

Terms of reference and conduct of our investigation

Terms of reference

1. On 4 April 2012, OFT sent us the following reference:
 1. The OFT, in exercise of its powers under Sections 131 and 133 of the Enterprise Act 2002 (the Act), hereby makes a reference to the CC for an investigation into the supply or acquisition of PH in the UK.
 2. The OFT has reasonable grounds for suspecting that a feature or a combination of features of the market or markets for the supply or acquisition of PH prevents, restricts or distorts competition.
 3. For the purposes of this reference, PH means privately funded healthcare services. These are services provided to patients via private facilities/clinics including private patient units, through the services of consultants, medical and clinical professionals who work within such facilities.

(signed) JOHN FINGLETON
 CEO
 4 April 2012

Conduct of our investigation

2. This appendix provides a detailed explanation of the conduct of our investigation from the reference by the OFT to publication of the final report.
3. On receiving the reference from the OFT on 4 April 2012, we published on our website an [invitation to interested parties](#) to provide evidence about privately-funded healthcare. We also sent out on the same day and over the course of the following weeks over 239 letters to private hospital operators, private patient units (PPUs) and interested third parties requesting initial information about their businesses. A notice inviting interested parties to submit evidence was also placed in the *BMJ* in April 2012.
4. On 7 June 2012, we published [a notice](#) setting out how we proposed to deal with interested parties, including how we intended to gather information and evidence during the course of the investigation and how interested parties would be kept updated as the investigation progressed.
5. An [administrative timetable](#) for the investigation was published on 15 June 2012. Revised versions were published on 28 September 2012, 22 May 2013, 1 August 2013 and 24 December 2013.
6. On 22 June 2012, we published the [issues statement](#), setting out the areas of concern on which the investigation would focus. We received 15 submissions from hospital operators, PMIs and trade associations in response to the issues statement. Non-confidential versions of [responses to the issues statement](#) have been published on our website.

7. During the early stages of our investigation, we received numerous initial [submissions](#) from individual consultants and members of the public. We have published over 290 such initial submissions on our website.
8. In July 2012 we held initial meetings with 11 parties and Healthcode Ltd (Healthcode) to help identify data and information held by the industry operators. In July 2012, we sent out 14 financial questionnaires to parties. In August 2012, we sent out market questionnaires to 12 hospital operators and 6 PMIs. Data questionnaires were also sent out in August 2012 to five hospital operators, five PMIs and Healthcode. In November 2012, further market questionnaires were sent to 89 PPUs and between December 2012 and January 2013 questionnaires were sent to over 100 anaesthetist groups. Many of these information and data requests were followed up with further written requests and/or telephone calls and/or meetings.
9. During June and August 2012 we visited the hospitals of seven private hospital operators and the offices of four PMI companies. We also made contact with a large number of third parties throughout this period of the investigation including the BMA, the Department of Health, the NHS Commissioning Board Authority, Northern Ireland Health & Social Care Board, PHIN, the Scottish Executive, the Welsh Executive and several consultant trade associations.
10. Between February and April 2013 we held 16 hearings with parties.
11. As well as the information and data gathering, on 11 September 2012 we published our [survey methodology](#). Following a tender process, we commissioned GfK to carry out a quantitative online survey with consultants who work in the private healthcare market, GPs who refer patients to consultants in private practice and patients who had received treatment/tests as a private patient. The [results of these three surveys](#) were published on our website in February 2013.
12. On 7 November 2012, we published our [profitability methodology consultation document](#). In that document, we set out our intention, following a tender process, to commission DTZ to estimate the modern equivalent asset value of land. Relevant parties were sent a draft of the report on 31 January 2013 for comment and DTZ produced a final report dated 4 June 2013 which is at Appendix 6.15.
13. Prior to the publication of our provisional findings, in addition to the issues statement, profitability methodology and survey methodology and results described above, in order to facilitate contributions from parties, we published a range of papers at various stages and, where appropriate, the results and our thinking at the relevant time of our analysis. Papers published at this time include:
 - [annotated issues statement](#) which contained as appendices a number of papers setting out our analyses and the results, where appropriate, of our analyses on, in particular, market definition, local market concentration, anaesthetist groups, bargaining between hospital operators and PMIs, barriers to entry and on corporate PMI;
 - [empirical analysis methodology](#) of price outcomes in negotiations between hospital operators and insurers;
 - [entry and expansion case study 1](#): Circle Holdings PLC, Bath;
 - [entry and expansion case study 2](#): The London Clinic;
 - [entry and expansion case study 3](#): Edinburgh and the Lothians;

- [hospital competition for clinician referrals](#);
 - [information availability](#);
 - [local competition assessment of hospitals of potential concern](#);
 - [price-concentration analysis for self-pay patients](#); and
 - [private healthcare in central London: horizontal competitive constraints](#).
14. Some of our analyses and results relating to specific parties have also been shared with relevant parties at various stages, including our work on land valuations and our assessment of hospitals which may have local market power. Following publication of a notice dated 15 June 2013 inviting interested parties to attend a roundtable on 9 April and a data room, we also opened a data room between 15 and 19 April 2013 to allow the economic advisers of some of the parties to review our analyses, including the underlying data relating to catchment areas, concentration in local markets and price concentration for self-pay patients. Nine parties took the opportunity to attend the roundtable and four parties took the opportunity to attend the data room.

From provisional findings to final report

15. On 28 August 2013, we notified our provisional findings and published our provisional findings in full on 2 September 2013. As we had provisionally concluded that our investigation had led to us finding AECs in the market, we also published a Notice of Possible Remedies. Interested parties were invited to comment on both of these documents. As set out in paragraph 26 of the Remedies Notice, we also consulted the five hospital groups and two largest insurers¹ on a confidential basis on our proposals for divestment remedies.
16. We received over 70 written submissions from parties including private hospital providers, PMIs, consultants and trade associations commenting on our provisional findings report and remedies notice. Non-confidential versions can be found on our website.
17. Shortly after the publication of the provisional findings report, arrangements were made for the external advisers of key parties to access certain confidential material which had been excised from our provisional findings, relating to the insured pricing and national bargaining analyses. The disclosure was made to allow the advisers to understand better the evidence relied upon by the CC, so that they could respond to the provisional findings. Given the degree of sensitivity of the information disclosed, the external advisers of some parties were admitted to a disclosure room to access the information. We also disclosed, subject to undertakings, confidential material from our provisional findings, relating to our local competition assessments, to a restricted number of external advisers of each operator of a hospital we identified as provisionally raising competition concerns.
18. On 17 September 2013, BMI applied to the Competition Appeal Tribunal (CAT) for a review of the decision by the CC to restrict the use by BMI's external advisers of certain confidential information they had accessed in the disclosure room. Requests to intervene in the proceedings were made by HCA, Spire, and in support of the CC, by The London Clinic.

¹ Subsequently disclosure was also made to another PMI [REDACTED].

19. On 2 October 2013, the CAT ruled that the regime adopted by the CC in the September disclosure room was unfair, and in breach of its statutory duty to consult. The rules governing the disclosure room and period of time of access were not considered fit for enabling parties to prepare a proper response to the provisional findings. Following the judgment, the CC operated a subsequent data room over a two-week period, providing parties with access to confidential material from relevant sections of our provisional findings, data underlying our two price analyses and the opportunity to draft and submit confidential submissions from within the data room. The parties were also provided with an extended period to respond to the provisional findings. On 2 October, BMI made a further application for review of the decision by the CC not to disclose a range of other confidential material relating to the investigation. This application has been stayed until publication of the CC's final report.
20. During October and November 2013 we held 11 response hearings with parties to discuss their responses to our provisional findings report and notice of possible remedies. Summaries of these hearings can be found on our [website](#).
21. On 16 January 2014 we published our [provisional decision on remedies](#). We invited interested parties to comment on our report.
22. We received over 150 written submissions from parties, including private hospital operators, private medical insurers, trade associations, consultants and members of the public. Non-confidential versions of these submissions can be found on our [website](#).²
23. In February 2014 we held four hearings with parties to consider their views on the provisional decision on remedies. Summaries of these hearings have been published on our website³. Also during February, external advisers of one hospital operator were invited to attend a disclosure room at the CC's premises. Following submissions made by the main hospital operators, we made revisions to the methodology used in our insured prices analysis and its results. The revised results of our analysis had a significant impact on our assessment of that hospital operator's position. Accordingly, the revised results were made available in the disclosure room to external advisers of that hospital operator for comment.
24. We would like to thank all those who have assisted in our investigation to date.
25. A copy of the final report has been placed on the CC's [website](#).

² www.competition-commission.org.uk/our-work/directory-of-all-inquiries/private-healthcare-market-investigation.

³ <http://www.competition-commission.org.uk/our-work/directory-of-all-inquiries/private-healthcare-market-investigation/evidence/summaries-of-response-hearings-held-with-parties>

Employers' private healthcare schemes

Executive summary

1. Nearly three times as many people enjoy access to private medical care as part of the compensation and benefits scheme provided by their employer as pay for PMI themselves and the majority of these are members of large corporate (rather than SME) schemes.
2. Larger companies provide access to private healthcare principally to attract and retain staff and to minimize disruption arising from sickness-related absences. They seek to balance the cost of providing access to private healthcare with the benefits that they derive from it.
3. Companies differ in the importance they attach to containing the costs of providing access to private healthcare. Some (we believe a minority) have maintained benefits while funding the increased costs themselves. Some have maintained the level of benefits but shifted part of the funding burden to staff. Some have sought and more are planning to reduce the costs of their schemes, including by adopting 'open'¹ referral processes and restricted hospital networks.
4. While there is thus variation between employers as to the degree of flexibility that employees are permitted when making healthcare decisions, the 'direction of travel' appears to be towards seeking ways of containing the cost burden on the employer of providing access to private healthcare including by adopting a more guided approach.

Introduction

5. Our first ToH postulated that some hospitals operators may have market power in particular geographic areas. This might arise from the absence of comparable or suitable facilities in the area concerned and hence the lack of an alternative for patients. To assess whether or not this is the case, we will need to understand the requirements of hospital users and in particular the extent to which they regard different hospital facilities as substitutes. We conducted survey research to understand what the requirements of individual patients/consumers are. However, for the majority of consumers with access to privately funded healthcare, their employer is the purchaser of their hospital services and will thus be in a position to decide which hospital facilities to make available to employees. We therefore wished to understand what the purchasing requirements of employers are. We also wished to consider whether large employers, in particular, may be able to exert buyer power.
6. This paper looks at private healthcare schemes provided by larger employers for their staff. It begins by providing some background information on the corporate PMI sector and how it compares with the individual PMI sector. It identifies segments within the corporate PMI sector that may be relevant to our analysis, noting trends in numbers of subscribers² covered and premiums paid. It goes on to describe the

¹ Open referrals are referrals made without specifying a particular clinician. This is typically accompanied by a process whereby the PMI will recommend suitable specialists to the patient. Policies that require open referrals are considered in more detail in Section 7.

² 'Subscribers' are used to denote the individual policyholders. The number of lives covered may exceed the number of subscribers as a subscriber's dependants may also be covered.

requirements of large employers as regards the features and benefits of their schemes, including the degree of flexibility that they permit their staff when making healthcare choices.

The company sector: industry background

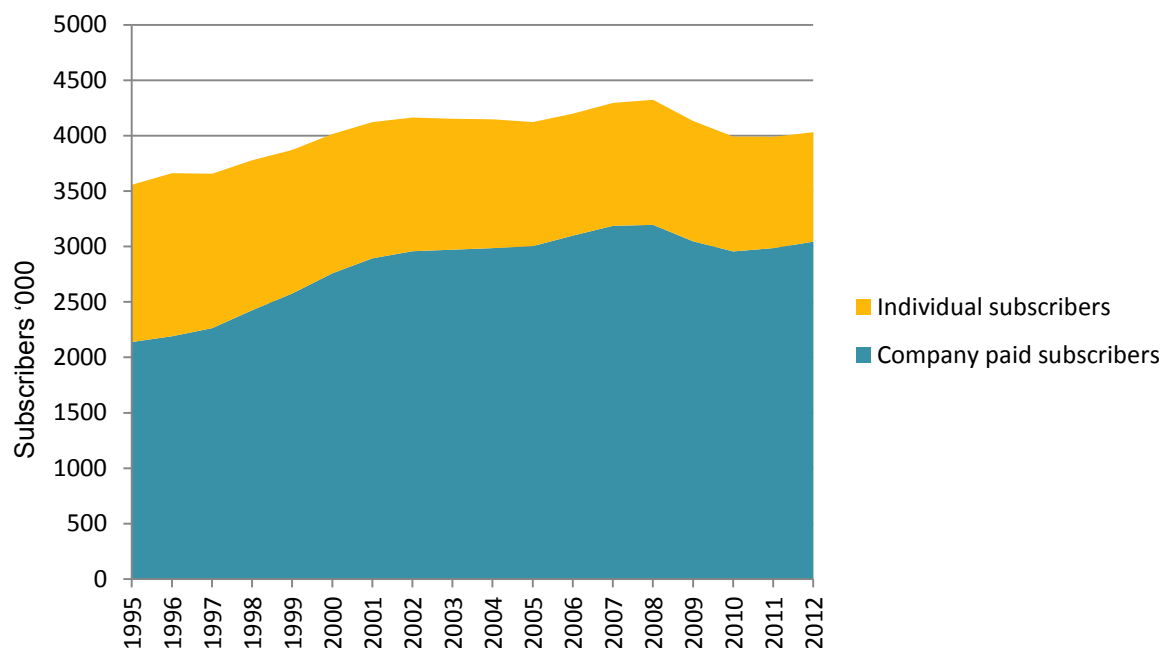
The company-paid vs individual-paid sectors

Subscriber numbers

7. Approximately three times as many subscribers are part of corporate PMI schemes as those that pay for their own PMI, and the majority of these are part of large corporate schemes. As at the end of 2012, there were approximately 988,000 individual PMI subscribers (down from 1.4 million in 1995), while the number of subscribers to company paid schemes was approximately 3.044 million. Laing and Buisson estimate that as of December 2012, large corporates³ accounted for 65 per cent of company-paid subscribers, amounting to 1.975 million subscribers, and that SMEs accounted for 35 per cent or 1.070 million subscribers.⁴

FIGURE 1

Company-paid and individual subscribers 2012



Source: Laing and Buisson, *Health Cover UK Market Report 2013*, p8.

³ Large corporates are defined by Laing and Buisson as companies with 250+ employees.

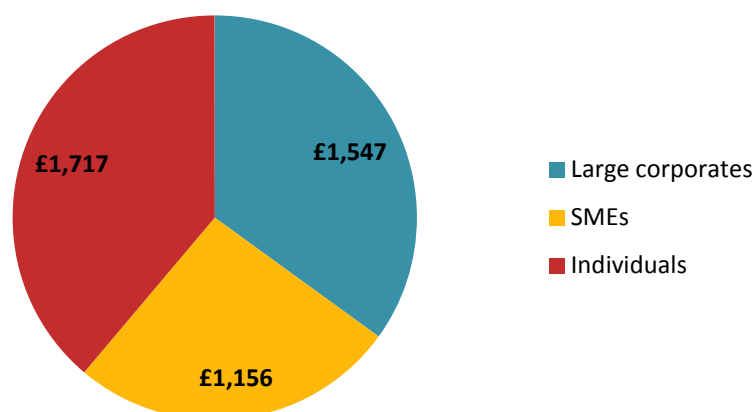
⁴ Laing and Buisson, *Health Cover UK Market Report*, 2013, p2.

Spend on medical cover

8. Total spending on private medical cover by companies in the UK was estimated by Laing and Buisson at £2,703 million in 2012, large corporates accounting for 57 per cent of this spend and SMEs 43 per cent.⁵
9. In total, companies spend significantly more than individuals: £2,703 million by companies and £1,717 million by individuals in 2012. However, individuals (and SMEs) pay higher premiums per individual than do large corporates. Because of this, large corporate spending on health cover in total (including the claims costs met by self-insured companies) is less than individuals spend and not significantly more than SMEs spend in total.

FIGURE 2

Health cover spending, 2012



Source: Laing and Buisson, *Health Cover UK Market Report 2013*, p2.

Types of company schemes—fully insured and self-insured

10. Company schemes may be 'fully insured' or they may be 'self-insured'. In the former case the PMI bears the risk of claims⁶ and in the latter all or some of it is borne by the employer.
11. If fully insured, a PMI will be selected by the employer to provide a specified level of healthcare cover in exchange for an annual premium. Typically, this will reflect the company's claims history, being higher or lower according to the size and number of claims being made against the policy.
12. If the employer decides to self-insure, it will, probably with the assistance of specialist compensation and benefit consultants, design its own scheme and create and fund a trust to meet claims from its employees. Typically, an employer will appoint a PMI to

⁵ Ibid.

⁶ Unlike some forms of insurance, PMI is not bought to mitigate the impact of a single, unlikely but catastrophic event. Sickness occurs inevitably on a greater or lesser scale and may be predicted reasonably well based on the nature of the population concerned. The 'risk' here might perhaps be better characterized as the possibility that the cost of meeting claims significantly exceeds that predicted.

administer the scheme, assessing claims and managing the payment process on the trust's behalf.⁷ In circumstances where the employer appoints a PMI to administer the scheme, the company will benefit from the rates that the PMI has agreed with private hospital groups and consultants and also with third parties which provide managed healthcare solutions.

13. The benefits of self-insurance to an employer include the avoidance of Insurance Premium Tax, which is currently levied at 6 per cent. However, only larger firms are likely to self-insure since only with a fairly large group of members is the claim rate reliably predictable.⁸ Even so, the employer may choose to hedge, taking out 'stop loss' insurance with the PMI, for example in respect of individual claims or the aggregate value of claims.⁹
14. Subject to the trust's compliance with HMRC rules, the value of claims paid on behalf of individual employees will not be considered as a taxable benefit to the employee concerned. The tax burden on the employee will be calculated on the basis of the cost per employee to the employer in a similar way that the benefit of a fully-insured scheme would be calculated: on the value of the premium per employee.
15. It should be noted that even if 'fully insured', the employer is not insulated from the costs of providing medical care as premiums are likely to rise in subsequent years if the cost of meeting claims increases.

Health cover requirements of large corporate customers

16. Our first ToH postulates that private hospital operators may exert market power in local areas where they own a large proportion of local healthcare facilities. This, as envisaged by our third ToH, might be exploited by hospital groups in conducting national negotiations with PMIs. High fees negotiated by hospital groups with the PMIs will in turn affect the policy premium paid by fully-insured corporate customers or, in the case of self-insured companies, the fees paid to hospitals as negotiated with the relevant PMI.
17. We wanted to understand whether corporate customers were able to reduce their healthcare costs by either requiring their staff to be more flexible as regards the hospitals where they could be seen and treated or by negotiating directly with hospital operators. If companies were willing to ask their staff to travel further to attend a private hospital or to use a restricted set of consultants, they might be able to reduce their overall healthcare costs, either by avoiding the use of particularly expensive providers or by securing preferential rates with a particular hospital group. For example, we thought that a large company (rather than an SME) which does/could represent a significant share of a particular hospital's revenue might be able to exert a degree of local buyer power over that hospital if it sought to negotiate directly. We therefore asked large firms operating health cover schemes how important it was to them to have access to particular hospitals and the extent to which they were able to exert buyer power.

⁷ As we contacted corporate customers of the major PMIs, all the companies we spoke to use a PMI to administer their trust. Our understanding is that most third party administrators (TPAs) of trusts are PMIs but we found one non-PMI company, Healix, which provided TPA services to large employers: www.healix.com/employers/healthcare-trusts/claims-administration/.

⁸ According to Laing & Buisson, only 1 per cent of SMEs self-insure, whereas 38 per cent of subscribers to large corporate schemes are self-insured (Laing & Buisson, *Health Cover UK Market Report 2013*, p10). Most, but not all, of the companies we contacted were self-insured, though one (1%) with 20,000 employees told us that it had saved money by becoming fully insured.

⁹ Alternatively a company may arrange cover with a captive insurance underwriter.

18. We contacted the 30 largest corporate customers of the five largest PMIs and asked them why they provided health cover for their employees, the benefits that they required the scheme to provide (particularly in terms of hospital access), how much their scheme cost and whether and if so in what way they had sought to contain the costs of providing private medical cover. Just over 50 companies responded to our questionnaire and we followed this up with telephone interviews with 12 of these. The remainder of this appendix is based on what they told us.

Reasons for providing health cover

19. The two most common reasons firms gave for providing health cover to employees were:
- (a) to attract and retain staff; and
 - (b) to reduce absences/disruption arising from sickness.

Attracting and retaining staff

20. Attracting and retaining staff was the reason given most often by companies across all industry sectors for providing health cover to their employees. In the financial and professional services sector in particular, the benefit was seen as a standard part of the remuneration package which employees would expect to be offered by an employer. Indeed, several firms in the sector¹⁰ told us that they regularly monitored the healthcare benefits provided by their competitors to employees, subscribing to various surveys and taking advice from their compensation and benefits consultants as to how their healthcare benefits compared with competitors'. The most commonly mentioned sources of advice on employee benefits, including healthcare, were Towers Watson and Aon Hewitt.
21. The positioning that employers sought, relative to competitors, varied. One financial services company, [X], wanted to be slightly ahead of the average in respect of benefits, if less so on salaries. Another, [X], recognized that its benefit package was less generous than competitors' but took the view that its staff preferred cash to benefits. A major bank, encompassing retail and investment banking activities,¹¹ told us that for the latter it was an expected part of the remuneration package and was therefore necessary to attract and retain staff, but for the retail side of the business it was over and above the industry benchmark. However, health cover was seen as an essential part of the occupational health and well-being support that the business provided to its staff. Private healthcare shortened the time frame between health problems arising and effective intervention taking place and resulted in a quicker return to work by the employee.
22. Outside of this sector, an oil company¹² said that it had tried to match competitors' benefits when it introduced the scheme but had also wanted to differentiate its package and so had enhanced a particular aspect of its cancer care. A logistics company, [X], told us that it liked to go beyond what its competitors offered, making health benefits available to first-line managers, for example.

¹⁰ [X]

¹¹ [X]

¹² [X]

Reducing absences/disruption

23. Because private treatment could generally be accessed more quickly than through the NHS and could be arranged at a time convenient to the patient, disruption as a result of sickness and sickness-related¹³ absence could be minimized. Rapid access to diagnostic services was seen as beneficial in that early diagnosis might result in more effective treatment and that treatment could be scheduled so as to minimize the disruption to an employee's work. Additionally, diagnostic facilities (including GP practices and testing/scanning services) close to the workplace reduced the time an employee would need to be away from their desk for a consultation/examination. Having diagnostic, examination and testing facilities close to the workplace was seen by one bank, [X], as being more important than having treatment available close by since employees would probably prefer to be treated at a hospital close to their home rather than to their workplace.

Importance of particular hospitals

24. We asked firms in which parts of the country they employed large numbers of staff and, in those areas, whether there were particular hospitals that it was important were available to their employees. We asked them, if there were such hospitals, whether they had sought to negotiate special terms with the hospital operator and, if so, what the outcome had been.
25. Because of the size and nature of the firms we were approaching, we reasoned that many of them would employ staff in central London and the City. As it had been put to us that HCA had a strong position in London, we asked companies with a significant number of employees in London specifically how important it was to them to have access to particular HCA hospitals.¹⁴

Companies with staff concentrations outside London

26. Companies generally took the view that staff outside London would prefer to be treated close to where they lived and worked, though acknowledged that for more serious or unusual conditions it might be appropriate for them to have access to hospitals further afield. They therefore cited hospitals situated in areas where they had a significant concentration of employees as important in access terms.
27. One transport business, [X], said that it adopted a network arrangement in 2010 to help cut the costs of its scheme but that it added a non-network hospital in one of its locations specifically to ensure that its staff could be treated there. Similarly, a pharmaceutical company, [X], with operations in the North-West, the South and the South-East, told us that it was very important for its staff to have access to two particular hospitals in the North-West ([X]) and another one in the South, [X]. A retailer, [X], cited a particular hospital located close to its [X] that it said was important for its staff to have access to. A financial services company with several thousand employees on the south coast, [X], told us that a hospital in the area was second only to London Bridge in terms of its usage. A TMT company, [X], said that it employed a large number of people in the Edinburgh area and the hospital that it used most in the UK was the Spire Murrayfield.

¹³ For example, care of a dependant.

¹⁴ We listed HCA's hospitals and asked companies how important it was that their scheme provided their employees with access to them and whether some were more important than others.

28. Generally, companies told us that they thought their PMI would be able to negotiate better terms with the hospital group concerned than they would.¹⁵ It was very rare for companies to have successfully negotiated special terms with such hospitals, though we did find this in one case outside London. This was a volume-related discount scheme which a financial services company, [X], had, through its PMI, [X], negotiated with Murrayfield Hospital in Edinburgh [X]. This arrangement was made prior to the hospital's acquisition by its current owner, Spire, but was still in force. The TMT company referred to above, [X] with [X] in the area told us, on the other hand, that it used the facilities of the Spire hospital in Edinburgh more heavily than any other hospital in the UK but had been unable to negotiate preferential terms.

Companies with staff distributed nationally

29. None of the companies we contacted had sought to negotiate special terms on a national basis with a major hospital group. One major bank, with staff distributed across the UK, [X], told us that it thought the bulk purchasing power of its scheme administrator, [X] would outweigh any leverage it could apply direct.

Companies with large numbers of staff in London

30. We asked companies with large numbers of staff based in London how important it was for their employees to have access to named HCA hospitals. Their responses varied. All three of the professional services firms that we heard from, [X] said that access to the HCA hospitals was either 'very important' or 'essential'.
31. Within the financial services sector, investment banks tended to have the same view, one, [X], telling us that the cost saving likely to arise from restricting access would not compensate for the likely negative reaction from senior executives that would ensue. Another, [X], said that it had considered continuing to permit consultations and diagnostic tests at the London Bridge Hospital whilst insisting that treatment took place elsewhere, but said that this would lead to a 'significant backlash' and had not pursued this.
32. Even so, not all investment banks took this view. One, [X], told us that as the costs of its healthcare cover rose by 12 per cent in 2012, it was considering and was likely to adopt an open referral scheme which would allow its employees access to two hospital chains only, [X], excluding HCA hospitals, unless treatment at another hospital could be medically justified. Its PMI, [X], would determine whether claims met this test on a case-by-case basis.
33. The attitudes of the major high street banks which responded differed as regards restricting access to particular hospitals and consultants.
34. One, [X], permitted staff to attend whichever consultant at whichever hospital they wanted but made them pay more for this than if they accepted a more directional pathway. It offered three levels of cover. Its default scheme for managers was the middle level, at a monthly cost to the employee of less than £50 but it funded this through an equivalent salary enhancement if the employee joined the scheme. Middle level healthcare did not, however, provide employees with access to HCA hospitals: this would require the top tier. If bank executives wished to avail

¹⁵ The PMI concerned had, in some circumstances, negotiated special terms with a hospital into whose catchment area a concentration of the employer's workforce fell. A PMI told us that it had come to such an arrangement on behalf of an employer in the West Country, for example.

themselves of this level of cover, they could subscribe at a cost of over £130 per month, though this would not be funded by the employer.

35. Another bank, [X], told us that it provided access to all hospitals in London. It said that this was because while retail banking staff would not be likely to insist on a particular hospital, staff on the investment banking side of the business would. This bank told us that it would not be practicable to offer two different schemes through the same trust.
36. A third, [X], introduced open referral in January 2011. It told us that it offered two levels of cover: standard and enhanced. Under the former, staff were limited to the recommendations of the scheme's administrator, [X], but under the enhanced scheme, to which employees had to contribute, they were not. It said that a majority of its staff had opted for standard cover but, of those that joined the enhanced scheme, 33 per cent receiving treatment opted to stay within the guided pathway.
37. Still within the financial services sector, the two insurance brokers which responded [X], told us that they did not consider it important to provide access to HCA hospitals. One, [X], said that it did not aim to provide a 'Rolls Royce' scheme, though some form of health cover was a standard element of remuneration packages in the sector generally.
38. Outside the financial services sector, some other firms with large numbers of staff in London operated relatively unrestricted schemes. These included TMT [X], logistics [X] and FMCG [X] businesses. That said, other large companies operated more restrictive schemes. Some very large corporations [X] told us that it was not important to provide their staff access to the HCA hospitals, for example.
39. It was not clear why these differences existed. Where such firms explained the reasons for considering staff access to the HCA hospitals important, they tended to cite the convenient location of the HCA facilities more than other factors. The location of the London Bridge Hospital, in particular, made it possible for employees of City firms to minimize their absence from the office when attending medical appointments.
40. Some of these companies cited the reputation of these hospitals for high-quality healthcare as being the reason for including them in their schemes. Others, for example, [X], however, told us that since no appropriate quality measures were available it was impossible to draw value-for-money conclusions.
41. In this context, we also note that four financial services firms, [X] expressed some concern at the ownership of private GP and occupational health facilities by the hospital group HCA in that these might be more likely to refer patients to consultants at HCA hospitals on grounds other than medical necessity. One, [X], said that it might be difficult to detect if this was happening since referrals could be driven by the perceived quality of the healthcare available at HCA hospitals or their convenient location. Another, [X], noted that the Roodlane practice owned by HCA did frequently refer patients to London Bridge and contrasted their referral practice with that of two other clinics used by the firm. None of these firms was able to offer any evidence of a systematic bias towards HCA referrals.

Measures to contain costs

42. The amount that companies spend on the provision of health cover is significant, averaging £897 per employee covered in 2012.¹⁶ Based on what the large companies that we contacted told us, expenditure per head appears to vary considerably, from less than £400 to over £1,000.
43. The priority that companies attached to containing the costs of private healthcare for their employees and maintaining the benefits of their scheme also varied. Some companies had considered but refrained from adopting cost-cutting measures in the past. One professional services firm, [X], told us that it had investigated introducing an excess and reducing the number of staff covered by the scheme but had not done so as this 'would be seen as degrading the benefit level'. Another, [X], said that it had considered introducing excesses and caps but had decided not to since there was not a great deal of pressure ('noise') to reduce the costs of the scheme, and to downgrade the benefits would be seen as counter to the firm's culture of treating people very well. A bank, [X], said that it had not seriously considered changes for several years but the rise in costs in 2012 had made reducing the costs of the scheme a higher priority. A public sector services company, [X], had rejected a number of cost-cutting initiatives as these would not generate sufficient savings 'to offset likely adverse reaction from staff'. One TMT company, [X], said that it had explored the introduction of open referrals in 2008 and had decided not to adopt it but was currently reconsidering this option.
44. Some said that they had made changes at the margin ('tweaks') such as discontinuing providing the benefit to retirees, [X], or raising the cost to employees of adding dependants to the policy, [X].
45. The most common measure adopted was the introduction of or an increase in a policy excess which, we were told, was effective in reducing claims.¹⁷ Other measures included 'shared responsibility' (whereby the employee would pay, say, 25 per cent of the cost of treatment up to a limit of, say, £150), removal of free cover for dependants and, less commonly, open referrals.
46. Bupa launched open referrals as a pilot in 2011 at the request of one of its corporate customers. Bupa made it an option available to corporates as from January 2012. Bupa told us that open referral was not mandatory on clients but that it was Bupa's recommended position. As a result, all clients coming up for renewal from January 2012 were offered terms on an open referral basis, though also given the option to request continuation of their current service without open referral. Bupa told us that as of July 2012, just under half of the lives it covered or provided administrative services for in the corporate segment (including Health Trusts) were on open referral policies.
47. AXA PPP, announcing an extension of its corporate Pathways open referrals product in October 2012, said that it hoped that this would become the preferred option for its corporate clients in two to three years.¹⁸
48. Open referrals had been introduced by one major retail bank, [X], specifically as a way of reducing costs and three other companies, [X]. Three further companies said that they were planning to introduce open referrals in 2013, [X]. One of these

¹⁶ Laing and Buisson, *Health Cover UK Market Report*, 2013, p20.

¹⁷ For example, one company, [X] told us that its claims fell from £670,000 to £480,000 when it introduced a £100 excess in 2008/09.

¹⁸ www.hi-mag.com/health-insurance/product-area/pmi/article408950.ece.

companies, [X] told us that it had concluded that open referral would reduce the cost of the scheme but with no reduction in clinical care. It said that a further benefit of open referral was that its employees would not be 'shortfalled'. Another, [X], said that its decision had been prompted by a 12 per cent increase in the cost of the scheme in 2012.

49. Other measures aimed at containing costs mentioned by more than one company included the use of alternative treatment pathways for particular conditions. Most commonly mentioned were referral to physiotherapy services procured by the insurer/trust administrator where staff had musculoskeletal conditions [X] or potential psychiatric problems [X].
50. One bank, [X], told us that about one-third of its claims were associated with musculoskeletal problems and that the traditional pathway of visiting the GP, referral to a physiotherapist or surgeon was slow and expensive. It said that the Nuffield service, offering telephone advice and home exercises initially, which was available to its scheme members, was more flexible, quicker and cheaper.
51. None of the companies we contacted indicated that they had considered withdrawing private health cover from its benefit package entirely, though one retailer, [X] said that it had withdrawn cover from a layer of its workforce. However, we were told by one firm of employee benefit consultants (Towers Watson) that a 'tipping point' may be approaching. It told us that, increasingly, its clients found the existing model of healthcare provision unsustainable as a result of rising costs. It told us that a tax burden of £500 had been sufficient to lead some of its clients' lower-paid employees to withdraw from the scheme, thus increasing the companies' risk profile and attracting higher premiums. It said that companies in the UK, including those which were part of US corporations, may adopt different types of schemes such as Healthcare Savings Accounts or Consumer Directed Healthcare Arrangements which had become much more common in the USA. These schemes provide employees with a 'fund' of healthcare benefits which they may spend or accumulate in a tax-free savings account which may transfer with the employee between employers and into retirement. We were told that such schemes were cheaper for employers to provide and that since employees were spending 'their own' money they may be expected to consider questions of value for money more carefully than they would under insurance-based schemes.

Private patient unit expansion

Introduction

1. This appendix describes the results of our research into the impact of expansion of PPUs following the removal of the private patient income cap by the Health and Social Care Act 2012 (the 2012 Act). It incorporates the relevant findings from our PPU market questionnaires, among other sources of information.
2. In our annotated issues statement, we said that in considering the relevant product market(s) for private healthcare, we needed to understand the extent to which PPUs and the NHS represented competitive constraints on private hospital operators.¹ In particular, we needed to consider the competitive effects of planned expansion of PPUs following the coming into force of the 2012 Act.
3. Prior to the 2012 Act, there were strict limits on the amount of income that NHS Foundation Trusts (Foundation Trusts) could earn from private patient work. This private patient income cap meant that Foundation Trusts could not exceed the proportion of the total income that they derived from private charges in 2002/03 (the year before the first Foundation Trusts were authorized), which varied from about 1.5 per cent to about 30 per cent. Under the 2012 Act, the cap has been lifted so that Foundation Trusts are now permitted to receive up to 49 per cent of their total income from private sources. However, if a Foundation Trust proposes to increase the proportion of its total income that comes from private sources by more than 5 per cent, it requires majority approval by its council of governors.

Overview of our findings

4. Based on our review of the evidence submitted by the parties and independent research, concerns about the effects of lifting the cap are varied.
5. The Department of Health undertook an Impact Assessment of the Health and Social Care Bill 2011, and in it noted that Monitor had collected data indicating that in 2010/11, most Foundation Trusts operated at a level well below their private patient income cap. Further, that data showed that there was not a strong relationship between the level of the cap and the usage that the Foundation Trusts made of their entitlement: 'Whilst it is not possible to predict how Foundation Trusts will behave with the lifting of the caps, the evidence indicates that many Foundation Trusts will not automatically make use of any ability to earn private income offered to them'.²
6. Industry observers expect that the lifting of the cap will lead to strong growth in NHS private patient activity in the medium term (next 3-5 years) and that this will include a range of measures (developing, refurbishing, reconfiguring and expanding PPUs).³ It is not, however, believed that any Trust would ever expect to reach the 49% ceiling in practice and projections for real growth in 2013/2014 were in the region of 1.5%.⁴ We were told by one hospital provider that in addition to PPU expansion projects in the public domain, there were undoubtedly other expansion projects which had not been officially publicized. We were also advised there was a risk that Foundation Trusts

¹ Annotated issues statement, paragraph 29(e).

² www.gov.uk/government/uploads/system/uploads/attachment_data/file/147536/dh_129917.pdf.pdf.

³ Laing & Buisson, Private Acute Medical Care, 2013, pp104-105.

⁴ Laing & Buisson, Private Acute Medical Care 2013, p104.

would pursue private patient income rather than focusing on delivering high-quality care for all.⁵ The *BMJ* reported that a growing number of hospitals were offering patients self-funding options for treatments for which there were long waiting lists on the NHS, and critics of these options believed that it muddled the waters between the private healthcare and the NHS, creating a two-tier system. However, the *BMJ* also reported that while the Foundation Trust Network, which represented Foundation Trusts in England, expected more treatments to be available through self-funding in the future, ‘most trusts [had] systems in place to stop paying patients “queue jumping” ahead of NHS patients when being treated in the same facility’.⁶

7. Another hospital provider told us that removing the private patient income cap would encourage plans for large-scale PPU expansion, adding the ‘full capacity of 400 hospitals to the private pay market’, and that this would lead to the potential threat of additional capital coming into the sector without necessarily being accompanied by market growth. Some providers also took the view that PPUs had an unfair competitive advantage due to cross-subsidization (eg of the cost of capital, pensions, clinical infrastructure and staff), tax status, abuse of the NHS monopsony position as consultant employer, the close proximity of the NHS hospital to the PPU, and issues arising from the vertical integration with NHS GP services and the horizontal integration with NHS secondary care services, leading to a risk of preferential internal referrals.⁷ This, in combination with the lifting of the cap, we were told, could afford PPUs the opportunity to set prices below those of a fully efficient private provider, which would comprise de facto predatory pricing if prices were then raised after PPUs had gained market share.⁸ Other concerns included the prospect of Foundation Trusts earning private patient revenues that breached EU competition rules prohibiting the use of state aid to distort competition.⁹
8. On the other hand, we were told that there were barriers to expanding, particularly for small hospitals, which lifting the cap would not address quickly or materially, and that therefore PPUs did not provide a competitive constraint on the conduct of the large hospital providers at the local or national level.¹⁰ Specifically, PPUs struggled to attract new consultants and regularly performed below other private hospitals in patient satisfaction surveys.¹¹ Addressing these problems would require significant investment given PPUs’ generally small sizes and limited capacity. PPUs faced political pressure, including expanding the provision of private healthcare services in the face of a reduced number of NHS beds, and organizational pressure such as the duty to serve NHS patients first. They also had weaker capabilities in commercial strategy and contract handling.¹² For some PPUs outside London, private patient activity was well below the cap when it was in place, and ‘the exclusion of a significant number of PPUs from hospital networks used by the leading private health insurers also dampened activity, particularly outside of London’.¹³ This, and other issues particular to smaller PPUs based outside London (described below), have

⁵ <http://m.guardian.co.uk/society/2013/apr/06/nhs-hospitals-increase-private-patients>.

⁶ *BMJ* 17 July 2013, www.rochdaleonline.co.uk/news-features/2/news-headlines/81474/one-in-six-hospitals-offers-private-services-to-boost-income-finds-bmj-investigation.

⁷ Nuffield Health main submission; HCA initial submission, sections 7 and 8; HCA response to issues statement, paragraph 5.13.

⁸ Nuffield Health response to annotated issues statement, paragraphs 1.39–1.41.

⁹ Laing’s Healthcare Market Review 2011–12, p56: ‘This claim is based on the assumption that private prices charged by the NHS are lower than the market average because their private services are subsidised by state aid.’ Laing & Buisson also noted in its Private Acute Medical Care 2013 report (p132) in the context of four of the largest non-profit hospital organizations in the UK generating considerable savings because of their tax exemption status: ‘However, these concerns have not raised a significant issue in the past, and Monitor, the regulator of competition within the sector, is likely to closely monitor these dynamics.’

¹⁰ Bupa response to issues statement, Annex A.

¹¹ *ibid.*

¹² *ibid.*

¹³ Laing & Buisson, Private Acute Medical Care, 2013, p93.

factored into their views on the effect that the lifting of the cap will have on PPU expansion.

London

9. The top ten private patient earning NHS trusts are all located in London and account for 51.8 per cent of total NHS private patient revenue.¹⁴ In general, London-based PPUs, which are broadly larger and have historically dominated the NHS private healthcare revenue stream, are positioning themselves to take advantage of the lifting of the cap more quickly than those outside London, by, for example, investing in additional capacity, refurbishing their existing facilities, and specializing in the provision of privately-funded healthcare services, such as cancer services.¹⁵ This is in part due to the size of the potential market as well as to demographic factors which drive demand and create significant opportunities for new entrants. One party told us that:

the London market possesses unique characteristics that off-set the risk of market failure for new entrants. Specifically, London's economic resilience, its vast patient and consultant population, its position as a centre for healthcare research and development, and its transport infrastructure lower the risk associated with market entry compared to many other parts of the UK.¹⁶

10. In these circumstances, we were told that 'there is a danger in making over-generalised and simplistic conclusions for the UK as a whole, which do not take account of the specifics of individual markets'.¹⁷
11. While many London-based PPUs are investing or contemplating investment with a view to increasing their private patient income,¹⁸ it does not appear that this will provide additional significant competitive constraints on private hospital operators in London in the short term, for reasons discussed in the rest of the appendix. Similarly to other PPUs, London-based PPUs expressed to us their concerns about the risks associated with expansion, and at least one major PPU has at the forefront of its growth strategy the retention of its current private patient income base.

Responses to market questionnaires

12. In our market questionnaires, we asked both large and small PPUs (and specialty PPUs) about their plans for expansion in general, as well as about the potential impact that the 2012 Act and the lifting of the private patient income cap might have on their business. Specifically, we asked:

(a) Please provide any relevant internal documents which set out the views of your senior management in terms of your PPU's key competitive strengths and disadvantages in relation to private patients and how your competitiveness in the provision of privately funded healthcare, or of any specific medical treatments/specialty,

¹⁴ Ibid, p.97

¹⁵ For example, one recent development is 'the opening of a new private cancer care outpatient facility by HCA at University College Hospital's Macmillan Cancer Centre in July 2012. HCA also operates a private patient unit with overnight beds, Harley Street at University College Hospital, at University College Hospital's main site.' Laing & Buisson, Private Acute Medical Care, 2013, p105.

¹⁶ [HCA response to issues statement](#), p3.

¹⁷ [HCA response to annotated issues statement](#), paragraph 7.12.

¹⁸ Laing & Buisson, Private Acute Medical Care 2013, p105.

has changed over the last 3 years or is likely to change in the future;
and

- (b) What impact do you expect the lifting of the cap on private revenue will have on your private patient business? Please support your answer with any relevant internal documents, including analysis, that discuss the lifting or removal of the cap.

Change in competitiveness over the last three years and in the future

13. Both large and small PPUs told us that the market for private healthcare had suffered decline over the past several years due to the economic recession, but that the outlook for the next few years was likely to be more favourable with an NHS spending squeeze potentially increasing demand for the private sector, and market growth, albeit at a slower rate than before the recession.
14. We were told that the competitive advantages enjoyed by PPUs included Foundation Trusts being better able to integrate their and the NHS's work by making use of common resources, and being able to offer clinical safety and service capability where there was a lack of safe private alternatives due to access to a full range of sophisticated technology, particularly for those specialty PPUs which traded internationally on their brand name.
15. Conversely, we were told that PPUs were disadvantaged by pricing pressures from private medical insurers and lack of insurer accreditation, capacity constraints (especially by a lack of easy access to dedicated private patient capacity) and the inability to attract consultants willing to undertake private work,¹⁹ and the requirement to cede to NHS priorities. Issues around capacity and upgrade may be addressed in time, but there is a considerable lag in terms of being able to create the necessary infrastructure to do so, and a risk of underperformance should target then prove overoptimistic.²⁰

Impact of lifting the private patient income cap

Smaller PPUs

16. For some smaller PPUs located outside London, the lifting of the cap is of little strategic importance and unlikely to have a significant impact on their business, as we were told that some were operating well within the cap when it was in place. The lifting of the cap could introduce pressure on already limited local markets from local Foundation Trust competitors, who may invest in (additional) private work as a consequence.
17. One of the major restrictions on expansion that smaller PPUs face is the fact that many of them do not have dedicated private units or facilities. Capacity pressure means that the priority goes to NHS patients and that private work is conducted on an ad hoc basis, in speciality areas that cannot be managed in private hospitals. In some cases, we were told that their private patient expansion strategy was a matter to be reviewed at a future point in time.

¹⁹ Bupa response to issues statement, Annex A.

²⁰ See *Analysed: District general hospitals look to private patient income*, a report published 6 June 2013 in the *Health Service Journal*.

18. However, we were also told that the lifting of the cap offered greater income generation opportunities. While they might not currently have dedicated private patient facilities, they were exploring ways to expand their private patient work, including developing dedicated private outpatient departments and units, and dedicated operating theatres. One of the ways that this might be accomplished was by partnering with private hospital operators. We were told that some insurers were also embarking on new initiatives to work with PPUs to reduce costs and encourage customers to choose lower cost options in an effort to win back market share and new customers. The degree to which an increase in PPU activity might constitute greater competition for private hospital operators would be affected by the number of Foundation Trusts that decided to expand in partnership with private hospital operators and insurers, with whom they partnered and on what terms.

Larger PPUs

19. In general, the private patient income cap appeared to be more of a concern to larger PPUs, particularly for those with a relatively low cap and for those within London. We were told that the removal of the cap would allow larger PPUs to exploit the market potential by undertaking more private patient activity without fear of contravening private income restrictions. It also offered opportunities to grow the amount of international private patient work for which they were able to compete. Some of these larger PPUs indicated that they were already contemplating a strategic approach which incorporated an increase in private patient income by refurbishing their facilities, widening the scope of their services and attracting new consultants, and partnering with private operators to further develop activity in this area.²¹ Efforts made by the leading PPUs to position themselves to expand and take advantage of the lifting of the cap are evident.²²
20. We were also told, however, that growth was likely to be tempered by several factors, including the need to seek approval from their council of governors for increases in private patient income of more than 5 per cent, the overall reduction in the amount of private work brought about by the recession, and the increased competition between Foundation Trusts for private patient work (which was previously dampened by the cap). Moreover, though PPUs might provide some competition for the independent sector, they could also 'exacerbate local concentration should they be partnered (managed) by the local independent sector operator'.²³
21. Similar to some smaller PPUs, some larger PPUs said that they had been operating well within the cap, so that its lifting would have no significant impact on them. Where the fact that they had been operating within the cap was due to limited capacity, we were told that if they were able to increase their capacity to accommodate additional private patient services, they would then be in a better position to fully utilize any potential increase in private patient activity.

Specialty PPUs

22. Specialty PPUs, which are largely London-based, told us that the private patient income cap significantly limited their potential to increase activity and income from private patient services, and that lifting it would allow them to increase their overall

²¹ Laing & Buisson Private Acute Medical Care 2013, pp105&106. For example, the Clatterbridge Centre for Oncology NHS Foundation Trust together with a private investor opened a joint venture private cancer treatment centre in Merseyside in June 2013: www.clickliverpool.com/news/liverpool-news/1219166-first-private-dedicated-cancer-clinic-opens-in-merseyside.html.

²² See Laing & Buisson Private Acute Medical Care 2013, pp105&106.

²³ *ibid*, p196.

revenue. There was still a lack of easy access to dedicated private patient capacity, which had meant a loss of revenue in some specialty areas such as cardiology, oncology and orthopaedics. However, some speciality PPUs told us that the lifting of the cap would allow them to meet the needs of private and public patients better, and that they expected moderate growth, which would enable some renewal of equipment and facilities. Great Ormond Street Hospital said publicly:

Our private work is largely international, with families funded by foreign governments and healthcare systems to receive care not otherwise available to them. Revenues generated by this can only be reinvested to the benefit of NHS patients. This is currently less than 10 per cent of our total clinical income. The lifting of the private patient cap will allow us, as a Foundation Trust, to treat more patients but also, through reinvestment, to help more NHS patients as well. However, we will continue to see ourselves as primarily an NHS hospital.²⁴

23. As a result of an increase in private patient work, Moorfields Eye Hospital anticipated growing the provision of international private patient services, particularly in the Gulf region through Moorfields Eye Hospital Dubai. The effect of this would be to increase clinical provision, opportunities to generate research themes, and surpluses available to address eye disease through research and care: 'all patients attending Moorfields Eye Hospital Dubai are fee-paying. Profits made come back into the UK and are used to fund the treatment of NHS patients.'²⁵

Conclusions

24. Many of the PPUs indicated a positive response to the lifting of the private patient income cap under the 2012 Act to the extent that it created increased potential for additional revenue streams. 'NHS private patient income increased in real terms by an estimated 1.5% in 2012/2013, which followed a stronger increase of 2.5% a year earlier, but real declines of 0.7% and 2.6% in 2010/11 and 2009/10 respectively. The consecutive increases in 2011/12 and 2012/13 is the first significant period of real growth for 10 years',²⁶ This may indicate the beginnings of an upward growth trend.²⁷
25. However, the evidence also showed that many PPUs were operating well within the cap prior to its being lifted, and that therefore the lifting of the cap will have little effect on their business. For those PPUs with concrete plans to develop their private patient services, including some of those based in London, there remain significant hurdles which may prevent wholesale expansion of that work. Where PPUs do not face major capacity or other constraints on their planned expansion, for instance specialty PPUs, the stated intention is to expand growth in a tempered manner and with the main priority continuing to be to serve NHS patients in the first instance.
26. Based on the evidence we have received and reviewed, the lifting of the cap is unlikely to give rise to such significant expansion that PPUs will operate as a substantially greater competitive constraint on private hospital operators in the near future.

²⁴ www.gosh.nhs.uk/about-us/foundation-trust/what-it-means-to-be-an-nhs-foundation-trust/frequently-asked-questions-faqs/

²⁵ <http://mf-main.jamkit.com/Aboutus/MoorfieldsDubai>.

²⁶ Laing & Buisson Private Acute Medical Care 2013, p93.

²⁷ See *Analysed: District general hospitals look to private patient income*, a report published 6 June 2013 in the *Health Service Journal*. The report states 'a number of foundation trusts indicated plans to increase private patient income in their forward plans for Monitor ... This upswell of interest is evident to those advising both foundation and NHS trusts ... But both [the Chief Executive of Independent Care and an executive director of Capita Symonds' health division] stress the need for trusts to be realistic about what can be achieved—and the length of time it will take to build up a successful PPU.'

Entry and expansion case study 1: Circle Holdings PLC, Bath

Introduction

1. This appendix examines the entry of Circle into the private healthcare market in Bath and its purpose is to identify what barriers it encountered in doing so. We begin with a brief description of Circle, its business model and the characteristics of the local market it planned to enter. We then describe Circle's entry plan: its strategy for attracting healthcare business from the private sector and the NHS, the scale of its investment and the risks that it identified. We next analyse the response of the incumbent private healthcare provider, BMI, and the conduct of the major private PMIs as Circle sought network recognition for its new facility. Finally, we set out the main conclusions that we draw from this episode in the wider context of our fifth ToH: barriers to entry and expansion.

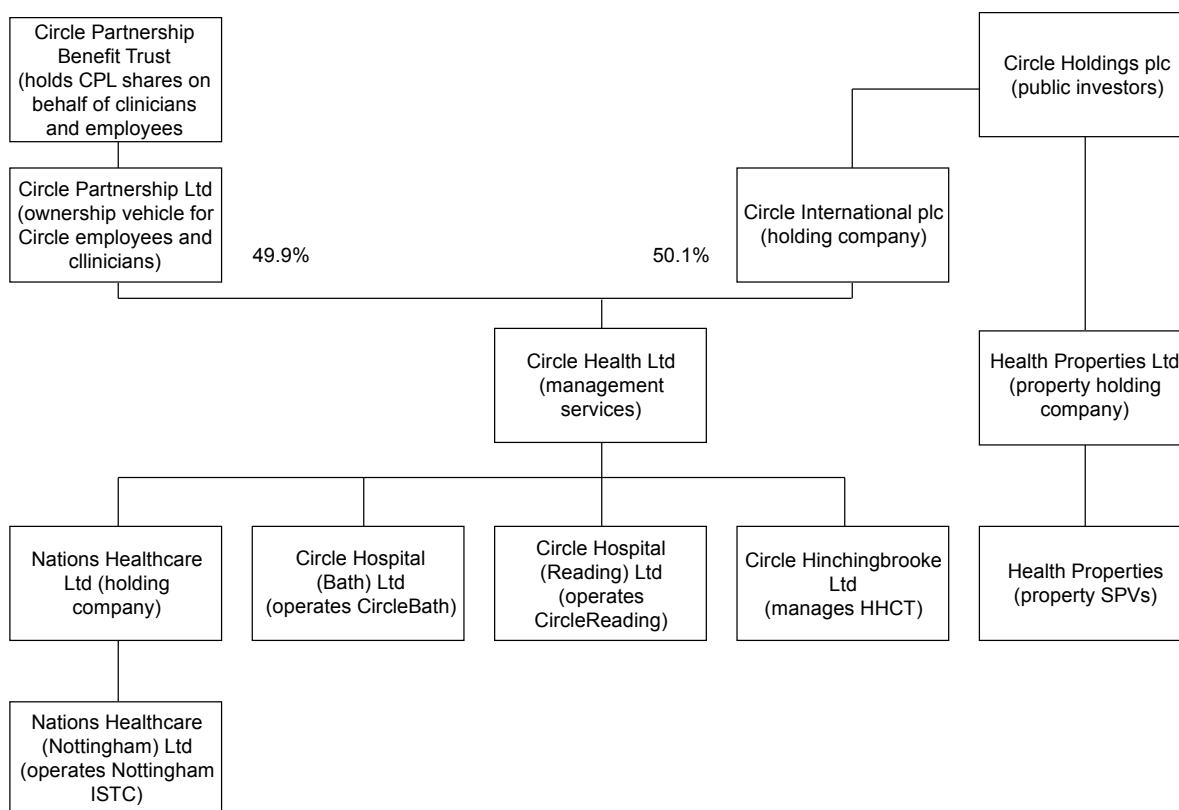
Circle Healthcare

2. Circle was set up in 2004, originally as Centres of Clinical Excellence. The feature that distinguished its business model from other private hospital operators' was that, in return for committing to undertake a certain proportion of their work at a Circle facility, consultants would be entitled to an equity stake in the business. Circle told us that [X] consultants had entered into contractual commitments.
3. Circle's strategy was to provide healthcare to both private and NHS patients from its facilities, the latter arising from what it saw as the growing demand for independently provided healthcare services created by NHS reforms.
4. Circle's first acquisition was made in 2007, when it bought Nations Healthcare, an operator of three NHS Independent Sector Treatment Centres (ISTCs) in Bradford, Burton and Nottingham. Two of these contracts have now expired, with the Nottingham facility still operated by Circle.¹ In addition to its NHS-focused activities, Circle opened its first private hospital in Bath in March 2010, followed by its Reading hospital in August 2012. At the current time, Circle is seeking to secure sufficient consultant commitments and raise financing for a third private hospital in Manchester.
5. As noted above, Circle's business model relies on consultants committing to undertake a proportion of their work at a Circle facility in return for an equity stake in the Circle Partnership and a role in managing and organizing the delivery of services. The consultant may terminate his/her commitment with 12 months' notice at any time following the first anniversary of the relevant facility's opening. The legal structure of the Circle business is shown in Figure 1.

¹ Circle Holdings, AIM Admission Document, June 2011, p47.

FIGURE 1

Circle group structure



Source: Circle.

6. In addition to the entities shown here, the Group also holds a minority interest in a company that owns the Bath hospital and leases it to the Circle Independent operating business.²
7. The consultants that hold equity in the Circle Partnership have not been asked to provide funding directly: they do not have to pay for shares in the partnership when they are allotted, only when they wish to sell them. However, their contractual commitments to bring revenue to any new facilities built in their local area have been pivotal in raising capital from third party debt and equity investors.³
8. Circle has raised funds for the development of the business from three principal sources:
 - (a) Circle Holdings Plc was listed on AIM via an initial public offering in June 2011;⁴
 - (b) the Bath hospital was largely funded by bank debt, both senior and mezzanine; and
 - (c) much of the equipment used in providing services from the Bath (and Reading) hospital(s) is leased under a financing arrangement with GE and Singers.⁵

² The hospitals are leased on 25-year terms.

³ Circle noted that lenders and equity investors had requested copies of consultant contracts prior to agreeing to provide funds to the Group.

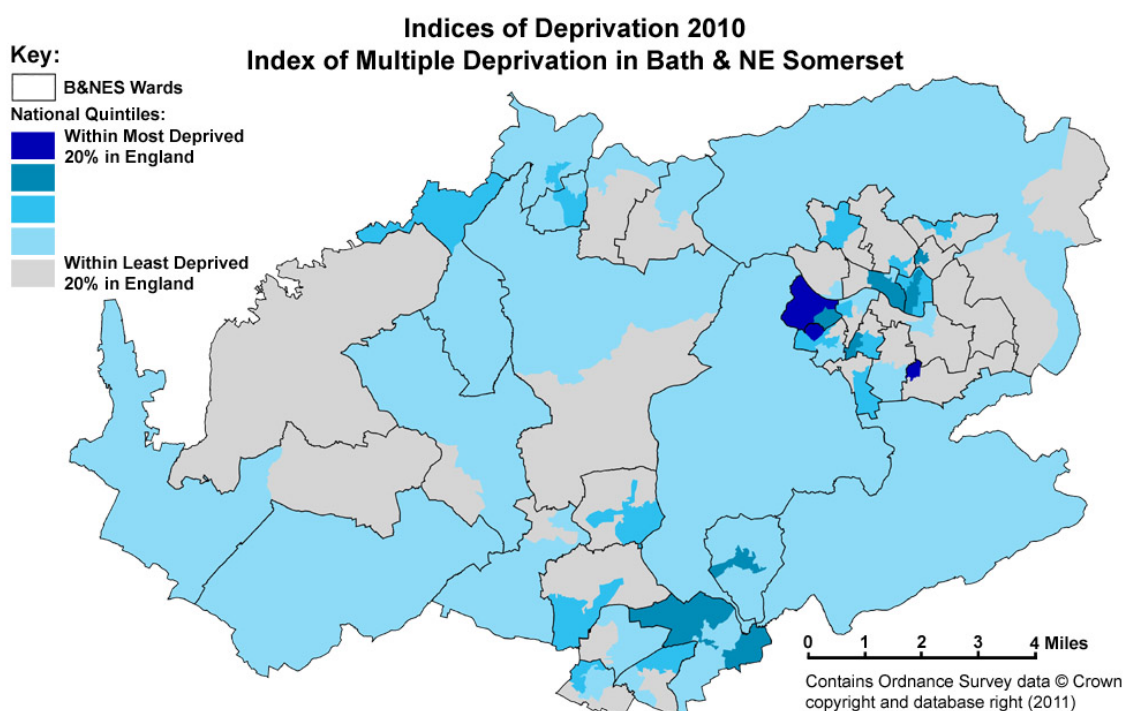
⁴ Circle Holdings, AIM Admission Document, June 2011. Circle Holdings Plc raised an additional £47.5 million through a further placement of shares in May 2012.

Local demographics

9. Bath and the immediate surrounding area (North-East Somerset) has a population of around 180,000. Bath is within a 45-minute drive of Bristol, with a population of over 400,000.
10. The Bath area is relatively affluent and healthy, scoring above the England average on virtually all indicators.⁶ Although there are pockets of deprivation, the area is generally prosperous with levels of unemployment that are below the national average. As of June 2012, unemployment in the area stood at 6.2 per cent, compared with a national average of 8.1 per cent.⁷

FIGURE 2

Indices of deprivation in Bath and North-East Somerset, 2010



Source: Bath and North East Somerset Council.

11. House prices are higher than those in England generally and the South-West region in particular.

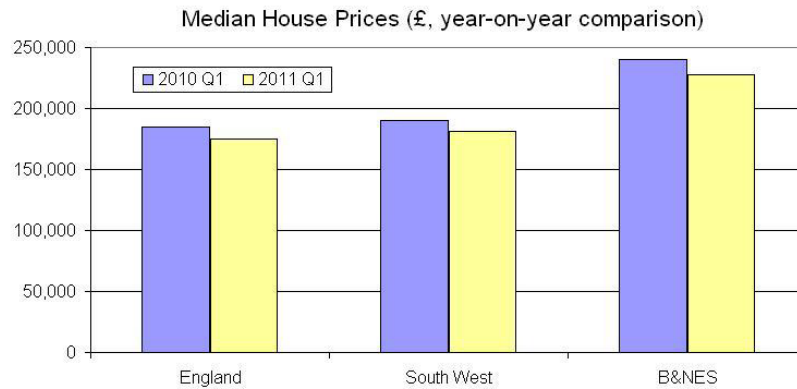
⁵ Circle Holdings, AIM Admission Document, June 2011.

⁶ www.apfo.org.uk/resource/view.aspx?RID=117246.

⁷ Source: ONS data: <http://www.nomisweb.co.uk/>.

FIGURE 3

House prices in Bath and North-East Somerset, 2010 to 2011

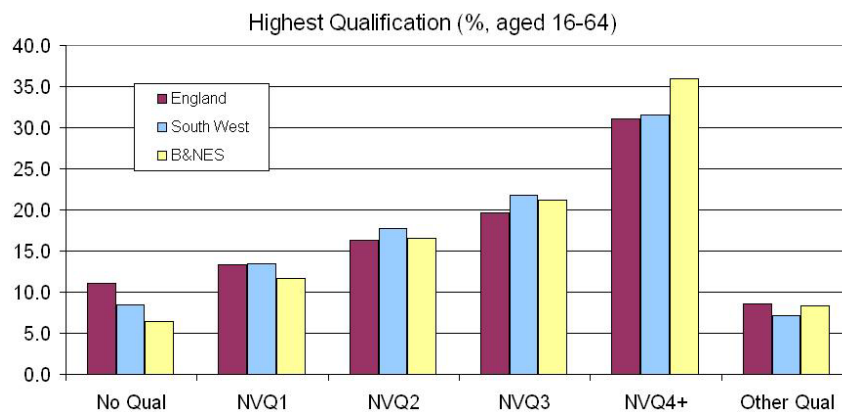


Source: Bath and North East Somerset Council.

12. The local population is relatively well educated.

FIGURE 4

Terminal qualification levels, Bath and North-East Somerset, 2011

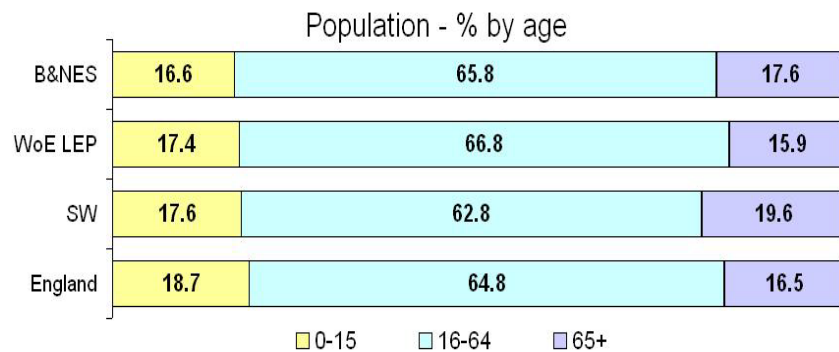


Source: Bath and North East Somerset Council.

13. The local population is older than average for the UK but lower than the South-West region.

FIGURE 5

Population age, Bath and North-East Somerset, 2011



Source: Bath and North East Somerset Council.

Secondary healthcare services in and around Bath

Private hospitals

14. Private hospital facilities within around 1 hour's drive of Bath are shown in Figure 6. Prior to 2010 there was only one private, acute hospital in Bath, the BMI Bath Clinic, situated approximately 2.5 miles south-east of the city centre. It had 75 beds, a high-dependency unit, static MRI and CT scanners and an endoscopy suite. The building housing the Bath Clinic was bought from Grand Metropolitan plc in the 1990s and converted from hotel to hospital use.

FIGURE 6

Private hospital and PPU locations in the Bath area



Source: Parties and CC analysis.

FIGURE 7

The BMI Bath Clinic



Source: BMI Bath website.

15. Further afield, the Nuffield and Spire Bristol hospitals were a 35-minute drive away⁸ and BMI operated a hospital in Swindon, about a 60-minute drive from Bath.

NHS

16. The main NHS hospital in the area was the Royal United Hospital (RUH), a relatively modern, 560-bed facility occupying a 52-acre site roughly 1.5 miles from the city centre. In the early 2000s, the RUH experienced some challenges as regards its financial management and the quality of healthcare provided.⁹ In 2010, the condition of some of its buildings were the subject of criticism¹⁰ and recent HES statistics suggest that the RUH underperforms the national average in a number of areas, in some cases significantly, for example deaths in low-risk conditions.¹¹ The RUH does not provide private healthcare services other than through a private, assisted conception clinic (the Bath Fertility Clinic) launched in a joint venture with BMI in 1994.¹²

⁸ Nuffield is currently refurbishing the hospital on its Chesterfield site in Clifton, Bristol: www.thechesterfieldhospital.com/.

⁹ www.hsj.co.uk/news/ruh-bath-report-pushes-reputation-aside/19557.article.

¹⁰ http://news.bbc.co.uk/local/somerset/hi/people_and_places/newsid_9267000/9267593.stm.

¹¹ www.drfoosterhealth.co.uk/hospital-guide/trust/Royal-United-Hospital-Bath-NHS-Trust-181.aspx?cid=164&ctype=1.

¹² The joint venture has ended and RUH now runs the business.

FIGURE 8

The Royal United Hospital, Bath



Source: RUH website.

Circle's planned entry

Market assessment

17. Circle considered that Bath was an attractive market in which to launch its first private hospital. It believed that: PMI penetration was very high, indicating strong demand; the Bath Clinic did not represent a serious competitive threat; the superior facilities of its new hospital would attract NHS patients; and these facilities, plus its business model, would encourage consultants to treat private patients at Circle Bath. In this context, Circle told us that it had a very active and supportive network of consultants in the Bath area.
18. The 6,600 sq metre hospital was designed by Fosters and Partners and built at a cost of £33 million on a business park, 9 miles south of Bath. It would have four operating theatres, 57 beds (30 overnight and 27 day-care) including two critical care (level 2) beds as well as up-to-date diagnostic facilities including X-ray and ultra-sound equipment, a fixed MRI scanner and a mobile high-resolution multi-slice CT scanner. The hospital would be owned by Health Properties (Bath) Limited¹³ and leased to Circle. The majority of medical equipment would be leased from leasing organizations. It was planned to open in September 2009.

¹³ A company within the Circle Group.

FIGURE 9

Circle's Bath hospital



Source: Circle.

Business plan

19. Circle's plan document valued the local market for private healthcare services in Bath at £[REDACTED] million in 2006 for approximately [REDACTED]. Its strategy was based on the quality of the facilities that it would provide and the support of local consultants who it had or would enlist as 'Partners' (ie consultants with an equity stake in the hospital business who would commit to undertaking a certain proportion of their private work at the hospital).
20. [REDACTED]
21. The plan set out details of the proportion of local consultants within each specialty who had committed to bringing work to the Circle hospital and the amount of revenue this represented.¹⁴ [REDACTED]
22. Regarding NHS patients, Circle said that the hospital's opening was timed to take advantage of NHS reforms which would, from 2008, permit NHS patients greater freedom to choose where they received treatment. It estimated that local NHS elective surgery spending was approximately £[REDACTED] million in 2007 for approximately [REDACTED].
23. [REDACTED] is shown in Table 1.

TABLE 1 [REDACTED]

[REDACTED]

Source: [REDACTED]

¹⁴ Circle's contract with clinicians committed them to undertake a specified proportion of their practice at the Circle hospital in exchange for which they would be awarded shares in Circle Partnership, which would own 49.9 per cent of Circle, the operating company. The other 50.1 per cent of Circle would be owned by Circle International (now Circle Holdings Plc). The extent of the commitment varied but, weighted by revenue, amounted to 65.5 per cent on average, as set out in the Bath hospital plan.

Risk assessment

24. Circle cited a number of risks that it said might impact the forecasts made in the business plan. These included that local competitors might engage in 'guerrilla' tactics, that Circle might not be able to secure the necessary regulatory approvals from the Healthcare Commission¹⁵ and that it may not be able to secure recognition from the leading private medical insurance providers to become part of their networks.
25. Local 'guerrilla' action, such as objections to Circle's planning application for the new hospital, did not materialize in Bath (unlike Southampton where Circle's application to build a new hospital was taken to appeal). Circle received planning permission for the hospital, involving a change of use for which the plot was zoned, on 13 March 2007. No objections to the application were lodged.
26. Circle told us that some local consultants did come under pressure from the Bath Clinic not to work with Circle. Circle told us that the practising privileges of one consultant were suspended by BMI Bath. However, BMI told us that this suspension was temporary, pending the clarification of the clinician's role at Circle Bath, and that once this had been established the suspension was lifted.
27. Registration by the Healthcare Commission/CQC does not appear to have been a significant problem, though the inspection of the premises was delayed and the regulator required some changes to be made to the facilities. Circle told us that certain additional building works were required in the theatre and recovery areas which contributed to Circle's decision to postpone opening to 1 March 2010.
28. Regarding PMI recognition, Circle said in its plan that both Bupa and AXA PPP, while recognizing all Healthcare Commission accredited hospitals, had networks of provider hospitals. Subscribers who held network policies, which on Circle's estimates accounted for 50 per cent of Bupa policyholders and 95 per cent of AXA PPP policyholders, were restricted to using hospitals registered on these networks. The plan document said that in order to capture the volume of private patients projected in its business plan, it would have to be registered by both Bupa and AXA PPP. It said that, to that end, it had been having regular discussions with both Bupa and AXA PPP for the previous 18 months and that feedback from these companies had been consistently positive. It said that it was confident that Circle Bath would be successful in achieving network status with both Bupa and AXA PPP.

Responses to Circle's entry in Bath

29. We now describe the responses of Circle's competitor in Bath, BMI's Bath Clinic, and then go on to set out how the major PMIs responded to Circle's requests for inclusion on their networks.

BMI

30. Circle had two potential competitive advantages over the Bath Clinic: the newness of its facilities and the financial incentives that it was able to provide to its consultant Partners through its equity sharing business model. BMI sought to match these by

¹⁵ The Care Quality Commission (CQC) replaced the Healthcare Commission, the Commission for Social Care Inspection and the Mental Health Act Commission in 2009.

introducing its own consultant incentive or 'loyalty' schemes and by investing in new equipment at the Bath Clinic.

Consultant 'loyalty' schemes

31. In the period between the granting of planning permission for Circle's Bath hospital and its opening, BMI adopted two schemes that were available to consultants practising in Bath: the initial scheme, which became known as 'Mark 1', launched in 2007, and the Mark 2 scheme, launched in 2010.

The Mark 1 Scheme

32. BMI group management considered consultant loyalty schemes in 2007 as part of its strategic response to increased competition from other hospital operators, including Circle. A board paper of April 2007, a month after Circle obtained planning permission for its Bath hospital, assessed the severity of the competitive threat to each of its hospitals. Mt Alvernia (Guildford) and Bath were considered to be exposed to the highest risks and, accordingly, were proposed as the first hospitals where consultant loyalty schemes would be set up.
33. The Mark 1 scheme combined profit sharing and 'virtual equity' elements which aimed to engage and motivate current and future consultants 'to fully commit to the Bath Clinic and to be rewarded for the future, for contributing to sustained growth over a period of time'. The scheme was designed in part to mimic an equity share plan which would have been impossible to implement at BMI given its ownership structure.
34. The scheme covered a six-year period and entitled consultants to a share of the Bath Clinic's profits, the size of their entitlement being determined by the amount of revenue that a consultant brought to the hospital.¹⁶ A 'standard' member would be entitled to a [X] per cent share of the Clinic's profits with an [X] being paid into the consultant's 'pot' which would pay out at the end of the scheme. A 'Platinum' member would be entitled to [X] per cent of the Clinic's profits.
35. As well as the rolling share of the Clinic's profits and the long-term payment referred to above, consultants would be entitled, depending upon their level of membership, to receive some or all of: [X]
36. In addition to these benefits, if a member were to introduce a new consultant to the clinic who subsequently went on to enter into a similar agreement, then the introducing member/consultant would be entitled to receive an additional profit share equal to the new consultant's profit share in the first year.
37. The 'Mark 1' scheme was, unlike Mark 2, contractual. The contract required a consultant 'to operate his private medical practice predominantly at the Hospital (the Bath Clinic) during the duration of this agreement'. In addition, the consultant was required to warrant that he had not, from the date of the agreement, entered into any agreement with any competitor in which he had:
- (a) a financial interest; or
- (b) profit share; or

¹⁶ [X]

(c) any beneficial interest in equity or otherwise.

38. Consultants were also required to agree that they would not enter into any form of agreement or contract with any competitor relating to operation of a private medical practice including acquiring any financial interest in such competitor, although they could retain practising privileges elsewhere.
39. [X] The ethical issues from the consultants' side were considered, including that: patient volume incentives were not acceptable; consultants would be obliged to disclose any financial interest; and the value of the payouts under the scheme should not be disproportionate to the consultant's practice income. Subject to a requirement for feedback on the incremental activity that the schemes were generating, the committee gave its approval.
40. The terms and conditions of the scheme required the consultant to:

comply with the requirements, rules, regulations and guidance of, or issued by, the GMC, including the guidance of the Good Medical Practice (2006), as amended from time to time. In particular, the Consultant shall have regard and comply with paragraphs 72–73 of the Good Medical Practice (financial and commercial dealings).

The GMC's guidance requires that clinicians with a financial interest in an organization providing healthcare should not allow this interest to influence the way they treat or refer patients and that they should tell the patient about the interest that they have if they are intending to refer the patient to that organization.¹⁷

The Mark 2 Scheme

41. As the scheduled opening of the Circle Bath hospital neared, the Bath Clinic began putting further measures in place to protect both private and NHS revenue. These included: a pilot scheme to subcontract GPs to undertake preoperative examinations of patients referred by them to the Bath Clinic and to receive payment for these examinations in the event that the patient was treated at the Bath Clinic; some changes to NHS and self-pay pricing;¹⁸ and an additional consultants' loyalty scheme: Mark 2.
42. In April 2010, shortly before the (delayed) opening of Circle Bath, Richard Foulkes, the Executive Director of the Bath Clinic, wrote individually to consultants setting out the terms of the new Consultant Engagement Scheme. This Mark 2 scheme would operate for calendar year 2010 and would pay out if consultants brought in [X] per cent or more of the revenue they had brought to the Clinic in 2009. The size of the entitlement would vary with the amount of extra revenue that the consultant brought in over and above the [X] per cent 'baseline'. For growth of up to £[X] above the baseline the consultant would be entitled to 10 per cent of the growth up to a maximum of [X] per cent for growth of £[X]. [X]
43. The letter said that there was to be no formal contract with consultants and that unless the Clinic heard to the contrary it would assume that consultants wished to participate. However, it said that participating consultants would be expected to sign

¹⁷ Paragraphs 77–80.

¹⁸ Prices for NHS and self-pay work were decreased whilst consultants' fees for this work were increased. In March 2010, BMI Bath Clinic also launched a 'Lowest Price Guarantee,' for self-pay inpatient and day-case treatment.

a confidentiality agreement and that payments may be withheld if it became apparent that a breach of confidentiality had occurred.

44. The Mark 2 scheme also differed from Mark 1 in that there were no bars to participation, such as financial interest in a competitor.

Cost of the two schemes

45. Payments made under these two schemes are shown in the table below. By the end of 2012 Bath Clinic had made over £[REDACTED] in payments.

TABLE 2 **BMI Bath expenditure on consultant loyalty schemes, 2010 to 2012**

<i>Scheme/consultant name</i>	<i>Incentive basis</i>	<i>FY10</i>	<i>FY11</i>	<i>FY12 est</i>
Consultant Engagement Scheme Mk1	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Consultant Engagement Scheme Mk2	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: BMI.

Investment in the Bath Clinic

46. BMI also invested in new equipment at the Bath Clinic, a few months before the opening of Circle Bath.
47. In January 2010, BMI considered a capital expenditure request of £[REDACTED] for the Bath Clinic to replace the Stack, Light Source and Scopes in the Endoscopy Suite. The request noted that the current scopes (colonoscopes, gastroscopes, cystoscopes and a bronchoscope) were between 10 and 13 years old and that this meant that their image quality was degraded to the point where abnormalities might become difficult to detect, giving rise to risks of misdiagnosis. It pointed out that new equipment had been installed in the RUH the previous June and that Circle Bath had also been equipped with HD scopes. [REDACTED] It said that this would only become more marked with the opening of Circle Bath the following month and that a failure to invest in new equipment at Bath Clinic would lead to a rapid and sizeable collapse in this specialty, with an associated drop in surgical procedures and oncology work that could be expected to follow on from endoscopy.
48. In addition to replacing the endoscopy equipment, Bath Clinic purchased new digital mammography and other equipment costing around £[REDACTED].

The PMIs

49. We next examine the responses of the PMIs to Circle's request that its Bath hospital be included in their networks. This process was straightforward as regards Bupa and WPA but more protracted in the case of AXA PPP and Aviva, as shown below by the documents we have reviewed.

Bupa

50. In 2008, Circle wrote to Bupa with a list of hospital facilities that it intended to provide medical services from, together with an indicative schedule of their planned opening dates. Bath was the first and was projected to open in H2 of 2009.

51. Bupa responded that it had a standard process for recognizing new facilities and that it intended to adopt this process with Circle. Bupa confirmed that it was its intention to recognize all the facilities listed by Circle subject to five conditions:
- (a) the parties agreed acceptable prices for the proposed services. Bupa said that its policy was to ensure that new entrants increased competition in local markets;
 - (b) the parties negotiated and executed a definitive hospital agreement plan (HAP);
 - (c) satisfactory inspection and review arrangements of the proposed facilities were put in place;
 - (d) the clinical standards that Circle would achieve would be included in the HAP; and
 - (e) all necessary regulatory clearances, permits and licences would be obtained by Circle.
52. Bupa signed a three-year agreement with Circle, commencing 1 August 2010, covering Circle Bath as well as Circle's clinics in Windsor and Stratford. Circle told us that the rates agreed were set at a [REDACTED]. As the [REDACTED] rates were much higher [REDACTED] the rates for [REDACTED].
53. In July 2009, BMI had written to Bupa expressing concerns in connection with Bupa's recognition of Circle Bath. It said that, typically, consultants would contract to undertake 50 per cent of their private work at a Circle hospital and a consultant might therefore be faced with the dilemma that a patient's best interests in terms of hospital referral might be in conflict with the consultant's contractual obligations. It said that the situation would be made worse if, as it seemed to consider likely, not all PMIs recognized the Circle hospital. In these circumstances, where Bupa had, but other PMIs had not, recognized Circle's hospital in Bath, Bupa patients would be required to attend the Circle hospital to ensure that the individual consultant's contracted caseload obligations were met.
54. BMI's second concern related to future pricing of its services as a result of 'adding new footprint to an already over supplied market'. It said that it was committed to investing in its hospitals but that this was predicated on [REDACTED].
55. Bupa's response began by referring to BMI's second area of concern, that relating to the importance of increased Bupa volumes to deliver efficiencies, which it said was part of Bupa's wider discussions and should be dealt with in that context.
56. Turning to the points that BMI made regarding the Circle business model, it observed that doctors as a profession were expected to practise consistent with the best interests of their patients and to put that interest before personal financial gain. Doctors were expected to disclose to patients such interests so that there could be no real or perceived conflict when they were advising patients. It went on to say that there were a myriad of arrangements within the private sector that may require consultants to have to warrant such disclosures ranging from free consulting rooms to clinicians owning their clinical facilities in toto or through equity stakes. Bupa noted that BMI had 'recently tried to interest consultants in a contractual model linking their income to hospital profit growth' and concluded that there was nothing inherent in the Circle model that represented a greater issue as regards the ability of patients to exercise informed choice than these current schemes.

WPA

57. On the same day that BMI wrote to Bupa it also wrote to WPA, and in virtually identical terms.
58. WPA responded by, first, setting out its general position that 'WPA has neither supported nor obliged our customers to use networks of 'approved' private hospitals'.
59. The letter went on:

it is our understanding that many beneficial arrangements have prevailed historically between providers of private medical facilities and Consultants and continue to do so. Indeed, we hear of generous inducements, for the direction of patients, from and to existing and long established private medical facilities. I sense that if these rumors have foundation, in addition to the matter that you raise, then the BMA Private Practice Committee should urgently consider issuing guidance; and the GMC reconsider their Guide to Practitioners in Private Practice with definitive ethical instruction.
60. Finally, WPA turned to BMI's statement in the last part of its letter, that falling volumes of patients through its facilities as a result of PMIs including new hospitals in their networks could lead to rising prices. WPA again pointed out that it did not operate a network but that if this were to be the outcome it would have to consider adopting networks to contain any such price rises.

AXA PPP

61. AXA PPP told us that it had chosen to recognize healthcare facilities on a selective basis in its Acute and Day-case network, in effect inviting tenders for recognition on its network. Whilst recognition on AXA PPP's Acute and Day-case network does not grant contractual exclusivity to the recognized provider, non-recognized competing providers will not have access to inpatient and day-case patients funded by AXA PPP who hold a network policy unless the patient is granted a medical exemption, but will nevertheless have access to AXA PPP patients requiring outpatient diagnostics and treatment.
62. In 2008, Circle told AXA PPP that it intended to open a hospital in Bath in September 2009 and began discussions over recognition. AXA PPP told Circle that it already had a provider in Bath and that in order to recognize Circle there it would need to conduct a formal tender, which it had no immediate plans to do. [REDACTED]
63. [REDACTED], Circle wrote to AXA PPP, setting out a revised proposal, stressing the quality of the services it would provide to patients which would be 'in a different league to the local competitor'. AXA PPP did not consider these revised proposals to be 'commercially compelling'.
64. AXA PPP staff visited Circle Bath in January 2010 and, though observing that its location was not ideal, produced a favourable report on the hospital's facilities and the likely patient experience, noting that: 'As far as anyone can enjoy going to a hospital, patients will like what they see and experience'. [REDACTED]
65. In addition to trying to engage AXA PPP in price negotiations, Circle adopted other tactics to try and take discussions further.

66. Circle began treating AXA PPP patients at its own expense since, if it had not done so, consultants might not have treated Bupa patients at Circle Bath even though Bupa had recognized the hospital. This was because consultants practising at Circle Bath might not wish to split the list of patients that they were operating on between two different hospitals. If they could treat Bupa patients at either the Circle or BMI hospitals but AXA PPP patients only at the Bath Clinic, they would tend to treat both at the BMI hospital.
67. In addition, Circle instructed lawyers to consider the merits of making a complaint under the Competition Act arising from the difficulties that it was facing in entering the market. [REDACTED] expose the 'cosy' relationships it had with providers nationally.
68. [REDACTED]
69. In September 2010 AXA PPP, after Circle Bath had opened, met Circle again and AXA PPP undertook to carry out a full review of Circle's commercial proposition, taking into account existing provision in Bath. [REDACTED]
70. However, according to AXA PPP internal documents, AXA PPP decided not to include Circle Bath on the grounds that:
- (a) it had to take into account the broader national relationship that it had with BMI;
 - (b) AXA PPP did not need additional provision in the Bath area based on existing subscriber numbers there; and
 - (c) Circle Bath did not offer any additional services to the BMI Bath Clinic.
71. AXA PPP wrote to Circle, informing it of its decision on 18 November 2010 citing the second and third grounds. The letter stated that as a result of its analysis, AXA PPP had concluded that it had no need for additional provision in the Bath area on the basis of its current insured population and that it was satisfied with its existing network provision. AXA PPP had therefore decided not to add Circle Bath to its network, [REDACTED]. The letter hoped that the existing good working relationships within the outpatient contract¹⁹ would continue and that if any of AXA PPP's corporate clients expressed a desire to specify Circle Bath as their preferred provider, then AXA PPP would seek to accommodate this.²⁰
72. Internal AXA PPP correspondence at the time noted that while Circle Bath was continuing to treat AXA PPP members on an inpatient and day-case basis at no cost to AXA PPP, Circle had indicated to it that this was not sustainable. [REDACTED]²¹ While Circle was treating its policyholders at its own expense, therefore, AXA PPP was benefiting from cost savings related to these treatments [REDACTED].
73. A Circle email quantified the cost of this treatment. It said that from its opening in 2010 up to June 2011, 557 individual AXA PPP members had been treated at Circle Bath as outpatients, day-case or inpatients. It said that had these patients been billed for their treatments in full, the total would have amounted to £775,000.
74. In October 2011, AXA PPP told Circle that it intended to recognize Bath and, following final negotiations, did so with effect from 1 January 2012. Circle told us that the terms agreed were not materially different from those offered previously. [REDACTED]

¹⁹ Circle Bath was recognized for outpatient work and was also part of AXA PPP's scanning and ophthalmic networks.

²⁰ Circle subsequently wrote to around 20 of AXA PPP's corporate clients setting out the benefits of Circle Bath.

²¹ [REDACTED]

75. [REDACTED]

Aviva

76. Aviva has two main hospital lists: its 'Key' list of hospitals, as well as its more extensive, premium 'Extended' list containing, additional, generally more expensive hospitals. The majority of its customers hold a product that provides access to the hospitals on its Key list. A smaller proportion of customers hold a product that provides access to its Extended list and can choose to access one of the additional hospitals recognized on this list.
77. Although Aviva was willing to list Circle Bath on its Extended network, it did not wish to include it on the Key list of hospitals. This position (ie limited recognition) appears to have been adopted towards the end of 2009 and represented a change of view (ie away from not recognizing) based on its concerns about what it felt were commercially unattractive pricing terms in circumstances where it considered that additional capacity was not required.
78. In the event, Aviva did decide to recognize Circle Bath on its Extended network only (though Circle subsequently claimed that it had understood that it had been asked to prepare its price proposals on the basis of full recognition). Circle continued to press for recognition on the Key list.
79. In May 2010, following a visit to Bath by Aviva, as was the case with AXA PPP, Circle had gained the impression that Aviva wished to list Bath on the Key network but that its contractual arrangements with BMI were an impediment to doing so.
80. On 25 May, Circle emailed Aviva:

We concluded the meeting by saying that we would like to see if we can help you get around any problems that you may experience in your providing full network recognition to Circle Bath. It would be helpful if you could show us the extent of the problem that needs resolving and in any event, as discussed, work with us to come up with an interim solution which allows your members to benefit from the facility.

The email went on to tell Aviva that Circle had taken advice from competition lawyers from whom it would be hearing shortly.

81. Aviva's response to Circle denied that Aviva was somehow constrained in what degree of recognition it could or would grant Circle Bath because of any contractual obligations to BMI. Aviva made clear that its position on recognizing Circle Bath on its Key list would be determined internally and on the basis of its commercial interest. In the meantime, the email said, Circle Bath's place on the Extended list properly aligned Aviva's PMI product with the quality of the proposition that Circle offered.
82. [REDACTED]
83. Aviva responded that it did not consider itself constrained by any agreement with BMI and neither did it wish to be drawn into a dispute between Circle and BMI.
84. Against the background of a possible dispute between Circle and BMI, a discussion took place between Aviva and BMI which prompted Aviva to write to BMI clarifying its position. Aviva said that its concern arose from BMI's request 'to agree that we will not "recognize" the Circle/Bath hospital on our Trustcare or Key hospital lists'. Aviva said that the hospitals that comprised Aviva's hospital lists and the manner in which

Aviva worked with other providers of hospital services must be a matter for Aviva. Aviva said that it had taken legal advice, which supported its view that such a restriction might be unlawful given the strong position that BMI enjoyed in the UK and in the Bath area in particular.

85. BMI's response reflected a different interpretation of their discussions. It said that these arose because Aviva approached BMI in the context of its commercial tariff negotiations and pursuit of a means of BMI providing additional discounts in return for incremental volume from Aviva. It said that, in order to achieve the volume hurdles that had been agreed, Aviva decided to exclude a number of hospitals from its Key hospital list in order to generate the required volume to BMI. BMI explicitly denied that it had asked Aviva not to recognize Circle Bath.
86. Aviva's incentives to meet the volume hurdles it had agreed with BMI were significant. Aviva had negotiated what it described as a 'game changing' four-year deal with BMI in 2008 which was designed to deliver substantial discount benefits to Aviva if volume thresholds were successfully achieved but would result in penalties if they were not. As originally envisaged, Aviva was targeted to increase turnover with BMI by an incremental £[REDACTED] million. Doing so would, on Aviva's estimate, add £[REDACTED] million a year to its margin: failure to do so would result in price increases from BMI going forward [REDACTED]. In the event, this proposed agreement with BMI was not finalized and the eventual agreement that was signed was more modest in the rebates on offer and penalties for failure to meet them were removed.
87. Discussions continued across the summer and, following negotiation, Aviva agreed that Circle Bath would be recognized as part of Aviva's MRI network, subject to the proviso that this should not negatively impact Aviva customers who would not be eligible for follow-up treatment at Circle Bath.²² In the event of complaints from customers about this arrangement, Aviva retained the right to reverse this decision.
88. In the first week of September, [REDACTED], the parties were moving closer to an agreement based on more attractive pricing arrangements for Aviva, a longer-term contract, the prospect of an open-book cost model, joint efforts to influence consultant behaviour and targeting reductions in average length of stay. On pricing in particular, Aviva discussed with Circle the need to be competitive generally and that Aviva would need to review the current Bath tariff to ensure that Aviva was no worse off commercially by including Circle Bath on its core hospital list.
89. Final terms, reached in November, included that all other Circle facilities would be recognized on the Key network as they came on stream, that all new facilities would be competitive in their local market and that Aviva would not be liable for any charges arising from Circle treating patients in Bath whose policies did not provide them with access to Circle Bath.
90. These features were reflected in the terms of the agreement recognizing Circle Bath as part of Aviva's Key network as from January 2011.

²² Circle had also started treating Aviva patients at its own expense, as it had done with AXA PPP patients. Since the volume of Aviva patients was lower, and the contribution to 'out of network' care was higher, however, this cost Circle far less than the initiative with AXA PPP patients.

The effect of Circle's entry

Market share

91. [X]

FIGURE 10

Circle Bath and Bath Clinic share of net revenue, 2009 to 2012

[X]

Source: CC analysis.

92. [X]

TABLE 3 Circle Bath and Bath Clinic net revenue, 2009 to 2012

	£ million			
	2009	2010	2011	2012 est
Circle		[X]	[X]	[X]
BMI	[X]	[X]	[X]	[X]
Total	[X]	[X]	[X]	[X]

Source: Parties' submissions.

FIGURE 11

Circle Bath and Bath Clinic net revenue (£ million), 2009 to 2011

[X]

Source: Parties' submissions.

TABLE 4 Circle Bath and Bath Clinic revenue breakdown, 2009 to 2012 (Circle)

	£'000			
	FY09	FY10	FY11	FY12 est
BMI private revenues	[X]	[X]	[X]	[X]
BMI NHS revenues	[X]	[X]	[X]	[X]
Circle private revenues	[X]	[X]	[X]	[X]
Circle NHS revenues	[X]	[X]	[X]	[X]

Source: Parties' submissions.

Notes: [X]

FIGURE 12

Circle Bath and Bath Clinic Revenue breakdown, 2009 to 2012 (£'000)

[X]

Source: Parties' submissions.

93. [X]

94. In aggregate terms, BMI told us that, taking into account an estimated 7 per cent decline in the volume of private healthcare activity in the period concerned, the Bath Clinic suffered a [X] per cent decline in activity (cases) as a result of Circle's entry. In some specialties it told us that the effect was quite sudden and dramatic. BMI told us that in February 2010 all its ophthalmic surgeons opted en masse to cease consulting at Bath Clinic and to undertake their private practice solely at Circle Bath. It told us that in the same month several consultants in a range of specialties (including orthopaedics, general surgery, urology and gastroenterology) commenced splitting their private patients with Circle Bath and that [X] out of [X] consultants moved their entire private practice to Circle.
95. The financial impact on the Bath Clinic resulting from Circle's entry is shown below. Following a [X], Bath Clinic's EBITDA fell by [X] per cent and its EBIT fell by [X] per cent. The decline in profitability is magnified by the operational gearing of the business, ie the existence of a number of fixed (or semi-fixed) costs.

TABLE 5 Bath Clinic net revenue and profitability, 2009 to 2012

	FY09	FY10	FY11	FY12	FY09-FY12 change %
Net revenue	[X]	[X]	[X]	[X]	[X]
Gross contribution	[X]	[X]	[X]	[X]	[X]
EBITDA	[X]	[X]	[X]	[X]	[X]
EBIT	[X]	[X]	[X]	[X]	[X]

Source: BMI.

Conclusions

96. The main impediment to Circle's entry and expansion in Bath was the lack of PMI, and in particular AXA PPP, recognition. AXA PPP was important to Circle Bath in its own right since it had a 25 per cent share of the PMI market but, as a result of 'consultant drag,' Circle faced the prospect that consultants would continue to treat their Bupa patients at the Bath Clinic rather than split their lists.
97. From the documents we have reviewed, AXA PPP's decision not to recognize Circle Bath when it opened would appear to have been based on the importance to it of its broader, national commercial relationship with BMI rather than specific contractual terms which would have obliged it to incur higher hospital charges at the Bath Clinic as a result of recognizing Circle Bath. [X]
98. By not recognizing Circle Bath, AXA PPP may have put itself at competitive disadvantage with, for example, Bupa (which had recognized Circle Bath): potential users of private hospital facilities in Bath may have chosen to switch to Bupa from AXA PPP since the former offered Circle as an option for treatment but AXA PPP did not. However, the number of subscribers and hence revenue that AXA PPP would have stood to lose as a result would have been small, certainly in comparison with the bigger deals it was negotiating with BMI at the time, including the new AXA PPP Corporate Pathways product.
99. That said, we noted that Circle remains in operation in Bath and was able to adopt measures to mitigate the delay in obtaining AXA PPP recognition, albeit at a cost: it decided to bear the costs of treating AXA PPP patients itself. Circle also laid greater stress on seeking NHS work than originally envisaged.
100. Other potential barriers were less important:

- (a) Finance for the Circle hospital was arranged, seemingly without difficulty. The consultant/Partner model was successful in attracting the support of consultants and this in turn gave sufficient comfort to investors for them to back the project.
- (b) In order to retain consultants at its clinic, BMI adopted incentive schemes which entitled consultants to financial rewards if they met certain targets. BMI's schemes appear to have been less attractive to consultants than Circle's Partnership scheme which awarded equity stakes to participating consultants. BMI, because of its ownership structure, could not offer consultants equity in the Bath Clinic business and was thus able only to offer a scheme based on 'virtual equity'.
- (c) No significant impediments were encountered in identifying a suitable site or obtaining planning permission for the hospital.
- (d) NHS business was available in Bath in quite significant volume.
- (e) While the CQC licensing process did cause some delays, these were minor.

Entry and expansion case study 2: The London Clinic

Introduction

1. This appendix describes TLC's attempts to grow its share of cancer treatment provision in London through the creation of a custom-built, integrated cancer care centre and the barriers that it encountered in doing so.
2. The appendix begins by describing TLC and its main competitors in cancer treatment in central London, sets out some of the distinctive characteristics of private healthcare provision in London and outlines TLC's strategy. It then describes how other participants responded to TLC's expansion plans and draws some preliminary conclusions on barriers to expansion.

TLC and its main competitors in cancer treatment in central London

TLC

3. TLC opened in 1932 and was granted charitable status in 1935. Its current facilities are located in and around Harley Street in central London and comprise 74 consulting rooms, 13 operating theatres, a level 3 intensive care unit, 181 overnight beds and 59 daybeds. TLC, which describes itself as the largest 'independent'¹ private hospital in London, admitted slightly fewer than [X] patients in 2011.² It provides most of the major clinical specialties with the exception of cardiac surgery, obstetrics and psychiatry. In 2009 TLC opened its Cancer Centre whose development we describe in more detail below.
4. As a charity, TLC is governed by a Chairman and Board of Trustees, with all surpluses reinvested into the hospital and, like other charities, benefits from certain tax reliefs and exemptions.³
5. The turnover of TLC grew from £74 million in 2006 to £124 million in 2011, an average annual growth rate of 10.8 per cent. Over the same period EBITDA⁴ increased from £[X] to just over [X]. TLC's revenue is generated largely from insured patients, who account for around [X] per cent of the total. The remaining [X] per cent of its revenue is split [X] between self-pay and international patients, with almost no revenue generated from NHS patients.

Hospital Corporation of America

6. Hospital Corporation of America (HCA) is the third-largest provider of healthcare services in the UK and the largest in London by revenue. In 2011, HCA generated turnover of £585 million and EBITDA of £142 million from its hospital operations in the UK. It admitted around [X] patients and treated a further [X] on an outpatient basis.

¹ In the sense that it is independent of the major private hospital groups (BMI, HCA, Nuffield, Ramsay and Spire).

² Admissions figures do not include outpatient consultations. In 2011, TLC held just under [X] outpatient consultations.

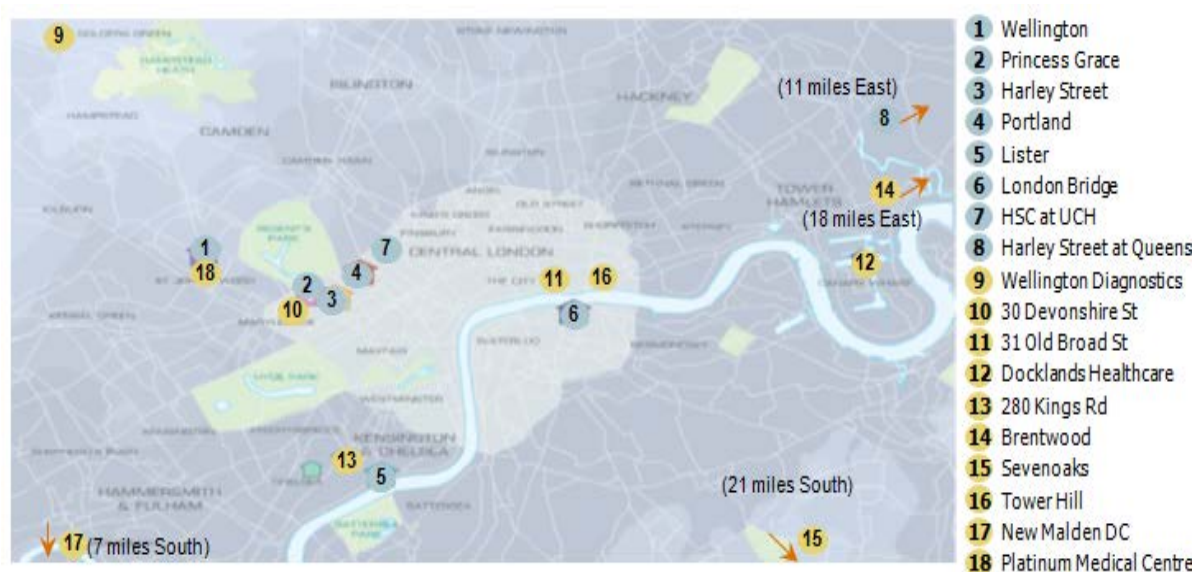
³ See www.hmrc.gov.uk/charities/tax/basics.htm.

⁴ EBITDA = earnings before interest, taxation, depreciation and amortization.

7. HCA began providing private healthcare in the UK in 1996 with its purchase of a 50 per cent share in the Harley Street Clinic, Wellington, Princess Grace and Portland hospitals, in a joint venture with PPP healthcare. HCA expanded significantly in 2000, buying out PPP's share in the joint venture and acquiring St Martin's Healthcare (comprising the London Bridge, Lister and Devonshire hospitals) from the Kuwait Investment Office.⁵
8. HCA has also created or acquired a number of outpatient and diagnostic clinics (see Figure 1), as well as reaching commercial agreements with a number of NHS PPUs including, in London, UCH (incorporating Harley Street at UCH and a private patient unit within the MacMillan Cancer Centre for outpatient and day-case treatments),⁶ Queens Hospital (Romford) and, most recently, Guy's and St Thomas' Hospital where HCA will manage a PPU within the Trust's new Cancer Treatment Centre.⁷

FIGURE 1

HCA facilities in the Greater London area



Source: HCA.

9. In 2010, HCA expanded outside the Greater London area for the first time, winning a tender to manage the Christie NHS Foundation Trust PPU in Manchester. The Christie Clinic is the UK's largest specialist cancer hospital outside of London.
10. HCA currently has a total of 416 consulting rooms, 44 theatres, 790 overnight beds and 167 daybeds across its UK hospitals. All of HCA's main hospitals have an intensive care unit and are capable of offering high dependency unit (HDU) services too. These facilities support the high-acuity work carried out at HCA hospitals.
11. In addition to its secondary care facilities, HCA has invested in the primary care sector through its acquisition of a number of private GP surgeries and occupational

⁵ HCA website: <http://phx.corporate-ir.net/phoenix.zhtml?c=63489&p=irol-newsArticle&ID=561221&highlight=>,
<http://phx.corporate-ir.net/phoenix.zhtml?c=63489&p=irol-newsArticle&ID=561225&highlight=>.

⁶ www.harleystreetatuch.co.uk/the-uch-macmillan-cancer-centre/.

⁷ HCA outpatient clinics include the Platinum, New Malden, Chelsea, Brentwood, City of London, Old Broad Street, Docklands and Sevenoaks medical centres. OFT decision regarding HCA and Guy's and St Thomas' commercial agreement: www.of.gov.uk/shared_of/mergers_ea02/2012/HCA.pdf.

healthcare providers including, Blossoms Healthcare, Roodlane and General Medical Clinics.

Bupa Cromwell Hospital

12. Bupa, which had previously sold all of its hospitals, acquired the Cromwell hospital in 2008. The 131-bed hospital is located on Cromwell Road in Kensington and provides care across more than 70 sub-specialties with a particular focus on oncology, neuroscience, paediatrics, cardiac sciences and orthopaedics. [REDACTED]
13. The hospital has five operating theatres and 29 consulting rooms. In 2011, Bupa Cromwell Hospital (BCH) generated £[REDACTED] in revenues and £[REDACTED] EBITDA. Revenues were split between insured patients ([REDACTED] per cent), overseas patients ([REDACTED] per cent), self-pay patients ([REDACTED] per cent) and NHS-funded patients ([REDACTED] per cent).
14. We set out BCH's strategy in cancer care in Annex A.

The Royal Marsden NHS Foundation Trust

15. The Royal Marsden Hospital NHS Foundation Trust (The Royal Marsden) specializes in cancer treatment, care and research. It has the largest PPU in the UK with turnover in 2011/12 of £50.3 million and operates from two sites: Chelsea and Sutton in Surrey. It has 34 private overnight beds, 12 daybeds, ten operating theatres (including shared capacity with the NHS), and nine consulting rooms. It has critical care facilities to level 3 and a wide range of advanced diagnostic and treatment equipment including PET/CT scanning and a CyberKnife.
16. [REDACTED] per cent of the Royal Marsden's private revenue is derived from UK insured patients, [REDACTED] per cent from UK self-pay patients and [REDACTED] per cent from overseas (self-pay, embassy or insured) patients.
17. The Royal Marsden is forecast to generate revenue of £[REDACTED] in 2012/13 with an expected contribution of £[REDACTED].
18. The Royal Marsden told us that when the cap on PPU earnings was lifted it hoped to double the amount of revenue that it generated from private patients but that this would require additional investment in capacity at both its Chelsea and Sutton sites. It also pointed to certain risk factors, [REDACTED]. It is currently preparing the business case for additional investment in dedicated private care capacity.

Private healthcare provision in London

19. The Greater London area has a population of around 8.2 million,⁸ 4.9 million of whom live in outer London and 3.2 million live in central London. In addition, a further 1 million people commute into London on a daily basis for work.⁹
20. London is the wealthiest region of the UK, with disposable income per head around 30 per cent greater than the national average as of 2010.¹⁰ The next wealthiest regions are the surrounding South-East and East of England areas (see Figure 2).

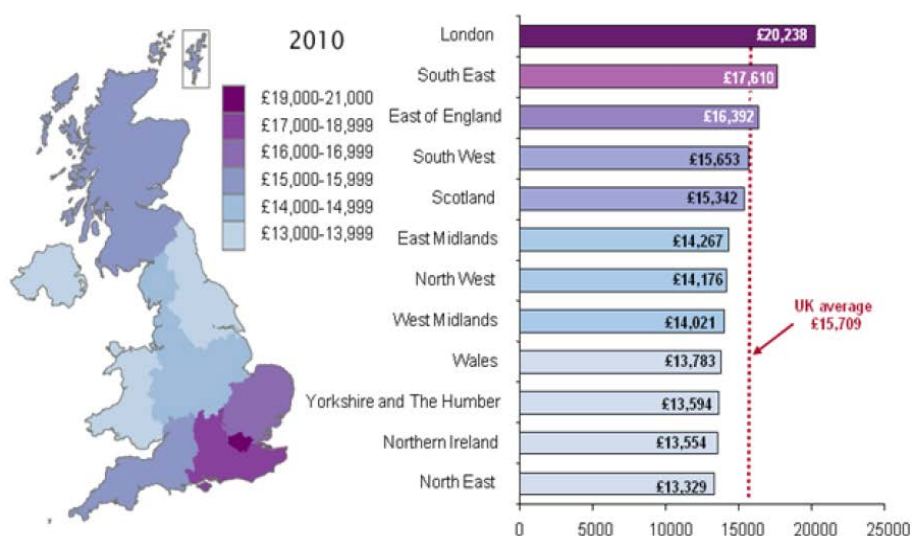
⁸ All demographic data has been sourced from the ONS and is based on the 2011 census: www.ons.gov.uk/ons/publications/reference-tables.html?edition=tcm%3A77-284349.

⁹ <http://londontransportdata.wordpress.com/>.

¹⁰ www.ons.gov.uk/ons/dcp171776_270749.pdf.

FIGURE 2

Disposable income per head in the UK, 2010

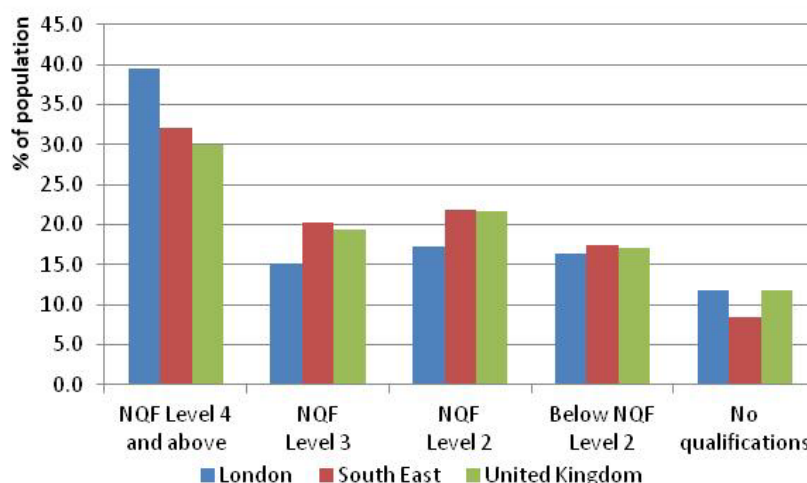


Source: ONS.

21. This affluence, together with the presence of major corporations whose employees may benefit from employer healthcare schemes, drives penetration of private medical insurance, with an estimated 17.5 to 18.5 per cent of the population being covered by a policy.¹¹
22. As shown in Figure 3, London's population is more highly educated than the national average with almost 40 per cent having a qualification at NQF level 4 or above, compared with a national average of around 30 per cent.¹²

FIGURE 3

Percentage of population by highest level of qualification (2011)



Source: ONS.

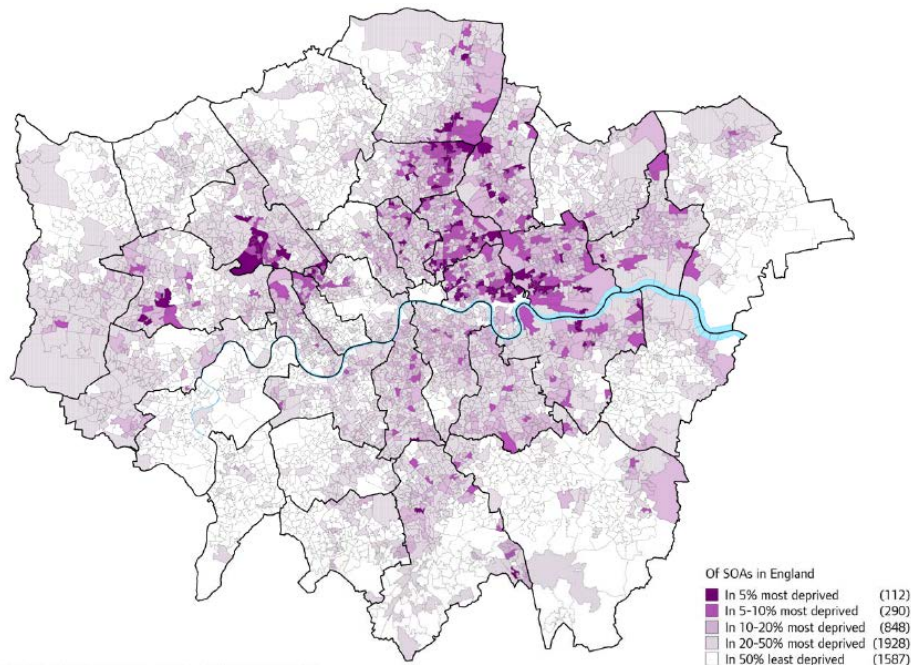
¹¹ Source: estimate taken from the Family Resources Survey 2004–2005. This is the latest available estimate by region. At this time around 12 per cent of the UK population was covered by a PMI policy, compared with 10.9 per cent as at the end of 2011.

¹² www.ons.gov.uk/ons/taxonomy/index.html?nscl=Higher+Education+Skills+and+Qualifications.

23. However, despite its overall affluence and high levels of education, London also demonstrates high levels of inequality with significant pockets of deprivation, particularly in the north and east of the city (see Figure 4).

FIGURE 4

Index of multiple deprivation, 2010



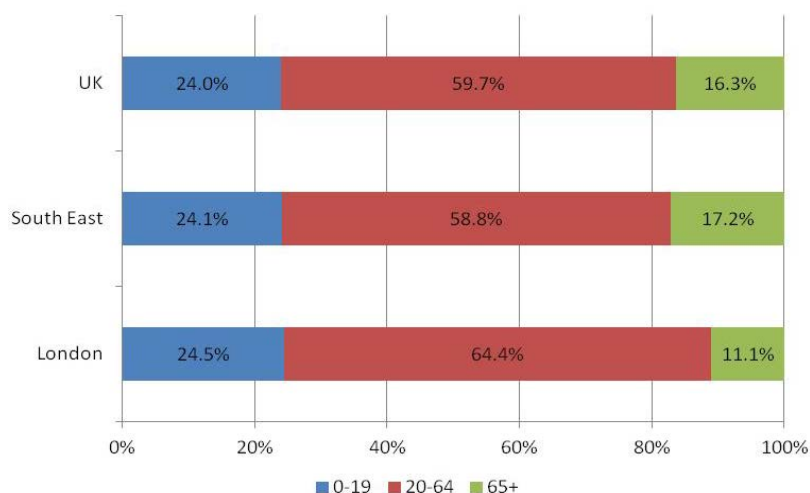
Source: <http://data.london.gov.uk/datastorefiles/documents/ID2010-a-london-perspective.pdf>.

Note: The index of multiple deprivation takes into account deprivation in terms of income, employment, health and disability, education, skills and training, barriers to housing and services, crime and living environment deprivation.

24. This pattern is repeated in unemployment figures, which range from 4.3 per cent in the London Borough of Richmond to 14.3 per cent in Newham. The average for London as a whole is 8.7 per cent, which is slightly above the national average of 8.1 per cent.
25. As shown in Figure 5, London's population is significantly younger than the average for the UK, with a particular concentration of working-age people and relatively low levels of those aged 65 years and above.

FIGURE 5

Breakdown of population by age, 2011



Source: ONS data, based on 2011 census.

26. The CC has previously viewed conditions for private healthcare provision in the London region as differing markedly from those prevailing elsewhere in the UK and has considered that London should be regarded as a distinct market segment in itself.¹³ Distinguishing characteristics of London it cited in this context persist and include:
 - (a) the presence of the UK's main teaching hospitals;
 - (b) the availability of eminent, including world-ranking, consultants;
 - (c) the fact that PPUs appeared to be a more effective competitors than in other parts of the country;
 - (d) a large number of self-pay patients, including from overseas;
 - (e) in many cases prices were well above the average for the UK;
 - (f) different travel patterns in London and higher disposable income; and
 - (g) the four main national hospital operators at the time having their hospitals located almost exclusively outside of London.
27. Private hospitals in central London generate revenue of around £1 billion: almost one-third of UK private hospital revenue annually.¹⁴ Private hospital revenue in London has been growing at around 8 per cent a year since 2009.
28. Below in Figure 6 we show the share of total admissions and revenue of the private hospital groups and PPUs in London.

¹³ http://webarchive.nationalarchives.gov.uk/+/http://www.competition-commission.org.uk/rep_pub/reports/2000/449bupa.htm#full, paragraph 4.68.

¹⁴ Laing and Buisson Market Review 2011–2012 estimates UK independent hospital revenue at £3,844 million in 2010–11.

FIGURE 6

**Hospital operators' shares of supply by total admissions
and total revenue—central London, 2011**

[✂]

Source: CC analysis.

29. HCA as a group generates the most hospital revenue in London with a total market share of approximately [✂] per cent across all specialties or around four times its biggest rival, TLC.

TLC's expansion plans and the importance of cancer treatment to it

The Quantum Leap project

30. In the early 2000s, the trustees of TLC embarked on a fundamental review of its services and facilities which it called the 'Quantum Leap' project. As part of this it commissioned a study from consultants Finnamore¹⁵ to help it prioritize its investments. In the spring of 2002 Finnamore presented a report to the Executive Management Team of TLC making a number of recommendations covering both services already provided by the clinic as well as services it should look to provide in the medium to long term. One of the areas in the latter category was a recommendation to consider investing in radiotherapy treatment facilities at the clinic and in September 2002 Finnamore presented its assessment of the business case for doing so.

The Finnamore proposals

31. Finnamore began by noting that the ability of TLC to provide a radiotherapy service to complement its existing oncology services was considered vital if it was to maintain and enhance its reputation as a leading private sector provider in the treatment of cancer. It said that the treatment of cancer had become a core business of TLC in recent years but that the inability to provide a comprehensive range of treatments, ie the lack of radiotherapy facilities, represented a considerable threat to TLC's position in the future.
32. Finnamore's reasoning was based on the fact that the cancer 'patient journey' may be somewhat different from that associated with other conditions. A patient may be referred by a GP to a surgeon who, before or after surgery, may refer the patient to a medical or a clinical oncologist for radiotherapy or chemotherapy.¹⁶ It is also common for the patient's treatment to be managed by a multi-disciplinary team (MDT) including surgeons and oncologists.
33. However, TLC had no radiotherapy facilities, unlike HCA's Harley Street Clinic which had two Linear Accelerators on stream at that time with a third being introduced in 2003 or The Cromwell (two Tomotherapy machines). Other private radiotherapy facilities in or close to London were the Parkside Hospital in Wimbledon and King Edward VII in Midhurst as well as NHS PPUs such as the Royal Marsden.

¹⁵ www.finnamore.co.uk/.

¹⁶ A clinical oncologist will be trained in the use of radiotherapy and the use of cytotoxic drugs. Medical oncologists may use chemotherapy, hormone therapy or, increasingly, new molecular targeted therapy.

34. The Finnermore report noted that radiotherapy was an effective treatment in the management and cure of cancer, set out the different types of radiotherapy available, referred to forecasts suggesting that the incidence of cancer was increasing at between 1 and 2 per cent a year and noted that the waiting lists at NHS radiotherapy facilities would be likely to encourage patients to use private facilities.
35. The report recognized the importance of consultant referrals to the business case and that a small number of consultants might be responsible for a large number of patient referrals (and thus hospital revenue). It included in its report the results of a survey of consultants with admitting rights to TLC. It said that roughly half of the consultants that it had approached expressed support for the project. Whilst acknowledging that this should be considered a very strong level of initial support the report said that a key factor would be the number of patients that would be referred by specialist oncologists.
36. Finnermore suggested building in annual patient volumes of [redacted] a year to the business case. From this it derived a base case for a two Linear Accelerator facility the costs of which would amount to capital investment of £22 million together with annual occupancy costs of £[redacted]. The profit and loss account produced by Finnermore assumed annual income generated by the radiotherapy facility [redacted] with an operating margin of [redacted] per cent in year 1.

TLC's response to the Finnermore proposals

37. TLC's trustees and management, partly as a result of exposure to integrated cancer treatment facilities in the USA and with the encouragement of leading oncologists, eventually decided to invest in a much larger scheme: an integrated cancer treatment facility offering radiotherapy (including a CyberKnife¹⁷), chemotherapy, and robotic surgical facilities for cancer patients under one roof.
38. In 2003, TLC began the process of planning, financing the project as initially conceived and acquiring the premises in which to house its Cancer Centre. TLC told us that the process of acquiring the land and obtaining planning permission took [redacted] years and that the land acquisition costs were over £[redacted]. It told us that the process was facilitated by its existing presence in the Harley Street vicinity and its relationships with landlords. Further, because of the potential safety and environmental hazards associated with the radiotherapy equipment TLC planned to install, consents had to be obtained from a number of agencies and regulatory bodies.
39. The Cancer Centre admitted its first patients in December 2009. It had cost £90 million to build and equip.

¹⁷ [redacted]

FIGURE 7

TLC's Cancer Centre



Source: TLC.

40. The Finnamore report had emphasized the importance of consultant referrals to the success of the Cancer Centre from the outset. Certain oncologists had been identified as a significant source of patient referrals by TLC, in particular those associated with what was to become the LOC. We discuss the LOC in more detail below, in paragraph 62.
41. In December 2004, five months before the LOC began trading, the TLC trustees discussed investing in it. The proposal was that TLC should make an interest-free loan of £[REDACTED] to the LOC business to be invested in growing the practice. Under the terms of the loan the Oncology Clinic Partners would be required to refer their new patients to TLC. At the time only two of the four partners had consulting rooms at TLC: the other partners conducted their outpatient sessions elsewhere. These arrangements were formalized in the Collaboration Agreement approved by the TLC Trustees in March 2005.
42. The Collaboration Agreement obliged the members, subject to the patient's clinical interests and in particular in compliance with the GMC's Good Medical Practice, to refer to TLC, and use their best endeavours to cause all oncologists working at the LOC to refer there, all new patients requiring inpatient admission and all outpatient and day-case chemotherapy patients who could not be treated at the LOC premises. In addition, the same referral obligations applied to patients requiring radiology and with scanning requirements and, when TLC was able to provide it, PET scanning, all radiotherapy and nuclear medicine imaging including gamma camera and isotope bone scanning. For this, LOC would receive £[REDACTED] for each MRI or CT scan at TLC arising from referrals from LOC. In addition, the Agreement extended the referral obligations to invasive and non-invasive cardiology investigations and such pathology testing that was not undertaken at the LOC premises. [REDACTED]

Response of private medical insurers to TLC's expansion plans

43. In our first case study, on Circle's entry into Bath, we identified PMI recognition as a potential barrier to entry and expansion. We therefore examined the response of PMIs to TLC's expansion plans.
44. TLC was already operating its hospital in London, the additional radiotherapy treatment facilities it was introducing were adjacent to and connected with those facilities rather than on a new or remote site and were to be used in an area of treatment in which it already offered services. Consequently, recognition did not appear to present a problem to most of the PMIs. AXA PPP, however, told us that it did consider whether or not to recognize the radiotherapy facilities at the cancer centre. We therefore looked at the factors that AXA PPP took into account in coming to a decision on recognition, and in particular its relationship with other hospital groups, including HCA.

AXA PPP

45. The relationship between AXA PPP and HCA at this time could be broadly characterized as reflecting AXA PPP's desire to maintain or lower the prices it paid for radiotherapy treatment in London and by HCA's to maintain and grow the volume of patients using its London radiotherapy facilities, in which it had invested heavily. AXA PPP therefore had an incentive to recognize TLC's additional facilities in London, to create rivalry between these and those of HCA and HCA had an incentive to encourage AXA PPP not to do so.
46. As we show below, discussions over AXA PPP's recognition of TLC's radiotherapy facilities took place in the context of, and became linked to, a serious dispute between the two companies which, similarly, raised the prospect of HCA losing business from AXA PPP. This dispute related to AXA PPP's proposed Corporate Pathways product. This product, whose importance to AXA PPP we refer to in our Bath case study, used BMI as its major hospital partner and did not provide clients' employees with routine access to HCA's central London hospitals.¹⁸
47. The parties engaged in discussions to avoid litigation and the eventual settlement included elements relating to both issues, including a term which entitled HCA to [X] if the number of Corporate Pathways subscribers in greater London reached [X].
48. AXA PPP told us that HCA had sought contractual arrangements which would have had the effect of 'locking out' new provision in London and that HCA wanted AXA PPP to 'guarantee not to recognize' the new cancer facilities being developed by TLC. AXA PPP submitted email exchanges between HCA's then Commercial Director and AXA PPP's Head of Provider Management in 2006 in which, on 13 October, HCA set out how it saw the goals of the two parties: 'We [HCA] are looking to have new facilities recognized and have network integrity within central London in tertiary services, and you [AXA PPP] are looking for an ability to offer wider access to your members.' AXA PPP told us that 'network integrity' referred to a situation in which AXA PPP should not add further radiotherapy facilities to its current network in London.
49. HCA told us that in the negotiations with AXA PPP which led to the revised 2010 contract there was discussion of a pricing formula based on whether AXA PPP was

¹⁸ Subsequently, AXA PPP included access to TLC in its Corporate Pathways product but not, routinely, HCA's London hospitals.

proposing to recognize TLC's newly opened Cancer Centre and the impact that this would have on the volume of cancer referrals to HCA hospitals. HCA told us that its position reflected its concern that the forecast volume of patients through its radiotherapy facilities, in which it had invested very heavily, might be impacted. As the economics of capital-intensive facilities such as these are very sensitive to volume, additional radiotherapy capacity could therefore undermine their profitability. HCA indicated that, more generally, a hospital operator or a PMI may put forward for negotiation a volume/pricing proposition. Either, for example, may propose exclusive arrangements in order to secure a better price.

50. Negotiations between the two parties over a new contract, [REDACTED].
51. A letter from the CEO of HCA to the CEO of AXA PPP in October 2009 set out the main issues and HCA's proposals [REDACTED].
52. [REDACTED]
53. An internal AXA PPP document described the course of negotiations following this letter. It said that in response, AXA PPP had qualified the restriction as applying to new providers only, 'not extensions, specifically referring to the London Clinic'. It went on to say that: 'At the meeting on 7 November HCA made clear that they were specifically talking about LC [London Clinic] and we agreed to consider whether we could (legally) restrict recognition of additional services provided by an existing network hospital (LC) and then whether we would want to.'
54. AXA PPP's note of a meeting with HCA to take discussions further, [REDACTED].
55. The new agreement between AXA PPP and HCA was signed in 2010. It committed AXA PPP to recognizing new HCA facilities, subject to agreement over charges, but left AXA PPP free to include new network provision at its absolute discretion. If AXA PPP did add or remove providers then either side would have the right to seek to negotiate an adjustment of prices if and only if it could be demonstrated that doing so had had a material impact on payments made to HCA. 'Material' was defined as [REDACTED] per cent.
56. We asked AXA PPP whether, in practice, this had proved a constraint on its ability to vary the provision of its network. It said that the [REDACTED] per cent hurdle was sufficiently high to make it unlikely to trigger price negotiations. Despite the apparent relaxation in constraints on AXA PPP as regards recognizing new facilities in London, the contract contained an obligation on AXA PPP to 'use its best endeavours to ensure that no additional radiotherapy providers located in Central London are included in the Directory of Hospitals until after June 2010'. We asked the parties what the origin of this clause was and whether it had affected its recognition of the TLC radiotherapy facilities.
57. AXA PPP told us that the provision, without the cut-off date, had been included by HCA at draft contract stage but that the time limitation had been inserted during negotiations. It told us that since it only reached agreement with TLC on radiotherapy prices in late March 2010 the restriction had little effect in practice since it lasted only around two months, following commencement of the contract.
58. HCA also pointed out that the scope of the restriction was limited to two months and that the provision was added to reflect significant investments made by HCA in its radiotherapy services.

HCA's growth strategy and the place of cancer treatment within it

59. HCA, like TLC/Finnamore, had identified the attractiveness and importance of cancer treatment to its business strategy given the likely growth in demand and the value and profitability of cancer treatment services.
60. HCA's Cancer Strategy document noted that cancer was a top-of-mind health issue for consumers: 76 per cent of people ranked it as their foremost health concern and 91 per cent gave cancer as their main reason for taking out PMI. It said that demographic data indicated that cancer would be the fastest growing health sector, +26 per cent by 2025. The same document pointed out that cancer treatments accounted for a significant proportion of HCA's activities ([REDACTED] per cent of HCA's net revenue and [REDACTED] per cent of EBITDA).
61. HCA's cancer strategy was based around investment in leading-edge technology and services not generally available privately or in the NHS, recruitment of top consultants and the creation of a cancer treatment network whereby a number of diagnostic and examination facilities would feed referrals to its treatment centres in London and beyond. Again, like TLC, HCA identified the potential benefits to it of closer collaboration with the London Oncology Clinic and set up 'Project Bosun' which would eventually lead to it acquiring a majority stake in the business from its founding partners. We examine in more detail below how relations between TLC, HCA and LOC evolved.

The London Oncology Clinic

62. The LOC was established in 2005 by four founding partners: Peter Harper, Maurice Slevin, Paul Ellis and David Landau. By 2008 it had attracted over 20 leading oncologists to work at its clinic at 95 Harley Street. As noted earlier, in 2005 TLC and LOC signed a Collaboration Agreement the main feature of which was that, in return for an interest-free £[REDACTED] loan to the LOC business, clinicians at LOC were required, subject to the medical interests of their patients, to refer patients to TLC.¹⁹
63. The importance that TLC attached to this arrangement was underlined by the degree of scrutiny of LOC's adherence to its obligations. [REDACTED]
64. It is clear from the minutes of senior management meetings that TLC assumed that it would continue to work closely with LOC and its consultants and this assumption was factored into TLC's plan projections. It was also clear how important this was to TLC in revenue terms: [REDACTED].
65. The Collaboration Agreement with LOC was due to expire in February 2010 but TLC wished to retain the relationship and make it even closer with a plan to acquire the LOC business. However, it gradually became apparent to the TLC management that the LOC partners were developing a closer relationship with HCA.
66. Discussions about a possible purchase by TLC of a majority stake in LOC were reported to the TLC trustees in June 2008. These continued through the summer and autumn of 2008 [REDACTED].
67. Following the June 2008 meeting of the trustees an offer of £[REDACTED] was put to the Chief Executive of LOC, [REDACTED].

¹⁹ [REDACTED]

68. LOC told us that it wished to retain managerial and clinical autonomy in order to run the LOC in the way it would best serve the interests of its patients, including the freedom to decide which hospitals to refer patients to for treatment. It told us that this was an aspect on which the LOC partners did not wish to compromise. Accordingly, nothing further was heard from LOC and the TLC offer lapsed.
69. In May 2010 the minutes of the TLC Executive Board confirmed that HCA had entered into a strategic partnership with and acquired a stake in LOC. [REDACTED] LOC told us that a substantial volume of patients were still admitted by the LOC to TLC for treatment and that it believed that the majority of inpatient referrals generated by the LOC were to TLC. HCA told us that two of the LOC founder members took virtually all of their inpatients to TLC in 2012.
70. In July 2010 the TLC Executive Board minutes recorded that further details of the deal between HCA and LOC had emerged. The two organizations had established a joint venture company with Dr Harper as its Chair and which would include the CEO of HCA on its board. [REDACTED]
71. TLC told us that it was concerned that HCA would target TLC consultants to transfer their practice to HCA hospitals. TLC provided an example of this targeting which was reported to the TLC Board in April 2011, ie after the Cancer Clinic had opened. A special meeting of the Board of Trustees was convened to discuss a situation concerning two surgeons. They had informed TLC that they had received an offer, which TLC believed to be from HCA, to transfer their practice to another facility, which TLC believed to be the Platinum Centre at the Wellington. [REDACTED] The trustees agreed that, exceptionally, management should negotiate a deal to retain these two doctors.
72. Since concluding the original LOC partnership agreement, HCA has applied the LOC 'brand' to other facilities including LOC at the London Bridge, LOC at the Wellington Hospital (Platinum Centre) and LOC at the Christie in Manchester, indicating the value of the LOC association to and the synergy with HCA.
73. Oncology was HCA's fastest growing [REDACTED] areas of care in 2011.

FIGURE 8

HCA revenue growth and gross margin by speciality

[REDACTED]

Source: HCA.

The TLC Cancer Centre: performance since launch

74. Any restrictions on expansion encountered by TLC in developing its Cancer Centre have not prevented it from operating profitably.
75. Figure 9 shows a forecast turnover and operating profit for the Cancer Centre in its first two years of operations and actual turnover and operating profit for its first two years of operation. [REDACTED]²⁰

²⁰ The other services offered by the Cancer Centre, including surgical and chemo treatments, were an established part of TLC's service offering.

FIGURE 9

TLC Cancer Centre financial performance

[✂]

Source: TLC.

76. [✂]

77. [✂]

TABLE 1 Revenue and profitability of TLC's radiotherapy department, 2012

[✂]

Source: TLC.

Conclusions

78. In our Bath case study we found that AXA PPP's delay in recognizing the Circle hospital, because of its broader, national relationship with BMI, restricted Circle Bath's ability to grow profitably. In this case it is less clear that a hospital group was able to similarly influence a PMI.
79. HCA may have tried to persuade AXA PPP not to recognize TLC's radiotherapy facilities in London but, in the event, AXA PPP did recognize them. This may be considered as evidence that AXA PPP had more bargaining power than HCA but the situation was complicated by the negotiations over Corporate Pathways which were taking place at the same time. The launch of AXA PPP's new product raised the prospect of more significant loss of business to HCA, from AXA PPP's corporate clients, since, under this scheme, their employees would not routinely be treated at or referred to HCA hospitals. HCA could, therefore, have conceded AXA PPP's recognition of TLC in order to win the safeguards it did regarding loss of business arising from the launch of Corporate Pathways.
80. There is evidence from the internal papers of hospital groups in London to suggest that the ability of hospital groups to identify consultants who are likely to be significant sources of admissions (and thus revenue) and to then adopt measures which encourage them to bring patients to their hospitals, may enable an incumbent to restrict or deter entry or expansion.
81. In this case such a strategy was open to, and was adopted by, both TLC and HCA, each of whom had established relationships with leading oncologists in London. We do not know, however, whether TLC, despite its longstanding relationships with consultants, would have proceeded with the development of the Cancer Centre had HCA acquired LOC earlier in the life of the project. In other situations, where a potential entrant did not have the benefit of such relationships, it would be harder still to adopt such a strategy successfully, particularly given the lead time required to open a new hospital. This suggests to us that, in some circumstances, adopting such schemes may afford a hospital a form of 'first mover advantage.'

We note that, in contrast to Circle in Bath, TLC did encounter quite significant problems in acquiring the necessary land and planning permissions for its Cancer Centre and that the project took several years to complete. TLC was successful in

undertaking the land swaps necessary to assemble the site but it was an existing hospital operator with established relations with local landlords.

Other hospitals' cancer strategies

Bupa Cromwell Hospital

1. Bupa acquired the Cromwell Hospital in 2008 intending to reverse 'years of underinvestment' with a £[REDACTED] redevelopment programme. Delays to this project held up progress to the extent that tenders for the construction work were only issued in 2012 and BCH acknowledged that retaining the loyalty of consultants during the disruption of the ensuing building work would be a challenge. Nonetheless, BCH had identified which services it intended to try and develop, which included oncology, and the strengths on which it intended to build. These included its ownership by Bupa though BCH has, in fact, [REDACTED].
2. BCH's 2012 Business Plan noted that with the direction of open referrals it would increasingly be in a position to provide more patients to consultants which would allow it to attract new consultant users and 'evolve the nature of our relationships with existing ones'. It noted that its top [REDACTED] consultants [REDACTED] but conducted [REDACTED] private practice work at BCH. It said that it intended [REDACTED].
3. BCH also intended to develop its referral network. It said that it was building up the numbers of its GP liaison staff, was developing GP practices in the mews adjacent to the hospital,¹ and would be creating satellite outpatient clinics at Bupa Wellness Centres, the first of which would be at the Barbican.²
4. BCH identified oncology as one key area to develop following much the same analysis as both TLC and HCA: the likely continued growth in the incidence of cancer; the importance of cancer treatment as a revenue stream; the high margins it attracted. In addition, its analysis of Bupa claims [REDACTED], excepting cardiology. Patients could therefore be drawn to London from [REDACTED] than they could for other forms of treatment. It estimated the value of the London oncology market as around £[REDACTED] million and BCH's share of this as [REDACTED] per cent.
5. BCH thus already generated quite significant revenue from cancer care, particularly from [REDACTED].

FIGURE 1

BCH Oncology net revenue (£m) by payor, 2000 to 2010

[REDACTED]

Source: Bupa.

6. [REDACTED] In this context it noted that the 'patient journey' in cancer treatment was somewhat different from other conditions in that surgeons would tend to refer patients on to clinical or medical oncologists who would deal with them on an MDT basis, particularly in the NHS. Although it had begun using MDTs it said that it [REDACTED] was more prone to lose referrals to outside facilities. BCH has since confirmed that it has addressed this issue and now treats all patients with an MDT approach.

¹ Bupa Cromwell provided accommodation for GPs on its premises with attractive rental terms being made available to the higher referring ones.

² Bupa has since confirmed that the outpatient clinics pilot has been discontinued.

Entry and expansion case study 3: Edinburgh and the Lothians

Introduction

1. This appendix, the third of our case studies on barriers to entry and expansion, examines the various attempts made by private hospital groups to begin providing private healthcare in Edinburgh from 2007. Whilst the other two case studies (London and Bath) focused on specific examples of entry and expansion in those areas, this appendix takes a broader approach, examining the activity of a number of private hospital operators in Edinburgh over the last five years, and seeks to understand the interplay between them.
2. Edinburgh has been selected for a case study due to the high level of interest shown in this area by a number of operators. In particular, we note the successful entry of TEC, which was subsequently acquired by Aspen, and the expansion of Spire, as well as the decisions of Circle and BMI not to enter despite their interest. We examine the extent to which these players encountered barriers to their entry and/or expansion and the nature of those barriers. In particular, we consider the role of market size, consultants, the PMIs and the Scottish NHS in facilitating or preventing entry/expansion. In addition, we consider the strategies deployed by Spire and Aspen to overcome any barriers to entry/expansion.
3. The structure of this paper is as follows:
 - (a) the first section describes the private hospital operators that have shown an interest in entering or expanding in Edinburgh;
 - (b) the second section provides a brief overview of the provision of healthcare in the Edinburgh area;
 - (c) the third section describes the entry/expansion plans of each private hospital operator and reviews their experiences; and
 - (d) the final section summarizes the main issues and sets out our current conclusions.

The private hospital operators

Spire

4. Spire is the second largest private hospital operator in the UK with 37 hospitals and 31 satellite clinics¹ located throughout England, Wales and Scotland. The Spire business was acquired by funds managed or advised by Cinven (a private equity firm), which acquired the business in two stages, reassembling the portfolio of hospitals that had been owned by Bupa. The first stage involved the buyout of BUPA Hospitals in August 2007 and the second involved the acquisition of the Classic Hospitals Group in February 2008.² Spire later acquired the Gerrards Cross private hospital (now known as Spire Thames Valley) from BMI Healthcare in March 2008.

¹ These satellite clinics generally offer consulting rooms and a range of outpatient and diagnostic services. In some cases, they may also have facilities for minor surgical procedures.

² The Classic Hospitals portfolio had been part of BUPA Hospitals but was sold to Legal and General Ventures in 2005.

As at 3 October 2012, Spire's facilities comprised 116 theatres, 479 consulting rooms, 1,564 overnight beds and 210 day-beds. In Scotland, Spire has two hospitals (Murrayfield and Shawfair), both of which are located in Edinburgh.

5. In the year ended 31 December 2011, Spire generated turnover of £667 million and EBITDA of £181 million. The business has grown its revenues by an average annual rate of 5.0 per cent between FY08 and FY11, and its EBITDA by 14.1 per cent a year. In FY11, around [X] per cent of Spire's revenue was generated by its Edinburgh hospitals. Figure 1 shows the location of Spire's hospitals in the UK.

FIGURE 1

Location of Spire's hospitals



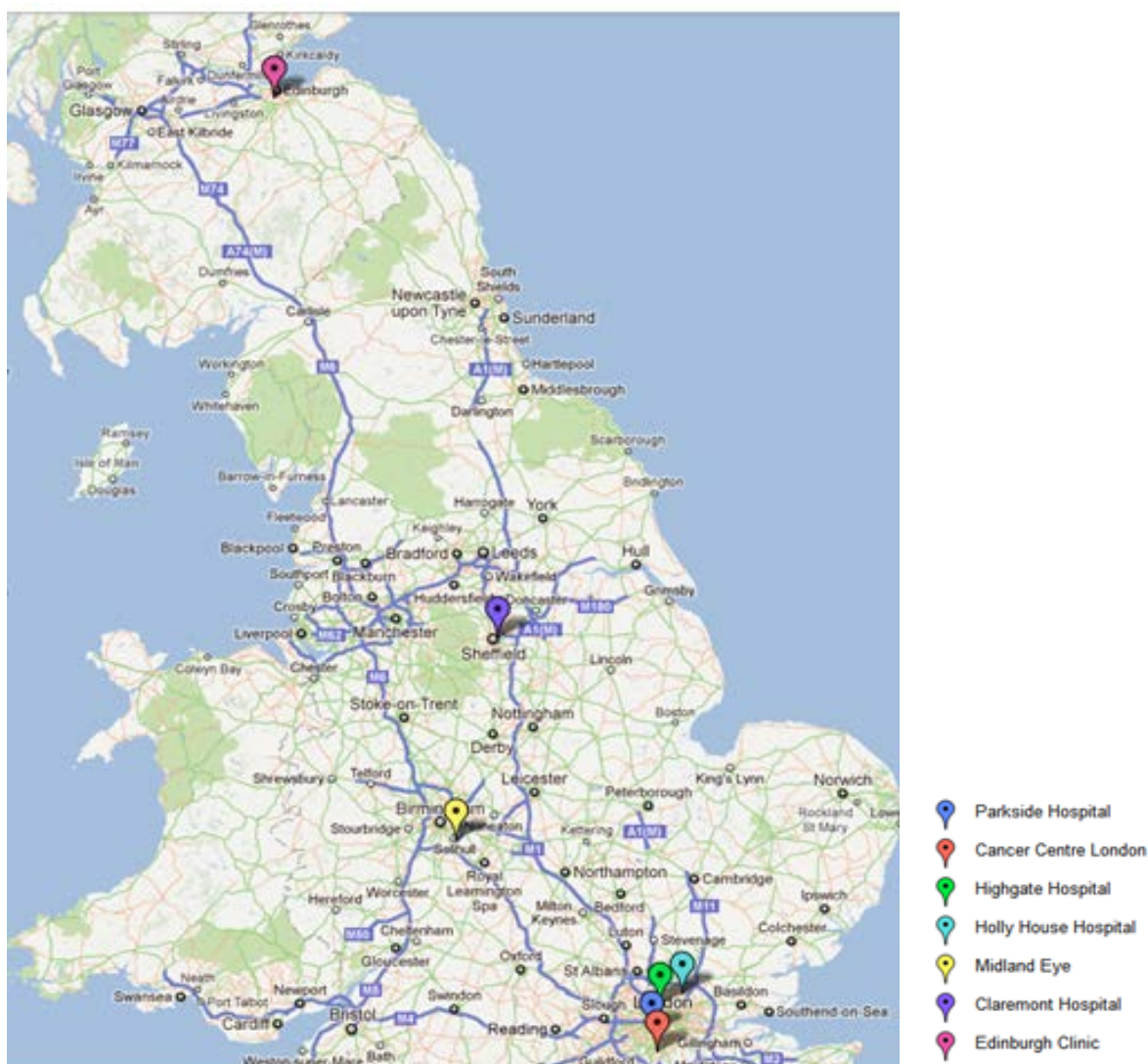
Source: Spire.

Aspen

6. Aspen Healthcare has eight facilities in the UK, five of which are based in and around London, with one each in Sheffield, Edinburgh and Solihull. These vary in size from a full-service hospital with a high-dependency unit and dedicated cancer centre (Parkside), to consulting rooms that offer day-case and minimally invasive procedures (Chelmsford Medical Centre). In total, Aspen's hospitals contain 15 theatres, 74 consulting rooms, 191 overnight beds and 24 day-beds. In the financial year ended 31 December 2011, the business generated £70 million of revenue and £18 million of EBITDA. Figure 2 shows the location of Aspen's hospitals and clinics in the UK.

FIGURE 2

Location of Aspen's hospitals and clinics



Source: Aspen.

Note: In addition to the locations shown, Aspen also has a facility in Chelmsford.

7. Aspen is owned by Welsh Carson Anderson and Stowe (a US-based private equity house) and was formed in 1998 via a management buyout of Paracelsus UK from Paracelsus Kliniken Deutschland GmbH. At the time of the transaction, Aspen owned the Parkside and Holly House hospitals. In 2003, the business acquired the Highgate hospital, followed in 2011 and 2012 by the acquisition of The Edinburgh Clinic (TEC), the Claremont (Sheffield), the Midland Eye Clinic and the Chelmsford Medical Centre.³
8. Aspen pursues a flexible expansion strategy, acquiring both full service hospitals and Ambulatory Surgical Centres (ASCs), depending on the characteristics of the local market and the opportunities that arise.⁴

³ Aspen website: www.aspen-healthcare.co.uk/our-heritage/.

⁴ ASCs provide a range of diagnostic testing as well as day-case surgery and medical treatments but not inpatient services.

9. A market review, carried out for Aspen by Stanbridge Associates in 2009, identified ASCs as offering a significant growth opportunity, based on both the trend towards day-case and away from inpatient treatment and the movement by consultants towards grouping together and investing in setting up their own facilities. Stanbridge Associates suggested that the latter trend was a direct result of the squeeze on consultant incomes by the PMIs.
10. The criteria used by Aspen to identify potential locations for such facilities included: [REDACTED]. Aspen's model for investing in ASCs is to set up partnerships with consultants, aligning the interests of the consultants and the healthcare provider in driving highest quality of care for the patients. As discussed in paragraphs 55 to 58, Aspen's decision to invest in TEC was based on its assessment that the business and the Edinburgh area met these criteria and hence was an attractive investment opportunity.

BMI

11. BMI is the largest hospital operator in the UK, with 61 hospitals and nine outpatient clinics located throughout England, Scotland and Wales. The business is majority-owned by Netcare, a South African hospital business, with Apax Partners and London and Regional Properties holding a minority stake.⁵ Across its portfolio of hospitals, BMI has 181 operating theatres, 659 consulting rooms, 2,514 overnight beds and 225 day-beds. In FY11, BMI generated around £800 million of turnover and £218 million of EBITDA from its private hospital activities.
12. BMI has grown both organically and via a number of acquisitions over the last five years, including the purchase of seven hospitals from Nuffield in February 2008⁶ and the acquisition of the Abbey Hospital group in May 2010, comprising four hospitals in Scotland and northern England.
13. BMI has five hospitals in Scotland, located in Aberdeen, Dundee, Stirling, Glasgow and Ayr, which together generate turnover of around £[REDACTED] million, making it the largest private healthcare provider in Scotland. Figure 3 shows the location of BMI's hospitals in the UK.

⁵ [Apax website](#).

⁶ BMI originally purchased nine hospitals from Nuffield but pre-emptively sold two of these after having conducted an internal competition analysis and reaching the conclusion that a substantial lessening of competition may have arisen in these local areas. See [OFT decision](#).

FIGURE 3

Location of BMI's private hospitals and clinics



Source: BMI.

Circle

14. Circle was founded in 2004 and has pursued a 'mixed' model of independent healthcare provision, supplying both the NHS via ISTCs and the management of NHS hospitals like Hinchingsbrooke Health Care Trust and the private sector via its hospitals in Bath and Reading and its outpatient/day-case clinics in Windsor and Stratford-upon-Avon.
15. The Circle model is based on a partnership with consultants who commit to bring a proportion of their revenue to the Circle facility in return for an equity stake in the business. Consultants are also encouraged to get involved in the management of Circle's hospitals in order to improve financial, operational and clinical performance. In FY11, Circle had turnover of £72 million and EBITDA of £15 million.⁷ (See Appendix 6.1 for a detailed overview of the Circle group.)

⁷ Numis, Analyst Report, 21 February 2012.

The provision of private healthcare services in Edinburgh

16. As of mid-2010 the Edinburgh area had a population of around 486,000,⁸ making it Scotland's second largest city. Edinburgh is relatively wealthy with a gross disposable income per head of £17,250 in 2010, which is approximately 10 per cent higher than the UK average of £15,730. The city exhibits low levels of unemployment, with a rate of 4.7 per cent as of June 2012 compared with a national average of 8.1 per cent.⁹
17. Estimates of the level of PMI penetration in the Edinburgh area vary, with BMI research putting the proportion at [X] per cent in 2010, significantly below the level for the UK as a whole, whilst Aspen used an estimate of between [X] and [X] per cent prepared by Laing & Buisson in their analysis of the sector.
18. Scotland's population is more highly educated than the national average, with around 35 per cent having a qualification at NQF level 4 or above, compared with a national average of around 30 per cent.¹⁰ However, health outcomes are poorer in Scotland than in the rest of the UK, with male and female life expectancy at birth 2.3 and 1.8 years, respectively, below the UK average.¹¹
19. There are a number of differences between healthcare policy and practice in England and Scotland which the CC has been told may have an impact on the private healthcare sector. In particular, we are aware of the following differences:
 - (a) The Scottish Government is committed to a different model of healthcare provision from that in place in England. In particular, it is committed to delivering services via public facilities, rather than private hospitals and clinics:

The Scottish Government has been clear that it remains committed to the values ... of collaboration, co-operation and partnership working across NHS Scotland, with patients and with the voluntary sector; of continued investment in the public sector rather than the private sector.... The Scottish Government will not follow the route being considered by the NHS in England as their response to the global challenges.¹²

As a consequence of this policy, the Scottish Executive is seeking to minimise the use it makes of private hospitals to deliver its services. Moreover, although there are currently a number of contracts for such publicly-funded and privately-delivered services,¹³ patients are unable to choose a private hospital as a matter of course as under the 'choose and book' scheme in place in England.

- (b) The Scottish Government has made certain commitments in terms of the quality of NHS services that are more ambitious than those in force in England. For example, the English NHS has a target that no patient should wait more than 18 weeks from the point of referral to commencing treatment.¹⁴ By contrast, in

⁸ ONS data, [Region and Country Profiles - Key Statistics Tables, October 2012](#). Glasgow is the largest city with a total population of around 590,000.

⁹ ONS data: www.ons.gov.uk/ons/dcp171778_286516.pdf.

¹⁰ ONS data, 2010: www.ons.gov.uk/ons/taxonomy/index.html?nscl=Higher+Education+Skills+and+Qualifications.

¹¹ ONS data: [Regional and Country Profiles—Key Statistics, October 2012](#).

¹² [NHS Scotland Chief Executive's Annual Report 2011/12](#), p7.

¹³ See www.scotsman.com/news/health/private-hospitals-needed-for-three-years-to-clear-nhs-waiting-list-1-2389187. These contracts are aimed at clearing a backlog of patients, waiting longer for treatment than permitted under current waiting list commitments.

¹⁴ <http://www.nhs.uk/choiceintheNHS/Rightsandpledges/Waitingtimes/Pages/Guide%20to%20waiting%20times.aspx>.

Scotland: 'From October 2012, patients requiring inpatient or day case treatment will be covered by a 12-week Treatment Time Guarantee enshrined in law which will apply every day of the year.'¹⁵

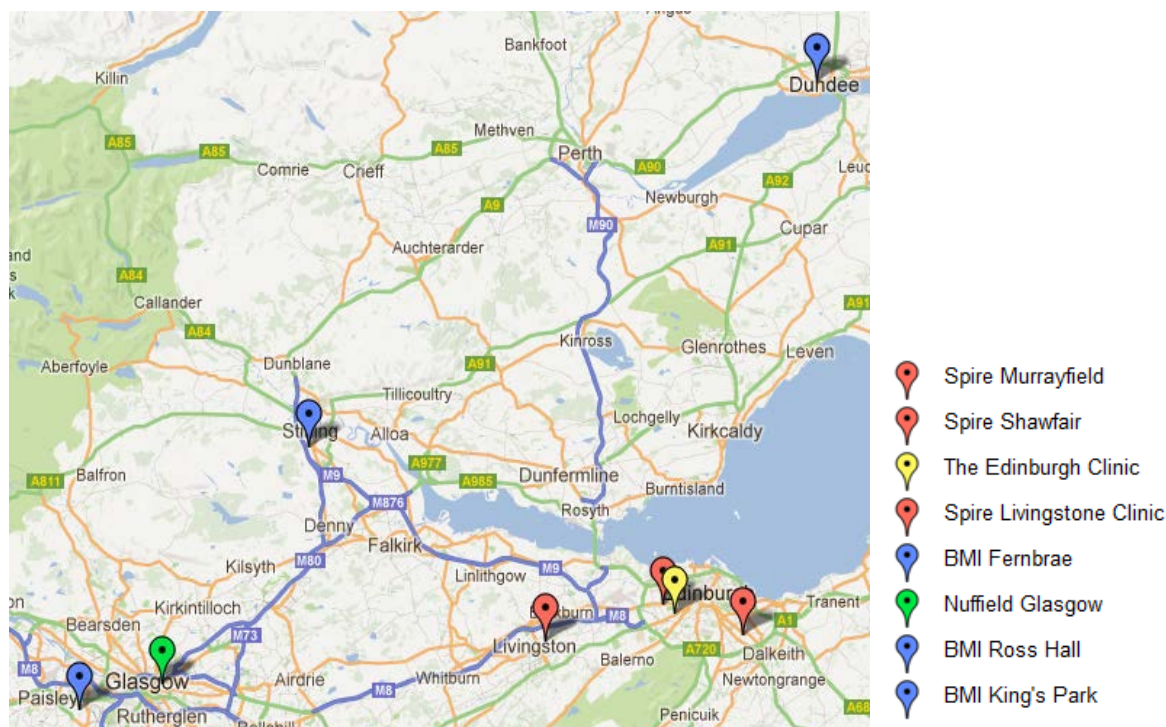
- (c) Finally, the NHS in Scotland has developed an IT system called SCI Gateway which enables the electronic referral of patients by GPs to a hospital. This system avoids the need to send a referral letter to a hospital, with consultant appointments being confirmed during a patient's GP visit, and their medical information transferred directly to the treating hospital at the same time. Some, but not all, of the private hospital facilities are also connected to this system, which requires NHS sponsorship.¹⁶

Private healthcare provision

20. Edinburgh and the Lothians are currently served by one full service hospital (Murrayfield), two day-case hospitals/clinics (TEC and Shawfair Park hospital) and a physiotherapy clinic (the Livingstone Clinic). Three of these facilities are owned by Spire, with TEC now owned by Aspen. There are three other hospitals within a one-hour drive of the city, two in Glasgow (Nuffield and BMI) and one in Stirling (BMI). In addition, BMI has a hospital in Dundee (Fernbrae). Figure 4 shows the location of these facilities.

FIGURE 4

Private healthcare facilities in and around Edinburgh



Source: CC analysis and Google maps.

¹⁵ *ibid*, p38.

¹⁶ www.sci.scot.nhs.uk/products/gateway/gate_desc.htm.

21. Despite the relative proximity of Edinburgh and Glasgow, [X] told us that patients tended to be reluctant to travel between the two cities for private healthcare services.
22. In 2007, private healthcare provision in Edinburgh was significantly more limited—only the Murrayfield hospital (see Figure 5) and the Livingstone Clinic were in operation. The Murrayfield hospital was first opened in 1983 (by BUPA) and offers four theatres, 61 overnight beds and 14 consulting rooms. [X]. The hospital is located in the north of the city, close to the former site of the Edinburgh Royal Infirmary (ERI).

FIGURE 5

Spire Murrayfield hospital, Beechwood House building



Source: Spire website.

23. The next section sets out the opportunities identified by the various operators and their plans for entering into or expanding within the Edinburgh area.

Edinburgh Royal Infirmary

24. The ERI is the main NHS hospital in the city. Up until around 2002/03, it was located in Lauriston Place, near the centre of the Edinburgh and close to the Murrayfield hospital. Between 2002 and 2005, the ERI moved its main site and several additional functions/specialisms to a new location in the Little France area in the south-east of Edinburgh. Several of the parties told the CC that this move had an impact on the dynamics of private healthcare provision in the city.

Entry and expansion plans

Introduction

25. This section provides an overview of the attempted entry by Circle into Edinburgh, the successful entry of TEC and the successful expansion by Spire, the incumbent operator. In addition, it sets out the issues considered by BMI in deciding not to enter the area.

Circle

26. Circle's strategy for expansion in the UK was based around identifying the 15 to 20 largest markets for private healthcare (outside London), raising the required levels of

committed revenue from local consultants in each area and building hospitals in those markets. The funding for each hospital building was to be raised on the basis of the consultant commitments. One such target area identified by the group was Edinburgh. Circle's assessment of the market opportunity was as follows:

In 2007 Circle saw Edinburgh as a market with PMI and cash pay revenues in excess of £20m. This market was dominated by Spire Murrayfield, which at the time was capacity constrained and enjoying a monopoly market position. The new Edinburgh Royal Infirmary was located to the East of the city with Spire Murrayfield located in the Western suburbs. Circle saw that an opportunity existed to provide more capacity closer to the Edinburgh Royal Infirmary.

27. In February 2007, Circle was approached by an agent with details of a site in Edmonstone, near the new Royal Infirmary site. The business decided to pursue the opportunity and began the process of seeking revenue commitments from consultants in March 2007. Circle's management set a target for revenue commitments of £[REDACTED] million, which the business reached in less than one year. In August 2007, Circle secured an option over the site and then submitted an application for outline planning permission, which was granted in February 2008. The hospital was to offer four operating theatres, 30 inpatient beds and 25 day-case beds, with diagnostic imaging and outpatient facilities.
28. In early 2008 [REDACTED]. Circle was able to secure [REDACTED] funding of approximately £9 million from AIB, which allowed it to complete the acquisition of the Edmonstone site in March 2008. Circle subsequently appointed architects to draw up more detailed plans for a new hospital on the site. However, the business was unsuccessful in raising the financing required to build the hospital. [REDACTED]
29. In early 2012, Circle made the decision not to proceed with its entry into Edinburgh.

Spire

30. Prior to 2008, when TEC opened, Spire was the only private hospital operator active in Edinburgh and the Lothians with its Murrayfield hospital and Livingstone Clinic, which had been acquired from BUPA as part of a larger portfolio in 2007.
31. Spire presented its initial business case for a new hospital to its Board in November 2007. According to the 2007 Board Paper, Spire's decision to invest in a second hospital in Edinburgh (at Shawfair Park) was motivated by three considerations, namely: (a) the relocation of the ERI and the stated preference of the Edinburgh consultants for a private hospital location nearer to their NHS base and the consequent threat to the Murrayfield hospital; (b) the threat of competitive entry, and (c) the growth of the Edinburgh market. In this Board Paper, Spire identified the threat of competitive entry, stating that its 'ambition would be to deter Circle or other competitors from entering the market'. In particular, Spire was concerned that the movement of the NHS's main facility—the ERI—from Lauriston Place to a new site in Little France, made its Murrayfield location less attractive to its consultants. The new ERI location was in the south-east of the city, whilst Murrayfield was located to the west of the centre of Edinburgh, a 25-minute drive away. Spire indicated that, as a result of the ERI move, the location of the main NHS practice of many of Spire's consultants shifted from the city centre to the south-east of the city. 'The location issue has opened up a chink in Murrayfield's armour that competitors are seeking to exploit. Developers have sought to identify sites which are capable of being developed into a new private hospital close to the ERI. This search has been encouraged by strong interest from potential competitors, most recently Circle.'

32. Spire indicated that its main concern was that consultants based at the ERI would move their private work to a new facility built close to the ERI in order to avoid the inconvenience of travelling between Murrayfield and the ERI. The business case presented to the Board set out a number of scenarios showing the potential impact on Murrayfield in the case of entry by Circle.
33. The business identified a growing private healthcare market in Edinburgh, which was under-served by its existing facility. [REDACTED] A new facility would allow Spire to treat more patients, carry out more complex procedures and to provide several new service lines, including paediatrics, oncology, cardiology and IVF.¹⁷ [REDACTED]
34. The November 2007 business case recommended the building of a new day-case hospital on the Shawfair site, whilst maintaining its existing facility in Murrayfield, with services being split across the two sites. [REDACTED].¹⁸
35. Spire acquired the Shawfair site in November 2007 and began a process of more detailed financial planning and evaluation prior to making a final decision regarding the site.
36. The November 2007 Board Paper highlighted the following 'critical success factors' that would minimize the probability and potential impact of competitor entry:
 - (a) 'Securing a site which is close to ERI and affords easy access for both patients and consultants.
 - (b) Acting quickly to ensure potential competitor investors know they would not be in a position to exploit the location weakness of Murrayfield unchallenged.
 - (c) Demonstrating our commitment to supporting the growth of consultants' private practice.
 - (d) Demonstrating the capability to improve the range and complexity of clinical services and to market aggressively in the region.'
37. In April 2008, [REDACTED]

TABLE 1 [REDACTED]

[REDACTED]

Source: [REDACTED]

-
38. The board paper reported that Circle had lost some credibility among the consultants due to its failure to keep to its original timetable for acquiring the site and building the Edmonstone hospital (see paragraphs 26 to 29). However, it also noted that Circle had completed the purchase and appointed architects in March 2008:

Whilst Circle has not abandoned proposals to establish a hospital in Edinburgh, if the Board accepts the recommendation to proceed with developing a new Spire hospital at Shawfair Park, the Spire facility will be operational for several months prior to a new Circle hospital. [REDACTED]

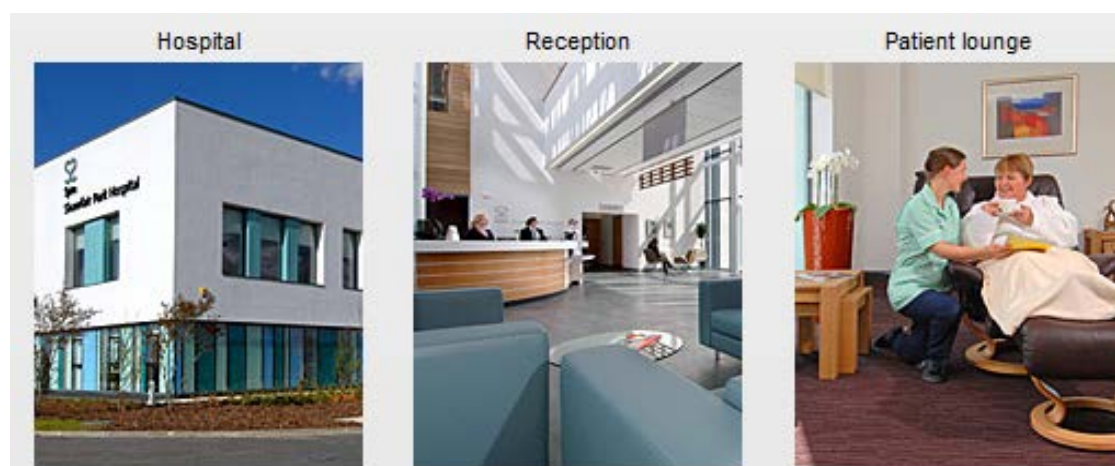
¹⁷ IVF was added to the planned new service offering in the April 2008 business case that was submitted to the Board for final approval. Spire told the CC that, at the time, there was a six-month wait to obtain privately-funded IVF treatment in NHS Lothian, and the next closest private IVF provider was located in Glasgow.

¹⁸ [REDACTED]

39. During this period, Spire Edinburgh considered the introduction of a cash-based, deferred payment incentive scheme for consultants to secure their loyalty for a period of five years from 2008. [REDACTED]
40. [REDACTED], Spire did not proceed with the consultant incentive scheme. Spire told the CC that the reason it had not proceeded with the scheme was because it considered such a strategy to be inappropriate.
41. Spire decided to proceed with construction of Shawfair Park in April 2008 with work starting in January 2009 and the hospital opening in March 2010. In total, the new facility cost £[REDACTED] million to develop, comprising £[REDACTED] million of land costs, £[REDACTED] million of build costs and £[REDACTED] million of equipment (see Figure 6). Facilities include two operating theatres, 18 day-beds, an IVF treatment centre, a cardiac catheterization laboratory and imaging facilities, including X-ray and ultrasound equipment.

FIGURE 6

Spire Shawfair Park Hospital



Source: Spire website.

42. The business plan targeted new revenue of £[REDACTED] million and EBITDA of £[REDACTED] million by FY11, based on a [REDACTED] per cent increase in the volume of patients treated in Edinburgh. This growth was expected across the two Edinburgh sites, which are operated and managed as a single unit.¹⁹
43. Spire indicated that it did not experience any difficulties either in obtaining planning permission for the hospital, or obtaining recognition from the PMIs, although the PMIs did not provide any advanced commitment to recognize the new facility. Spire explained that it 'was able to secure recognition, subject to quality certification, from Bupa, AXA PPP and Aviva UK Health during contract negotiations in Q1/Q2 2009'. Hence, the Shawfair hospital was recognized by the three largest insurers from opening with most PMIs accepting Shawfair as an extension of Murrayfield. In addition, Spire's Board Minutes indicate that the expansion was supported by local consultants, who demonstrated significant interest in the new facility.²⁰

¹⁹ [REDACTED]

²⁰ Edinburgh has a concentration of financial services firms, such as RBS, which have been particularly badly affected by the financial crisis.

Investment in Murrayfield

44. In addition to developing the new Shawfair Park hospital, the financial information provided by Spire to the CC indicates that over this same period there was a significant programme of investment in the Murrayfield site. This included:
- (a) installation of a new modular theatre in April 2008 to increase capacity on the site, at a cost of around £1.5 million;
 - (b) acquisition of a new CT scanner in October 2008, at a cost of just under £1 million;
 - (c) refurbishment of patient bedrooms, reception and other communal areas, theatres, consulting rooms, the wellness suite, and the physiotherapy gym at a total cost of around £600,000 over FY10, FY11 and FY12; and²¹
 - (d) investment in new medical equipment, including a phaco machine, MRI coil, new camera stacks, specialised theatre, CSD and anaesthetic equipment at a total cost of around £200,000 over FY10, FY11 and FY12.

Performance of Shawfair (and Murrayfield)

45. A review of the first year of operations at Shawfair Park indicated that the hospital [REDACTED].
46. [REDACTED], Spire has increased total revenues in Edinburgh from £[REDACTED] million in 2009 to £[REDACTED] million in 2012, growth of [REDACTED] per cent. Over the same period, EBITDA increased by £[REDACTED] million, with the EBITDA margin increasing from [REDACTED] per cent to [REDACTED] per cent, compared with an average of [REDACTED] per cent for the Spire group as a whole. Volume growth has come from [REDACTED]
47. [REDACTED]²²

FIGURE 7

Financial performance of Spire in Edinburgh

[REDACTED]

Source: Spire.

48. Spire noted in internal documents that it believed that its construction of Shawfair Park caused Circle to withdraw from Edinburgh, maintaining Spire's solus status in the city. Furthermore, Spire's assessment was that, following this withdrawal, new entrants in Edinburgh are unlikely.

The Edinburgh Clinic

49. TEC was founded in 2008 by Dr Martin Errington, an Edinburgh-based consultant radiologist. Facilities include an imaging suite with MRI, CT, DEXA scanner and 4D ultrasound scanners, as well as an X-ray machine, six consulting rooms, a laminar

²¹ The bedroom refurbishment programme appears to have started in 2008/09 at Murrayfield. Only the costs for 2010 and 2011 are shown here.

²² www.scotsman.com/news/health/private-hospitals-needed-for-three-years-to-clear-nhs-waiting-list-1-2389187.

flow operating theatre for day-case patients and a physiotherapy suite (see Figure 8 below). The clinic is located in the Morningside area of Edinburgh.

50. Dr Errington told the CC that he had been motivated to open the clinic as the result of a lack of available diagnostic facilities in the Edinburgh area. In particular, he stated that he had been unable to obtain practising privileges at the Murrayfield hospital during the early 2000s and, having spent a number of years renting diagnostic facilities from both the NHS and Alliance Medical in Edinburgh and from other private and NHS facilities elsewhere in Scotland, he decided to establish a diagnostic and consulting facility from which to develop his practice.
51. Dr Errington's strategy for TEC was to attract consultants in specialist fields that had a particular requirement for diagnostic and scanning equipment, including orthopaedics, urology, cardiology and physiotherapy, among others, in order to generate demand for the facility's imaging equipment. In addition, the clinic sought to develop its offering over time with a day-case theatre (opened early 2012) in order to capture a greater proportion of the patient journey.
52. In early 2007, Dr Errington located a suitable site for the clinic in the affluent Morningside area of Edinburgh, which was conveniently located in terms of the clinic's likely catchment area for patients and with respect to the consultants' residential addresses. The clinic did not encounter any significant planning issues as the building had previously been owned and used by NHS Lothian for healthcare purposes. However, the building did require modernization, which took around 18 months.
53. Since opening in 2008, the clinic has attracted around 90 clinicians to practise at its facilities, from both Edinburgh and the surrounding areas, including some Glasgow-based consultants. In 2009, it entered into an agreement with the Glasgow Centre for Reproductive Medicine (GCRM), a specialist fertility (IVF) centre. GCRM already provided IVF services to patients in the Edinburgh area and was looking for a local facility to provide a range of pre- and post-treatment services, including consultations, blood tests, counselling and scanning. The strategy was to develop the business and enhance customer service by reducing travelling for Edinburgh patients.²³
54. Dr Errington told the CC that his initial venture (Errington Associates) had already been recognized by all the main PMIs as a 'virtual hospital' for scanning and diagnostic tests prior to opening TEC. He stated that all the PMIs wanted the clinic to succeed and that his existing (virtual) recognition was relatively easily transferred to the new facility. The one exception to this situation was gaining recognition from AXA PPP. Dr Errington had understood from AXA PPP that it was keen to recognize the clinic but in his view a pre-existing agreement with Spire meant that it was unable to do so.

Aspen's decision to invest in TEC

55. Aspen told us that its interest in the Edinburgh market was triggered by an approach from Dr Errington, who was looking for a private healthcare group to manage and grow the business.

²³ Patients would continue to travel to Glasgow for the IVF treatment itself but would no longer need to travel for the associated consultations, tests and scans.

56. Aspen carried out an evaluation of the market as part of its due diligence process and identified a number of possible challenges and risk, including:
- (a) recognition had not been obtained from all PMIs for theatre procedures (nor prices agreed), although most had provided verbal support;²⁴
 - (b) the prevalence of 'Dear Doctor'²⁵ referrals which are distributed to consultants by hospital facilities not only 'makes it very difficult for aspiring consultants to build a strong and commercially rewarding practice' but that it also meant 'very little practice can be brought instantly to the Clinic due to the majority of referrals going straight to Spire Murrayfield'; and
 - (c) it was 'essential' to gain access to the SCI Gateway system in order to attract referrals from GPs. Dr Errington also highlighted the importance of gaining access to this system.
57. In spite of these risks, Aspen decided that Edinburgh met its criteria for investment in an ASC [X]. It noted that TEC was 'a new phenomenon' in Scotland but that the investment 'allows Aspen early entry into an attractive emerging market at a relatively low investment exposure'. In addition, although not part of Aspen's business case for the investment, it identified a further potential opportunity arising from a number of initiatives by the Scottish NHS to work with external providers with an objective of increasing capacity. Aspen's view was that capacity constraints in the local NHS would mean private provision would be required to meet their commitments.
58. Aspen's plan was to develop a broader range of services than those currently offered, including urology, cosmetic surgery, cardiology and diagnostics.
59. Aspen entered into discussions regarding a joint venture with TEC in October 2009, and completed the deal in January 2011, acquiring a 50 per cent stake for £[X].

FIGURE 8

The Edinburgh Clinic



Source: TEC website.

²⁴ Aspen indicated that AXA PPP, in particular, was reluctant to commit to recognition or agree prices. However, AXA PPP's low penetration in the Edinburgh market was considered to counteract this risk.

²⁵ 'Dear Doctor' referrals are sent directly to a hospital, which then passes the referral to an appropriate consultant, rather than being addressed to a specific consultant.

Performance of TEC

60. Aspen initially forecasted revenues of £[redacted] million in 2011, rising to £[redacted] million by 2013. [redacted]. Aspen estimated that the clinic needed to undertake [redacted] scans and [redacted] minor procedures per month in order to become cash positive.
61. During 2011, TEC performed [redacted]. In addition, it has taken up to four years for TEC to gain access to the SCI Gateway system (effective from January 2013), although it is unclear what impact this may have had on performance.²⁶
62. Aspen told the CC that it had taken a number of steps to improve the performance of the clinic, including:
- (a) In October 2011, Aspen increased its equity stake in the clinic to 90 per cent.
 - (b) Aspen had invested £300,000 in developing the operating theatre, with day-case procedures in ophthalmology, cosmetics, urology, orthopaedics, ENT and general surgery commencing from January 2012.
 - (c) TEC had signed a 'treat' contract with a local health trust under which it was carrying out around [redacted] MRI scans and [redacted] procedures per month. Aspen indicated that this contract had been effective in raising the profile of the clinic among local GPs and consultants.
63. Aspen told the CC that these changes were starting to show results, with the clinic [redacted] and a number of new consultants bringing work to the clinic. [redacted]
64. Figure 9 shows the performance of TEC compared with Aspen's initial forecasts for the facility.

FIGURE 9

Financial performance of TEC

[redacted]

Source: Aspen.

65. TEC is recognized by all the PMIs with Aspen indicating that obtaining this recognition had not been 'as challenging as it might have been if TEC had overnight facilities'. Dr Errington told the CC that an advantage of Aspen's involvement with the clinic was its ability to bring 'firepower' to the negotiations with the PMIs.

Competitive response

66. Dr Errington stated that he believed the entry of TEC had provoked a limited competitive reaction from Spire, in part due to its relatively small scale and focus on diagnostics and minor procedures, with consultants continuing to refer their patients to the Murrayfield hospital for inpatient treatment.²⁷ For example, he stated that Spire did not appear to have changed its self-pay prices for certain scanning procedures, such as MRI, despite the lower prices charged by TEC.

²⁶ Aspen stated that it had taken two years to gain access to the SCI Gateway system, whilst Dr Errington told the CC that the process had taken four years.

²⁷ Dr Errington told the CC that Spire's decision to start offering IVF services at its Shawfair Park hospital may have been a direct response to its agreement with GCRM in 2009. However, we note that the business case prepared by Spire in April 2008 includes revenue forecasts for IVF treatments at the Shawfair hospital.

67. Spire told the CC that it had recently invested in new optometry equipment in order to better compete with TEC for patients.

BMI

68. BMI first identified Edinburgh as a target market during a network strategy review undertaken in 2005. The city was identified as a gap in BMI's portfolio of hospitals and a key target [REDACTED]. The market was viewed as being 'worthwhile' on the basis of having a local population of more than 40,000 people with private medical insurance. BMI noted that the transfer of the activities of the Royal Infirmary to the Little France area of the city reduced the attractiveness of Murrayfield's location and that there were at least two potential sites for a new hospital which were now better located. However, this strategy review also noted that the Edinburgh area might not be sufficiently large to accommodate two hospitals.
69. In early 2007, both the Edmonstone and the Shawfair sites were reviewed by BMI as potential means of entry. The Shawfair site was initially considered attractive for a number of reasons, including its proximity to affluent populations in south-central Edinburgh and the border region, good transport links, a positive planning environment, and its location next to the ERI, which was considered to provide access to consultants.
70. However, in July 2007, BMI's board came to the conclusion that the Edinburgh area was not sufficiently attractive since 'either significant growth of the market in the area or significant cannibalization of BUPA Murrayfield's work was required to make the project viable'. [REDACTED]
71. In addition, BMI noted several features which reduced the perceived opportunity for BMI in Edinburgh at the relevant time, including:
- (a) Circle's intention to build a hospital in Edinburgh;
 - (b) the low level of PMI penetration in Scotland; and
 - (c) the recent change of Government in Edinburgh, with the SNP winning a majority.
72. On the other hand, BMI noted that the Murrayfield hospital did not have an ICU and so more complex, higher acuity work was being done by the NHS in Edinburgh rather than the private sector. This was considered an opportunity for a new entrant.
73. [REDACTED]
74. In early 2010, BMI identified a joint venture with TEC as a potential means of entry. [REDACTED] It went on to highlight the opportunity to attract consultants and their business to TEC and other BMI facilities and away from Spire's hospitals: [REDACTED].
75. BMI did not proceed with the acquisition of TEC because it was unable to agree commercial returns with the owners.

Conclusions

76. The experience of the private hospital operators in Edinburgh provides a number of interesting insights into the dynamics of competition in the private healthcare market, both in Edinburgh itself and more generally.

77. Several operators identified Edinburgh as a desirable area in which to have a hospital due to the size of the insured population—more than 40,000 people—and the existence of a single provider [X]. Furthermore, there were at least two sites near to the ERI that were both available and able to achieve planning permission for a hospital.
78. BMI, Circle and TEC all sought to enter Edinburgh but only the latter has done so and via a diagnostic and day-case facility rather than a full service hospital. Their experiences highlight a number of pertinent factors:
- (a) the importance of economies of scale in hospital provision (particularly inpatient services) and the limited level of demand for private healthcare in certain areas, which may make entry, at least in the format of a full-service hospital, unprofitable;
 - (b) the incumbent operator in an area may face a different calculation than a new entrant when deciding whether or not to expand, with the potential costs of losing its existing solus position being taken into account alongside the potential growth opportunity from expansion. A new entrant will only consider the potential returns from operating a hospital in competition with the incumbent;
 - (c) TEC's approach to entry—opening a diagnostic and day-case facility—appears to have circumvented the issue of economies of scale and the risks of large-scale entry by focusing on a specific part of the market. The focus on outpatient and diagnostic services may also have minimized the issues associated with obtaining PMI recognition; and
 - (d) the existence of NHS-funded work has the effect of increasing the level of demand for privately-provided healthcare services but this facilitates entry to a lesser extent where there are risks that the work will not continue in the longer run.

Measuring local concentration using the LOCI measure

Introduction

1. This appendix provides a detailed explanation of the LOCI measure of market concentration. This is one of two concentration measures that we have used in this inquiry—see Appendix 6.5 for our initial filtering exercise (where the concentration measures have been used to exclude certain hospitals from our local competitive assessments) and Appendix 6.9 for our price-concentration analysis (where the relationship between the concentration measures and self-pay prices has been tested).
2. Concentration measures are commonly used as part of an assessment of firms' unilateral market power.¹ Such measures are typically market-share-based, and common examples include fascia counts (the number of rivals in a local area) and the HHI indices (the summation of market shares squared). The former can be thought of as a market-share-based measure that treats all competitors as equally sized, while the latter as a market-share-based measure that assigns more weight to firms that have high market shares compared with those that have low market shares. These measures are ideally based on a well-defined market (in the product and geographic dimensions), but catchment areas are at times used to inform and proxy the relevant geographic market.² The OFT and CC has used these concentration measures and catchment area techniques in a number of previous inquiries.³
3. In this appendix, we explain that the LOCI measure is also a market-share-based measure, and in this respect is related to the concentration measures noted above. The appendix is structured as follows. First, we provide some background to the LOCI measure. Second, we set out our reasons for using the LOCI measure in this inquiry. Third, the LOCI methodology is explained. Fourth, empirical issues with LOCI that are specific to this inquiry are considered. The final section of this appendix summarizes our results.

Background to the LOCI measure

4. The LOCI measure originated in the health economics literature. In a working paper by Akoso Antwi, Gaynor and Vogt (2006),⁴ the authors derive a 'competition index' that reflects pricing power in a particular underlying economic model.⁵ This measure is referred to as the 'Logit Competition Index' (LOCI). After deriving the measure, the authors apply the technique to assess the potential impact on prices of healthcare mergers in California.

¹ CC *Guidelines for Market Investigations*, paragraph 101.

² CC *Guidelines for Market Investigations*, paragraph 148.

³ For example, the CC *Aggregates Market Investigation*, CC *Groceries Market Investigation*, and the recent aggregates merger (*Anglo American PLC/Lafarge SA*), and the recent travel agency merger inquiry (*Thomas Cook Group plc/Co-operative Group Limited/Midlands Co-operative Society Limited*).

⁴ Y Akosa Antwi, M Gaynor & W B Vogt, 'A competition index for differentiated products oligopoly with an application to hospital markets', unpublished manuscript, 2006.

⁵ The model assumes logit demand, a differentiated products oligopoly and Bertrand pricing.

5. Following that initial paper, the LOCI measure has been used by the Dutch healthcare regulator, NZa, in a number of cases.⁶ The LOCI measure is also referred to in the Handbook of Health Economics, in a chapter written by Professor Martin Gaynor and Dr Robert Town.⁷ In that chapter the authors present estimates of the LOCI measure for hospitals in the Netherlands. In other work that is currently unpublished, the LOCI measure has also been used in relation to the Irish healthcare market,⁸ and the USA.⁹
6. While the LOCI measure has received some use, as noted above, it has not been applied as extensively as other concentration measures used by academics and competition authorities. The parties to this inquiry have expressed concerns in this regard. In our view, the fact alone that the LOCI measure has not been widely used to date does not lead us to consider it inappropriate for the purposes of this inquiry. We explain in more detail below (see paragraphs 11 to 19) our reasons for using LOCI in this case. However, in response to the parties concerns, we note several factors that may explain the current level of precedent. First, the LOCI measure has significant data requirements and this is likely to prevent its use in many situations. Second, while certain merits of the LOCI measure (explained later in paragraphs 11–19) are beneficial when analysing healthcare markets, the application of competition policy to these markets is still developing and is relatively new in Europe.
7. A third reason for the concern is that the paper by Akoso Antwi, Gaynor and Vogt (2006) justifies the use of LOCI on the basis of a particular economic model, and this may not be seen as an appropriate economic model in certain applications. The parties have raised several specific concerns in this regard.¹⁰ We would emphasize that our interpretation of LOCI, explained in the paragraph below, does not rely on the assumptions of any particular economic model holding.¹¹ This is consistent with how other concentration measures, such as fascia count and HHI, are routinely applied by the OFT, CC and other competition authorities. This point is noted in the Handbook of Health Economics.¹²
8. Reformulating the equation for the LOCI, we see that it is in fact equal to one minus a weighted-average market share. Annex A shows this formula explicitly. Interpreted in this way, rather than as the result of a particular economic model, we consider the LOCI measure to have intuitive and economic appeal. It also shows that the LOCI measure is closely related to other more commonly employed concentration measures, such as fascia counts and HHI. This second point—ie its relation to other

⁶ See, for example: NZa (2011), Monitor Medisch Specialistische zorg, April; NZa, Marktscan Ketenzorg weergave van de markt 2007–2010; and, RS Halbersma, Dutch Healthcare Authority, Market Definition in Healthcare, February 2, 2011.

⁷ M Gaynor and R Town (2012), 'Competition in Health Care Markets', *Handbook of Health Economics: Volume two*, edited by Mark V Pauly, Thomas G McGuire, Pedro Pita Barros.

⁸ M C Mikkers and P Ryan (2011), 'Managed Competition' for Ireland?', TILC Discussion Paper No 2011-023, 30 March.

⁹ Y A Antwi, M S Gaynor, and W B Vogt (2007), 'Evaluating the Performance of Merger Simulation: Evidence from the Hospital Market in California', iHEA 2007 6th World Congress: Explorations in Health Economics Paper.

¹⁰ For example, the parties have argued: the underlying logit model is not aligned with certain characteristics of the UK healthcare market (eg it assumes price-sensitive patients, which is unlikely for those with PMI coverage), the underlying logit model assumes restrictions on patient substitution patterns, and that the LOCI measure is not a reasonable indicator of market power when compared with the Hotelling (1929) model.

¹¹ We note that HCA submitted that it agreed with our interpretation of one minus LOCI as a weighted-average market share, although it noted that the measure is sensitive to the choice of geographical submarkets. We discuss the issue of submarket choice later in this appendix.

¹² Regarding HHI, the authors note 'in most applied settings it is difficult to square a strict functional relationship between price and the HHI with economic theory. Basic oligopoly theory posits a functional relationship between HHI and prices only with Cournot behavior—quantity setting with homogenous products. Homogenous product, quantity setting models are inconsistent with the institutional facts of hospital markets, as we have previously indicated.'

measures—is explicitly discussed in the Handbook of Health Economics.¹³ The authors note that:

Some alternative models [to those that underpin HHI] generate pricing power as a function of market shares, and are thus related to the HHI. [Akoso Antwi, Gaynor and Vogt (2006)] develop a competition index for differentiated product oligopoly with logit demand and Bertrand pricing. They call the index ‘LOCI’ for Logit Competition Index.¹⁴

9. The authors go on to note an alternative to the traditional HHI calculation:

A common approach [in the health economics literature] to calculating the HHIs is to construct a HHI at the ZIP code level and then aggregate up to the hospital level [weighted using the hospital’s share of its patients it culls from each zip code].

One might more broadly think of the HHI as a proxy for the expected toughness of competition based on market structure. The HHI isn’t explicitly derived from an underlying theoretical framework, but is intended to capture the potential for competition. This has some appeal, but it is important to realize that while the HHI can be constructed to imperfectly capture geographic and product differentiation, nonetheless it likely contains meaningful measurement error.¹⁵

10. The weighted-HHI procedure outlined in the paragraph immediately above is almost identical to the LOCI measure.¹⁶ The weighted-HHI measure calculates, for each local area (zip code in the quoted text), the sum of market shares squared; the LOCI measure would do the same, but use the market shares directly (ie do not square them, and do not sum them). Both the weighted-HHI measure and the LOCI measure then aggregate these area-specific results to a hospital-level using the same weighting scheme. In the second quoted paragraph above, the authors justify the use of this weighted-HHI procedure.¹⁷ This same justification applies to the LOCI measure—ie it is simply a reasonable and intuitive way to measure differences in local concentration. In the next section of this appendix we explain why we consider the LOCI measure to be reasonable and also preferable to other concentration measures in the context of this inquiry.

Our reasons for using the LOCI measure

11. We have used two concentration measures in this inquiry, the fascia count measure (based on catchment areas) and the LOCI measure. In this section we explain our reasons for adopting the LOCI approach, and explain its merits relative to the fascia count measure and other measures that we also considered using in this inquiry.
12. Our starting point for measuring local concentration was the fascia count measure. This is the simplest measure of concentration available, and requires few details other than hospital locations (and a catchment area to be chosen). It is therefore a useful initial indicator of concentration that can be constructed relatively easily and

¹³ M Gaynor and R Town (2012), ‘Competition in Health Care Markets’, *Handbook of Health Economics: Volume two*, edited by Mark V Pauly, Thomas G McGuire, Pedro Pita Barros.

¹⁴ M Gaynor and R Town (2012), ‘Competition in Health Care Markets’, *Handbook of Health Economics: Volume two*, edited by Mark V Pauly, Thomas G McGuire, Pedro Pita Barros, p28.

¹⁵ *ibid.*

¹⁶ Examples of studies that take the ‘common approach’ referred to by Gaynor and Town include Kessler and McClellan (2000), Cooper et al (2011) and Gaynor et al (2012).

¹⁷ The authors also note measurement error, and we discuss this issue later in this appendix.

quickly. This is also the measure that several parties have adopted, and it fits with the 'solus hospital' definition used by the OFT.¹⁸ However, this measure has some limitations, that are particularly acute in this industry, and this led us to consider whether additional or alternative measures would be beneficial to our analysis.

13. There are two main limitations to the fascia count measure in this inquiry. First, the fascia count measure does not take account of any heterogeneity between hospitals (in terms, for example, of size, range of treatments and specialties offered, and relative location). It therefore treats as equal competitors a small hospital located towards the boundary of a catchment area and a large hospital located more closely, although these two hospitals are unlikely to act as equally effective competitive constraints. Second, the fascia count measure relies on the predefined catchment area, and is therefore subject to the typical concerns when catchment areas are applied (see paragraphs 5.64 to 5.67).¹⁹ As with the first limitation, the heterogeneity between providers and patients make this second limitation more acute than may be the case in other industries.
14. The LOCI measure, as we explain below, addresses both of the limitations of the fascia count measure. We therefore considered it as a useful addition to our analysis of local concentration. Given the merits of the LOCI measure, and because we have used it in conjunction with the fascia count measure throughout our analyses, we did not pursue additional concentration measures such as HHI (which, like fascia count, also relies on predefined catchment areas) or, as suggested by one party, demand-centred fascia count (which, like fascia count, does not reflect the heterogeneity between providers).
15. There are three specific aspects of the LOCI measure that we find particularly attractive. First, the LOCI measure takes advantage of the detailed data that we have available in this inquiry, in particular on patient home postcodes. This allows the measure to account for the heterogeneity between providers and patients, by taking into account: (a) exactly where demand is originating from; and (b) the relative strength of competitors in each local area. Catchment area approaches will likely be less accurate with regard to point (a), and fascia count measures do not take into account point (b).
16. Second, the LOCI measure does not rely on establishing geographic market boundaries. In the healthcare industry, where both patients and hospitals are very heterogeneous, it may be difficult to determine precisely the geographic boundaries of each local market, and thus avoiding a sharp geographic delineation is an appealing aspect of the LOCI measure. This point has also been made in the *Handbook of Health Economics*.²⁰ The parties have argued that by not taking into account the exact geographic market for each hospital, and by relying on disaggregated submarket calculations (explained later), LOCI may not be an accurate or meaningful measure of local concentration. We note, however, that when

¹⁸ OFT (2012), [Private Healthcare Market Study](#), April.

¹⁹ Examples include: catchment areas may be of different sizes and overlap potentially indicating asymmetric constraints between providers, yet the fascia count measure would not reflect this overlap; a hospital may be located just outside the boundary of the fascia count and thus be discounted as a potential constraint; and, a catchment area may be inaccurately measured due to differences in local geography. In our local competitive assessment, we acknowledge and take into account these limitations of the fascia count measure.

²⁰ The authors note that 'reduced form approaches generally require specifying a geographic market. This often relies on geopolitical boundaries (eg counties or Primary Metropolitan Statistical Areas (PMSAs)) to define the market. Geopolitical boundaries are unlikely to correspond to market definitions, and thus this approach will generate measurement error. As mentioned above, many recent SCP approaches construct a hospital-specific measure of the HHI by measuring the HHI at the ZIP code level and taking a share weighted average across ZIP codes to construct the hospital's HHI. This approach to calculating the HHI mitigates, at least to some degree, the third and fourth criticisms listed above.' The third criticism that the authors refer to relates to the geographic differentiation between hospitals that a traditional HHI calculation would not reflect, and the fourth criticism is that noted in the quote regarding market definition.

the ability to precisely define the geographic boundaries of each local market is limited, other concentration measures may also be subject to similar criticisms.

17. As a result of this second aspect, the LOCI measure also does not rely on as many subjective decisions as other concentration measures. For example, to calculate a fascia count measure requires specific rules regarding: the competitor set, the measure of distance (eg travel time or distance), the percentile of patients that will define the catchment boundary (eg 80 per cent), and, in a price-concentration analysis, the different distance bands for each variable. The LOCI measure, in contrast, relies only on a submarket definition (discussed later).
18. Third, research in the health literature has consistently shown distance to be an important element of patients' preferences and thus a driver of hospital choice.²¹ Given that hospitals are differentiated by geographic location, hospitals that are nearer are likely to represent a stronger constraint than hospitals that are further away. The weighting scheme implicit in the LOCI measure typically assigns more weight to a hospital's share of patients in local areas that are nearby—as a result, the preferences of patients with regard to geographic differentiation are directly reflected in the concentration measure.²² This is not the case for other concentration measures such as the fascia count and HHI.
19. In summary, we consider that, in the context of this inquiry, the LOCI measure, interpreted as a weighted-average market share, is intuitive and has certain aspects that make it preferable to the fascia count measure, as well as other catchment-area-based concentration measures such as HHI. We would also like to emphasize that we use both LOCI and fascia count measures in parallel throughout our analyses, and in a cautious manner—in the local competitive assessment they are used as an initial filter, and in the price-concentration analysis the estimated relationship is tested and not assumed.

Methodology and interpretation

20. We now turn to the methodology for calculating the LOCI measure. Calculating LOCI involves two basic steps. First, in all submarkets, the submarket share is calculated for each hospital. Second, these submarket shares are aggregated to the hospital level under a particular weighting scheme. The details of this methodology are at first illustrated with a worked example. A more general step-by-step description of the methodology is then given, followed by a description of how to interpret the LOCI measure.

A worked example

21. The following example illustrates the steps taken to calculate the LOCI measure, and the details of the calculation. An anonymized hospital from our data is taken as the example, with the number of submarkets reduced to simplify the calculations. We use

²¹ In response to the [CC patient survey](#), 48 per cent of private patients indicated that 'geographic location' was an important reason for their choice of private hospital. This is over ten percentage points higher than the second most commonly indicated reason ('previous experience'). See summary of responses to question D5, slide 42 of the survey report.

²² The parties noted that the weighting scheme in LOCI is assigning larger weights and thus emphasising the areas close to the hospitals from which the hospital draws a lot of patients, but that the relevant customers in terms of competitive constraint (and assessment of market power) are those who would be likely to switch if, for instance, prices change. We note that the same argument could be made with regard to fascia count and market shares when these are defined over a catchment area that does not include 100 per cent of customers (80 per cent is a typical choice). These measures therefore place no weight on customers that live outside the catchment area (ie less weight than LOCI does). Moreover, we do not consider this issue to raise material concerns for our analysis as we are primarily interested in a hospital's LOCI relative to other hospitals, and the issue would affect all hospitals in a similar way.

outward postcode areas for the submarkets—this is the area that corresponds to the first part of the postcode (eg EC1N, LE12). We discuss this choice in more detail later.

22. The example focuses on a single ‘focal’ hospital. This focal hospital draws patients from around 450 submarkets. For the purposes of this example only four (anonymized) submarkets are considered, denoted: SM1, SM2, SM3 and SM4. The four submarkets were chosen for this example as each includes a substantial number of patients, and the four are roughly equally sized. Table 1 below shows the total number of patients in each submarket (column B), and how many of these patients attended the focal hospital (column C).

TABLE 1 **Worked example—LOCI with four submarkets**

Submarket (A)	Number of patients (B)	Number of patients attending focal hospital (C)	Market share of focal hospital (D) %	Proportion of all patients attending focal hospital (E) %
SM1	2,020	889	44	60
SM2	2,009	557	28	37
SM3	2,420	29	1	2
SM4	2,519	19	1	1
All areas	8,968	1,494	17	100

Source: CC analysis.

Note: Numbers may not sum due to rounding.

23. As shown in the table above, the focal hospital has a different market share in each of the four submarkets (column D), ranging from 1 per cent (SM3 and SM4) to 44 per cent (SM1). The patients from each of these four submarkets also account for a different proportion of the total patients attending the focal hospital (column E), with SM1 representing the largest proportion of the hospital’s patients (60 per cent) and SM4 representing the lowest proportion. LOCI is calculated as: one minus the average market shares for each submarket, weighted according to the proportion of total patients attending the focal hospital. That is:

$$\text{LOCI} = 1 - [(0.44 \times 0.60) + (0.28 \times 0.37) + (0.01 \times 0.02) + (0.01 \times 0.01)] \\ = 0.63$$

24. In this example, the LOCI equals 0.63. This is equal to one minus the weighted average market share of 37 per cent. Underlying the calculation are four separate market shares (1 per cent, 1 per cent, 28 per cent and 44 per cent). The weight given to each submarket represents the proportion of the total patients attending the focal hospital—one interpretation of this weighting scheme is that it reflects the importance of each submarket to the focal hospital. The area SM1, which the focal hospital draws most of its patients from, has the highest weighting, and SM4 has the lowest weighting.
25. In practice, we find that the submarkets attracting the highest weights are typically those nearest the focal hospital. This likely arises from patients’ preference for receiving treatment locally.²³ The weighting scheme can therefore often be interpreted as giving more weight to submarkets in close proximity to the focal hospital. In the worked example, this point is not immediately clear because we have

²³ In our survey, ‘geographic location’ was the most commonly given answer by patients when asked what were the most important reasons for choosing the private hospital that they attended (48 per cent). See [CC patient survey](#), slide 42, question D5.

simplified the calculation to only four submarkets. This type of weighting scheme does not feature in traditional concentration measures but does feature in concentration measures used in the health economics literature (as cited earlier).²⁴

26. The LOCI calculation as described above is referred to as the hospital's 'individual LOCI', since it ignores any common ownership that the focal hospital has with other hospitals. It reflects the average market share (across submarkets) of a hospital assuming the patients that do not attend the focal hospital attend rival hospitals, each of which acts as a competitive constraint.
27. If, however, the focal hospital is part of a hospital group that owns other hospitals, then not all other hospitals may be rivals that act as potential competitive constraints. If hospitals owned by the same hospital operator draw patients from one or more of the four submarkets then a hospital's individual LOCI may understate the degree of local concentration. This is indeed the case with the example. Table 2 below extends the previous table by showing the total number of patients in each submarket that attend all hospitals owned by the same hospital group as the focal hospital (column C2).

TABLE 2 Worked example—LOCI with four submarkets, accounting for common ownership

Submarket (A)	Number of patients (B)	Number of patients attending focal hospital (C)	Number of patients attending focal hospital and other hospitals owned by the same group (C2)	Market share of hospitals of group that owns focal hospital (D2) %	Proportion of all patients attending focal hospital (E) %
SM1	2,020	889	1,030	51	60
SM2	2,009	557	893	44	37
SM3	2,420	29	1,397	58	2
SM4	2,519	19	101	4	1
All areas	8,968	1,494	3,421	38	100

Source: CC analysis.

Note: Numbers may not sum due to rounding.

28. As the table above shows, within each submarket there are a substantial number of patients that do not attend the focal hospital, but do attend other hospitals owned by the same hospital group (ie the difference between columns C2 and C). Thus, the market share of the hospital group in each submarket (column D2 in Table 2) substantially exceeds the market share of the focal hospital (column D in Table 1)—at the extreme, in SM3, the focal hospital has a market share of only 1 per cent while the hospital group in total has a market share of 58 per cent. The individual LOCI does not reflect the higher submarket shares that are expected to come about through the hospital group's ownership of a hospital network. We now modify the previous LOCI calculations to reflect this 'network effect'.
29. The LOCI, modified to reflect the network effect, is obtained by calculating the market share of the hospital group in each submarket rather than the market share of the

²⁴ To draw the analogy with traditional concentration measures, suppose that these were based on a catchment area that contained all four areas (SM1, SM2, SM3 and SM4). In this case, a traditional market share calculation would not distinguish between the submarkets, but would implicitly assign the largest weight to SM4, as it is the largest area, and the smallest weight to SM2, as the smallest area. This would lead to a market share figure of 17 per cent ($= 1,494/8,968$), which is very different to the weighted market share of 37 per cent that underlies the LOCI measure. The difference occurs because of the difference in weighting schemes. The LOCI measure assigns weights according to importance of each area to the focal hospital, which in practice typically coincides with the areas closest to the focal hospital, whereas the traditional market share calculation weights according to the relative size of each area. The traditional market share approach does not reflect the strong heterogeneity in concentration across the four submarkets, or incorporate any additional information about the location of patients.

individual hospital in each submarket. This modification is in line with how standard approaches to measuring concentration would treat multiple sites under common ownership (eg fascia count and HHI).^{25,26} In the example given:

$$\begin{aligned}\text{LOCI} &= 1 - [(0.51 \times 0.60) + (0.44 \times 0.37) + (0.58 \times 0.02) + (0.04 \times 0.01)] \\ &= 0.52\end{aligned}$$

30. We refer to this LOCI measure as the 'network LOCI' measure. This measure is equal to, or lower than the individual LOCI measure, reflecting that the hospital is expected to have at least as high market share once commonly owned hospitals are taken into account. It is the network LOCI measure that we use for the majority of our analysis, and when referring to 'LOCI', unless otherwise stated, we mean the network LOCI.

General methodology

31. The worked example given above is a simplified example with only four submarkets. To generalize the example, the same methodology is followed but taking into account all of the submarkets that the hospital draws patients from. The same calculation is then performed separately for all other individual hospitals. This produces two LOCI numbers for each hospital, an individual LOCI and a network LOCI. The difference between the two measures reflects the increase in local concentration that results from the common ownership of hospitals by hospital operators—we refer to this as the 'network effect'.
32. The LOCI can also be calculated using different measures of market shares. In addition to the method described above which is based on patient numbers (ie volume shares), we have also calculated LOCI using revenue shares. Revenue is calculated as the summation of the prices charged for hospital services to insured patients.²⁷ In this note we present results based on patient shares.
33. A step-by-step process for calculating LOCI is set out below:
 - (a) define the submarkets that will be dealt with. In our case, these are the outward postcode areas;
 - (b) for each hospital site, calculate the market share of the hospital site in each submarket. In our case, this has been done on the basis of volumes (ie patient numbers) and revenues (ie episode prices for hospital services) for inpatient visits relating to any of the set of 17 specialties;
 - (c) for each hospital site, calculate the weightings for each submarket that will be applied when averaging the market shares. In our case, this is the proportion of a hospital site's total volume (or revenue) stemming from that submarket;
 - (d) for each hospital site, calculate a weighted average market share, using the market shares and weights computed above. Individual LOCI is then equal to one minus this weighted average market share; and

²⁵ The modification is a departure from the LOCI methodology in the academic paper. In that paper, the authors apply an adjustment based on the underlying demand model. Since we do not rely on the assumptions of that demand model, we therefore do not pursue that specific adjustment.

²⁶ We do not modify the LOCI weightings.

²⁷ See Appendix 6.9 for a discussion of how these prices are constructed.

- (e) for network LOCI, repeat the above steps, but in step (b), replace the market share of the hospital site in each submarket with the summation of the market shares for all hospitals owned by the same hospital group in each submarket.
34. For the purposes of the local competitive assessments, we have calculated a LOCI measure based on insured patients. This measure has been used as an initial filter (see Appendix 6.5 for further details). The calculations were performed using data on insured patient visits in the Healthcode data.²⁸ The limitations of that data mean that we have calculated LOCI for 173 hospitals (discussed later in this appendix). The LOCI calculation has been performed once for the period 2009 to 2012; this period has been taken as a reference period, and the use of multiple years has the benefit of increasing the number of observations per submarket for the submarket share calculations. There are around 2,500 submarkets, and the median number of observations per submarket is around 250.
35. We have also calculated a LOCI measure based on self-pay patients for the purposes of the price-concentration analysis. This is described in more detail in Appendix 6.9.

Interpretation

36. LOCI always lies between zero and one, and can be interpreted in a similar way to (one minus) market shares. A higher LOCI corresponds to a lower market share, and therefore a 'low LOCI' hospital faces a higher degree of local concentration than a 'high LOCI' hospital.
37. A LOCI of zero (or close to zero) can be thought of as the monopoly benchmark. In practice, this means that a hospital draws its patients from a collection of submarkets, and for each submarket there are no patients who visit any other hospital. A LOCI of one (or close to one) can therefore be thought of as the perfectly competitive benchmark. In practice, this will never occur as all hospitals will have at least one patient and therefore, by definition, a market share of above zero in at least one submarket.
38. The difference between the individual LOCI and the network LOCI reflects the difference in local concentration that arises as a result of the common ownership of hospitals. The two LOCI terms will only be equal if either the hospital in question is an independent and has no other hospital sites under its control; or, the hospital in question is under common ownership, but the group's other hospitals do not draw any patients from common submarkets (ie the focal hospital and the other commonly-owned hospitals are operating in geographically distinct areas).

Empirical issues

39. Three empirical issues have come to our attention when calculating the LOCI measure in this inquiry. These issues are as follows: first, a choice must be made regarding the submarkets; second, our data is incomplete which may lead to errors in measurement; and third, LOCI performs less well when hospitals are highly heterogeneous. Each issue is taken in turn below.
40. The first issue relates to the choice of submarket. This involves a trade-off between accurate measurement of shares in each submarket (which benefits from bigger

²⁸ Healthcode is an intermediary between private hospitals and insurers. It is used by the majority of providers, including the large private hospitals and insurers, but does not include all providers.

submarkets with more observations per submarket), and a weighting scheme that reflects the level of heterogeneity between submarkets (which benefits from smaller submarkets that reflect heterogeneity more richly).

41. The parties have noted that, at the extreme, if submarkets each contained only one individual then the submarket shares would all equal either zero or one and, as a result of the weighting scheme, the LOCI measure would also be equal to either zero or one. We would note two points in relation to this. First, taking that extreme approach would also make the weighting scheme redundant—all submarkets that a hospital draws patients from would get the same weight and geographic differentiation would not be reflected at all. Second, in the other extreme case with no submarket disaggregation (ie there being only one single submarket) the weighting scheme again is redundant and the measure does not reflect any geographic differentiation. Both of these extremes do not achieve the objective that we have in mind when using the LOCI measure. The choice of submarket size is clearly an empirical issue and must be chosen in a sensible manner.
42. We have chosen outward postcode areas as the submarkets as we consider these to adequately reflect geographic differentiation. This splits the UK into around 2,500 regions, and the median number of observations per submarket is around 250. Our view is that this approach takes into account accurately the local differences in distance that are important to patients, but does not lead to such small submarkets that the shares are inaccurately calculated.
43. The parties have also argued that the LOCI measure is sensitive to the choice of submarket, with smaller submarkets leading to lower LOCI estimates. We recognize that different size submarkets can lead to different LOCI results, but consider our choice of outward postcode to be reasonable, and also preferable to the alternative submarket choices considered by the parties when testing our LOCI results.²⁹ We also note that similar issues arise with other measures of concentration being dependent on the specific geographic market definition that is adopted. In addition we would again emphasize that we use the LOCI measure in the context of many other pieces of information and we test rather than assume any relationship that LOCI may have with market outcomes.
44. The second issue relates to our data. While we have extensive and very detailed data available, our data is not fully comprehensive. A number of patient episodes are not recorded in the Healthcode data and this is primarily because certain hospitals do not use Healthcode as an intermediary with insurers. We have also been told that some of the smaller insurers do not use Healthcode, and that one of the medium sized insurers began using Healthcode only part-way through 2009–2012. Invoices are also missing because a small proportion of data was excluded as being erroneous or having missing information. We refer to the patient episodes not recorded in Healthcode as 'missing invoices'. These invoices may result in the submarket shares being misstated. This may happen if the missing invoices are missing systematically for particular hospitals.
45. Missing invoices as a result of our data exclusions are not thought to materially affect our results. This is because we do not consider the exclusions likely to have affected some submarkets more than others. For the same reason, we do not think that missing invoices due to omissions from the data of certain insurers are likely to have a material impact on our results. We do consider, however, that the missing invoices

²⁹ The parties have recalculated the LOCI measure using larger submarkets to demonstrate that the LOCI estimates are sensitive to the choice of submarket. We consider using submarkets larger than outward postcode to be a disadvantage—it removes the heterogeneity in patient locations and their distances to local hospitals.

as a result of hospitals not using Healthcode may bias the LOCI calculations to a degree. These omissions are likely to involve more missing invoices than the two previous categories (data exclusions and insurers), and these omissions are unlikely to affect submarkets in a similar way. Parties have also raised concerns in this regard. We have assessed this issue using the aggregated data on inpatient admissions that was sent to us in response to the Market Questionnaire. This is the most complete information on patient numbers that is available. Table 3 below shows, for each region of the UK, the estimated proportion of missing invoices associated with hospitals that do not have Healthcode invoices.

TABLE 3 **Estimated proportion of missing invoices, by region**

<i>Region</i>	<i>Inpatient admissions at hospitals not included in the Healthcode data set</i>	<i>Inpatient admissions at all hospitals</i>	<i>Estimated proportion of missing inpatient invoices, %</i>
East Midlands	0	13,954	0
East of England	711	33,087	2
London	15,461	89,478	17
North-East	463	7,591	6
North-West	0	31,232	0
Northern Ireland	2,003	2,003	100
Scotland	647	12,980	5
South-East	505	57,878	1
South-West	1,247	25,008	5
Wales	1,889	5,343	35
West Midlands	0	20,529	0
Yorkshire and The Humber	0	22,992	0
All regions	22,926	322,075	7

Source: CC analysis.

Note: Numbers may not sum due to rounding. Data on inpatient admissions not available for 23 of 219 hospitals and this may mean some of the estimated proportions are understated. However, since 7 of these 23 hospitals are located in London, Northern Ireland or Wales, and 11 of these 23 hospitals are PPU's (which typically have lower levels of admissions than private hospitals), these omissions are not expected to materially change the estimated proportions of missing invoices in most regions. Data on inpatient admissions has been used rather than insured admissions as the available data for inpatient admissions was more comprehensive. Regions are defined according to the NUTS1 classification.

46. Table 3 shows that the estimated proportion of missing invoices is around 7 per cent in total across the UK. This proportion varies significantly between regions, with London, Northern Ireland and Wales being the regions with the highest proportion of missing invoices.³⁰ Excluding London (missing invoices for around 17 per cent of inpatient admissions), Northern Ireland (100 per cent) and Wales (35 per cent), all regions have an estimated proportion of missing invoices that is no higher than 6 per cent of inpatient admissions in the region. While this indicates the LOCI measure will be less accurate in the regions with a larger proportion of missing invoices, we expect the impact to be limited for the majority of regions.³¹ However, when interpreting and using our LOCI measure, we take into account that there may be errors in measurement for particular hospitals and regions.³²

³⁰ The proportion of missing invoices may also vary across hospitals within a given region.

³¹ There are two factors that lead us to this conclusion. First, most hospitals draw patients from many submarkets and if the missing invoices only affect a relatively small number of these then any impact on the hospitals' overall LOCI measure may be limited. Second, changes in the shares for submarkets located at distance from the focal hospital will only have a small impact on the focal hospital's overall LOCI measure because of the weighting scheme. It is therefore unlikely that small proportions of missing invoices will have a large impact on a hospital's LOCI.

³² For example, in the price-concentration analysis, we consider whether the results are sensitive to the inclusion of the regions where there are a larger proportion of missing invoices and we also consider whether measurement errors may have an effect on the results of the analysis. Appendix 6.9 provides more details.

47. The third issue relates to the performance of LOCI in certain circumstances, and is an issue that also affects catchment area approaches. The issue arises when comparing hospitals that are of a very different nature—for example, consider a very large hospital with a strong reputation that draws patients from a very wide geographic area, as compared with a very small hospital that primarily serves local patients. In such circumstances, the large hospital's LOCI may be relatively high (ie towards one, indicating a less concentrated area) and the small hospital's LOCI may be relatively low (ie towards zero, indicating a more concentrated area). However, the difference between the two hospitals' LOCI is in part driven by the large hospital's competitive success. The same issue occurs with a catchment area approach, where wide catchment areas would result for the large hospital and narrow catchment areas for the small hospital.³³ These different sized catchment areas would also affect the concentration measures that rely on the catchment areas. We note that the effect of this issue is less of a concern for LOCI than for the catchment area approaches.³⁴ As with the missing invoices, we take these considerations into account when interpreting the filters based on LOCI (and fascia count).

Results

48. All results presented in this section are based on the insured patient data, and individual or network LOCI calculated using patient shares (ie volumes). Table 4 below summarizes the individual LOCI results by region. The table shows the number of hospital sites that fall into one of five categories of LOCI (up to 0.2, 0.2–0.4, 0.4–0.6, 0.6–0.8, above 0.8).

³³ Spire submitted a hypothetical example where a hospital's weighted average market share is shown to increase as a result of an increase in competition (eg following entry or a rival hospital becoming a stronger competitor in certain submarkets), suggesting that the hospital faces less competition rather than more. Spire argued that this showed that LOCI is unreliable as it fails to capture local dynamics meaningfully, since a market share measure should decrease rather than increase in such a scenario. We noted two points in relation to this example. First, this issue occurs in the example because the hospital's patient base (which LOCI and also catchment areas rely on) and its market share both change simultaneously due to the rival's competitive success. The same issue therefore applies to LOCI as well as all measures of concentration that are based on hospital-specific catchment areas, as highlighted in paragraph 47 above (for example, the competitive success of a rival may result in a hospital's catchment area shrinking and its fascia count appearing to reduce). Second, this issue, which results from LOCI and other concentration measures relying on a hospital's patient base, occurs when making cross-sectional comparisons between heterogeneous hospitals, and we have explained this above in paragraph 47 giving the small and large hospital example.

³⁴ This is because the concentration measures based on catchment areas will not directly take into account any overlap in catchment areas (and related asymmetric constraints), while the LOCI measure will take this into account.

TABLE 4 Results of individual LOCI by region (number of hospital sites)

Region	Individual LOCI = 0.0–0.2	Individual LOCI = 0.2–0.4	Individual LOCI = 0.4–0.6	Individual LOCI = 0.6–0.8	Individual LOCI = 0.8–1.0	Total
East Midlands	0	3	3	1	1	8
East of England	1	5	7	4	1	18
London	0	0	2	7	20	29
North-East	0	3	1	0	0	4
North-West	0	2	10	3	5	20
Northern Ireland	0	0	0	0	1	1
Scotland	2	2	2	1	0	7
South-East	0	2	16	14	7	39
South-West	0	9	5	0	2	16
Wales	1	1	2	0	0	4
West Midlands	0	2	8	3	1	14
Yorkshire and The Humber	1	1	6	2	3	13
Total	5	30	62	35	41	173

Source: CC analysis.

Note: LOCI calculated based on insured patient volumes. Regions defined by NUTS1 categories. London includes Central London and Greater London.

49. Table 4 above shows that five hospitals have an individual LOCI of less than 0.2—this corresponds to a weighted average market share of 80 per cent or more. In total, there are 97 hospital sites that have an individual LOCI of less than 0.6—this corresponds to a weighted average market share of 40 per cent or more. The LOCI results in Table 4 do not account for any network ownership and therefore may understate the level of local concentration for hospitals that are owned by hospital groups.

50. Table 5 below summarizes the network LOCI results (which account for the common ownership of hospital sites by hospital groups) by region. As with Table 4, these results are based on patient volumes.

TABLE 5 Results of network LOCI by region (number of hospital sites)

Region	Network LOCI = 0.0–0.2	Network LOCI = 0.2–0.4	Network LOCI = 0.4–0.6	Network LOCI = 0.6–0.8	Network LOCI = 0.8–1.0	Total
East Midlands	1	3	2	1	1	8
East of England	1	7	6	3	1	18
London	0	3	5	13	8	29
North-East	0	3	1	0	0	4
North-West	2	10	4	2	2	20
Northern Ireland	0	0	0	0	1	1
Scotland	4	2	0	1	0	7
South-East	0	12	12	11	4	39
South-West	1	8	5	0	2	16
Wales	1	1	2	0	0	4
West Midlands	0	5	7	2	0	14
Yorkshire and The Humber	1	4	4	1	3	13
Total	11	58	48	34	22	173

Source: CC analysis.

Note: LOCI calculated based on insured patient volumes. Regions defined by NUTS1 categories. London includes Central London and Greater London.

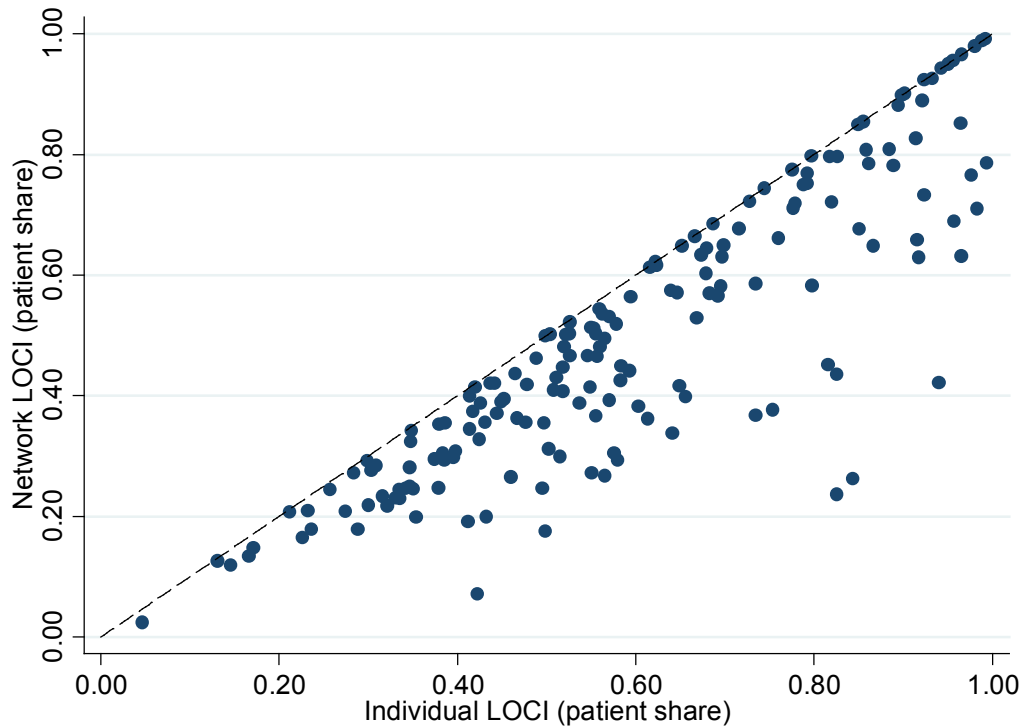
51. The comparison between Tables 4 and 5 indicates that levels of local concentration appear significantly higher once network ownership is accounted for. Table 5 above shows that 11 hospitals have a network LOCI of less than 0.2, as opposed to five

using the individual LOCI. In total, there are 117 hospital sites that have a network LOCI of less than 0.6, as opposed to 97 based on the individual LOCI.

52. Figure 1 compares individual LOCI with network LOCI.

FIGURE 1

Comparison of individual and network LOCI (patient shares)



Source: CC analysis.

Notes:

1. One dot corresponds to one hospital site.
2. Overlapping dots may mean multiple hospital sites are represented by a single dot.

53. Figure 1 shows network LOCI on the vertical axis and individual LOCI on the horizontal axis. If all hospitals were independently owned, the figure would show all points lying on the 45 degree line (ie network LOCI would equal individual LOCI). Points that lie below the 45 degree line are those hospitals that have a lower network LOCI than their individual LOCI—these hospitals are part of a network of hospitals that draw patients from some common areas.

Expressing LOCI as a weighted-average market share

1. Akosa Antwi, Gaynor and Vogt (2006) derive the LOCI as:³⁵

$$LOCI_j = \sum_{t=1}^T \frac{N_t \Pr_{(t \rightarrow j)}}{\sum_{t=1}^T N_t \Pr_{(t \rightarrow j)}} (1 - \Pr_{(t \rightarrow j)})$$

where $\Pr(t \rightarrow j)$ is the probability that a patient of type t attends hospital j , and N_t is the total number of patients of type t . If the patient types are specified according to geographic submarkets, then the probability that a patient of type t attends hospital j is, by definition, equal to hospital j 's market share in submarket t .

2. Noting that the denominator of the above equation for LOCI can be rewritten as the total number of patients at hospital j , $N_j = \sum_{t=1}^T N_t \Pr_{(t \rightarrow j)}$, LOCI can be rewritten as:

$$LOCI_j = 1 - \sum_{t=1}^T w_{tj} \Pr_{(t \rightarrow j)}$$

where $w_{tj} = \frac{N_t \Pr_{(t \rightarrow j)}}{N_j}$.

3. In this rewritten formula, LOCI can be seen as a weighted average of hospital j 's market shares for each patient type t , where the weights, w_{tj} , correspond to the proportion of total patients attending hospital j that are type t .

³⁵ Y O D Akosa Antwi, M Gaynor & W B Vogt, 'A competition index for differentiated products oligopoly with an application to hospital markets', unpublished manuscript, 2006, p6, equation (6).

Initial filtering of hospitals

Introduction

1. This appendix presents the methodology and results of the first stage of our local competitive assessment of hospitals. This first stage consisted of an initial filtering exercise. The aim of this exercise was to identify and exclude from further analysis those hospitals where we could, by a systematic method, form a view that there were unlikely to be competition problems. The remaining hospitals were identified as 'hospitals of potential concern' and evaluated in more detail in our local competitive assessments as described in Section 6).¹
2. The filtering exercise involved an analysis of hospitals' catchment areas and the two measures of local concentration: fascia count (within hospitals' catchment areas) and LOCI. Our assessment, as described in Section 5, focuses on 219 private hospitals and PPU's (215 general private hospitals/PPU's, plus four specialized private hospitals/PPU's).
3. We first discuss the methodology that we have used, and then present the results for our analysis. See Appendix 6.6 for a complete list of the 219 hospitals that we have taken into account in our analysis.

Methodology

4. Here we describe our methodology for calculating hospitals' catchment areas, the two concentration measures, and our approach to filtering.

Catchment areas

5. Catchment areas, the areas where most of a hospital's patients live, have been used for two purposes. First, they were used to inform our understanding of the local geographic market for each hospital. We take a hospital's catchment area to be indicative of the relevant geographic market for that hospital, although this approach may result in geographic markets being defined too narrowly in some instances (see paragraphs 5.62 to 5.69). Second, we have used the catchment areas to calculate fascia counts.
6. We defined a hospital's catchment area as the radius within which a given percentage of the hospital's patients originate from. We have used 80 per cent as the proportion of patients, and have measured the radius based on road distances (in miles) between patient home postcodes and hospital postcodes.² We use road distance rather than drive-time in this investigation as we found road distances to be the more conservative and less subjective measure.³ However, we took drive-time

¹ We note that the fact that a hospital was not identified by the filters did not preclude the possibility of it being further evaluated on the basis of further evidence and a more detailed analysis.

² The CC and OFT have used catchment areas based on an 80 per cent distribution in a number of their inquiries. See CC/OFT 'Commentary on retail mergers', March 2011; [Aggregates, cement and ready-mix concrete Market Investigation](#); [Thomas Cook Group plc/Co-operative Group Limited/Midlands Co-operative Society Limited](#); Completed acquisition by General Healthcare Group of control of four Abbey hospitals and de facto control over Transform Holdings Limited, previously part of the Covenant Healthcare Group: www.of.gov.uk/shared_of/mergers_ea02/2010/GHG-Abbey.pdf; Completed acquisition by General Healthcare Group of assets of Nuffield Hospitals: www.of.gov.uk/shared_of/mergers_ea02/2008/GHG.pdf.

³ With regard to the latter point, we found significant discrepancies between estimated journey times when using different mapping software. Given the scale of this investigation, we were concerned that this may affect some estimates (and thus

into account in our detailed local competitive assessments that followed the initial filtering.

7. Data on insured patient visits was used to calculate the catchment areas. We have used the Healthcode data set for this purpose.⁴ For the purpose of defining catchment areas, we consider the data on patient visits to be superior to the information gained in response to our patient survey because the data reports actual journeys (rather than stated journeys) and the data includes more patients than the survey (in total, and for each individual hospital). Following our cleaning of the data (see Appendix 6.9, Annex A for details), we have information available on over 500,000 inpatient visits over the period 2009 to 2012 (part year), when a treatment was performed by a consultant with a primary specialty in our set of 16 specialties,⁵ plus oncology. This set of specialties is the same as identified in our product market definition (see paragraphs 5.49 to 5.51). From our total of 219 private hospitals/PPUs, the cleaned Healthcode data includes patient visits in relation to 173 private hospitals/PPUs (172 private general hospitals/PPUs and one specialized PPU).
8. Catchment areas have been calculated for the 173 hospitals included in the cleaned Healthcode data. We have not distinguished between specialties or years when calculating catchment areas.⁶ There are two reasons for aggregating the specialties. The first reason is that, as set out in Section 5 (paragraph 5.54(b)), there is a reasonable degree of supply-side substitutability between specialties for the hospitals included in our set. The second reason is pragmatic: the number of patients receiving treatment for a particular specialty can be low, and aggregating across specialties avoids catchment areas being unduly influenced by the journeys of individual patients.
9. For the 46 hospitals not included in the Healthcode data, we have made assumptions to identify an indicative catchment area.⁷ We have assumed that a hospital's catchment area is equal to the median catchment area of other hospitals in the same region, except for hospitals in Northern Ireland. We also used this approach for four hospitals of the 173 hospitals that do have Healthcode data, but for which the number of observations is low (fewer than 100).⁸ For hospitals in Northern Ireland, which is a region that has no hospitals included in the Healthcode data,⁹ we have assumed that a hospital's catchment area is equal to the median catchment area of all hospitals in Great Britain (17 miles). These indicative catchment areas are subject to a degree of error relative to the true catchment area. However, we do not consider that this will affect our analysis because in our competitive assessment of individual hospitals, regardless of the precise boundaries of each hospital's catchment area, we have considered competitive constraints provided by hospitals located inside and outside the hospital's catchment area.
10. Parties have argued that our methodology results in catchment areas that are likely to understate the true geographic market (ie they are too small). We have received suggestions for alternative definitions of the catchment areas, including using a

some hospitals) more than others, and that it was most important to have a measure that is accurate and consistent. We acknowledge that there are, of course, differences between road distance and drive-time, but when using catchment areas only as a guide, as we do, we do not think any differences would materially affect our overall analysis.

⁴ Healthcode is an intermediary between hospitals and PMIs. It records line-by-line invoice data for each patient episode. The majority of hospitals and PMIs use Healthcode.

⁵ These specialties are obstetrics and gynaecology, general surgery, trauma and orthopaedics, anaesthetics, urology, gastroenterology, ophthalmology, otolaryngology, dermatology, plastic surgery, cardiology, general medicine, neurology, oral and maxillofacial surgery, rheumatology and clinical radiology.

⁶ As a result, the catchment areas are (implicitly) weighted by patient numbers in each specialty over the period 2009–2012.

⁷ Of the 219 hospitals that are included in our assessment, 173 hospitals are included in our cleaned Healthcode data. This leaves 46 hospitals that are not included in our cleaned Healthcode data.

⁸ These hospitals are Circle Bath, Ulster Independent Clinic, St Hugh's Hospital, and BMI Fitzroy Square.

⁹ With the exception of Ulster Independent Clinic. See footnote 8.

threshold of more than 80 per cent of patients, considering also self-pay patients (who on average travel further than insured patients) and using journey time (rather than road distance). Many (if not all) of these modifications would result in larger catchment areas. However, we considered that a conservative approach to the catchment area delineation was appropriate because it decreases the risk of overlooking hospitals that may be a potential concern. By using smaller catchment areas, our analysis has only resulted in some additional hospitals being selected for our local competitive assessment. As noted in the preceding paragraph, we do not consider this a concern because of our approach to the competitive assessment, which takes into account competitive constraints provided by hospitals located inside and outside the hospital's catchment area.

Fascia count

11. The first measure of concentration that we have used is the fascia count. We have defined the fascia count concentration measure as the total number of competitors that lie within a hospital's catchment area; a competitor is defined as one or more private hospitals/PPUs that are owned or managed by the same rival operator.
12. We have used two fascia count measures: (a) a fascia count that includes as competitors all general private hospitals and general PPUs providing inpatient care and offering one or more of our set of 16 specialties (215 general private hospitals and general PPUs in total); and (b) a fascia count that includes as competitors only those general and specialized private hospitals and PPUs providing inpatient care and also offering oncology services (139 oncology providers in total, comprised of general private hospitals, general PPUs and specialized private hospitals and PPUs). We have considered a separate fascia count for oncology because the number of providers that offer oncology is substantially below those offering the set of 16 specialties (see Section 5 for more details). The same catchment area is used for both fascia count measures for the two reasons noted above, namely the degree of supply-side substitution between specialties, and the practical advantages of calculating catchment areas for the specialties as a group.
13. We note two limitations of the fascia count measure. First, the fascia count measure does not take account of any heterogeneity between providers (in terms, for example, of size, range of treatments and specialties offered and type of area where the hospital is located). It therefore treats a small general private hospital located towards the boundary of a catchment area with the same weight as a large general private hospital located nearby. Second, the fascia count measure relies on the predefined catchment area, and is therefore subject to the typical concerns when catchment areas are applied (see paragraphs 5.64 to 5.67).¹⁰ We take these limitations into account when interpreting the results of the fascia count measure in the detailed local competitive assessment (eg by considering constraints from inside and also outside the catchment areas).

LOCI

14. The second concentration measure that we have used is the LOCI measure. Appendix 6.4 provides full details of the LOCI measure, and explains how this measure overcomes some of the limitations of the fascia count measure. The LOCI

¹⁰ Typical concerns when using catchment-area-based measures include: catchment areas may overlap but the count of rival fascias within each catchment area would not reflect this overlapping area; catchment areas may be of different sizes meaning that one hospital is counted as a competitor of another but not vice versa; or a hospital may be located just outside the boundary of the fascia count and thus be discounted as a potential constraint.

measure we have used is defined as ‘one minus a hospital’s weighted-average market share’ and is therefore a market-share-based concentration measure. Market shares are adjusted to take into account the common ownership of other hospitals located in any area where the hospital draws its patients (in Appendix 6.4 we refer to this LOCI measure as ‘network LOCI’). The weighting scheme assigns more weight to those areas where a hospital draws a large proportion of its total patients—in practice this means that more weight is typically given to those areas near a hospital. LOCI always lies between zero and 1; zero can be thought of as a monopoly benchmark and 1 as a perfectly competitive benchmark. A higher LOCI corresponds to a lower weighted average market share, and therefore a ‘low LOCI’ hospital is expected to face a higher level of local concentration than a ‘high LOCI’ hospital.

15. To calculate the LOCI measures for the purpose of the filtering exercise, we have used the same data on insured patient visits as for catchment areas (Healthcode). This means that we were able to calculate LOCI for the 173 hospitals referred to above. We have computed two LOCI measures: one based on patient visits (ie volume shares) and one based on revenue shares. In what follows, unless otherwise specified, for simplicity we use the term ‘LOCI’ to refer to the network LOCI calculated by patient shares (ie volume shares).
16. We consider the LOCI measure to have several benefits in the context of this investigation, in particular if compared with the fascia count measure. As described in more detail in Appendix 6.4, the LOCI measure takes into account the geographic differentiation between hospitals, accurately reflects where the patient demand originates from, and does not rely on a fixed catchment area or other geographic market definition. Therefore it is our view that the LOCI measure, compared with fascia count, is likely to provide a more accurate reflection of local competitive constraints facing a hospital.
17. The LOCI measure, however, has two limitations prompted by the shortage of data in some cases. First, as noted above, we were only able to calculate LOCI for 173 hospitals (out of 219) because the Healthcode data does not contain information for patient visits to all hospitals. We therefore cannot compute the measure for all hospitals. However, we do have fascia count results for the hospitals without Healthcode data. Second, because the Healthcode data does not include information for 46 hospitals, there are likely to be errors in the measurement of LOCI for the 173 hospitals that it does contain data for. This is because some of the submarket shares in the LOCI calculations will be overstated, as a result of the shares for hospitals without data being under-represented. The issue, referred to as the ‘missing invoices’, is discussed in Appendix 6.4, and in our view the majority of hospitals and regions are not materially affected this issue.¹¹ As we have only used the LOCI measure as an initial filter, which is then followed by a local competitive assessment that does not rely on the specific LOCI results, errors in measurement will not affect the outcome of our competitive assessment of each individual hospital of potential concern.
18. Parties have raised several objections to our use of the LOCI, and these are addressed in Appendix 6.4.

¹¹ Regions where the missing invoices may have had more of an effect on LOCI calculations are London, Northern Ireland and Wales.

Filters

19. We have used the two concentration measures, LOCI and fascia count, to identify the hospitals of potential concern. To this end, we have defined thresholds for each concentration measure. Hospitals that have a concentration measure below the threshold were identified as a potential concern, and have then been subjected to a local competitive assessment.
20. We have identified a hospital as being of potential concern if either of the following conditions are met:
 - (a) LOCI (patient share) and/or LOCI (revenue share) is below 0.6; and
 - (b) fascia count (set of 16 specialties) and/or fascia count (oncology) is equal to or below 1.
21. We considered it important that this initial filtering exercise was conservative so that we did not overlook any hospitals that may be a potential concern. We took this into account when selecting the above thresholds. To determine the LOCI threshold, we considered the market share thresholds that have often been used by the OFT, the CC and the European Commission to exclude cause of concern, namely less than 40 per cent in undifferentiated product markets.¹² This level approximately corresponds to a level of LOCI of 0.6. We selected the fascia count threshold on a similar basis: a fascia count of one corresponds to a local area with two competitors, which if evenly sized would imply market shares of 50 per cent.
22. The parties argued that our thresholds were determined on an ad hoc basis and were too conservative. As explained above, we determined the thresholds on the basis of commonly used thresholds, and consider it appropriate to take a conservative approach. Moreover, as explained in Section 6, these thresholds do not determine the outcome of our competitive analysis in any mechanistic way. Ramsay also noted that the filters were used in an additive manner, such that certain hospitals were highlighted by one filter but not by another filter. They argued that because of this our filtering approach was inconsistent. We do not consider this to be an inconsistency; in our view this is a benefit of using more than one filter—it ensures that we do not overlook hospitals that the use of only one filter might otherwise do. As explained above, there are strengths and weaknesses of the different concentration measures, and while we see significant advantages of the LOCI measure, it cannot be computed for all hospitals due to the data limitations.

Results

23. We present below the results of our analysis of the catchment areas, concentration measures and hospitals of potential concern.

Catchment areas

24. Table 1 shows the results of our catchment area calculations, by region and in aggregate for the UK.

¹² CC/OFT *Merger Assessment Guidelines*, CC2, paragraph 5.3.5. European Commission, [Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings](#), 2004/C 31/03.

TABLE 1 Hospital catchment areas, by region

<i>Region</i>	<i>Minimum catchment area miles</i>	<i>Median catchment area miles</i>	<i>Maximum catchment area miles</i>	<i>Total private hospitals/PPUs</i>
East Midlands	14	18	25	8
East of England	7	17	37	22
London	5	15	41	44
North-East	16	22	24	6
North-West	6	15	45	21
Northern Ireland	17	17	17	7
Scotland	17	23	34	8
South-East	9	16	37	49
South-West	11	22	29	20
Wales	14	28	43	7
West Midlands	8	15	51	14
Yorkshire and the Humber	8	19	24	13
All regions	5	17	51	219

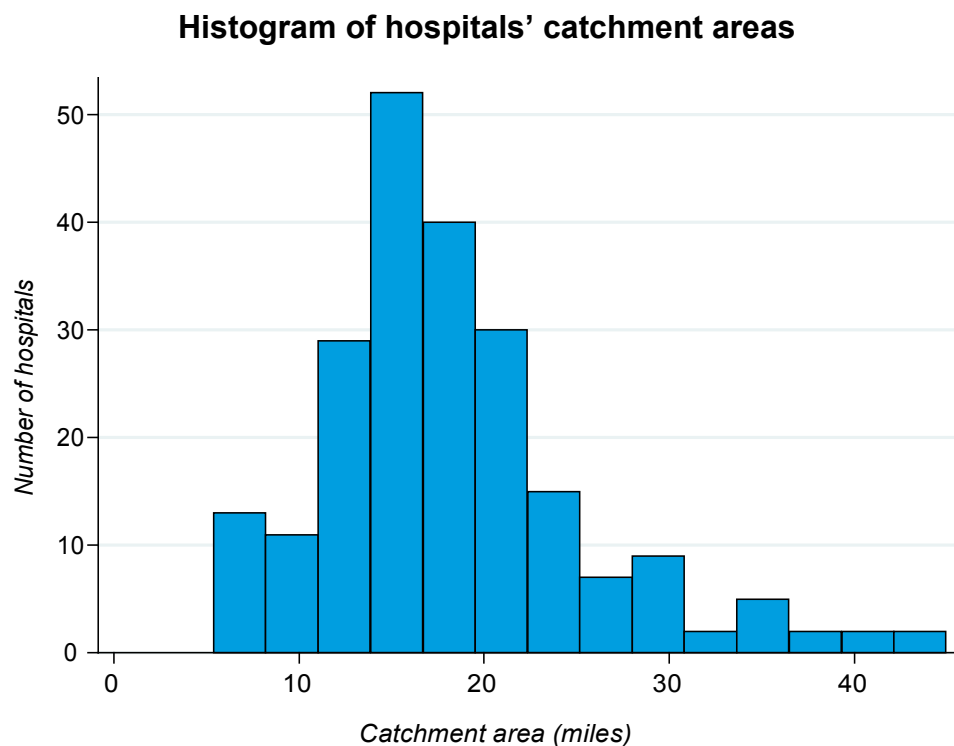
Source: CC analysis.

Notes:

1. Numbers may not sum due to rounding.
2. Regions defined by NUTS1 categories.
3. London refers to the NUTS1 region which includes central London and Greater London.

25. Table 1 shows that the median catchment for the UK is 17 miles, and that there is significant variation in the catchment areas which range from 5 to 51 miles. Most hospitals have a catchment area between 10 and 25 miles. Figure 1 shows the distribution of catchment areas.

FIGURE 1



Source: CC analysis.

Fascia count

26. Table 2 shows the fascia count results for the set of 16 specialties. The table shows the number of hospitals that face a certain number of competing fascias in their catchment area (indicated in the first row).

TABLE 2 Fascia counts (set of 16 specialties), by region

Region	Number of hospitals facing no competing fascias	Number of hospitals facing 1 competing fascia	Number of hospitals facing 2 competing fascias	Number of hospitals facing 3 or more competing fascias	Total private hospitals
East Midlands	4	4	0	0	8
East of England	9	2	6	5	22
London	2	3	2	34	41
North-East	0	2	4	0	6
North-West	8	4	7	1	20
Northern Ireland	1	0	6	0	7
Scotland	4	4	0	0	8
South-East	4	16	10	19	49
South-West	4	7	4	5	20
Wales	2	0	2	3	7
West Midlands	6	4	2	2	14
Yorkshire and the Humber	3	7	1	2	13
All regions	47	53	44	71	215

Source: CC analysis.

Notes:

1. Numbers may not sum due to rounding.
2. Regions defined by NUTS1 categories.
3. London refers to the NUTS1 region which includes central London and Greater London.

27. Table 2 shows that 100 (47 + 53) hospitals face one or zero competing fascias in their catchment area, and that 44 hospitals face two competing fascias in their catchment area. The remaining 71 hospitals face at least three competing fascias in their catchment area.

28. Table 3 shows the fascia count results for oncology only.

TABLE 3 Fascia counts (oncology), by region

Region	Number of hospitals facing no competing fascias	Number of hospitals facing 1 competing fascia	Number of hospitals facing 2 competing fascias	Number of hospitals facing 3 or more competing fascias	Total private hospitals providing oncology
East Midlands	5	2	0	0	7
East of England	9	1	4	3	17
London	2	3	1	20	26
North-East	1	0	3	0	4
North-West	9	2	1	0	12
Northern Ireland	0	0	0	0	0
Scotland	2	2	0	0	4
South-East	9	12	7	1	29
South-West	5	6	0	5	16
Wales	0	2	1	0	3
West Midlands	6	4	2	0	12
Yorkshire and the Humber	3	3	1	2	9
All regions	51	37	20	31	139

Source: CC analysis.

Notes:

1. Numbers may not sum due to rounding.
2. Regions defined by NUTS1 categories.
3. London refers to the NUTS1 region which includes central London and Greater London.

LOCI

29. Tables 4 and 5 show the results of our LOCI analysis for patient share and revenue share respectively. The tables show the total number of hospitals that have a LOCI measure within a certain range (indicated in the first row).

TABLE 4 **LOCI (patient share), by region**

<i>Region</i>	<i>LOCI: 0.0–0.2</i>	<i>LOCI: 0.2–0.4</i>	<i>LOCI: 0.4–0.6</i>	<i>LOCI: 0.6–0.8</i>	<i>LOCI: 0.8–1.0</i>	<i>Total private hospitals</i>
East Midlands	1	3	2	1	1	8
East of England	1	7	6	3	1	18
London	0	3	5	13	8	29
North-East	0	3	1	0	0	4
North-West	2	10	4	2	2	20
Northern Ireland	0	0	0	0	1	1
Scotland	4	2	0	1	0	7
South-East	0	12	12	11	4	39
South-West	1	8	5	0	2	16
Wales	1	1	2	0	0	4
West Midlands	0	5	7	2	0	14
Yorkshire and the Humber	1	4	4	1	3	13
All regions	11	58	48	34	22	173

Source: CC analysis.

Notes:

1. Numbers may not sum due to rounding.
2. Regions defined by NUTS1 categories.
3. London refers to the NUTS1 region which includes central London and Greater London.

TABLE 5 **LOCI (revenue share), by region**

<i>Region</i>	<i>LOCI: 0.0–0.2</i>	<i>LOCI: 0.2–0.4</i>	<i>LOCI: 0.4–0.6</i>	<i>LOCI: 0.6–0.8</i>	<i>LOCI: 0.8–1.0</i>	<i>Total private hospitals</i>
East Midlands	1	3	2	1	1	8
East of England	1	4	7	4	2	18
London	0	0	12	8	9	29
North-East	0	3	0	1	0	4
North-West	2	7	5	4	2	20
Northern Ireland	0	0	0	0	1	1
Scotland	4	2	0	1	0	7
South-East	0	5	16	12	6	39
South-West	1	7	5	1	2	16
Wales	1	0	2	1	0	4
West Midlands	0	4	8	2	0	14
Yorkshire and the Humber	1	4	3	3	2	13
All regions	11	39	60	38	25	173

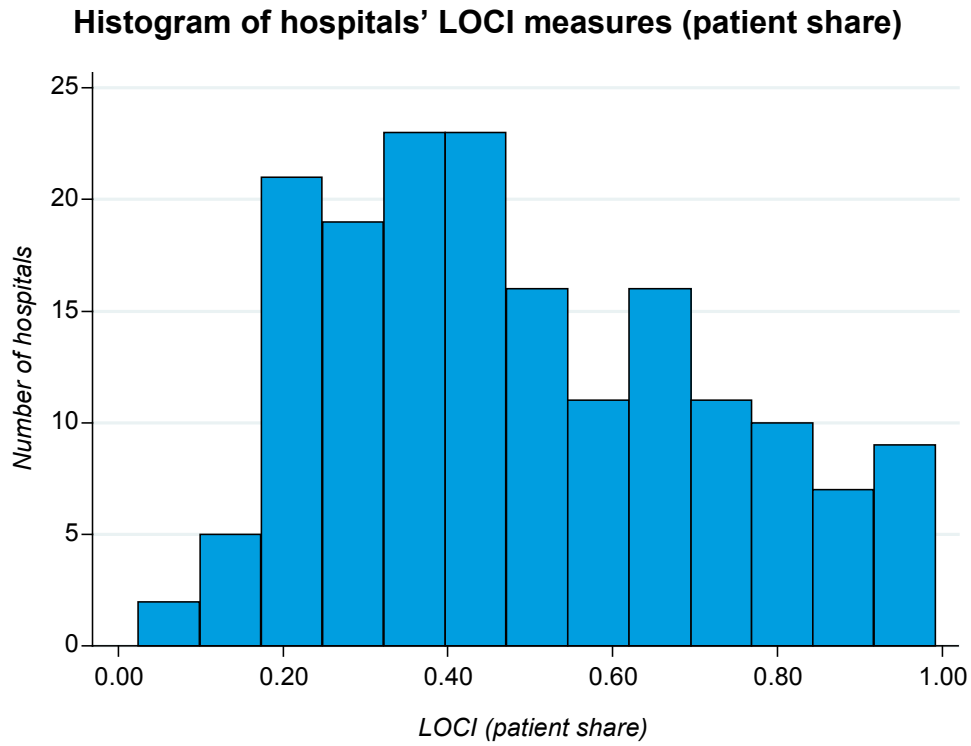
Source: CC analysis.

Notes:

1. Numbers may not sum due to rounding.
2. Regions defined by NUTS1 categories.
3. London refers to the NUTS1 region which includes central London and Greater London.

30. Table 4 shows that 117 hospitals (11 + 58 + 48) have a LOCI (patient share) of less than 0.6. This corresponds to a weighted average market share of 40 per cent or higher. Table 5 shows the analogous results but calculated with revenue shares, and shows that 110 private hospitals have a LOCI (revenue share) of less than 0.6. Figure 2 shows the distribution of LOCI (patient share) results for the 173 private hospitals.

FIGURE 2

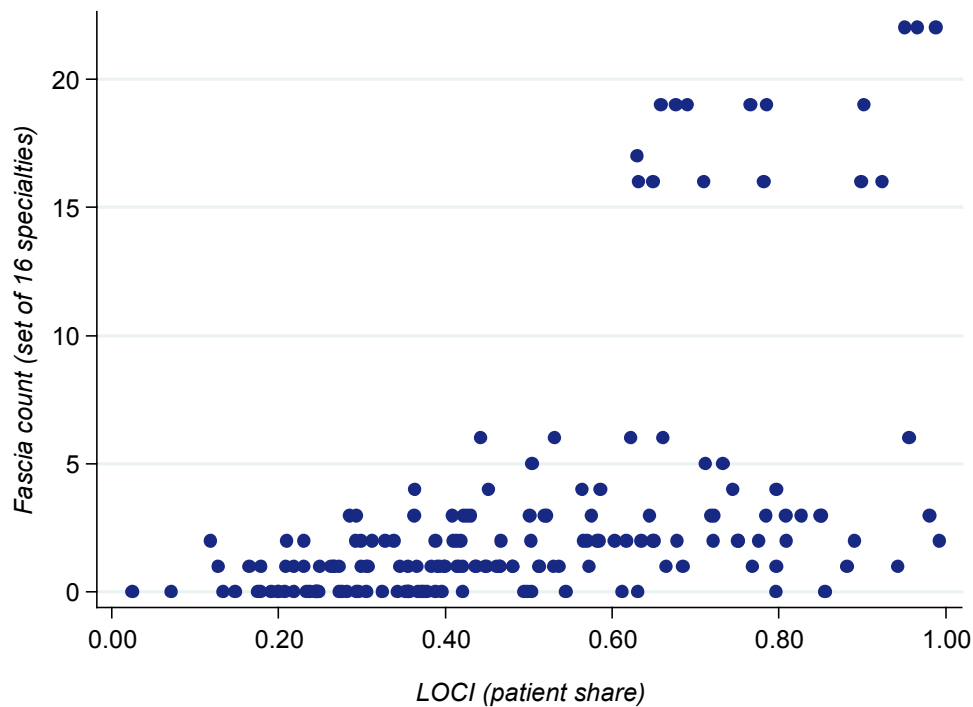


Source: CC analysis.

31. Figure 3 shows a comparison between the LOCI (patient share) measure and the fascia count (set of 16 specialties) measure.

FIGURE 3

Comparison of fascia count and LOCI



Source: CC analysis.

Notes:

1. One dot corresponds to one hospital site.
2. Overlapping dots may mean that multiple hospital sites appear to be represented by a single dot.

32. Figure 3 shows that the LOCI measure and fascia count measure are positively related.¹³ This is expected since hospitals facing fewer nearby competitors (lower fascia count) are expected to have a higher weighted average market share (lower LOCI).

Hospitals of potential concern

33. We now present the results of applying the filters and thresholds to identify the hospitals of potential concern. Table 6 sets out, for each region and in aggregate for the UK, the number of hospitals identified as of potential concern according to each concentration measure and its associated threshold.

¹³ The correlation coefficient is 0.53.

TABLE 6 Hospitals of potential concern, as identified by each filter individually

Region	LOCI (patient share) ≤ 0.6	LOCI (revenue share) ≤ 0.6	Fascia count (set of 16 specialties) ≤ 1	Fascia count (oncology) ≤ 1
East Midlands	6	6	8	7
East of England	14	12	11	10
London	8	12	5	5
North-East	4	3	2	1
North-West	16	14	12	11
Northern Ireland	0	0	1	0
Scotland	6	6	8	4
South-East	24	21	20	21
South-West	14	13	11	11
Wales	4	3	2	2
West Midlands	12	12	10	10
Yorkshire and the Humber	9	8	10	6
All regions	117	110	100	88

Source: CC analysis.

Notes:

- Numbers may not sum due to rounding.
- Regions defined by NUTS1 categories.
- London refers to the NUTS1 region which includes central London and Greater London.

34. Table 6 shows that, of the four filters, the LOCI (patient share) measure identifies the most hospitals of potential concern (117 of the 173 hospitals for which LOCI calculations are available), and the oncology fascia count identifies the least number of hospitals (88 of the 139 hospitals for which the oncology fascia count was calculated).

35. We now show the results of the filtering exercise when the filters are applied sequentially. Table 7 shows the number of hospitals of potential concern identified by the LOCI (patient share) filter, and then the additional hospitals identified by the other three filters, applied in the order shown from left (LOCI revenue) to right (fascia count, oncology).

TABLE 7 Hospitals of potential concern, as identified by filters applied sequentially

Region	LOCI (patient share) ≤ 0.6	Additional hospitals identified by: LOCI (revenue share) ≤ 0.6	Additional hospitals identified by: Fascia count (set of 16 specialties) ≤ 1	Additional hospitals identified by: Fascia count (oncology) ≤ 1	Total hospitals of potential concern
East Midlands	6	0	2	0	8
East of England	14	0	1	0	15
London	8	4	0	0	12
North-East	4	0	0	0	4
North-West	16	0	1	0	17
Northern Ireland	0	0	1	0	1
Scotland	6	0	2	0	8
South-East	24	0	6	4	34
South-West	14	0	2	0	16
Wales	4	0	0	1	5
West Midlands	12	0	2	0	14
Yorkshire and the Humber	9	0	2	0	11
All regions	117	4	19	5	145

Source: CC analysis.

Notes:

- Numbers may not sum due to rounding.
- Regions defined by NUTS1 categories.
- London refers to the NUTS1 region which includes central London and Greater London.

36. Table 7 shows that the total number of hospitals of potential concern is 145 of the 219 hospitals considered. It also shows that 117 hospitals are identified by the LOCI

(patient share) measure, and that there are an additional 28 hospitals (4 + 19 + 5) identified by the other three filters. Of the 12 hospitals of potential concern in London, five are located in central London.¹⁴ Note that we discuss these results with regard to central London in more detail in Section 6, paragraph 6.238.

37. Tables 8 and 9 show the breakdown of the 145 hospitals of potential concern by type of hospital (general private hospital, general PPU, specialized private hospital and specialized PPU), and by operator.

TABLE 8 Hospitals of potential concern, split by hospital type

<i>Hospital type</i>	<i>Total hospitals</i>	<i>Hospitals of potential concern</i>
General private hospitals	164	128
General PPUs	51	17
Specialized oncology private hospitals and PPUs	4	0
Total	219	145

Source: CC analysis.

TABLE 9 Hospitals of potential concern, split by operator

<i>Operator</i>	<i>Total hospitals</i>	<i>Hospitals of potential concern</i>
BMI	60	53
HCA	10	4
Nuffield	31	24
Ramsay	22	19
Spire	36	32
Other—general private hospitals	19	4
Other—general PPUs	40	9
Other—specialized oncology hospitals	1	0
Total	219	145

Source: CC analysis.

¹⁴ Of the five hospitals located in central London one was identified by the LOCI (patient share) measure and four by the LOCI (revenue share) measure. The hospital identified by the LOCI (patient share) measure was BMI Blackheath, and the four hospitals identified by the LOCI (revenue share) measure were the following HCA hospitals: Lister Hospital, Portland Hospital, Princess Grace Hospital and Wellington Hospital.

Hospital list

<i>Operator</i>	<i>Hospital name</i>	<i>Region</i>	<i>Private hospital/PPU?</i>	<i>Oncology?</i>	<i>Identified as potential concern by initial filters?</i>	<i>Sufficient or insufficient constraints?</i>
Addenbrook NHS Trust	Cambridge University Hospitals NHS Trust	East of England	PPU	No	No	Sufficient
Aspen	Claremont Hospital	Yorkshire and the Humber	Private hospital	No	Yes	Sufficient
Aspen	Highgate Hospital	London*	Private hospital	No	No	Sufficient
Aspen	Holly House Hospital	East of England	Private hospital	Yes	No	Sufficient
Aspen	Parkside Hospital	London	Private hospital	No	No	Sufficient
BMI	Albyn	Scotland	Private hospital	Yes	Yes	Insufficient
BMI	Alexandra	North-West	Private hospital	Yes	Yes	Insufficient
BMI	Bath Clinic	South-West	Private hospital	Yes	Yes	Sufficient
BMI	Beardwood	North-West	Private hospital	Yes	Yes	Insufficient
BMI	Beaumont	North-West	Private hospital	Yes	Yes	Insufficient
BMI	Bishops Wood	London	PPU	Yes	Yes	Insufficient
BMI	Blackheath	London*	Private hospital	Yes	Yes	Sufficient
BMI	CCH	London	Private hospital	Yes	Yes	Insufficient
BMI	Carrick Glen	Scotland	Private hospital	No	Yes	Insufficient
BMI	Cavell (aka Enfield)	London	Private hospital	Yes	Yes	Insufficient
BMI	Chaucer	South-East	Private hospital	Yes	Yes	Insufficient
BMI	Chelsfield Park	London	Private hospital	Yes	Yes	Insufficient
BMI	Chiltern	South-East	Private hospital	Yes	Yes	Insufficient
BMI	Coombe Wing	London	PPU	No	No	Sufficient
BMI	Droitwich Spa	West Midlands	Private hospital	Yes	Yes	Sufficient
BMI	Duchy (aka Harrogate)	Yorkshire and the Humber	Private hospital	Yes	No	Sufficient
BMI	Edgbaston	West Midlands	Private hospital	No	Yes	Sufficient
BMI	Esperance	South-East	Private hospital	Yes	Yes	Insufficient
BMI	Fawkham Manor	South-East	Private hospital	Yes	Yes	Insufficient
BMI	Fernbrae	Scotland	Private hospital	No	Yes	Insufficient
BMI	Fitzroy Square	London*	Private hospital	No	No	Sufficient
BMI	Foscote	South-East	Private hospital	Yes	Yes	Sufficient
BMI	Gisburne Park	North-West	Private hospital	No	Yes	Sufficient
BMI	Goring Hall	South-East	Private hospital	Yes	Yes	Insufficient
BMI	Hampshire Clinic	South-East	Private hospital	Yes	Yes	Insufficient
BMI	Harbour	South-West	Private hospital	Yes	Yes	Sufficient
BMI	Highfield	North-West	Private hospital	Yes	Yes	Insufficient
BMI	Huddersfield	Yorkshire and the Humber	Private hospital	No	Yes	Sufficient
BMI	Kings Oak	London	PPU	Yes	Yes	Insufficient
BMI	Kings Park	Scotland	Private hospital	No	Yes	Insufficient
BMI	Lancaster	North-West	Private hospital	No	Yes	Sufficient
BMI	Lincoln	East Midlands	Private hospital	Yes	Yes	Insufficient
BMI	London Independent	London*	Private hospital	Yes	No	Sufficient

<i>Operator</i>	<i>Hospital name</i>	<i>Region</i>	<i>Private hospital/PPU?</i>	<i>Oncology?</i>	<i>Identified as potential concern by initial filters?</i>	<i>Sufficient or insufficient constraints?</i>
BMI	Manor	East of England	Private hospital	Yes	Yes	Insufficient
BMI	McIndoe	South-East	PPU	No	No	Sufficient
BMI	Meriden	West Midlands	PPU	Yes	Yes	Sufficient
BMI	Mount Alvernia	South-East	Private hospital	Yes	Yes	Sufficient
BMI	Park	East Midlands	Private hospital	Yes	Yes	Insufficient
BMI	Princess Margaret	South-East	Private hospital	Yes	Yes	Insufficient
BMI	Priory	West Midlands	Private hospital	Yes	Yes	Insufficient
BMI	Ross Hall	Scotland	Private hospital	Yes	Yes	Insufficient
BMI	Runnymede	South-East	PPU	No	Yes	Sufficient
BMI	Sandringham	East of England	PPU	Yes	Yes	Insufficient
BMI	Sarum Road	South-East	Private hospital	Yes	Yes	Sufficient
BMI	Saxon Clinic	South-East	Private hospital	Yes	Yes	Insufficient
BMI	Sefton	North-West	PPU	No	Yes	Sufficient
BMI	Shelburne	South-East	PPU	Yes	Yes	Insufficient
BMI	Shirley Oaks	London	Private hospital	Yes	Yes	Insufficient
BMI	Sloane	London	Private hospital	Yes	Yes	Insufficient
BMI	Somerfield	South-East	Private hospital	Yes	Yes	Sufficient
BMI	South Cheshire	North-West	PPU	Yes	Yes	Insufficient
BMI	St Edmunds	East of England	Private hospital	Yes	Yes	Sufficient
BMI	The Garden	London	Private hospital	No	No	Sufficient
BMI	The Ridgeway	South-West	Private hospital	Yes	Yes	Insufficient
BMI	Thornbury	Yorkshire and the Humber	Private hospital	Yes	Yes	Insufficient
BMI	Three Shires	East Midlands	Private hospital	Yes	Yes	Insufficient
BMI	Werndale	Wales	Private hospital	No	Yes	Insufficient
BMI	Weymouth Hospital	London*	Private hospital	No	No	Sufficient
BMI	Winterbourne	South-West	Private hospital	Yes	Yes	Insufficient
BMI	Woodlands	North-East	Private hospital	Yes	Yes	Insufficient
Belfast Trust	Belfast City Hospital	Northern Ireland	PPU	No	No	Sufficient
Belfast Trust	Mater Hospital	Northern Ireland	PPU	No	No	Sufficient
Belfast Trust	Musgrave Park Hospital	Northern Ireland	PPU	No	No	Sufficient
Belfast Trust	Royal Group of Hospitals	Northern Ireland	PPU	No	No	Sufficient
Bridgend Clinic	Bridgend Clinic	Wales	PPU	No	No	Sufficient
Brighton Sussex Trust	Princess Royal Hospital (incl Hurstwood Park Neurosciences)	South-East	PPU	No	Yes	Sufficient
Brighton Sussex Trust	Royal Sussex County Hospital (incl Royal Alexandra Children's)	South-East	PPU	No	No	Sufficient
Circle	Circle Bath	South-West	Private hospital	Yes	No	Sufficient
Circle	Circle Reading	South-East	Private hospital	No	No	Sufficient
EN Hertfordshire Trust	Hertford County Hospital	East of England	PPU	No	No	Sufficient
EN Hertfordshire Trust	Lister Hospital	East of England	PPU	No	Yes	Sufficient
EN Hertfordshire Trust	Mount Vernon Cancer Center	London	PPU†	Yes	No	Sufficient
EN Hertfordshire Trust	Queen Elizabeth II	East of England	PPU	No	No	Sufficient
Fairfield Independent Hospital	Fairfield Independent Hospital	North-West	Private hospital	No	No	Sufficient
Firmley Park	Parkside Suite	South-East	PPU	No	No	Sufficient
Gloucestershire Hospitals	Cheltenham General Hospital	South-West	PPU	No	No	Sufficient

<i>Operator</i>	<i>Hospital name</i>	<i>Region</i>	<i>Private hospital/PPU?</i>	<i>Oncology?</i>	<i>Identified as potential concern by initial filters?</i>	<i>Sufficient or insufficient constraints?</i>
Gloucestershire Hospitals	Gloucestershire Royal Hospital	South-West	PPU	No	No	Sufficient
Great Western	The Shalbourne Suite	South-West	PPU	Yes	Yes	Sufficient
Guys & St Thomas Trust	Guy's Nuffield House	London*	PPU	Yes	No	Sufficient
Guys & St Thomas Trust	St Thomas	London*	PPU	Yes	No	Sufficient
HCA	Harley Street Clinic	London*	Private hospital	Yes	No	Insufficient
HCA	Lister Hospital	London*	Private hospital	No	Yes	Insufficient
HCA	London Bridge Hospital	London*	Private hospital	No	No	Insufficient
HCA	London Oncology Clinic	London*	Private hospital†	Yes	No	Insufficient
HCA	NHS Ventures—Queens	London	PPU	Yes	No	Sufficient
HCA	NHS Ventures Christie Clinic	North-West	PPU†	Yes	No	Sufficient
HCA	NHS Ventures UCLH	London*	PPU†	Yes	No	Insufficient
HCA	Portland Hospital	London*	Private hospital	No	Yes	Insufficient
HCA	Princess Grace Hospital	London*	Private hospital	No	Yes	Insufficient
HCA	Wellington Hospital	London*	Private hospital	No	Yes	Insufficient
HMT Hospitals	Sancta Maria Hospital	Wales	Private hospital	No	Yes	Insufficient
HMT Hospitals	St Hugh's Hospital	Yorkshire and the Humber	Private hospital	No	Yes	Insufficient
Hospital of St John & St Elizabeth	Hospital of St John & St Elizabeth	London*	Private hospital	No	No	Sufficient
Imperial College Healthcare NHS Trust	Queen Charlottes & Chelsea Hospital (incl Robert & Lisa Sainsbury Wing)	London*	PPU	Yes	No	Sufficient
Imperial College Healthcare NHS Trust	The Lindo Wing	London*	PPU	No	No	Sufficient
Imperial College Healthcare NHS Trust	The Thames View	London*	PPU	Yes	No	Sufficient
King Edward VII's Hospital Sister Agnes	King Edward VII's Hospital Sister Agnes	London*	Private hospital	Yes	No	Sufficient
King's College Hospital NHS Foundation Trust	King's College Hospital NHS Foundation Trust	London*	PPU	Yes	No	Sufficient
Kingsbridge Private Hospital	Kingsbridge Private Hospital	Northern Ireland	Private hospital	No	No	Sufficient
Maidstone	Tunbridge Wells Suite	South-East	PPU	No	No	Sufficient
NHS Lothian	NHS Lothian	Scotland	PPU	No	Yes	Sufficient
NW Independent Hospital	NW Independent Hospital	Northern Ireland	Private hospital	No	Yes	Insufficient
Newcastle Trust	Freeman Hospital	North-East	PPU	Yes	No	Sufficient
Newcastle Trust	Royal Victoria Infirmary	North-East	PPU	No	No	Sufficient
North West London Hospitals NHS Trust	Northwick Park & St Marks Hospitals	London	PPU	No	No	Sufficient
Nuffield	Bournemouth Hospital	South-West	Private hospital	Yes	Yes	Sufficient
Nuffield	Brentwood Hospital	East of England	Private hospital	Yes	No	Sufficient
Nuffield	Brighton Hospital	South-East	Private hospital	Yes	Yes	Sufficient
Nuffield	Bristol Hospital	South-West	Private hospital	Yes	No	Sufficient
Nuffield	Cambridge Hospital	East of England	Private hospital	Yes	No	Sufficient
Nuffield	Cheltenham Hospital	South-West	Private hospital	Yes	Yes	Sufficient
Nuffield	Chester Hospital	North-West	Private hospital	Yes	Yes	Sufficient
Nuffield	Chichester Hospital	South-East	Private hospital	Yes	Yes	Sufficient
Nuffield	Derby Hospital	East Midlands	Private hospital	Yes	Yes	Insufficient
Nuffield	Exeter Hospital	South-West	Private hospital	Yes	Yes	Insufficient

<i>Operator</i>	<i>Hospital name</i>	<i>Region</i>	<i>Private hospital/PPU?</i>	<i>Oncology?</i>	<i>Identified as potential concern by initial filters?</i>	<i>Sufficient or insufficient constraints?</i>
Nuffield	Glasgow Hospital	Scotland	Private hospital	Yes	Yes	Sufficient
Nuffield	Guildford Hospital	South-East	Private hospital	Yes	No	Sufficient
Nuffield	Haywards Heath Hospital	South-East	Private hospital	Yes	Yes	Sufficient
Nuffield	Hereford Hospital	West Midlands	Private hospital	Yes	Yes	Insufficient
Nuffield	Ipswich Hospital	East of England	Private hospital	Yes	Yes	Insufficient
Nuffield	Leeds Hospital	Yorkshire and the Humber	Private hospital	Yes	No	Sufficient
Nuffield	Leicester Hospital	East Midlands	Private hospital	Yes	Yes	Sufficient
Nuffield	Newcastle Hospital	North-East	Private hospital	Yes	Yes	Sufficient
Nuffield	North Staffs Hospital	West Midlands	Private hospital	Yes	Yes	Insufficient
Nuffield	Oxford Hospital	South-East	Private hospital	Yes	Yes	Insufficient
Nuffield	Plymouth Hospital	South-West	Private hospital	Yes	Yes	Insufficient
Nuffield	Shrewsbury Hospital	West Midlands	Private hospital	Yes	Yes	Insufficient
Nuffield	Taunton Hospital	South-West	Private hospital	Yes	Yes	Insufficient
Nuffield	Tees Hospital	North-East	Private hospital	No	Yes	Insufficient
Nuffield	Tunbridge Wells Hospital	South-East	Private hospital	Yes	Yes	Sufficient
Nuffield	Vale Hospital	Wales	Private hospital	Yes	Yes	Sufficient
Nuffield	Warwickshire Hospital	West Midlands	Private hospital	Yes	Yes	Sufficient
Nuffield	Wessex Hospital	South-East	Private hospital	Yes	No	Sufficient
Nuffield	Woking Hospital	South-East	Private hospital	No	No	Sufficient
Nuffield	Wolverhampton Hospital	West Midlands	Private hospital	Yes	Yes	Sufficient
Nuffield	York Hospital	Yorkshire and the Humber	Private hospital	Yes	Yes	Insufficient
Oxford Radcliff Trust	Churchill Hospital	South-East	PPU	No	No	Sufficient
Oxford Radcliff Trust	Horton Hospital	South-East	PPU	No	Yes	Sufficient
Oxford Radcliff Trust	JR Hospital	South-East	PPU	No	Yes	Sufficient
Plymouth Hospitals NHS Trust	Meavy Clinic	South-West	PPU	Yes	Yes	Sufficient
Ramsay	Ashtead Hospital	South-East	Private hospital	No	No	Sufficient
Ramsay	Berkshire Independent Hospital	South-East	Private hospital	No	No	Sufficient
Ramsay	Duchy Hospital	South-West	Private hospital	Yes	Yes	Insufficient
Ramsay	Euxton Hall Hospital	North-West	Private hospital	No	Yes	Sufficient
Ramsay	Fitzwilliam Hospital	East of England	Private hospital	Yes	Yes	Insufficient
Ramsay	Fulwood Hall Hospital	North-West	Private hospital	No	Yes	Sufficient
Ramsay	Mount Stuart Hospital	South-West	Private hospital	No	Yes	Insufficient
Ramsay	New Hall Hospital	South-West	Private hospital	Yes	Yes	Sufficient
Ramsay	North Downs Hospital	South-East	Private hospital	No	Yes	Sufficient
Ramsay	Nottingham Woodthorpe Hospital	East Midlands	Private hospital	No	Yes	Sufficient
Ramsay	Oaklands Hospital	North-West	Private hospital	No	No	Sufficient
Ramsay	Oaks Hospital	East of England	Private hospital	Yes	Yes	Insufficient
Ramsay	Park Hill Hospital	Yorkshire and the Humber	Private hospital	No	Yes	Sufficient
Ramsay	Pinehill Hospital	East of England	Private hospital	Yes	Yes	Sufficient
Ramsay	Renacres Hospital	North-West	Private hospital	Yes	Yes	Sufficient
Ramsay	Rivers Hospital	East of England	Private hospital	No	Yes	Sufficient
Ramsay	Rowley Hospital	West Midlands	Private hospital	Yes	Yes	Sufficient
Ramsay	Springfield Hospital	East of England	Private hospital	Yes	Yes	Insufficient
Ramsay	West Midlands Hospital	West Midlands	Private hospital	No	Yes	Sufficient
Ramsay	Winfield Hospital	South-West	Private hospital	No	Yes	Sufficient

<i>Operator</i>	<i>Hospital name</i>	<i>Region</i>	<i>Private hospital/PPU?</i>	<i>Oncology?</i>	<i>Identified as potential concern by initial filters?</i>	<i>Sufficient or insufficient constraints?</i>
Ramsay	Woodland Hosptial	East Midlands	Private hospital	Yes	Yes	Sufficient
Ramsay	Yorkshire Clinic	Yorkshire and the Humber	Private hospital	Yes	Yes	Insufficient
Royal Brompton and Harefield NHS Foundation Trust	Brompton	London*	PPU	No	No	Sufficient
Royal Brompton and Harefield NHS Foundation Trust	Harefield	London	PPU	No	No	Sufficient
Royal Free London NHS Foundation Trust	Royal Free Private Patients	London*	PPU	Yes	No	Sufficient
Royal Surrey	Royal Surrey	South-East	PPU	No	No	Sufficient
Spire	Alexandra Hospital	South-East	Private hospital	Yes	Yes	Sufficient
Spire	Bristol Hospital	South-West	Private hospital	Yes	Yes	Insufficient
Spire	Bushey Hospital	East of England	Private hospital	Yes	No	Sufficient
Spire	Cambridge Lea Hospital	East of England	Private hospital	Yes	Yes	Sufficient
Spire	Cardiff Hospital	Wales	Private hospital	Yes	Yes	Sufficient
Spire	Cheshire Hospital	North-West	Private hospital	Yes	Yes	Insufficient
Spire	Clare Park Hospital	South-East	Private hospital	Yes	Yes	Sufficient
Spire	Dunedin Hospital	South-East	Private hospital	Yes	Yes	Sufficient
Spire	Elland Hospital	Yorkshire and the Humber	Private hospital	Yes	Yes	Sufficient
Spire	Fylde Coast Hospital	North-West	Private hospital	Yes	Yes	Sufficient
Spire	Gatwick Park Hospital	South-East	Private hospital	Yes	Yes	Sufficient
Spire	Harpenden Hospital	East of England	Private hospital	Yes	Yes	Insufficient
Spire	Hartwood Hospital	East of England	Private hospital	Yes	Yes	Sufficient
Spire	Hull and-East Riding Hospital	Yorkshire and the Humber	Private hospital	Yes	Yes	Insufficient
Spire	Leeds Hospital	Yorkshire and the Humber	Private hospital	Yes	Yes	Sufficient
Spire	Leicester Hospital	East Midlands	Private hospital	Yes	Yes	Sufficient
Spire	Little Aston Hospital	West Midlands	Private hospital	Yes	Yes	Sufficient
Spire	Liverpool Hospital	North-West	Private hospital	Yes	Yes	Insufficient
Spire	Manchester Hospital	North-West	Private hospital	No	No	Sufficient
Spire	Methley Park Hospital	Yorkshire and the Humber	Private hospital	Yes	Yes	Sufficient
Spire	Murrayfield Hospital	Scotland	Private hospital	Yes	Yes	Insufficient
Spire	Norwich Hospital	East of England	Private hospital	Yes	Yes	Insufficient
Spire	Parkway Hospital	West Midlands	Private hospital	Yes	Yes	Sufficient
Spire	Portsmouth Hospital	South-East	Private hospital	Yes	Yes	Insufficient
Spire	Regency Hospital	North-West	Private hospital	No	Yes	Sufficient
Spire	Roding Hospital	London	Private hospital	Yes	No	Sufficient
Spire	South Bank Hospital	West Midlands	Private hospital	Yes	Yes	Sufficient
Spire	Southampton Hospital	South-East	Private hospital	Yes	Yes	Insufficient
Spire	St Saviours Hospital	South-East	Private hospital	No	No	Sufficient
Spire	Sussex Hospital	South-East	Private hospital	Yes	Yes	Insufficient
Spire	Thames Valley Hospital	South-East	Private hospital	Yes	Yes	Sufficient
Spire	Tunbridge Wells Hospital	South-East	Private hospital	Yes	Yes	Sufficient
Spire	Washington Hospital	North-East	Private hospital	Yes	Yes	Sufficient
Spire	Wellesley Hospital	East of England	Private hospital	Yes	Yes	Insufficient
Spire	Wirral Hospital	North-West	Private hospital	Yes	Yes	Insufficient
Spire	Yale Hospital	Wales	Private hospital	Yes	Yes	Sufficient

<i>Operator</i>	<i>Hospital name</i>	<i>Region</i>	<i>Private hospital/PPU?</i>	<i>Oncology?</i>	<i>Identified as potential concern by initial filters?</i>	<i>Sufficient or insufficient constraints?</i>
St Joseph's Hospital	St Joseph's Hospital	Wales	Private hospital	No	No	Sufficient
St Anthony's Hospital	St Anthony's Hospital	London	Private hospital	No	No	Sufficient
The Bupa Cromwell Hospital	The Bupa Cromwell Hospital	London*	Private hospital	Yes	No	Sufficient
The London Clinic	The London Clinic	London*	Private hospital	Yes	No	Sufficient
The New Victoria Hospital	The New Victoria Hospital	London	Private hospital	No	No	Sufficient
The Royal Marsden NHS Foundation Trust	Private Care Chelsea	London*	PPU	Yes	No	Sufficient
The Royal Marsden NHS Foundation Trust	Private Care Sutton	London	PPU	Yes	No	Sufficient
The Spencer Private Hospital	QEQM Hospital	South-East	PPU	No	Yes	Sufficient
The Spencer Private Hospital	William Harvey Hospital	South-East	PPU	No	Yes	Sufficient
Ulster Independent Clinic	Ulster Independent Clinic	Northern Ireland	Private hospital	No	No	Insufficient
Western Sussex Trust	St Richards	South-East	PPU	No	No	Sufficient
Western Sussex Trust	Worthing Hospital	South-East	PPU	No	No	Sufficient

Source: CC analysis.

*Indicates that the hospital lies within the central London NUTS2 region (which itself lies within the London NUTS1 region).

†Indicates a specialized private hospital or PPU.

Note: Region definitions are the NUTS1 geographic delineation.

Local assessments

Table of conclusions

East Midlands	
BMI Lincoln	<ol style="list-style-type: none"> 1. BMI Lincoln is the only private hospital in the Lincoln area. Its closest competitors are Hospital Management Trust (HMT) St Hugh's in Grimsby to the north-east and the Bostonian PPU in Boston to the south-east, both approximately 35 miles away. We do not have information on the areas from which these facilities draw insured inpatients, but our judgment is that competition would be limited to areas where patients would have to travel a similar distance to either hospital. In the case of St Hugh's, this would be the area around Market Rasen, and in case of the Bostonian this would be the area around Sleaford. There are five other rival private hospitals located between 38 and 61 miles of BMI Lincoln, but these do not appear to compete with BMI Lincoln for insured patients. Therefore, for much of the area from which BMI Lincoln attracts insured patients, it appears to face little or no competition, with patients needing to travel long distances to reach an alternative provider. 2. We note that BMI internal documents commented that [REDACTED]. 3. We also note the views of insurers: [REDACTED]. 4. Our view is that BMI Lincoln is insufficiently constrained.
BMI Park	<ol style="list-style-type: none"> 5. BMI Park is located on the A60 approximately 8 miles north of Nottingham and 8 miles south of Mansfield. Its main competitor appears to be Ramsay Nottingham Woodthorpe, which is located a further 5 miles south on the A60 just to the north of Nottingham. These hospitals draw insured inpatients from much the same area, but Ramsay Nottingham Woodthorpe is much smaller than BMI Park in terms of private admissions (although we note that nearly [REDACTED] per cent of patients at Ramsay Nottingham Woodthorpe were NHS). Both hospitals have level 2 ICU capability, but Ramsay offers fewer specialties. BMI Park offers all 17 specialties used in our analysis, and Ramsay Nottingham Woodthorpe offers 15 not including oncology. 6. There are five other private hospitals between 26 and 60 miles from BMI Park. Competition from these hospitals appears to be limited to the edge of the area from which BMI Park draws insured patients, in particular to the south around [REDACTED], to the east [REDACTED], and to the north around [REDACTED].

	<p>7. We note that internal BMI documents state that [REDACTED]. We are also concerned that the significant difference in the size of the two hospitals, in terms of the number of private admissions, suggests a major divergence in the strategic positioning of the two hospitals, with Ramsay Nottingham Woodthorpe more focused on the NHS patients than the private patient sector.</p> <p>8. We note the views of insurers: [REDACTED].</p> <p>9. Given the difference in the number of services offered, the lack of oncology service at Ramsay Woodthorpe and, especially, the significant difference in the number of private patients treated, our judgment is that insurers would not consider Ramsay Woodthorpe to be a close substitute for BMI Park.</p> <p>10. Our view is that BMI Park is insufficiently constrained.</p>
BMI Three Shires	<p>11. BMI Three Shires is the only private hospital in Northampton. The only competitor to the hospital appears to be Ramsay Woodland, located 15 miles to the north, in Kettering. It offers 15 of the specialties used in our analysis, compared with 16 specialties at BMI Three Shires. Both hospitals offer oncology and level 2 ICU capability. Both hospitals draw insured inpatients from the Northampton and Kettering areas, but BMI has a much stronger presence in a number of postcode areas in and around [REDACTED]. BMI Three Shires does not appear to compete with Ramsay Woodland for insured patients in the [REDACTED] and [REDACTED] areas. Both areas are in the core catchment area for BMI Three Shires. BMI Three Shires appears to face no or limited competition for insured patients from other private hospitals.</p> <p>12. We note that Ramsay commented on the [REDACTED].</p> <p>13. We also note the views of insurers: [REDACTED].</p> <p>14. Our view is that BMI Three Shires is insufficiently constrained.</p>
Nuffield Derby	<p>15. Nuffield Derby is the only private hospital in Derby. Its only competitors in the immediate area are: Derby Health, a relatively new PPU within the Royal Derby Hospital (2 miles away); and the Burton Clinic, a PPU in Queen's Hospital, Burton-on-Trent (9 miles away). We have limited information on these facilities. However, given their locations, we would expect them to attract patients from areas served by Nuffield Derby. Derby Private Health (11 beds) and Burton Clinic (12 beds) have fewer beds than Nuffield Derby (45 overnight beds and 8 day beds). Both appear to offer significantly fewer specialties than Nuffield Derby and not to offer oncology services.</p> <p>16. The closest private hospitals to Nuffield Derby are Ramsay Nottingham Woodthorpe (23 miles away), BMI Park (25 miles away) and Spire Little Aston (27 miles away). Competition for insured patients from these hospitals appears to be limited.</p>

	<p>17. We note Bupa's internal analysis, that more than [REDACTED].</p> <p>18. We also note the views of insurers: [REDACTED].</p> <p>19. Our view is that Nuffield Derby is insufficiently constrained.</p>
Spire Leicester	<p>20. There are two private hospitals in Leicester, Spire Leicester and Nuffield Leicester. Spire Leicester is located just to the west of Leicester, and Nuffield Leicester 3 miles away closer to the city centre. These hospitals draw insured inpatients from the same area. Both hospitals offer all 17 specialties used in our analysis and level 2 ICU capability. Nuffield Leicester is smaller than Spire Leicester in terms of private admissions.</p> <p>21. Spire Leicester also appears to face competition in some areas from other private hospitals. In particular: from Ramsay Woodland around [REDACTED]; Ramsay Fitzwilliam around [REDACTED]; BMI Meriden around [REDACTED]; and BMI Park around [REDACTED] and [REDACTED]. All these hospitals offer level 2 ICU capability and, with the exception of Ramsay Woodland, all 17 of the specialties used in our analysis.</p> <p>22. We note the views of insurers: [REDACTED].</p> <p>23. Our view is that Spire Leicester is sufficiently constrained.</p>
East of England	
BMI Manor	<p>24. BMI Manor is the only hospital in the Bedford area. It offers all 17 specialties used in our analysis and has no ICU. Its two closest hospitals are other BMI hospitals: BMI Saxon and BMI Three Shires, 18 and 19 miles away respectively. The closest rival hospital is Ramsay Pinehill, 23 miles to the south-east. It offers the same number of specialties and level 2 ICU capability. Competition from Ramsay Pinehill appears to be limited to those in [REDACTED] area.</p> <p>25. Spire Harpenden appears to compete with BMI Manor to the south of Bedford and Spire Cambridge Lea in the [REDACTED] area. Both are large hospitals providing all 17 specialties and ICU capability. We might also expect competition in these areas from the Cobham Clinic and Lister PPU.</p> <p>26. BMI Manor therefore appears to face no or limited competition in much of the area that it serves.</p> <p>27. We note the views of insurers: [REDACTED].</p> <p>28. Internal documents show that BMI considered that this hospital [REDACTED]. In preparation for its negotiations with BMI, Bupa identified [REDACTED]. Bupa delisted this hospital in 2012 offering as the two closest alternatives for its customers NHS hospitals. BMI's internal documents identified [REDACTED] as the main alternative to Manor.</p>

	29.	Our view is that BMI Manor is insufficiently constrained.
BMI Sandringham	30.	BMI Sandringham is located in King's Lynn. It is the only private hospital in the area. The closest rival hospitals are: Ramsay Fitzwilliam, 39 miles away; and Spire Norwich, Spire Cambridge Lea and Nuffield Cambridge which are all more than 40 miles away.
	31.	BMI Sandringham appears to face competition for insured patients to the west from Ramsay Fitzwilliam and to the north from Spire Norwich, but little or no competition across a large part of the area from which it draws insured patients including King's Lynn itself.
	32.	We note the views of insurers: [REDACTED].
	33.	We also note that internal documents show that in its analysis for its negotiations with BMI in 2011, Bupa considered this hospital [REDACTED]. It did not delist BMI Sandringham. BMI's internal analysis [REDACTED].
	34.	Our view is that BMI Sandringham is insufficiently constrained.
Nuffield Brentwood	35.	Nuffield Brentwood is one of two private hospitals in Brentwood; the other is Spire Hartwood (2 miles away). Spire Hartwood is larger than Nuffield Brentwood in terms of private admissions. Both hospitals offer all 17 specialties used in our analysis and have level 2 ICU capability. Spire Hartwood and Nuffield Brentwood draw insured inpatients from much the same area.
	36.	The HCA Queens is a dedicated private unit within the Queen's Hospital, 8 miles away in Romford. It offers ten of the specialties used in our analysis, including oncology, and has level 3 ICU capability. It appears to specialize in cancer care, complex neurosurgery and general surgery services. It is active in the Brentwood area, [REDACTED].
	37.	We note the views of insurers: [REDACTED].
	38.	Our view is that Nuffield Brentwood is sufficiently constrained.
Nuffield Cambridge	39.	Nuffield Cambridge is one of two private hospitals in Cambridge, the other being Spire Cambridge Lea. These hospitals are 4 miles apart. Both offer all 17 specialties used in our analysis. Spire Cambridge Lea has level 3 ICU capability, and Nuffield Cambridge has no ICU. These hospitals draw insured inpatients from the same area. Competition from other private hospitals and facilities appears to be limited.
	40.	We would expect the 'Forum' project (2 miles away) to add to the competitive constraints faced by Nuffield Cambridge. Whilst we do not know the range of specialties that it will provide, the information we have suggests that it will be a large dedicated private facility with intensive care and high dependency capability.

	<p>41. We note the views of insurers: [REDACTED].</p> <p>42. We also note that internal Nuffield documents identified [REDACTED].</p> <p>43. Our view is that Nuffield Cambridge is sufficiently constrained.</p>
Nuffield Ipswich	<p>44. Nuffield Ipswich is the only private facility in Ipswich. It offers all specialties used in our analysis and has level 2 ICU capability. Its closest rival hospitals are Ramsay Oaks, 22 miles away, and BMI St Edmunds, 33 miles away. There are three other hospitals between 47 and 60 miles away.</p> <p>45. Nuffield Ipswich appears to face competition for insured patients from Ramsay Oaks or BMI St Edmunds to the east of [REDACTED] and around [REDACTED]. The [REDACTED] area is in the core catchment area for Nuffield Ipswich. However, it also appears that Nuffield Ipswich faces no or limited competition across a large part of the area it serves. We find that the other, more distant hospitals, have no material overlaps with Nuffield Ipswich in the areas from which each draws insured inpatients.</p> <p>46. We note the views of insurers: [REDACTED].</p> <p>47. We also note that, in preparation for its negotiations with BMI, Bupa identified [REDACTED].</p> <p>48. Our view is that Nuffield Ipswich is insufficiently constrained.</p>
Ramsay Fitzwilliam	<p>49. Ramsay Fitzwilliam is the only private facility in Peterborough. It offers all 17 specialties used in our analysis and level 2 ICU capability. Its nearest competitor appears to be the Mulberry Suite in the Hinchingsbrooke hospital, operated by Circle, located 22 miles to the south. According to its website, the Mulberry Suite offers 14 of the specialties used in our analysis, including oncology. We do not have information on patient numbers or locations for this hospital, but given its location we would expect it to draw patients from areas served by Ramsay Fitzwilliam to the south and south-east of Peterborough.</p> <p>50. Other private hospitals are more than 35 miles away. Ramsay appears to compete with Spire Leicester to the west and with BMI Sandringham to the east. However, whilst these hospitals offer a similar range of services, it appears that Ramsay Fitzwilliam faces no or limited competition across much of the area from which it draws insured inpatients. This includes its core catchment area of Peterborough and the surrounding postcodes.</p> <p>51. Internal documents from Ramsay note that [REDACTED], and identified the [REDACTED].</p> <p>52. We note the views of insurers: [REDACTED].</p> <p>53. Our view is that Ramsay Fitzwilliam is insufficiently constrained.</p>

Ramsay Oaks	<p>54. Ramsay Oaks is the only private facility in Colchester. It offers all 17 specialties used in our analysis and level 2 ICU capability. The closest private competitors to Ramsay Oaks are Nuffield Ipswich and BMI St Edmunds, located 22 and 28 miles away respectively. Ramsay appears to compete with these hospitals for insured patients to the east of Colchester and in the [REDACTED] area. So whilst these hospitals offer a similar range of services, Ramsay Oaks appears to face no or limited competition across much of the area from which it draws insured patients.</p> <p>55. We note the views of insurers: [REDACTED].</p> <p>56. Internal Ramsay documents note that Ramsay Oaks [REDACTED].</p> <p>57. Our view is that Ramsay Oaks is insufficiently constrained.</p>
Ramsay Pinehill	<p>58. Ramsay Pinehill is located in Hitchin to the north-west of Stevenage. It offers all 17 specialties used in our analysis and level 2 ICU capability. The closest private facilities are Lister PPU (4 miles away), the Cobham Clinic (13 miles away) and Spire Harpenden (15 miles away). The Lister is located between Hitchin and Stevenage. Luton and Harpenden are to south-west of Ramsay Pinehill.</p> <p>59. We would expect Lister PPU to draw patients from areas served by Ramsay Pinehill, but it offers only 11 of the specialties used in our analysis not including oncology. It is also much smaller than Ramsay Pinehill in terms of private admissions ([REDACTED] compared with [REDACTED]) which we consider to be indicative of its limited presence in the local market and its limited ability to treat additional patients.</p> <p>60. Spire Harpenden is a large hospital with over [REDACTED] private admissions in 2011 which draws insured patients from a wide area. It offers the same range of services as Ramsay Pinehill. Spire Harpenden appear to be a competitor to the south of Ramsay Pinehill in the directions of Welwyn Garden City and Hertford. This includes part of the core catchment for Ramsay Pinehill (an area between [REDACTED]). Both hospitals are close to the main A505. For these patients, travelling to Spire Harpenden would be a further 15 miles (less than 30 minutes).</p> <p>61. The Cobham Clinic is located 13 miles away in Luton. Revenue figures suggest that it is also smaller than Ramsay Pinehill. It offers a 15 of the specialties we use including oncology.</p> <p>62. Ramsay Pinehill also appears to compete with BMI Manor to the north in the [REDACTED] area. It offers all 17 specialties used in our analysis, but has not ICU.</p> <p>63. Overall Ramsay Pinehill appears to face competition from other private hospitals in part of its core catchment area. There are areas important to Ramsay Pinehill (in particular, [REDACTED]) where these hospitals do not have a material presence. For policyholders in these areas, the Lister PPU is close by, and the Spire Harpenden and the Cobham Clinic would appear to be a further drive of 30 minutes or less.</p>

	<p>64. We note the views of insurers: [X].</p> <p>65. Our view is that Ramsay Pinehill is sufficiently constrained.</p>
Ramsay Springfield	<p>66. Ramsay Springfield is the only private facility in Chelmsford. It offers 16 of the specialties used in our analysis and has level 2 ICU capability. Its closest competitors are Nuffield Brentwood and Spire Hartswood located to the south-west in Brentwood, 13 and 15 miles away respectively. Both these hospitals offer all 17 specialties and level 2 ICU capability. However, these hospitals attract insured inpatients largely from areas to the south of that served by Ramsay Springfield. Whilst they attract insured inpatients from areas in which Ramsay Springfield is most active, the numbers of patients are relatively small. Competition from other private hospitals appears to be limited.</p> <p>67. We note the views of insurers: [X].</p> <p>68. Our view is that Ramsay Springfield is insufficiently constrained.</p>
Spire Cambridge Lea	<p>69. Spire Cambridge Lea is one of two private hospitals in the Cambridge area, the other being Nuffield Cambridge. Spire Cambridge Lea is located to the north of the city and Nuffield Cambridge is 4 miles away to the south of the city. These hospitals draw insured inpatients from much the same area. Both offer all 17 specialties used in our analysis. Spire Cambridge Lea has level 3 ICU capability, but Nuffield Cambridge has no ICU.</p> <p>70. We would expect the 'Forum' project (6 miles away) to add to the competitive constraints faced by Spire Cambridge Lea. Whilst we do not know the range of specialties that it will provide, the information we have suggests that it will be a large dedicated private facility with, significantly, intensive care and high dependency capability. Competition from other private hospitals and facilities appears to be limited.</p> <p>71. We note the views of insurers: [X].</p> <p>72. Our view is that Spire Cambridge Lea is sufficiently constrained.</p>
Spire Harpenden	<p>73. Spire Harpenden is the only private hospital in Harpenden. It is a large hospital with over [X] private admissions in 2011, and it draws insured inpatients from a wide area. Its closest rival hospital is Ramsay Pinehill which is located 15 miles to the north-east in Hitchin. Both hospitals offer all 17 specialties used in our analysis and both have level 2 ICU capability. The areas from which these two hospitals draw insured inpatients overlap materially is limited to three postcode areas between [X], and do not cover the main centre of patient activity for Spire Harpenden area.</p> <p>74. Other private hospitals appear to provide competition to Spire Harpenden to the west from Berkhamsted to Leighton Buzzard, and the south-east around Hatfield, Hereford and Ware.</p> <p>75. There are three PPUs in the area: the Cobham Clinic located 8 miles to the north-west in Luton; the Queen</p>

	<p>Elizabeth II hospital PPU 13 miles to the east in Welwyn Garden City; and the Lister PPU 17 miles to the north-east. All these facilities offer fewer specialties (15, 14 and 11 respectively) than Spire Harpenden, and only the Cobham Clinic provides oncology services. They are all much smaller than Spire Harpenden. We would expect the Cobham Clinic and the Queen Elizabeth PPU to draw patients from areas important to Spire Harpenden, but not so the Lister PPU.</p> <p>76. Overall it appears that whilst Spire Harpenden faces competition, in its core catchment area of Harpenden and Luton this will be largely from two PPUs which provide fewer services and are much smaller than Spire Harpenden. We consider their relative size to be indicative of their relative presence in the local market and their limited ability to treat additional patients if Spire Harpenden were not available to policyholders.</p> <p>77. We note the views of insurers: [REDACTED].</p> <p>78. Our view is that Spire Harpenden is insufficiently constrained.</p>
Spire Hartwood	<p>79. Spire Hartwood is one of two private hospitals in Brentwood, the other is Nuffield Brentwood (2 miles away). Spire Hartwood and Nuffield Brentwood draw insured inpatients from much the same area. Spire Hartwood is larger than Nuffield Brentwood in terms of private admissions. Both hospitals offer all 17 specialties used in our analysis and level 2 ICU capability. In addition, Spire Hartwood appears to compete with Ramsay Springfield for insured patients in the [REDACTED]. Ramsay Springfield offers 16 of the specialties used in our analysis and level 2 ICU capability.</p> <p>80. The HCA Queens PPU in Romford (7 miles away) offers ten of the specialties used in our analysis, including oncology, and level 3 ICU capability. It is active in the Brentwood area, but the number of insured inpatients it attracts is small.</p> <p>81. We note the views of insurers: [REDACTED].</p> <p>82. Our view is that Spire Hartwood is sufficiently constrained.</p>
Spire Norwich	<p>83. Spire Norwich is the only private hospital in Norwich. Its closest competitor is the Norfolk and Norwich University NHS Foundation Trust (NNUHFT PPU) which is less than 2 miles away. The closest private hospitals are BMI Sandringham and BMI St Edmunds, 43 miles to the west in King's Lynn and 45 miles to the south-west in Bury St Edmunds.</p> <p>84. Spire Norwich appears to face no or limited competition from other private hospitals. Material overlap in the areas from Spire Norwich and rival hospitals attract insured inpatients is limited to one postcode area to the north of [REDACTED]. The information we have suggests that NNUHFT PPU is very small, and has a limited presence in the local market</p>

	<p>or capacity to treat additional private patients.</p> <p>85. We note the views of insurers: [REDACTED].</p> <p>86. Our view is that Spire Norwich is insufficiently constrained.</p>
Spire Wellesley	<p>87. Spire Wellesley is the only private facility in Southend-on-Sea. The closest private hospitals are: Nuffield Brentwood, 21 miles to the west; and Ramsay Springfield, 22 miles to the north. Spire Wellesley appears to face no or limited competition for insured patients from these facilities.</p> <p>88. We note the views of insurers: [REDACTED].</p> <p>89. Our view is that Spire Wellesley is insufficiently constrained.</p>
Greater London	
BMI Bishops Wood	<p>90. BMI Bishops Wood is located in Northwood, Middlesex. It offers all 17 specialties used in our analysis and level 2 ICU capability. BMI told us that the hospital focused on the provision of oncology services which accounted for over [REDACTED] per cent of its revenue.</p> <p>91. The main competitor to BMI Bishops Wood appears to be Spire Bushey which is located 7 miles to the east (around 20 minutes' drive). It is much larger Bishops Wood. It offers all 17 specialties used in our analysis and has level 2 ICU capability. It appears to compete with BMI Bishops Wood across a substantial part of the core catchment area for Bishops Wood including [REDACTED].</p> <p>92. The Mount Vernon Cancer Centre, a specialist oncology facility, is located on the same site as BMI Bishops Wood and shares many of its consultants with Bishops Wood. We would, therefore, expect this to be a competitor to BMI Bishops Wood in the provision of oncology services. We recognize that the provision of oncology services is a particular strength of BMI Bishops Wood, but it is a full-service PPU offering all 17 specialties.</p> <p>93. Northwick Park & St Marks PPU is located 7 miles to the south-east, the other side of Harrow. Given its location, we would expect competition to Bishops Wood to be limited to areas in which Bishops Wood is also competing with Spire Bushey. We also note that it offers only 12 of the specialties used in our analysis, oncology not included, and has no ICU capability.</p> <p>94. Overall, whilst BMI Bishops Wood appears to face competition from Spire Bushey across a substantial part of the area it serves there remain postcode areas important to the hospital where it seems to face no or limited competition from rival private hospitals. This is the case of postcode areas to the west and south of BMI Bishops Wood, running from around [REDACTED]. For the reasons given in Section 6, we consider that the presence of BMI</p>

	<p>Clementine Churchill will reduce the competitive constraint exerted by Spire Bushey. Competition from the Mount Vernon Cancer Centre is limited to the provision of oncology services.</p> <p>95. We note that internal BMI documents [REDACTED].</p> <p>96. We note the views of insurers: [REDACTED].</p> <p>97. Our view is that Bishops Wood is insufficiently constrained.</p>
BMI Clementine Churchill	<p>98. BMI Clementine Churchill Hospital (CCH) is located in Harrow, Middlesex. It offers all 17 specialties used in our analysis and level 3 ICU capability. BMI told us that it had focused on the provision of orthopaedics. The main competitor to BMI CCH appears to be Spire Bushey. This is the only private hospital that currently attracts insured patients to any material extent from areas important to CCH. Spire Bushey is located 6 miles from BMI CCH to the north (20 minutes' drive-time in normal traffic conditions). It is similar in size to CCH, offers all 17 specialties in our analysis, but has level 2 ICU capability.</p> <p>99. In particular, to the north of CCH, Spire Bushey appears to have a material presence in most postcode areas from which CCH draws insured patients in material numbers. However, Spire Bushey is not active to the south and south-east of CCH. There are areas important to CCH including [REDACTED] and further south towards [REDACTED] where there are no material overlaps. Competition from the two other Spire hospitals in the area, Spire Thames Valley and Spire Harpenden, appears to be limited.</p> <p>100. We recognize that BMI CCH is also likely to face competition for a subset of its patients from the Royal National Orthopaedic Hospital, but BMI CCH is a full-service hospital offering all 17 specialties.</p> <p>101. We also note that BMI CCH is a large hospital which draws insured inpatients from a wide area, and that it is the only private hospital in the area that offers level 3 ICU capability. We consider that these features are likely to be indicative of its attractiveness to insured patients, the strength of its presence in the area and therefore its importance to insurers.</p> <p>102. We note the views of insurers: [REDACTED] Bupa [REDACTED] the hospital was one of the BMI hospitals it delisted in 2012.</p> <p>103. Our view is that CCH is insufficiently constrained.</p>
BMI Cavell and Kings Oak	<p>104. BMI Cavell and Kings Oak are located in Enfield and are most active in areas around [REDACTED]. Due to these hospitals being located close to each other, having a similar footprint for private inpatients (see below) and being managed as a single hospital by BMI we have analysed the competitive constraints they face together. On this basis, the combined facility offers all 17 of the specialties used in our analysis and level 2 ICU capability.</p> <p>105. The closest competitors to these BMI hospitals are Aspen Holly House and Aspen Highgate (7 and 9 miles away</p>

	<p>respectively) and Spire Roding, 10 miles to the south-east. However, these hospitals are not active in the areas served by BMI Cavell and Kings Oak. We also note that Aspen Holly House offers only 15 of the specialties used in our analysis including oncology. Ramsay Rivers is located 21 miles to the north-east of the BMI hospitals, but again competition with the BMI hospitals appears limited.</p> <p>106. The strongest competitor appears to be Spire Bushey located 13 miles to the west. In terms of private admissions it is larger than the BMI hospitals combined. It offers all 17 specialties used in our analysis and level 2 ICU capability. It attracted patients from areas important to the BMI hospitals, in particular, from [REDACTED] areas, although the number of insured inpatients from [REDACTED] going to Spire Bushey is relatively small compared with those going to the BMI hospitals.</p> <p>107. Overall BMI Cavell and Kings Oak appear to face no or limited competition in a large part of the area in which they are most active. This is a densely populated area which accounts for a [REDACTED]. We believe that insurers would therefore be concerned to maintain the quality of provision (including convenience) for policyholders in the area.</p> <p>108. We note the views of insurers: [REDACTED].</p> <p>109. Our view is that BMI Cavell and Kings Oak are insufficiently constrained.</p>
BMI Chelsfield Park	<p>110. The closest private hospitals to the west are BMI Shirley Oaks and BMI Sloane and to the east BMI Fawkham Manor. We find some overlap in the areas from which BMI Chelsfield Park and the Nuffield and Spire hospitals in Tunbridge Wells draw insured inpatients, but this is limited to the [REDACTED] area. We note that all three hospitals offer a similar range of specialties, have the same level of critical care and are a similar size, suggesting that their main differentiator is location. We would also expect some competition for the same patients from the Wells Suite in Tunbridge Wells, but that it would not add significantly to the constraints identified given its small size and location. We also consider that the presence of BMI McIndoe could reduce the constraint on BMI Chelsfield Park from Nuffield Tunbridge Wells and Spire Tunbridge Wells.</p> <p>111. We do not observe material overlaps with other private hospitals. This leaves a significant group of insured patients, stretching from close to [REDACTED], north-west towards BMI Sloane where we did not observe any overlap with rival hospitals. We consider that this is likely to reflect common ownership of BMI Chelsfield and BMI Sloane. We note that this is an area of [REDACTED].</p> <p>112. We note the views of insurers: [REDACTED].</p> <p>113. Our view is that BMI Chelsfield Park is insufficiently constrained.</p>
BMI Shirley Oaks	<p>114. BMI Shirley Oaks is the only private hospital in Croydon. It offers all 17 specialties used in our analysis and level 2 ICU capability. Its closest rival facility is the King's College PPU, but this PPU does not attract patients in material</p>

	<p>numbers from the areas served by BMI Shirley Oaks. In addition, for the reasons given in Section 6, typically we do not consider the constraint provided by central London hospitals on outer London hospitals to be effective.</p> <p>115. The strongest competitors appear to be St Anthony's 9 miles to the west in Cheam, and Ramsay North Downs 11 miles to the south in Caterham. St Anthony's attracts insured patients in material numbers from much of the area in which BMI Shirley Oaks is active, but its presence is not as strong in the Croydon area. Ramsay North Downs attracts insured patients in material numbers from areas to the south and south-west of the hospital, but it does not have a material presence in the Croydon area. St Anthony's and Ramsay North Downs do not offer oncology services. Ramsay Downs offers only 13 of the specialties used in our analysis.</p> <p>116. Given its location, we would expect the Royal Marsden PPU to draw patients from areas served by BMI Shirley Oaks, but it offers only seven of the specialties used in our analysis, including oncology.</p> <p>117. Other potential constraints considered are The New Victoria hospital in Kingston-upon-Thames and Aspen Parkside in Wimbledon.</p> <p>118. The New Victoria hospital does not attract patients from areas served by BMI Shirley Oaks, and currently offers only 11 of the specialties used in our analysis. It also has no ICU. We recognize that the New Victoria may be a stronger competitor when expansion and refurbishment works are completed. However, based on the information provided in the announcement to which BMI referred us, we cannot expect the range of specialties offered to increase.</p> <p>119. Aspen Parkside is much larger than BMI Shirley Oaks and offers the same range of services. We do not have data on patient locations for Aspen Parkside, but given its location we would not expect it to attract patients in material numbers from the Croydon area or further to the south. We note that in normal traffic conditions the expected drive-time between the hospitals would be around 30 minutes, but this is a densely populated area. We note that in 2012 Bupa did not list Aspen Parkside as an alternative to BMI Shirley Oaks.</p> <p>120. Overall, although BMI Shirley Oaks clearly faces competition from other private hospitals, it is the only private hospital located in the Croydon area. Whilst St Anthony's attracts insured patients from the Croydon area its presence is not as strong as it is elsewhere. Ramsay North Downs does not draw insured patients in material numbers from the Croydon area and we would not expect Aspen Parkside to do so. St Anthony's and Ramsay North Downs do not offer oncology services, and Ramsay North Downs offers only 13 of the specialties used in our analysis. [REDACTED]</p> <p>121. We also note the views of insurers: Bupa [REDACTED]. It was delisted during negotiations with BMI in 2011, [REDACTED].</p> <p>122. Our view is that BMI Shirley Oaks is insufficiently constrained.</p>
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BMI Sloane	<p>123. BMI Sloane's centre of patient activity is close to the hospital in the Bromley and Beckenham area. It offers all 17 specialties, but has no ICU. To the east the only nearby hospitals are owned by BMI. To the west the closest rival hospital is St Anthony's (12 miles away). Both hospitals attract insured patients from one postcode area around [REDACTED], but otherwise we do not observe material overlaps in the areas from which these hospitals draw insured patients.</p> <p>124. The New Victoria Hospital (14 miles away) in Kingston-upon-Thames and Ramsay North Downs (12 miles away) in Caterham do not attract patients from areas in which BMI Sloane is active.</p> <p>125. We do not have information on the location of patients being treated at Aspen Parkside (13 miles away). However, we do not think it would be an attractive alternative for insured patients served by BMI Sloane.</p> <p>126. We are also not able to observe the location of patients attending Royal Marsden at Sutton (11 miles away), but given its location and the smaller number of specialties available there we do not think it would be an attractive alternative for insured patients served by BMI Sloane.</p> <p>127. We note the views of insurers: [REDACTED].</p> <p>128. We consider that BMI Sloane is insufficiently constrained.</p>
North-East	
BMI Woodlands	<p>129. BMI Woodlands is the only private facility in Darlington. It offers 16 of the specialties used in our analysis including oncology and has level 2 ICU capability.</p> <p>130. The closest private facility to BMI Woodlands is Nuffield Tees, located 13 miles away, on the outskirts of Stockton-on-Tees. Nuffield Tees does not offer oncology service and has no ICU capability. The areas from which BMI Woodlands and Nuffield Tees draw insured patients are adjacent to each other, but there are no material overlaps. Inspection of road maps suggests that for many BMI Woodlands patients, Nuffield Tees would be a further 16 miles drive (by main A roads), much of this through a built-up area.</p> <p>131. Spire Washington is located 31 miles to the north. Whilst it offers all 17 specialties used in our analysis, as well as level 2 ICU capability, we found no material overlaps in the areas from which BMI Woodlands and Spire Washington draw insured inpatients.</p> <p>132. We considered the constraint from facilities in Newcastle, 41 miles to the north, namely Nuffield Newcastle and two PPUs. We find that Nuffield Newcastle and BMI Woodlands draw insured inpatients from distinct areas and therefore consider it unlikely that these PPUs will overlap with BMI Woodlands.</p>

	<p>133. Overall, we note that BMI Woodlands is the only private facility in Darlington and serves a large area from the north-west to the south-east of the hospital. Other private hospitals do not attract insured patients in material numbers from this area. The only competitor appears to be Nuffield Tees which does not offer oncology services and has no ICU capability.</p> <p>134. We note the views of insurers: [REDACTED]. Bupa delisted it during negotiations with BMI [REDACTED].</p> <p>135. We also note that BMI's internal documents provided some evidence of [REDACTED].</p> <p>136. Our view is that BMI Woodlands is insufficiently constrained.</p>
Nuffield Tees	<p>137. Nuffield Tees is the only private facility in Stockton-on-Tees. It offers 16 of the specialties used in our analysis—it does not offer oncology and has no ICU capability.</p> <p>138. The closest private facility to Nuffield Tees is BMI Woodlands, 13 miles to the south-west in Darlington. BMI Woodlands offers 16 specialties, oncology included, and level 2 ICU capability. Whilst overlaps in the areas from which these hospitals attract patients are limited, these hospitals are active in adjacent areas. By A roads the two hospitals are 16 miles apart with much of this through built-up areas. However, if Nuffield Tees were not available, inspection of road maps suggests that for many patients travelling to BMI Woodlands rather than Nuffield Tees would be a further 8 miles outside built-up areas.</p> <p>139. Spire Washington is located 28 miles to the north. Whilst it offers all 17 specialties and level 2 ICU capability, we find no material overlaps in the areas from which Spire Washington and Nuffield Tees draw insured inpatients. Given their location, we also think it unlikely that the two Newcastle Trust PPUs will attract insured patients from the same areas as Nuffield Tees.</p> <p>140. We consider that the only material competitor to Nuffield Tees is BMI Woodlands which, unlike Nuffield Tees, offers oncology services and ICU capability. However, Nuffield Tees is the only private hospital in a large built-up area comprising Stockton-on-Tees and Middlesbrough, and extending from Hartlepool to Redcar on the coast.</p> <p>141. We note the views of insurers: [REDACTED].</p> <p>142. We also note that Nuffield's internal documents provided some evidence [REDACTED].</p> <p>143. Our view that Nuffield Tees is insufficiently constrained.</p>
Nuffield Newcastle	<p>144. Nuffield Newcastle offers all 17 specialties used in our analysis and has no ICU. The closest private facilities are two PPUs located within 2 miles of Nuffield Newcastle. These PPUs are much smaller than Nuffield Newcastle and offer only eight of the specialties used in our analysis (and only Freeman provides oncology), but they provide</p>

	<p>level 3 ICU capability.</p> <p>145. The closest private hospital is Spire Washington. Nuffield Newcastle is located in Newcastle-upon-Tyne to the north of the city and Spire Washington is located 10 miles to the south. Nuffield Newcastle draws insured patients largely from postcode areas to the north of the River Tyne and to the west, and Spire Washington from an area to the south of the river. These catchment areas are, however, practically adjacent. The two hospitals overlap in postcode areas located between them to the south of the river ([REDACTED]), although one or both of these hospitals attract few patients and [REDACTED] PMI penetration. The hospitals are similar in size and both offer all 17 specialties used in our analysis, although Spire Washington has level 2 ICU capability.</p> <p>146. We note that [REDACTED]. Nuffield's internal documents also said that Newcastle hospital [REDACTED] patients.</p> <p>147. Spire Washington is located just off the A1(M), about 8 miles to the south of the centre of Newcastle-upon-Tyne. Given the position of Nuffield Newcastle and Spire Washington in relation to the areas from which the former draws patients, it appears that for the majority of Nuffield Newcastle's patients, attending Spire Washington rather than Nuffield Newcastle would be a further 9 miles or so drive (some of which would be in a built-up area). We consider that the PPUs in Newcastle-upon-Tyne will add to the constraint exerted by Spire Washington.</p> <p>148. We also note the views of insurers: [REDACTED].</p> <p>149. Our view is that Nuffield Newcastle is sufficiently constrained.</p>
Spire Washington	<p>150. The closest facilities to Spire Washington are Nuffield Newcastle and two PPUs at the Royal Victoria Infirmary and at the Freeman Hospital. All three are located in Newcastle-upon-Tyne within 10 miles of Spire Washington.</p> <p>151. Nuffield Newcastle largely draws insured patients from areas to the north of the River Tyne and to the west, whereas Spire Washington draws patients mainly from areas to the south of the river. These catchment areas are, however, practically adjacent to each other and there is some overlap. For many Spire Washington patients, Nuffield Newcastle would be a further 10 miles or so drive (some of which would be in a built-up area) were they to attend that hospital rather than Spire Washington. Nuffield Newcastle and Spire Washington are similar in size and both offer all 17 specialties used in our analysis, but Spire Washington has level 2 ICU capability and Nuffield Newcastle has no ICU.</p> <p>152. We note that Spire internal documents [REDACTED] and also said that [REDACTED].</p> <p>153. Newcastle Trust's PPUs, Royal Victoria Infirmary and Freeman, are much smaller than Spire Washington and provide fewer specialties but, significantly, they have level 3 ICU capability.</p> <p>154. We find that Nuffield Tees and BMI Woodlands, located 27 and 29 miles away from Spire Washington, respectively, do not appear to compete with Spire Washington for insured patients. We note that Spire's internal</p>

	<p>documents state that Nuffield Tees ‘only competes with us for work in the area [REDACTED]’ and, in relation to BMI Woodlands, that [REDACTED].</p> <p>155. We also note the views of insurers: [REDACTED].</p> <p>156. Our view is that Spire Washington is sufficiently constrained.</p>
North-West	
BMI Alexandra	<p>157. BMI Alexandra is in Cheadle near Stockport to the south of Manchester. It is a large hospital (with [REDACTED] private patient admissions) offering all 17 specialties used in our analysis and with level 3 ICU capability. Its competitors appear to be three Spire hospitals.</p> <p>158. The closest is Spire Manchester, 6 miles to the north-west of Manchester. There is considerable overlap in the areas from which BMI Alexandra and Spire Manchester attract insured inpatients. However, BMI Alexandra attracts patients from a wider area than Spire Manchester. We also note that in many postcode areas where we observe such overlaps, for Spire Manchester the number of insured inpatients is small.</p> <p>159. BMI Alexandra and Spire Regency (14 miles to the south in Macclesfield) both attract patients from areas to the south of BMI Alexandra, and BMI Alexandra and Spire Cheshire (19 miles to the west in Warrington) both attract patients from areas to the west of the hospital.</p> <p>160. Spire Manchester and Spire Regency do not offer oncology services. All three Spire hospitals offer level 2 ICU capability. Each is much smaller than BMI Alexandra in terms of private admissions. There are also postcodes to the east of the hospital where BMI Alexandra appears to face little competition. The areas include [REDACTED] PMI penetration.</p> <p>161. We also note that BMI Alexandra is much larger than any of its competitors and, unlike the other hospitals, draws insured inpatients from across the north-west. BMI Alexandra is the only private hospital in the region to have level 3 ICU facilities. We consider that all of these features are likely to be indicative of its attractiveness to patients, the strength of its presence in the region and therefore its importance to insurers.</p> <p>162. We note the views of insurers: [REDACTED] Bupa delisted BMI Alexandra in 2012, [REDACTED].</p> <p>163. Our view is that BMI Alexandra is insufficiently constrained.</p>
BMI Beardwood	<p>164. BMI Beardwood is the only private hospital in Blackburn. It offers all 17 specialties and has level 2 ICU capability. The closest private hospitals to BMI Beardwood are two Ramsay hospitals: Fulwood Hall and Euxton Hall 9 and 13 miles away, respectively, to the west. Both Ramsay hospitals are smaller than BMI Beardwood and offer fewer</p>

	<p>specialties (16 and 15 respectively) and neither offers oncology. Ramsay Euxton Hall has no ICU capability. These hospitals draw insured inpatients from the areas to the west of BMI Beardwood ([REDACTED]).</p> <p>165. BMI Beardwood appears to face little or no competition in the areas from which it attracts most insured patients, ie those immediately around the hospital and those to the north and west. We recognize that the maps may understate the competition from Ramsay Fulwood Hall. In particular, we note that: the areas from which BMI Beardwood and Ramsay Fulwood Hall attract insured inpatients are adjacent; Ramsay Fulwood Hall is located to the north-east of Preston outside the town and BMI Beardwood is located outside of Blackburn to the north-west (ie on the Preston side); and the road links between the two hospitals are good through rural areas. However, we also note that Ramsay Fulwood does not offer oncology services and the areas where we do not see overlaps include [REDACTED] PMI penetration.</p> <p>166. We note that BMI's internal documents suggest [REDACTED].</p> <p>167. We also note the views of insurers: [REDACTED].</p> <p>168. Our view is that BMI Beardwood is insufficiently constrained.</p>
BMI Beaumont	<p>169. BMI Beaumont is the only private hospital in the Bolton area. It is located outside Bolton to the east. The closest private hospital is Ramsay Euxton Hall, 10 miles to the north-west near Chorley. The maps show limited material overlap in the areas from which BMI Beaumont and Ramsay Euxton Hall draw insured inpatients, but we recognize that this may understate the competitive constraint exerted by Ramsay Euxton Hall. In particular, we note that: both hospitals are located close to the M61 (with an estimated drive-time between them of 21 minutes); and for patients located in areas between these hospitals a preference for BMI Beaumont based on accessibility may be marginal.</p> <p>170. Ramsay Oaklands is 14 miles to the south-east (about 20 minutes' drive-time in normal traffic conditions). Again, the maps show no material overlaps, but we recognize that this may understate the competitive constraint exerted by Ramsay Oaklands on BMI Beaumont with both hospitals located close to the M61.</p> <p>171. Spire Manchester is 17 miles to the south-east in Manchester. Again the maps show no material overlaps and, given its location, we would not expect it to add materially to any constraint posed by Ramsay Oaklands.</p> <p>172. Nevertheless, inspection of road maps suggests that for much of the area served by BMI Beaumont the preference for the hospital on grounds of accessibility would not be marginal. Furthermore, BMI Beaumont offers all 17 of the specialties used in our analysis although it has no ICU capability. Ramsay Euxton Hall, Ramsay Oaklands, Spire Manchester and Fairfield Independent do not offer oncology, and offer only 15, 14, 16 and 12 of the specialties used in our analysis respectively.</p>

	<p>173. We note the views of insurers: Bupa [REDACTED] delisted the hospital in 2012 [REDACTED].</p> <p>174. Our view is that BMI Beaumont is insufficiently constrained.</p>
BMI Gisburne Park	<p>175. BMI Gisburne Park is the only private facility in Gisburn. It offers 12 of the specialties used in our analysis, not including oncology, and has no ICU. Of its total admissions, in 2011, less than [REDACTED] were private patient admissions ([REDACTED] per cent of admissions were NHS patients).</p> <p>176. The two closest rival private hospitals are Ramsay Fulwood Hall in Preston and Ramsay Yorkshire Clinic in Bingley, both 25 miles to the south-west and south-east, respectively. Ramsay Fulwood Hall offers 16 of the specialties used in our analysis, oncology not included, and Ramsay Yorkshire Clinic offers all 17 specialties. Both hospitals offer level 2 ICU facilities.</p> <p>177. The maps show no material overlaps in the areas from which BMI Gisburne Park and these rival hospitals draw insured inpatients, but we consider that this understates the extent of competition between these hospitals. In particular, we note that the catchment areas for these hospitals are adjacent and that much of the area from which BMI Gisburne Park draws patients is located between it and Ramsay Fulwood Hall.</p> <p>178. We note the views of insurers: [REDACTED]. The hospital was delisted in 2012; [REDACTED].</p> <p>179. Our view is that BMI Gisburne Park is sufficiently constrained.</p>
BMI Highfield	<p>180. BMI Highfield is the only private hospital in Rochdale. It offers all 17 specialties but has no ICU. The closest competitors are Ramsay Oaklands and Spire Manchester, 13 and 14 miles, respectively, to the south-east. Ramsay Oaklands and Spire Manchester draw insured inpatients from the areas to the south-west of those in which BMI Highfield is active. Only in the areas [REDACTED] does BMI Highfield appear to compete with these rival hospitals for insured patients. We also note that Spire Manchester and Ramsay Oaklands do not offer oncology services and Ramsay Oaklands offers only 14 of the specialties used in our analysis. Both rival hospitals have level 2 ICU capability.</p> <p>181. Spire Elland is 20 miles to the north-east near Halifax. It largely draws insured inpatients from areas to the east of those in which BMI Highfield is active. It offers all 17 specialties used in our analysis and has level 2 ICU capability.</p> <p>182. We consider that the maps may understate the competitive constraint exerted by Spire Elland and Ramsay Oaklands. In particular, we note that: Spire Elland and Ramsay Oaklands are both located near to the M60/62; and that for patients living in areas between BMI Highfield and Ramsay Oaklands and/or between BMI Highfield and Spire Elland, the preference for BMI Highfield based on accessibility may be marginal. However, inspection of road maps suggests that this would not be the case for areas important to BMI Highfield near [REDACTED] and to the north-</p>

	<p>west and west of the hospital. For many of these patients, the closest alternatives will be other BMI hospitals, BMI Beardwood and BMI Beaumont.</p> <p>183. We note the views of insurers: [REDACTED]; Bupa [REDACTED] and delisted the hospital in 2012; [REDACTED].</p> <p>184. Our view is that BMI Highfield is insufficiently constrained.</p>
BMI Lancaster	<p>185. BMI Lancaster is the only private facility in Lancaster and draws patients from a wide area. Of its total admissions in 2011, less than [REDACTED] were private patients. It offers 14 of the specialties used in our analysis, not including oncology and has no ICU. The two closest private facilities to BMI Lancaster are Ramsay Fulwood Hall and Spire Fylde Coast, 21 and 22 miles away, respectively. Ramsay Fulwood Hall is larger than BMI Lancaster in terms of private admissions and offers more of the specialties used in our analysis (16 compared with 14). Spire Fylde Coast is larger than BMI Lancaster in terms of private admissions and offers all 17 specialties used in our analysis. Both of these hospitals have ICU capability.</p> <p>186. The maps show that these hospitals draw insured inpatients from areas to the south of where BMI Lancaster is active. They do not attract patients from the Lancaster and Morecambe areas, the centre of patient activity for BMI Lancaster. There are overlaps in one postcode between [REDACTED]. This area does not account for many BMI Lancaster patients, but in judging the materiality of overlaps we take note of the small number of private admissions at BMI Lancaster.</p> <p>187. We note the views of insurers: [REDACTED]. The hospital was delisted by Bupa during its negotiations with BMI in 2011; [REDACTED].</p> <p>188. Our view is that BMI Lancaster is sufficiently constrained.</p>
BMI South Cheshire	<p>189. BMI South Cheshire PPU is the only private patient facility in Crewe. It offers all 17 specialties and level 3 ICU capability.</p> <p>190. Spire Cheshire in Warrington and Nuffield Chester are 13 miles to the north and 18 miles to the west, respectively. Both hospitals are much larger than BMI South Cheshire in terms of private admissions, and both offer all 17 specialties used in our analysis and have level 2 ICU capability. However, competition with BMI South Cheshire for insured patients appears to be limited to the [REDACTED] area.</p> <p>191. Nuffield North Staffordshire in Newcastle-under-Lyme and Spire Regency in Macclesfield are 19 miles to the south-east and 22 miles to the north-east, respectively. Both hospitals offer fewer specialties (16 of the specialties used in our analysis; only Nuffield North Staffordshire offers oncology) and lower ICU cover (Spire Regency has level 2 ICU capability and Nuffield North Staffordshire has no ICU). Competition with BMI South Cheshire for</p>

	<p>insured patients appears to be limited to [REDACTED].</p> <p>192. Overall, BMI Cheshire appears to face little or no competition across a substantial part of the area it serves including areas around [REDACTED], to the north of [REDACTED] and [REDACTED].</p> <p>193. We note the views of insurers: [REDACTED]. BMI South Cheshire was delisted by Bupa in 2012; [REDACTED].</p> <p>194. Our view is that BMI South Cheshire is insufficiently constrained.</p>
Spire Cheshire	<p>195. Spire Cheshire is the only private facility in Warrington. It offers all 17 specialties used in our analysis and level 2 ICU capability. The area around Spire Cheshire is [REDACTED] PMI penetration, particularly in the areas in and around [REDACTED].</p> <p>196. The closest rival to Spire Cheshire is BMI Alexandra, 18 miles to the east. Another BMI hospital, BMI South Cheshire, is 23 miles to the south. Both BMI hospitals are much larger than Spire Cheshire in terms of private admissions. They offer all 17 specialties, as well as level 3 ICU capability. The maps show material overlaps with a substantial part of the area from which Spire Cheshire attracts insured inpatients.</p> <p>197. According to Spire's internal documents, [REDACTED]. We also consider that the presence of Spire Manchester and Spire Regency to the north and south of BMI Alexandra has the potential to reduce the competitive constraint exerted by BMI Alexandra.</p> <p>198. Nuffield Chester is 23 miles away in Chester. It offers all 17 specialties and level 2 ICU capability. The material overlaps are limited to the [REDACTED] area. Spire said that Nuffield Chester '[REDACTED]'. Spire also said that [REDACTED]. Spire said that [REDACTED].</p> <p>199. Ramsay Oaklands is 21 miles away in Salford. It offers fewer specialties (14 not including oncology) and is unlikely to overlap materially with Spire Cheshire. Fairfield Independent is 20 miles to the north-west. It provides fewer specialties (12 not including oncology) and has no ICU. Spire said that Fairfield Independent [REDACTED].</p> <p>200. Overall, Spire Cheshire appears to face competition across a substantial part of the area from which it draws patients, but little or no competition in an area to the north-east of the hospital, [REDACTED]. These are areas of [REDACTED] PMI penetration.</p> <p>201. We note the views of insurers: [REDACTED].</p> <p>202. Our view is that Spire Cheshire is insufficiently constrained.</p>
Spire Liverpool	<p>203. Spire Liverpool is one of two private facilities in Liverpool. It is located to the south-east of the city, and BMI Sefton PPU is 8 miles to the north-east. The estimated drive-time between the two hospitals is 20 minutes in normal</p>

	<p>traffic conditions, travelling in a built-up area. Spire Liverpool is larger than BMI Sefton and offers more specialties (17 compared with 15). BMI Sefton does not offer oncology services. Spire Liverpool has level 2 ICU capability and BMI Sefton has no ICU. Material overlap in the area from which Spire Liverpool and BMI Sefton draw insured inpatients is limited to one postcode area.</p> <p>204. Fairfield Independent is 14 miles to the north of St Helens (about 30 minutes' drive in normal traffic conditions). It offers only 12 of the specialties used in our analysis, not including oncology and has no ICU.</p> <p>205. Ramsay Renacres is 21 miles to the north (about 40 minutes' drive in normal traffic conditions). It offers all 17 specialties but has no ICU capability. The maps show no material overlaps in the areas from which Spire Liverpool and Ramsay Renacres draw insured inpatients.</p> <p>206. We note that in internal documents, [REDACTED].</p> <p>207. We note the views of insurers: [REDACTED].</p> <p>208. Our view is that Spire Liverpool is insufficiently constrained.</p>
Spire Wirral	<p>209. Spire Wirral is the only private hospital in Wirral. The closest rival private facility is BMI Sefton PPU 15 miles away on the other side of the River Mersey. It is much smaller than Spire Wirral in terms of private admissions and offers fewer specialties (15 not including oncology compared with 17 at Spire Wirral). The maps show no material overlaps in the areas from which the two hospitals draw insured inpatients.</p> <p>210. The next closest rival hospital is Nuffield Chester, 18 miles away (about 30 minutes' drive in normal traffic conditions). It is a similar facility to Spire Wirral in terms of the size, the number of specialties provided, and ICU capability. However, the material overlap is limited to [REDACTED]. We also note that [REDACTED].</p> <p>211. Spire also identified the Park Suite PPU as a constraint. We have limited information on this facility. Given its location we would expect it to draw patients from much the same area as Spire Wirral. It is, however, much smaller than Spire Wirral.</p> <p>212. We note the views of insurers: [REDACTED].</p> <p>213. Our view is that Spire Wirral is insufficiently constrained.</p>
Ramsay Euxton Hall	<p>214. Ramsay Euxton Hall is located between Preston and Wigan and is most active in areas around [REDACTED]. It offers 15 of the specialties used in our analysis, oncology not included, and has no ICU. Its closest competitors are BMI Beardwood to the west and BMI Beaumont to the south-east. One other BMI hospital in the wider area is BMI Alexandra, a large hospital in Manchester that draws insured inpatients from across the region.</p>

	<p>215. These rival hospitals do not attract insured inpatients in material numbers from the areas that are most important to Ramsay Euxton Hall. However, we consider that the geographic distribution of patients may understate the competitive constraint from BMI Beardwood and BMI Beaumont. In particular, we note that for insured inpatients originating in the postcodes that taken together account for a large proportion of Ramsay Euxton Hall's insured inpatients, both BMI Beaumont and BMI Beardwood appear to be easily accessible (these hospitals are located outside Bolton and Blackburn respectively, both of which are well connected with the areas from which Ramsay Euxton Hall draws patients). These hospitals also offer a wider range of the 17 specialties we used in our analysis than Ramsay Euxton Hall.</p> <p>216. We note the views of insurers: [X].</p> <p>217. Our view is that Ramsay Hall is sufficiently constrained.</p>
Northern Ireland	
North West Independent	<p>218. We have not been able to estimate catchment areas for private hospitals and PUs in Northern Ireland due to the lack of data. However, it is our view that insurers would not consider private facilities located in Belfast to be close competitors to North West Independent Hospital given their distance from Londonderry/Derry. We do not have details on the private facilities available in the NHS Altnagelvin Area Hospital (14 miles away) and Causeway Hospital (17 miles away) including the range of services available or their capacity to treat private patients. We note, however, that North West Independent has not provided further evidence to support its view that these are competitors to the North West Independent Hospital.</p> <p>219. We note the views of insurers: [X].</p> <p>220. Our view is that North West Independent Hospital is insufficiently constrained.</p>
Ulster Independent Clinic	<p>221. We consider that the other private hospitals and PUs located in Belfast area cannot provide a sufficient constraint for the Ulster Independent Clinic given their small presence in the provision of private patient services. In addition, we consider that private facilities located some distance from Belfast in Northern Ireland or the Republic of Ireland will not be considered by insurers to be close substitutes for the Ulster Independent Clinic.</p> <p>222. We note the views of insurers: [X].</p> <p>223. Our view is that Ulster Independent Clinic is insufficiently constrained.</p>

Scotland	
BMI Albyn	<p>224. BMI Albyn is located in Aberdeen. Its closest competitor is Spire Murrayfield in Edinburgh, 123 miles away. These hospitals draw insured inpatients from different areas.</p> <p>225. We note the views of insurers: [REDACTED].</p> <p>226. Our view is that BMI Albyn is insufficiently constrained.</p>
BMI Carrick Glen	<p>227. BMI Carrick Glen is in Ayr. BMI Carrick Glen's closest competitor is Nuffield Glasgow which is 42 miles to the north. The maps show no overlap in the areas from which these hospitals draw insured inpatients.</p> <p>228. We note the views of insurers: [REDACTED]. Bupa did not delist this hospital in 2012; [REDACTED].</p> <p>229. Our view is that BMI Carrick Glen is insufficiently constrained.</p>
BMI Fernbrae	<p>230. BMI Fernbrae is the only private hospital in Dundee and its closest competitor is Spire Murrayfield, 58 miles away in Edinburgh. The maps show some overlap in the areas from which these hospitals draw insured inpatients to the south of BMI Fernbrae, but Spire Murrayfield attracts few patients from these postcode areas. Overall BMI Fernbrae appears to face little or no competition in the area it serves.</p> <p>231. We note the views of insurers: [REDACTED].</p> <p>232. Our view is that BMI Fernbrae is insufficiently constrained.</p>
BMI Kings Park	<p>233. BMI Kings Park is the only private hospital in Stirling. It offers 15 of the specialties used in our analysis, not including oncology, but has no ICU. The closest rival hospitals are Nuffield Glasgow (30 miles away in Glasgow) and Spire Murrayfield (33 miles away in Edinburgh). BMI Kings Park does not appear to face competition from these hospitals in its core catchment area for insured patients of [REDACTED]. Only in the [REDACTED] area does a rival operator, Spire Murrayfield, attract insured patients in material numbers. Furthermore, we note that Nuffield Glasgow is 6 miles from another BMI hospital, BMI Ross Hall. As explained in Section 6, this could weaken any constraint that Nuffield Glasgow may have on BMI Kings Park.</p> <p>234. We note the views of insurers: [REDACTED]. BMI Kings Park was not delisted by Bupa during its negotiations with BMI in 2011; [REDACTED].</p> <p>235. Our view is that BMI Kings Park is insufficiently constrained.</p>

BMI Ross Hall	<p>236. BMI Ross Hall is located to the south-west of Glasgow (and therefore south of the River Clyde). Its main competitor is Nuffield Glasgow, 6 miles away to the north-west of the city (and therefore north of the River Clyde). Both hospitals offer all 17 of the specialties used in our analysis. BMI Ross Hall has level 3 ICU capability whilst Nuffield Glasgow ICU level 2.</p> <p>237. BMI Ross Hall draws insured patients from a wide area, but those most important to the hospital are largely to the south and south-east of the hospital (and the city of Glasgow). These are areas of [REDACTED] PMI penetration [REDACTED]. Nuffield Glasgow is not active in these areas. Nuffield Glasgow largely attracts patients from postcode areas to the north, north-east and north-west of the city, and so the other side of the River Clyde.</p> <p>238. Spire Murrayfield, 48 miles away in Edinburgh, does not appear to compete with BMI Ross Hall for insured patients to any material degree.</p> <p>239. We note the views of insurers: [REDACTED]. BMI Ross Hall was not delisted by Bupa during its negotiations with BMI in 2011; [REDACTED].</p> <p>240. Our view is that BMI Ross Hall is insufficiently constrained.</p>
Spire Murrayfield	<p>241. Spire Murrayfield is the only private hospital in Edinburgh. It offers all 17 specialties used in our analysis, and level 2 ICU capability. It draws insured patients from a wide area, although it is the Edinburgh, Livingston and Rosyth areas that appear to be most important to the hospital. The NHS Lothian PPU is located 3 miles from Spire Murrayfield. It offers 11 of the specialties used in our analysis, not including oncology, and level 3 ICU capability. It is much smaller than Spire Murrayfield measured by private admissions ([REDACTED] compared with [REDACTED]) which we consider to be indicative of its small presence in the local market and limited capacity to absorb additional patients. Competition from other private hospital for insured patients appears to be limited.</p> <p>242. We note the views of insurers: [REDACTED].</p> <p>243. Our view is that Spire Murrayfield is insufficiently constrained.</p>
South-East—East	
BMI Chaucer	<p>244. BMI Chaucer is the only private hospital in Canterbury. The closest rivals are two facilities operated by the Spencer Private Hospital, the William Harvey in Ashford, 16 miles away, and the Queen Elizabeth and Queen Mother (QEQM) in Margate, 18 miles away. The next closest private hospitals are Spire St Saviour's in Hythe (20 miles to the south) and Spire Alexandra in Chatham (30 miles to the west).</p> <p>245. We do not have information on the location of patients attending William Harvey. Given its location, we would</p>

	<p>expect the areas from which it and BMI Chaucer draw patients to overlap around Ashford. We note that, in 2011, William Harvey admitted a relatively small number of private patients, [REDACTED], suggesting that it may have limited capacity to absorb patients from BMI Chaucer. The QEQM is a larger facility in terms of private patient admissions. It draws insured inpatients from a wide area, though it is only in the [REDACTED] area that the overlap with BMI Chaucer is material. The William Harvey offers 14 of the specialties we used in our analysis, oncology is not one of them, and QEQM offers all 17. Both have level 3 ICU capability.</p> <p>246. We found a material overlap in the area from which Spire St Saviour's and BMI Chaucer draw insured inpatients to the south of Canterbury, including [REDACTED]. With the exception of the area around [REDACTED], these overlaps are mostly not within the centre of patient activity for BMI Chaucer. Spire St Saviour's does not offer oncology services. Spire Alexandra has a material overlap with BMI Chaucer in the [REDACTED] area, which is not within the centre of patient activity for BMI Chaucer. It offers all 17 specialties used in our analysis. These two Spire hospitals and BMI Chaucer all offer level 2 ICU capability.</p> <p>247. BMI Chaucer therefore appears to have faced no or limited competition across a large part of the area it serves, including the two areas most important to the hospital, those around [REDACTED].</p> <p>248. We consider that the new Kent Institute of Medicine & Surgery (KIMS) facility, 28 miles away in Maidstone, will add to the competitive constraints faced by BMI Chaucer. However, given its location in Maidstone we would not expect it to exert a material constraint in the [REDACTED] areas.</p> <p>249. We note the views of insurers: Bupa [REDACTED] did not delist it during negotiations with BMI in 2011; [REDACTED].</p> <p>250. Our view is that BMI Chaucer is insufficiently constrained.</p>
BMI Esperance	<p>251. Other than the Michelham PPU, based at the Eastbourne District General Hospital, BMI Esperance is the only private facility in Eastbourne. It offers all 17 specialties used in our analysis and has level 2 ICU capability. The other closest rival facilities are Spire Sussex near Hastings (20 miles away) and Nuffield Brighton (21 miles away).</p> <p>252. The Michelham PPU in Eastbourne offers 16 of the specialties in our analysis and does not offer oncology services. We do not have data on the number of private patient admissions. In terms of the number of overnight beds, it is smaller than BMI Esperance: it has 21 beds compared with the 38 at the BMI hospital.</p> <p>253. Spire Sussex and Nuffield Brighton do not appear to exert a material constraint on BMI Esperance. Spire Sussex attracts insured inpatients from areas to the west, and Nuffield Brighton from areas to the east, of those served by BMI Esperance.</p> <p>254. Spire Tunbridge Wells and Nuffield Tunbridge Wells are 31 miles to the north. It appears that these hospitals compete for patients located between these hospitals and BMI Esperance.</p>

	<p>255. Overall BMI Esperance appears to face limited competition from other private hospitals across much of the area it serves. We would expect BMI Esperance to compete with Michelham PPU in Eastbourne for insured patients. We note, however, that it does not offer oncology services. We also have no data on the number of private patient admissions.</p> <p>256. We note the views of insurers: [REDACTED]. BMI Esperance was delisted by Bupa during its negotiations with BMI in 2011 [REDACTED].</p> <p>257. Our view is that BMI Esperance is insufficiently constrained.</p>
BMI Fawkham Manor	<p>258. BMI Fawkham Manor is located in Hartley, south of Dartford and Gravesend. The closest private hospitals to BMI Fawkham Manor are two other BMI hospitals. The closest rival hospital is Spire Alexandra, 17 miles to the east. Both hospitals offer all 17 specialties used in our analysis and have level 2 ICU capability. Spire Alexandra largely draws insured inpatients from an area to the east of that served by BMI Fawkham Manor, although there is material overlap in one postcode area, [REDACTED]. This area is not within the centre of patient activity for BMI Fawkham Manor.</p> <p>259. Nuffield Tunbridge Wells, Ramsay North Downs, Spire Hartwood and Nuffield Brentwood are all about 20 to 25 miles from BMI Fawkham Manor. All these hospitals offer level 2 ICU capability. Spire Hartwood and Nuffield Brentford offer all 17 specialties, and Nuffield Tunbridge Wells and Ramsay North Downs offer 16 and 13 respectively. Nuffield Tunbridge Wells appears to compete with BMI Fawkham Manor for insured patients in one postcode area, [REDACTED]. Otherwise these hospitals draw insured inpatients from areas that either do not overlap materially, or do not overlap at all, with that from which BMI Fawkham Manor attracts insured inpatients.</p> <p>260. Overall, BMI Fawkham Manor appears to face no or limited competition in the areas from which it attracts most insured patients [REDACTED].</p> <p>261. We note the views of insurers: [REDACTED]. It was delisted during negotiations with BMI in 2011; [REDACTED].</p> <p>262. Our view is that BMI Fawkham Manor is insufficiently constrained.</p>
BMI Goring Hall	<p>263. BMI Goring Hall is located in Worthing. Its closest competitor is the PPU at Worthing operated by the Western Sussex Hospitals Trust (3 miles away). This PPU offers 14 of the specialties used in our analysis, oncology not included, and is much smaller than Goring Hall in terms of private admissions ([REDACTED] compared with [REDACTED], in 2011). Although we would expect this PPU to compete with Goring Hall in the Worthing area, we consider the number of private admissions to be indicative of its limited capacity to absorb patients currently served by BMI Goring Hall.</p> <p>264. There are two hospitals in Brighton, 14 to 20 miles east of BMI Goring Hall: Spire Montefiore and Nuffield Brighton. We have data on the location of patients for only Nuffield Brighton. This shows that Nuffield Brighton attracts</p>

	<p>insured inpatients from areas to the east of those served by BMI Goring Hall, and that material overlaps appear to be limited to two postcode areas.</p> <p>265. There are a number of other hospitals around BMI Goring Hall: Nuffield Chichester and Western Sussex Trust St Richards (18 miles away to the west in Chichester); and Nuffield Haywards Heath (27 miles to the north-east in Haywards Heath).</p> <p>266. BMI Goring Hall appears to face competition in areas to the west, around Hove, from hospitals in Hove and Brighton, and to the east and north from hospitals in Chichester and Haywards Heath. However, BMI Goring appears to face limited competition for insured patients in [REDACTED], and to the north of these towns, which [REDACTED].</p> <p>267. We note the views of insurers: [REDACTED], it was delisted by Bupa during its negotiations with BMI in 2011 and [REDACTED].</p> <p>268. Our view is that BMI Goring Hall is insufficiently constrained.</p>
BMI Somerfield	<p>269. BMI Somerfield is currently the only private facility in Maidstone. Its closest active competitor is Spire Alexandra 7 miles to the north in Walderslade. KIMS, a new entrant, is due to start admitting patients in April 2014 and is located within 5 miles of BMI Somerfield. In its response to CC's Provisional Findings, [REDACTED].</p> <p>270. Other private facilities in the area are The Tunbridge Wells Suite PPU (15 miles away), Nuffield Tunbridge Wells (16 miles away) and Spire Tunbridge Wells (21 miles away); William Harvey hospital in Ashford (25 miles away); Ramsay North Downs (29 miles away); and Spire St. Saviour's (34 miles away).</p> <p>271. BMI Somerfield appears to compete with Spire Alexandra in areas to the north of Maidstone, and with the private hospitals in Tunbridge Wells in areas east of Tunbridge Wells and Sevenoaks. BMI Somerfield and Spire Alexandra offer all 17 specialties and Nuffield Tunbridge Wells offers 16 including oncology.</p> <p>272. Moreover, if KIMS' entry is successful, we would expect this to be a strong competitor to BMI Somerfield. KIMS is expected to have greater capacity in terms of inpatient beds and theatres than BMI Somerfield. KIMS plans to cover all 17 specialties we have focused on and to provide intensive care. We expect KIMS to have a significant impact in drawing patients from much of BMI Somerfield's catchment areas including in its centre of activity.</p> <p>273. We note the views of insurers: [REDACTED]. BMI Somerfield was delisted by Bupa during its negotiations with BMI in 2011; [REDACTED]. We note these views were given before KIMS' opening.</p> <p>274. We consider that BMI Somerfield is likely to be sufficiently constrained on account of the pressure we expect it will come under from KIMS, as well as from existing competition particularly in the northern and western parts of its catchment area.</p>

Nuffield Brighton	<p>275. Nuffield Brighton is located in Brighton. Its closest competitor is Spire Montefiore. This is a new hospital, opened in November 2012, in Hove, 4 miles from Nuffield Brighton. The number of inpatient rooms suggests that it is a smaller facility than Nuffield Brighton (20 at Spire Montefiore compared with 41 at Nuffield Brighton). We do not have information on the location of patients for these rival facilities, but we would expect considerable overlap with the area served by Nuffield Brighton.</p> <p>276. Other competitors appear to be: BMI Goring Hall 19 miles to the west; BMI Esperance 22 miles to the east; and Spire Gatwick Park 31 miles to the north. We expect these hospitals further to constrain Nuffield Brighton as, between them, they appear to attract insured patients in material numbers from [REDACTED]—at the centre of patient activity for Brighton Nuffield—as well as from areas to the north of Hove, and around [REDACTED], which are also important areas for Brighton Nuffield.</p> <p>277. We note the views of insurers: [REDACTED].</p> <p>278. Our view is that Nuffield Brighton is sufficiently constrained.</p>
Nuffield Tunbridge Wells	<p>279. Nuffield Tunbridge Wells is one of two private hospitals in Royal Tunbridge Wells. The other is Spire Tunbridge Wells, 4 miles away. The two hospitals are of similar size, in terms of private patient admissions. Nuffield offers 16 of the specialties used in our analysis, including oncology. Spire Tunbridge Wells offers all 17. Both hospitals offer level 2 ICU capability. The two hospitals attract insured inpatients from much the same area.</p> <p>280. A third facility at Tunbridge Wells is the Maidstone Tunbridge Wells Suite PPU, 2 miles away. It offers 12 of the specialties used in our analysis, not including oncology and level 3 ICU capability. We would expect this to draw patients from much the same area as the two private hospitals.</p> <p>281. There are other hospitals in the wider area: BMI McIndoe (12 miles to the west); BMI Somerfield (16 miles to the north), BMI Chelsfield Park (22 miles to the north); Spire Alexandra (22 miles to the north), Spire Gatwick Park (25 miles to the west); Ramsay North Downs (27 miles to the north-west); BMI Fawkham Manor (22 miles to the north); and BMI Shirley Oaks (30 miles to the north). The material overlaps of these hospitals with the areas from which Nuffield Tunbridge Wells draws insured inpatients are limited to areas east of Tunbridge Wells and Sevenoaks.</p> <p>282. We note the views of insurers: [REDACTED].</p> <p>283. Our view is that Nuffield Tunbridge Wells is sufficiently constrained.</p>
Spire Alexandra	<p>284. Spire Alexandra is the only private facility in Chatham. Currently, its closest competitor is BMI Somerfield 7 miles to the south in Maidstone. KIMS is a new private hospital that is expected to open in Maidstone in Spring 2014,</p>

	<p>7 miles to the south. [REDACTED].</p> <p>285. Currently there is considerable overlap in the areas from which BMI Somerfield and Spire Alexandra draw insured patients, although BMI Somerfield is more active in the [REDACTED] and to the south and Spire Alexandra is more active in [REDACTED] and to the north. We expect KIMS to have a higher capacity than BMI Somerfield. Given that, and given that KIMS is closer to the M20, we think it reasonable to expect that KIMS may have a similar, if not greater, reach into the areas at the centre of Spire Alexandra' patient activity. KIMS proposes to offer all 17 specialties used in our analysis, as well as providing intensive care.</p> <p>286. Other competitors to Spire Alexandra appear to be: BMI Fawkham 17 miles to the west in Hartley; and BMI Chaucer 30 miles to the east in Canterbury.</p> <p>287. We note the views of insurers: [REDACTED]. We note that these views were given before KIMS' opening.</p> <p>288. Our view is that Spire Alexandra is sufficiently constrained taking into account the likely competition from KIMS.</p>
Spire Sussex	<p>289. Spire Sussex is the only private facility in St Leonards-on-Sea (Hastings). The potential competitors appear to be BMI Esperance (20 miles to the west in Eastbourne) and Nuffield Tunbridge (25 miles away to the north in Tunbridge Wells). Spire Sussex appears to face no or limited competition from these hospitals in the areas from which it draws insured patients. BMI Esperance draws insured inpatients largely from an area to the south-west of Spire Sussex, and Nuffield Tunbridge Wells from an area to the north-west. The Maidstone Tunbridge Wells Suite PPU, 25 miles to the north, does not add materially to these constraints.</p> <p>290. We note the views of insurers: [REDACTED].</p> <p>291. Our view is that Spire Sussex is insufficiently constrained.</p>
Spire Tunbridge Wells	<p>292. Spire Tunbridge Wells is one of two private hospitals in Royal Tunbridge Wells. The other is Nuffield Tunbridge Wells, 4 miles away.</p> <p>293. Spire Tunbridge Wells offers all 17 specialties used in our analysis and Nuffield Tunbridge Wells offers 16, including oncology. The hospitals are of a similar size and both offer level 2 ICU capability. The two hospitals attract insured patients from much the same area.</p> <p>294. There is also the Maidstone Tunbridge Wells Suite PPU, 7 miles from Spire Tunbridge Wells. The PPU is small compared with these hospitals and offers only 12 of the specialties used in our analysis, not including oncology, but has level 3 ICU capability. We would expect it to draw patients from much the same area as the two private hospitals in Tunbridge Wells.</p> <p>295. There are many hospitals in the wider area: BMI McIndoe (9 miles to the west); BMI Somerfield (21 miles to the</p>

	<p>north), BMI Chelsfield Park (22 miles to the north); Ramsay North Downs (21 miles to the north-west); Nuffield Haywards Heath (20 miles to the south-west); BMI Fawkham Manor (21 miles to the north); and BMI Shirley Oaks (28 miles to the north). The material overlaps of these hospitals with the areas from which Nuffield Tunbridge Wells draws insured inpatients are limited to areas east of Tunbridge Wells and Sevenoaks. Several of these offer oncology services.</p> <p>296. We note the views of insurers: [X].</p> <p>297. Our view is that Spire Tunbridge Wells is sufficiently constrained.</p>
The Spencer QEQM	<p>298. Spencer QEQM is the only private facility in Margate. Its main competitor is BMI Chaucer 18 miles to the west in Canterbury. BMI Chaucer is larger than QEQM in terms of private admissions. Both offer all 17 specialties used in our analysis. BMI Chaucer has level 2 ICU capability and QEQM level 3 capability. The maps show that BMI Chaucer draws insured inpatients from the area served by QEQM, and in the same or greater numbers. This includes QEQM's main areas of patient activity of Margate and Broadstairs. Spire St Saviour's also draws insured inpatients from most of the area where QEQM is active, though the numbers are relatively low at the centre of QEQM's patient activity.</p> <p>299. We note the views of insurers: [X].</p> <p>300. Our view is that the Spencer QEQM hospital is sufficiently constrained.</p>
South-East—West	
BMI Chiltern	<p>301. The two closest private hospitals to BMI Chiltern are two other BMI hospitals. The closest competitors appear to be Spire Thames Valley (15 miles) and then Spire Bushey (21 miles), Nuffield Oxford (31 miles) and Spire Harpenden (24 miles). All these hospitals offer all 17 specialties used in our analysis. Nuffield has ICU level 3 facilities compared with ICU level 2 at BMI Chiltern and the three Spire hospitals. There are material overlaps in the areas from which BMI Chiltern draws insured inpatients and those from which the Nuffield and Spire hospitals draw insured inpatients, but these are at the edges of the area served by BMI Chiltern. As a result, BMI Chiltern appears not to face competition for insured patients from these rival hospitals across a substantial part of the area it serves. This includes postcodes around High Wycombe, Amersham and Aylesbury. [X] PMI penetration.</p> <p>302. BMI identified other constraints including PPUs. Our view is that these do not add materially to the constraints exerted by the hospitals considered above taking into account their locations and the range of services offered.</p> <p>303. We note the views of insurers: [X], BMI Chiltern was not among the BMI hospitals delisted by Bupa in the 2011 negotiations; [X].</p>

	304. Our view is that BMI Chiltern is insufficiently constrained.
BMI Foscote	<p>305. Horton General Hospital's PPU is located less than a mile from BMI Foscote. It is of a similar size to BMI Foscote in terms of private admissions. It has level 3 ICU capability whereas BMI Foscote has no ICU. However, Horton PPU offers fewer specialties: BMI Foscote offers 15 of the specialties including oncology and Horton PPU offers 11 not including oncology services.</p> <p>306. Nuffield Warwickshire and Nuffield Oxford are both within 25 miles, to the north and south of BMI Foscote. They are larger than BMI Foscote in terms of private admissions, offer more specialties, and provide intensive care. The maps show material overlaps in the areas from Nuffield Oxford and BMI Foscote draw insured inpatients, extending to much of the area important to BMI Foscote. Only in the [REDACTED] area does BMI Foscote appear not to be competing with Nuffield Oxford. We recognize that the observed overlaps may overstate the extent to which BMI Foscote is competing with Nuffield Oxford for patients given that Nuffield Oxford offers more specialties (15 and 17 respectively).</p> <p>307. There are no material overlaps in the areas from which Nuffield Warwickshire and BMI Foscote draw insured inpatients. The [REDACTED] area, which is to the north of the area from which BMI Foscote draws insured inpatients appears to be as close to Nuffield Warwickshire as it is to BMI Foscote. However, further investigation shows that for people living south of [REDACTED], the most direct route to the hospital would be [REDACTED] (ie [REDACTED]).</p> <p>308. We consider that the Oxford University Hospitals John Radcliff and Churchill PPUs, given their location, are likely to draw insured patients from areas served by Nuffield Oxford. Whilst these PPUs offer fewer specialties than BMI Foscote, given their size and level 3 ICU capability, we consider that they are likely to add somewhat to the competition faced by BMI Foscote.</p> <p>309. We note the views of insurers: [REDACTED], it was delisted by Bupa during negotiations with BMI in 2011. [REDACTED].</p> <p>310. Our view is that BMI Foscote is sufficiently constrained.</p>
BMI Hampshire Clinic	<p>311. The closest private hospital to BMI Hampshire Clinic is Spire Clare Park, 13 miles away in Farnham. Spire Clare Park draws insured inpatients from an area to the east of BMI Hampshire Clinic. We see that Spire Clare Park has a material presence in postcodes to east of BMI Hampshire Clinic going towards and beyond, [REDACTED]. Spire Clare Park offers 16 of the specialties used in our analysis (compared with 17 at BMI Hampshire Clinic) and level 2 ICU capability (compared with level 3 at BMI Hampshire Clinic).</p> <p>312. Circle Reading, Ramsay Berkshire Independent, and Spire Dunedin are located to the north of BMI Hampshire Clinic near Reading. All three hospitals offer level 2 ICU capability and offer 13, 14 and 17 respectively of the specialties used in our analysis. Both Spire Dunedin and Ramsay Berkshire draw insured inpatients from much the</p>

	<p>same area, an area to the north of BMI Hampshire Clinic. We do not have information on the distribution of patients using Circle Reading, but given its location we would expect it to draw patients from much the same area as the other two hospitals. We see material overlaps with postcodes from which BMI Hampshire draws insured patients to the south of Reading and going west towards Newbury and Thatcham.</p> <p>313. Frimley Park PPU is located within 17 miles to the north-east of BMI Hampshire Clinic. It offers 14 of the specialties used in our analysis, oncology not included, and level 3 ICU capability. We do not have data on patient locations for Frimley Park. We would not expect it to add significantly to the competition faced by BMI Hampshire Clinic from the hospitals located to its east and north.</p> <p>314. Nuffield Wessex and Spire Southampton are located to the south-west, 26 and 32 miles away, respectively. These hospitals offer all 17 of the specialties used in our analysis and level 2 and three, respectively, ICU capability. We see material overlaps with areas from which BMI Hampshire Clinic draws insured patients from [REDACTED] going west towards Winchester and Andover.</p> <p>315. Overall, whilst BMI Hampshire appears to face competition to the east, north and south-west of the area from which it draws insured patients, it faces no or limited competition in the centre of its catchment area including Basingstoke and its surrounds.</p> <p>316. We note the views of insurers: [REDACTED]. It was delisted during negotiations with BMI in 2011; [REDACTED].</p> <p>317. Our view is that BMI Hampshire Clinic is insufficiently constrained.</p>
BMI Mount Alvernia	<p>318. Nuffield Guilford is 3 miles to the west of Mount Alvernia on the other side of the city. The maps show that these two hospitals are attracting insured inpatients from the same areas with similar distributions of patients. Although outside the city centre, Nuffield is accessible, located just off the A3 road which bypasses Guildford. Both hospitals offer all 17 specialties although Nuffield has level 2 ICU capability and BMI Mount Alvernia has no ICU.</p> <p>319. The maps suggest that in addition to competition from Nuffield Guildford, BMI Mount Alvernia is competing for insured patients in many areas outside its centre of patient activity with one or more of the following hospitals: Spire Gatwick Park (24 miles away) and Spire Clare Park (14 miles away), Nuffield Woking (8 miles away) and Ramsay Ashted (17 miles away). Of these, Spire Gatwick Park provides all 17 specialties, Ramsay Ashted provides 15, and the other two provide 16 specialties. Oncology is provided at the two Spire hospitals. Ramsay Ashted, Spire Clare Park, and Spire Gatwick Park have level 2 ICU facilities, while BMI Mount Alvernia has no ICU.</p> <p>320. Given its location we would expect Royal Surrey PPU to add somewhat to the constraints faced by Mount Alvernia.</p>

	<p>321. We note the views of insurers: Bupa [REDACTED] the hospital was delisted in 2012; [REDACTED].</p> <p>322. Our view is that BMI Mount Alvernia is sufficiently constrained.</p>
BMI Princess Margaret	<p>323. The closest private hospital to BMI Princess Margaret is Spire Thames Valley, 6 miles to the north-east. Spire Thames Valley appears to be a strong competitor for insured patients located in postcodes to the north of Princess Margaret (including those to the northeast towards Uxbridge and the north-west towards Maidenhead and beyond). Both hospitals offer all 17 of the specialties used in our analysis. Spire Thames Valley has level 2 ICU capability whereas Princess Margaret has no ICU.</p> <p>324. Spire Thames Valley has a weaker presence in areas to the south of Windsor. BMI Princess Margaret is located to the south-west of Windsor and Spire Thames Valley is located to the north of Slough. For BMI Princess Margaret patients living in Windsor and the area to the south stretching from Bracknell to Staines, Spire Thames Valley would be a further 6 miles drive through Windsor and Slough (an additional 20 minutes' drive-time in normal traffic conditions). We also note that Spire Thames Valley is smaller than BMI Princess Margaret in terms of private admissions ([REDACTED] compared with [REDACTED]) which may be an indicator of its capacity to accommodate patients that might otherwise go to BMI Princess Margaret.</p> <p>325. There are other hospitals to the south-east (Nuffield Woking, 13 miles away), south-west (Frimley Park PPU, 14 miles away), and west (Spire Dunedin, 20 miles away, Ramsay Berkshire Independent, 22 miles away, and Circle Reading, 21 miles away) that appear to compete with BMI Princess Margaret in certain areas. There are, however, areas to the south of BMI Princess Margaret where the presence of competitors is small ([REDACTED]). We consider also that the observed overlaps may overstate the extent of competition from these hospitals as they all have level 2 ICU facilities (except for Nuffield Woking, which has no ICU), while BMI Princess Margaret has no ICU. We also note that Nuffield Woking is 4 miles from another BMI hospital, BMI Runnymede. As explained in Section 6, this could weaken the constraint that Nuffield Woking may have on BMI Princess Margaret.</p> <p>326. Finally we note that BMI Princess Margaret is much larger than any of its competitors and draws insured inpatients from a wide area. We consider that this is likely to be indicative of its attractiveness to insured patients, the strength of its presence in the area and therefore its importance to insurers.</p> <p>327. We note the views of insurers: [REDACTED].</p> <p>328. We also note that [REDACTED].</p> <p>329. Our view is that BMI Princess Margaret is insufficiently constrained.</p>
BMI Runnymede	<p>330. The closest private hospital to BMI Runnymede is Nuffield Woking, 4 miles to the south. Both hospitals offer 16 of the specialties used in our analysis, oncology not included. The areas from which these two hospitals draw insured</p>

	<p>inpatients are very similar, excluding those postcodes from which BMI Runnymede treats a small number of patients. Nuffield Woking is located outside of Woking and on the same side of the town as BMI Runnymede. Both hospitals are located close to the A320 (with an estimated drive-time between them of 13 minutes).</p> <p>331. We do not consider that the lack of ICU facilities at Nuffield Woking (compared with ICU2 at BMI Runnymede) materially reduces the competitive constraint exerted on BMI Runnymede given the availability of ICU2 facilities at Nuffield Guildford and ICU3 facilities at Royal Surrey PPU.</p> <p>332. We note that Nuffield Woking is smaller than BMI Runnymede in terms of private patient admissions ([REDACTED] compared with [REDACTED] in 2011), but consider this difference in the size to be insufficient to materially weaken the outside option available to insurers.</p> <p>333. The maps suggest that BMI Runnymede is also competing in its centre of patient activity with Nuffield Guildford (12 miles away) for those postcode areas that are closer to, or well connected with, Guildford (although this competition may be reduced by the presence of BMI Alvernia). We note that Nuffield Guildford offers all 17 specialties used in our analysis (compared with 16 at BMI Runnymede) and (like BMI Runnymede) has an ICU at critical level 2. We consider that competition from other hospitals in the area is limited.</p> <p>334. We note the views of insurers: [REDACTED].</p> <p>335. Our view is that BMI Runnymede is sufficiently constrained.</p>
BMI Saxon Clinic	<p>336. The nearest private hospitals to BMI Saxon Clinic are BMI Three Spires (21 miles away) and BMI Manor (18 miles away). The closest rival facilities appear to be the Cobham Clinic (17 miles away), Spire Harpenden (26 miles away) and Nuffield Oxford (43 miles away).</p> <p>337. We observe material overlaps in areas from which: BMI Saxon Clinic and Spire Harpenden draw insured inpatients around [REDACTED]; and BMI Saxon Clinic and Nuffield Oxford draw insured inpatients [REDACTED]. All three hospitals offer all 17 specialties. We consider, however, that the overlaps observed may overstate the extent of competition given that the rival hospitals have ICU facilities (levels 2 and 3 respectively) and Saxon Clinic has no ICU.</p> <p>338. The Cobham Clinic is located 17 miles from BMI Saxon Clinic in the direction of Spire Harpenden. It offers 15 of the specialties we use including oncology. It is a 13-bed purpose-built PPU within the grounds of the Luton and Dunstable University. Given its location, we consider it likely that the Cobham Clinic draws insured patients from postcode areas to the east of the area from which BMI Saxon Clinic draws patients.</p> <p>339. Overall BMI Saxon Clinic appears to face little or no competition in a substantial part of the area it serves. In particular, the area immediately around and to the north of BMI Saxon Clinic. PMI penetration [REDACTED].</p>

	<p>340. We note the views of insurers: [REDACTED].</p> <p>341. Our view is that BMI Saxon Clinic is insufficiently constrained.</p>
BMI Shelburne	<p>342. BMI Shelburne is the only private facility in High Wycombe. To its east there are three Spire hospitals and to its west there is Nuffield Oxford. These hospitals attract insured inpatients in material numbers from postcode areas at the edge of the area from which BMI Shelburne draws insured inpatients. In particular, BMI Shelburne appears to face competition for insured patients to the north around [REDACTED], and to the south around [REDACTED]. BMI Shelburne appears to face little or no competition across a large part of the area it serves.</p> <p>343. The closest competitor to BMI Shelburne is Spire Thames Valley, 14 miles to the south-east. Both offer all 17 specialties. Spire Thames Valley has level 2 ICU capability, but BMI Shelburne has no ICU. Spire Thames Valley draws most of its insured patients from areas adjacent to those that are most important to BMI Shelburne. For BMI Shelburne patients from the [REDACTED] inspection of the road links suggests that there is not much to choose between the two hospitals on grounds of accessibility. With all other BMI Shelburne insured inpatients, if their insurer were to delist BMI Shelburne, Spire Thames Valley would be a further drive of at most 14 miles (with an estimated journey time of 24 minutes in normal traffic conditions) on the M40 and/or main roads. We note, however, that the stretch of the M40 between the High Wycombe and Slough exits can be busy and at times congested.</p> <p>344. We also note the views of insurers: [REDACTED].</p> <p>345. Our view is that BMI Shelburne is insufficiently constrained.</p>
Nuffield Guildford	<p>346. BMI Mount Alvernia is 3 miles to the east of Nuffield Guildford on the other side of the city. These hospitals attract insured patients from much the same areas with similar distributions of patients. Both hospitals offer all 17 specialties although Nuffield has level 2 ICU capability and BMI Mount Alvernia has no ICU.</p> <p>347. The maps suggest that in addition to competition from BMI Mount Alvernia, Nuffield Guildford also faces competition for insured patients from: BMI Runnymede, Spire Gatwick Park and Spire Clare Park, and Ramsay Ashtead. Ramsay Ashtead offers 15 specialties, BMI Runnymede and Spire Clare Park 16, and Spire Gatwick Park all 17. All these hospitals have level 2 ICU facilities. Given its location we would expect Royal Surrey PPU to be a further constraint on Nuffield Guildford. It offers ten of the specialties used in our analysis and, significantly, level 3 ICU capability.</p> <p>348. We note the views of insurers: [REDACTED].</p> <p>349. We consider Nuffield Guildford to be sufficiently constrained.</p>

Nuffield Oxford	<p>350. Nuffield Oxford is the only private hospital in Oxford. It draws insured inpatients from a wide area reflected in its catchment area of [REDACTED] miles. It offers all 17 specialties used in our analysis and level 3 ICU capability.</p> <p>351. Its two nearest competitors are Oxford University Hospital's PPUs—Churchill and JR—both located less than a mile away. Given their location we would expect these PPUs to draw patients from areas served by Nuffield Oxford. These PPUs offer level 3 ICU capability, but 7 and 13 respectively of the specialties used in our analysis. Also, their combined size appears to be considerably smaller than Nuffield Oxford which may be an indicator of their limited capacity to accommodate additional patients were Nuffield not available to insured patients.</p> <p>352. Nuffield Oxford appears to compete with other private hospitals around the edge of the area from which it draws insured patients. However, there is a substantial area in the centre of its catchment area where it appears to face no or limited competition from other private hospitals. This area includes Oxford and Bicester, and surrounding areas.</p> <p>353. We note the views of insurers: [REDACTED].</p> <p>354. Our view is that Nuffield Oxford is insufficiently constrained.</p>
Oxford University Hospitals Horton PPU	<p>355. We consider that Horton PPU is sufficiently constrained given the presence of BMI Foscote and Nuffield Oxford.</p>
Spire Portsmouth	<p>356. The two closest private facilities to Spire Portsmouth are Nuffield Chichester and Western Sussex Trust St Richard's PPU, located 9 miles to the east. Both these hospitals are smaller than Spire Portsmouth. Spire Portsmouth and Nuffield Chichester offer all 17 specialties used in our analysis, but St Richard's PPU offers 14 specialties. Spire Portsmouth has level 2 ICU capability whereas Nuffield Chichester and St Richards have no ICU. Both Nuffield Chester and St Richard's PPU largely draw insured inpatients from areas to the east of those in which Spire Portsmouth is active. These rivals overlap with Spire Portsmouth just north of [REDACTED], but not beyond it. AXA PPP told us that [REDACTED], Spire's internal documents said that [REDACTED].</p> <p>357. Other rival hospitals located nearby include Nuffield Wessex and BMI Sarum Road. Both these hospitals offer 17 of the specialties used in the analysis and level 2 ICU capability. Nuffield Wessex and BMI Sarum Road largely draw insured inpatients from an area to the north-west of that in which Spire Portsmouth is active. These rivals overlap with Spire Portsmouth in the Southampton area, but not beyond it.</p> <p>358. Overall, Spire Portsmouth appears to face no or limited competition in its centre of patient activity, an area which covers [REDACTED]. Competition is largely limited to the east around [REDACTED] and to the west around [REDACTED].</p> <p>359. We note the views of insurers: [REDACTED].</p>

	360. Our view is that Spire Portsmouth is insufficiently constrained.
Spire Southampton	<p>361. The closest private facility to Spire Southampton is Nuffield Wessex, 7 miles to the north-east of the city. Both hospitals offer all 17 specialties used in our analysis. Spire Southampton offers level 3 ICU capability whereas Nuffield Wessex offers level 2. Nuffield Wessex is about half the size of Spire Southampton. Spire Southampton and Nuffield Wessex draw insured inpatients from across much the same area, although the number of Spire Southampton insured patients is, in most postcode areas, greater than the number of those attending Nuffield Wessex. [X]. Spire Southampton is located in the city. Nuffield Wessex is to the north of the city just off the M3. The drive-time between the two hospitals is estimated to be around 15 minutes in normal traffic conditions. For Spire Southampton patients who are not based in Southampton, the additional travel time could be considerably less than this.</p> <p>362. BMI Sarum Road (12 miles away), Ramsay New Hall (22 miles away) and BMI Hampshire Clinic (32 miles away) appear to add to the constraints faced by Spire to the north of Southampton around [X]. Nuffield Bournemouth (28 miles away) and BMI Harbour (33 miles away) provide a constraint to the west of Southampton around [X]. All these hospitals offer 17 of the specialties used in our analysis, with the exception of Ramsay New Hall which offers 14, and all provide level 2 ICU capability, with exception of BMI Hampshire Clinic which has level 3.</p> <p>363. Overall, we consider that Spire Southampton is competing with other private hospitals across much of the area in which it is active. It is, however, the only private hospital located in the city of Southampton. For the postcodes in Southampton and along the River Test towards the Solent the only competitor appears to be Nuffield Wessex and the number of Nuffield Wessex patients is small compared with Spire Southampton. In addition, with the exception of BMI Hampshire Clinic, Spire Southampton is the only hospital which has level 3 ICU capability.</p> <p>364. We note the views of insurers: [X].</p> <p>365. We also note that Spire documents [X].</p> <p>366. Our view is that Spire Southampton is insufficiently constrained.</p>
South-West	
BMI Harbour	<p>367. BMI Harbour is located in Poole. Its closest competitor is Nuffield Bournemouth, 6 miles to the east in Bournemouth. Other hospitals in the area are Ramsay New Hall 29 miles to the north-east, in Salisbury, and Spire Southampton, 36 miles to the east. Located 25 miles to the west is another BMI hospital, BMI Winterbourne. The Cornelia Suite, a PPU at Poole Hospital, is next to BMI Harbour.</p> <p>368. BMI Harbour and Nuffield Bournemouth draw insured inpatients from much the same area. Nuffield Bournemouth</p>

	<p>is active in the main centre of patient activity for BMI Harbour, the area around [REDACTED]. There are also material overlaps to the east of BMI Harbour in the Bournemouth area, and in areas towards [REDACTED]. Both hospitals offer all 17 specialties used in the analysis and level 2 ICU capability, and are of a similar size.</p> <p>369. Nuffield Bournemouth has a stronger presence to the east of the Bournemouth and Poole area. There are postcodes in [REDACTED] and then to the west where Nuffield attracts relatively few insured inpatients. This includes areas from which BMI Harbour attracts material numbers of patients.</p> <p>370. Nevertheless, we consider that, from the perspective of insurers, Nuffield Bournemouth would be a close substitute for BMI Harbour. Whilst Nuffield Bournemouth currently attracts few insured inpatients from areas to the west of BMI Harbour's catchment area, if BMI Harbour were not available to policyholders in these areas, we would expect Nuffield Bournemouth to be a good alternative. It offers the same range of services and is conveniently located; travelling to Nuffield Bournemouth would be a further 5 miles east along the A338.</p> <p>371. Ramsay New Hall and Spire Southampton appear to be competing with BMI Harbour in areas to the north and east, respectively, of BMI Harbour and, as such, add to the competition faced by BMI Harbour. We note that Spire Southampton has ICU level 3 capability compared with level 2 at BMI Harbour.</p> <p>372. We note the views of insurers: [REDACTED].</p> <p>373. Our view is that BMI Harbour is sufficiently constrained.</p>
BMI The Ridgeway	<p>374. BMI The Ridgeway is located to the south of Swindon. Its only competitor in the immediate area is the Great Western PPU, 4 miles to the east. Given their proximity we would expect these two hospitals to draw patients from much the same area. However, the Great Western PPU is much smaller than BMI The Ridgeway as measured by private admissions ([REDACTED] compared with [REDACTED], in 2011), which we consider to be an indicator of its limited ability to accommodate patients that would otherwise be treated at BMI The Ridgeway. In addition, the Great Western PPU offers 15 of the specialties used on our analysis, including oncology, compared with the 17 offered by BMI Ridgeway.</p> <p>375. Other hospitals in the wider area are: Nuffield Oxford and the Oxford Radcliffe Churchill PPU, 46 miles to the east; Ramsay Hall 41 miles to the south; Cheltenham and Gloucester PPUs 33 and 40 miles respectively to the northwest; Ramsay Winfield 41 miles to the north; and Nuffield Bristol 40 miles to the west. Competition from these facilities with BMI The Ridgeway for insured patients appears to be limited to the north around [REDACTED] and to one postcode area to the north-east towards Oxford.</p> <p>376. For much of the area from which the BMI Ridgeway attracts patients, competition therefore appears to be limited to that from The Great Western PPU. This area includes [REDACTED] and towns in the surrounding areas such as [REDACTED]. We consider that an insurer would be unlikely to delist BMI Ridgeway in the expectation that patients could be treated</p>

	<p>at this PPU.</p> <p>377. We note the views of insurers: [REDACTED].</p> <p>378. Our view is that BMI The Ridgeway is insufficiently constrained.</p>
BMI Winterbourne	<p>379. BMI Winterbourne is located in Dorchester. Its closest competitor is Nuffield Bournemouth, 29 miles to the east. Other private hospitals are Ramsay New Hall to the north-east (43 miles away) and Nuffield Taunton to the north-west (45 miles away). The maps show no material overlaps in the areas from which BMI Winterbourne and these other private hospitals draw insured inpatients.</p> <p>380. Competition to BMI Winterbourne therefore seems to be limited to that from Yeovil District Hospital PPU, 21 miles to the north-west. Given its location we might expect this PPU to draw patients from areas that are important to BMI Winterbourne including the areas between [REDACTED], and between [REDACTED]. We have little information on this facility other than on the number of private beds available, 14 (BMI Winterbourne has 36 private beds).</p> <p>381. We note the views of insurers: [REDACTED].</p> <p>382. Our view is that BMI Winterbourne is insufficiently constrained.</p>
Nuffield Bournemouth	<p>383. The closest competitor to Nuffield Bournemouth is BMI Harbour in Poole 6 miles to the west. Other private hospitals in the area are Ramsay New Hall, 24 miles to the north-east in Salisbury, and Spire Southampton, 31 miles to the east. Located 31 miles to the west is another BMI hospital, BMI Winterbourne. The Cornelia Suite, a PPU facility at Poole Hospital, is 6 miles to the west of Nuffield Bournemouth.</p> <p>384. BMI Harbour and Nuffield Bournemouth offer all 17 specialties used in the analysis and have level 2 ICU capability. They are similar in size. The two hospitals draw insured inpatients from much the same areas, though Nuffield Bournemouth has a stronger presence to the east of the Bournemouth. There are areas important to Nuffield Bournemouth from where BMI Harbour attracts relatively few patients, in particular, in the postcode areas closest to Bournemouth centre, in particular to the east and north of the city, and in the [REDACTED] areas. We consider that if Nuffield Bournemouth were not to be available to policyholders in these areas, BMI Harbour would be a good substitute. Both hospitals offer the same range of services, they are relatively close to each other and both are located close to the A338. For these patients, travelling to BMI Harbour would be a further 5 miles west along this road.</p> <p>385. Nuffield Bournemouth also appears to compete for insured patients with Spire Southampton in areas to the east of Bournemouth including [REDACTED]. We note that Spire Southampton has ICU level 3 capability compared with level 2 at Nuffield Bournemouth.</p>

	<p>386. We note the views of insurers: [REDACTED].</p> <p>387. Our view is that Nuffield Bournemouth is sufficiently constrained.</p>
Nuffield Cheltenham	<p>388. Nuffield Cheltenham is in Cheltenham, on the west side of the town. The closest private hospital to Nuffield Cheltenham is Ramsay Winfield, 6 miles to the west of Nuffield Cheltenham, and to the north-west of Gloucester. Both hospitals are just off the A40.</p> <p>389. Ramsay Winfield and Nuffield Cheltenham both attract insured inpatients from areas to the south and south-west of Nuffield Cheltenham, in particular around [REDACTED]. Nuffield Cheltenham offers all 17 specialties used in our analysis, whereas Ramsay Winfield does not offer oncology. Both have level 2 ICU capability. With the exception of the [REDACTED], Ramsay Winfield does not attract insured inpatients in material numbers from the centres of population most important to Nuffield Cheltenham, in particular from [REDACTED].</p> <p>390. Cheltenham PPU, located in Cheltenham, is within 3 miles of Nuffield Cheltenham. It appears to be a PPU with a material presence in the area, as measured by its total admissions in 2011 of [REDACTED]. It offers 15 of the specialties used in our analysis, not including oncology, and has level 3 ICU capability. We do not have data on its patients, but we would expect it to draw patients from a similar area to Nuffield Cheltenham.</p> <p>391. The Gloucester Royal PPU is located 6 miles from Nuffield Cheltenham, and less than 2 miles from Ramsay Winfield. The Gloucester Royal PPU offers 14 specialties, not including oncology and, in terms of income from private patients is significantly smaller than Ramsay Winfield. Given its location we would expect this PPU and Ramsay Winfield to attract patients from a similar area, though given its size and the range of services provided we would not expect it to add materially to the competitive pressure from Ramsay Winfield.</p> <p>392. Other private hospitals in the area are Spire Southbank in Worcester (25 miles to the north), Spire Bristol in Bristol (39 miles to the south-west) and BMI The Ridgeway in Swindon (40 miles to the south-east). These appear to compete with Nuffield Cheltenham for patients living in and around [REDACTED].</p> <p>393. Overall, these observations suggest that, with the exception of the Cirencester area, competition with Nuffield Cheltenham in the centres of population important to the hospital is limited to that from the Cheltenham PPU. In particular, the areas in and around [REDACTED] PMI penetration. The PPU has material presence in the area, measured by total admissions, and offers level 3 ICU capability. It does not, however, offer oncology services. However, whilst Nuffield Cheltenham is more convenient than Ramsay Winfield for patients from [REDACTED], if it were not available, Ramsay Winfield would be at most a further 6 miles away along the A40.</p> <p>394. We note the views of insurers: [REDACTED].</p> <p>395. Our view is that Nuffield Cheltenham is sufficiently constrained.</p>

Nuffield Exeter	<p>396. The closest private hospital to Nuffield Exeter is Ramsay Mount Stuart, 21 miles to the south in Torquay. Nuffield Exeter is larger than Ramsay Mount Stuart in terms of private admissions, and draws patients from a wider area. Nuffield Exeter offers all 17 of the specialties used in our analysis whilst Ramsay Mount Stuart's offers 14, not including oncology. Both hospitals have ICU at level 2. We observe that material overlap in the areas from which these hospitals attract insured inpatients is limited to [X] area.</p> <p>397. The next closest private hospitals are Nuffield Taunton (32 miles north-west) and Nuffield Plymouth (45 miles south-east). We did not identify any material overlaps in the areas from which these hospitals and Nuffield Exeter draw insured inpatients.</p> <p>398. We note the views of insurers: [X].</p> <p>399. Our view is that Nuffield Exeter is insufficiently constrained.</p>
Nuffield Plymouth	<p>400. The closest private hospital to Nuffield Pymouth is Ramsay Mount Stuart, 34 miles to the east in Torquay. We did not identify any material overlaps in the areas from which these hospitals draw insured inpatients.</p> <p>401. The Meavy Clinic PPU in Plymouth is very close to Nuffield Plymouth and offers the same range of services. We expect it to attract patients from much the same area as Nuffield Plymouth, but the facility is significantly smaller than Nuffield Plymouth which we consider to be indicative of its limited ability to absorb additional patients.</p> <p>402. We note the views of insurers: [X].</p> <p>403. Our view is that Nuffield Plymouth is insufficiently constrained.</p>
Nuffield Taunton	<p>404. Nuffield Taunton is the only private hospital in Taunton. The closest private hospitals are Circle Bath, 43 miles away in Bath, and BMI Winterbourne, 48 miles away in Dorchester. The maps show no material overlaps in the areas from which Nuffield Taunton and BMI Winterbourne draw insured inpatients. We do not have information on patient locations for Circle Bath, but we would expect any material overlap to be limited to the east of the area from which Nuffield Taunton attracts patients.</p> <p>405. Musgrove Park Hospital PPU is 3 miles from Nuffield Taunton. We have limited information on this facility, but it appears to be much smaller than Nuffield Taunton. Despite its proximity to Nuffield Taunton we do not have reason to consider this PPU to be a sufficient constraint.</p> <p>406. Yeovil District Hospital PPU is 28 miles away in Yeovil. It also appears to be much smaller than Nuffield Taunton. Given its location, and distance to Nuffield Taunton, we would expect any material overlaps to be limited to the east of Taunton.</p>

	<p>407. We note the views of insurers: [REDACTED].</p> <p>408. Our view is that Nuffield Taunton is insufficiently constrained.</p>
Ramsay Duchy	<p>409. Ramsay Duchy is the only private hospital in Truro. The closest private hospital is Nuffield Plymouth located 56 miles away. The maps show no material overlaps in the areas from which Ramsay Duchy and Nuffield Plymouth draw insured inpatients.</p> <p>410. The Royal Cornwall Hospital is close to Ramsay Duchy. Ramsay Duchy argued that this was [REDACTED]. We have limited information on how private patient services at The Royal Cornwall Hospital compared with those provided by Ramsay Duchy. However, Ramsay Duchy's private patient revenues appear to be much larger than those of the Royal Cornwall Hospital which we consider to be an indicator of the relative presence of these facilities in the area in the provision of services to private patients. Despite its proximity to Ramsay Duchy, we do not have grounds for considering it to be a sufficient constraint.</p> <p>411. We note the views of insurers: [REDACTED].</p> <p>412. Our view is that Ramsay Duchy is insufficiently constrained.</p>
Ramsay Mount Stuart	<p>413. Ramsay Mount Stuart is the only private hospital in Torquay. Its closest competitor is Nuffield Exeter, 21 miles to the north. There are two other possible constraints, The Meavy Clinic PPU and Nuffield Plymouth, 33 miles to the west, both in Plymouth.</p> <p>414. Nuffield Exeter draws relatively few patients from [REDACTED] and from the surrounding postcode areas, which together comprise Ramsay Mount Stuart's centre of patient activity.</p> <p>415. We observe no material overlaps in the areas from which Ramsay Mount Stuart and Nuffield Plymouth draw insured inpatients. We would not, therefore, expect material overlaps between Ramsay Mount Stuart and the Meavy Clinic PPU, which is adjacent to Nuffield Plymouth and admits significantly fewer private patients.</p> <p>416. Our analysis suggests that there are important centres of population served by Ramsay Mount Stuart where it faces little competition. This includes [REDACTED] PMI penetration.</p> <p>417. We note the views of insurers: [REDACTED].</p> <p>418. Our view is that Ramsay Mount Stuart is insufficiently constrained.</p>
Ramsay Winfield	<p>419. Ramsay Winfield is to the north-west of Gloucester. The closest private hospital to it is Nuffield Cheltenham, on the outskirts of Cheltenham, to the west, and 6 miles to the west of Ramsay Winfield. Both hospitals are just off the A40. Nuffield Cheltenham offers all 17 of the specialties used in our analysis, but Ramsay Winfield does not</p>

	<p>offer oncology. Both have level 2 ICU capability. Nuffield Cheltenham appears to attract insured patients in material numbers from a substantial part of the area served by Ramsay Winfield including the Cirencester area and postcodes to the south and west of Gloucester.</p> <p>420. There are two PPU facilities close to Ramsay Winfield: Gloucester Royal PPU and Cheltenham General PPU.</p> <p>421. Gloucester Royal PPU, 2 miles away, offers 14 of the specialties used in our analysis, excluding oncology, and has level 3 ICU capability. Based on private patient revenues, Gloucester Royal PPU is much smaller than Ramsay Winfield. We would expect this PPU and Ramsay Winfield to attract patients from a similar area.</p> <p>422. Cheltenham General PPU, in Cheltenham, appears to have a material presence in the area, as measured by its total admissions: [REDACTED] in 2011. It offers 15 of the specialties in our analysis, not including oncology, and has level 3 ICU capability. We would expect it to attract patients from much the same area as Nuffield Cheltenham.</p> <p>423. BMI The Ridgeway and the Shalbourne Suite (Great Western PPU) are both located in Swindon around 40 miles south-east of Ramsay Winfield. BMI The Ridgeway appears to compete with Ramsay Winfield for insured patients in and around [REDACTED], which is an important area for Ramsay Winfield. We do not have data on the location of patients admitted to the Shalbourne Suite.</p> <p>424. Ramsay Winfield does not appear to face competition for insured patients from Nuffield Bristol, Spire Bristol, Spire South Bank, BMI Bath or Circle Bath.</p> <p>425. Overall, these observations suggest that in and around [REDACTED] there are of number of competing facilities with a material presence. Outside that area, the key competitors to Ramsay Winfield are Nuffield Cheltenham, Royal Gloucester PPU and Cheltenham PPU. There are postcode areas in and around [REDACTED] from where Nuffield Cheltenham attracts few patients. However, whilst Ramsay Winfield is more convenient than Nuffield Cheltenham for patients in the [REDACTED] area, if it were not available, Nuffield Cheltenham would be at most a further 6 miles away along the A40.</p> <p>426. We note the views of insurers: [REDACTED].</p> <p>427. Our view is that Ramsay Winfield is sufficiently constrained.</p>
Spire Bristol	<p>428. The closest private hospitals to Spire Bristol are Nuffield Bristol (The Chesterfield) (1 mile away), BMI Bath Clinic (16 miles away) and Circle Bath (18 miles away). Other hospitals in the area are: Ramsay Winfield (40 miles away), Nuffield Taunton (48 miles away), St Josephs in Newport (28 miles away), Weston General Hospital PPU (24 miles away), the new Southmead Bristol PPU and Bristol NHS Trust (both 3 miles away); and Nuffield Cheltenham (40 miles away).</p> <p>429. Nuffield Bristol (The Chesterfield) is 1.3 miles away from Spire Bristol, also in the Clifton area of the city. The</p>

	<p>information we have on the location of Nuffield patients are for the now closed St Mary's Hospital. This information shows that whilst Nuffield St Mary's attracted insured inpatients from much the same area as Spire Bristol, its presence was small compared with Spire Bristol. The information we have on the scale of the facilities at the new Nuffield Chesterfield suggests that this will continue to be the case. In particular, on its website Nuffield says that the Chesterfield has: 29 beds, 3 theatres and fully equipped three-bed ICU. Spire told us that Spire Bristol had: 74 overnight beds; 6 operating theatres; 26 consulting rooms; and 3 beds with ICU 2 and 3 beds with ICU 3.</p> <p>430. BMI Bath Clinic attracts insured inpatients from an area to the south-west of that in which Spire Bristol is active. Spire Bristol is larger than BMI Bath Clinic in terms of private admissions ([REDACTED] compared with [REDACTED], in 2011). Both Spire Bristol and BMI Bath Clinic offer all 17 specialties used in our analysis, but Spire Bristol has a higher level of ICU capability (three rather than two). Material overlaps in the areas from which these hospitals draw insured inpatients are limited to the Bath area. The Bath Clinic does not attract insured inpatients from the major population centres served by Spire Bristol, in particular Bristol itself and the surrounding areas (including [REDACTED]).</p> <p>431. We do not have much information on Bath Circle, but given its location we would expect it to attract patients from much the same area as BMI Bath Clinic.</p> <p>432. Other private hospitals in Taunton, Newport and Cheltenham did not attract material numbers of patients from areas important to Spire Bristol.</p> <p>433. We note the views of the insurers: [REDACTED].</p> <p>434. Our view is that Spire Bristol is insufficiently constrained.</p>
Wales	
BMI Werndale	<p>435. BMI Werndale is located in Bancyfelin. The most important areas to BMI Werndale are to the east around [REDACTED]. The two closest private facilities are HMT Sancta Maria, 35 miles away in Swansea, and Bridgend Clinic, 55 miles away in Bridgend.</p> <p>436. HMT Sancta Maria is similar in size to BMI Werndale, but offers fewer of the specialties used in our analysis (12 compared with 15). Neither hospital offers oncology or ICU capability. HMT Sancta Maria is not active in the area served by BMI Werndale. For policyholders in Haverfordwest, St David's and Milford Haven, HMT Sancta Maria would be a further 35 miles.</p> <p>437. In its internal documents, BMI named HMT Sancta Maria as [REDACTED]. However, it also noted that [REDACTED]. Its current market share in the core catchment area was estimated at [REDACTED] per cent.</p> <p>438. We note the views of insurers: [REDACTED] It was retained on Bupa's network during its negotiations with BMI in 2011;</p>

	<p>[REDACTED].</p> <p>439. Our view is that BMI Werndale is insufficiently constrained.</p>
HMT Sancta Maria	<p>440. HMT Sancta Maria is the only private hospital in Swansea. The most important areas to the hospital are to the east, in particular the [REDACTED]. It offers 12 specialties used in our analysis, not including oncology, and no ICU capability. The closest private facilities to HMT Sancta Maria are Bridgend Clinic in Bridgend, BMI Werndale in Bancyfelin and Nuffield Vale Clinic in the Vale of Glamorgan.</p> <p>441. BMI Werndale is similar in size to HMT Sancta Maria and it provides more specialties (15 compared with 12). However, there are no material overlaps in the areas from which these two hospitals draw insured inpatients ([REDACTED]). For the majority of HMT Sancta Maria patients BMI Werndale would be a further 35 miles or so drive.</p> <p>442. Bridgend Clinic offers 12 of the specialties used in our analysis, oncology not included, and has no ICU. We do not have data on volumes of patients or from where this facility draws insured patients. However, given its position to the east of HMT Sancta Maria we would not expect it to draw insured patients in material numbers from areas important to the HMT. For many HMT Sancta Maria patients it would be a further 23-mile drive along the A4 (about 33 minutes in normal traffic conditions).</p> <p>443. The Nuffield Vale Clinic is 45 miles to the south-east in the Vale of Glamorgan. It is larger than HMT Sancta Maria in terms of private admissions. It also offers all 17 specialties used in our analysis and level 2 ICU capability. However, whilst we do not have data on patient locations for this hospital, given its distance from Swansea and [REDACTED] we would expect material overlaps in the areas from which these hospitals draw insured patients to be limited.</p> <p>444. We note the views of insurers: [REDACTED].</p> <p>445. Our view is that HMT Sancta Maria is insufficiently constrained.</p>
West Midlands	
BMI Droitwich Spa	<p>446. BMI Droitwich Spa draws most insured patients from around Droitwich Spa and areas to the north and north-east towards Redditch and Kidderminster. It offers all 17 specialties used in our analysis and level 2 ICU capability. BMI Droitwich Spa's closest competitor is Spire South Bank, 8 miles away (20 minutes' drive in normal traffic conditions). It offers the same range of services and is similar in size in terms of private patient admissions. BMI and Spire internal documents both [REDACTED]. There are areas important to BMI Droitwich Spa (in particular, [REDACTED], and areas south of the hospital) where Spire South Bank attracts insured inpatients in material numbers. There are also areas to the north-west and north-east of BMI Droitwich Spa where Spire South Bank does not have a material presence.</p>

	<p>447. Ramsay West Midlands, 19 miles away, offers 15 of the specialties used in our analysis and level 2 ICU capability. BMI Droitwich Spa and Ramsay West Midlands appear to compete for insured patients located between the two hospitals to the south of [REDACTED]. Spire Parkway is a large hospital 25 miles to the north-west in Solihull. It offers all 17 specialties and level 3 ICU capability. It attracts some, but not many, insured inpatients from areas important to BMI Droitwich Spa close to [REDACTED].</p> <p>448. We therefore consider Spire South Bank to be the main competitor to BMI Droitwich Spa. Whilst we observe that Spire South Bank is less active in some areas important to BMI Droitwich Spa, for BMI patients it would be a further drive of at most 10 miles (or 15 minutes), while the catchment area of BMI Droitwich Spa is [REDACTED] miles. For example, a drive from Stourport-on-Severn to BMI Droitwich Spa is 10 miles (or 20 minutes), and Spire South Bank is a further 3 miles (5 minutes). A drive from Bromsgrove to BMI Droitwich Spa is 7 miles (16 minutes) and Spire South Bank is a further 8 miles (10 minutes). It would take an extra 10 miles (8 minutes) for a patient from Redditch to travel to Spire South Bank compared with BMI Droitwich Spa. In light of these comparative drive-times, we consider that both BMI Droitwich and Spire South Bank are reasonably accessible to patients throughout BMI Droitwich's catchment area.</p> <p>449. We note the views of insurers: [REDACTED].</p> <p>450. Our view is that BMI Droitwich Spa is sufficiently constrained.</p>
BMI Edgbaston	<p>451. BMI Edgbaston attracts insured inpatients from a wide area with no clear centre of patient activity. We consider that this reflects its reputation ([REDACTED]). The maps for BMI Edgbaston, by excluding postcode areas that account for fewer than ten insured inpatients, capture the origins of [REDACTED] per cent of patients, some of which we would expect to be orthopaedic patients.</p> <p>452. We consider that Edgbaston is competing in two markets: a wider regional or national market in its orthopaedics specialty, where the constraints operating on the hospital will be wider than those in the local area; and a local market, where it is competing for patients across specialties.</p> <p>453. [REDACTED] We note that in discussions with Bupa [REDACTED].</p> <p>454. The closest competitors are Ramsay West Midlands and Spire Parkway 7 and 11 miles away respectively (Ramsay to the west and Spire to the south-east). Other competitors appear to be Spire Little Aston to the north of Birmingham and Spire South Bank in Worcester. Taken together, these hospitals attract more insured inpatients than BMI Edgbaston in many of the postcode areas in which BMI Edgbaston is active. Nevertheless, there is a corridor of insured patients immediately around the hospital and to the south of the hospital towards Redditch where there are limited overlaps. For all these postcode areas, the number of BMI Edgbaston insured inpatients was less than [REDACTED].</p>

	<p>455. We consider that the presence of BMI Priory might reduce the competitive pressure on BMI Edgbaston as if delisted a proportion of patients in the local market would divert to BMI Priory.</p> <p>456. We note the views of insurers: [REDACTED].</p> <p>457. Given the relatively small number of patients for which competition with BMI Edgbaston appears limited, and [REDACTED], our view is that the hospital is sufficiently constrained.</p>
BMI Meriden	<p>458. BMI Meriden PPU is the only private facility in Coventry. Its closest competitors are Nuffield Warwickshire 12 miles to the south in Leamington Spa and Spire Parkway 18 miles to the west in Solihull. Nuffield Warwickshire is similar in size to BMI Meriden, while Spire Parkway is larger. All three hospitals offer all 17 specialties. Spire Parkway has level 3 ICU capability and the others level 2.</p> <p>459. There are substantial overlaps in the areas from which BMI Meriden and Nuffield Warwickshire draw insured inpatients including areas important to BMI Meriden such as [REDACTED], as well as areas south of it such as [REDACTED]. Spire Parkway provides competition to the west.</p> <p>460. There are four postcode areas to the north of Coventry where BMI Meriden appears to face limited competition. However, BMI Meriden is located on the outskirts of the city to the west close to major roads. For these patients Nuffield Warwickshire would be at most a further 10 miles (or 10 minutes' drive in normal traffic conditions) and Spire Parkway at most a further 11 miles (or 15 minutes' drive in normal traffic conditions). In light of these comparative drive-times, we consider that both BMI Meriden and Nuffield Warwickshire are reasonably accessible to patients throughout BMI Meriden's catchment area.</p> <p>461. We note the views of insurers: [REDACTED], Bupa [REDACTED] delisted the hospital during these negotiations; [REDACTED].</p> <p>462. Internal BMI documents [REDACTED].</p> <p>463. Our view is that BMI Meriden is sufficiently constrained.</p>
BMI Priory	<p>464. BMI Priory draws insured inpatients from a wide area around Birmingham and across the West Midlands. Its centre of patient activity is the postcode areas immediately surrounding the hospital to the south of Birmingham city centre and stretching south, south-east and south-west. There is another important pocket of customers to the north of the hospital near [REDACTED].</p> <p>465. The strongest competitors appear to be two Spire hospitals: Spire Parkway (8 miles away), which has a strong centre of patient activity in the south-east of Birmingham, near [REDACTED]; and Spire Little Aston (15 miles away), which has its centre of patient activity in the north-east, near [REDACTED]. These are important areas for BMI Priory. These are also parts of the region with [REDACTED] PMI patient activity, [REDACTED], Spire internal documents [REDACTED].</p>

	<p>466. In addition, to the west of Birmingham BMI Priory appears to compete with Ramsay West Midlands (8 miles away) for insured inpatients around [REDACTED], which is another important pocket for Priory. BMI Priory also appears to compete with other rival hospitals for insured patients in the during areas: Coventry, Droitwich Spa, Rugby, Warwick, Wolverhampton and Worcester.</p> <p>467. However, there is a significant pocket of insured inpatients near to the hospital and stretching south towards Droitwich Spa, where there is no material overlap from rival hospitals. We consider that this may reflect the common ownership of BMI Droitwich Spa.</p> <p>468. We also note that BMI Priory is much larger than any of its competitors and, unlike the other hospitals in the region, draws insured inpatients from across the West Midlands. BMI Priory and Spire Parkway are the only hospitals in the region to have level 3 ICU facilities. We consider that all of these features are likely to be indicative of its attractiveness to insured patients, the strength of its presence in the region and therefore its importance to insurers.</p> <p>469. We note the views of insurers: [REDACTED] Bupa [REDACTED] (but delisted it in 2012); [REDACTED].</p> <p>470. Our view is that BMI Priory is insufficiently constrained.</p>
Nuffield Hereford	<p>471. Nuffield Hereford is the only private hospital in Hereford. Its core market comprises [REDACTED]. It offers all 17 of the specialties used in our analysis, but has no ICU.</p> <p>472. The closest private hospital is Spire South Bank, 26 miles away in Worcester. It is larger than Nuffield Hereford in terms of private admissions. It also offers all 17 specialties used in our analysis and level 2 ICU capability. However, Spire South Bank draws insured inpatients from an area to the east of that served by Nuffield Hereford. The maps show no material overlaps with Nuffield Hereford. Furthermore, Nuffield Hereford does not appear to face competition for insured patients from Ramsay Winfield or Gloucestershire Royal PPU, 31 miles away in Gloucester, or BMI Droitwich Spa, 32 miles away.</p> <p>473. We note the views of insurers: [REDACTED].</p> <p>474. Our view is that Nuffield Hereford is insufficiently constrained.</p>
Nuffield North Staffs	<p>475. Nuffield North Staffs is the only private hospital in Stoke-on-Trent. The closest rival private hospital is Ramsay Rowley, 16 miles away in Stafford. It is much smaller than Nuffield North Staffs in terms of private admissions and offers 15 of the specialties used in our analysis, compared with 16 at Nuffield North Staffs. Both offer oncology and neither has an ICU. The maps show that the overlaps between the two hospitals are limited to [REDACTED].</p> <p>476. The next closest rival hospital is BMI South Cheshire, 19 miles away in Crewe. It is much smaller in size than</p>

	<p>Nuffield North Staffs, provides 17 of the specialties used in our analysis and has ICU capability. The overlap between the two hospitals is limited to [REDACTED].</p> <p>477. Neither Ramsay Rowley nor BMI South Cheshire appears to be active in Nuffield North Staffs' centre of patient activity, the area around [REDACTED].</p> <p>478. We note the views of insurers: [REDACTED].</p> <p>479. Our view is that Nuffield North Staffs is insufficiently constrained.</p>
Nuffield Shrewsbury	<p>480. Nuffield Shrewsbury is the only private hospital in the Shrewsbury area. It offers 17 of the specialties considered in our analysis and has no ICU. The closest rival private hospital to Nuffield Shrewsbury is Spire Yale, 32 miles away in Wrexham. It is smaller than Nuffield Shrewsbury in terms of private admissions, but offers all 17 specialties used in our analysis and level 2 ICU capability. The maps show no material overlaps in the areas from which these hospitals draw insured inpatients. Nuffield said in its internal documents [REDACTED].</p> <p>481. Nuffield said that [REDACTED]. We have limited information on these facilities and note that Nuffield has not provided further information or evidence on the materiality of the constraints. However, we found the combined revenues of these facilities to be considerably smaller than that of Nuffield Shrewsbury (even taking into account the proportion of admissions that are NHS patients) which we consider to be indicative of their limited capacity and, therefore, ability to constrain Nuffield Shrewsbury.</p> <p>482. We note the views of insurers: [REDACTED].</p> <p>483. Our view is that Nuffield Shrewsbury is insufficiently constrained.</p>
Yorkshire	
BMI Thornbury	<p>484. BMI Thornbury is located to the west of Sheffield. Its main areas of patient activity are to the west, south-west and north-west of Sheffield. Its closest competitor is Aspen Claremont which is less than a mile away. It is, however, much smaller than BMI Thornbury in terms of numbers of private admissions, and offers a narrower range of services. BMI Thornbury offers all 17 of the specialties used in our analysis and level 3 ICU capability. Aspen Claremont offers 11, not including oncology, and level 2 ICU capability.</p> <p>485. Other private hospitals in the area are Ramsay Park Hill, 26 miles to the north-east, and Spire Methley Park, 35 miles to the north. Ramsay Park Hill offers 15 of the specialties, not including oncology and has no ICU. The maps suggest that material overlaps are limited to one postcode area to the west of Sheffield. We identified no material overlaps in the areas from which Spire Methley Park and BMI Thornbury draw insured inpatients.</p>

	<p>486. We note the views of insurers: [REDACTED].</p> <p>487. Our view is that BMI Thornbury is insufficiently constrained.</p>
HMT St Hughes	<p>488. HMT St Hugh's is the only private hospital in Grimsby. It offers 12 of the specialties we used in our analysis, and has no ICU. The two closest private hospitals are Spire Hull, 27 miles to the north-west and BMI Lincoln, 34 miles to the south-west. Both offer the 17 specialties, and Spire Hull offers level 2 ICU capability.</p> <p>489. We do not have reliable data to map the areas from which St Hugh's draws its insured inpatients. However, we find that neither Spire Hull nor BMI Lincoln draw insured inpatients in material numbers from the postcode areas in and surrounding Grimsby, which we would expect to be St Hugh's main centre of patient activity.</p> <p>490. We note the views of insurers: [REDACTED]. HMT itself explained that St Hugh's was in a 'solus' position 'because there is not room economically for two hospitals to survive in Grimsby' although it considered that the impact from NHS private beds was sufficient to constrain it. In this context, we note that the local NHS Trust's revenue from private patients was less than [REDACTED] of the revenue of HMT St Hugh's. We also note that Nuffield and BMI [REDACTED].</p> <p>491. Our view is that HMT St Hugh's is insufficiently constrained.</p>
Nuffield York	<p>492. Nuffield York is the only private hospital in the York area. The closest rival hospital to Nuffield York is BMI Duchy, 23 miles to the west in Harrogate. We found that there are no material overlaps between the areas from which it and Nuffield York draw insured inpatients. BMI Duchy draws relatively few patients from around [REDACTED] and [REDACTED], the most important areas to Nuffield York. The next two closest competitors are Spire Leeds (24 miles to the south-west) and Spire Hull and East Riding (37 miles to the south-east). We also found no material overlaps in the areas from which these hospitals and Nuffield York draw insured inpatients. All of these private hospitals offer all 17 of the specialties used in our analysis and level 2 ICU capability (with the exception of BMI Duchy which has no ICU).</p> <p>493. We note the views of insurers: [REDACTED].</p> <p>494. Our view is that Nuffield York is insufficiently constrained.</p>
Ramsay Yorkshire Clinic	<p>495. Ramsay Yorkshire Clinic is the only private hospital in Bradford area. It is located to the north of the Bradford between Shipley and Brindley. It draws insured inpatients from postcode areas around Bradford and to its north and north-west. The most important areas are those to the north and east of Bradford and going north to [REDACTED] and [REDACTED]. It offers all of the 17 specialties used in our analysis and level 2 ICU capability.</p> <p>496. Its closest competitors are Nuffield Leeds and Spire Leeds, 13 and 16 miles away respectively, and Spire Elland 13 miles away. These hospitals offer all 17 specialties, and level 2 or 3 ICU capability. There is also BMI</p>

	<p>Huddersfield (16 miles away), but it does not offer oncology and has no ICU.</p> <p>497. Nuffield Leeds and Spire Leeds draw insured inpatients from a wide area including postcodes in which Ramsay Yorkshire Clinic is active. However, with the exception of the area around [X], these hospitals attract few patients from areas important to Ramsay Yorkshire Clinic, namely those around [X].</p> <p>498. Spire Elland is active in areas to the south of Yorkshire Clinic around [X] where Ramsay Yorkshire Clinic draws relatively few insured patients. BMI Huddersfield activity is largely confined to postcodes surrounding Huddersfield, an area from which Ramsay Yorkshire Clinic [X].</p> <p>499. Ramsay also identified Spire Methley Park, BMI Duchy, Nuffield York, BMI Gisburne Park and BMI Highfield as competitors. Each of these hospitals [X] from the areas in which Ramsay Yorkshire Clinic is most active.</p> <p>500. Whilst material overlaps are limited to the [X] area, there are four rival operator private hospitals within 16 miles and a further three within 20 to 25 miles. However, with the exception of BMI Gisburne Park and BMI Duchy, these are located to the south and east of Bradford near Leeds, Halifax and Huddersfield. Inspection of the road maps shows that for patients in the Ilkley area, the choice between the Leeds hospitals, in particular Spire Leeds, and Ramsay Yorkshire Clinic on grounds of accessible may be marginal. For patients in other areas important to Ramsay Yorkshire Clinic, this does not appear to be the case.</p> <p>501. BMI Gisburne appears to be conveniently located to compete with Ramsay Yorkshire Clinic for insured patients in the [X] area, but offers only 12 of the specialties considered in our analysis and has no ICU.</p> <p>502. BMI Duchy would also appear to be conveniently located for insured patients in Skipton and Ilkley, but not for patients living in other parts of the catchment area for Ramsay Yorkshire Clinic. BMI Duchy also has no ICU.</p> <p>503. We consider that the PPUs at Airedale General Hospital, Bradford Royal Infirmary and at Harrogate District Hospital will add to the constraints exerted by the private hospitals, but not materially so. We have limited information on these facilities, but the revenues figures suggest a limited presence in the market.</p> <p>504. We note the views of insurers: [X].</p> <p>505. Our view is that Ramsay Yorkshire Clinic is insufficiently constrained.</p>
Spire Elland	<p>506. Spire Elland is located between Huddersfield and Halifax. It draws most of its insured patients from around Elland and from Halifax to the north. The hospital offers all 17 of the specialties used in our analysis and level 2 ICU capability.</p> <p>507. Its closest competitors are: BMI Huddersfield (5 miles to the south), Ramsay Yorkshire Clinic (13 miles to the north), Nuffield Leeds (19 miles to the north-east) and BMI Highfield (21 miles to the west). All but BMI</p>

	<p>Huddersfield offer all 17 of the specialties used in our analysis; BMI Huddersfield does not offer oncology. The two BMI hospitals have no ICU. Spire Elland appears to be competing with BMI Huddersfield to the south of Huddersfield and with Ramsay Yorkshire Clinic around [REDACTED]. These are no material overlaps with Nuffield Leeds and BMI Highfield.</p> <p>508. We note that Ramsay told us that [REDACTED]. The observed overlaps appear to be consistent with [REDACTED].</p> <p>509. Whilst the material overlaps in the areas from which Spire Elland and BMI Huddersfield draw insured inpatients are limited to postcode areas to the south of Huddersfield, we note that these hospitals are 5 miles apart (6 minutes in normal driving conditions). Both hospitals are close to the A629, one north and the other south of the M62. BMI Huddersfield does not offer oncology services and has no ICU, but Ramsay Yorkshire Clinic offers all 17 specialties and level 2 ICU capability, and attracts insured inpatients in material numbers from the Halifax area.</p> <p>510. We note the views of insurers: [REDACTED].</p> <p>511. Our view is that Spire Elland is sufficiently constrained.</p>
Spire Hull	<p>512. Spire Hull is the only private hospital in Hull. It offers all 17 of the specialties used in our analysis and level 2 ICU capability. It attracts insured inpatients from around Hull, principally north of The Humber and in areas north of Hull, around [REDACTED].</p> <p>513. Its closest competitor is HMT St Hugh's, 27 to the south in Grimsby. It is smaller than Spire Hull in terms of private admissions, offers only 12 of the specialties used in our analysis, oncology not included, and has no ICU. We do not have data to map out the areas from which HMT St Hugh's draws insured patients, but note the statement made in a Spire internal document [REDACTED].</p> <p>514. The next closest competitors are Nuffield York (37 miles to the north-west), Ramsay Park Hill (40 miles to the south-west) and BMI Lincoln (40 miles to the south). These hospitals are not active in the areas served by Spire Hull.</p> <p>515. We note the views of insurers: [REDACTED].</p> <p>516. Our view is that Spire Hull is insufficiently constrained.</p>
Spire Leeds	<p>517. Spire Leeds attracts patients from a large area around Leeds, and is particularly active in postcode areas just to the north of Leeds and around [REDACTED], to the north-west of Leeds. Its closest competitor is Nuffield Leeds, also located in Leeds, 4 miles away. Nuffield Leeds is located in the city centre and Spire Leeds to the north-east of the city.</p> <p>518. Nuffield Leeds and Spire Leeds have similar centres of insured inpatient activity. In 2011, Spire Leeds was much</p>

	<p>larger than Nuffield Leeds in terms on the number of private patients. This is reflected in the relative numbers of Spire Leeds and Nuffield Leeds insured inpatients in those postcode areas where the two hospitals overlap. Such observations may understate the strength of Nuffield Leeds as it was not recognized by AXA PPP in 2011. Both hospitals offer all 17 specialties, Nuffield Leeds has level 3 ICU capability and Spire Leeds level 2.</p> <p>519. Nuffield internal documents identified [REDACTED] as Nuffield Leeds' major rivals, and state that [REDACTED].</p> <p>520. Overall, we consider that Nuffield Leeds is a close substitute for Spire Leeds, acting as a constraining factor in negotiations with insurers.</p> <p>521. The next closest competitors are BMI Duchy, 13 miles to the north, in Harrogate, and Ramsay Yorkshire Clinic, 16 miles to the west near Bradford. Both Spire Leeds and BMI Duchy are active in postcode areas between Harrogate and Leeds, and around Harrogate. Spire Leeds and Ramsay Yorkshire Clinic both draw insured inpatients from around [REDACTED]. All three hospitals offer all 17 specialties used in our analysis. Spire Leeds and Ramsay Yorkshire Clinic offer level 2 ICU capability but BMI Duchy has no ICU. We consider that these hospitals add to the constraint exerted by Nuffield Leeds.</p> <p>522. We note the views of insurers: [REDACTED].</p> <p>523. Our view is that Spire Leeds is sufficiently constrained.</p>
Spire Methley Park	<p>524. Spire Methley Park is located to the south-east of Leeds. It offers all 17 of the specialties used in our analysis and level 2 ICU capability. Spire identified [REDACTED] as its core market. The two closest hospitals are Nuffield Leeds and Spire Leeds 9 miles and 10 miles away respectively.</p> <p>525. Nuffield Leeds attracts some insured inpatients from postcode areas that comprise the centre of patient activity for Spire Methley Park, though the numbers are not material. However, we note that Spire Leeds draws material numbers of insured inpatients from the areas around and just to the north of Wakefield, and AXA PPP told us that patients are used to travelling into Leeds as the closest large city. For Spire Methley Park's core market, [REDACTED], Nuffield Leeds would be only a further 5 and 7 miles respectively (additional drive-times of 5 and 10 minutes respectively in normal driving conditions). Both hospitals offer all 17 specialties, and Nuffield has a higher level of ICU capability (three rather than two).</p> <p>526. We found no material overlap in the areas from which Spire Methley Park and other rival hospitals in the area attract insured inpatients. In particular: BMI Huddersfield (23 miles away), Nuffield York (30 miles away), BMI Duchy (21 miles away), Ramsay Park Hill (27 miles away) and Ramsay Yorkshire Clinic (23 miles away).</p> <p>527. Spire Methley Park is one of three Spire hospitals in the area of Leeds, Halifax and Huddersfield, the other two being Spire Leeds and Spire Elland. Of these, Spire Leeds is 4 miles away from Nuffield Leeds. We consider that</p>

	<p>the presence of Spire Leeds could reduce the competitive constraint from Nuffield Leeds as any threat by a PMI to delist Spire Methley Park would be weakened as some share of those insured patients that would otherwise attend that hospital would be diverted to Spire's other hospitals, particularly to Spire Leeds. Spire did not expect insurers to be able to delist both these hospitals.</p> <p>528. We note the views of insurers: [REDACTED].</p> <p>529. We also note that [REDACTED].</p> <p>530. Our view is that Spire Methley Park is sufficiently constrained.</p>
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Local competitive assessment

East of England

BMI Manor, Bedford—insufficiently constrained
 BMI Sandringham—insufficiently constrained
 Nuffield Brentford—sufficiently constrained
 Nuffield Cambridge—sufficiently constrained
 Nuffield Ipswich—insufficiently constrained
 Ramsay Fitzwilliam—insufficiently constrained
 Ramsay Oaks—insufficiently constrained
 Ramsay Pinehill—sufficiently constrained
 Ramsay Springfield—insufficiently constrained
 Spire Cambridge Lea—sufficiently constrained
 Spire Harpenden—insufficiently constrained
 Spire Hartswood—sufficiently constrained
 Spire Norwich—insufficiently constrained
 Spire Wellesley—insufficiently constrained

[REDACTED]

East Midlands

BMI Lincoln hospital in Lincoln—insufficiently constrained
BMI Park hospital in Nottingham—insufficiently constrained
BMI Three Shires hospital in Northampton—insufficiently constrained
Nuffield Derby hospital in Derby—insufficiently constrained
Spire Leicester hospital in Leicester—sufficiently constrained



Greater London (exc Bishops Wood and CCH)

BMI Cavell and Kings Oak—insufficiently constrained
BMI Chelsfield Park—insufficiently constrained
BMI Shirley Oaks—insufficiently constrained
BMI Sloane—insufficiently constrained



North-East

BMI Woodlands—insufficiently constrained
Nuffield Tees—insufficiently constrained
Nuffield Newcastle—sufficiently constrained
Spire Washington—sufficiently constrained



North-West

BMI Alexandra—insufficiently constrained
BMI Beardwood—insufficiently constrained
BMI Beaumont—insufficiently constrained
BMI Gisburne Park—sufficiently constrained

BMI Highfield—insufficiently constrained
BMI Lancaster—sufficiently constrained
BMI South Cheshire—insufficiently constrained
Spire Cheshire—insufficiently constrained
Spire Liverpool—insufficiently constrained
Spire Wirral—insufficiently constrained
Ramsay Euxton Hall—sufficiently constrained



Northern Ireland

North West Independent Hospital—insufficiently constrained
Ulster independent Clinic—insufficiently constrained



Scotland

BMI Albyn, Aberdeen—insufficiently constrained
BMI Carrick Glen, Ayr—insufficiently constrained
BMI Fernbrae, Dundee—insufficiently constrained
BMI Kings Park—insufficiently constrained
BMI Ross Hall—insufficiently constrained
Spire Murrayfield—insufficiently constrained



South-East—East

BMI Chaucer—Insufficiently constrained
BMI Esperance—Insufficiently constrained
BMI Esperance—insufficiently constrained

BMI Fawkham Manor—insufficiently constrained
BMI Goring Hall—insufficiently constrained
BMI Somerfield—sufficiently constrained
Nuffield Brighton—sufficiently constrained
Nuffield Tunbridge—sufficiently constrained
Spire Alexandra—sufficiently constrained
Spire Sussex—insufficiently constrained
Spire Tunbridge Wells—sufficiently constrained
The Spencer QEQM—sufficiently constrained

[✂]

South-East—West

BMI Chiltern—insufficiently constrained
BMI Foscote—sufficiently constrained
BMI Hampshire Clinic—insufficiently constrained
BMI Mount Alvernia—sufficiently constrained
BMI Princess Margaret—insufficiently constrained
BMI Runnymede—sufficiently constrained
BMI Saxon Clinic—insufficiently constrained
BMI Shelburne—insufficiently constrained
Nuffield Guildford—sufficiently constrained
Nuffield Oxford—insufficiently constrained
Oxford University Hospitals Horton PPU in Banbury—sufficiently constrained
Spire Portsmouth—insufficiently constrained
Spire Southampton—insufficiently constrained

[✂]

South-West

BMI Harbour—sufficiently constrained
BMI The Ridgeway—insufficiently constrained

BMI Winterbourne—insufficiently constrained
Nuffield Bournemouth—sufficiently constrained
Nuffield Cheltenham—sufficiently constrained
Nuffield Exeter—insufficiently constrained
Nuffield Plymouth—insufficiently constrained
Nuffield Taunton—insufficiently constrained
Ramsay Duchy—insufficiently constrained
Ramsay Mount Stuart—insufficiently constrained
Ramsay Winfield—sufficiently constrained
Spire Bristol—insufficiently constrained

[✂]

Wales

BMI Werndale—insufficiently constrained
HMT Sancta Maria—insufficiently constrained

[✂]

West Midlands

BMI Droitwich Spa—sufficiently constrained
BMI Edgbaston—sufficiently constrained
BMI Meriden—sufficiently constrained
BMI Priory—insufficiently constrained
Nuffield Hereford—insufficiently constrained
Nuffield North Staffs—insufficiently constrained
Nuffield Shrewsbury—insufficiently constrained

[✂]

Yorkshire

BMI Thornbury—insufficiently constrained
HMT St Hughes—insufficiently constrained
Nuffield York—insufficiently constrained
Ramsay Yorkshire Clinic—insufficiently constrained
Spire Elland—sufficiently constrained
Spire Hull—insufficiently constrained
Spire Leeds—sufficiently constrained
Spire Methley Park—sufficiently constrained

[✂]

Local assessment of hospital characteristics

Region	Operator name	Hospital name	Private /PPU	General/ Special-ised	Range of 17 spec	Offers oncol-ogy	ICU level	Total admis-sion 2011	Inpatient admis-sion 2011	Total revenue (£m)	Inpatient revenue (£m)	Share insured admis-sion	Share self-pay admis-sion	Share NHS admis-sion	Share overseas admis-sion	Catch-ment area	Fascia count (16 spec)	Fascia count (oncol-ogy)	Individual LOCI (patient based)	Individual LOCI (revenue based)	Network LOCI (patient based)	Network LOCI (revenue based)	Network effect	Name and distance of closest hospital (miles)		Name and distance of second closest hospital (miles)	
East Midlands	BMI	Lincoln	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	HMT Hospitals, St Hugh's	34.4	BMI, Park	36.1
East Midlands	BMI	Park	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Nottingham Woodthorpe	4.7	Nuffield, Derby	26.8
East Midlands	BMI	Three Shires	Private	General	16	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Woodland Hospital	15.4	BMI, Manor	18.6
East Midlands	Nuffield	Derby	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Nottingham Woodthorpe	22.5	Spire, Little Aston	26.8
East Midlands	Nuffield	Leicester	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Leicester	3.6	BMI, Meriden	25.4
East Midlands	Ramsay	Nottingham Woodthorpe	Private	General	15	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Park	4.7	Nuffield, Derby	22.5
East Midlands	Ramsay	Woodland Hospital	Private	General	15	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Three Shires	15.4	Spire, Leicester	22.9
East Midlands	Spire	Leicester	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Leicester	3.6	Ramsay, Woodland Hospital	22.9
East of England	Addenbrooke's NHS Trust	Cambridge University NHS	PPU	General	16	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Cambridge	2.3	Spire, Cambridge Lea	6.6
East of England	Aspen	Holly House	Private	General	15	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Roding	3.7	BMI, Cavell (aka Enfield)	7.2
East of England	BMI	Manor	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Saxon Clinic	17.7	BMI, Three Shires	18.6
East of England	BMI	Sandringham	PPU	General	15	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Fitzwilliam	38.4	Spire, Norwich	42.6
East of England	BMI	St Edmunds	Private	General	16	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Oaks	29	Spire, Cambridge Lea	30.1
East of England	EN Hertfordshire Trust	Hertford County	PPU	General	0	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	EN Hertfordshire Trust, Queen Elizabeth II	5	EN Hertfordshire Trust, Lister	12
East of England	EN Hertfordshire Trust	Lister	PPU	General	11	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Pinehill	4.4	EN Hertfordshire Trust, Hertford County	12
East of England	EN Hertfordshire Trust	Queen Elizabeth II	PPU	General	14	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	EN Hertfordshire Trust, Hertford County	5	BMI, Kings Oak	11.9
East of England	Nuffield	Brentwood	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Hartwood	2.2	HCA, NHS Ventures - Queens	7.4
East of England	Nuffield	Cambridge	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Addenbrooke's NHS Trust, Cambridge University NHS Trust	2.3	Spire, Cambridge Lea	4.3
East of England	Nuffield	Ipswich	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Oaks	22.4	BMI, St Edmunds	33.3
East of England	Ramsay	Fitzwilliam	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Papworth Hospital NHS Foundation Trust, Papworth Clinic	26.7	Ramsay, Woodland Hospital	30.6
East of England	Ramsay	Oaks	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Ipswich	22.4	Ramsay, Springfield	23.2
East of England	Ramsay	Pinehill	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	EN Hertfordshire Trust, Lister	4.4	Spire, Harpenden	15.4
East of England	Ramsay	Rivers	Private	General	12	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	EN Hertfordshire Trust, Hertford County	12.8	Aspen, Holly House	15.2
East of England	Ramsay	Springfield	Private	General	16	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Brentwood	12.8	Spire, Hartwood	14.9
East of England	Spire	Bushey	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	NorthWest London Hospitals NHS Trust, Northwick Park & St Marks	4.7	BMI, CCH	6.1
East of England	Spire	Cambridge Lea	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Cambridge	4.3	Addenbrooke's NHS Trust, Cambridge University NHS Trust	6.6
East of England	Spire	Harpenden	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	EN Hertfordshire Trust, Queen Elizabeth II	13.4	Ramsay, Pinehill	15.4
East of England	Spire	Hartwood	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Brentwood	2.2	HCA, NHS Ventures – Queens	6.7
East of England	Spire	Norwich	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Sandringham	42.6	BMI, St Edmunds	45.4

Region	Operator name	Hospital name	Private /PPU	General/ Special-ised	Range of 17 spec	Offers oncology	ICU level	Total admis-sion 2011	Inpatient admis-sion 2011	Total revenue (£m)	Inpatient revenue (£m)	Share insured admis-sion	Share self-pay admis-sion	Share NHS admis-sion	Share overseas admis-sion	Catch-ment area	Fascia count (16 spec)	Fascia count (oncol-ogy)	Individual LOCI (patient based)	Individual LOCI (revenue based)	Network LOCI (patient based)	Network LOCI (revenue based)	Network effect	Name and distance of closest hospital (miles)		Name and distance of second closest hospital (miles)	
East of England	Spire	Wellesley	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Orwell Private Patient Unit (PPU)	14.4	Nuffield, Brentwood	21
Greater London	Aspen	Parkside	Private	General	16	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	The New Victoria Hospital, The New Victoria	3.1	Imperial College Healthcare NHS Trust, The Thames View	3.8
Greater London	BMI	Bishops Wood	PPU	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	EN Hertfordshire Trust, Mount Vernon Cancer Center	0.1	Royal Brompton and Harefield NHS Foundation Trust, Harefield	1.9
Greater London	BMI	Cavell (aka Enfield)	Private	General	16	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Kings Oak	0.6	Aspen, Holly House	7.2
Greater London	BMI	CCH	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	NorthWest London Hospitals NHS Trust, Northwick Park & St Marks	1.3	Spire, Bushey	6.1
Greater London	BMI	Chelsfield Park	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Sloane	8.7	BMI, Fawkham Manor	9.3
Greater London	BMI	Coombe Wing	PPU	General	13	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	The New Victoria Hospital, The New Victoria	1.5	Aspen, Parkside	4.6
Greater London	BMI	Kings Oak	PPU	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Cavell (aka Enfield)	0.6	Aspen, Holly House	7.8
Greater London	BMI	Shirley Oaks	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Sloane	4.1	King's College Hospital NHS Foundation Trust, King's College NHS Foundation Trust	7.6
Greater London	BMI	Sloane	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Shirley Oaks	4.1	BMI, Blackheath	5.3
Greater London	BMI	The Garden	Private	General	16	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Aspen, Highgate	3.8	Royal Free London NHS Foundation Trust, Royal Free Private Patients	4.2
Greater London	EN Hertfordshire Trust	Mount Vernon Cancer Center	PPU	Specialised	1	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Bishops Wood	0.1	Royal Brompton and Harefield NHS Foundation Trust, Harefield	1.8
Greater London	HCA	NHS Ventures – Queens	PPU	General	10	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Hartswood	6.7	Nuffield, Brentwood	7.4
Greater London	NorthWest London NHS Trust	Northwick Park & St Marks	PPU	General	12	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, CCH	1.3	Spire, Bushey	4.7
Greater London	Royal Brompton & Harefield NHS	Harefield	PPU	General	1	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	EN Hertfordshire Trust, Mount Vernon Cancer Center	1.8	BMI, Bishops Wood	1.9
Greater London	Spire	Roding	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Aspen, Holly House	3.7	HCA, NHS Ventures - Queens	7.5
Greater London	St Anthony's Hospital	St. Anthony's	Private	General	16	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	The Royal Marsden NHS Foundation Trust, Private Care Sutton	3.6	The New Victoria Hospital, The New Victoria	4.8
Greater London	The New Victoria Hospital	The New Victoria	Private	General	11	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Coombe Wing	1.5	Aspen, Parkside	3.1
Greater London	The Royal Marsden NHS Trust	Private Care Sutton	PPU	General	7	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	St. Anthony's Hospital, St. Anthony's	3.6	The New Victoria Hospital, The New Victoria	7.1
North East	BMI	Woodlands	Private	General	16	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Tees	13.4	Spire, Washington	31.4
North East	Newcastle Trust	Freeman	PPU	General	8	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Newcastle	2.6	Newcastle Trust, Royal Victoria Infirmary	3.2
North East	Newcastle Trust	Royal Victoria Infirmary	PPU	General	8	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Newcastle	1.3	Newcastle Trust, Freeman	3.2
North East	Nuffield	Newcastle	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Newcastle Trust, Royal Victoria Infirmary	1.3	Newcastle Trust, Freeman	2.6
North East	Nuffield	Tees	Private	General	16	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Woodlands	13.4	Spire, Washington	28
North East	Spire	Washington	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Newcastle	10.2	Newcastle Trust, Royal Victoria Infirmary	10.6
North West	BMI	Alexandra	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	HCA, NHS Ventures Christie Clinic	2.8	Spire, Manchester	5.7
North West	BMI	Beardwood	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Fulwood Hall	8.7	Ramsay, Euxton Hall	12.8
North West	BMI	Beaumont	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Euxton Hall	10.3	Ramsay, Oaklands	14.1
North West	BMI	Gisburne Park	Private	General	12	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Beardwood	18.5	Ramsay, Fulwood Hall	25.1
North West	BMI	Highfield	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Oaklands	13.4	Spire, Manchester	14.4

Region	Operator name	Hospital name	Private /PPU	General/ Special-ised	Range of 17 spec	Offers oncology	ICU level	Total admis-sion 2011	Inpatient admis-sion 2011	Total revenue (£m)	Inpatient revenue (£m)	Share insured admis-sion	Share self-pay admis-sion	Share NHS admis-sion	Share overseas admis-sion	Catch-ment area	Fascia count (16 spec)	Fascia count (oncol-ogy)	Individual LOCI (patient based)	Individual LOCI (revenue based)	Network LOCI (patient based)	Network LOCI (revenue based)	Network effect	Name and distance of closest hospital (miles)		Name and distance of second closest hospital (miles)	
North West	BMI	Lancaster	Private	General	14	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Fulwood Hall	21.1	Spire, Fylde Coast	22.3
North West	BMI	Sefton	PPU	General	15	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Liverpool	7.6	Fairfield Independent Hospital, Fairfield Independent	8.7
North West	BMI	South Cheshire	PPU	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, North Staffs	19	Spire, Regency	22.7
North West	Fairfield Independent Hospital	Fairfield Independent	Private	General	12	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Sefton	8.7	Spire, Liverpool	14.4
North West	HCA	NHS Ventures Christie Clinic	PPU	Specialised	2	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Alexandra	2.8	Spire, Manchester	2.9
North West	Nuffield	Chester	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Yale	10.8	Spire, Wirral	16.5
North West	Ramsay	Euxton Hall	Private	General	15	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Beaumont	10.3	Ramsay, Fulwood Hall	11.4
North West	Ramsay	Fulwood Hall	Private	General	16	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Beardwood	8.7	Ramsay, Euxton Hall	11.4
North West	Ramsay	Oaklands	Private	General	14	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Manchester	5.4	HCA, NHS Ventures Christie Clinic	7.8
North West	Ramsay	Renacres	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Sefton	12.2	Fairfield Independent Hospital, Fairfield Independent	14.9
North West	Spire	Cheshire	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Alexandra	18	HCA, NHS Ventures Christie Clinic	18.6
North West	Spire	Fylde Coast	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Fulwood Hall	16.9	BMI, Lancaster	22.3
North West	Spire	Liverpool	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Sefton	7.6	Spire, Wirral	13.7
North West	Spire	Manchester	Private	General	16	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	HCA, NHS Ventures Christie Clinic	2.9	Ramsay, Oaklands	5.4
North West	Spire	Regency	Private	General	16	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Alexandra	13.9	HCA, NHS Ventures Christie Clinic	16.5
North West	Spire	Wirral	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Liverpool	13.7	BMI, Sefton	14.5
Northern Ireland	Belfast Trust	Belfast City	PPU	General	16	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Kingsbridge Private Hospital, Kingsbridge Private	0	BMI, Carrick Glen	59.9
Northern Ireland	Belfast Trust	Mater	PPU	General	16	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Kingsbridge Private Hospital, Kingsbridge Private	0	BMI, Carrick Glen	59.9
Northern Ireland	Belfast Trust	Musgrave Park	PPU	General	16	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Belfast Trust, Mater	0	BMI, Carrick Glen	59.9
Northern Ireland	Belfast Trust	Royal Group of Hospitals	PPU	General	16	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ulster Independent Clinic, Ulster Independent Clinic	0	BMI, Carrick Glen	59.9
Northern Ireland	Kingsbridge Private Hospital	Kingsbridge Private	Private	General	10	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Belfast Trust, Musgrave Park	0	BMI, Carrick Glen	59.9
Northern Ireland	NW Independent Hospital	NW Independent	Private	General	9	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Glasgow	142	BMI, Ross Hall	146
Northern Ireland	Ulster Independent Clinic	Ulster Independent Clinic	Private	General	13	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Belfast Trust, Royal Group of	0	BMI, Carrick Glen	59.9
Scotland	BMI	Albyn	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Fernbrae	68.9	BMI, Kings Park	118
Scotland	BMI	Carrick Glen	Private	General	14	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Ross Hall	35.8	Nuffield, Glasgow	42.3
Scotland	BMI	Fernbrae	Private	General	16	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Kings Park	54.6	Spire, Murrayfield	58.3
Scotland	BMI	Kings Park	Private	General	15	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Glasgow	30	Spire, Murrayfield	33.2
Scotland	BMI	Ross Hall	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Glasgow	5.8	BMI, Kings Park	33.3
Scotland	NHS Lothian	NHS Lothian	PPU	General	11	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Murrayfield	3.3	BMI, Kings Park	35.6
Scotland	Nuffield	Glasgow	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Ross Hall	5.8	BMI, Kings Park	30
Scotland	Spire	Murrayfield	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	NHS Lothian, NHS Lothian	3.3	BMI, Kings Park	33.2
South East (East)	BMI	Chaucer	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	The Spencer Private Hospital, William Harvey	16.1	The Spencer Private Hospital, QEOM	18.1
South East (East)	BMI	Esperance	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Sussex	20.1	Brighton Sussex Trust, Sussex Eye (Eye)	20.6
South East (East)	BMI	Fawkham Manor	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Chelsfield Park	9.3	BMI, Sloane	15.8
South East (East)	BMI	Goring Hall	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Western Sussex Trust, Worthing	3.4	Brighton Sussex Trust, Royal Sussex County (incl. Royal Alexandra Children's)	14.7

Region	Operator name	Hospital name	Private /PPU	General/ Special-ised	Range of 17 spec	Offers oncology	ICU level	Total admis-sion 2011	Inpatient admis-sion 2011	Total revenue (£m)	Inpatient revenue (£m)	Share insured admis-sion	Share self-pay admis-sion	Share NHS admis-sion	Share overseas admis-sion	Catch-ment area	Fascia count (16 spec)	Fascia count (oncology)	Individual LOCI (patient based)	Individual LOCI (revenue based)	Network LOCI (patient based)	Network LOCI (revenue based)	Network effect	Name and distance of closest hospital (miles)	Name and distance of second closest hospital (miles)		
South East (East)	BMI	McIndoe	PPU	General	7	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Tunbridge Wells	9.9	Spire, Gatwick Park	11.9
South East (East)	BMI	Somerfield	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Alexandra	6.8	Maidstone, Tunbridge Wells Suite	15.2
South East (East)	Brighton Sussex Trust	Princess Royal	PPU	General	16	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Haywards Heath	1.7	Brighton Sussex Trust, Royal Sussex County (incl. Royal Alexandra Children's)	16.1
South East (East)	Brighton Sussex Trust	Royal Sussex County	PPU	General	16	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Brighton Sussex Trust, Sussex Eye (Eye)	0	Nuffield, Brighton	2.2
South East (East)	Maidstone	Tunbridge Wells Suite	PPU	General	12	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Tunbridge Wells	2.4	Spire, Tunbridge Wells	6.5
South East (East)	Nuffield	Brighton	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Brighton Sussex Trust, Royal Sussex County (incl. Royal Alexandra Children's)	2.2	Brighton Sussex Trust, Sussex Eye (Eye)	2.3
South East (East)	Nuffield	Haywards Heath	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Brighton Sussex Trust, Princess Royal (incl. Hurstwood Park Neurosciences)	1.7	Brighton Sussex Trust, Royal Sussex County (incl. Royal Alexandra Children's)	15.7
South East (East)	Nuffield	Tunbridge Wells	Private	General	16	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Maidstone, Tunbridge Wells Suite	2.4	Spire, Tunbridge Wells	4.4
South East (East)	Ramsay	Ashtead	Private	General	15	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	St. Anthony's Hospital, St. Anthony's	6.7	The Royal Marsden NHS Foundation Trust, Private Care Sutton	7.2
South East (East)	Ramsay	North Downs	Private	General	13	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	The Royal Marsden NHS Foundation Trust, Private Care Sutton	10.5	BMI, Shirley Oaks	10.5
South East (East)	Spire	Alexandra	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Somerfield	6.8	BMI, Fawkham Manor	16.6
South East (East)	Spire	Gatwick Park	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, McIndoe	11.9	Ramsay, North Downs	13.5
South East (East)	Spire	St Saviours	Private	General	16	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	The Spencer Private Hospital, William Harvey	10.6	BMI, Chaucer	19.5
South East (East)	Spire	Sussex	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Esperance	20.1	Maidstone, Tunbridge Wells Suite	24.7
South East (East)	Spire	Tunbridge Wells	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Tunbridge Wells	4.4	Maidstone, Tunbridge Wells Suite	6.5
South East (East)	The Spencer Private Hospital	QEQM	PPU	General	n/a	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Chaucer	18.1	The Spencer Private Hospital, William Harvey	31.4
South East (East)	The Spencer Private Hospital	William Harvey	PPU	General	n/a	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, St Saviours	10.6	BMI, Chaucer	16.1
South East (East)	Western Sussex Trust	Worthing	PPU	General	14	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Goring Hall	3.4	Brighton Sussex Trust, Royal Sussex County (incl. Royal Alexandra Children's)	11.7
South East (West)	BMI	Chiltern	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Shelburne	8.8	BMI, Bishops Wood	14.5
South East (West)	BMI	Foscote	Private	General	15	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Oxford Radcliff Trust, Horton	0.4	Nuffield, Warwickshire	23.9
South East (West)	BMI	Hampshire Clinic	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Clare Park	13.1	Circle, Circle Reading	14.3
South East (West)	BMI	Mount Alvernia	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Royal Surrey, Royal Surrey	2.8	Nuffield, Guildford	3.3
South East (West)	BMI	Princess Margaret	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Thames Valley	6.3	BMI, Runnymede	9.7
South East (West)	BMI	Runnymede	PPU	General	16	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Woking	3.9	BMI, Princess Margaret	9.7
South East (West)	BMI	Sarum Road	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Wessex	6.4	Spire, Southampton	11.9
South East (West)	BMI	Saxon Clinic	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Manor	17.7	BMI, Three Shires	21.4
South East (West)	BMI	Shelburne	PPU	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Chiltern	8.8	Spire, Thames Valley	14.2

Region	Operator name	Hospital name	Private /PPU	General/ Special-ised	Range of 17 spec	Offers oncology	ICU level	Total admis-sion 2011	Inpatient admis-sion 2011	Total revenue (£m)	Inpatient revenue (£m)	Share insured admis-sion	Share self-pay admis-sion	Share NHS admis-sion	Share overseas admis-sion	Catch-ment area	Fascia count (16 spec)	Fascia count (oncology)	Individual LOCI (patient based)	Individual LOCI (revenue based)	Network LOCI (patient based)	Network LOCI (revenue based)	Network effect	Name and distance of closest hospital (miles)	Name and distance of second closest hospital (miles)		
South East (West)	Circle	Circle Reading	Private	General	13	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Berkshire Independent	2.7	Spire, Dunedin	2.9
South East (West)	Frimley Park	Parkside Suite	PPU	General	14	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Woking	9.7	Spire, Clare Park	10.6
South East (West)	Nuffield	Chichester	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Western Sussex Trust, St Richards	1.1	Spire, Portsmouth	9.9
South East (West)	Nuffield	Guildford	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Royal Surrey, Royal Surrey	0.6	BMI, Mount Alvernia	3.3
South East (West)	Nuffield	Oxford	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Oxford Radcliff Trust, JR	0.6	Oxford Radcliff Trust, Churchill	0.8
South East (West)	Nuffield	Wessex	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Sarum Road	6.4	Spire, Southampton	6.6
South East (West)	Nuffield	Woking	Private	General	16	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Runnymede	3.9	BMI, Mount Alvernia	7.7
South East (West)	Oxford Radcliff Trust	Churchill	PPU	General	7	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Oxford	0.8	Oxford Radcliff Trust, JR	1.1
South East (West)	Oxford Radcliff Trust	Horton	PPU	General	11	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Foscote	0.4	Nuffield, Warwickshire	24
South East (West)	Oxford Radcliff Trust	JR	PPU	General	13	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Oxford	0.6	Oxford Radcliff Trust, Churchill	1.1
South East (West)	Ramsay	Berkshire Independent	Private	General	14	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Dunedin	1	Circle, Circle Reading	2.7
South East (West)	Royal Surrey	Royal Surrey	PPU	General	10	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Guildford	0.6	BMI, Mount Alvernia	2.8
South East (West)	Spire	Clare Park	Private	General	16	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Firmley Park, Parkside Suite	10.6	Royal Surrey, Royal Surrey	12.1
South East (West)	Spire	Dunedin	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Berkshire Independent	1	Circle, Circle Reading	2.9
South East (West)	Spire	Portsmouth	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Chichester	9.9	Western Sussex Trust, St Richards	10
South East (West)	Spire	Southampton	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Wessex	6.6	BMI, Sarum Road	11.9
South East (West)	Spire	Thames Valley	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Princess Margaret	6.3	Royal Brompton and Harefield NHS Foundation Trust, Harefield	8.8
South East (West)	Western Sussex Trust	St Richards	PPU	General	14	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Chichester	1.1	Spire, Portsmouth	10
South West	BMI	Bath Clinic	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Circle, Circle Bath	6.6	Nuffield, Bristol	15.3
South West	BMI	Harbour	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Bournemouth	5.6	BMI, Winterbourne	24.7
South West	BMI	The Ridgeway	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Great Western, The Shalbourne Suite	4.4	Gloucestershire Hospitals, Cheltenham General	32.8
South West	BMI	Winterbourne	Private	General	15	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Harbour	24.7	Nuffield, Bournemouth	29.4
South West	Circle	Circle Bath	Private	General	14	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Bath Clinic	6.6	Nuffield, Bristol	19.3
South West	Gloucestershire	Cheltenham General	PPU	General	15	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Cheltenham	2.8	Gloucestershire Hospitals, Gloucestershire Royal	9
South West	Gloucestershire	Gloucestershir e Royal	PPU	General	14	No	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Winfield	1.7	Nuffield, Cheltenham	6.2
South West	Great Western	The Shalbourne Suite	PPU	General	15	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, The Ridgeway	4.4	Gloucestershire Hospitals, Cheltenham General	32.7
South West	Nuffield	Bournemouth	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Harbour	5.6	Ramsay, New Hall	23.9
South West	Nuffield	Bristol	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Bristol	1.2	BMI, Bath Clinic	15.3
South West	Nuffield	Cheltenham	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Gloucestershire Hospitals, Cheltenham General	2.8	Ramsay, Winfield	6.1
South West	Nuffield	Exeter	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Mount Stuart	20.9	Nuffield, Taunton	37.2
South West	Nuffield	Plymouth	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Plymouth Hospitals NHS Trust, Meavy Clinic	0.1	Ramsay, Mount Stuart	34.2
South West	Nuffield	Taunton	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Exeter	37.2	Circle, Circle Bath	43.2
South West	Plymouth NHS Trust	Meavy Clinic	PPU	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Plymouth	0.1	Ramsay, Mount Stuart	32.6
South West	Ramsay	Duchy	Private	General	16	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Plymouth	55.5	Plymouth Hospitals NHS Trust, Meavy Clinic	55.6
South West	Ramsay	Mount Stuart	Private	General	14	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Exeter	20.9	Plymouth Hospitals NHS Trust, Meavy Clinic	32.6
South West	Ramsay	New Hall	Private	General	14	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Bournemouth	23.9	Spire, Southampton	24.1

Region	Operator name	Hospital name	Private /PPU	General/ Special-ised	Range of 17 spec	Offers oncology	ICU level	Total admis-sion 2011	Inpatient admis-sion 2011	Total revenue (£m)	Inpatient revenue (£m)	Share insured admis-sion	Share self-pay admis-sion	Share NHS admis-sion	Share overseas admis-sion	Catchment area	Fascia count (16 spec)	Fascia count (oncology)	Individual LOCI (patient based)	Individual LOCI (revenue based)	Network LOCI (patient based)	Network LOCI (revenue based)	Network effect	Name and distance of closest hospital (miles)		Name and distance of second closest hospital (miles)	
South West	Ramsay	Winfield	Private	General	16	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Gloucestershire Hospitals, Gloucestershire - Royal	1.7	Nuffield, Cheltenham	6.1
South West	Spire	Bristol	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Bristol	1.2	BMI, Bath Clinic	16.4
Wales	BMI	Werndale	Private	General	15	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	HMT Hospitals, Sancta Maria	34.7	Bridgend Clinic, Bridgend Clinic	54.9
Wales	Bridgend Clinic	Bridgend Clinic	PPU	General	12	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Vale	14.2	HMT Hospitals, Sancta Maria	23.4
Wales	HMT Hospitals	Sancta Maria	Private	General	12	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Bridgend Clinic, Bridgend Clinic	23.4	BMI, Werndale	34.7
Wales	Nuffield	Vale	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Cardiff	13.4	Bridgend Clinic, Bridgend Clinic	14.2
Wales	Spire	Cardiff	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	St Joseph's Hospital, St Joseph's	10.2	Nuffield, Vale	13.4
Wales	Spire	Yale	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Chester	10.8	Spire, Wirral	24.5
Wales	St Joseph's Hospital	St Joseph's	Private	General	12	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Cardiff	10.2	Nuffield, Vale	22.7
West Midlands	BMI	Droitwich Spa	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, South Bank	7.6	BMI, Priory	18.5
West Midlands	BMI	Edgbaston	Private	General	16	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Priory	1.2	Ramsay, West Midlands	7.3
West Midlands	BMI	Meriden	PPU	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Warwickshire	12.5	Spire, Parkway	18.2
West Midlands	BMI	Priory	Private	General	16	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Edgbaston	1.2	Spire, Parkway	8.3
West Midlands	Nuffield	Hereford	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, South Bank	25.8	Gloucestershire Hospitals, Gloucestershire Royal	30.8
West Midlands	Nuffield	North Staffs	Private	General	16	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, Rowley	15.7	BMI, South Cheshire	19
West Midlands	Nuffield	Shrewsbury	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Yale	32.2	Nuffield, Wolverhampton	34
West Midlands	Nuffield	Warwickshire	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Meriden	12.5	Spire, Parkway	22.6
West Midlands	Nuffield	Wolverhampton	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Ramsay, West Midlands	13.5	Spire, Little Aston	15.2
West Midlands	Ramsay	Rowley	Private	General	15	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, North Staffs	15.7	Nuffield, Wolverhampton	19
West Midlands	Ramsay	West Midlands	Private	General	15	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Edgbaston	7.3	BMI, Priory	8.6
West Midlands	Spire	Little Aston	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Priory	13.7	BMI, Edgbaston	13.8
West Midlands	Spire	Parkway	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Priory	8.3	BMI, Edgbaston	9.5
West Midlands	Spire	South Bank	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Droitwich Spa	7.6	Ramsay, West Midlands	23.8
Yorkshire & The Humber	Aspen	Claremont	Private	General	11	No	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Thornbury	0.9	Ramsay, Park Hill	26.8
Yorkshire & The Humber	BMI	Duchy (aka Harrogate)	Private	General	17	Yes	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Leeds	14.2	Nuffield, Leeds	15.8
Yorkshire & The Humber	BMI	Huddersfield	Private	General	16	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Elland	4.5	Ramsay, The Lodge (incl. Yorkshire clinic)	18.2
Yorkshire & The Humber	BMI	Thornbury	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Aspen, Claremont	0.9	Ramsay, Park Hill	25.8
Yorkshire & The Humber	HMT Hospitals	St Hugh's	Private	General	12	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Hull and East Riding	26.8	BMI, Lincoln	34.4
Yorkshire & The Humber	Nuffield	Leeds	Private	General	17	Yes	Level 3	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Leeds	3.6	Spire, Methley Park	8.5
Yorkshire & The Humber	Nuffield	York	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Duchy (aka Harrogate)	22.5	Spire, Leeds	24.2
Yorkshire & The Humber	Ramsay	Park Hill	Private	General	15	No	No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Spire, Methley Park	22.9	BMI, Thornbury	25.8
Yorkshire & The Humber	Ramsay	Yorkshire Clinic	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Leeds	12.6	Spire, Leeds	16.2
Yorkshire & The Humber	Spire	Elland	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	BMI, Huddersfield	4.5	Ramsay, The Lodge (incl. Yorkshire clinic)	17.5
Yorkshire & The Humber	Spire	Hull and East Riding	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	HMT Hospitals, St Hugh's	26.8	Nuffield, York	37
Yorkshire & The Humber	Spire	Leeds	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Leeds	3.6	Spire, Methley Park	10.4
Yorkshire & The Humber	Spire	Methley Park	Private	General	17	Yes	Level 2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	Nuffield, Leeds	8.5	Spire, Leeds	10.4

Sources: Response to the market questionnaire: Section 1, questions 1–3. Starting from catchment area (column R) to the right: CC analysis.

Price-concentration analysis for self-pay patients

Introduction

1. This appendix sets out our quantitative assessment of the effects of local concentration on the prices paid by self-pay patients. We have focused our analysis on inpatient medical treatments, and defined prices as the amount paid for inpatient hospital services, excluding consultant fees (referred to as 'self-pay prices' unless otherwise specified). Our analysis has sought to evaluate the relationship between price and concentration (the 'price-concentration relationship') while controlling for other factors. To do this we have used regression analysis, also known as price-concentration analysis (PCA).
2. The appendix is organized into the following sections:
 - (a) our hypothesis of interest;
 - (b) the data and key measures we have used in our analysis;
 - (c) our econometric methodology;
 - (d) the main results of our analysis;
 - (e) an evaluation of the robustness of our main results to various modifications;
 - (f) an extension of our analysis that considers results at the operator level;
 - (g) a review of the econometric evidence submitted to us by BMI; and
 - (h) our main conclusions from this analysis.
3. There are also two annexes to this appendix. Annex A sets out details of our data processing. Annex B provides a summary of the qualitative evidence we have reviewed in relation to self-pay prices.

Hypothesis of interest

4. The hypothesis we are interested in is whether private hospital operators are able to charge higher self-pay prices in local areas where they face fewer competitive constraints. Given the scope of this inquiry, which is industry-wide, our analysis is primarily focused at testing the hypothesis at a general level, ie whether it holds across the private healthcare industry. If this hypothesis holds, then all else equal, we would expect higher self-pay prices in more concentrated local areas.¹ This would also imply that self-pay prices would be reduced if more competition were present in certain local areas.
5. Our hypothesis has initial support from two perspectives. First, as noted in the CC Guidelines, competition creates incentives for firms to meet the needs of customers

¹ That is, if we observe that prices are on average higher at hospitals that face weaker competitive constraints compared with hospitals that face stronger competitive constraints, then any particular hospital facing weak competitive constraints is expected to be charging higher prices than it would do if, all else equal, it faced stronger competitive constraints. The amount by which the prices are higher may vary across hospitals but the expectation will hold on average.

by cutting prices.² Second, the qualitative evidence that we have reviewed, which included what the parties have submitted and told us about local competition in the self-pay market as well as a wide range of internal documents, shows that: local hospitals have a significant degree of autonomy with regard to their price-setting; local hospitals often monitor their competitors' pricing; and price-setting strategies often take account of local competitive conditions. There were also several examples of hospitals responding to local competition or, in some cases, noting that they face a lack of competition. A summary of this qualitative evidence is provided in Annex B.

6. The role of our PCA in relation to the hypothesis is twofold. First, we can statistically test whether the hypothesis holds. Second, we can quantify the relationship between local concentration and self-pay price outcomes.

Data and key measures

7. The main source of data for this analysis is invoice-level data that was provided to us by the five main hospital operators.³ We have used this data to construct measures of self-pay prices and local concentration.
8. The invoice data provides detailed information on the hospital visits of self-pay patients. It includes details of the hospital visited, the treating consultant, the treatment received, and the prices paid. We have cleaned and consolidated hospital operators' data and produced a single data set for our analysis. We refer to this as the hospital data set. Each row in this data set is an 'episode', which we have defined as a single visit to hospital. The hospital data set covers the period 2009 to mid-2012 and includes information on inpatient episodes at 142 hospital sites. Annex A provides details of our data processing.
9. In the following three subsections we describe the price measure, the concentration measures, and the medical treatments (referred to as 'treatments') that our analysis has focused on.

Price measure

10. We use a measure of the 'episode price' paid by self-pay patients. This is defined as the price paid by a self-pay patient for hospital services, excluding the cost of consultant fees and ancillary items.⁴ Each episode relates to a specific treatment received by a patient, and thus our prices are for hospital services associated with known procedures such as a hip replacement (the particular classification of treatments is discussed at the end of this subsection).⁵ We refer to this definition as 'price' for the remainder of this document.
11. A characteristic of our price measure is that it contains significant variation (see Table 3 later in this appendix). The variation in prices that our analysis relies upon is

² *Guidelines for market investigations* (CC3), paragraph 10.

³ BMI, HCA, Nuffield, Ramsay and Spire.

⁴ There are some known differences in this definition across the data for each hospital operator. However, these differences are limited to factors that are not expected to influence prices in a substantive manner; for example, for BMI data we could not exclude ancillary items (eg food and drinks, telephone calls) but these are generally a small proportion of the total episode price.

⁵ We also considered the possibility of more granular price measures—for example, the price for particular line items—but differences in data recording conventions between hospital operators did not permit a practical or consistent categorization of the data in this way. One of the key limitations is that certain hospital operators only record the total episode price for each patient, and do not provide a breakdown into the line item prices. More aggregated price measures such as average prices across bundles of procedures or patient episodes were considered less preferable on the basis that mix may introduce artificial variation in the observed price data.

the difference in price outcomes between hospital sites. In addition to this variation, there is also variation between the prices paid by patients that received the same treatment at the same hospital. Factors that lead to this type of variation include differences in the bundle of hospital services received (for example, the length of stay, the type of prosthesis used if required, the amount of drugs) and differences in the agreed price or discount between the patient and the hospital (for example, the hospital may propose a bespoke price to the patient after an initial consultation, or modify an initial shelf price following a negotiation or price match).

12. We are also aware of some more minor variations in prices being introduced by the recording of data by hospital operators. This could include data entry errors (for example erroneous price records, incorrect categorization of treatments etc), or differences in how refunds, ancillary items and multiple treatments are recorded in the data. We have cleaned and processed the data in a way that minimizes these differences between hospital operators. This process is described in Annex A.
13. The parties have argued that the price variation caused by the data recording issues noted above, and our cleaning of the data in this regard, may distort our analysis. We do not think that these issues will materially affect our analysis. There are several factors that lead us to this conclusion, and in particular because: some of the known differences are a very small proportion of price (eg ancillary items), and other differences that have been suggested (eg patients receiving multiple treatments in one visit but these not all being recorded in the data) are likely to be mitigated by specific steps of our data cleaning (eg we have taken a careful approach to removing the episodes observed with multiple treatments, and then removing outlying price observations from the remaining episodes) and our regression analysis (eg through the use of operator dummies, which account for any differences in average prices between the data sets). We therefore think any unaccounted differences are small, and to the extent that they do exist, our analysis should remove any concerns over their influence on the results.

Concentration measure

14. We have used two measures of local concentration. These measures are referred to as LOCI and fascia count. Both of these measures are indicators that give an indication of the degree of local concentration and the strength of the competitive constraints that a hospital faces. An advantage of using two different concentration measures is that it allows for a comparison between and check of the PCA results using each measure separately. We briefly describe each measure in turn.

LOCI

15. We have constructed a measure of concentration that we refer to as LOCI. The details of the LOCI methodology and the advantages of this measure over other measures of concentration are set out in Appendix 6.4. The LOCI measure described in that appendix uses the Healthcode data on insured patient visits. We refer to that measure as the insured LOCI. In this appendix, and for the regression analysis, we apply the same methodology as in Appendix 6.4 but use the hospital data set (ie on self-pay patients). We refer to this measure as the self-pay LOCI or, in this appendix simply as LOCI. Both the insured LOCI and self-pay LOCI incorporate the network effect adjustment described in Appendix 6.4 (paragraphs 26 to 30), and are based on data for inpatients visits over the period 2009 to 2012 for the set of 16 specialties plus oncology.

16. The parties have raised a number of concerns about our use of LOCI as a measure of local concentration. We discuss these issues in Appendix 6.4. Here we note two issues that have direct relevance to this analysis. The first issue is that any measure of local concentration is only an indicator of the local competitive constraints. Several of the concerns raised do not undermine the use of LOCI as an indicator, but do highlight that it may not always fully reflect every aspect of a local area and the competition between hospitals in that area. We discuss the implications of these potential ‘errors in measurement’ later in this appendix.
17. The second issue is that when calculating the self-pay LOCI we do not have invoice information for all self-pay patients. This occurs because our self-pay data only includes patient episodes for BMI, HCA, Nuffield, Ramsay and Spire. It does not include patient episodes for other operators’ hospitals. The ‘missing invoices’ for these patients may bias the estimates of submarket patient shares used in the calculation of the LOCI measure. To assess the likely scale of the missing self-pay invoices we have compared the invoices in the hospital data set against the aggregated data on self-pay admissions that was sent to us in response to the Market Questionnaire.⁶ The latter source is the most complete information on self-pay patient numbers.⁷ The results of this comparison are shown in Table 1.

TABLE 1 **Estimates of missing self-pay invoices**

<i>Region</i>	<i>Self-pay admissions at hospitals not included in the hospital data set</i>	<i>Self-pay admissions at all hospitals</i>	<i>Missing self-pay Invoices %</i>
East Midlands	0	5,640	0
East of England	957	13,051	7
London	20,999	38,152	55
North-East	0	1,834	0
North-West	0	9,236	0
Northern Ireland	991	991	100
Scotland	0	5,854	0
South-East	2,595	25,088	10
South-West	0	11,069	0
Wales	0	3,296	0
West Midlands	0	8,556	0
Yorkshire and The Humber	0	6,936	0
All regions	25,542	129,703	20
All regions excl London and Northern Ireland	3,552	90,560	4

Source: CC analysis.

Note: Numbers may not sum due to rounding. Regions are defined by the NUTS1 classification.

18. Table 1 shows that the percentage of missing invoices for the self-pay LOCI calculation is around 20 per cent for the UK as a whole. It also shows the regional breakdown: the highest proportions of missing invoices are in London (55 per cent) and Northern Ireland (100 per cent). The proportions are higher in these regions because of the higher number of independents and PPUs in London, and the fact that the main five hospital operators are not present in Northern Ireland. Compared with our sample of self-pay invoices, we note that both of these regions are relatively small proportions of the data (London accounts for around 7 per cent, and Northern

⁶ We note that because of our data cleaning process, our analysis does not use all of the self-pay invoices at all hospitals included in the hospital data set. This may mean that the proportions stated in Table 1 are overstated in some cases. We do not consider this issue to materially affect the general conclusions we take from the comparisons made in Table 1.

⁷ Data on self-pay admissions not available for 47 of 219 hospitals and this may mean some of the estimated proportions are understated. However, since 37 of these 47 hospitals are located in London or Northern Ireland (which are discussed in paragraph 18 below), and 27 of these 47 hospitals are PPUs (which typically have lower levels of self-pay admissions than private hospitals), these omissions are not expected to materially change the estimated proportions of missing invoices in most regions.

Ireland is excluded from our analysis). The final row in Table 1 shows that after excluding London and Northern Ireland, the proportion of missing invoices is around 4 per cent.

19. These figures suggest that the LOCI measure may be less accurate for hospitals in certain regions; however, for the majority of regions, the impact is expected to be limited.⁸ For other regions, such as London (and Northern Ireland, but this is not included in the PCA), the impact may be greater but it is still not expected to materially affect our analysis.^{9,10} In general, we do not see that the scale of the missing invoices raises a substantive concern with our use of the self-pay LOCI.

Fascia count

20. We have defined fascia count measures as the count of general private hospital and PPU fascia within a hospital's catchment area.¹¹ The methodology we have used for these calculations is described in Appendix 6.5. For the purposes of the PCA, we have modified that methodology by calculating the fascia count variables separately for three fixed distance bands (rather than once within the catchment area) from the focal hospital: 0–9 miles, 9–17 miles and 17–26 miles. These distance bands are defined by road distance, and were chosen around a benchmark distance of 17 miles.^{12,13} We have used common distance bands for each hospital as this provides more coherent basis when we later interpret the results of the PCA and is in line with standard practice.^{14,15}
21. A comparison between the fascia count and the LOCI is given in Appendix 6.4 and Appendix 6.5. Two notable differences between the measures are that fascia count, unlike LOCI, treats all competitors as equal (eg small PPUs vs large general private hospitals) and the fascia count does not suffer from the data shortages noted above in relation to the LOCI measure.

Treatments

22. The private healthcare industry is characterized by many separate treatments that patients can receive. In the hospital data set, each episode relates to a particular inpatient treatment (eg hip operation, gallbladder removal etc). These treatments are defined by 'CCSD codes', a five-digit coding system for surgical procedures. The majority of episodes in the hospital data set are recorded with a single CCSD code

⁸ There are three factors that lead us to this conclusion. First, as noted in the text above, London accounts for a relatively small proportion of our sample of self-pay invoices. Second, most hospitals draw patients from many submarkets and if the missing invoices only affect a relatively small number of these then any impact on the hospitals' overall LOCI measure may be limited. Third, changes in the shares for submarkets located at distance from the focal hospital will only have a small impact on the focal hospital's overall LOCI measure because of the weighting scheme, and since few hospitals are located very close to either other, it is unlikely that small proportions of missing invoices will have a large impact on a hospital's LOCI. The use of submarkets and the weighting scheme in the LOCI calculation are explained in Appendix 6.4.

⁹ We have also considered any impact on the self-pay LOCI calculations as a result of our data cleaning, and in particular the episodes that we have excluded because of the irregular pricing information (see Annex A for more details). To assess this issue, we have compared the self-pay LOCI described in the text with a self-pay LOCI constructed using the hospital data set but with no cleaning of irregular episodes applied (ie we reintroduced the irregular priced episodes). We observe that these two self-pay LOCI measures are very highly correlated (0.99) and conclude from this that our data exclusions are unlikely to have materially affected the self-pay LOCI calculations.

¹⁰ We have tested the results presented later in this paper to the exclusion of London. We find that the results are robust to such exclusions.

¹¹ The definition of each catchment area is the road-distance radius within which 80 per cent of a hospital's patients live.

¹² This is the average catchment area for the hospitals in Great Britain.

¹³ For the purposes of the regression analysis we did consider variations around these distance bands, but have found such changes to have no material effect on the results.

¹⁴ This approach also avoids the possibility that the catchment area size is influenced by local competition (eg with larger catchment areas observed in more concentrated areas).

¹⁵ See for example [Rank/Gala](#) or [Booker/Makro](#), CC, 2013.

and it is these episodes that we focus our analysis on. We refer to CCSD codes as ‘treatments’.

23. After cleaning, the hospital data set contains patient episodes for 54 separate inpatient treatments. In this cleaning process we have excluded treatments that we do not consider representative of acute inpatient treatments (eg cosmetic treatments, day-case treatments, treatments that are conducted in both inpatient and day-case settings) and treatments that we cannot examine in isolation (eg when a patient receives several treatments in one episode). Annex A provides more details of our processing of the data in this way.
24. The number of treatments raised practical questions for our analysis—how many treatments to consider, which treatments are suitable and so on. In principle we could have analysed each treatment separately to assess the price-concentration relationship. For 54 treatments we did not consider this a practical solution. From the 54 treatments, however, we noted that the volume of episodes is skewed towards a small number of treatments that account for a large proportion of volume and revenue. Given this, we considered it reasonable to focus our assessment on a number of treatments that we considered representative.
25. The treatments that we focus on, referred to as the ‘focal treatments’, are the top four inpatient treatments by patient episodes in our data set. The four focal treatments are: hip replacement (W3712), knee replacement (W4210), prostate resection (M6530) and gallbladder removal (J1830). The focal treatments account for almost 60 per cent of inpatient visits, and over 60 per cent of inpatient revenue in our cleaned data set.^{16,17} We consider these four focal treatments sufficiently representative of acute self-pay inpatient treatments to provide us with information about the price-concentration relationship in the industry.¹⁸ The majority of our analysis focuses on the focal treatments. We do, however, test whether our results are robust to considering the wider set of all inpatient treatments.
26. Tables 2 and 3 below provide a summary of the top ten treatments in our hospital data set.

¹⁶ These figures are an average across the five operators. We note that there are differences in how representative these treatments are for each individual operator (eg they are less representative for HCA), however it is the case that the focal treatments are important for each individual operator (eg they are four of the top seven treatments for HCA). See Annex A for more details.

¹⁷ We have also tested the robustness of our results to the choice of treatments by analysing all 54 treatments. See paragraph 105 for the results of this test.

¹⁸ There are also at least two empirical benefits to focussing on these focal treatments. First, the focal treatments are provided at more hospital sites (over 100 for each focal treatment) than other treatments which means that the data we analyse contains the maximum variation in the levels and range of local concentration. This variation is useful because our analysis effectively compares episode price outcomes with levels of local concentration. More levels of local concentration and more variation in local concentration allow the analysis to make more comparisons which is beneficial when trying to identify a relationship between the two variables. Second, the patient numbers for each focal treatment is high (over 1,000 patients per focal treatment, and on average nine or more patients per focal treatment at each hospital site), which means that prices at each hospital are observed for many patients, reducing the likelihood that the price paid by any particular patient has the potential to obscure or distort the analysis. For example, if we were to observe the episode price for only a single patient at each hospital site, the price variation caused by individual circumstances (as described earlier) may be such that any influence of local concentration on price is impossible to determine.

TABLE 2 Top ten treatments by patient volumes in cleaned hospital data set, 2009 to 2012 (part)

CCSD code	Description	Specialty	Patients (obs)	Revenue £	Number of hospital sites	Average patients per hospital site
W3712	Primary total hip replacement with or without cement	Trauma and orthopaedics	5,834	49,552,616	138	42
W4210	Total prosthetic replacement of knee joint, with or without cement, +/- patella	Trauma and orthopaedics	3,250	29,898,737	130	25
M6530	Endoscopic resection of prostate (tur) (including cystoscopy)	Urology	1,808	6,768,967	130	14
J1830	Laparoscopic cholecystectomy	General surgery	1,412	4,987,644	130	11
Q0740	Total abdominal hysterectomy (+/- oophorectomy)	Obstetrics and gynaecology	918	4,062,954	132	7
P2380	Anterior (+/- posterior) colporrhaphy with vaginal hysterectomy (including primary repair of enterocele)	Obstetrics and gynaecology	867	3,984,280	124	7
V2540	Posterior excision of disc prolapse including microdiscectomy (lumbar region)	Trauma and orthopaedics	794	3,456,446	85	9
P2310	Anterior +/- posterior colporrhaphy (including primary repair of enterocele) (including cystoscopy)	Obstetrics and gynaecology	706	2,482,452	126	6
J1880	Laparoscopic cholecystectomy with peri-operative cholangiogram	General surgery	672	2,481,647	80	8
V2560	Decompression for central spinal stenosis (1 or 2 levels)	Trauma and orthopaedics	536	2,734,282	87	6
	Focal treatments (W3712, W4210, M6530, J1830)		12,304	91,207,964		
	Top 10 treatments (each shown above)		16,797	110,410,025		
	All treatments		21,406	142,039,551		

Source: CC analysis.

Note: See Annex A for details of our data cleaning and processing.

TABLE 3 Summary statistics for top ten treatments by patient volumes in hospital data set, 2009 to 2012 (part)

CCSD code	Description	Average price £	Median price £	Min price £	Max price £	Std deviation
W3712	Primary total hip replacement with or without cement	8,494	8,399	5,818	11,989	996
W4210	Total prosthetic replacement of knee joint, with or without cement, +/- patella	9,200	9,153	5,484	15,215	1,155
M6530	Endoscopic resection of prostate (tur) (including cystoscopy)	3,744	3,694	2,075	6,500	493
J1830	Laparoscopic cholecystectomy	3,532	3,513	1,890	5,917	578
Q0740	Total abdominal hysterectomy (+/- oophorectomy)	4,426	4,401	1,995	9,889	793
P2380	Anterior (+/- posterior) colporrhaphy with vaginal hysterectomy (including primary repair of enterocele)	4,595	4,550	2,744	6,732	699
V2540	Posterior excision of disc prolapse including microdiscectomy (lumbar region)	4,353	4,250	1,980	7,926	955
P2310	Anterior +/- posterior colporrhaphy (including primary repair of enterocele) (including cystoscopy)	3,516	3,474	1,645	6,011	828
J1880	Laparoscopic cholecystectomy with peri-operative cholangiogram	3,693	3,663	2,348	5,613	608
V2560	Decompression for central spinal stenosis (1 or 2 levels)	5,101	5,137	2,500	7,999	1,202

Source: CC analysis.

Note: See Annex A for details of our data cleaning and processing.

Econometric methodology

27. Analysing the price-concentration relationship involves comparing price outcomes with local concentration. A hypothetical ideal would be to compare price outcomes at hospitals that are identical in all respects except for the level of local market concentration faced. Any price difference between such hospitals could then be attributed to a price-concentration relationship. However, when hospitals are not like-for-like, simple price comparisons may be misleading.¹⁹ PCA addresses this issue by using regression analysis to estimate the price-concentration relationship while controlling for the differences between hospitals and local areas. In effect, the price-concentration relationship is estimated while other factors are 'held fixed'. This section sets out the econometric model that we have used to estimate the relationship and the factors ('control variables') we have controlled for.

Model

28. We have taken a 'reduced-form' approach to the PCA.²⁰ We estimate the following equation:

$$\text{(Equation 1)} \quad \ln(\text{price}_i) = \beta \cdot \text{concentration}_i + \gamma \cdot X_i + u_i$$

29. In this equation, *price_i* is the price paid for private hospital services by patient *i*, and *concentration_i* is a measure of local concentration faced by the hospital that patient *i* visited.^{21,22} The term *X_i* contains other measurable factors that are specific to patient *i*'s hospital visit and expected to affect the price paid by patient *i*.²³ Factors contained in *X_i* are referred to as the 'control variables', while *concentration_i* and *X_i* collectively are referred to as the 'covariates'. The term *u_i* represents all 'unobserved' factors that affect prices but that are not included in *X_i*. The two terms β and γ represent the 'parameters' that characterize the relationship of each covariate with price. Regression analysis can be used to estimate these parameters.
30. In order to estimate the parameters of Equation 1 it is necessary to make certain assumptions. We begin by making two key assumptions:
- Assumption 1: the equation is a reasonable approximation of the relationship between prices and the covariates; and
- Assumption 2: the covariates are exogenous (or equivalently, that the covariates are uncorrelated with the unobserved term, *u_i*).
31. The first assumption relates to the particular form of Equation 1, which links the natural logarithm of price to the covariates in a certain way. We use this representation as it produces a model that is simple to interpret and estimate. The natural

¹⁹ For example, Ramsay submitted an analysis comparing price outcomes between different hospitals. The approach was to rank hospitals by their average prices in each of the four focal treatments. Ramsay observe that obtained rankings differ within hospitals, that is, a hospital that is ranked as relatively expensive in one treatment may be ranked as relatively inexpensive in another. We note two points with regards to this analysis. First, this type of price comparison does not control for other important factors that affect episode prices. Second, this approach does not provide any tools for statistical inference, that is, we do not know whether the particular ranking of hospitals is a result of actual price differences, or are the result of statistical noise. Our regression analysis addresses both of these problems and is therefore a more appropriate approach to assessing the hypothesis of interest.

²⁰ By reduced form we refer to an approach that does not rely on a particular underlying economic model that is assumed to hold.

²¹ The concentration measure may be one variable (eg LOCI) or more than one variable (eg fascia count at different distance bands).

²² The concentration variable therefore varies by hospital site but does not vary between patients that visit the same hospital site.

²³ *X_i* is a vector that contains several variables (including a constant).

logarithm allows the analysis to characterize the proportional relationship between prices and concentration through a single parameter (β).²⁴ This proportional relationship is assumed constant across all treatments and operators that are included in the analysis. Later in this appendix we present some analysis that examines how our estimation results change if we allow the parameter to vary between treatments and operators.

32. The second assumption implies that the covariates, and concentration in particular, are not correlated with any other factors that are not included in the covariates (ie that are included as part of the unobserved term). We first present results under this assumption, and then consider our results under alternative assumptions.
33. If these assumptions hold, estimates of the parameter β can be interpreted as the causal effect of concentration on price. Specifically, $100 \times \beta$ will indicate the expected percentage response (all else equal) in self-pay prices following a 'one unit' change in concentration.²⁵ When fascia count is used as the concentration measure, a 'one unit' change in concentration reflects an additional competitor within the relevant distance band. When LOCI is used as the concentration measure, a 'one unit' change in concentration can be thought of as a change in market structure between monopoly and perfect competition; while this is a useful benchmark it is an extreme change in market structure which is unlikely to occur in practice.²⁶ The differences in scale between a one unit change in the LOCI and fascia count variables mean that estimates of β using the two measures are not directly comparable. As a rule of thumb, comparisons can be made by scaling the LOCI coefficient by between 0.2 or 0.5—an increase in LOCI of this amount is broadly comparable to an increase of one competitive fascia from either one-to-two (0.2) or zero-to-one (0.5).²⁷
34. When we present our results, we also comment on the 'statistical significance' of the estimate. Estimates that are statistically insignificant are not sufficiently precise (in the statistical sense) to reject the possibility that there is no true relationship between price and concentration (ie, the true value of β that we are trying to estimate is actually zero). Equally, statistically insignificant estimates are also not sufficiently precise to rule out a relationship of a magnitude that lies between the estimated value and zero, or indeed that is larger in magnitude than the estimated value.^{28,29}
35. Under Assumption 1 and 2 stated above, ordinary least squares estimation (OLS) can be used to estimate the parameters (β , γ) in Equation 1. We proceed under

²⁴ We also ran a test to check whether our results were sensitive to this choice of specification. To do this we estimated a model using a linear relationship (ie with no natural logarithm transformation for prices) and compared the results to the model described above. This was done separately for each treatment since the linear model does not estimate a proportional effect but an effect in levels, and this may differ between treatments. The results for the linear and logarithmic models were similar.

²⁵ The effect is only approximately equal to the percentage change due to the properties of the natural logarithm function.

²⁶ Moreover, there are no hospitals in our data set with a LOCI of zero or a LOCI of one.

²⁷ We note that around half of the hospitals in our data set have a fascia count equal to zero, and another third have a fascia count of one (calculated within a 9-mile radius).

²⁸ The results presented below show the statistical significance of estimates according to different thresholds (1, 5 or 10 per cent as indicated by the stars next to estimates). We have typically taken a 5 per cent threshold when considering statistical significance, although we do not consider our results to rely on the use of this specific threshold. For example, many of our results are robust to lower thresholds (for example 1 per cent). We also considered whether one-sided tests would be more appropriate than two-sided tests in this context, since we only expect our concentration variables to be negatively related to prices. If we were to use one-sided tests, then a conventional 10 per cent threshold (which assumes a two-sided test) would instead correspond to 5 per cent statistical significance.

²⁹ Statistical significance calculations rely on the estimated standard errors from the regression. In relation to our standard error calculations, BMI noted that we had rightly been careful to use a technique known as 'clustering' (by hospital site) when calculating standard errors, but that it was likely that our approach in this regard has only succeeded in only partially reducing 'Moulton bias' since the observations across hospitals will presumably not in truth be wholly independent as is required by the resulting estimators of standard errors. As such BMI considered that our estimated standard errors are likely to be too small—and so will tend to indicate that relationships are statistically significant when in truth they are not. We tested alternative assumptions in relation to this comment, such as clustering at the regional level (which would allow for correlations between the unobservable terms at different hospital sites), but we did not find that this materially affected our results.

these assumptions at first, and then give more specific attention to Assumption 2, and estimation under an alternative assumption using instrumental variable estimation (IV). To perform the estimation, we use data on the price and concentration variables described above (episode prices, self-pay LOCI and fascia count), and data on the control variables that is described below.

Control variables

36. Equation 1 specified a group of control variables, X_i . This group of variables should include the factors that are expected to affect prices, as well as being correlated with the concentration measures. If factors that meet these conditions are not included in the variables, Assumption 2 is less likely to hold. Factors that affect supply and demand conditions for private healthcare services are typical candidates for control variables. Typical reasons for factors not being included in the control variables are that the factors cannot be measured or are not available in the data.
37. For the majority of our analysis, we use the following control variables:
 - (a) year dummies, to account for differences in average price over time (eg due to inflation);³⁰
 - (b) operator dummies, to account for any potential differences between the five large hospital operators on average across their portfolio of hospitals (eg price differences, cost differences, quality differences, minor differences in the data definitions);
 - (c) treatment dummies, to account for differences in average price between the treatments;
 - (d) patient age, patient gender and the number of nights per episode, to account for differences in the individual circumstances of each patient;³¹
 - (e) average direct cost of the hospital (logged), to account for differences in input or labour costs;^{32,33}
 - (f) a dummy indicating provision of critical care level 3 (CCL3), to account for potential differences associated with hospitals providing this level of care (eg as a result of perceived or actual differences in quality or cost of service or case mix);^{34,35}

³⁰ We note, however, that self-pay prices for the focal treatments have in general remained at similar levels over time.

³¹ The number of nights per episode will to a degree proxy for the severity of a particular treatment. For example, patients receiving hospital services that stay a larger number of nights are likely to be those having treatment for a more complex or severe diagnosis.

³² This is calculated as the total direct cost of each hospital site, divided by the total number of patients (itself the sum of inpatient, day-patient and outpatient visits). Cost data was available for almost all hospitals in our analysis. For hospitals with missing cost data, we have imputed the data on the basis of hospitals owned by the same operator in the same region and year; if data for the desired year is not available, we use the average for the operator and region over years that are available. We note that in an earlier version of this analysis the cost variable was computed incorrectly for the year 2012; this has now been corrected.

³³ Average direct cost will also proxy for differences in quality, to the extent that these are reflected in differences in average costs.

³⁴ We assume that if a hospital has beds for critical care level 3, then it can provide that level of care.

³⁵ In an earlier version of this analysis the value of this variable was missing for the BMI South Cheshire hospital. This has now been corrected.

- (g) regional dummies, to account for any differences in supply and/or demand conditions that vary by region of the country;³⁶ and
- (h) local area characteristic variables, including average age of the local population, average disposable income of the local population and local population density to proxy for differences in demand conditions in the area surrounding a hospital.³⁷
38. The data for the majority of these control variables has been sourced from either the hospital invoice data or from publicly available databases.³⁸ We have constructed two versions of the local area characteristic variables. The first uses regional average data for each variable, each measured at the NUTS3 level (ie, each variable takes on 81 separate values depending on the region). The parties have argued that measuring the local area characteristic variables in this way is imprecise—for example, because there may be differences within a NUTS3 region. In response to these comments we have constructed a second, more detailed, hospital-specific version of the local area characteristic variables. To do this we have measured the local area characteristics specific to a 17-mile straight line radius around each hospital.³⁹ We consider it likely that the hospital-specific measures are more accurate than the NUTS3 measures for the reasons argued by the parties.
39. We test the sensitivity of our analysis to different combinations of these control variables. Later in this appendix we also consider some additional control variables and how these influence our results.

Main results

40. This section sets out the results of estimating Equation 1. We use the data described in the previous section. We first present and discuss the results of OLS estimation which assumes that Assumptions 1 and 2 hold. We then discuss the potential for any (omitted variable) bias that may be affecting the OLS estimates. Finally, we present and interpret the results of instrumental variable (IV) estimation which relaxes Assumption 2.
41. The estimated coefficients on the local concentration variables presented throughout this section should be interpreted as described in paragraph 33. Statistical significance should be interpreted as described in paragraph 34.

³⁶ Differences specific to each region might include demand and supply conditions such as population and demographics. These regional dummies are measured at the NUTS1, NUTS2 or NUTS3 level. NUTS1 contains 11 categories, NUTS2 contains 34 categories and NUTS3 contains 81 categories. NUTS stands for 'Nomenclature of Territorial Units for Statistics' and is a delineation of geographic areas developed and regulated by the EU. A map of UK NUTS regions can be found at: www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/maps/index.html.

³⁷ The population density and age variables are based on one cross-section of data (2011) and do not vary by year. The income variable varies by region and year; although the data for 2012 was imputed using 2011 data.

³⁸ The data for variables (a) to (d) above comes directly from the hospital data set. The data for the cost variable (e) has been submitted to us by the five large hospital operators in response to the Financial Questionnaire and we have cleaned and matched this data to the hospital data set. The CCL3 dummy, (f), was constructed based on the information provided to us by hospital operators in response to the Market Questionnaire. The regional dummies, (g), have been created by linking the postcode of each treating hospital to the appropriate geographic classification. This linking was done using data provided by the Office for National Statistics (ONS). The local area characteristic variables, (h), have been constructed using a range of data from ONS and National Records of Scotland.

³⁹ To construct these variables, we obtained the relevant demographic statistics at the Local Authority District (LAD) level, which is a more granular geographic classification than the NUTS3. For each hospital, the catchment area-specific average population age and population density are weighted averages of the respective statistics in each LAD that the hospital's 17-mile radius area covers. The weights in this average correspond the proportions of the circle that lie in each of the LADs.

OLS estimation

42. We first consider the results using self-pay LOCI as the concentration measure, and then using fascia count as the concentration measure. For each, we consider four different specifications of the control variables. The first specification (labelled L1 and FC1 for LOCI and fascia count respectively) includes year, operator and treatment dummies, and patient-level variables (age, gender, length of stay). The second specification (L2 and FC2) additionally includes the cost variable, the CCL3 dummy and the NUTS1 regional dummies. The third specification (L3 and FC3) adds the local area characteristics variables at NUTS3 level (average age, population density, income). The fourth specification (L4 and FC4) is the same as the third one, but replaces average age and population density at the NUTS3 level with equivalent measures calculated within a 17-mile catchment area for each hospital.⁴⁰
43. We prefer the fourth specification for both LOCI and fascia count (L4 and FC4) on the basis that it controls for the most factors, and the local area characteristic variables are more accurately measured than the regional averages used in the third specification (L3 and FC3). The first (L1, FC1) and second (L2, FC2) specifications include fewer control variables and are presented for reference only.

LOCI

44. Table 4 sets out the results of the four regressions using LOCI as the concentration measure.

⁴⁰ We have not constructed a catchment-area-specific income variable because data for Gross Domestic Household Income is not available at the LAD level. Further on in this appendix we test the robustness of this choice by replacing the NUTS3 level income variable with a variable that measures gross weekly earnings within the catchment area.

TABLE 4 OLS regression results, LOCI

	L1		L2		L3		L4	
	Coeff	Std error	Coeff	Std error	Coeff	Std error	Coeff	Std error
Self-pay LOCI	-0.0436	0.0387	-0.0870**	0.0432	-0.0636	0.0462	-0.1141**	0.0534
Year dummy: 2010	0.0127**	0.0063	0.0131**	0.0062	0.0141**	0.0066	0.0131**	0.0065
Year dummy: 2011	0.0529***	0.0081	0.0548***	0.0072	0.0556***	0.0074	0.0555***	0.0072
Year dummy: 2012	0.0685***	0.0091	0.0704***	0.0084	0.0716***	0.0087	0.0708***	0.0087
Operator dummy: HCA	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Operator dummy: Nuffield	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Operator dummy: Ramsay	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Operator dummy: Spire	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Treatment dummy: prostate resection	0.0493***	0.0129	0.0469***	0.0126	0.0466***	0.0126	0.0483***	0.0123
Treatment dummy: hip replacement	0.8604***	0.0155	0.8632***	0.0145	0.8623***	0.014	0.8645***	0.014
Treatment dummy: knee replacement	0.9377***	0.0175	0.9407***	0.0169	0.9396***	0.0166	0.9424***	0.0163
Patient sex	-0.0079**	0.0035	-0.0083**	0.0033	-0.0082***	0.0031	-0.0077**	0.0031
Patient age	-0.0003*	0.0002	-0.0003*	0.0002	-0.0003*	0.0001	-0.0002	0.0001
Episode number of patient nights	0.0054***	0.002	0.0046**	0.002	0.0048**	0.0019	0.0042**	0.0019
In(average direct cost)			0.0179	0.0258	0.0171	0.0257	0.0249	0.0259
CCL3 provision dummy			0.0494**	0.0207	0.0581***	0.0222	0.0453**	0.0209
Average age (NUTS3)					0.0005	0.005		
Average GDHI (NUTS3)					-0.0006	0.0043	0.001	0.004
Average population density (NUTS3)					-0.0009	0.0008		
Mean population age in catchment area							-0.008	0.0079
Population density in catchment area							-0.0005	0.0016
Constant	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
R-squared	0.91		0.91		0.91		0.91	
N	12304		12304		12304		12304	
Regional dummies?	No		Yes (NUTS1)		Yes (NUTS1)		Yes (NUTS1)	

Source: CC analysis.

Note: Base categories for dummy variables are BMI, 2009 and removal of gallbladder. Standard errors are clustered by hospital site. Blank entries indicate that the covariate is not included in the specification. ***/**/* indicates statistical significance at the 1%/5%/10% level.

45. Using specification L1 the estimated coefficient on the self-pay LOCI variable (ie the estimate of β from Equation 1) is -0.0436. This estimate is statistically insignificant. Specifications L2, L3 and L4, which control for additional factors, have estimated coefficients that are also negative but are larger in magnitude (-0.0870, -0.0636 and -0.1141, respectively). The estimated coefficients for specification L2 and L4 are statistically significant, but the estimated coefficient for specification L3 is statistically insignificant.

Fascia count

46. Table 5 reports results of the specifications that use the fascia count variables as the concentration measure. These are the same four specifications as in Table 4 but replacing the self-pay LOCI with the (three) fascia count concentration measures.

TABLE 5 OLS regression results, fascia count

	FC1		FC2		FC3		FC4	
	Coeff	Std error	Coeff	Std error	Coeff	Std error	Coeff	Std error
Fascia count (0–9 miles)	–0.0088	0.0081	–0.0088	0.0087	–0.0034	0.0088	–0.0042	0.0103
Fascia count (9–17 miles)	0.0011	0.0021	0.0022	0.0024	0.0039	0.0027	0.0075	0.0069
Fascia count (17–26 miles)	0.0004	0.002	0.001	0.0023	0.0015	0.0028	0.0028	0.0035
Year dummy: 2010	0.0123*	0.0063	0.0127**	0.0062	0.0151**	0.0067	0.0124*	0.0067
Year dummy: 2011	0.0524***	0.008	0.0543***	0.0072	0.0561***	0.0076	0.0541***	0.0073
Year dummy: 2012	0.0684***	0.009	0.0704***	0.0083	0.0730***	0.0088	0.0701***	0.0087
Operator dummy: HCA	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]
Operator dummy: Nuffield	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]
Operator dummy: Ramsay	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]
Operator dummy: Spire	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]
Treatment dummy: prostate resection	0.0500***	0.0127	0.0481***	0.0125	0.0473***	0.0126	0.0486***	0.0123
Treatment dummy: hip replacement	0.8595***	0.0153	0.8626***	0.0144	0.8617***	0.014	0.8632***	0.0138
Treatment dummy: knee replacement	0.9371***	0.0173	0.9402***	0.0166	0.9389***	0.0166	0.9408***	0.0162
Patient sex	–0.0076**	0.0034	–0.0077**	0.0032	–0.0079**	0.0031	–0.0075**	0.003
Patient age	–0.0003*	0.0002	–0.0002	0.0002	–0.0003*	0.0002	–0.0002	0.0001
Episode number of patient nights	0.0055***	0.002	0.0045**	0.0019	0.0049**	0.0019	0.0044**	0.0019
ln(average direct cost)			0.0156	0.0249	0.0154	0.0244	0.0143	0.0244
CCL3 provision dummy			0.0494**	0.0213	0.0617***	0.0221	0.0479**	0.0218
Average age (NUTS3)					0.0037	0.0048		
Average GDHI (NUTS3)					–0.0031	0.0048	0.0003	0.0042
Average population density (NUTS3)					–0.0009	0.0009		
Mean population age in catchment area							–0.0038	0.0076
Population density in catchment area							–0.004	0.0038
Constant	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]	[⊗]
R-squared	0.91		0.91		0.91		0.91	
N	12304		12304		12304		12304	
Regional dummies?	No		Yes (NUTS1)		Yes (NUTS1)		Yes (NUTS1)	

Source: CC analysis.

Note: Base categories for dummy variables are BMI, 2009 and removal of gallbladder. Standard errors are clustered by hospital site. Blank entries indicate that the covariate is not included in the specification. ***/**/* indicates statistical significance at the 1%/5%/10% level.

47. Using specification FC1 the estimated coefficient on the nearby fascia count variable is –0.0088, and the estimated coefficients at further distance bands are of smaller magnitudes. None of these estimated coefficients are statistically significant. Specifications FC2, FC3 and FC4, which add more covariates to specification FC1, report similar results.

Discussion of OLS results

48. We note that the OLS results for all specifications in Tables 4 and 5 show that the estimated coefficient on the local concentration is always negative for the LOCI variable and the nearby fascia count variable. This is the case regardless of the choice of control variables. The negative estimate implies that less concentrated (ie more competitive) areas are associated with lower prices.
49. Our preferred specifications (L4 and FC4) produce coefficient estimates on the local concentration variables that are larger in magnitude than the third specification (L3

and FC3). This is consistent with our view that L4 and FC4 control better for demand-side factors through the more accurate local area characteristic variables.⁴¹

50. Compared with the LOCI specification (L4), the specification using fascia count (FC4) reports estimated coefficients on the local concentration variables that are smaller in magnitude.⁴² The coefficient using FC4 is estimated imprecisely and is statistically insignificant. We have given some consideration as to the reason for this and considered that measurement error is one likely explanation, as discussed in the further evaluation below (see paragraphs 115 to 130).
51. In summary, our OLS model using LOCI (L4) yields a negative coefficient estimate on the local concentration variable and this is statistically significant. This model cannot reject our initial hypothesis and suggests that less concentrated (ie more competitive) areas are associated with lower prices. The corresponding fascia count model (FC4) yields coefficient estimates on the local concentration variables that are small and imprecisely estimated. We now consider whether the OLS estimates are subject to any bias.

Potential bias in OLS estimates

52. The previous OLS estimates assumed that Assumption 2 held. We now consider Assumption 2 in more detail. The assumption requires that the covariates (concentration and the control variables in Equation 1) are uncorrelated with other factors that are unobserved (all factors in the u_i in Equation 1). If this assumption does not hold, one or more covariates is said to be endogenous. This might happen if there are factors directly affecting prices that are also correlated with concentration but not included in the covariates ('omitted variables'). Depending on the nature of the endogeneity—the cause, the interrelationship between price and the covariates, and its degree—the resulting bias in estimates may be upwards, downwards or of a negligible magnitude.
53. In PCA studies it is often considered whether the concentration measure, LOCI or fascia count, are endogenous as a result of omitted variables. We consider this possibility here. Later in this appendix we also consider another possible type of bias (from measurement error, discussed in paragraphs 115 to 130).
54. We first note that the control variables are not required to account for all of the variation in episode prices. For omitted variables to cause bias in the estimated relationship, these omitted variables would need to both affect prices and be correlated with local concentration.⁴³ The sign of any bias introduced by such variables depends in general on two relationships: the impact of the omitted variables on prices (positive or negative), and the correlation between the concentration variable and the omitted variables (positive or negative). We focus on the possibility of omitted variables that positively affect price.⁴⁴ If the omitted variable is positively correlated with LOCI or fascia count, our OLS estimates would understate the

⁴¹ We do not consider the lack of statistical significance of the coefficients of local area characteristic variables to be problematic or to raise concerns. Generally, it is better to include variables that may affect the dependent variable and are correlated with the covariates. Omitting such variables may lead to bias (discussed in paragraphs 52 & 53), whereas including such variables when in fact they have no effect on the dependent variable or are not correlated with the covariates does not lead to bias and only leads to higher standard errors. Increasing the standard errors of our model is not a particular concern given that our estimates are statistically significant. We therefore consider it better to include these variables, even if they are not statistically significant, since this can reduce bias in the estimated price-concentration relationship. This is consistent with what we observe in the difference in price-concentration coefficients in models L2 and L4.

⁴² When comparing fascia count and LOCI coefficients, we take into account that they are measured in different scales. See paragraph 33 for a rule of thumb that we apply in such comparisons.

⁴³ Thus omitted variables that are not correlated with local concentration are not a concern.

⁴⁴ We have not found reasons to consider omitted variables that negatively affect prices.

magnitude of the price-concentration relationship. Conversely, if the omitted variable is negatively correlated with LOCI or fascia count then our OLS estimates would overstate the magnitude of the price-concentration relationship. Because our price-concentration coefficient is negative, if our OLS estimates are understated (overstated) in magnitude it would imply that the true price-concentration relationship is more (less) negative and the true relationship is stronger (weaker) than indicated by the OLS estimates.

55. In the current context, factors that might cause endogeneity are omitted supply or demand factors. We have attempted to control for such differences through the control variables. Specifically, our use of regional dummies limits problems that arise because of differences between regions, and the other variables (eg average cost, local area characteristic variables) attempt to control for any remaining within-region differences. Concerns over omitted variables are therefore largely limited to variables that vary within regions and are not accounted for by the other control variables.
56. We now consider potential omitted variables from the supply-side and the demand-side that may lead to bias. In each case, we discuss the potential sources of omitted variables, the direction of the bias, and conclude on the likelihood that it has biased our OLS estimates. When referring to OLS specifications we mean specifications L4 and FC4.

Potential supply-side omitted variables

57. From the supply-side, we consider that marginal cost is the most realistic candidate for an omitted variable, as this is expected to positively affect price and be correlated with concentration.⁴⁵ The correlation between marginal cost and the local concentration variables would be negative if some areas have intrinsically high marginal costs and as a result fewer entrants are attracted to these areas.⁴⁶ Any omitted variable bias from marginal cost is therefore expected to be negative and would mean that the estimated coefficient using OLS is overstated in magnitude.
58. Our OLS specification (L4 and FC4) includes several variables to control for potential differences in marginal cost. First, the use of regional dummies controls for differences in marginal cost between regions. Hence if there are differences in marginal cost between, for example, the North and South of England, these are largely accounted for. Second, to the extent that there are some within-region differences in marginal cost, we expect that several of our control variables would explain this variation, for example: the control variables for age, gender and length of stay will explain some of the costs of treating different patients;⁴⁷ the treatment dummies will explain the differences in average cost between the four focal treatments; and the average cost and CCL3 provision variables will explain cost variation between hospitals. Collectively we think that these variables capture the majority of any within-region marginal cost differences that may affect prices.
59. We have considered the possibility that the variables described above do not fully account for all differences in marginal cost. To do this we have examined the components of hospitals' direct costs. The majority of these direct cost components

⁴⁵ In contrast, fixed costs may be correlated with local concentration, but are not expected to affect prices and therefore are not considered to be an omitted variable.

⁴⁶ That is, areas of high marginal costs attract fewer entrants which means concentration in these areas is high. However, the LOCI and fascia count variables are low when concentration is high, therefore the correlation between marginal costs and the LOCI and fascia count variables is negative.

⁴⁷ Note that since a large proportion of episodes in our data are package treatments, differences in the patient characteristics included in the model (and those that are omitted from the model) may not lead to differences in episode prices.

(around 60 to 80 per cent, depending on operator) appear unlikely to vary geographically (for example, we understand that drugs and prosthetics, which are two large cost components, are centrally procured).⁴⁸ Thus even if the control variables do not explain all of the variation in these particular cost components, it is unlikely that there will be omitted variable bias due to the lack of within region variation. The remainder of direct cost components (around 20 to 40 per cent) are labour costs. These costs may vary regionally, for example because of differences in wage rates. However, even if this is the case, we do not expect it to cause substantive omitted variable bias. For it to do so, the degree of variation in labour costs within each region would have to be so large that it influenced entry or expansion decisions. We consider this to be very unlikely.

60. The parties have argued that our cost variable is measured with significant error, for example, because it is measured as an average over all treatments (including day-case and outpatient treatments) and because it does not control for case mix. BMI have also noted that the estimated parameter of the cost variable is insignificant. In response, we note that cost differences across treatments and episodes will be explained by several other variables in our analysis (treatment dummies, patient age and sex, and length of stay). To the extent that there are further unexplained differences in costs, we do not think that these differences would both vary within regions and be correlated with local concentration (and the parties have not provided arguments why that would be the case). These further unexplained differences are therefore unlikely to lead to any bias in our estimated price-concentration relationship. We also note that the small coefficient on the cost variable (and its lack of statistical significance) is consistent with our dummy variables capturing the majority of regional variation in costs, and there being little within-region variation left to explain. Finally, the tests that we present later, as part of our further assessment (see paragraphs 106 to 114), show that our results are robust to the inclusion of additional variables that may control for further cost differences (for example, more granular regional dummies and interaction terms) and this supports the argument that any such differences in cost do not materially affect our results.
61. To conclude, we do not think our OLS specifications (L4 and FC4) suffer from omitted supply-side variables. As a result, we are not concerned about the possibility that the estimated price-concentration relationship using OLS is overstated.

Potential demand-side omitted variables

62. In contrast to supply-side omitted variables, demand-side variables are likely to be correlated positively with the LOCI and fascia count variables. This correlation may result from, for example, areas characterized by high demand attracting more entrants or expansion from existing competitors and this leading to lower levels of concentration.⁴⁹ Any bias from demand-side omitted variables is therefore expected to be positive, and the estimated coefficient using OLS would be understated in magnitude.
63. Demand-side bias may be present in our OLS estimates if hospitals located within a region face different levels of self-pay demand because, for example, the individuals most likely to demand self-pay treatment, due to factors uncontrolled for in our regression, are clustered in certain areas and this is correlated with local concen-

⁴⁸ To the extent that there are items in these cost components that are not centrally procured, we consider it unlikely that any geographic variation in the associated costs would be correlated to concentration in the self-pay market.

⁴⁹ That is areas of high demand attract more entrants which means concentration in these areas is low. However, the LOCI and fascia count variables are high when concentration is low, therefore the correlation between demand shifters and the LOCI and fascia count variables is positive.

tration. This may be because of consumer preferences (eg their inherent desire for private treatment), properties of the private hospitals (eg the presence of particular consultants or quality of service),⁵⁰ or properties of the alternative NHS hospitals (eg high waiting times). The parties have argued that demand-side bias may affect our results, for example, because our local area characteristics are measured with error, are too aggregate or do not capture all relevant factors, or because we do not successfully control for the competitive pressure exerted by NHS hospitals. As explained earlier, we are primarily concerned about omitted variables that vary within geographic regions and that are not fully explained by our other control variables (eg local area characteristic variables for age, income and population density).

64. The demand-side factors that may be causing omitted variable bias are harder to directly examine than those on the supply-side (eg marginal cost). This is because the demand-side factors are intrinsically harder to measure (eg preferences), and because there is more uncertainty about whether these factors would be observable and/or important to patients (eg quality) and also material enough to affect prices.⁵¹ As a result of these greater uncertainties, compared with the supply-side, we have been less able to satisfy ourselves that our OLS estimates do not suffer from omitted variable bias from the demand-side.
65. In summary, we think it is possible that our OLS specifications (L4 and FC4) do not fully account for all demand-side factors that are correlated with local concentration. As noted above, we do not have the same concerns for supply-side variables. The possible demand-side omitted variables mean that our OLS estimates may be understated—ie the true relationship between price and concentration may be higher in magnitude than the OLS estimates suggest.

IV estimation

66. To test and potentially correct for endogeneity we have used an instrumental variables (IV) approach. This approach requires at least one additional variable, known as an instrument, to be used in the regression. For the IV approach and associated instrument(s) to adequately correct and test for endogeneity, the instrument(s) must satisfy a number of conditions. The three conditions required of instrument(s) are:
 - (a) the instrument(s) should themselves be excluded from the covariates in the price equation—instrument(s) that meet this condition are said to be ‘excluded’;
 - (b) the instrument(s) should be correlated with the potentially endogenous variable—instrument(s) that meet this condition are said to be ‘relevant’;⁵² and

⁵⁰ With regard to quality, we first note that the control variables in our specifications will explain several potential differences in quality. These variables are: the CCL3 dummy variable, the average direct cost variable (to the extent quality differences are reflected in costs), operator dummies, and regional dummies. Should these variables not fully capture all quality differences, we think that quality is likely to be positively correlated with LOCI and fascia count (and would therefore bias the coefficient towards zero). For example, more intense competition may drive quality up, or a higher willingness to pay for quality in an area can be expected to encourage more entry. HCA and BMI have noted that high quality may lead to higher prices but also lower LOCI because the hospital's quality increases its market share in the area. However, we note that any effect of this sort would not affect fascia count, and the effect on LOCI is likely to be small relative to the effects of the number of competitors and their relative proximity. As a result we think it is more likely that unobservable quality may be positively correlated with fascia count and LOCI and cause bias in a similar way as demand-side omitted variables.

⁵¹ For example, waiting times at NHS are likely to be important to patients, but this might not necessarily lead to differences in prices levels between hospitals (and therefore create omitted variable bias) if waiting times do not vary significantly across areas or over time or if waiting times change in such a way (e.g. too frequently or are not easily observable) that they are not factored into hospitals' pricing decisions.

⁵² To be precise, this correlation should be conditional on the exogenous covariates. The stronger this correlation is, the more ‘relevant’ the instrument is said to be.

(c) the instrument(s) should be uncorrelated with the unobserved term in Equation 1—instrument(s) that meet this condition are said to be ‘exogenous’.

67. Condition (c) above is similar to Assumption 2 (for OLS), but requires the *instrument(s)* rather than the *covariate* (ie local concentration) to be uncorrelated with the error term. If the instrument(s) do not satisfy the conditions above, and in particular conditions (b) and (c), the IV technique may not guarantee improvements to the specification.
68. We now discuss these conditions in the context of our analysis, and specifically in relation to the instrumental variable we have used. This is followed by the results of IV estimation and our interpretation of these results.

Using insured LOCI as an instrument

69. We have identified one variable that we think is a suitable candidate for an instrument in our self-pay PCA. This instrument is based on the insured market, and is the insured LOCI measure of local concentration. This variable is defined in the same way as our self-pay LOCI but instead for insured patients (see paragraph 15 above and Appendix 6.4). We now discuss whether this variable meets the required conditions set out above.
70. Condition (a) will hold if the instrument does not directly affect prices in Equation 1. We do not see a strong reason to think that concentration in the insured market should directly affect prices in the self-pay market, and the parties have not disputed this. We therefore consider condition (a) to be satisfied.
71. Condition (b), that the instrument is relevant, is a matter that can be directly tested in the estimation. We therefore defer this discussion and return to it later.
72. Condition (c), that the instrument is exogenous, requires that insured LOCI is uncorrelated with the omitted variables that are thought to potentially cause bias. As discussed above, we are concerned that demand-side omitted variables may be biasing our OLS estimates. Condition (c) therefore requires that insured LOCI is unrelated to the omitted demand factors that influence self-pay prices and are correlated with local (self-pay) concentration. These omitted factors (which are unobserved) are those not already accounted for by our control variables (which are observed). Because the omitted factors are unobserved we cannot directly test condition (c). Instead we have given detailed consideration as to the plausibility of the condition holding.
73. An argument for condition (c) holding comes from considering how self-pay demand originates. Healthcare demand, in general, involves several consumer decisions. Prior to requiring healthcare services, consumers must first decide whether or not to purchase a PMI policy. Then, at the point of requiring healthcare services, consumers choose between private healthcare providers and NHS providers. Those with PMI typically attend a private hospital⁵³ while those without PMI may either attend an NHS hospital or attend a private hospital (and make a self-pay payment). Self-pay demand therefore arises when consumers without PMI decide to attend a private hospital rather than an NHS hospital. They make this decision despite not purchasing

⁵³ This will be particularly the case for the focal treatments, which are covered by typical PMI policies.

PMI at an earlier stage and despite the additional costs of self-pay treatment compared with free treatment at an NHS hospital.⁵⁴

74. This decision process suggests two characteristics of self-pay demand. The first is that the demand is largely as a result of consumers switching away from the NHS to private hospitals at the point of requiring treatment, despite the significant costs incurred. The second is that the consumers that may switch, by having previously chosen not to purchase PMI, have already revealed themselves as in some way different (eg in circumstances or their preferences) to the consumers that did decide to purchase PMI.
75. In this context, condition (c) states that the unobservable factors that cause this switching, which also affect self-pay prices and are correlated with local concentration, are unrelated to the market share of a hospital in the insured sector (ie insured LOCI). This will be the case if our analysis controls for the common factors between the self-pay demand and insured demand and if the remaining uncontrolled differences between the two types of demand are unrelated (or alternatively, do not affect self-pay prices and/or are not correlated with local concentration). We think this is plausible: our analysis controls for several common demand-side factors (income, age, population, and we later also consider the inclusion of a variable measuring NHS waiting times as well) and, as noted above, self-pay patients have already revealed themselves as different from insured patients in relation to their preferences towards private healthcare (via the PMI decision, which is closely related to their demand for private healthcare). The results of our patient survey also highlighted several differences between the decisions and/or preferences of self-pay and insured patients.⁵⁵ Thus even if there are some unobservable factors affecting the demand from one group of patients (insured or self-pay), these factors may not be relevant for the other group of patients.
76. There are also considerations relevant to condition (c) on the supply-side. These can help explain why, if we have successfully controlled for the common demand-side factors between self-pay and insured patients, the self-pay LOCI and insured LOCI remain correlated conditional on these factors.⁵⁶ As a starting point, note that the same providers on the supply-side cater for both self-pay and insured patients. It is this common supply-side that may result in the correlation between self-pay LOCI and insured LOCI. To see this consider an example in which hospitals' fixed costs differ across areas such that a different number of private hospitals choose to operate in each area. The outcome in this example is that self-pay LOCI and insured LOCI would be correlated purely on account of the number of hospitals in the area (eg high fixed cost areas may have high concentration levels, low fixed cost areas have low concentration levels). This would be the case even if the demand from self-pay and insured patients were entirely independent. A similar example can be given using fascia count instead of self-pay LOCI.
77. In our context, barriers to entry in areas may play a similar but more general role to fixed costs in the above example. If barriers to entry in some way determine the number of firms operating in local areas or their proximity to one another within a local area, then we would expect to find self-pay LOCI and insured LOCI conditionally correlated. This would be the case if there are barriers to entry, or differences in the cost and time required to overcome potential barriers to entry, and the degree of

⁵⁴ This will be particularly the case for the focal treatments, which are typically available at most NHS hospitals.

⁵⁵ See the [CC patient survey](#), slides 24 and 26–28. Compared with insured patients, self pay patients were more likely to have considered treatment on the NHS, less likely to have been referred to a private hospital by a GP, more likely to have visited a private hospital without a referral, and more likely to already know which consultant they wanted to see prior to being referred.

⁵⁶ As required by condition (b).

this differs between local areas. We discuss barriers to entry more fully in Section 6 (see paragraphs 6.8 to 6.144). Thus if there are demand conditions as described above, and (potential) barriers to entry or fixed costs vary in some way between local areas, it is plausible that at the same time condition (c) holds and the self-pay LOCI and insured LOCI are conditionally correlated.

78. An argument against condition (c) holding, which the parties have made, is that insured LOCI is likely to be correlated with the omitted variables because it is driven by the same factors as local concentration in relation to self-pay. For example, BMI argued that this is caused by commonality in cost and demand conditions as well as the presence of heterogeneity across hospitals (such as quality and range of services, that affect both self-pay and insured demand). Similarly, Spire argued that the same omitted supply and demand factors drive concentration in the self-pay and insured market, and gave the following examples: a hospital's ability to treat complex cases; the reputation or ability of consultants; and GP referral patterns. The parties have also noted that the unconditional and conditional correlation between insured LOCI and self-pay LOCI is very high which, the parties argue, indicates that it is unlikely that our control variables capture all the factors that affect prices and are common to the insured and self-pay patients.⁵⁷
79. Given the discussion above, while we think it is plausible that condition (c) holds, we cannot confidently claim that this is the case. Despite the logic set out above and the results of our patient survey, there are unobserved factors that may influence both insured and self-pay demand, and it is possible that these factors may also influence self pay prices. We were therefore not able to dismiss the parties' concerns. As a result we have taken the following approach to interpreting our IV analysis. First, we present results of our IV estimation assuming that condition (c) holds. We then follow this up with a discussion of how the results should be interpreted when condition (c) does not hold.

IV estimation results

80. Table 6 below shows the results of two specifications where either self-pay LOCI or fascia count are used as the measure of local concentration, and insured LOCI is used as the instrument. Each specification includes the covariates that mirror specifications L4 and FC4. For the fascia count model we have included the fascia count measure only for the closest distance band because it is not possible to estimate a model with more endogenous variables than instruments. We consider this to be a reasonable simplification since the competition is likely to be most pronounced among the closest hospitals, and this is supported by only the nearby fascia count having a negative coefficient in our OLS estimation (FC4).⁵⁸

⁵⁷ Note that the high correlation can also be explained by the arguments set out in paragraph 77.

⁵⁸ As a sensitivity test we have also estimated the model using a fascia count that is an aggregate of the closest and medium distance bands (that is, a count of fascia within 17 miles distance). We obtained a statistically significant estimate of -0.0811.

TABLE 6 IV regression results

	L5		FC5	
	Coeff	Std error	Coeff	Std error
Self-pay LOCI	−0.1717***	0.0538		
Fascia count (0-9 miles)			−0.0527***	0.0186
R-squared	0.91		0.91	
N	12206		12206	
Test of null hypothesis that instruments are irrelevant (F-statistic)	361.58		35.98	
Test of null hypothesis that the covariates are exogenous (p-value)	0.02		0.00	
Instruments	Insured LOCI		Insured LOCI	

Source: CC analysis.

Note: Control variables not shown but are the same as specifications L4 and FC4. Standard errors are clustered by hospital site. IV estimates use 2SLS. All diagnostic tests are those reported by Stata command ivreg2. ***/**/* indicates statistical significance at the 1%/5%/10% level. We could not calculate the insured LOCI instrument for one hospital due to data limitations, and this means that the IV regressions use a marginally smaller sample of data than the OLS regressions.

81. The first point to note from Table 6 relates to condition (b) of the instruments. This condition—that the instrument is relevant—is tested and the results are reported in the first row of statistical tests (‘Test of null hypothesis that instruments are irrelevant (F-statistic)’). A common benchmark for this test that indicates the instruments are relevant is an F-statistic of 10 or higher.⁵⁹ On this basis, we observe that insured LOCI is a strong instrument in both the LOCI and the fascia count models and condition (b) is satisfied.
82. On the assumption that condition (c) is satisfied, insured LOCI is therefore a valid instrument. We find that for the LOCI specification (L5) the estimated coefficient on the local concentration variable is −0.1717, and for the fascia specification (FC5) it is −0.0527. Each of these estimated coefficients is statistically significant. In comparison with the OLS estimates in Tables 4 and 5, the IV estimates on the local concentration variables are larger in magnitude and are statistically significant (in contrast, the OLS estimate for FC4 is not statistically significant).
83. The final point to note from the table is the second statistical test (‘Test of null hypothesis that the covariates are exogenous (p-value)’). This is a test that compares the OLS estimates (L4 and FC4) against the IV estimates (L5 and FC5). The low p-values indicate that for both the LOCI and fascia count specifications, the IV estimates are preferable to the OLS estimates.^{60,61}

Discussion of IV results

84. We first interpret the results on our initial assumption that condition (c) holds, and insured LOCI is a valid instrument. The estimated coefficients on the local concentration variables are both negative. This implies that less concentrated local areas are associated with lower prices. These estimates are also statistically significant for both the LOCI and fascia count models. Comparisons between the IV estimates (L5 and FC5) and the corresponding OLS estimates (L4 and FC4) show that the IV estimates on the local concentration variables are larger in magnitude. These differences in magnitude are consistent with endogeneity arising from omitted demand-side

⁵⁹ Colin A Cameron, P K Trivedi, *Mircoeconometrics. Methods and applications*, 2005, p105.

⁶⁰ This is indicated by the relatively small p-values, where a typical benchmark is taken to be 0.05 and p-values around or below this level indicate rejection of the null hypothesis, suggesting that IV estimates are preferable to OLS estimates.

⁶¹ We note that the particular implementation of this test is based on the differences between OLS and IV coefficients of only the concentration variable of interest rather than all variables in the equation.

rather than supply-side variables and imply, as hypothesized earlier, that our OLS estimates were understated in magnitude. The LOCI and fascia count IV results, in terms of the estimated coefficients on the local concentration variables, are more closely aligned in magnitude than their OLS counterparts; we return to this point later when we discuss measurement error (see paragraphs 115 to 130).

85. We now evaluate how these IV estimates should be interpreted if condition (c) does not hold, and we instead consider the possibility that the insured LOCI instrument is correlated with the omitted variables. To analyse this situation, we need to consider how the omitted variables are related to the self-pay LOCI or fascia count (the concentration variable that may be endogenous) and the insured LOCI (the instrument). As discussed earlier, we expect that any omitted variables are likely to be demand rather than cost factors. Therefore, the omitted variables are expected to be positively correlated with self-pay LOCI and fascia count. In line with the parties' arguments regarding why condition (c) fails, we now additionally assume that the omitted variables are also positively correlated with the insured LOCI instrument.⁶² Under these conditions, insured LOCI can be interpreted as an 'imperfect instrumental variable'.⁶³
86. Insured LOCI, as an imperfect instrument, may not fully correct for the omitted variable bias. However, it can still provide an improvement on the OLS estimates and provide bounds on where the true effect that we are estimating may lie.⁶⁴ Specifically, should condition (c) not hold, given the conditions described above, then the IV estimates can be interpreted as an upper bound on the true price-concentration relationship. Because our estimates are negative, this upper bound implies that the price-concentration relationship may be understated by our IV estimates—ie the true relationship is more negative (larger in magnitude). Thus, relative to the OLS estimates, the imperfect IV technique may only have partially corrected for the omitted variable bias.
87. To summarize, we have given two interpretations of our IV estimates. Both of these interpretations support our earlier argument that if there is omitted variable bias it is likely to mean that the OLS estimates understate the effect of local concentration on price. This is the case for both the LOCI and fascia count specifications. Focussing on the LOCI specification: the first interpretation of the IV results, under the assumption that insured LOCI is a valid instrument, suggest the effect is actually around 50 per cent larger in magnitude than the OLS estimates indicate; the second interpretation, under the weaker assumption that insured LOCI is only imperfectly valid, suggests that the effect is potentially even larger than the IV estimates indicate. For the fascia count specification, under either assumption regarding the insured LOCI, the IV estimates are much larger in magnitude than the OLS estimates. We therefore consider that our IV estimates are valid regardless of whether condition (c) is fully satisfied or not, and that they provide a reliable but potentially conservative (ie understated) estimate of the magnitude of the price-concentration relationship. Moreover, we consider the estimates based on the IV specifications (L5 and FC5) to be preferable to the estimates based on the OLS specifications (L4 and FC4).

⁶² We also expect that the positive correlation between the omitted variables and insured LOCI is lower than the correlation between the omitted variables and self-pay LOCI.

⁶³ Nevo, A and Rosen, A, 'Identification with Imperfect Instruments', *The Review of Economics and Statistics*, August (2012), 94(3), pp659–671.

⁶⁴ *ibid.*

Further evaluation of the main results

88. We now consider a series of tests that evaluate the robustness and sensitivity of the main results from the previous section. Each test makes a change to either the data or the econometric model. When referring to the main results, we mean OLS specifications L4 and FC4 and IV specifications L5 and FC5.
89. Our evaluation has considered the following issues:
- (a) how changes in the hospital data set, and in particular certain exclusions to this data, may affect our main results ('evaluation of data exclusions');
 - (b) how our approach of pooling the four focal treatments together may have affected our results ('evaluation of treatment-level analysis');
 - (c) whether our main results are sensitive to the choice of control variables that we include in the model ('evaluation of model specification'); and,
 - (d) the potential for measurement error in our concentration variables and how this may have influenced our analysis ('consideration of measurement error').
90. The issue of what constitutes 'robust' is of course subjective. Throughout the results below, in the first instance we consider robust to mean that our main qualitative conclusion—that prices and local concentration are negatively associated—do not change. With regard to the magnitude of the relationship, the issue of robustness is more nuanced. We have judged the tests below on the basis of whether the changes to the model lead to major changes in the magnitude of the estimated price-concentration relationship. As a rule of thumb, we have used the '95% confidence interval' of our main results as a guide for what might be considered a 'major change'.⁶⁵ We note in advance that we consider our main results to be preferable to the models and estimates set out in this section.
91. In general, we have found that none of these issues raise material concerns for the conclusions that we draw from the main results. Our analysis appears robust to changes in the data, the model specification, and the treatment-level analysis shows that our approach of pooling data has not distorted our results. In relation to measurement error, this may mean our main results are conservative—that is, measurement error may mean our estimates are understated in magnitude and the true effect of concentration on price may be larger than indicated by the main results.
92. We now present analysis and results that address each issue. We present both OLS and IV estimates for completeness. All estimates relate to specifications L4 and FC4 for OLS, and L5 and FC5 for IV, which we refer to as the 'main results'. We omit the detailed instrument relevance and endogeneity tests for brevity.

Evaluation of data exclusions

93. In this section we consider how certain changes to our hospital data set may affect our main results. We undertake this analysis solely to assess whether there are parts of our data set that may be unduly influencing our results. If this were to be the case, it may indicate issues with the underlying data or our data cleaning processes. We consider two types of modifications to the hospital data set: the first type involves

⁶⁵ The 95% confidence intervals of the estimates in our main results are approximately as follows: [-0.22; -0.01] for L4, [-0.02; 0.02] for FC4, [-0.28; -0.07] for L5 and [-0.09; -0.02] for FC5.

reintroducing to the data set some of the irregular episodes that were removed during our data cleaning process (see Annex A); the second type involves systematically excluding portions of the data and re-estimating our model. In the final part of this subsection we address an argument raised by Spire that we consider is related to data exclusions.

94. The first sensitivity test checks whether our exclusion of ‘irregular’ episodes from the data may have distorted the main results. To assess this we have estimated our preferred models using the hospital data set but including the irregular episodes (as defined in Annex A). The results of this estimation show that the coefficients are all negative and statistically significant, and larger than the corresponding coefficients in our main results.⁶⁶ These results show that our exclusion of ‘irregular’ episodes does not raise any substantive concerns.
95. The second group of sensitivity tests relates to analysis submitted by the parties. The parties have re-run our analysis but excluded various portions of the data sample. For example, BMI excluded (one-by-one) individual hospitals that had over 300 episodes; Spire excluded a particular region, or all orthopaedic treatments of Nuffield in a particular region. In these exercises the parties obtained estimates of the price-concentration relationship that varied in magnitude and statistical significance, and claimed that since these estimates and their statistical significance differ from the main result, the main result is not robust.
96. It is important to note that in statistical analyses such as this it is not unusual for estimation results to change in magnitude if large and relevant parts of a sample are removed or modified, and, by excluding parts of the data it is also the case that the interpretation of what is being estimated changes. For this second reason, the main results, which use all of the data, are therefore preferable to the estimates presented in this series of tests. For the first reason given above, we do not think an indicator of the reliability of our estimates is whether they remain of identical magnitude following modifications to the data, or whether they remain statistically significant.⁶⁷ We think that the relevant consideration is whether these tests highlight concerns over certain portions of our data; this might be the case if the results were extremely sensitive to the inclusion or exclusion of certain observations or small groups of observations. We note that some of our tests (described below) exclude large portions of the data and are therefore very severe.
97. Our approach is to exclude a portion of data, each portion defined by all patients in a single geographic region or attending a single hospital or operator, and re-estimate the model using the remaining data. We do this repeatedly for all portions of the data. The exclusions are defined by three different regional definitions (NUTS1, NUTS2 and NUTS3), individual hospitals and the identity of the hospital operator. Exclusions at the operator level are the most extreme (these exclusions remove on average one-fifth of the data). Exclusions at NUTS1 level also involve excluding relatively large portions of the data (there are 11 regions of the UK by the NUTS1 definition), with NUTS2 and NUTS3 level exclusions smaller in comparison, and exclusions at the

⁶⁶ The estimated OLS coefficients are -0.1383^{**} (L4) and -0.0088 (FC4), and the estimated IV coefficients are -0.2188^{***} (L5) and -0.0664^{***} (FC5).

⁶⁷ The statistical significance of an estimate is determined by the size of the coefficient, the size of the standard error and the significance threshold applied (see paragraph 34, footnote 28). When a portion of data is excluded, both the size of the estimated coefficient and its standard error may change. Our interest in conducting data exclusions is in the stability of the coefficient estimate. We note that as this coefficient estimate changes, even if there is no change to the standard errors, it must lead to changes in the statistical significance (ie the p-value). When excluding some portions of the data, this will mean that the statistical significance decreases, while for other exclusions it will increase. Since the only purpose of these tests is to assess the robustness of the coefficient estimate to the data exclusions, and we have no reason beyond this for making these data exclusions (ie using the full sample is always preferable), we do not attach any interpretation to any changes in statistical significance.

hospital level involve the smallest portions of data (there are around 142 hospitals in our data set).

98. Table 7 below presents an overview of the results of this series of tests. The columns 'Min' and 'Max' indicate the smallest and largest estimated coefficient on the local concentration variable from each series of exclusions. For example, 'NUTS1 region exclusions' involves estimating our model 11 times, and the columns 'Min' and 'Max' report the lowest and highest estimates from the 11 sets of estimation results. The table does not indicate the statistical significance of the results.

TABLE 7 OLS and IV regression results, LOCI and fascia count, exclusion of various data portions

	OLS		IV	
<i>Self-pay LOCI</i>				
As per L4 (OLS) or L5 (IV)	-0.1141		-0.1717	
Operator exclusions	-0.2003	-0.0129	-0.2157	-0.1049
NUTS1 region exclusions	-0.1454	-0.0358	-0.2095	-0.1166
NUTS2 region exclusions	-0.1396	-0.0436	-0.1971	-0.1099
NUTS3 region exclusions	-0.1354	-0.0462	-0.1888	-0.1101
Single hospital exclusions	-0.1354	-0.0774	-0.1960	-0.1384
<i>Fascia count (0–9 miles)</i>				
As per FC4 (OLS) or FC5 (IV)	-0.0042		-0.0527	
Operator exclusions	-0.0220	0.0080	-0.0735	-0.0266
NUTS1 region exclusions	-0.0205	0.0040	-0.0632	-0.0321
NUTS2 region exclusions	-0.0165	0.0017	-0.0602	-0.0306
NUTS3 region exclusions	-0.0142	-0.0002	-0.0600	-0.0311
Single hospital exclusions	-0.0122	-0.0009	-0.0610	-0.0411

Source: CC analysis.

Note: Control variables not shown but are the same as specifications L4 and FC4. Standard errors are clustered by hospital site. IV estimates use 2SLS and insured LOCI as the instrumental variable. Statistical significance levels not shown.

99. The ranges of point estimates presented in Table 7 show that all point estimates are negative, with the exception of some fascia count OLS estimates which lie around zero. These results illustrate how exclusion of certain relevant data portions, as expected, leads to either lower or higher estimates. We also note that the ranges of point estimates, as expected, are wider when larger portions of data are excluded.⁶⁸ We consider that these estimates taken together, none of which reveal extreme changes in the estimated coefficient on the local concentration variables (even for the most severe exclusions), do not raise any material concerns over the data sample.
100. Spire has raised a more general argument that is related to heterogeneity in the data. We consider this argument closely related to our data exclusions test described above. Spire have stated that heterogeneity across portions of data may imply that the IV estimates no longer measure the 'average' effect of interest across all observations in the data. Instead, Spire argued, the IV estimates at best only estimated the effect of interest for those subsets of data where sufficient correlation exists between the instrument and the local concentration measure. They have presented detailed results showing that this correlation varies by regions of the UK (for example, it is very low for certain regions, or is collinear with other explanatory variables in some other regions).
101. We do not think that Spire's argument raises concerns with our analysis or interpretation of the results, and consider that our work has suitably examined the issue of

⁶⁸ As a result, the operator-level exclusions produce the widest range of estimates. We note that BMI, Spire and HCA submitted versions of our analysis excluding Nuffield and argued that our main results appear to be driven by this one operator. The LOCI coefficient estimated using IV when excluding Nuffield is -0.1049 and the corresponding fascia count coefficient is -0.0266. These estimated coefficients are not statistically significant. We do not consider this to raise any concerns for reasons set out in paragraph 96 (and footnote 67) and particularly because this exclusion involves such a large share of our data set. We have also carried out further analysis of differences between operators and this is discussed in paragraphs 131–142.

heterogeneity. For example, we discuss heterogeneity in relation to treatments (see the later subsection ‘Evaluation of treatment-level analysis’), in relation to hospital operators (see the later subsection ‘Extension of analysis to the operator-level’), and, albeit indirectly, in relation to geographic regions (see above in Table 7). In relation to the potential differences in the price-concentration relationship between geographic regions, which Spire’s argument focuses on, we do not think that there are strong economic grounds for expecting such differences. This is supported by the qualitative evidence, which did not indicate that the general behaviour of hospital operators varied geographically (see Annex B). It is also supported by the results of our data exclusion tests above which demonstrate that no single region has a major influence on the conclusions we draw from our main results. Overall, we think this evidence shows that our main results are sufficiently robust to concerns about heterogeneity and that our use of a simple econometric model estimated using IV (and OLS) techniques is appropriate.⁶⁹

Evaluation of treatment-level analysis

102. In this section, we consider whether pooling the four focal treatments together may have distorted our analysis. There are two potential concerns here. First, the specifications may not have allowed for sufficient flexibility for the differences between treatments (eg because there are differences in the demand conditions for each treatment, or the price-concentration relationship may differ between the focal treatments) such that neglecting these differences has distorted our main results. Second, the price-concentration relationship for the focal treatments may not be representative of the price-concentration relationship for other treatments.
103. To assess these two arguments, we have considered two modifications to our analysis. We first estimate our models but using only the data for each focal treatment separately; this approach allows for a separate model for each treatment and is therefore entirely flexible with regard to differences between treatments.⁷⁰ For the second modification, we have instead estimated our model but using the data for the focal treatments as well as all other treatments in our data set (ie 54 treatments in total). The results of this analysis are reported in Table 8.

⁶⁹ We also disagree with some of the technical elements of the argument made by Spire. For example, the theoretical results that they have cited rely on a more complex econometric model that requires more detailed assumptions about the price-concentration relationship than the model we have used. We think our approach in this regard is reasonable: we have at first assumed a simple econometric model (ie that uses a single parameter to characterize the relationship between price and concentration) and then we have considered relaxing this assumption to allow the relationship to vary by treatment and by operator. In each case, our assumptions are sufficient to ensure that the IV methodology will deliver appropriate estimates (ie consistent in the statistical sense). While it is the case that our estimates rely on various averages of the observed data, this is always the case with an econometric analysis. The important issue is whether these averages are masking material differences in the underlying economic mechanisms and relationships, and our analysis suggests that this is not the case.

⁷⁰ We note that this approach is equivalent to interacting the treatment dummies with all of the other variables in the regression and then running a regression pooled across treatments and including all of these interacted terms. This is therefore a more flexible approach than interacting only the LOCI variable (and not other variables) with the treatment dummies, as some parties have advocated.

TABLE 8 OLS and IV regression results, LOCI and fascia count, by treatment

Treatment	OLS			IV		
	Coeff	Std error	N	Coeff	Std error	N
<i>Self-pay LOCI</i>						
As per L4 (OLS) or L5 (IV),						
pooled focal treatments	-0.1141**	0.0534	12304	-0.1717***	0.0538	12206
All 54 treatments	-0.1186***	0.0415	21405	-0.1499***	0.0445	21217
J1830	0.0244	0.0836	1412	-0.0748	0.0904	1407
M6530	-0.1009*	0.0594	1808	-0.1327**	0.0656	1808
W3712	-0.1343**	0.063	5834	-0.1829***	0.0659	5758
W4210	-0.1650**	0.0663	3250	-0.2229***	0.0686	3233
<i>Fascia count (0–9 miles)</i>						
As per FC4 (OLS) or FC5						
(IV), pooled focal						
treatments	-0.0042	0.0103	12304	-0.0527***	0.0186	12206
All 54 treatments	-0.0058	0.0081	21405	-0.0467***	0.0159	21217
J1830	0.0187**	0.0085	1412	-0.0172	0.0218	1407
M6530	0.0074	0.0081	1808	-0.0321	0.0202	1808
W3712	-0.0251**	0.0127	5834	-0.0643***	0.0237	5758
W4210	-0.0132	0.011	3250	-0.0663***	0.0241	3233

Source: CC analysis.

Note: Control variables not shown but are the same as specifications L4 and FC4. Standard errors are clustered by hospital site. IV estimates use 2SLS and insured LOCI as the instrumental variable. ***/**/* indicates statistical significance at the 1%/5%/10% level.

104. Considering first the concern regarding the potential differences between treatments, the coefficient estimates in Table 8 for each focal treatment considered separately show similar characteristics to those in the main results. The OLS estimates are often negative and, most notably, the IV estimates are all negative and larger in magnitude than the OLS estimates. The estimated coefficients do vary by treatment, but it is clear that the estimated coefficients for focal treatments when pooled are an average of these treatment-level estimates.^{71,72} While we consider it plausible that competitive conditions may differ across treatments, the results presented in Table 8 and our review of qualitative evidence do not suggest that any such differences are a material concern for our analysis. We therefore consider our approach of pooling the four focal treatments together in the analysis to be a reasonable simplification, and that the alternative approach of estimating the relationship separately for each treatment produces results that lead to a similar conclusion.
105. Looking now at the ‘all 54 treatment’ analysis, the results in Table 8 also support the main results presented earlier. All estimated coefficients are negative, and they are broadly similar in magnitude, albeit marginally smaller, to the main results. These results suggest that the relationship that we estimate in our main results can be considered broadly representative for inpatient treatments outside of the focal treatments.

Evaluation of model specification

106. Our main results, using either OLS or IV, rely on a particular choice of control variables. In this section we consider alternative choices and combinations of the control variables and how this affects our main results.

⁷¹ It is not strictly a simple or weighted average, because the two models are not identical in terms of covariates.

⁷² We have also statistically tested the hypothesis that the four treatment-specific coefficients are equal. The results of this test suggest this hypothesis cannot be rejected for the OLS and IV models that use LOCI and the IV model that uses fascia count, but is rejected for the OLS model using fascia count. The respective p-values of this test were 0.25 (L4), 0.00 (FC4), 0.48 (L5) and 0.21 (FC5).

107. Table 9 shows the results of our assessment. It includes a number of modifications to the model specification used in our main results (L4, L5, FC4 and FC5) and we discuss these below. The first row shows the results using the specifications from earlier (L4 and L5). Rows further down in the table relate to alternative sets or specifications of the control variables, and the first column describes the modifications to the control variables that we have made in each case.

TABLE 9 OLS and IV regression results, LOCI†, different model specification

Control variables	Concentration variable	OLS		IV	
		Coefficient	Std error	Coefficient	Std error
As per L4 (OLS) or L5 (IV)	Self-pay LOCI	-0.1141**	0.0534	-0.1717***	0.0538
1. Sensitivities using alternative regional dummies					
(a) Change to NUTS2 dummies	Self-pay LOCI	-0.0864*	0.0515	-0.1591***	0.0538
(b) Change to NUTS3 dummies	Self-pay LOCI	-0.0875	0.0572	-0.1824**	0.0803
2. Sensitivities using alternative local area characteristic variables					
(c) Change to local area characteristics calculated within 9 miles radius	Self-pay LOCI	-0.0964**	0.0486	-0.1500***	0.0493
(d) Change from GDHI to catchment area-specific gross weekly earnings	Self-pay LOCI	-0.1086**	0.0513	-0.1730***	0.0542
(e) Change average catchment area age to proportion of local population above 65 years old	Self-pay LOCI	-0.1172**	0.0536	-0.1746***	0.0535
(f) Include NHS waiting time variable	Self-pay LOCI	-0.1384**	0.0584	-0.1823***	0.0596
3. Sensitivities to the inclusion or exclusion of certain control variables					
(g) Exclude CCL3 dummy	Self-pay LOCI	-0.1045*	0.0545	-0.1857***	0.0562
(h) Exclude average direct costs	Self-pay LOCI	-0.1047**	0.0515	-0.1632***	0.052
(i) Include package dummy	Self-pay LOCI	-0.1075**	0.0503	-0.1738***	0.0519
4. Sensitivities to alternative specifications of functional form					
(j) Change to logarithms of GDHI and population density	Self-pay LOCI	-0.1049**	0.0519	-0.1656***	0.053
(k) Include additional interactions	Self-pay LOCI	-0.1025*	0.0549	-0.1611***	0.0561
(l) Include additional squared terms	Self-pay LOCI	-0.1031**	0.0515	-0.1640***	0.052
(m) Include additional interactions and additional squared terms	Self-pay LOCI	-0.1004*	0.051	-0.1620***	0.0514

Source: CC analysis.

† We do not present results of the fascia count models for brevity. The estimate coefficients on the fascia count variable vary between -0.0109 and 0.0044 for the OLS models, and between -0.0588 and -0.0374 for the IV models.

Notes:

1. Control variables not shown but are the same as specifications L4 and FC4. Standard errors are clustered by hospital site. IV estimates use 2SLS and insured LOCI as the instrumental variable.***/**/* indicates statistical significance at the 1%/5%/10% level.

2. Additional interaction terms include operator and treatment interactions, treatment and length of stay and operator interactions, and treatment and age interactions. Additional squared terms are for patient age, number of nights, average direct cost, and each local area characteristic variable.

108. Sections 1 and 2 of Table 9 report specifications that modify the regional dummies or the local area characteristic variables. These variables are intended to control for differences in local levels of self-pay demand.⁷³ The modifications include, for example, calculating the local area characteristic variables in a smaller radius around

⁷³ The regional dummies may also control for some differences in regional costs, to the extent that such differences are not reflected in the average direct cost variable and CCL3 dummy.

hospitals, or using more granular regional dummies.^{74,75} The estimation results with these modifications broadly concur with our main results.

109. The third section of Table 9 presents sensitivities to choices of other control variables. As with the previous modifications, the estimated coefficients vary around our main result and therefore do not cause any concern over our choice of variables in the preferred specification.
110. In section 4 of Table 9, we present modifications to the model that allow for more complicated interactions and non-linear relationships between variables. For example, by including squared terms or interactions between certain variables. These changes allow for a more flexible but also more complex model. We have limited the introduction of these more complex variables to instances where we expect such relationships to be potentially relevant and meaningful. Looking at the estimation results, we find that, in general, our main results are robust to the consideration of these more complex relationships.
111. Several parties suggested that our assessment of functional form should include a particular statistical test, namely the Ramsay RESET test. In practice, this test is similar to modifications to the model that we have considered in section 4 of Table 9. The RESET test involves including additional covariates that are either squared (and/or higher power) versions of the predicted value of the dependent variable, and then testing whether these included variables are (jointly) statistically significant.
112. The parties have applied the RESET test and focused on whether the test result is a 'pass' or 'fail'. In our view, this approach does not address the issue at hand—that is, whether our main results are robust to the consideration of more flexible and complex specifications. For example, the RESET test may detect that one or more covariates in the regression has a non-linear relationship with the dependent variable, but this does not inform us which covariate this is or whether excluding the non-linear terms affects the coefficient estimate on the local concentration variable (ie the estimate that we are interested in). As discussed earlier, an omitted term (of any type, including non-linear) would only cause bias in the estimated coefficient on our concentration variable if the omitted term was also correlated with concentration. The parties have not argued in which variables the non-linear relationships are to be expected, or, moreover, why not accounting for these potential complexities would bias the price-concentration relationship that we have estimated. We therefore prefer our more direct approach to assessing functional form and non-linearities, which focuses on the robustness of the estimated price-concentration relationship to including additional and potentially relevant non-linear terms, rather than the RESET test.
113. Notwithstanding this argument, we have run the RESET test on our preferred models and it yielded p-values of 0.00, 0.08, 0.59 and 0.77 for specifications L4, FC4, L5 and FC5 respectively. Using a conventional threshold of 0.05, this suggests that the OLS

⁷⁴ Model 2(f) includes NHS waiting time as a control variable. This variable varies by region by year and is calculated at the NUTS3 level. Data for this variable was not available for Scotland and certain NUTS3 regions in Wales and the East Midlands. As a result the model is estimated for a sample that excludes hospitals in those regions.

⁷⁵ BMI have argued that our preference for NUTS1-level dummies is unjustified because there may be important demand or cost differences within NUTS1 regions which are not adequately controlled for by the local area characteristics variables since NUTS1 regions are relatively large, and also because they claimed that the statistical tests that they performed suggested that more granular NUTS2-level dummies should be preferred. The estimates in Table 9 suggest this is not a material issue. Moreover, we note that the more granular the regions used, the higher the likelihood that there will be only one or a few distinct observations of local concentration per region. To illustrate, our data set contains 143 hospitals (ie different local concentration points). Each NUTS1 region contains between 3 and 35 different hospitals; at the NUTS2 level this variation is reduced to between 1 and 13 different hospitals and there are 7 regions that contain only one hospital each; at the most granular NUTS3 level there are only 1 to 7 hospitals per region, with 49 regions that only have one hospital. Therefore we consider it likely that regional dummies at a level more granular than NUTS1 would substantially reduce the informative variation in local concentration and cause imprecision in our estimates.

specification using LOCI does not pass the RESET test, the OLS specification using fascia count marginally passes, and that both of our IV specifications pass the RESET test. Despite these test results we stress the point made above—the relevant consideration in our view is whether our estimates are robust to the additional inclusion of reasonable interaction and squared terms and, as shown in section 4 of Table 9, we find that this is indeed the case.

114. In summary, the analysis above shows that our main results are robust to a range of modifications to the model specification.

Consideration of measurement error

115. We now consider how any measurement error in the local concentration variables may have influenced our OLS and/or IV estimates. We consider this issue on two accounts: first, the parties have questioned how accurately our concentration variables measure local competitive constraints, and one (statistical) interpretation of these concerns is that these variables are measured with error; and second, because we think measurement error is one possible explanation for some of the differences in magnitude between our different estimates.
116. We first discuss the potential for measurement error and some general issues such as the form and potential impact it may have. We then present some illustrative results regarding the potential influence of measurement error in our OLS results. Finally, we provide an interpretation of our main IV results under certain assumptions about the presence of measurement error.

Potential sources of measurement error and associated bias

117. Measurement error describes a situation where the true value of a variable cannot be observed and an imprecise proxy variable is observed instead. As described in Appendix 6.4, our LOCI and fascia count variables are indicators of, or proxies for, local concentration. As indicators, there is potential that the variables may not always fully reflect every aspect of a local area and the competition between hospitals in that area. The parties have raised some concerns in this regard, particularly in relation to LOCI; these points are discussed in Appendix 6.4. One interpretation of these issues is that they are ‘errors in measurement’.
118. When a variable with measurement error is used as a covariate in a regression, it is often thought to lead to coefficient estimates that are too small in magnitude, and this has been referred to as ‘Iron Law of Econometrics’.⁷⁶ This kind of result relies on assumptions about the particular form of the measurement error. An assumption is required because the errors in measurement are not known or observed. The most commonly assumed form of measurement error is referred to as ‘classical errors-in-variables’; this assumes that the measured value of a variable is equal to its true value plus an error component, and this error component is uncorrelated with the unobserved true value.⁷⁷ When a variable with this type of measurement error is used in regression as a covariate, the estimated effect associated with the variable will be biased towards zero (ie understated in magnitude).
119. We do not have evidence to directly support that any measurement error in the local concentration variables conforms to the classical errors-in-variables assumption.

⁷⁶ J Hausman (2001) ‘Mismeasured Variables in Econometric Analysis: Problems from the Right and Problems from the Left’, *Journal of Economic Perspectives*.

⁷⁷ See section 4.4.2 in J M Wooldridge (2010) ‘Econometric analysis of cross section and panel data’.

However, we also do not see immediate reasons to reject this assumption, or indeed, support other types of measurement error assumptions. The remainder of this subsection therefore relies on the classical errors-in-variables assumption, and discusses the potential influence that any such measurement error may have had on our main results.

Illustrative example: OLS specifications

120. For the purposes of this example, we make two assumptions: (i) that there is no omitted variable bias in our OLS specifications; and (ii) there is classical measurement error in the local concentration variables. This provides a simple basis for examining the issue of measurement error but is subject to the caveat that our main results may not satisfy these assumptions, most notably because the results presented earlier suggested that there is a degree of omitted variable bias in our OLS estimates.
121. The common approach to test and correct for measurement error is to use an IV technique (ie, the same technique used earlier to test and correct for omitted variable bias). This procedure is the same as outlined earlier, since the measurement error (which is unobserved) can be thought of as an omitted variable. To be valid the instrument must fulfil similar conditions to those before (see paragraph 66). In this context, condition (b) requires that the instrument is conditionally correlated with the mismeasured variable (ie local concentration), and condition (c) requires that the instrument is uncorrelated with the measurement error (ie the unobservable difference between the mismeasured variable and the true value of the variable). If these conditions hold, the IV estimate will correct for the bias caused by measurement error.
122. One type of variable that can fulfil these conditions is an alternative measure of the same true variable of interest. In our context, that would mean another proxy of local concentration. The intuition behind this is that if local concentration is measured in two separate ways, the two measures will be correlated (condition (b)) but the measurement errors in each measure may be uncorrelated (condition (c)).⁷⁸ The latter condition is more likely to hold if the two measures are recorded or produced using different methodologies. This approach is referred to as the ‘multiple indicator’ solution. Following this, we have therefore considered a third measure of local concentration that is measured in a different way to those we have used so far. This third measure is the distance to the nearest rival hospital.
123. We consider the distance variable to be an alternative indicator of local concentration since in more concentrated local areas the distance between hospitals will typically be shorter and the constraint imposed by the nearest rival hospital will typically be stronger. BMI and HCA have argued, in response to our earlier work when we used distance as an instrument to address omitted variables (an approach we have since dropped), that distance should instead be included in the pricing equation that we estimate, and is therefore not a variable we should consider as an instrument. We disagree that distance should be included in the pricing equation on the basis that our concentration variables implicitly reflect the different distances between nearby competitors.⁷⁹ We therefore do not think that it is necessary to additionally include

⁷⁸ See section 5.3.2 in J M Wooldridge (2010) ‘Econometric analysis of cross section and panel data’.

⁷⁹ Distance to the rival hospitals is implicit in the weighting scheme and share calculations that LOCI uses (see Appendix 6.4). The fascia count incorporates information on distance by the use of three different distance bands. We also note that a regression including LOCI (or fascia count) as well as distance would be difficult to interpret: since the LOCI (or fascia count) variable already incorporates in its calculation the distances between hospitals, the regression would imply an interpretation that the distance variable could change while holding the LOCI (or fascia count) variable fixed.

distance as a variable in the pricing equation and, subject to the other conditions required of an instrument being satisfied (see paragraph 66), consider our use of it as an instrument in the multiple indicator approach as reasonable.⁸⁰

124. Table 10 presents the results of IV estimation using distance as an instrument for the local concentration variables (LOCI or fascia count).

TABLE 10 IV regression results using distance to rival hospital

	Coefficient	Std error	Coefficient	Std error
Self-pay LOCI	-0.4428***	0.1334		
Fascia count (0-9 miles)			-0.0650***	0.0177
R-squared	0.9		0.9	
N	12304		12304	
Test of null hypothesis that instruments are irrelevant (F-statistic)	6.25		9	
Test of null hypothesis that the covariates are exogenous (p-value)	0.0		0.0	
Instruments	Distance to rival hospital		Distance to rival hospital	

Source: CC analysis.

Note: Control variables not shown but are the same as specifications L4 and FC4. Standard errors are clustered by hospital site. IV estimates use 2SLS and insured LOCI as the instrumental variable. ***/**/* indicates statistical significance at the 1%/5%/10% level.

125. These IV estimates produce LOCI and fascia count coefficients that are negative and statistically significant. Compared with the earlier the OLS results (L4 and FC4), these estimates are larger in magnitude. Thus, under the assumption of no omitted variable bias and the classical errors-in-variables, these estimates do suggest that the OLS estimates (L4 and FC4) are biased towards zero due to some measurement error. However, since our OLS estimates may also be affected by omitted variables (which here we have assumed is not the case), we take these results as illustrative only.

An interpretation of our main results in the presence of measurement error

126. We now consider our main results and how these may be interpreted given the potential for measurement error. We consider first our OLS results (L4 and FC4) and then our IV results (L5 and FC5).
127. In the case of the OLS results, the estimated price-concentration relationship was larger in magnitude for the LOCI specification (L4) as compared with the fascia count specification (FC4).⁸¹ We consider that measurement error may be one explanation of this difference in magnitude. In particular, there may be more measurement error associated with the fascia count measure than the LOCI measure. For example, because LOCI differentiates between the strength of competitors while fascia count does not (which may lead to measurement error because the number of fascia does not fully reflect the strength of competitive constraint from each fascia) and LOCI does not rely on fixed distance bands while fascia count does (which may also lead to measurement error because fascia count may not record constraints from fascia outside of the pre-specified distance band). If this is the case, and assuming the measurement error in both LOCI and fascia count conforms to the classical errors-in-

⁸⁰ We do note, however, that using the distance to rival hospital as the only variable measuring concentration (ie as a replacement for LOCI or fascia count) yields results that are consistent with our preferred model. That is, the coefficient on distance is positive, indicating that prices are higher when the nearest rival is further away. This suggests that distance, when used as a concentration measure, produces similar results to those obtained when using LOCI or fascia count.

⁸¹ When comparing fascia count and LOCI coefficients, we take into account that they are measured in different scales. See paragraph 33 for a rule of thumb that we apply in such comparisons.

variables assumption, then the measurement error bias in the fascia count OLS estimates is likely to be larger than in the LOCI estimates. This would explain the difference in magnitude between the estimated coefficients using OLS that we observe.

128. Considering now the difference between the magnitude of the OLS results and the IV results. The IV coefficient estimates on the local concentration variable are larger in magnitude than the OLS estimates for both the LOCI specification (L4 compared with L5) and the fascia count specification (FC4 compared with FC5). The relative difference in magnitude, however, is greater for the fascia count specification. We think measurement error may provide an explanation of this relative difference. We argued earlier that, for both the LOCI and fascia count specifications, the IV estimates correct for omitted variable bias that affects the OLS estimates; however, there may be a difference between the two specifications when it comes to measurement error. We explain this below, assuming that any measurement error conforms to the classical errors-in-variables assumption.
129. In model L5, the IV specification using LOCI, we use self-pay LOCI as the concentration measure and insured LOCI as the instrument. While this approach corrects for the omitted variable bias, it may be less likely to correct for any measurement error in the self-pay LOCI. This is because any measurement errors in the two LOCI measures may be correlated due to the similarities in the two measures (ie the LOCI methodology in general). The picture is different for the FC5 model, which uses fascia count as the concentration measure and insured LOCI as the instrument. Since these two concentration measures are constructed using different methods, it is more likely that any measurement errors in the two measures are unrelated (ie as required by the multiple indicator solution, and in a similar way to the self-pay LOCI and distance variables used in our illustrative example above). Thus, it may be the case that L5 corrects for omitted variables but not measurement error, while FC5 corrects for omitted variables as well as measurement error. This would explain why the IV coefficient estimates on the local concentration variable are higher in magnitude than the OLS estimates by a greater degree for the fascia count specification as compared with the LOCI specification.
130. In summary, we think measurement error is a plausible explanation for the differences between some of our estimates. These explanations rely on the classical errors-in-variables assumption, however, which we are not able to verify. Measurement error of this type would not undermine any of our estimates but instead would imply that they are understated, in some cases more than others—ie the true price-concentration relationship may be of a higher magnitude.

Extension of the analysis to the operator-level

131. The previous section considered how robust our main results were to various modifications. In this section, we now consider an extension to the main analysis to the operator-level. This extension may provide additional insights into any differences in the price-concentration relationship between the hospital operators. We first discuss some general issues relating to the operator-level analysis and the methodology (which explain why we consider this analysis to be an extension, rather than a robustness check, of the main analysis), and then present the results.
132. As a starting point, we note that we do not have reasons to expect this analysis to uncover major differences between the behaviour of hospital operators. The qualitative evidence we have reviewed (see Annex B) has not revealed that the operators behave in markedly different ways, or face markedly different circumstances. In fact, there is a significant degree of uniformity in the types of behaviour they undertake to

monitor and set prices. For example, the operators generally monitor the prices of local competitors in a similar way, and delegate price-setting to their local hospitals. This suggests that the general way in which competitive pressures influence price outcomes is likely to be similar for all operators, albeit in the context of each local area and the operators' particular portfolio of hospitals. We therefore do not have an economic rationale that leads us to expect material differences in the price-concentration relationship between hospital operators. This is one reason why we consider this analysis to be an extension of our work rather than a part of the main results.

133. To undertake the operator-level analysis, we apply the econometric models that produced our main results (L4, FC4, L5 and FC5) but separately to the data specific to each operator. That is, we create five separate hospital data sets, each containing only the data for a single operator, and then estimate our model using these smaller data sets.⁸² It is important to note that this change in the methodology is a substantive departure from the methodology used to produce the main results.
134. The operator-level analysis effectively makes two changes from our main analysis. First, we are now attempting to estimate separate relationships between price and the covariates for each operator. Second, the information contained in the data that we use to estimate this more complex model is more limited, belonging only to a single operator. The operator-level analysis is therefore a more challenging task: we are trying to estimate more with less. This is another factor that led us to consider this analysis an extension of our work rather than a part of the main results. We expand on these two methodology changes and their implications below, where we refer to the main results (based on all operators) as the 'pooled approach' and compare this to the 'operator-level approach'.
135. The first difference between the pooled and operator-level approach is that the pooled approach uses a simpler model in the sense that it has fewer relationships (ie parameters) to estimate. The pooled approach estimates the price-concentration relationship once for all five operators (ie using a single parameter), and this is also the case for the relationship between price and all of the other control variables (ie one parameter per variable). In contrast, the operator-level approach requires estimating each of these relationships separately for each operator—this necessarily involves estimating many more parameters (up to between four and five times more).
136. The second difference between the two approaches relates to the information contained in the data. In the pooled approach, the data contains information on the price outcomes and local concentration for 142 hospitals. This approach allows the analysis to use the maximum number of comparisons between hospitals to estimate the price-concentration relationship. The operator-level analysis, which uses data from each operator separately, can only compare price outcomes and local concentration amongst the hospitals owned by a single operator. The amount of information is therefore less, since each operator has between 4 and 49 hospitals in the data, which means that even for BMI (the operator with the most hospitals in our data) the number of comparisons is far fewer (at 49) than in the pooled approach (at 142).⁸³ As

⁸² We note that this approach is equivalent to interacting the operator dummies with all of the other variables in the regression and then running a regression pooled across operators and including all of these interacted terms. Our approach is therefore more flexible approach than, as suggested by certain parties, only interacting the LOCI or fascia count variable (but not other variables) with the operator dummies, which constrains the relationship of other variables (ie not local concentration) with price to be common across all operators.

⁸³ Note that it is the hospital numbers that matter rather than the number of observations since concentration only varies at the hospital level and not the individual patient level.

a result, the operator-level analysis has less information to use when forming the estimates.⁸⁴

137. The implication of these two differences is that, while the operator-level analysis can in principle be used to evaluate potential differences in the price-concentration relationship between operators, it is likely to deliver less precise estimates than the 'pooled approach'. It is therefore possible that the operator-level approach is unable provide any further insights into whether the price-concentration differs between hospital operators. As discussed below, we indeed find that this issue does limit the conclusions that we can draw from the operator-level results.
138. Table 11 shows the estimates at the operator-level. These are achieved by applying the same model specification (ie L4, FC4, L5 and FC5) to the data for each operator separately. HCA is omitted from the analysis because of the small sample of data available.⁸⁵

TABLE 11 OLS and IV regression results, LOCI and fascia count, by operator

Operator	OLS				IV			
	Coeff	Std error	95% conf interval	N	Coeff	Std error	95% conf interval	N
<i>Self-pay</i>								
<i>LOCI</i>								
BMI	0.0186	0.1026	[-0.18; 0.22]	3,349	-0.1256	0.1229	[-0.37; 0.12]	3,349
Nuffield	-0.3256***	0.0743	[-0.47; -0.18]	4,156	-0.3285***	0.0722	[-0.47; -0.19]	4,058
Ramsay	-0.1157	0.0937	[-0.3; 0.07]	845	-0.1645*	0.0975	[-0.36; 0.03]	845
Spire	-0.114	0.1147	[-0.34; 0.11]	3,706	-0.1918	0.1246	[-0.44; 0.05]	3,706
<i>Fascia count</i>								
<i>(0–9 miles)</i>								
BMI	-0.0021	0.0083	[-0.02; 0.01]	3,349	-0.0162	0.0184	[-0.05; 0.02]	3,349
Nuffield	-0.0329	0.0257	[-0.08; 0.02]	4,156	-0.1171***	0.0387	[-0.19; -0.04]	4,058
Ramsay	-0.0515**	0.0207	[-0.09; -0.01]	845	-0.0638*	0.0352	[-0.13; 0.01]	845
Spire	-0.0358**	0.0143	[-0.06; -0.01]	3,706	-0.0589*	0.0345	[-0.13; 0.01]	3,706

Source: CC analysis.

Note: Control variables not shown but are the same as specifications L4 and FC4. Standard errors are clustered by hospital site. IV estimates use 2SLS and insured LOCI as the instrumental variable. ***/**/* indicates statistical significance at the 1%/5%/10% level.

139. The first point to note about the results is that the standard errors for these operator-level results are higher than for the estimates from the main results (ie that pooled all operators together, see Tables 4 and 5). In line with our expectations, this shows that the operator-level estimates are less precise. The lack of precision associated with these estimates makes it difficult to draw conclusions about the estimated relationship at the operator level. For example, in the large majority of instances, a statistical test of the operator-level results cannot reject the hypothesis that the magnitude of the operator-specific price-concentration relationship is equal to our estimates from the main results.⁸⁶ This alone suggests that the operator-level results do not add a great deal of information to our main results.

⁸⁴ Two more subtle differences relating to the data are that: (1) the operator-level data, as well as containing fewer hospitals, also contains less within-region variation, which our model relies on to estimate the price-concentration relationship; and (2) the operator-level data precludes any price-concentration comparisons between different operators, which means that the direct outcomes of competition in comparable local areas are not used in the operator-level analysis while they are used in the pooled analysis. These two points mean that there is not only less variation in the operator-level data, it is also the case that the variation excluded from the operator-level analysis is highly relevant and useful in our analysis.

⁸⁵ The sample of HCA data for the focal treatments includes only four hospitals.

⁸⁶ This can be seen by noting that the main results from the OLS models (L4 and FC4) and IV models (L5 and FC5) typically lie within the 95% confidence intervals of the operator-level estimates.

140. Looking at the results in Table 11 in more detail, we note that the estimated coefficient for Nuffield is larger, and estimated more precisely, than that of other operators. The confidence intervals for the Nuffield estimates also suggest that the Nuffield estimate might be larger than our estimates from the main results (depending on the significance threshold used). However, this apparent difference could be caused by several factors that are unrelated to the price-concentration relationship and Nuffield's behaviour (for example, the general drawbacks of the operator-level analysis described above, the particular portfolio of hospitals owned by Nuffield, the treatment mix, the number of price observations per hospital, the variation in the concentration measures, the degree of measurement error). Moreover, in our review of the qualitative evidence (see Annex B), we have not found any economic reasons to believe that this result derives from different behaviour by Nuffield compared with the other hospital operators. For these reasons, and the limitations of the operator-level analysis, we did not attach significant weight to the apparent difference between the estimates for Nuffield and the other hospital operators.
141. BMI have proposed that statistically testing the operator-level estimates of the price-concentration relationship can provide evidence of whether the data indicates that the relationship differs between operators. In response to this, we carried out statistical tests of the hypothesis that the price-concentration parameter is equal across all operators (except HCA which, as noted above, was not included in the operator-level analysis due to the small sample of data available), and we did this test for the models used above to estimate the operator-level results in Table 11 (ie based on L4, FC4, L5 and FC5). Our IV models (L5 and FC5) cannot reject the hypothesis, and the test results for the OLS models reject the hypothesis but only marginally (depending on the significance threshold used).⁸⁷
142. Given the above considerations, we did not place weight on the results of the operator-level analysis. The statistical analysis at the operator-level is weaker, primarily on account of the limited variation in the data at the operator-level, and the results of the analysis provide little conclusive evidence of differences in the price-concentration relationship between the operators. This is consistent with our interpretation of the qualitative evidence.

Econometric evidence submitted to us by BMI

143. In this section we summarize the econometric evidence that was submitted by BMI. This is the only submission that we received containing original econometric work (ie rather than responses to our work). BMI and several other parties also submitted responses to our econometric analysis following the two Data Room exercises. We have taken into account these responses in our analysis, the preceding discussion in this appendix, and the discussion in Section 6 of the main report, and so do not discuss these submissions separately in this section.
144. The BMI submission assesses (self-pay) price and non-price outcomes at BMI hospitals that have been classified as either solus or non-solus.⁸⁸ The hypothesis that outcomes are similar in both environments is tested. For self-pay prices, the analysis considered seven treatments based on the OFTs 'indicator treatments', but found that sufficient data was only available for five of these treatments to be

⁸⁷ Our preferred test is based on a 'fully interacted' model that is equivalent to the results presented in Table 11 above. The p-values for this test were 0.04 (L4), 0.04 (FC4), 0.37 (L5) and 0.10 (FC5). We also conducted a test comparable to the one performed by BMI using a model pooled over operators but including operator and local concentration interactions; this produced similar results but with p-values for the OLS models above 0.05.

⁸⁸ There are two definitions used. One based on a 30-minute drive time, and another based on the postcode areas that 80 per cent of patients originate from.

analysed. These five treatments do not match with our focal treatments, but they do include the same hip replacement treatment that we consider (W3712). For non-price outcomes, a range of measures were considered including quality, investment, capacity utilization and margins.

145. We first provide a brief summary of the BMI analysis of self-pay outcomes, and then consider how it relates to our main results above. We do not provide further information with regard to the analysis of other outcomes as this is not directly relevant to this appendix.
146. The self-pay analysis involved regressions with average yearly hospital episode price as the dependent variable, and as independent variables a solus dummy variable and control variables for volumes, population and average direct cost. The specification is linear and the analysis is conducted at the treatment level (and necessarily the operator level since only the BMI's data was available to them).
147. The submission summarized its findings in relation to self-pay outcomes as follows: [REDACTED].
148. We have reviewed the estimation results, and while we have some concerns regarding the reliability of the BMI self-pay analysis, we have come to a different interpretation to that offered by BMI in their submission (and quoted above). In reaching this view, we have not attached any weight to the results for one of the five treatments because it has a very small sample size (26 observations); we therefore base our interpretation on the remaining four treatments (each of which typically had 200 to 300 observations available for analysis). We have focused on the specifications that estimate an average effect across BMI solus hospitals rather than the specifications that estimate separate effects for each BMI hospital, since the average effect will be less influenced by the individual circumstances of each BMI hospital and aligns with our interest in the industry-wide effects (although are of course limited to only the BMI estate). In keeping with BMI's own interpretation of their results, and because of the concerns we have over the BMI analysis (discussed below), when we interpreted their results we considered the results from several specifications in the round, rather than trying to identify one or more preferred models. On this basis, from the statistically significant estimates presented in the paper, we interpret the results to show that [REDACTED].⁸⁹
149. As noted above, we have some general concerns about the reliability of the BMI self-pay price analysis. We do not provide a full critique of the analysis here but do note some key points. One particular reservation we have is that the analysis relies on a sharp distinction between solus and non-solus hospitals. The submission does not present results of the self-pay analysis showing how changes to this solus definition (eg for hospitals that are borderline cases) affects the results. We also note that the analysis: acknowledges the possibility of omitted variable bias (despite the control variables) but does not attempt to address this issue analytically; acknowledges the presence of irregular episode prices but only addresses this analytically for a selection of models (by using median prices instead of mean prices); and is limited to treatments that are less representative than ours and data belonging to only a single hospital operator (and is therefore subject to the points made in the previous section about the drawbacks of the operator-level analysis).

⁸⁹ To calculate these percentage effects (from the models which are based on price levels) we have taken the minimum and maximum of the statistically significant coefficient reported in the various regression results, and divided these by the averages of the hospital-level median prices that are reported. The range of numbers is driven by the treatment and the particular specification.

150. [REDACTED]

Conclusions

151. We have used regression techniques to isolate the relationship between self-pay prices and concentration, while holding other factors fixed. Our preferred approach uses a pooled group of four focal treatments, and pooled data across the five main hospital operators. The results of this analysis show that there is a relationship between self-pay prices and local concentration and imply that, all else equal, self-pay prices are higher in more concentrated local areas. Our review of the qualitative evidence provides support for the existence of this relationship.
152. The magnitude of the estimated relationship varies according to the particular specification that is adopted. Our preferred specification that uses the LOCI variable (L5) estimates that increases in LOCI of 0.2 or 0.5 are expected, on average, to lead to reductions in self-pay prices of around 3 per cent or 9 per cent respectively. Our preferred specification that uses the fascia count variable (FC5) implies a relationship of a similar magnitude, suggesting that one additional fascia located within 9 miles may be expected to lead to, on average, lower self-pay prices by around 5 per cent. In our view, these are conservative estimates and the true magnitude of the price-concentration relationship may be higher.
153. We have considered whether our approach to the regression analysis is robust to various modifications, both to the data and the econometric model. Our conclusions are robust to these considerations. Econometric analysis submitted by BMI [REDACTED].
154. We therefore conclude that there is statistical evidence of a price-concentration relationship for self-pay prices, and, as a result, self-pay prices in certain local areas are higher than they would be if there were lower levels of local concentration.

Data processing

1. This annex provides details of how we have processed the self-pay invoice data provided to us by hospital operators. Similar information for our treatment of the Healthcode data, which covers insured patients, is provided in Appendix 6.12.
2. The five main hospital operators (BMI, HCA, Nuffield, Ramsay and Spire) provided us with information on self-pay invoices. This information came in the form of row-by-row invoice data. Each row in these data sets corresponds to a patient's purchase of a single item or service from a hospital, and during a single hospital visit a patient may receive many such items or services. As a result several rows are typically associated with each patient's hospital visit. The way in which prices are recorded for these patient visits varies between data sets (for example, some record prices for each line item, others only for the entire visit, and some include while others exclude the consultant fee). The main role of our data processing was therefore to construct and standardize these five data sets in a way that makes them comparable.
3. Our data processing had four main stages:
 - (a) standardizing the definition of the variables and rows in each data set;
 - (b) cleaning the data sets;
 - (c) identify the episodes relevant to our analysis; and
 - (d) further cleaning of the price data.
4. Each stage is described in more detail below.

Standardizing the data sets

5. At an early stage in this work we engaged with the hospital operators to better understand their data. This enabled us to standardize the basic information contained in certain variables (for example, admission dates, treatments received, treating consultant etc), such that the data in these variables is comparable between data sets.
6. To ensure that the rows in each data set were comparable, we defined in each data set an 'episode' as a single patient visit to a given hospital for a given treatment. In the data this was defined as a unique combination of patient identifier—discharge date—visit type—package indicator—date of birth—gender. Each data sets therefore contains one row per episode, with aggregated information relating to that episode (for example, the type of visit, the treating hospital, the particular treatment that was received, the primary specialty of the treating consultant, and the total episode price paid for all hospitals services). By combining together these standardised data sets we produced a single data set that includes self-pay patient episodes for the five operators. Each episode has a corresponding treatment and the primary specialty of the treating consultant. These two dimensions—treatment and specialty—are how we classify the data for most of our analyses.
7. The key variable that has been created in this process is the episode price. This is the total price paid by a patient for all hospital services received during that episode.

It excludes consultant fees and ancillary services; to remove these items we have followed advice given to us by the parties.¹

Cleaning the data sets

8. During the process of processing the data we noticed certain irregularities. For example, episodes with missing information, episodes with admission dates occurring after discharge dates, and negative prices. We have applied a number of filters to the data sets in order to remove these inconsistencies from the data sets. We made the following exclusions:

- (a) package episodes for which we could not identify the relevant consultant fee to remove (referred to below as 'package without part 2');
- (b) package episodes for which there were inconsistencies in the price information between the two data sources submitted by hospital groups ('part 1 and part 2 inconsistencies');²
- (c) episodes with admission dates occurring after discharge dates ('date inconsistencies');
- (d) episodes with missing information for any of the following variables: patient identifier, type of visit, discharge date, package indicator, hospital postcode, gender, age ('missing data'); and
- (e) episodes with negative or zero episode prices.

9. Table 1 below shows the number of episodes excluded in each of these categories.

TABLE 1 Cleaning of the hospital data sets

	<i>BMI</i>	<i>HCA</i>	<i>Nuffield</i>	<i>Ramsay</i>	<i>Spire</i>	<i>Total</i>
Total episodes	1,404,122	550,238	933,968	59,062	940,902	3,888,292
Package without part 2	83,973	0	184,424	8,813	52,587	329,797
Part 1 and part 2 inconsistencies	322	0	0	56	0	378
Date inconsistencies	55	0	0	0	18	73
Missing data	10,368	652	7,199	22	5,652	23,893
Negative or zero prices	<u>76,767</u>	<u>165,785</u>	<u>18,013</u>	<u>2,365</u>	<u>118,021</u>	<u>380,951</u>
Total episodes after cleaning	1,232,637	383,801	724,332	47,806	764,624	3,153,200
Proportion of total excluded	12%	30%	22%	19%	19%	19%

Source: CC analysis.

Note: Exclusions are sequential, from the top to the bottom of the table. There were also a very small number of exclusions made to the data following early discussions with parties; these exclusions are not shown in Table 1 (ie the 'Total episodes' figure is after these initial exclusions).

10. As Table 1 above shows, as a result of the data cleaning between 12 and 30 per cent of patient episodes were excluded from the data sets.

¹ In the case of consultant fees for non-package deals, the consultant fees were removed from the data before summing the cost of hospital services; for package deals, the consultant fees were extracted from the total package price using 'Part 2' of the DQ. In the case of ancillary services, where possible, these were removed from the row-by-row invoice data before summing the costs of other hospital services.

² Hospital groups submitted 'part 1' data and 'part 2' data. The former contained the prices for hospital services, and the latter contained invoices relating to consultant fees. For certain episodes both part 1 and part 2 contained prices for hospital services, and we have excluded episodes where the price of hospital services reported in part 1 and part 2 did not match.

Identifying the relevant data for our analysis

11. Our analysis of the self-pay data has focused on inpatient treatments over the period 2009 to 2012. Within this, we have focused on only those treatments that are within our market definition; we therefore excluded from the analysis those treatments outside of our 17 specialties as well as cosmetic or non-acute treatments. In addition, we also excluded patients that received multiple treatments during a single episode since in these cases the data does not record the separate price for each treatment received. To identify the relevant data, we therefore excluded:
- (a) outpatient and day-case episodes;
 - (b) inpatient treatments that are not representative of the inpatient market, in the sense that they are also associated with a substantive number of day-case episodes;³
 - (c) inpatient episodes with an unknown treatment;
 - (d) inpatient episodes from earlier years (2006 to 2008);
 - (e) cosmetic or non-acute treatments;⁴
 - (f) episodes with multiple treatments (ie for which we cannot observe the prices of the individual treatments received); and
 - (g) any remaining episodes outside of our market definition with regard to hospitals and specialties (see Section 2).
12. Table 2 below shows the number of exclusions made to the data for each of these categories.

TABLE 2 Identifying the relevant episodes

	<i>BMI</i>	<i>HCA</i>	<i>Nuffield</i>	<i>Ramsay</i>	<i>Spire</i>	<i>Total</i>
Total episodes after cleaning	1,232,637	383,801	724,332	47,806	764,624	3,153,200
Outpatient episodes	1,000,721	334,903	579,691	n/a	597,607	2,512,922
Day-case episodes	116,539	22,200	76,156	26,433	85,878	327,206
Day-case/inpatient treatments	46,348	10,525	31,500	9,932	36,684	134,989
Unknown treatments	29,578	10,558	14,106	4,246	13,228	71,716
Earlier years (2006 to 2008)	21,764	2,928	11,900	2,416	12,764	51,772
Cosmetic or non-acute treatments	2,818	257	1,960	564	4,634	10,233
Episodes with multiple treatments	5,818	1	0	2,020	4,464	12,303
Episodes outside market definition	941	314	212	292	236	1,995
Total relevant episodes	8,110	2,115	8,807	1,903	9,129	30,064
Proportion of total excluded	99%	99%	99%	96%	99%	99%

Source: CC analysis.

Note: Exclusions are sequential, from the top to the bottom of the table. N/A signifies that we did not receive outpatient data for Ramsay and thus there was no exclusion required.

13. As Table 2 above shows, the inpatient episodes that are relevant to our analysis account for a small proportion (between 4 and 1 per cent) of all episodes. The reason that these proportions appear very low is because outpatient and day-case episodes account for the majority of patient visits (over 97 per cent of all episodes).

³ Treatments that were identified as sometimes offered as a day-case service were identified as those having a proportion of day-case episodes over 5 per cent (eg cataract surgery).

⁴ Treatments that are sometimes cosmetic or non-acute were identified on the basis of a list provided by Spire.

Further cleaning of the inpatient episode price data

14. The final stage of data processing relates to the episode prices that feature in the PCA. In examining the price data for such episodes, we noted wide variation in the prices charged, even when evaluating episode prices for a single treatment at a single hospital site. Some of this price variation is expected (for example, due to differences in prosthesis or differences in patient requirements during a long hospital stay) but some of this variation may be driven by factors that may potentially distort our analysis. Examples of factors that could cause this type of variation include IT, accounting or recording practices (for example, refunds, data entry errors, cross-invoice recording) and particularly unusual patient circumstances (for example, very complex episodes requiring multiple treatments). In an attempt to mitigate any distortion that may arise because of these irregularities, we have therefore made the following exclusions:

- (a) episodes with a CCSD code performed by a consultant with an atypical primary specialty;⁵
- (b) episodes with a CCSD code that is uncommon in the data for a particular operator;⁶
- (c) episodes with a low price that is less likely to be credible;⁷ and
- (d) episodes with prices that appear extreme.⁸

15. Table 3 below shows the number of exclusions made to the data for each category.

TABLE 3 **Irregular episodes**

	<i>BMI</i>	<i>HCA</i>	<i>Nuffield</i>	<i>Ramsay</i>	<i>Spire</i>	<i>Total</i>
Total relevant episodes after cleaning	8,110	2,115	8,807	1,903	9,129	30,064
Inpatient episodes with atypical specialty	724	198	493	95	637	2,147
Uncommon treatments for a particular operator	1,070	974	961	327	1,286	4,618
Low prices that are unlikely to be credible	51	330	39	14	46	480
Prices that appear extreme	<u>370</u>	<u>58</u>	<u>338</u>	<u>97</u>	<u>612</u>	<u>1,475</u>
Total relevant episodes excluding irregular episodes	5,897	598	6,983	1,372	6,556	21,406
Proportion identified as irregular (%)	27	72	21	28	28	29

Source: CC analysis.

Note: The total episodes excluded as irregular is not equal to the sum of the categories of irregular episodes as certain episodes may be counted in more than one category.

16. We therefore identify around 29 per cent of the data as being potentially irregular. The majority of our analysis has been conducted excluding these irregular episodes, but we test for the impact on our results of making these exclusions.

⁵ For the majority of treatments, a single primary specialty is common in the data (eg if the treatment is hip replacement, the specialty is typically 'Trauma and Orthopaedics'), but in some instances an alternative primary specialty is listed. We have excluded episodes with these less-common primary specialties.

⁶ Episodes associated with operator-treatment combinations that have less than 30 observations in the data. (In the AIS we had previously applied this rule to hospital site-treatment combinations.) The main purpose of these exclusions is to ensure that the methodology for making exclusions relating to low or extreme prices can be applied more reliably. Both cases rely on making exclusions relative to the distribution of prices, and so if that distribution is based on a very small amount of data, it is difficult to determine with a systematic rule which parts of the data are 'extreme'. These episodes also represent a small minority of the data and are therefore not thought to be important.

⁷ It is observed that certain episode prices observations lie very close to zero, or are very low relative to the majority of prices for that treatment. These episode prices observations likely contain some kind of discount, rebate or credit associated with them and are unlikely to represent the typical price for a particular treatment. We exclude such observations if they have an episode price that is less than 50 per cent of the median price for that treatment-operator combination.

⁸ A price is considered extreme if it less (or greater) than the lower (upper) quartile plus (minus) 1.5 times the inter-quartile range.

17. The number of episodes that was available for our analysis is therefore 21,406. From this, we have focused most of our analysis on four focal treatments which account for 12,304 observations (around 57 per cent of 21,406).

Qualitative evidence of local competition and self-pay prices

1. This annex summarizes the qualitative evidence that we have reviewed in relation to local competition and self-pay prices and the price-concentration relationship that is tested quantitatively in this appendix. We have carefully considered all of the relevant material submitted to us over the course of this investigation, including: submissions by the private hospital operators; transcripts of main party hearings; and, internal documents submitted to us by the hospital operators. We set out in this annex the most pertinent examples from the evidence we have reviewed to illustrate how hospital operators behave with regards to local competition and self-pay price setting.
2. The examples we present in this annex are organized into two categories:
 - (a) monitoring competitor behaviour (for example, mystery shopping, tracking publicly available prices or similar behaviour); and
 - (b) price setting (for example, how hospital operators or individual hospitals set their self-pay prices and the extent to which this incorporates local competitive conditions, including specific examples where hospitals have adjusted their self-pay prices directly in response to local competition).
3. The annex has two main sections. The first provides a summary of our interpretation of the evidence we have reviewed in relation to the above categories. The second presents examples of evidence for each of the five main hospital operators (BMI, HCA, Nuffield, Ramsay and Spire).

Summary

4. In terms of monitoring competitor behaviour and price setting, we considered that the behaviour of the five main hospital operators to be broadly comparable. This view is largely based on what the hospital operators have told us. It is also supported by the internal documents that we have reviewed.⁹
5. The available evidence showed that it is common practice for hospital operators in the self-pay market to monitor local competitors, and a key metric that is monitored is price. [REDACTED]
6. The available evidence also showed that it is also common across the industry for self-pay price setting to be delegated to individual hospitals. In cases where pricing strategies are developed at the group level, individual hospitals are given autonomy to adjust the prices to some degree. [REDACTED]

Evidence

7. In the following sections we provide a selection of examples for each of the five operators: BMI, HCA, Nuffield, Ramsay and Spire. For each operator we first set out examples in relation to monitoring of competitive behaviour, and then in relation to

⁹ We noted that the volume of available evidence from internal documents varied between operators (and to a degree this is reflected in the examples we give later in this annex), although given what the hospital operators have told us about their behaviour in general terms (which is similar for each operator), we did not place any interpretation or weight on the apparent differences in the volume of evidence available for each operator.

price setting. The main sources of evidence reviewed are the parties' responses to the Market Questionnaire, transcripts from the main party hearings and internal documents. For certain operators we only present a selection of the available evidence due to the large volume of relevant internal documents. The selected evidence provides concrete examples that are in line with the general statements and descriptions made to us by the hospital operators.

BMI

Monitoring competitor behaviour

8. In its response to the Market Questionnaire BMI stated that [REDACTED]
9. In the CC hearing on March 2013, BMI commented regarding price monitoring [REDACTED]
10. Various internal documents submitted over the course of the investigation provide examples of such behaviour: [REDACTED]

Price setting

11. In the response to the Market Questionnaire, BMI stated regarding self-pay price setting that [REDACTED]
12. [REDACTED]
13. In the CC hearing on March 2013 BMI made several comments regarding self-pay pricing and price outcomes: [REDACTED]
14. In relation to the reasons why prices vary across BMI hospitals for self-pay, [REDACTED]
15. [REDACTED]

HCA

Monitoring competitor behaviour

16. We did not identify any specific internal documents that illustrate how HCA hospitals monitor competitor prices, although HCA did comment on this issue more generally when responding to questions about price setting (see below).

Price setting

17. In their response to the Market Questionnaire, HCA stated that [REDACTED]
18. HCA also explained that [REDACTED]

Nuffield

Monitoring competitor behaviour

19. [REDACTED]
20. [REDACTED]

Price setting

- 21. [REDACTED]
- 22. [REDACTED]
- 23. [REDACTED]
- 24. [REDACTED]
- 25. [REDACTED]

Ramsay

Monitoring competitor behaviour

- 26. We did not identify any specific internal documents that illustrate how Ramsay's hospitals monitor competitor prices.

Price setting

- 27. Ramsay stated in its response to the Market Questionnaire that 'Prices for self pay patients for admitted care are currently set by each of the hospitals' (question 14.2).
- 28. In a hearing in March 2013, Ramsay stated that historically, self-pay pricing had been set at a local level [REDACTED]

Spire

Monitoring competitor behaviour

- 29. In their response to the Market Questionnaire, Spire stated that [REDACTED]
- 30. In the CC hearing in March 2013, Spire explained that [REDACTED]
- 31. Internal documents submitted to the CC contain further evidence and examples of when parties considered conducting [REDACTED]:
 - (a) An internal presentation on 'Self Pay Marketing Overview' dated November 2008 details the self pay market, and Spire's self-pay strategy mentions a [REDACTED]
 - (b) An internal presentation for a 'Self Pay pricing workshop' (June 2011) recommends: [REDACTED].
 - (c) Another internal presentation for 'Self-pay & workshop' (December 2009) sets out [REDACTED]:[REDACTED]
 - (d) In the same presentation Spire provide a recommendation to [REDACTED]

Price setting

- 32. In their response to the Market Questionnaire (Part 1) Spire stated:

- [REDACTED] Hospitals take numerous factors into account when setting self-pay prices, including the following: [REDACTED]
 - 'Local hospitals make their own decisions as to whether to offer discounts or promotions, and whether to negotiate individual prices with patients. As a result, practices vary among hospitals: [REDACTED]
 - 'In several cases, competing local hospitals have altered their prices or marketing activities following developments at a Spire hospital. For example:
 - Following the installation of an MRI scanner at Spire Wellesley, the Chartwell Hospital reduced its self-funding MRI price. This reduced price was advertised in the local press. In addition, the Chartwell Hospital began offering MRI services on Saturdays and Sundays.
 - Following the installation of a new fixed site MRI at Spire Roding, Holly Head lowered their prices. Spire Roding had previously faced high overhead costs and patient prices had, therefore, been high. The installation of the fixed price MIR lowered Spire's overhead costs and, as a result, Spire lowered its prices. Holly Head then responded by lowering its prices.'
33. In the CC hearing in March 2013 Spire stated that [REDACTED]
34. Internal documents contain further examples:
- (a) On 1 February 2012 the Spire [REDACTED] director wrote to four consultants regarding self-pay pricing for 2012. The hospital director proposed a reduction in pricing following a review of its current pricing for self-pay patients for hip and knee replacements it. The discount would affect the hospital element only and did not impact on the consultants fee or anaesthetist's fee. The hospital director stated the decision to reduce its pricing had been driven by three elements: [REDACTED]
 - (b) In a presentation titled 'Spire Healthcare Senior Leadership Team' (April 2011) Spire commented regarding self-pay versus PMI: [REDACTED]
 - (c) In a business plan Spire commented regarding assumptions of outpatient revenue in physiotherapy ('Spire Parkway Hospital. Three Year Business Plan 2011–2013', internal document, August 2010): [REDACTED]
 - (d) In a '3 year business plan 'Spire Hull & East Riding Hospital' (internal document, August 2011) Spire state: [REDACTED]
 - (e) In an internal presentation for 'Self-pay & workshop' (December 2009) Spire recommend to [REDACTED].

Central London

1. This appendix sets out in detail the evidence and analysis underlying our assessment of competitive constraints in central London.¹
2. The appendix is structured as follows. First, we give an overview of the characteristics of private healthcare provision in central London. Then we examine shares of supply and shares of capacity for private hospitals and PPUs. Finally, we set out our analysis of HCA's vertical integration in GP practices. Annex A presents the parties' views in relation to competition in London. Annexes B and C provide a list of private hospitals and PPUs in central London and Greater London respectively.

Characteristics of private healthcare provision in central London

3. This section considers a number of characteristics of private healthcare provision in central London. We first discuss private hospitals and PPUs, and then look at the patients and customers.

Private hospitals and PPUs

4. As set out in Section 5, in our competitive assessment we looked at 219 private hospitals and PPUs providing inpatient care. Of these, 26 are located in central London. These are as follows (see Annex B for the list of hospitals):
 - (a) HCA operates eight hospitals: it owns seven private hospitals² and manages one PPU;³
 - (b) BMI owns and operates four private hospitals;
 - (c) Aspen owns and operates one private hospital;
 - (d) there are four hospitals owned and operated by independents: the Bupa Cromwell Hospital, the Hospital of St John and St Elizabeth, the King Edward VII's Hospital Sister Agnes, and TLC; and

¹For the purposes of our analyses, we have used standard definitions of central London and Greater London. Our definitions for central London and Greater London are the NUTS2 regions named 'Inner London' and 'Outer London', respectively. NUTS stands for 'Nomenclature of Territorial Units for Statistics' and is a delineation of geographic areas developed and regulated by the EU. A map of UK NUTS regions can be found at: www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/maps/index.html. In terms of private hospital and PPU locations, our central London definition coincides with the area inside the North and South Circular Roads, and our Greater London definition is similar (but with some exceptions) to the area between the North and South Circular Roads and the M25 ring road. We use the term 'London' to refer to the combined area of central London and Greater London.

²There are nine HCA facilities in central London that do not provide inpatient services but are operated in conjunction with one of the seven HCA private hospitals in central London. These facilities are: The Harley Street Clinic's Cancer Centre, The Harley Street Clinic Outpatient Diagnostic Centre, CyberKnife at Harley Street Clinic, Wellington Diagnostic and Outpatient Centre, 30 Devonshire Street, Chelsea Outpatient Centre, Platinum Medical Centre (PMC), Leaders in Oncology Care at PMC, and Sarah Cannon Research Institute. We have included these facilities in our shares of supply as follows. As none of these facilities provides inpatient care, they have not been included in the shares of supply by inpatient admissions or by inpatient revenue. As all these facilities provide either day or outpatient care, all have been included in the aggregate shares of supply by total revenue. Only those facilities providing day-patient care have been included in our shares of supply by total admissions, either at the aggregate level or by specialty. These facilities are The Harley Street Clinic's Cancer Centre, Platinum Medical Centre (PMC) and Leaders in Oncology Care at PMC.

³We note that HCA has won a tender to operate a further PPU in central London at Guy's NHS Trust.

- (e) there are nine PPUs (excluding the PPU managed by HCA) owned and operated by six NHS Foundation Trusts.
5. On the basis of our set of private hospitals and PPUs, there are a further 18 private hospitals and PPUs in Greater London (see Annex C for the list of hospitals).

Characteristics of private hospitals in central London

6. A key factor that attracts patients to central London is the perception that quality of care is very high in the capital. Several parties have made this point and we highlight some examples here. Whilst some of the references below (paragraphs 7, 8, 12 and 13) refer to London, we believe that they apply to central London.
7. For example, when asked why patients choose to be treated in London, TLC stated that there was a perception among patients that standards in London were generally higher:
- But on the whole people who live or work in London perceive the best will be offered in London and therefore look to London for their treatment ... think in terms of the investment in the facilities and the scope of back-up that you can provide, it's much greater. A lot of people are not well informed, because they don't access private healthcare until something goes wrong, and therefore you look to your local hospital. But for those who search the internet and really look into their condition, it is probable that you will find yourself being drawn into central London.
8. HCA also commented that London was regarded as a global centre of excellence, especially for 'high end' tertiary care, which attracted patients from around the world. The Federation of Independent Practitioner Organisations (FIPO) was of the view that patients were attracted to London due to its international reputation and the high quality of consultants.
9. HCA said that it had a strong focus in 'tertiary' clinical specialisms, which it described as the treatment of serious complex medical conditions with a high level of acuity requiring specialist investigation, treatment and care in facilities with advanced equipment, highly-trained staff and 24/7 life support back-up capabilities. HCA suggested that examples of tertiary care included cancer treatment, neurosurgery, cardiac surgery, advanced neonatal services and other complex medical and surgical interventions.
10. HCA also commented that it had invested heavily in diagnostic and treatment facilities and intensive care facilities to support this focus on tertiary/high acuity services. It also noted that it provided the clinical environment which could support higher levels of patient dependency, such as level 3 intensive care units. It said that this investment had attracted leading consultants from major London teaching hospitals.
11. AXA PPP argued that patients were attracted to seek treatment in central London, due to a 'Harley Street effect', a point that was separately made by FIPO.
12. The CC patient survey also indicated that London hospitals were viewed differently. For example, the survey indicated that patients treated at Greater and central London hospitals⁴ were more likely to say that they chose private treatment to access the expertise of private hospitals/private consultants (27 per cent compared with 7 per

⁴ Sample size 118 patients.

cent on average).⁵ Patients in London were also more likely to say that the most important reasons for choosing the private consultant were the consultant's reputation (46 per cent compared with 36 per cent on average), the consultant's clinical expertise (43 per cent compared with 38 per cent on average) and the geographic location of the consultant (32 per cent compared with 25 per cent on average).⁶

13. The CC patient survey also showed that patients in London were more likely to have engaged in some research ahead of their treatment. Patients in London were more likely than average to have looked up any information online (63 per cent compared with 47 per cent on average), and in particular more likely to have looked up the websites of private consultants (41 per cent compared with 25 per cent on average), of private hospitals/PPUs (36 per cent compared with 24 per cent on average) and other websites (eg Google search) (20 per cent compared with 12 per cent on average).⁷

Characteristics of PPU in central London

14. NHS PPUs have a greater presence in central London than elsewhere in the UK, and the London PPUs are also typically larger. Laing & Buisson noted that: nine of the ten NHS Trusts (that operate PPUs) with the highest revenue from private patients are located in London, and that London PPUs also account for a significant proportion (44 per cent) of the UK's dedicated private patient beds within NHS facilities.^{8,9}
15. As noted above, there are nine PPUs included in our analysis of central London (excluding the PPU managed by HCA). These PPUs are owned and operated by the following Foundation Trusts (see Annex B for the list of PPUs):
 - (a) Guy's & St Thomas' (two general PPUs);
 - (b) Imperial College Healthcare (three general PPUs);
 - (c) King's College Hospital (one general PPU);
 - (d) Royal Brompton & Harefield (one general PPU);
 - (e) Royal Free London (one general PPU); and
 - (f) The Royal Marsden (one general PPU).
16. HCA has noted that the central London teaching hospitals (Guy's and St Thomas', St Bartholomew's, King's College, University College Hospital, Royal Marsden) boasted a strong global reputation and had contributed to London's position as a global medical centre of excellence with well-established tertiary care services. In relation to consultants, HCA suggested that a distinguishing characteristic of London was the large pool (approximately 7,500) of NHS consultants, including many eminent specialists at the top of their field. On a similar note, FIPO referred to the 'gilded London teaching hospitals'. TLC also noted that nearly all of its consultants worked at teaching hospitals in central London.
17. The level of private work that PPUs can undertake is regulated and limited by a revenue cap. The level of this cap is set to be increased under recent legislation.

⁵ CC patient survey: QB1, Slide 25, Table B1.

⁶ CC patient survey: QC6, Slide 32, Table C6.

⁷ CC patient survey: QF1, Slide 63, Table 133.

⁸ Laing & Buisson, Private Acute Medical Care UK Market Report 2012, Table 4.2.

⁹ *ibid*, Table 4.3.

Prior to the 2012 Act, legislative restrictions limited the amount of income that Foundation Trusts could earn from private patient work. This private patient income cap meant that Foundation Trusts could not exceed the proportion of the total income that they derived from private charges in 2002/03 (the year before the first Foundation Trusts were authorized), which varied from about 1.5 per cent to about 30 per cent. Under the 2012 Act, the cap has been lifted so that Foundation Trusts are now permitted to receive up to 49 per cent of their total income from private sources. However, if a Foundation Trust proposes to increase the proportion of its total income that comes from private sources by more than 5 per cent, it requires majority approval by its council of governors. We discuss the revenue cap and the implications of the 2012 Act further in Appendix 3.1.

Patients and customers

18. London has a population of around 8.2 million, 4.9 million of whom live outside central London and 3.2 million live within central London.¹⁰ In addition, a unique aspect of working patterns in the capital is that a further 1 million people commute into central London on a daily basis for work.¹¹
19. London has a high level of PMI penetration, making it an important area for PMIs. The last known accurate measure suggested that London had a PMI penetration rate of 17.5 per cent in 2006. This compared with a UK-wide rate of 12 per cent, but with a number of other parts of the country exhibiting much lower penetration, many as low as 5 to 10 per cent. Only the South-East had a higher PMI penetration rate at 18.5 per cent.¹²
20. In the following subsections we present evidence on the characteristics of patients and customers in London.

Patient demographics

21. TLC submitted to us that there were differences in patient characteristics between central London, Greater London and the rest of the UK. We analysed the Healthcode data and confirmed this result. Table 1 below shows that both self-pay and insured patients in central London tend to be younger and are more likely to be males. The difference is most pronounced for self-pay patients.

TABLE 1 **Patient demographics, insured and self-pay inpatients, 2011**

	<i>Central London</i>	<i>Greater London</i>	<i>Rest of UK</i>
<i>Mean age (insured)</i>	53	56	55
<i>Mean age (self-pay)</i>	50	58	58
Male proportion (insured)	48	44	46
Male proportion (self-pay)	40	33	35

Source: CC analysis.

¹⁰ All demographic data has been sourced from the ONS and is based on the 2011 census:

www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-284349.

¹¹ <http://londontransportdata.wordpress.com/>.

¹² Source: L&B UK Health Cover 2012, estimated from the Family Resource Survey 2004–2005 (DWP), after applying UK growth rates (persons covered) 2004–2006 to all regions.

Procedures and specialties performed

22. TLC also submitted to us that there were differences in the mix of specialties and level of acuity between central London, Greater London and the rest of the UK. We analysed the data available to us from Healthcode and confirmed this for the mix of inpatient specialties. Table 2 shows the proportions of inpatients according to the primary specialty of the consultant for central London, Greater London and the rest of the UK.

TABLE 2 Mix of specialties, insured and self-pay inpatients, 2011*

Consultant specialty	per cent		
	Central London	Greater London	Rest of UK
Trauma and orthopaedics	27.1	26.1	34.6
General surgery	17.7	22.8	22.2
Obstetrics and gynaecology	10.1	11.5	11.1
Cardiology	7.4	2.7	1.1
Urology	7.1	9.7	7.5
Otolaryngology	6.5	5.4	6.1
Neurology	5.8	1.4	2.7
General internal medicine	5.1	9.6	2.2
Oncology	3.6	3.1	1.9
Plastic surgery	2.5	2.3	6.4
Clinical radiology	1.8	1.9	0.5
Gastroenterology	1.8	0.5	1
Oral and maxillofacial surgery	1.1	0.7	1.3
Ophthalmology	1.1	1.2	0.9
Anaesthetics	0.9	0.5	0.3
Rheumatology	0.2	0.3	0.1
Dermatology	0.1	0.1	0

Source: CC analysis.

*As data for some PPU is not available for our analysis of mix of specialties in Table 2, HCA questioned our ability to consider the potential competitive constraint a PPU has on relevant specialties. We note that Table 2 is based on Healthcode data, which does not cover all PPUs. However, we have looked at competitive constraints from PPUs under our shares of supply by specialty, which is based on Market Questionnaire data that includes PPUs (see paragraphs 43–45).

Note: Data not available for all hospitals, including certain central London private hospitals and PPUs (Aspen, Imperial College Healthcare, Royal Brompton and Harefield, Royal Free London, and The Royal Marsden).

23. The table above highlights that there are differences in the specialty mix for inpatients between central London and Greater London, and central London and the rest of the UK. Examples include:
- (a) trauma and orthopaedics account for 27 per cent of inpatient episodes in central London, a similar level in Greater London, but around 35 per cent of inpatient episodes in the rest of the UK;
 - (b) cardiology accounts for around 7 per cent of inpatient episodes in central London, but around 3 per cent of inpatient episodes in Greater London and around 1 per cent in the rest of the UK; and
 - (c) neurology accounts for around 6 per cent of inpatient episodes in central London, but around 1 per cent of inpatient episodes in Greater London and around 3 per cent of inpatient episodes in the rest of the UK.

Corporate PMI customers

24. One of the issues identified by the parties was the significant number of corporate customers located in London, or corporate customers that made regular use of central London hospitals (see Annex A, paragraphs 41 to 49).

25. HCA also noted that the larger presence of major corporates in the London region meant that PMI corporate policies accounted for a higher share of PMI sales.
26. Our analysis of corporate PMI customers was constrained by data shortages. We have not been able to identify the overall size of the corporate market in London or nationally. Only data provided by Bupa was at a sufficiently disaggregated level to allow us to isolate and estimate its corporate expenditure at central London hospitals. Table 3 below presents Bupa's analysis.

TABLE 3 **Bupa hospital expenditure—by customer type**

	<i>Corporate policyholders*</i>	<i>Individual policyholders</i>
Central London expenditure† (£m)	[REDACTED]	[REDACTED]
UK expenditure (£m)	[REDACTED]	[REDACTED]
Central London (%)	[REDACTED]	[REDACTED]

Source: Bupa.

*[REDACTED]
†[REDACTED]

27. Table 3 suggests that Bupa's hospital expenditure is, in total across the UK, broadly balanced between corporate and individual policyholders. Looking at the proportion of UK expenditure accounted for by central London hospitals, for corporate policyholders this proportion is close to a [REDACTED], while for individual policyholders the proportion is [REDACTED]. This illustrates the importance of the London market to PMIs ([REDACTED]) but does not indicate that the market is driven primarily by corporate customers.

Patient travel patterns

28. The results of our catchment area analysis (see Appendix 6.5) did not reveal that London hospitals had a substantively different catchment area to hospitals in other regions of the UK on average. We reported the median catchment area of London hospitals to be 15 miles as compared with the UK average of 17 miles.
29. In Table 4 below we present more detailed results for our catchment area analysis in relation to London. The table shows our 80 per cent catchment area results for London, but split between central London and Greater London. It also shows the catchment area results for the rest of the UK for comparison, as well as catchment area results based on higher percentages of insured patients (90 per cent, and 95 per cent). Each figure in the table is the median hospital's catchment area for the region.

TABLE 4 **Median catchment areas, split by central London, Greater London and rest of UK**

	<i>80 per cent catchment area miles</i>	<i>90 per cent catchment area miles</i>	<i>95 per cent catchment area miles</i>
Central London	24	46	77
Greater London	8	11	15
Rest of UK	17	22	29

Source: CC analysis.

Note: Data not available for all hospitals, including certain central London private hospitals and PPUs (Aspen, Imperial College Healthcare, Royal Brompton and Harefield, Royal Free London, and The Royal Marsden).

30. Table 4 shows that the catchment areas for central London and Greater London are very different in size. Central London hospitals have a median 80 per cent catchment

area that is three times as large as the catchment area of hospitals in Greater London (24 versus 8 miles). For wider catchment areas, based on 90 per cent and 95 per cent of insured patients, the difference between central London and Greater London is even larger.

31. Our disaggregated analysis shows that central London hospitals attract patients from a very wide geographic area. In addition, our analysis shows that the catchment area for central London hospitals is significantly larger in size than the area that Greater London hospitals attract patients from. This suggests a marked difference in patient travel patterns between those attending central London hospitals and those attending Greater London hospitals.
32. To further assess this issue, we have looked at the travel patterns of two groups of patients: those who have a home address in central London and those who have a home address in Greater London. For each of these groups of patients we have calculated the proportion of patients who attend hospitals located in central London and Greater London. Table 5 below shows the results of this analysis.

TABLE 5 Patient travel patterns between central and Greater London, insured and self-pay inpatients, 2011

	<i>Percentage attending central London hospitals</i>	<i>Percentage attending Greater London hospitals</i>
Patients resident in central London	94.6	5.4
Patients resident in Greater London	54	46

Source: CC analysis.

Note: Data not available for all hospitals, including certain central London private hospitals and PPUs (Aspen, Imperial College Healthcare, Royal Brompton and Harefield, Royal Free London, and The Royal Marsden).

33. Table 5 shows that around 95 per cent of patients resident in central London chose to travel to a hospital in central London, while only around 5 per cent chose to travel to a hospital in Greater London. For patients resident in Greater London, the balance is very different: around 54 per cent of patients chose to travel to a central London hospital, and around 46 per cent chose to travel to a Greater London hospital. Thus over half of patients resident in Greater London chose to attend a central London hospital, yet only 5 per cent of central London patients attended hospitals in Greater London. Patients in both groups appear significantly more willing to receive treatment in central London.
34. We note that the volume of commuters and transport network in London is likely to contribute to these patient movements. For example, patients in Greater London that commute to central London for work may find central London hospitals more convenient (for example, because patients travel to the hospital from work, or because the public transport options are convenient and known).

Shares of supply analysis

35. This section sets out our analysis of shares of supply for the hospitals located in central London. This analysis has been conducted at an aggregate level (across all specialties and all treatments), and a disaggregated level (for particular segments, eg individual specialties). We also calculated shares of supply at an aggregated level for hospitals located in London (central London and Greater London). Hospitals belonging to a single operator are considered together.

Aggregate shares of supply

36. Table 6 shows the shares of supply in central London in terms of inpatient admissions and inpatient revenue, as well as total admissions (inpatient plus day-case) and total revenue (inpatient plus day-case plus outpatient).

TABLE 6 Central London aggregate shares of supply, 2011*

	<i>per cent</i>			
	<i>Inpatient admissions</i>	<i>Inpatient revenue</i>	<i>Total admissions</i>	<i>Total revenue</i>
HCA	[85]	[89]	[86]	[86]
TLC	[10]	[15]	[10]	[15]
BMI	[5]	[5]	[5]	[5]
The Bupa Cromwell Hospital	[5]	[5]	[5]	[5]
Aspen	[5]	[5]	[5]	[5]
Hospital of St John & St Elizabeth	[5]	[5]	[5]	[5]
King Edward VII's Hospital Sister Agnes	[5]	[5]	[5]	[5]
Total private hospitals	85	89	86	86
Imperial College Healthcare NHS Trust	[5]	[5]	[5]	[5]
Royal Free London NHS Foundation Trust	[5]	[5]	[5]	[5]
Royal Brompton and Harefield NHS Foundation Trust	[5]	[5]	[5]	[5]
The Royal Marsden NHS Foundation Trust	[5]	[5]	[5]	[5]
King's College Hospital NHS Foundation Trust	[5]	[5]	[5]	[5]
Guy's & St Thomas' Trust	[5]	[5]	[5]	[5]
Total PPUs	15	11	14	14

Source: CC analysis.

*All revenue and admissions figures include international patients. When excluding international patients from our data for central London operators, we obtain similar results: HCA's share of total admissions in central London does not change (48 per cent) and HCA's share of total revenue in central London drops by 1 percentage point (56 per cent to 55 per cent).
Note: Total admissions include inpatient and day-case. Total revenue includes inpatient, day-case and outpatient.

37. The shares of supply results in Table 6 indicate that central London is a highly concentrated market. HCA has a share of supply in central London of above 45 per cent by admissions (inpatient or total) and a share of supply of above 55 per cent by revenue (inpatient or total). TLC has the next largest shares, at around [10 to 15]. All other private hospital operators individually have shares below 10 per cent, and all PPUs individually have shares of 5 per cent or lower.
38. Table 7 shows the shares of supply in London (central London and Greater London) in terms of inpatient admissions, inpatient revenue, total admissions (inpatient plus day-case) and total revenue (inpatient plus day-case plus outpatient).

TABLE 7 London (central London and Greater London) aggregate shares of supply, 2011

	<i>per cent</i>			
	<i>Inpatient admissions</i>	<i>Inpatient revenue</i>	<i>Total admissions</i>	<i>Total revenue</i>
HCA	[X]	[X]	[X]	[X]
The London Clinic	[X]	[X]	[X]	[X]
BMI	[X]	[X]	[X]	[X]
The Bupa Cromwell Hospital	[X]	[X]	[X]	[X]
Aspen	[X]	[X]	[X]	[X]
Hospital of St John & St Elizabeth	[X]	[X]	[X]	[X]
King Edward VII's Hospital Sister Agnes	[X]	[X]	[X]	[X]
Spire	[X]	[X]	[X]	[X]
St. Anthony's Hospital	[X]	[X]	[X]	[X]
The New Victoria Hospital	[X]	[X]	[X]	[X]
Total Private hospitals	87	90	88	87
Imperial College Healthcare NHS Trust	[X]	[X]	[X]	[X]
Royal Free London NHS Foundation Trust	[X]	[X]	[X]	[X]
Royal Brompton and Harefield NHS Foundation Trust	[X]	[X]	[X]	[X]
The Royal Marsden NHS Foundation Trust	[X]	[X]	[X]	[X]
King's College Hospital NHS Foundation Trust	[X]	[X]	[X]	[X]
Guys & St Thomas Trust	[X]	[X]	[X]	[X]
NorthWest London Hospitals NHS Trust	[X]	[X]	[X]	[X]
EN Hertfordshire Trust	[X]	[X]	[X]	[X]
Total PPU's	13	10	12	13

Source: CC analysis.

Note: Total admissions include inpatient and day-case. Total revenue includes inpatient, day-case and outpatient.

39. The shares of supply results in Table 7 indicate that HCA's shares including hospitals and PPU's in Greater London are still high, particularly in terms of inpatient revenue. HCA has shares of supply, in this case, above 30 per cent by admissions (inpatient or total), above 40 per cent by total revenue and just below 50 per cent by inpatient revenue. BMI is the second largest operator after HCA and TLC is the third.

Disaggregate shares of supply

40. We also considered the shares of supply at a disaggregated level. This has been used to inform whether HCA's position is particularly strong in certain specialties or particular segments (such as the more complex specialties/treatments). It has also been used to inform the closeness of competition between HCA and its rivals.
41. In particular we analysed shares of supply:
- (a) In each specialty, including the more complex specialties such as cardiology and oncology (Table 8).
 - (b) Among hospitals that have beds for critical care level 3 (CCL3)—these hospitals may be those that undertake a more complex mix of treatments and/or specialties (Table 9).
 - (c) For tertiary treatments—these treatments require a referral from a consultant to another consultant, and may be interpreted as more complex treatments (Table 10).¹³

¹³ Our definition of tertiary treatments is based on information provided by Spire, which provided us with a list of tertiary treatments performed at their hospitals. Spire noted that there were a number of different approaches to defining tertiary care and that the provision of this information necessarily involved an element of subjective judgement by the individual Hospital Directors because there is no universally accepted definition of tertiary care and individual Hospital Directors may have different views on what amounts to tertiary care at their hospitals.

42. We present the results of our shares of supply analysis in relation to each of these segments below.

Individual specialties

43. Table 8 shows shares of supply by specialty, on the basis of total admissions, for central London providers.

TABLE 8 Central London shares of supply by specialty, 2011

	Total admissions						per cent
	HCA	TLC	BMI*	Bupa Cromwell	St John & St Elizabeth	Other private hospitals†	Specialty admissions as proportion of total admissions in central London
						PPUs‡	
Oncology	[X]	[X]	[X]	[X]	[X]	27.4	14.3
Trauma and orthopaedics	[X]	[X]	[X]	[X]	[X]	1.9	11.8
Gastroenterology	[X]	[X]	[X]	[X]	[X]	1.7	10.6
Obstetrics & gynaecology	[X]	[X]	[X]	[X]	[X]	12.1	7.6
General surgery	[X]	[X]	[X]	[X]	[X]	7.9	7.3
Cardiology	[X]	[X]	[X]	[X]	[X]	20.0	5.0
Plastic surgery	[X]	[X]	[X]	[X]	[X]	3.2	4.9
Urology	[X]	[X]	[X]	[X]	[X]	4.7	4.3
Ophthalmology	[X]	[X]	[X]	[X]	[X]	3.7	4.0
General medicine	[X]	[X]	[X]	[X]	[X]	18.7	2.4
Oral & maxillofacial surgery	[X]	[X]	[X]	[X]	[X]	1.5	1.6
Anaesthetics	[X]	[X]	[X]	[X]	[X]	1.9	1.5
Otolaryngology	[X]	[X]	[X]	[X]	[X]	8.5	1.4
Neurology	[X]	[X]	[X]	[X]	[X]	28.6	1.2
Clinical radiology	[X]	[X]	[X]	[X]	[X]	4.0	0.5
Dermatology	[X]	[X]	[X]	[X]	[X]	15.2	0.3
Rheumatology	[X]	[X]	[X]	[X]	[X]	4.5	0.1

Source: CC analysis.

*Data is not available for one BMI hospital for obstetrics and gynaecology, trauma and orthopaedics and urology. This hospital accounts for less than 1 per cent of total admissions in central London. Data is not available for one BMI hospital for ophthalmology and two BMI hospitals for dermatology. The missing data for each BMI hospital is estimated to be less than 0.5 per cent of its total admissions in central London.

†Other private hospitals include Aspen and King Edward VII's Hospital Sister Agnes. Data for Aspen is not available for ophthalmology and rheumatology. The missing data for Aspen is estimated to be less than 0.5 per cent of its total admissions in central London.

‡PPUs include those presented in Table 6. Data on admissions is not available for some PPU for some specialties. The missing data for the six PPUs combined is estimated to be around 3 per cent of all central London admissions.

Note: N/A = not available. Total admissions include inpatient and day-case admissions.

44. The analysis presented in Table 8 above shows that:
- (a) HCA has a share of over 60 per cent in specialties that might be considered more complex (oncology and cardiology);
 - (b) HCA has a share of over 55 per cent in the four largest specialties by admissions (oncology, trauma and orthopaedics, gastroenterology, obstetrics and gynaecology);
 - (c) HCA has a share over 40 per cent in 10 of 17 specialties considered;
 - (d) HCA has a share below 5 per cent in certain specialties (otolaryngology, dermatology) but these specialties are typically small segments of the market;
 - (e) TLC has a share of over 35 per cent in certain specialties (ophthalmology, oral and maxillofacial surgery, otolaryngology);

- (f) Aspen (not shown) has a share of over 50 per cent in plastic surgery;
- (g) individual PPUs (not shown) have a high share in certain specialties (eg The Royal Marsden has a share of [15-20 per cent] in oncology).

45. We can see that there are several providers in London offering most specialties. However, the providers' shares for each specialty show that HCA has a significantly stronger market position than other providers in many specialties. While not always the case, our analysis indicates that for a smaller number of specialties TLC has the highest share or the second highest share. The next highest shares are often represented by BMI or Bupa Cromwell. The disaggregated shares of supply by specialty are therefore largely in line with the results of aggregated shares of supply analysis.

Critical care level 3

46. Table 9 shows the shares of supply based on total admissions and total revenue considering only central London hospitals that have CCL3 beds. We note that these shares of supply include all treatments and specialties and not only those requiring CCL3.

TABLE 9 Central London shares of supply for hospitals with intensive care at critical care level 3, 2011

	<i>per cent</i>	
	<i>Total admissions</i>	<i>Total revenue</i>
HCA	[X]	[X]
TLC	[X]	[X]
The Bupa Cromwell Hospital	[X]	[X]
BMI	[X]	[X]
Total CCL3 private hospitals	83.2	84.3
The Royal Marsden NHS Foundation Trust	[X]	[X]
Royal Free London NHS Foundation Trust	[X]	[X]
Imperial College Healthcare NHS Trust	[X]	[X]
King's College Hospital NHS Foundation Trust	[X]	[X]
Royal Brompton and Harefield NHS Foundation Trust	[X]	[X]
Total CCL3 PPUs	16.8	15.7

Source: CC analysis.

Note: Total admissions include inpatient and day-case. Total revenue includes inpatient, day-case and outpatient.

47. Table 9 shows that, among those hospitals that provide critical care level 3, HCA has high shares of supply, over 50 per cent by total admissions and just below 60 per cent by total revenue. TLC has the next largest shares, at around [15-20 per cent] by total admissions and [15-20 per cent] by total revenue. Bupa Cromwell has the third largest shares at around [5-10 per cent], and the remaining operators have shares that are less than 6 per cent.

Tertiary treatments

48. Table 10 shows the shares of supply for tertiary treatments, on the basis of inpatient admissions and inpatient revenue, at central London hospitals.¹⁴

¹⁴ This analysis is conducted at the treatment level, therefore we calculated shares of supply on the basis of inpatient admissions and revenue (rather than total admissions and revenue).

TABLE 10 Shares of supply for tertiary treatments based on Healthcode data, 2011

	<i>% share of central London inpatient admissions</i>	<i>% share of central London inpatient revenue</i>
BMI	[X]	[X]
Guy's & St Thomas' Trust	[X]	[X]
HCA	[X]	[X]
Hospital of St John & St Elizabeth	[X]	[X]
King Edward VII's Hospital Sister Agnes	[X]	[X]
King's College Hospital NHS Foundation Trust	[X]	[X]
The Bupa Cromwell Hospital	[X]	[X]
TLC	[X]	[X]

Source: CC analysis.

Note: Treatment-level data not available for Aspen, Imperial College Healthcare, Royal Brompton and Harefield, Royal Free London, and The Royal Marsden. Shares of supply shown for providers may therefore be overstated.

49. Table 10 shows that HCA has shares of supply of tertiary treatments of over 60 per cent by inpatient admissions and over 70 per cent by inpatient revenue. The second largest provider, after HCA, is TLC, with shares of supply at [10-15 per cent].

Shares of capacity analysis

50. We considered four capacity measures: number of overnight beds, number of theatres, number of consulting rooms and number of critical care level 3 beds. In relation to PPUs' capacity dedicated to private patients, we used data from the Laing and Buisson's report¹⁵ on the number of NHS dedicated beds for PPUs; however, we did not find similar data for the other three measures of capacity. In relation to these, therefore, our analysis of capacity shares focuses on private hospitals only.
51. Table 11 below shows the shares of capacity of private hospitals, including in the case of overnight beds PPUs, in central London.

¹⁵ Laing & Buisson, Private Healthcare Market Review, 2011/2012.

TABLE 11 Shares of capacity of private hospitals in central London, 2011

	Overnight beds (including PPUs)		Theatres		Consulting rooms		Critical care beds level 3	
	Numbers	%	Numbers	%	Numbers	%	Numbers	%
<i>Aspen</i>								
Highgate Hospital	28	1.8	3	3.8	12	2.8	0	0
<i>BMI</i>								
Blackheath	69	4.3	4	5	21	4.9	0	0
Fitzroy Square	16	1.0	1	1.3	7	1.6	0	0
London Independent	58	3.6	4	5	10	2.3	6	7.1
Weymouth	10	0.6	4	5	0	0.0	0	0
Total BMI	153	9.6	13	16.3	38	8.8	6	7.1
<i>HCA¹⁶</i>								
Harley Street Clinic	104	6.5	4	5	51	11.9	20	23.5
Lister Hospital	74	4.6	4	5	31	7.2	2	2.4
London Bridge Hospital	111	7.0	7	8.8	56	13.0	8	9.4
Portland Hospital	87	5.5	4	5	39	9.1	3	3.5
Princess Grace Hospital	114	7.2	8	10	38	8.8	4	4.7
Wellington Hospital	226	14.2	11	13.8	20	4.7	20	23.5
NHS ventures UCLH	24	1.5						
Total HCA	740	46.5	38	47.6	235	54.7	57	67
St John & St Elizabeth	49 ¹⁷	3.1	5	6.3	36	8.4	0	0
King Edward VII's Sister Agnes	60	3.8	3	3.8	6	1.4	4	4.7
The Bupa Cromwell	118	7.4	5	6.3	29	6.7	7	8.2
TLC	170	10.7	13	16.3	74	17.2	11	12.9
Total private hospitals	1,318	82.8	80		430		85	
Guys & St Thomas Trust	43	2.7	N/A		N/A		N/A	
Imperial College Healthcare NHS Trust	106	6.7	N/A		N/A		N/A	
King's College Hospital NHS Foundation Trust	21	1.3	N/A		N/A		N/A	
Royal Brompton and Harefield NHS Foundation Trust	31	1.9	N/A		N/A		N/A	
Royal Free London NHS Foundation Trust	52	3.3	N/A		N/A		N/A	
The Royal Marsden NHS Foundation Trust	21	1.3	N/A		N/A		N/A	
Total PPUs	274	17.2						

Source: CC analysis.

Note: N/A = not available.

52. Table 11 shows that HCA operates around 47 per cent of all overnight bed capacity installed by private hospitals and PPUs in central London. The results for the other three capacity measures, which exclude PPUs, also show high shares. HCA's share of private hospital theatres is 48 per cent and its share of consulting rooms is 55 per cent. In the case of beds for critical care level 3, HCA has an even higher share, at 67 per cent. The second largest operator in terms of installed capacity is TLC, which accounts for 11 per cent of overnight beds, 16 per cent of theatres, 17 per cent of consulting rooms and 13 per cent of beds for critical care level 3. The third largest operator is BMI, which accounts for 10 per cent of overnight bed capacity, 16 per cent of theatre capacity, 9 per cent of consulting room capacity and 7 per cent of beds for critical care level 3.

¹⁶ HCA London Oncology Clinic (LOC) does not have theatres, overnight beds or critical care beds. In terms of consulting rooms, we have not included LOC in our analysis as it does not provide inpatient services. If we were to include LOC data, HCA's share of consulting rooms would increase by 1.1 per cent (54.7 to 55.8).

¹⁷ HCA argued that there were mistakes in our calculations as St John & St Elizabeth hospital has over 150 inpatient beds, each with their own private room, as stated on the hospital's website. We note that St John & St Elizabeth confirmed that only 49 out of the 155 beds mentioned on its website reflect those beds on-site which are used for inpatients requiring hospital treatment.

Vertical integration

53. HCA has ownership links with three GP practices that operate in central London. We have considered whether these ownership links may restrict or distort competition between hospital operators in central London. The concerns centre on the possibility that HCA-owned GP care facilities might refer patients predominantly, or disproportionately, to its own hospitals. This would limit the competitive constraint exerted on HCA by other hospital operators.¹⁸
54. We have considered the nature of the ownership links, HCA's incentives for making the acquisitions and the analysis HCA submitted to us on the potential effects of its vertical integration.
55. HCA has equity ownership in three GP practices. It owns 90 per cent of Roodlane Medical Limited (Roodlane),¹⁹ 70 per cent of Blossoms Healthcare LLP (Blossoms)²⁰ and 100 per cent of General Medical Clinics Plc (General Medical).^{21,22} Roodlane is based in four locations in central London and one location in Glasgow. Analysis of GP referrals to HCA hospitals that was conducted by BCG for HCA (as part of a high-level management overview) suggested that in 2010 Roodlane was the [X] of GP referrals.²³ HCA submitted analysis suggesting that [X] per cent of GP referrals to HCA hospitals may originate from Roodlane.²⁴ Blossoms has locations in central London, Birmingham and Edinburgh, and it is responsible for fewer GP referrals to HCA than Roodlane (it is ranked [X] in the list of referring GP practices). General Medical operates from four locations in central London. In addition, HCA licenses consultant rooms to a number of GPs who practice within some of its inpatient and/or outpatient facilities. HCA states that it has no ownership interest or rights in these GP practices.

Nature of the HCA agreements

56. HCA submitted that it did not impose any requirements or obligations on, or offer any incentives or inducements to, GPs to refer patients to HCA facilities. In particular we have been told by HCA that the agreements in place with Roodlane, Blossoms and General Medical contain no referral obligations or incentives, and that member doctors must act in the patients' best interests when recommending treatments and referrals.
57. HCA acquired its ownership interest in Roodlane in August 2011. We note that the original shareholders' agreement at Roodlane contained a general obligation on the part of the doctor shareholders concerned [X]. HCA told us that it and the doctors holding an equity stake in Roodlane entered into a deed of variation to this shareholders' agreement. The variation, dated 27 April 2012, stated that the doctor shareholders would exercise their own independent clinical judgement in the selection of appropriate treatments, facilities and hospitals and would not be subject

¹⁸ HCA noted that other hospital operators also offer or operate GP services in London, including Nuffield, BMI, Aspen, TLC and The Hospital of St John and St Elisabeth. Given the strong position of HCA relative to its competitors in central London, we focused our assessment of vertical relationships on HCA only.

¹⁹ Acquisition on 08/2011.

²⁰ Acquisition on 04/2012.

²¹ Acquisition on 07/2012.

²² We note that Roodlane Medical is a business name of Roodlane Medical Limited and General Medical Clinics Limited.

²³ HCA informed the CC that this analysis was subject to error and should not be relied on due to (a) the data not covering all patient records, (b) the fact that it included overseas patients, who may be more likely to use central London GPs, (c) the fact that the exercise manually matched GP names to GP practices and so could be prone to error, and (d) the analysis used data that was assumed to represent a referral rather than being based on actual referrals. We note these criticisms and that the analysis is not a precise reflection of actual referrals.

²⁴ This analysis also relied on a series of assumptions which may affect the robustness of this finding.

to the control or direction of HCA with respect to such judgements or the selection of hospitals.

Incentives for HCA acquisitions

58. We have also reviewed internal documents provided by HCA regarding the acquisitions and its incentives for making the acquisitions. HCA argued, in response to the annotated issues statement, that the acquisitions of Roodlane, Blossoms and General Medical were investments that expanded the scope of care to patients and that the key rationale for investing in primary care was driven by growth opportunities in the primary care sector, including a trend towards care being provided in a primary care setting rather than secondary care.
59. However, an internal document from HCA, on managed care outlook in 2009, indicates that one of HCA's incentives to acquire the GP practices was to protect its main referral sources from potential interventions by PMIs. In the document, HCA identified four main risks it faced with Bupa. One of the risks mentioned was 'Bupa attacks on HCA's key referral source: (General Medical Clinics, Blossoms, Roodlane, Bupa Wellness)'. In relation to these insurer interventions, HCA argued that such interventions had led to a lack of transparency over how referral decisions were being made by insurers (for example, whether they were being driven by cost factors over quality of care) and, in some cases, referrals being made to the wrong consultant specialist. HCA also highlighted that insurers such as Bupa and AXA PPP had a significant and growing presence in the primary care sector.

Scale of HCA's vertical integration

60. We analysed HCA's submission on the potential effects of its vertical integration. HCA told us that there were around [REDACTED] GPs (of which [REDACTED] were part-time) employed across the three GP practices and that there were [REDACTED] GPs with licence arrangements for the use of rooms within HCA's facilities. It also noted that not all of these GPs were based in London as some of the GP practices had sites located outside of London. HCA also provided two estimates relating to the number of total GPs that might be considered as relevant benchmarks:
- (a) BCG estimated in 2010 that there were approximately 9,000 (NHS and private) GPs that made referrals to HCA hospitals, and that approximately 2,000 GPs account for [REDACTED] per cent of HCA's referrals; and
- (b) research commissioned by the OFT in 2011 estimated that there were around 6,000 GPs in London.²⁵
61. Relative to these estimates of the total number of GPs either referring to HCA hospitals or present in London generally, the number of GPs with commercial links to HCA (either because HCA owns the GP practice or because the GP operates out of HCA facilities) is relatively small at between [REDACTED] per cent.²⁶

²⁵ The research by GHK states there are 42,540 GPs in the UK, of which 14 per cent are based in London.

²⁶ [REDACTED]

HCA analysis of referrals

62. HCA also submitted to us an analysis of referral patterns from HCA-owned GP practices to HCA before and after HCA acquisitions.²⁷ Table 12 shows the estimated referrals to HCA facilities as a proportion of total referrals at the GP practices.

TABLE 12 **Estimated referrals to HCA facilities as a proportion of estimated total referrals made by primary care facilities, all patients (inpatients, outpatients and day-case)**

	<i>per cent</i>					
	<i>Six months before</i>	<i>Six months after</i>	<i>Nine months before</i>	<i>Nine months after</i>	<i>12 months before</i>	<i>12 months after</i>
Roodlane	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
General	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Medical	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Blossoms	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: HCA analysis.

Notes:

1. Data in the table was not available for certain time periods because HCA acquired its ownership interest more recently than the period indicated.
2. N/A = Not available.

63. Table 12 shows that for Roodlane and General Medical, referrals to HCA represented [REDACTED]. At Blossoms, [REDACTED]. For all three GP practices, the analysis indicates that the referral rate to HCA has [REDACTED].

²⁷ [HCA response to the annotated issues statement.](#)

Parties' views

1. In this section we set out the views of hospital operators and PMIs regarding competition in central and Greater London and the competitive constraints faced by HCA in particular.
2. We received representations from most PMIs that there is a lack of competition in central London. However, in response HCA argued that it faced competition from other private hospitals in and around London as well as PPUs.
3. A detailed summary of the parties' views is provided under the following sections:
 - (a) London's distinguishing characteristics;
 - (b) closeness of competition in London;
 - (c) constraints that could prevent PMIs switching hospital provider—capacity;
 - (d) constraints that could prevent PMIs switching hospital provider—customer demand;
 - (e) the consequences of a dispute between HCA and an insurer; and
 - (f) redirection of policyholders away from HCA facilities.

London's distinguishing characteristics

4. Several parties argued that there were certain characteristics that distinguished private healthcare in central London. AXA PPP stated:

in our view central London has the features of a distinct market given the reputational draw of certain facilities and consultants, the fact that new technology will tend to be introduced in London before other locations and/or may only be justified in London due to the concentration of population and specialist consultants, the importance of London facilities to large corporate customers, and the fact that many customers living both within and outside London prefer to be treated within central London.

5. TLC stated:

In The Clinics opinion the central London Market for private healthcare has a number of features which distinguish it from private healthcare in other parts of the country. These include: a focus on acute care and complex and tertiary surgery (eg cardiac, neurosurgery and oncology services); world renowned consultants and facilities; a higher proportion of self-paying patients (including many overseas patients) and a patient population drawn from outside the local area; the presence of HCA and dominant local competitor; high capital and operating costs and limited opportunities for expansion in the immediate area.

Closeness of competition in London

Insurer views

6. PMIs argued that there was a relatively small cohort of close competitors in central London. In their view, hospitals outside central London, including Greater London and those on the fringes of London, did not provide enough of an alternative from their perspective to provide a constraint. PPU did not represent a close alternative.

Competition in central London

7. While accepting that other hospitals in London competed to some degree with HCA, AXA PPP argued that HCA overstated this competition. AXA PPP argued that hospitals in London could instead be split between 'elite' and 'non-elite' hospitals, elite hospitals being those that provided the strongest professional reputation for a broad range of treatments and which it believed were more important for its clients, though not necessarily 'must have' (see paragraph 42 in this annex for AXA PPP's definition of 'must-have' hospitals in central London). AXA PPP argued that the London hospitals could be divided along the following lines:

Elite London hospitals

Non-HCA

BMI Weymouth Street
BUPA Cromwell Hospital
Hospital of St John & St Elizabeth
King Edward VII's Hospital Sister Agnes
The London Clinic
Parkside Hospital (Acute)
Royal Marsden Hospital

HCA

Harley Street @ UCLH¹
Harley Street Clinic
Lister Hospital
London Bridge Hospital
Portland Hospital
Princess Grace Hospital
Wellington Hospital

London non-elite

BMI Fitzroy Square Hospital
BMI London Independent Hospital
BMI The Blackheath Hospital
BMI The Garden Hospital
Highgate Private Hospital
London Day Surgery Centre
London Radiosurgical Centre
St Anthony's Hospital

8. AXA PPP argued that for patients resident in central London competition was closest between the elite hospitals on this list. Based on defining an elite central London market according to the hospitals shown above, AXA PPP stated that [X] per cent of all the treatments in central London for patients living in central London that it funded occurred in these elite hospitals. AXA PPP also stated that [X] per cent of the treatment in the elite hospitals it funded occurred in HCA hospitals.

Competition from hospitals outside central London

9. Bupa argued that the fact that a number of patients travelled into central London for treatment did not mean that central London hospitals faced strong competition for these patients from hospitals on the periphery:

¹ PPU.

Commuting patterns into central London overstate the catchment areas over which central London hospitals 'compete'. A significant number of insured customers travel into central London every day to work. For these customers it may appear that hospitals closer to their home postcodes are possible alternatives for inpatient treatment. However, for many their local hospital may continue to be a weak alternative because they will begin their treatment journey with a consultant located inside central London who, being close to their place of work, is convenient to meet during the working day for the first consultation or diagnostic. Once the patient has met the consultant it becomes highly likely that they will receive inpatient care at a facility at which that consultant has practicing privileges. Therefore, while it appears that the patient has 'chosen' to have inpatient care inside central London (far away from their home postcode) this does not reflect the central London hospital being superior but rather that the patient was seeking convenient outpatient/diagnostic care inside central London.²

Competition from PPUs

10. AXA PPP argued that it did not consider most NHS PPUs in London to be significant competitors currently, noting that investment in these facilities had been variable, with many being little more than a private room in an NHS environment while others offered facilities more directly comparable with a private hospital. Moreover, as they shared clinical resources, such as theatres, with the NHS, this could mean that private patients' theatre lists had to wait behind NHS patients with higher clinical priorities and private surgery could get cancelled as a result. AXA PPP also suggested that specialists had a bias towards avoiding treating their private patients in the NHS facility they worked in. However, AXA PPP also stated that there was potential for a limited number of PPUs, notably those linked to prestigious hospitals, to remain or become significant competitors in the central London 'elite' market in the future (see paragraph 7 above for AXA PPP's description of elite hospitals). These are:

Charing Cross Hospital	Royal Brompton Hospital
Chelsea & Westminster Hospital	Royal Free Hospital
Guy's and St Thomas'	Royal Marsden Hospital (Fulham)
Hammersmith Hospital	St Bartholomew's Hospital
Harley St @ UCH	St Mary's—Lindo wing
Kings College Hospital	

11. AXA PPP, however, excluded a number of PPUs with strong but limited areas of specialism (such as the Great Ormond Street Hospital, Moorfields Eye Hospital and The Heart Hospital) since it considered that, from an insurer's perspective, in order to provide an effective alternative to HCA they would, even taken together, need to provide a much broader range of specialism than they did today.

² HCA disagreed with Bupa's view. HCA argued that there might be a convenience factor in taking an outpatient appointment close to the commuter's workplace, however, patients may prefer to be admitted into a hospital which is close to family and friends, unless there is a more compelling competitive offering. HCA argued that [§] view reported in paragraph 26 in this annex confirms this. HCA added that Bupa's open referral policy and other evidence suggest that patients are not tied to central London. For example, Bupa's Open Referral Q&A leaflet states that 'Generally, our members prefer to see a consultant close to their home address as 70 per cent of all BUPA outpatient appointments lead to surgery and 70 per cent of these are in the same location as the outpatient appointment' and Bupa's minutes mention that 'there would be potential benefits if its policyholders could be encouraged to have treatment outside Central London'. Finally, HCA added that its experience with its outpatient facilities outside Central London confirmed this.

12. While AXA PPP believed that these hospitals had the potential to develop as stronger competitors, it had particular concerns that HCA might inhibit this development by bidding to run the facilities itself. AXA PPP noted that NHS Trusts which outsourced management of their private facilities were attracted to bidders who were likely to generate the most income for the Trust, which it suggested tended to be the high-charging providers such as HCA. It cited the example of HCA's plan to take over Guy's and St Thomas' PPU which could otherwise emerge as a competitor to the London Bridge.
13. WPA noted that with the exception of hospitals such as the Royal Marsden, which were slightly unusual because they were world-renowned centres, it did not regard PPUs as viable alternatives to private hospitals. It also expressed a concern that when HCA took over the running of an NHS PPU they tended to be much more expensive.
14. Aviva also argued that PPUs were not currently a competitive constraint on private hospitals and often did not feel like a private hospital experience. It noted, however, that this might change with the lifting of the private patient cap as hospitals might start to set them up differently.³ The exception it noted in London was the good reputation of Guy's, which it thought HCA had expressed an interest in running. Aviva did also note that in the case of some complex surgery a consultant may recommend the use of a PPU due to the availability of NHS intensive care facilities.

Hospital views

15. HCA argued that London was one of the most competitive parts of the UK. There were a significant number of competitors in both central London and Greater London, including private hospitals and PPUs with a world-class reputation, which represented a competitive constraint.

Competition in central London

16. As regards its 'main competitors' in central London, HCA stated:

I think that in central London the private hospitals are, of course, London Clinic and Cromwell. They are probably the most formidable competitors that we face. We also have King Edward VII, St John and Lizzies and the BMI hospital, the London Independent. There are six of those private hospitals in the central London area that are our main competitors.
17. HCA also identified NHS PPUs as a second group of competitors in central London that it thought were very competitive.
18. TLC argued that, including itself, competition for private patient activity in central London was primarily concentrated within 11 central London private (ie non-NHS) hospitals. This includes six HCA hospitals,⁴ three charitable hospitals (TLC, the Hospital of St John and St Elizabeth and the King Edward VII's hospital) and two others (Bupa Crowell Hospital and BMI Weymouth Clinic). TLC also argued that

³ Under the Health and Social Care Act 2012 NHS foundation trusts will be able to earn up to 49 per cent of their income from private patients, a significant increase from the current cap.

⁴ HCA 1. The Wellington 2. Harley Street Clinic 3. The Portland 4. Princess Grace 5. London Bridge Hospital 6. Lister Hospital.

‘there are seven elite hospitals in London’ and that this consisted of TLC (one hospital) and HCA (six hospitals).⁵

19. However, [X].

Competition from hospitals outside central London

20. HCA argued that hospitals outside central London competed strongly for its patients. It suggested that there was a higher propensity to use public transport in and around London, and evidence from the National Transport Survey⁶ showed that Londoners were prepared to travel longer for healthcare services than individuals in other parts of the country. HCA told us that it could and did not distinguish, in its pricing or other aspects of its offering, between patients in central London and patients in Greater/Outer London postcodes. Therefore, in its view, the alternative hospital choices available to a large portion of HCA’s customer base located outside central London necessarily influenced HCA’s competitive behaviour in a way that improved outcomes for all HCA’s customers regardless of where they are located.
21. In addition to the hospitals in central London that HCA identified as its main competitors and central London NHS PPUs, HCA also identified hospitals around the edge of London as a third group of competitors. The final group of competitors HCA identified were international hospitals in other healthcare destinations such as Germany, the USA, Singapore and Thailand, which competed for international patients.
22. When discussing how effective a competitor it was, [X] noted that the extent it could compete with hospitals in central London had to be considered on a procedure-by-procedure basis. In this regard [X] stated:

We can credibly compete with the comparable offer in London and, where we have more complex offers in certain hospitals, [X], on those service lines we can effectively compete. We do not compete on a broad band basis at each of those individual hospitals for all of the services that the London hospitals offer.

23. [X] noted that it considered HCA was a strong competitor as many patients who lived in the outer area of London opted to be treated in central London in HCA hospitals. It suggested that this was often commuters but also patients who were not regular commuters into London that chose to be treated in central London. [X] also noted that the OFT’s view [X], was that analysis of patient postcodes suggested that HCA was a strong competitor in what might otherwise be regarded as these hospitals’ primary catchment. [X] view was that this applied all the way around London.
24. [X] noted that it could not compete for patients located in central London that wanted to be treated in central London. However, it identified two other groups it was seeking to attract:

In the kind of Greater London space there are about 5 million people. They have a choice to make. They can move out of London or into London and we would like to equip our hospitals on the periphery to be able to attract some of those. Then we have the 1.6 million commuters

⁵ TLC response to annotated issues statement, p1

⁶ www.gov.uk/government/organisations/departments-for-transport/series/national-travel-survey-statistics.

that come into London every day to work and then go back out. Many of them pass our [REDACTED] sites.

25. However, [REDACTED] also noted that although patients would travel for surgery, they would not travel for a consultation and a lot of consultations happened 9 am to 8 pm Monday to Friday. [REDACTED]
26. [REDACTED] explained that it had tried to put outpatient consulting rooms in central London ([REDACTED]) as a way to attract patients to the [REDACTED]. However, this was not a success.
27. When asked why it thought PMIs were not doing more to encourage patients to be treated in outer London facilities, Aspen noted that traditionally there had been an aura around Harley Street. Also, the insurance companies had found it difficult to direct patients to outside central London: 'I suspect that it's not that easy for them to openly direct. They have tried via various networks etc, but have never been able to do it to any great extent, to our knowledge.'
28. HCA stated that it competed for patients located outside of London. It also stated that these hospitals primarily competed for local patients: 'in the south east (outside Greater London) there are 44 independent hospitals operated by seven different organizations. These providers primarily compete for local consumers who may choose a London provider as an alternative'.

Competition from PPUs

29. HCA argued that central London PPUs represented strong competitors. It noted that although some of these facilities were 'niche' players, these hospitals often had global reputations (eg the Royal Marsden and Great Ormond Street). HCA also stated that other hospitals, including, among others, the Royal Free and the cluster of PPUs operated by Imperial and Kings College Healthcare Foundation Trust, offered a broader range of services which overlapped with its own services. It noted that the most significant competitive threat came from PPUs' expertise in high-acuity tertiary specialties.
30. HCA also argued that PPUs in London, as well as already being a significant competitor to private hospitals, represented a 'sleeping giant' of potential competition that had yet to be fully realized, and which 'poses a serious threat to the continued existence of non-NHS private healthcare providers'. HCA commented that not all PPUs were as competitive as they might be. However, when it had gone into partnership with UCH, it had been able to increase its market share, suggesting that PPUs could be more formidable competitors. HCA said that it was looking for more partnerships, provided the proposed joint venture was consistent with HCA's objective and strategy. It noted that the fact that PPUs were now partnering with private providers was 'double edged', as on the one hand it represented an opportunity, but on the other a threat, if competitors partnered with the PPU. Although PPUs currently accounted for less than 10 per cent of inpatient and day-patient admissions in London, HCA's expectation was that this would [REDACTED] over the next five years.
31. HCA also provided a comment on an Aviva comment, pointing out that a number of PPUs were included on Aviva's 'Key List' of hospitals, suggesting that Aviva must therefore regard these PPUs as directly competing alternatives. HCA also pointed out that Aviva sold a 'Trust Care' product, demonstrating that an insurer could develop a low-cost product based exclusively on PPUs. HCA also made the point that central London PPUs were included in policies sold by Bupa, AXA PPP and PruHealth that did not include all HCA hospitals.

32. However, TLC argued that the London PPUs were not close competitors because they did not offer comparable services to central London private hospitals:

PPUs by definition operate as part of an NHS Hospital and thus are unable to accommodate consultants working for other NHS Trusts or private hospitals. The service they offer also falls below that expected at private hospitals both in terms of the 'customer experience' but also access to dedicated facilities on a timely basis. The weakness of competition from PPUs is most marked in relation to tertiary [care] of PMI funded patients (eg specialist oncology treatment) which is dominated by HCA with The [London] Clinic and the other private hospitals taking a smaller share.

33. In response to questions about PPU capacity, Kings College Hospital NHS Foundation Trust noted that there were 18 theatres and 72 Level 3 critical care beds across the trust. Priority is given to NHS patients so that NHS care is not compromised. The PPU access to these facilities is flexed accordingly.

Constraints that could prevent PMIs switching hospital provider—capacity

Insurer views

34. PMIs argued that one of the reasons they were in a weak position when negotiating with HCA was that they would need to find alternative capacity to absorb their patients were they to delist HCA.
35. AXA PPP tried to estimate the impact of delisting HCA (see paragraph 56 below). This modelling assumed that redirecting treatment to other hospitals was feasible, but noted that it would need to redirect [X] patients and it did not know if there would be available capacity in practice.
36. We also found some evidence from Bupa internal documents to suggest that it had considered this. In preparing for its recent negotiation with HCA, Bupa discussed this issue:

Removing HCA completely from the BHW networks would require alternative provision to be found elsewhere ...

[X]

37. When planning for its negotiation with HCA in 2010, Bupa noted that HCA had a particularly strong position in some specialties in London, such as [X]. It also noted that HCA was able to attract and retain consultants who practised in [X], since there were few private patient alternatives available for these doctors to use. AXA PPP noted that of the patients living in central London having treatment in the elite hospitals, [X] of the 'complex stays' occurred in an HCA facility.

Hospital views

38. TLC also suggested that there might be capacity constraints that would stop an insurer delisting HCA:

I think the difficulty for insurance companies is if they were to exclude HCA from their network, it would be difficult for all of that work to be absorbed by any one or two other providers. So that makes it difficult.

... we need to be competitively priced in order to keep in those networks. So although we couldn't absorb all the work HCA do, if we were excluded from insurer networks they could absorb all the work that we do.

39. HCA noted that the number of competitors changed as acuity increased. However, it stated that hospitals did not necessarily require level 2 or level 3 critical care support to do high-acuity work, due to the ability to transfer patients to the NHS if necessary.
40. When asked whether it considered that there would be enough capacity at rival hospitals were an insurer to exclude HCA for any reason, particularly for high-acuity or specialist services, HCA responded that it thought that there would be. It did, however, note that this would depend on the 'elasticity of supply' at rival hospitals such as PPUs, which in the short term it recognized could be quite low. HCA noted that this was not something it had ever had to consider or put to the test.

Constraints that could prevent PMIs switching hospital provider—customer demand

Insurer views

41. PMIs also suggested that one of the challenges they faced when negotiating with HCA was that it would be extremely difficult to delist HCA, even for a short time, due to the demands of customers, in particular corporate customers which wished to retain access for their policyholders.
42. AXA PPP argued that a PMI policy purporting to offer a full network that only included one of the seven core London hospitals would not be seen as a credible policy. In its view, professional groups based in London required access to these hospitals in their PMI policies.

Within London, certain hospitals are clearly 'must have' for servicing Corporate Customers which have employees in the south-east. Another advantage is that senior decision-makers are often based in London and have a desire to achieve the 'best' access for themselves.

We defined the 'must have' private hospitals as comprising those healthcare facilities offering the strongest professional reputation for a broad range of treatments and those which we believe are a 'must have' for our large corporate clients. We believe there to be seven such facilities, six of which are owned by HCA in addition to the London Clinic.

43. Bupa emphasized that its [REDACTED].
44. Bupa argued that measures such as network LOCI would underestimate HCA's market power [REDACTED].
45. Aviva also stressed that its largest corporate clients in London had all chosen products that allowed access to HCA facilities. It said that corporate clients regarded HCA hospitals as must have. It contrasted HCA's position with that of TLC, which would not be in the same position as HCA in a negotiation and offered lower prices accordingly (which meant it was listed on Aviva's standard 'Key' network). In practice, Aviva felt that its options in London were very limited and HCA had a monopoly over the areas it specialized in.

46. PruHealth noted that the corporate market was largely intermediated and brokers often insisted that their clients had access to HCA hospitals.
47. When planning for its ongoing negotiation with HCA, Bupa analysed demand for HCA services from corporate customers, noting that a number of large corporate customers had a strong preference for its services.

The majority of the spend with HCA comes from BHW [Bupa Health & Wellbeing] corporate clients with [redacted] of their BHW revenue coming from [redacted] of BHW's corporate clients ...

[redacted]

48. Bupa also analysed the share of its corporate spending with different HCA hospitals (Figure 1). This suggested that the [redacted] accounted for a significant proportion of this.

FIGURE 1

Bupa spend at HCA hospitals

[redacted]

Source: Bupa.

49. Aviva argued that it could not tie back the prices charged by HCA to differentiated quality outcomes or service it provided to its customers.

Hospital views

50. HCA argued that the CC survey of corporate PMI holders did not support the view that London corporate customers required access to HCA hospitals.
51. While HCA agreed that there was a high level of corporate penetration in London and the South-East, it suggested that this gave Bupa additional bargaining power as the Bupa share of corporate PMI policies was particularly high.
52. HCA also argued that any perception that its facilities were strongly demanded by PMI clients simply reflected the quality of the service HCA provided. HCA stressed that many of its hospitals were centres of excellence which offered some of the most advanced treatments in the UK (including the NHS) and international reputations in key specialisms. It suggested that this was accepted by BUPA:

We ask them this question almost every time we meet now ... Why do you think that with 29 per cent of the beds we are getting more than 29 per cent of your customers coming in? Essentially, they say that it is because you run really good hospitals. We say that, yes, we think that that is how it should be.

53. [redacted] also noted that HCA had excellent quality hospitals which operated a high level of complexity.

The consequences of a dispute between HCA and an insurer

Insurer views

54. PMIs argued that the lack of alternatives and the various constraints on switching provider meant that it would be very costly were they to remove HCA from their network, leaving them in a weak negotiating position.
55. AXA PPP provided analysis which purported to show the impact of delisting HCA on its business. AXA PPP noted that it would make significant savings if it was able to direct patients to alternative facilities. However, it would face a significant price increase for any patients who continued to be treated at HCA facilities (which it estimated would be a [REDACTED] per cent increase if prices were increased to rack rate). AXA PPP estimated that there would be at least [REDACTED] per cent of patients that it would not be able to redirect to other hospitals, even in the medium term.⁷ Based on a steady state (ie not taking into account increased lapses due to HCA being omitted from the network), AXA PPP estimated that it would lose [REDACTED] in the first year, and would need to redirect [REDACTED] per cent of the treatment in future years to break even on an annual basis.
56. However, if HCA was excluded from the AXA PPP network, AXA PPP argued that it would need to reduce its premiums to retain business, particularly in the London region. AXA PPP also believed that in practice it would lose a significant volume of customers to other PMIs (many of which would continue to use HCA facilities). AXA PPP provided the results of its modelling to show the effect on its business, depending on the extent of any reactions from corporate customers. As set out in Table 1, AXA PPP argued that it would lose between [REDACTED] and [REDACTED] in the first year, [REDACTED].

TABLE 1 [REDACTED]

[REDACTED]

Source: [REDACTED]

-
57. A 2010 internal Bupa document setting out internal thinking as it prepared for negotiations with HCA summarizes [REDACTED].
58. Discussing upcoming negotiations with HCA, minutes from the Bupa board meeting cite Bupa's then Managing Director explaining that [REDACTED].
59. As can be seen in Figure 2, analysis conducted by Bupa's advisers helping it prepare to enter into its most recent round of negotiations during 2012 suggest that Bupa thought it would be able to redirect [REDACTED].

FIGURE 2

Bupa analysis of delisting HCA

[REDACTED]

Source: Bupa.

⁷ [REDACTED]

FIGURE 3

Bupa analysis of delisting on corporate clients

[REDACTED]

Source: Bupa.

60. Figure 4 is another presentation prepared in 2012 by Bupa's advisers to assist preparations for Bupa's most recent negotiations with HCA. This evaluates where demand for HCA services derives, and shows which Bupa clients spend the most at HCA. This also shows what proportion of the company's overall spend HCA represents.

FIGURE 4

Bupa 'top 20' corporate spend with HCA

[REDACTED]

Source: Bupa.

Hospital view

61. HCA argued that PMIs were in a strong bargaining position and the size of PMI provider was an important determinant of the scale of discounts it received, with Bupa in particular able to negotiate significant discounts.
62. HCA argued that it faced a 'critical dependency' on the revenue stream of the top four PMIs, which accounted for 90 per cent of the PMI market. Bupa and AXA PPP, in themselves, accounted for two-thirds of the PMI market, and their bargaining power was commensurately higher. Bupa accounted for [REDACTED] per cent of HCA's total revenue and Bupa and AXA PPP collectively accounted for [REDACTED] per cent of its total revenue. HCA stated:

In short, failing to be recognized by a top four PMI provider, particularly BUPA and AXA PPP, can threaten the financial viability of a facility by limiting the volume of patients that can be admitted for treatment. This effect is significantly multiplied by the consultant drag effect, whereby consultants prefer to treat their patients at a single facility, and faced with a split list, choose to exit that facility altogether.

63. HCA noted that its success was dependent on being recognized by the major PMIs. While it thought the PMIs could potentially live without HCA, it could not live without them.
64. HCA also argued that in tandem with the above effect, failing to be recognized by any PMI provider represented a serious reputational risk for hospital operators.
65. HCA stated that while it had a relatively high proportion of international patients, it would not easily be able to increase the revenues of these patients to fill any spare capacity as a result of AXA PPP (or indeed any other PMI provider) delisting HCA facilities.
66. HCA also argued that even smaller PMIs had been able to secure significant discounts from it, noting that Aviva was building an increasingly strong position with

London corporate subscribers, and major corporate customers included [REDACTED]. In HCA's view, [REDACTED] had secured substantial discounts from itself, [REDACTED] which effectively extended [REDACTED] discount for large corporate clients to [REDACTED] per cent. These discounts were in recognition of [REDACTED] growth and increasingly important position in the London corporate market. As they grew even small PMIs were able to get substantial discounts.

67. HCA also argued that aside from a threat to 'delist' its facilities there were other ways by which PMIs asserted their leverage. For example, HCA noted that if PMIs refused to approve new 'innovative' treatments, this could undermine investment in new equipment or procedures. HCA said that PMI providers were in a position to constrain how hospital operators expanded and invested in new facilities and were often resistant to recognizing new facilities where they perceived that there was already sufficient capacity in a given area. HCA told us that the use of service line tenders was now a long-established tactic PMIs used to drive down prices.

Redirection of policyholders away from HCA facilities

Insurer views

68. PMIs argued that it was difficult actively to direct policyholders away from HCA facilities towards cheaper facilities. Moreover, contractual clauses HCA had with Bupa and AXA PPP may make it more difficult to price insurance policies in such a way as to signal that HCA facilities were more expensive than other hospitals.
69. The clearest example of this type of clause was in the most recent contract with [REDACTED]
70. [REDACTED]
71. In setting out its objectives for the negotiation, [REDACTED] explained why it wanted to remove the clause: [REDACTED]
72. In further internal preparations for the negotiation, [REDACTED]. It stated that the 'nub of the problem' was that it wanted to be able to create networks which gave customers the choice over what they would pay for—and ensure that the price of the products reflected the underlying cost of provision. Customers could then exert pressure on providers to deliver value.
73. [REDACTED]. Although it did not prevent [REDACTED] from introducing new policies, neither was it tied to how much [REDACTED] spent with HCA, but instead [REDACTED].
74. Aviva currently only included HCA on its premium 'Extended' hospital list but not on its more widely-sold 'Key' hospital list. It noted that it priced its policies on a postcode-by-postcode basis with a focus on winning business in areas of the country where it felt it got competitive prices from hospitals. Aviva said that some years ago it tried to increase its volumes significantly in London and wrote policies for big corporates like [REDACTED] to increase its volume. However, it claimed that it did not see a notable difference in price with HCA, which continued to increase. At this stage it decided not to try to compete for SME and individual policyholders in London and decided to separate HCA hospitals from the other London hospitals so it was clear to all of its customers that there was a premium for them, over and above the other hospital groups.
75. Aviva also noted that while it had not seen a significant number of its large corporate policyholders taking policies that did not include HCA, it was starting to have conver-

sations with corporate customers about how they could reduce their spend in London.

Hospital view

76. HCA argued that the fact that Aviva sold a policy which included access to most of the central London independent hospitals and the main PPUs but not HCA was an example of how PMIs could exercise real negotiating leverage. It noted that on Aviva's website the 'Key' hospital list was offered as the standard default option. HCA told us that Aviva had informed it that this accounted for [REDACTED] policyholders in London with a treatment value of £[REDACTED]. This, HCA suggested, was a real example of an insurer 'delisting' HCA on a mainstream PMI product.
77. [REDACTED]
78. HCA also questioned a comment made by AXA PPP that AXA PPP network products 'may be acceptable to a small sub-set of customers' only. HCA believed that both Bupa and AXA PPP had significant lower-cost network products which were increasingly diverting business away from London providers.
79. HCA argued that all of the PMIs sold products that did not include HCA. It suggested that there was no shortage of consumer choice for a network product which was not HCA hospitals. However, HCA commented that when consumers were given a choice, they liked to go to its hospitals.
80. HCA stated that the clauses in its contract with [REDACTED], had not prevented [REDACTED] from introducing and marketing its [REDACTED] policies to corporate clients in London. Furthermore, HCA had not sought to enforce this clause to prevent or restrict [REDACTED] from launching [REDACTED] policies, such as [REDACTED].
81. HCA said that the clause [REDACTED]. However, this provision had never been enforced, nor had [REDACTED], rendering the provision redundant.
82. [REDACTED] explained that it had seen Bupa's algorithms at work in its call centre and these did not appear to recommend that Bupa patients in London use its facilities. On this basis, [REDACTED] inferred that the reason for this must be some contractual restrictions that stopped certain PMIs from referring or directing patients away from HCA. [REDACTED] also argued that there was a difference between creating an incentive for PMIs to allocate or direct work to a hospital and any absolute prohibitions or restrictions on PMIs' ability to direct it anywhere else.

Hospital list in central London

<i>Operator</i>	<i>Hospital name</i>	<i>Private hospital/PPU?</i>
Aspen	Highgate Hospital	Private hospital
BMI	Blackheath	Private hospital
BMI	Fitzroy Square	Private hospital
BMI	London Independent	Private hospital
BMI	Weymouth Hospital	Private hospital
HCA	Harley Street Clinic	Private hospital
HCA	Lister Hospital	Private hospital
HCA	London Bridge Hospital	Private hospital
HCA	London Oncology Clinic	Private hospital
HCA	NHS Ventures UCLH	PPU
HCA	Portland Hospital	Private hospital
HCA	Princess Grace Hospital	Private hospital
HCA	Wellington Hospital	Private hospital
Hospital of St John & St Elizabeth	Hospital of St John & St Elizabeth	Private hospital
The Bupa Cromwell Hospital	The Bupa Cromwell Hospital	Private hospital
The London Clinic	The London Clinic	Private hospital
King Edward VII's Hospital Sister Agnes	King Edward VII's Hospital Sister Agnes	Private hospital
Guys & St Thomas Trust	Guy's Nuffield House	PPU
Guys & St Thomas Trust	St Thomas	PPU
Imperial College Healthcare NHS Trust	Queen Charlottes & Chelsea Hospital (including Robert & Lisa Sainsbury Wing)	PPU
Imperial College Healthcare NHS Trust	The Lindo Wing	PPU
Imperial College Healthcare NHS Trust	The Thames View	PPU
King's College Hospital NHS Foundation Trust	King's College Hospital NHS Foundation Trust	PPU
Royal Brompton and Harefield NHS Foundation Trust	Brompton	PPU
Royal Free London NHS Foundation Trust	Royal Free Private Patients	PPU
The Royal Marsden NHS Foundation Trust	Private Care Chelsea	PPU

Source: CC analysis.

Note: There are nine HCA facilities in central London that do not provide inpatient services but are operated in conjunction with one of the seven HCA private hospitals in central London. These facilities are: The Harley Street Clinic's Cancer Centre, The Harley Street Clinic Outpatient Diagnostic Centre, Cyberknife at Harley Street Clinic, Wellington Diagnostic and Outpatient Centre, 30 Devonshire Street, Chelsea Outpatient Centre, Platinum Medical Centre (PMC), Leaders in Oncology Care at PMC, and Sarah Cannon Research Institute. We have included these facilities in our shares of supply as follows. As none of these facilities provides inpatient care, they have not been included in the shares of supply by inpatient admissions or by inpatient revenue. As all these facilities provide either day or outpatient care, all have been included in the aggregate shares of supply by total revenue. Only those facilities providing day-patient care have been included in our shares of supply by total admissions, either at the aggregate level or by specialty. These facilities are The Harley Street Clinic's Cancer Centre, PMC, and Leaders in Oncology Care at PMC.

Hospital list in Greater London

<i>Operator</i>	<i>Hospital name</i>	<i>Private hospital/PPU?</i>
Aspen	Parkside Hospital	Private hospital
BMI	Bishops Wood	PPU
BMI	CCH	Private hospital
BMI	Cavell (aka Enfield)	Private hospital
BMI	Chelsfield Park	Private hospital
BMI	Coombe Wing	PPU
BMI	Kings Oak	PPU
BMI	Shirley Oaks	Private hospital
BMI	Sloane	Private hospital
BMI	The Garden	Private hospital
EN Hertfordshire Trust	Mount Vernon Cancer Centre	PPU
HCA	NHS Ventures—Queens	PPU
North West London Hospitals NHS Trust	Northwick Park & St Marks Hospitals	PPU
Royal Brompton and Harefield NHS Foundation Trust	Harefield	PPU
Spire	Roding Hospital	Private hospital
St Anthony's Hospital	St Anthony's Hospital	Private hospital
The New Victoria Hospital	The New Victoria Hospital	Private hospital
The Royal Marsden NHS Foundation Trust	Private Care Sutton	PPU

Source: CC analysis.

National negotiations

Introduction

1. This appendix reviews evidence provided by both hospital operators and PMIs relating to how they negotiate and their respective strengths and weaknesses in national negotiations. Although negotiations between PMIs and hospital operators take place at a national level, it has been suggested by PMIs that the degree of local competition between hospitals plays an important role. Our ToH3 in the annotated issues statement hypothesized that private hospital operators have market power in these negotiations and that this is likely to derive, at least in part, from the hospital operator's market power in certain local areas and the scale of its set of hospitals. As a result, the more hospitals with local market power that a hospital group has, the stronger its negotiating position and the better the overall price it can extract.
2. In response to the market questionnaire, hospital operators and PMIs provided a very large number of documents including internal documents relating to their negotiations. Key evidence identified in our review of these documents is presented below along with views of relevant parties made in submissions and hearings.

Structure of appendix

3. We have received submissions from PMIs and hospital operators setting out many factors that they argued could influence the outcome of a negotiation. Each set of bilateral negotiations is going to be different and the outcome will depend on the identity of the PMI and the hospital operator involved. This appendix considers the key factors we identified as part of our review of negotiations between the main hospital groups and PMIs that are likely to most affect the outcome of those negotiations, in particular:
 - (a) the importance of local factors to national negotiations, specifically whether there are hospitals in particular locations that, given their characteristics, are 'must have' for a PMI and the role this plays in national negotiations;
 - (b) the extent to which PMIs can control where patients are treated and can switch demand to other providers (ie improve their own outside position and weaken the outside option of hospital). This includes:
 - (i) use of networks:
 - the credibility and consequences of a threat by a PMI to delist hospitals from its networks. From a PMI's insurer's perspective this is closely tied to the question of 'must have' hospitals considered in (a). This section considers the effect on both hospitals and PMIs;
 - adjusting the composition of individual networks; and
 - strategic recognition of new facilities/services;
 - (ii) steering patients: the use of guided referrals to direct policyholders to specific hospital operators;

- (iii) service-line tenders: increasing competition between hospital operators for individual treatments; and
- (iv) sponsoring new entry; and
- (c) the extent to which the relative size and financial strength of parties influences the outcome of a negotiation.

Bargaining framework

Parties' views

4. HCA argued that the CC's bargaining assessment was inconsistent with economic theory because it had largely ignored the effects on negotiating parties in a temporary dispute.¹ HCA submitted that in addition to the CC understating the alternatives available to PMIs and overstating those available to hospital operators, it carried out the assessment of these outside options incorrectly at provisional findings. This was because, in HCA's view, the CC largely focused on the effects of a permanent breakdown in negotiations, rather than a temporary one.² HCA submitted an alternative theoretical model for the bargaining analysis in order to argue that the bargaining outcome depended not only on parties' outside options in the case of a permanent breakdown in negotiations but also on parties' 'inside options' in the case of a temporary breakdown in negotiations.
5. BMI's response to provisional findings focused on Bupa only and contended that Bupa did have full countervailing power with regard to BMI.³ BMI's principal arguments were that (a) bargaining strength should be assessed in terms of the impact of full or partial delisting by Bupa, and (b) the evidence demonstrated that Bupa had far superior outside options compared with BMI in relation to all BMI hospitals and was aware of this; hence why it was able to delist BMI hospitals in 2012 and was willing to resort to delisting to achieve its objectives.
6. BMI argued that Bupa was able, and prepared, to delist BMI's hospitals for sufficient time that the result was that BMI must either concede to Bupa's demands [38]. In BMI's view, bargaining power was about using a strategy to force a favourable outcome in negotiations and not about which hospitals were dispensable in the medium or longer term. Therefore, BMI considered that the CC misinterpreted its own test.⁴

Hospital-PMI negotiations in practice

7. There is normally a principle contract that governs the relationship between a hospital and PMI. In the case of the smaller PMIs, this is often a loose annual agreement that is focused on the price of particular services. In the case of the larger PMIs, this is usually a more detailed multi-year contract (often referred to as a Hospital Agreement Plan (HAP)) that along with prices sets a number of detailed conditions. In some cases this may be augmented by smaller separate agreements covering a specific policy of the PMI (for example, a low-cost network product) or specific services.

¹ [HCA response to provisional findings](#), paragraph 7.

² *ibid*, paragraph 7.62.

³ [BMI response to provisional findings, Annex 3 Bargaining and Insurer Negotiations](#), paragraph 1.2.

⁴ *ibid*, paragraph 4.33.

8. The principal mechanism used by PMIs to control access to hospitals by policyholders is through their hospital networks. When a customer signs up with a PMI the terms of the policy will list a network of hospitals they are allowed to use. When a hospital is included on a PMI's network, this means that the PMI has committed to allow their policyholders to be treated at that hospital. An agreement between the PMI and hospital fixes the level of the fees and terms of service (eg quality standards) and in return the PMI will add the hospital to its network.
9. Our review of the documents indicates that during negotiations, hospitals seek the broadest possible recognition and assurances that they will have access to as many patients as possible, with the PMIs seeking to trade this for the lowest possible price. The more patients that the PMI can credibly deliver, or withhold, the stronger its negotiating position is likely to be. It is the ability to exclude a given hospital or hospital group from its network(s) that will give the PMIs their main lever in negotiations.

Local competitive conditions and 'must-have' hospitals in national negotiations

10. This section considers the importance of local factors such as the degree of local competition in national negotiations. It reviews the views of the parties and internal documents in relation to the question of whether there are hospitals in particular locations, with certain characteristics, that are considered as 'must have' by PMIs and the extent that this may provide a hospital operator with any degree of leverage in a negotiation.

Views of the parties on local competitive conditions and 'must-have' hospitals in national negotiations—PMIs

11. Several of the PMIs argued that their negotiating position was driven by the nature of each hospital operator's portfolio of hospitals—in particular, the number, where they were located and the competitive conditions in each local area. In their view, ownership of key hospitals in locations that PMIs required access to in order to offer a credible insurance product to customers, in particular corporate customers, provided hospitals operators with a degree of negotiating leverage:
 - (a) Bupa argued that where a hospital was located in an area with no, or a very limited number of, rival hospitals located nearby (or where the rivals lacked sufficient capacity or key specialisms) the hospital was 'must have' in order to serve policyholders in that area. It stated that its analysis, which identified hospitals that either dominated treatments in an area (with over 80 per cent of Bupa's claims activity) or did not have a rival within a 30-minute drive-time, showed that [REDACTED] of BMI's hospitals were 'must have'; it also thought [REDACTED] and [REDACTED] owned a significant number of must-have hospitals. However, Bupa said that a hospital operator's bargaining power stemmed not just from the number of must-have hospitals within that operator's portfolio but also the importance of these hospitals, in particular their impact on corporate accounts. [REDACTED]⁵ Bupa argued in its response to the provisional findings that several dimensions of 'scale' of a hospital group impact its market power, including the total number of hospitals in a portfolio; the overall financial scale of the hospital group; and the number of 'must-have' hospitals in the portfolio.⁶

⁵ [REDACTED]

⁶ Bupa response to provisional findings, paragraphs 4.13 & 4.20–4.23.

(b) AXA PPP argued that there were some hospitals in London it regarded as ‘must have’ for servicing corporate customers which had employees in the South-East. These hospitals were distinguishable on the basis of their professional reputation (both in terms of facilities and/or consultants) and the broad range of treatments undertaken. Six of the seven hospitals it identified were operated by HCA. AXA PPP also stated that the number and proportion of ‘solus’ hospitals owned by BMI was significant. Although it did not think BMI had sought to leverage its very strong position, it was concerned that it could do in the future. AXA PPP in its response to the provisional findings welcomed the CC’s conclusion that there were hospital groups which possessed substantial market power. In its view, the criteria which identified market power for an individual hospital operating in a locality could be different from those in the hospital group/insurer national bargaining context. In relation to corporate customers, a company would typically wish to see provision of hospitals in its PMI provider’s network that matched the needs and expectations of its staff and senior decision-makers, and which matched the geographic spread of its employees. From the perspective of a PMI, the issue was one of whether a hospital had to be included in the network to satisfy important customer groups, rather than local substitution patterns of marginal individual customers. According to it, one consequence of this distinction was that the principal private hospital in a city that was in the commuter belt of any major centre of employment would typically have to be included in the network even if there were a number of private hospitals in a radius around the city that might constrain it in the self-pay market.⁷

(c) Aviva argued that there were significant parts of the UK with high levels of concentration, which it defined as a single hospital operator having a market share above 70 per cent. This meant that each of the large hospital operators owned facilities that it needed to recognize if it was to offer insurance with national coverage. It noted that national coverage mattered if it was to be able to offer policies to large corporate customers with employees across the UK. [X]

(d) WPA said that it had customers throughout the UK, in particular large corporate customers. [X]

12. PMIs argued that if a hospital operator did own must-have facilities, this meant that the PMIs would have to continue to send patients to these facilities even in the event of a dispute—for example, where they failed to agree terms over a new contract. Most PMIs therefore argued that owning a number of must-have hospitals provided the hospital operator with a degree of negotiating leverage as a hospital operator with a significant number of these hospitals could take steps that would disadvantage the PMI in the event of a dispute, thus weakening the PMI’s outside option while improving its own:

(a) Aviva argued that due to the ownership of must-have hospitals it was forced to recognize higher-priced facilities, even in local areas where alternative facilities offered more competitive pricing.⁸ Were it to recognize only the lower-priced provider, it would be threatened with price rises at the remaining facilities that would leave it in a worse position.⁹

(b) Bupa argued that hospital operators leveraged their must-have hospitals by negotiating their portfolio as a bloc; if the PMIs wanted access to the must-have hospitals they must also recognize other hospitals in the portfolio or face signifi-

⁷ AXA PPP response to provisional findings, paragraphs 1.13–1.14.

⁸ Aviva response to issues statement, paragraph 1.2.

⁹ *ibid*, paragraph 1.18.

cant price increases at the hospitals it must continue to use.¹⁰ If Bupa were to delist some of the hospital operator's facilities, it would have to pay significantly more at the must-have hospitals it could not delist, leading to higher costs for the PMI insurer while mitigating the financial consequences of the dispute for the hospital operator.¹¹

(c) WPA [REDACTED].

(d) In response to the annotated issues statement, AXA PPP provided analysis which it argued showed the impact on its business of delisting HCA specifically.¹² AXA PPP noted that it would make significant savings if it was able to direct patients to alternative facilities. However, it argued that it would face a significant price increase for any patients who continued to be treated at HCA facilities (which it estimated would be a [REDACTED] per cent increase if prices were increase to rack rate). AXA PPP estimated that there would be at least [REDACTED] per cent of patients who it would not be able to redirect to other hospitals, even in the medium term.¹³ Based on a steady state (ie not taking into account increased lapses due to HCA being omitted from the network), AXA PPP estimated that it would lose about £[REDACTED] million in the first year, and would need to redirect [REDACTED] per cent of the treatment in future years to break even on an annual basis.

13. AXA PPP also argued that although Spire, Nuffield and Ramsay owned some solus hospitals (or hospitals that were necessary to provide an alternative to one of the other providers), it felt that, in the round, there was a balance in the relative levels of commercial leverage between Spire, these hospital operators and PMIs.¹⁴ PruHealth said also that, outside London, it had not seen evidence of hospital operators using their local position to influence pricing.
14. Several PMIs also argued that where a hospital operator owned must-have hospitals, then in the event of a dispute the hospital operators could engage directly with the insurer's customer that continued to use its hospitals encouraging a migration of policyholders to rival PMIs:
 - (a) Both AXA PPP and Bupa argued that hospital operators might seek to damage a PMI's relationship with policyholders by suspending the ability to settle bills for treatment, meaning that patients had to pay in advance, or suspending the payment of invoices to the insurer for patients treated at the operator's hospitals. [REDACTED]
 - (b) Bupa argued that a hospital operator might rally concerns among customers and intermediaries that PMI attempts to control cost would lead to lower quality, which it regarded as unfounded.¹⁵
15. Bupa noted that when solus hospitals were owned by a hospital group, its negotiating position was weaker as it became more difficult to take mitigating steps. For example, in a dispute with an independent hospital in a single market, mitigating steps like working with affected consultants, communicating with policyholders or even finding some short-term alternative provision for certain treatments were all more plausible than when managing a situation of being in dispute with a group across a large number of local markets simultaneously. Therefore, a dispute with a national operator was significantly more challenging and costly; [REDACTED].

¹⁰ Bupa response to annotated issues statement, p33i.

¹¹ ibid, pp28 & 29.

¹² We understand that this analysis was prepared for the purpose of its submission to the CC.

¹³ [REDACTED]

¹⁴ AXA PPP response to annotated issues statement, pp3 & 20.

¹⁵ Bupa response to annotated issues statement, p33.

Views of the parties on local competitive conditions and must-have hospitals in national negotiations—hospital operators

16. Most hospital operators rejected the proposition that PMIs might be constrained in their ability to steer patients as a result of limited choice of alternative hospitals in particular areas. Several stated that in the annotated issues statement we significantly underestimated the degree of local competition, that there was sufficient alternative provision in the areas where they operated and their hospitals could not reasonably be characterized as ‘must have’ by the PMIs.^{16,17}
17. Similarly, in its response to the provisional findings HCA argued that there was sufficient spare inpatient capacity in central London alone for any of the largest PMIs to have a viable alternative to HCA’s hospital facilities. Furthermore, HCA claimed that the CC had erred in its geographic market definition by defining the market too narrowly, and this had led to an incorrect assessment of the alternatives available to PMIs.¹⁸ HCA submitted that the CC seemed to have both reported and relied on only a small set of internal documents from the PMIs and that the CC should closely scrutinize any PMI’s claims on ‘must-have’ hospitals if it wished to rely on them.¹⁹
18. BMI argued that the insurers had proven alternatives to each of BMI’s hospitals, suitable for treating their policyholders and able to meet their demand.²⁰ BMI and Spire both highlighted the ability of PMIs to delist alleged must-have hospitals or hospital clusters. BMI argued that the delisting of hospitals in solus and rural areas²¹ and the delisting of three alleged clusters in their entirety²² showed that Bupa had proven alternatives to each of BMI’s hospitals and that BMI could not leverage any of these hospitals in national negotiations.²³ Spire noted that the evidence suggested that the CC had greatly overstated the number of Spire hospitals that may face limited local alternatives.²⁴ Spire believed that reasonable substitutes were available for all of its hospitals and the evidence from all PMIs showed that, at most, [§] of Spire’s hospitals lacked reasonable substitutes. Spire also argued that there was a discrepancy between the total number of hospitals of concern identified by the CC (21) with the views of PMIs expressed in the documents reviewed and that the views of the parties to negotiations must be relevant to an assessment of bargaining power. Spire considered that even if a hospital had local market power, [§].²⁵
19. All the main hospital groups were of the view that their own portfolio of hospitals did not provide a significant advantage in negotiations with PMIs. HCA argued that the very fact that many PMIs had a range of networks that did not provide cover for all hospitals indicated that PMIs could market networks with a subset of hospitals and suggested that policyholders would be satisfied with a subset of hospitals.²⁶
20. While Nuffield argued that local concentration did not necessarily translate directly into hospital operator leverage in national negotiations with PMIs, it did take the view that for some hospital operators this was the case.²⁷ Nuffield argued that there were

¹⁶ [HCA response to issues statement](#), paragraph 10.21.

¹⁷ [Ramsay response to AIS](#), paragraphs 7.4 & 7.15.

¹⁸ [HCA response to provisional findings](#), paragraphs 7 & 7.25.

¹⁹ *ibid*, paragraphs 7.40 & 7.41.

²⁰ [BMI response to provisional findings, Annex 3 Bargaining and Insurer Negotiations](#), paragraph 2.1(a).

²¹ *ibid*, paragraph 3.10. According to BMI, Bupa was able to divert away over [§] per cent of demand from BMI Lancaster and [§] per cent of demand from BMI Gisborne Park following the 2012 delisting episode; both hospitals are in remote locations.

²² *ibid*, paragraph 3.3. According to BMI, Bupa delisted hospitals within three clusters: (1). Runnymede, Princess Margaret and Mount Alvernia; (2) Bishops Wood and Clementine Churchill; and (3) Priory, Edgbaston, Droitwich Spa and Meriden.

²³ *ibid*, paragraphs 3.2–3.7.

²⁴ [Spire response to provisional findings](#), paragraph 2.3.

²⁵ *ibid*, paragraph 3.3.

²⁶ [HCA response to annotated issues statement](#), paragraph 5.46.

²⁷ [Nuffield response to annotated issues statement](#), paragraph 1.15.

‘must-have’ hospitals, which a PMI had little or no choice to recognize if it were to have a credible offering to large corporate customers. For a hospital to be ‘must have’, it must be located in an area with high corporate PMI penetration and have a high local market share. On this basis, Nuffield believed that there were 55 must-have hospitals in the UK, of which BMI, Spire and HCA controlled 89 per cent.²⁸ In Nuffield’s view, the concentration of must-have facilities within BMI and Spire meant that they were able to negotiate higher prices with PMIs while driving an increasing proportion of insured procedures through their portfolio of hospitals and maintain universal PMI network approval. Nuffield argued that BMI’s and Spire’s scale and coverage meant that PMIs must essentially build their national network by starting with BMI and Spire portfolio subsequently adding other hospitals in areas lacking coverage.²⁹

21. Most hospital operators also argued that even if there were pockets of concentration, there were few steps they could take to leverage these hospitals in a negotiation:
 - (a) Several hospital operators argued that, in the event of a PMI shifting volumes away (for example, the delisting of hospitals from a PMI network), adjustments to prices at other hospitals was not leveraging ‘must-have’ hospitals, it simply reflected the reality that price was closely tied to volume. The high fixed cost component in a hospital business meant that a loss in volume would result in an increase in unit costs.³⁰
 - (b) Spire argued that PMIs overstated the significance of the threat of a price increase by hospital providers in the event of a dispute. It suggested that the PMI may simply refuse to pay a new price and continue to reimburse the hospital at the previous year’s rates.³¹
 - (c) BMI argued, citing evidence of being approached by Bupa, that the PMI would in any case be able to get better rates from other hospital operators if they were to delist its hospitals using the additional volume as an incentive.³²
 - (d) Several hospitals argued that even in the context of a dispute the hospital still had a powerful incentive to continue to encourage the PMI to send volume to its hospitals as it was unable to adjust its committed fixed cost quickly and needed revenue to help mitigate these costs. [✂]
 - (e) BMI also argued that due to the fact that BMI had no means to even know, let alone to actually contact, the vast majority of policyholders, the likelihood that it could have an impact on policyholders switching PMI was far-fetched.³³
 - (f) HCA said that suggestions by PMIs that hospital operators may take other steps, such as billing patients directly, were exaggerated. It noted that such a course of action could only take place in a situation when a valid contract between the hospital and PMI no longer existed or where the PMI had not reimbursed the hospital within the contractual period and so was in breach of contract. Furthermore, billing PMI customers directly during a commercial dispute was not a sustainable or attractive strategy for a hospital operator as it had an adverse impact on the hospital’s finances and severely damaged the hospital operator’s

²⁸ Nuffield response to issues statement, paragraph 3.25.

²⁹ Ibid, paragraph 3.27

³⁰ HCA response to annotated issues statement, paragraph 5.31; BMI response to annotated issues statement, paragraph 8.8(a).

³¹ Spire response to annotated issues statement, paragraph 4.30.

³² BMI response to annotated issues statement, p28.

³³ Ibid, paragraph 8.9.

reputation with patients and consultants. HCA added that billing customers directly was a course of action it was desperate to avoid and, on occasion, HCA had instead elected to write off bills.³⁴

- (g) Spire argued that PMIs always had the ability to retaliate against activities by a hospital operator at one hospital by redirecting their customers away from another of that operator's hospitals.

Local competitive conditions and must-have hospitals in national negotiations—internal documents

22. In this section, we consider the internal documents of the PMIs and hospital operators as to how the portfolio of hospitals owned by a particular hospital operator can affect its negotiating position. We identify examples where, as part of their planning for negotiations, PMI and hospital operators look at where hospitals are located, assess whether there are alternative providers available in each area and evaluate how this affects their negotiating position.
23. Although negotiations are typically national, PMIs' and hospital operators' internal view of their respective bargaining positions is influenced by local considerations, in particular their analysis of whether there are alternative hospitals in each area and the consequence for the PMI of diverting patients to the alternatives identified.
24. Where PMIs assess their options, their internal view of their bargaining position is influenced by their assessment of:
- (a) the availability of alternative hospitals in each location that patients could be diverted to in the event of a dispute;
 - (b) the treatment cost of sending patients to these alternative hospitals were they to remove the incumbent from their networks, including any additional discounts they could secure from rival hospitals in the area; and
 - (c) the prices the PMI anticipates the incumbent hospital operator will charge at any hospital they continue to use (eg must-have hospitals) in the event that they seek to divert patients to alternative hospitals where they can.
25. Bupa's negotiation planning is based around analysing its 'Best Alternative to Negotiated Agreement' (BATNA). As part of its assessment, Bupa looks at each hospital owned by a hospital group and considers the alternative hospitals available and the likely costs faced if it fell out of agreement with the group.
26. In the context of its 2011 negotiations with BMI and Spire, Bupa set out how it evaluated the alternative hospitals available. Bupa's principal model (the BATNA model) used [REDACTED] to determine if there were viable alternatives in each area. [REDACTED]
27. Bupa looked at the portfolio of hospitals owned by an operator and categorized each hospital on the basis of the analysis described above, considering competition at each hospital location. In the 2011/12 BMI and Spire negotiations, Bupa categorized each individual hospital as either [REDACTED].

³⁴ [HCA response to annotated issues statement](#), paragraph 5.54.

28. In relation to BMI, a contemporaneous strategy document setting out Bupa's proposed approach to its negotiation states that [REDACTED] per cent of its claims spend with BMI [REDACTED]. Bupa stated in its 'sourcing strategy': [REDACTED].
29. As can be seen from Figure 1 below, prepared for the steering committee overseeing the negotiation, Bupa modelled what proportion of patients treated at BMI hospitals it could divert to alternative providers and how much more or less it would spend if it did so. [REDACTED]

FIGURE 1

Bupa analysis: number of BMI patients that could be diverted to alternative hospital operators and cost of doing so

[REDACTED]

Source: Bupa.

30. After the dispute with BMI, Bupa refined its analysis, stating that it needed to consider more carefully the impact on customers, which it thought was driven by the [REDACTED].
31. In negotiations with other hospital operators, Bupa similarly assessed its bargaining position in relation to the number of hospitals the operator owned that were in locations with limited competition and the cost implications of transferring business elsewhere where it could do so:
 - (a) The first step in Bupa's internal planning for a negotiation was what it called a 'business need' document setting out its objectives for the negotiation. [REDACTED]
 - (b) In negotiations with [REDACTED], Bupa considered the location of its hospitals and the extent to which they had rivals located nearby, as well as the cost of those rivals' facilities. Bupa's 'sourcing strategy' document stated that there were alternatives within a reasonable distance that it could transfer patients to in the event of an out-of-contract scenario. However, a factor it said it should take into account was that [REDACTED].
 - (c) Likewise when Bupa prepared a contingency plan at the outset of its negotiations with [REDACTED] it identified only one hospital where it would be difficult to transfer rivals to alternative providers based on travelling time. Further analysis as negotiations progressed confirmed that alternatives were available at most locations. It said: [REDACTED]
32. Analysis conducted by Bupa's advisers, [REDACTED], helping it prepare to enter into its recent round of negotiations with HCA, [REDACTED].
33. In an internal briefing document prepared for its negotiation [REDACTED], Bupa noted that it would need to secure capacity elsewhere were it to delist [REDACTED].
34. When considering its upcoming negotiations with HCA in 2010, Bupa noted that HCA had [REDACTED].
35. During Bupa's negotiations with [REDACTED], minutes from the Bupa board meeting cite Bupa Health and Wellbeing's then Managing Director explaining that [REDACTED].
36. In internal papers prepared during 2008 and 2009 when its negotiations stalled, AXA PPP considered the financial implications of delisting Spire hospitals and sending policyholders to alternative hospitals. A key part of these deliberations was its

assessment of the number and locations of Spire's hospitals where it felt there were no alternatives, its spend at each of these sites and what it expected the cost to be if it kept using some Spire hospitals. An internal 'briefing note' prepared in January 2008 stated that of the 23 hospitals Spire owned at the time,³⁵ most had at least one competitor, leaving [X] locations³⁶ (accounting for £[X] million of AXA PPP's spend) where AXA PPP considered there was a lack of competitors.

37. Analysis conducted by AXA PPP in 2009, and provided in a presentation to its management committee on the financial implications of removing Spire from its network, noted that its 'assumptions indicate that it could operate without Spire'. The analysis presented how much business AXA PPP thought it could shift to each different hospital group and compared its existing cost of treatment with the new cost if the business was moved. AXA PPP stated that if it was able to use this additional volume to negotiate a [X] per cent discount, removing Spire would achieve an overall saving of £[X] million. However, based on AXA PPP's existing rates with these operators, the overall cost would be £[X] million.
38. During negotiations with Nuffield in 2006, AXA PPP evaluated Nuffield's portfolio of hospitals and considered the options available were it to remove Nuffield from its network. At this stage, only 27 of the 40 hospitals Nuffield owned at the time were in the AXA PPP network, [X] of which it regarded as local monopolies. However, it noted that most of these were in [X]. AXA PPP provided internal analysis it conducted during the negotiation. This identified the closest competitor for each of the 33 Nuffield hospitals, of which 11 of these hospitals were cheaper. In evaluating its options, AXA PPP stated that it did not believe that the financial impact would be significant if Nuffield were outside its network for a prolonged period. In the more recent negotiations during 2010, AXA PPP considered removing Nuffield entirely from its network. Its conclusion was that if all 22 hospitals were removed, this would save it approximately £[X] million a year, plus an additional £[X] million if it could secure additional discounts from other providers. However, it did state that this would endanger a number of accounts with corporate clients.
39. Aviva reviewed its hospital procurement strategy after a dispute with Spire. As part of this, it considered if it was possible to shift patients towards BMI facilities, as it had entered into an agreement with BMI which provided rebates if certain volume targets were achieved. A challenge this document highlighted was that it thought there were [X] Spire facilities in areas with 'little competition' (representing £[X] million of spend) and [X]. As part of this assessment, Aviva also stated that [X] Nuffield hospitals faced limited competition.
40. We found little evidence of smaller PMIs such as WPA and Simplyhealth evaluating local competition in this way or considering alternatives to different hospital operators.
41. As well as PMIs assessing their bargaining position with regard to the characteristics of the hospitals within the hospital operator's portfolio of hospitals, we also identified several instances where hospital operators considered their relative strength based on the local competition their hospitals faced.
42. A June 2011 BMI strategy document called [X] described its plans for negotiations over the following year: 'These negotiations centred on the big four PMIs (Bupa, AXA PPP, Aviva and PruHealth) but also shaped relationships with the larger number of smaller funders. The Bupa negotiation is critical to our success as this represents the

³⁵ This was prior to Spire purchasing ten hospitals from Classic.

³⁶ [X]

largest volume ([REDACTED]% PMI market share) and the [REDACTED] discounts (at [REDACTED]% from “rack-rate”).’

43. Under the section ‘Funder engagement and negotiation strategy’, BMI considered its position with respect to Bupa, evaluating its portfolio of hospitals and considering the impact they could have on the negotiation. A slide titled [REDACTED] divided BMI’s hospital estate into three categories:
 - (a) those with a strong case for exclusion ([REDACTED] hospitals), where it thought there were private competitors within sensible driving time, with similar acuity and specialty range and where exclusion would bring little disruption to Bupa members;
 - (b) those where competitors’ specialty range, acuity or reputation hindered BMI exclusion somewhat ([REDACTED] hospitals), stating that exclusion would cause moderate disruption to Bupa members but competitors may be willing to invest to raise standards to BMI level; and
 - (c) those where Bupa could not exclude BMI based on geography as there were no private hospitals within sensible driving time, and BMI exclusion would cause very strong disruption to Bupa members.
44. BMI then stated that if it was completely excluded from Bupa’s network, [REDACTED] Bupa patients using its hospitals were likely to be severely affected (based on hospitals in category A and B above), representing [REDACTED] per cent of Bupa policyholders. In a further slide titled [REDACTED], BMI looked at the number of hospitals in each region that BMI considered before the negotiation that Bupa could not delist (category C above) and took the view that [REDACTED] of its 63 hospitals were at risk of delisting by Bupa, reflecting [REDACTED] per cent of its Bupa revenue.
45. A Spire document provides evidence suggesting that [REDACTED].
46. A spreadsheet provided by Spire, [REDACTED], evaluated the relative strength and weaknesses of each of Spire’s hospitals and whether there was a risk that Bupa could exclude Spire hospitals from its network. The assessment of individual hospitals looked at the alternative hospitals within a [REDACTED]-minute drive-time and [REDACTED]-minute drive-time from Spire sites and evaluated [REDACTED] at each. In each case, Spire also summarized the main advantage or disadvantage of each Spire hospital. [REDACTED] Spire stated that this document was a work in progress; however, a summary output shows some of the factors Spire considered relevant in assessing an individual hospital’s strengths and weaknesses. [REDACTED]
47. A Spire meeting note from its [REDACTED].
48. During its negotiations with Bupa in 2006, Nuffield considered the possibility that Bupa could decide to delist some of its hospitals, identifying those hospitals it considered ‘high risk’ ([REDACTED] hospitals), ‘medium risk’ ([REDACTED] hospitals) and ‘low risk’ ([REDACTED] hospitals). Those hospitals it considered most at risk were those that had a low market share and a high proportion of insured revenue derived from Bupa policyholders.
49. In an internal summary of its negotiations with Bupa in 2010, Aspen considered options available if an agreement proved elusive. It noted that if the disagreement escalated, Bupa might start to redirect patients to other facilities, in which case it would need to uplift prices significantly across the board possibly to rack rates. It noted, however, that redirection was probably counterproductive as Aspen’s intelli-

gence suggested that its competitors were more expensive and would struggle with volumes.

50. A 2009 internal HCA document setting out its plans for negotiations with Bupa stated that it had [REDACTED].
51. PMIs argued that a hospital operator was likely to be in a strong negotiating position if many of its hospitals faced limited competition as it could disadvantage the PMI through raising prices at must-have hospitals in the event of dispute. Our review of the documentary evidence identified some examples where the possibility that a hospital operator could increase prices at hospitals that did not face significant competition appeared to have been considered by the hospital operator in the context of a negotiation.
52. In an internal Spire email from November 2010, Nigel Hawkins (head of PMI business development and contracting) considered [REDACTED].
53. An HCA planning document from HCA's previous negotiations with Bupa in 2009 [REDACTED]. However, HCA also noted that this would enable Bupa in: [REDACTED].
54. During 2009 negotiations with Aviva, [REDACTED] sought a price increase for 2010 of [REDACTED] per cent. In response, Aviva proposed an arrangement whereby it would include [REDACTED] out of [REDACTED] hospitals on its 'key' network list, with [REDACTED] hospitals being moved on to its 'extended' network list (which was only available to policyholders at a premium). In response, [REDACTED] stated that if Aviva went ahead with this approach it would adjust its pricing at hospitals Aviva continued to require access to:

[REDACTED] is unable to continue positively in a relationship that unambiguously favours other hospital providers with Aviva seeking only to maintain a relationship with [REDACTED] on the basis of securing hospital coverage in areas where its preferred provider hospital organizations have no footprint ... Under these circumstances [REDACTED] is forced to respond to Aviva's intended exclusion in a firmly defensive manner to ensure that any subsequent loss of revenue is mitigated through price increases.
55. [REDACTED] response was to propose a three-tier charging structure, with [REDACTED]. All the hospitals with the largest increase were ones that Aviva had proposed to leave on its key list. [REDACTED] also reserved the right to increase prices or remove discounts further as required and to restrict the acceptance of Aviva policies on a hospital by hospital basis, subject to four weeks' notice.
56. In 2010, Nuffield was in negotiations with AXA PPP to try and get all its hospitals included on AXA PPP's networks. During these negotiations, Nuffield wrote to AXA PPP on 19 August 2010 protesting at AXA PPP's failure to respond positively to its offer. The letter also stated that if no agreement was reached by 1 November, it would consider removing direct settlement for AXA PPP customers (ie require AXA PPP customers to pay upfront) and remove all AXA PPP discounts (which AXA PPP estimated would mean a price rise of [REDACTED] per cent on average at a cost of £[REDACTED] million a year). However, Nuffield did not pursue its threat to increase prices significantly and the parties continued to negotiate. [REDACTED]
57. The dispute between Bupa and BMI at the end of 2011 is the only example where we have seen a failed negotiation result in the complete removal of hospitals from a PMI's networks. Bupa argued that [REDACTED]. This is discussed in the context of that dispute in paragraph 83.

58. In relation to negotiations between HCA and Bupa and AXA PPP respectively, we have also been provided with evidence that HCA's ongoing relationship with insured policyholders was relevant to disputes it has had with these PMIs.
59. During 2009 and 2010, a contractual dispute arose between AXA PPP and HCA as a result of AXA PPP's plans to launch its Corporate Pathways product (see paragraph 140), which did not include HCA hospitals and which HCA anticipated would 'divert patients between network providers on the grounds of price'. [REDACTED] HCA stated that holding bills resulted in the patient being held harmless (that is, the patient was not requested to pay any amount until the correct rate had been determined). AXA PPP argued that this meant that AXA PPP could not accurately cost its corporate clients business based on an up-to-date billing history when those contracts came up for renewal. AXA PPP provided a number of emails demonstrating the frustration of its corporate clients with this. An Internal HCA document from September 2009, titled 'AXA-PPP Update-Sept 09', setting out HCA's strategy in the event that it served notice to terminate its contract with AXA PPP, stated that the [REDACTED]. Internally HCA noted that [REDACTED]. An HCA document from December 2008 referred to its policy of [REDACTED].
60. AXA PPP also stated that HCA selected patients who were policyholders of their corporate clients, sending letters of demand for payment. AXA PPP provided samples of these letters chasing payment, including final demand notices from a debt collection agency. An internal HCA document called 'AXA PPP Update-Sept 09' stated: '[REDACTED]'. Internally AXA PPP noted that where customers were being threatened with referral to a debt collector, AXA PPP had no choice but to pay the amount claimed in order to manage the reputational effect. In its response to the market questionnaire, AXA PPP argued that it was forced to settle given that the dispute was costing it customers and damaging its reputation.
61. Internally HCA considered a number of similar steps during its negotiations with Bupa in 2009. In a document setting out its options for how to respond to Bupa's negotiating position, HCA set out its 'escalation route' in the event that Bupa 'hold firm and talk the clock down' and an agreement was not reached by the time the contract expired. HCA stated it could [REDACTED].

To what extent can PMIs switch demand to alternative providers?

62. The ability of the PMI to direct patients between hospitals is critical to understanding its position in a negotiation. If the PMI can control the choice of hospital its policyholders use, it will increase the credibility of any proposition to reward lower-cost hospitals with more patients or withdraw patients from high-cost facilities. This section considers arguments put forward by hospital operators that there are a number of effective steps PMIs can take to shift demand between hospital operators.

Use of networks by PMIs

63. As noted in paragraph 8, the principal mechanism PMIs use to retain control of where policyholders are treated is a requirement that policyholders should use a hospital recognized on the network associated with their policy. By adding or removing hospitals from these networks, PMIs can potentially control whether all or some of their patients are treated at a specific hospital.
64. All PMIs sell a range of policies with different sized networks. The only exception we are aware of is WPA, which does not operate a restrictive network but seeks to recognize all eligible providers. If unable to reach an agreement with a hospital operator, the ultimate threat available to a PMI is to remove, or threaten to remove,

some or all hospitals from its networks, so that policyholders would not be able to use these hospitals under the terms of their insurance policy. This we refer to as a 'full delisting' and is discussed in paragraphs 67 to 124.

65. As PMIs often have a number of networks, they may also introduce new networks or adjust the composition of individual networks as a way to direct patients towards favoured providers. This is discussed in paragraphs 125 to 174.
66. At various points hospital operators may buy or construct a new hospital, in which case they will need to obtain agreement with the PMI to include the hospital in their network. The potential for PMIs to withhold recognition as a way to extract better terms is discussed in paragraphs 175 to 179.

Use of networks by PMIs: 'full delisting' from network

67. In this section, we consider evidence that the risk that a PMI may fully delist some or all of a hospital operator's hospitals may act as a constraint during negotiations. As well as setting out the views of hospital operators and PMIs, this section considers internal documents which relate to:

- (a) the effect on hospital operators and PMIs of a delisting in relation to the two examples of network exclusion we are aware of (Bupa delisting of BMI hospitals in 2011 and non-recognition of Nuffield hospitals by AXA PPP), with particular reference to the recent dispute between BMI and Bupa; and
- (b) examples where hospital operators and PMIs have internally considered delisting in the context of other negotiations, in particular where they have considered the credibility or anticipated effect of a delisting on either themselves or the other party.

Views of the parties regarding a 'full delisting'—hospital operators

68. The main hospital groups said that the risk that a PMI might remove their hospital(s) from its network(s) was likely to influence strongly the outcome of a negotiation. Most of the hospital groups argued that the threat of delisting was a credible and powerful threat used by PMIs, [38]. BMI stated that as PMIs were able to delist, and in doing so remove all demand from the delisted hospitals, this meant that BMI's 'outside option' (ie the alternative to reaching a deal) was very poor. BMI concluded that Bupa had far superior outside options compared with BMI, especially in the context of a delisting scenario.³⁷ Hospital operators argued that were they to face a full delisting (ie an insurer deciding not to list a hospital at all), this could have [38]. Similarly, HCA submitted in its response to the provisional findings that the high concentration in the supply of medical insurance implied that losing the business of even one large PMI entailed a very significant loss of revenues for a hospital operator.³⁸
69. [38] Several hospital operators noted that the fixed cost nature of hospitals meant that the threat would have a significantly disciplining effect. For example, BMI argued that losing significant numbers of customers during a period of delisting, coupled with a very limited ability to 'turn off' ongoing fixed costs, weakened its ability to withstand a protracted dispute, [38]. BMI contrasted its position with that of a PMI which it argued, in the event of a dispute, would face a stable cash flow from policyholders with, at worst, an increase in variable costs in the very short term as it diverted

³⁷ BMI response to provisional findings, Annex 3 Bargaining and Insurer Negotiations, paragraph 2.3.

³⁸ HCA response to provisional findings, paragraph 7.6.

demand elsewhere.³⁹ HCA also argued that as a fixed-cost business, it was greatly impacted by any loss of revenue such as any PMI would be able to inflict, because HCA would not be able to replace the business lost following a delisting, while the PMIs' customer base would not reduce significantly.⁴⁰ Several hospital operators also noted that were they delisted from a major PMI's network, there was little in the way of effective steps they could take to mitigate the effect and replace lost PMI business, in an environment where PMIs had several mitigation options.

70. A number of hospital operators argued that a delisting could also have a magnifying effect as it would lead to consultants switching hospitals in order to maintain their ability to see all private patients, regardless of the insurer.⁴¹ BMI stated that this was relevant to a delisting even by a small insurer. BMI and HCA also argued that once consultants had changed their practice in this way, it could continue after the hospital was relisted. They stated that a delisting may also lead to changed GP/consultant referral patterns.⁴²
71. In its response to the provisional findings, BMI submitted that it had weaker outside options which undermined its bargaining position and it could not mitigate the effects of delisting. BMI claimed that the financial impact on BMI of delisting was more serious than for Bupa. It added that delisting also led to loss of consultant loyalty and consultant drag, which was a consultant leaving to rival operators. BMI also criticized the evidence the CC relied upon in its analysis of the reputational damage to Bupa of the delisting episode, stating that there was no compelling evidence of quantifiable damage of any kind. BMI considered that through the delisting episode, Bupa had gained a reputation as an uncompromising negotiator and had demonstrated not just the strength of its outside options but its willingness to resort to a delisting.⁴³
72. Similarly, HCA in response to the provisional findings submitted that delisting would inflict unsustainable losses on HCA with additional losses of consultant drag effect and difficulty in replacing lost volumes.⁴⁴ According to HCA, the calculations it submitted in its response to the provisional findings to give an estimate of the loss of revenues a hospital operator would suffer as a result of a delisting by one large PMI 'are not meant to suggest that Axa PPP or Bupa are (or are not) likely to delist HCA. [REDACTED] This gives a very substantive degree of bargaining power to PMIs.'
73. On the financial consequences of delisting, Spire considered that the evidence suggested that Bupa assessed the financial consequences of delisting to be more severe for a hospital provider than for itself, [REDACTED].⁴⁵
74. Several hospital operators also noted that the recent Bupa delisting of BMI confirmed to other suppliers that Bupa was willing to carry out delistings, and confirmed the credibility of any threat to delist.⁴⁶ BMI submitted that the internal documents showed that a sustained delisting [REDACTED]. It stated that both BMI and Bupa were aware that this would [REDACTED] and that this was an entirely credible threat that Bupa had leveraged in its negotiations with BMI.⁴⁷ Spire argued that the evidence showed that delisting was a

³⁹ BMI argued in paragraph 2.2(b) of its [response to provisional findings \(Annex 3, Bargaining and Insurer Negotiations\)](#) that a sudden loss of a large number of patients choked crucial cash flow required to cover the high fixed costs associated with running a hospital [REDACTED].

⁴⁰ [HCA response to provisional findings](#), paragraph 7.12.

⁴¹ [Spire response to annotated issues statement](#), paragraph 4.22; [Nuffield response to issues statement](#), paragraph 3.36.

⁴² [BMI response to annotated issues statement](#), paragraph 8.7; [HCA response to annotated issues statement](#), paragraph 5.130.

⁴³ [BMI response to provisional findings, Annex 3 Bargaining and Insurer Negotiations](#), paragraphs 2.1-2.2.

⁴⁴ [HCA response to provisional findings](#), paragraphs 7.6 & 7.7.

⁴⁵ [Spire response to provisional findings](#).

⁴⁶ [Spire response to annotated issues statement](#), paragraph 4.35; [HCA response to annotated issues statement](#), paragraph 5.49.

⁴⁷ [BMI response to provisional findings, Annex 3 Bargaining and Insurer Negotiations](#), paragraph 2.3(b).

significant and credible threat that was considered relevant to negotiations by both hospitals and PMIs, and that it conferred bargaining power on PMIs.⁴⁸ HCA pointed out that Bupa had publicly stated that it intended to continue to exclude hospital operators that it regarded as too expensive.⁴⁹ BMI stated that delisting was not connected to an insurer's scale; if Bupa could redirect much of its holders' demand to other hospitals through delisting, then so could other PMIs.⁵⁰ On the frequency of the delisting episodes, Spire argued that the fact that a PMI might not be able to delist hospitals again and again did not in any way diminish the significance of this negotiating lever. Spire argued that the question was whether a particular tactic was a credible threat in a given instance.⁵¹ BMI presented a similar line of argument. It suggested that consideration of the Bupa delisting as exceptional was erroneous given that the reputation and behaviour of Bupa made it difficult to predict when this might be considered and the evidence showed that it was indeed considered on multiple occasions.⁵²

75. In its response to the provisional findings, HCA considered that PMIs such as Bupa leveraged their bargaining power against hospital operators, including by way of delisting.⁵³ The consequences of such delisting were much more severe for a hospital operator compared with a PMI. HCA submitted that insurers had more alternatives than hospitals and could direct patient journey in particular through service line tenders, open referrals and guided referrals. HCA argued that the CC should scrutinize the PMIs' claims around their outside options, if the CC wanted to rely on any such evidence.⁵⁴ HCA argued that in some instances HCA's advisers had been unable to corroborate some of the PMIs' claims that referred to HCA own data because of lack of full disclosure of the original document. For this reason, HCA argued that, for example, it was unable to comment fully or engage with AXA PPP's analysis and estimates of the effect of delisting HCA on both AXA PPP and HCA.⁵⁵
76. Spire argued that even if a PMI had to recognize a hospital for higher-acuity treatments, which it did not believe to be the case, it could redirect lower-acuity patients to alternative providers, which would represent the majority of its purchases. Spire stated that [REDACTED].⁵⁶ HCA noted that delisting of particular specialties could lead to the end of the provision of such services if there were insufficient volumes or if consultants decided to relocate their practice to an alternative hospital (because that other hospital was recognized for a more comprehensive range of services).⁵⁷
77. Spire considered in its response to the provisional findings that the evidence showed that (a) PMIs could exert meaningful control over where their policyholders were treated, and it faced a credible risk that it could lose [REDACTED], and (b) while it may be the case that the evidence did not as a general matter indicate whether hospital operators had market power or PMIs had buyer power, [REDACTED].⁵⁸ In this regard, Spire submitted that the evidence specifically suggested that PMIs considered that they [REDACTED].⁵⁹

⁴⁸ [Spire response to provisional findings](#), paragraph 3.1.

⁴⁹ [HCA response to annotated issues statement](#), paragraph 5.129.

⁵⁰ [BMI response to annotated issues statement](#), paragraph 8.12.

⁵¹ [Spire response to provisional findings](#), paragraph 3.10.

⁵² [BMI response to provisional findings, Annex 3 Bargaining and Insurer Negotiations](#), paragraphs 2.3 & 5.10.

⁵³ [HCA response to provisional findings](#), paragraph 7.

⁵⁴ HCA submitted that if the CC wanted to rely on AXA PPP and Bupa estimates on their outside options, the CC would have to test the credibility of those figures.

⁵⁵ [HCA response to provisional findings](#), paragraphs 7.30, 7.32 & 7.33.

⁵⁶ [Spire response to annotated issues statement](#), paragraph 4.25.

⁵⁷ [HCA response to annotated issues statement](#), paragraph 5.100.

⁵⁸ [Spire response to provisional findings](#), paragraph 7.5(a).

⁵⁹ *ibid*, paragraph 3.11(a) & (b).

78. HCA argued that there was a lack of competition in the PMI market and that policyholders were often unable to switch insurance provider. It said that individual PMI consumers in the UK faced a PMI underwriting process which often meant that if they switched from their current PMI, they lost the very cover that they were seeking.⁶⁰ In HCA's view, this constraint on switching PMI provider significantly improved a PMI's bargaining position, as it meant that there was little risk that customers would migrate to a rival PMI offering a more attractive hospital list in the event that an insurer removed or did not include a given hospital from its network.⁶¹

Views of the parties regarding a 'full delisting'—PMIs

79. PMIs agreed that their main negotiating lever was the threat to delist a hospital operator. However, they argued that in practice this could often seriously damage their business. Paragraphs 11 to 15 set out views put forward by PMIs that many hospital operators owned a number of 'must-have' hospitals in areas of the country where there was a lack of competition, and were they to delist other hospitals they would expect to face increased prices at these hospitals, making a delisting an expensive exercise. As well as these arguments relating to local competition, it has been argued that a delisting harms their interests as it reduces the overall attractiveness of their product:

(a) Bupa stressed that delisting a hospital was a last resort given the impact on its policyholders. Insurance customers were buying 'peace of mind', wanted to be treated when necessary and were not interested in the cost implications of their decisions when they were ill. The reputational costs of delisting a major hospital chain were such that getting into a situation where Bupa had to delist hospitals was not something that Bupa or its competitors could do again and again. The reputational impact was particularly important for a PMI as the relationship with the customer was the key asset of the business.⁶² Not only would Bupa lose share but the market would be eroded into extinction.

(b) Simplyhealth stated: 'I think it's worth stressing the point as well that we never approach any hospital on the basis that if they don't agree with us we're going to drop them from the list. Because, whether it's corporate clients or our individual customers, they want that national coverage, they want inclusivity.'

(c) WPA stated: [REDACTED]

80. [REDACTED]⁶³ AXA PPP said that it was difficult to determine what the impact of client losses would be for a PMI actually delisting a hospital operator from its network and there were few examples of actually reaching this stage.⁶⁴

81. However, AXA PPP argued that outside London the threat of delisting a hospital could have a disciplining effect: 'the negotiating power (outside of London) is to some extent balanced by our continued efforts to manage costs and the PH providers' objective to achieve recognition for as many of their non-solus hospitals as possible'.⁶⁵ 'While PMI buyer power is a positive and mitigating factor up to a point it is not panacea, most acutely in relation to HCA in London.'⁶⁶ AXA PPP's view was

⁶⁰ HCA reply to AXA PPP, 22 February 2013, paragraphs 7.3–7.10; HCA response to issues statement, paragraphs 6.16–6.21.

⁶¹ HCA response to issues statement, paragraph 10.27, also response to annotated issues statement, paragraph 5.47.

⁶² Bupa response to annotated issues statement, p35.

⁶³ [REDACTED]

⁶⁴ AXA PPP response to annotated issues statement, paragraph 5.37.

⁶⁵ AXA PPP response to issues statement, paragraph 9.1.

⁶⁶ AXA PPP response to annotated issues statement, p3.

that 'HCA hospitals are essential for its corporate customers in the South East meaning that its choice was binary—either AXA PPP has a credible London offer for its corporate customers, which includes HCA, or it does not'.⁶⁷ AXA PPP argued that were it to exclude HCA from its network, it would need to reduce its premiums to retain customers, but in practice would still lose a significant volume of customers to other PMIs. A similar view about the consequence of delisting HCA in London was expressed by most PMIs.

82. AXA PPP provided the results of its modelling to show the effect on its business were it to delist HCA (see paragraph 12(d)). It stressed that the impact would depend on the reactions from corporate customers. AXA PPP argued that taking this into account, it would expect to lose between £[§] and £[§] in the first year after delisting HCA, considerably more than what it thought would be the cost to HCA.

Bupa delisting BMI hospitals in 2011

83. We are only aware of one example of PMI removing a group of hospitals from all its general networks as a result of failing to reach an agreement over a revised contract. This stemmed from negotiations between BMI and Bupa in 2011.⁶⁸ The contract (initially signed in 2008) expired on 31 December 2011 and despite protracted negotiations no agreement was reached, resulting in Bupa temporarily removing 37 BMI hospitals from its hospital networks.
84. [§] Bupa intended to remove BMI hospitals from its network in areas where there was adequate provision if they did not represent value for money compared with other providers. Bupa also wanted to change certain contractual terms including the removal of [§].
85. During negotiations discussions involved nominal price increases or decreases (ie not adjusted for inflation). In August 2011, Bupa initially proposed a [§] per cent reduction in its tariff assuming static volumes. BMI's starting position had been a [§] per cent increase in price on static volume but in response to Bupa's desire for a [§] per cent discount offered this in return for a [§]. In October 2011, Bupa informed BMI that it planned to delist (from 1 January 2012) 12 BMI hospitals where it considered that there was already sufficient provision. It then asked BMI to provide separate prices for BMI's other hospitals.
86. In late November, BMI rejected Bupa's request for local pricing and made a new offer which reduced its proposed price increase to [§] per cent based on static volumes (which it stated was close to inflation at the time). However, this offer included a volume discount scheme linking price to total Bupa activity [§].
87. Bupa in turn responded with a counterproposal on 1 December 2011 proposing a [§] per cent reduction on static volumes. When BMI rejected Bupa's counterproposal, Bupa's response was to inform BMI that it intended to delist a further 25 hospitals, making a total of 37 hospitals which it planned to remove from its network on 1 January 2013. Bupa also informed BMI that it had contacted consultants to advise them that it was planning to remove 37 BMI hospitals from its network. On 22 December, BMI offered a [§]. Bupa rejected this proposal and responded with an offer of a [§] per cent discount [§]. On 1 January 2012 the contract expired without an agreement in place and the 37 BMI hospitals were delisted.

⁶⁷ *ibid*, p4.

⁶⁸ Bupa stated that certain delisted hospitals remained on its service line networks (eg cataract) during the delisted period.

88. At this stage an agreement was quickly reached and on 18 January all but three of the delisted hospitals were reinstated on the Bupa network (one of the initial 12 had been sold). The final agreement included a mechanism under [REDACTED]. Bupa stated that [REDACTED].

Effect of the BMI delisting on Bupa

89. [REDACTED]
90. Bupa, however, argued that the dispute damaged its relationship with customers. It referred to the fact that it experienced a [REDACTED] in complaints over this period, peaking close to [REDACTED] customer complaints relating directly to the dispute in January 2012.
91. Bupa noted that it was particularly difficult to manage its relationship [REDACTED].
92. Support for this can be found in a December 2011 internal BMI document updating its board on the negotiation. [REDACTED] BMI noted that ‘anecdotal feedback’ suggested that there had been an increase in tendering activity by Bupa’s corporate clients seeking a safer haven while negotiations between Bupa and BMI ran their course.
93. Bupa also argued that its position was harmed when some BMI hospitals wrote to Bupa policyholders that had used BMI hospitals in the past to inform them about the dispute, and that there was the prospect that they may no longer be covered for treatment at BMI hospitals. A sample of a letter sent to patients by BMI stated that Bupa plans to delist hospitals were ‘a unilateral decision made by Bupa and our understanding is that this is part of an ongoing Bupa initiative to direct patients to healthcare facilities who charge the lowest price, rather than offering patients the best quality hospitals and consultants’. The letter went on to note that other insurance options were available and that ‘the significant majority of these PMIs will offer you unimpeded access to both the hospital and consultant of your choice, something Bupa will not be offering in the future’. BMI board minutes from December 2011 note that BMI sent letters relating to its dispute to [REDACTED] corporate decision-makers, [REDACTED] patients who had previously received care at the 12 hospitals that it expected to be delisted at that stage and [REDACTED] intermediaries.
94. Other BMI correspondence over the period advised patients how to complain to Bupa, including how to report Bupa to the FSA for making an ‘unacceptable mid-term policy change’, or (for corporately-insured patients) reporting Bupa to their HR Director. [REDACTED]
95. Bupa argued that the recent loss in market share it had experienced was in part a result of the dispute with BMI. Bupa noted that the dispute took place in the latter part of 2011 and into early 2012, [REDACTED]. It said that it did not get its share of the new clients that were coming into the market because the [REDACTED]. Bupa’s view was that [REDACTED]
96. AXA PPP noted that Bupa appeared to have lost about 6 per cent of patient volume (from 2.87 million at the end of 2011 to 2.69 million by the end of 2012), the majority of this in the first six months. This contrasted with a 3 per cent increase in AXA PPP’s UK population. AXA PPP considered that the majority of Bupa’s losses would have been from its Large Corporate portfolio, one contributor of which it thought was the dispute with BMI.⁶⁹

⁶⁹ AXA PPP response to annotated issues statement, paragraphs 5.37 & 5.38.

97. An internal BMI document titled 'operational and financial report—May 2012' also commented that Bupa was losing customers. The BMI report discussed the impact of Bupa delisting/negotiations and stated that Bupa had lost about [REDACTED] corporate lives since January 2012, AXA PPP being the main beneficiary (estimated about £[REDACTED] million revenue), although it noted that the 'root cause of the current Bupa trend is inconclusive'. BMI stated that the statistics appeared to support the notion that at least some of what Bupa was losing was going to other PMIs rather than being lost from the market.
98. Bupa provided samples of unfavourable media coverage and argued that the publicity the dispute received was also very damaging. In discussing the dispute AXA PPP made the same point, 'Pictures of sad-looking people saying "Bupa would not let me go and see my consultant at BMI" in the Daily Mail are a disaster'.

Effect of the BMI delisting on BMI

99. BMI argued that Bupa had set out in the negotiation from the outset to send a clear signal to BMI and the market as a whole that Bupa could and would assert its authority over BMI and [REDACTED]. BMI stated that this was consistent with Bupa's stated objectives in respect of the current market investigation which included ensuring that Bupa had 'the tools and authority to identify and address poor behaviour'.⁷⁰ [REDACTED]
100. Bupa argued that [REDACTED] BMI's debt level meant that [REDACTED]. This leverage would not always be there [REDACTED]. In Bupa's view, it should not be taken as evidence that Bupa or any other PMI can make credible threats to delists.
101. However, BMI stated that Bupa knew that delisting 37 hospitals would [REDACTED]. BMI's long-term debt, covenant compliance and equity financing were related factors, but the critical factor was that BMI had insufficient cash to fund its fixed costs for a prolonged period without work from its most important customer which represented [REDACTED] per cent of total revenue. BMI said that there was no 'one time' effect related to the period of the last negotiation or to BMI's current capital structure. In particular, BMI stated that there was no BMI or GHG debt refinancing going on at the time.
102. In June 2011, as negotiations were at an early stage, BMI analysis considered the impact of going out of contract with Bupa. It estimated at that stage that up to [REDACTED] per cent of its Bupa revenue (£[REDACTED] million) was at risk and on this basis it would face a loss of £[REDACTED] million. BMI's view was that if it increased Bupa's prices by [REDACTED] per cent this would have a comparatively small impact on Bupa profitability, raising Bupa costs by [REDACTED] per cent and, assuming a claims ratio of about [REDACTED] per cent, result in a net profit reduction for Bupa of [REDACTED] per cent.
103. [REDACTED] This is supported in a document setting out the situation for the board after a new deal with Bupa had been negotiated: [REDACTED].
104. In a report to the Bupa Group Chief Executive on developments in negotiations as it was approaching the stage of delisting BMI, Bupa emphasized that [REDACTED].
105. As can be seen from Figure 2 below, taken from a negotiation strategy steering committee discussion document, Bupa's view during its 2011/12 negotiation with BMI was that [REDACTED]. In modelling the potential impact on BMI, Bupa estimated that were it delisted, BMI's profit on a per year basis could reduce [REDACTED].

⁷⁰ [Bupa response to issues statement](#), paragraphs 1.24 & 1.125 et seq.

FIGURE 2

Internal Bupa analysis assessing the impact on BMI of some of its hospitals being delisted

[REDACTED]

Source: Bupa.

106. In BMI's view the timing and Bupa's selection of the initial 12 delisted hospitals was calibrated to represent 'a shot across the bows' in terms of a number of hospitals that would 'cause significant pain and a decent enough volume for it to reverberate around the market'. BMI stated that the further 25 delisted hospitals were intended to [REDACTED]. Internal Bupa documents updating the Bupa steering committee overseeing the negotiations with BMI stated that any delisting [REDACTED].
107. At the same time that Bupa informed BMI of its plans to delist its hospitals, it also informed consultants working at the hospitals. BMI argued that the impact was felt much earlier than the day of the delisting because of the level of notification Bupa provided to consultants, general practitioners, patients, consumers and corporate employers. Moreover this effect of the dispute with Bupa had a disproportionate effect as some consultants took all of their business with them.
108. On 16 January 2012, two days before the settlement with Bupa, BMI internally discussed the problem of consultants moving their business internally: 'Where we are now is that the Bupa patients pre-authorised before 31 December are being flowed through the hospitals, but this activity is starting to dry up. The challenge we are facing is that, as it does so, consultants are starting to move their practices to other hospitals and with them some of their other work. [REDACTED]
109. In updating the board that an agreement had been reached with Bupa on 18 January 2012, BMI's Chief Executive stated that [REDACTED]
110. Bupa also considered that this 'consultant drag' effect, whereby consultants moved all of their practice to another hospital after a delisting by one PMI, could [REDACTED].
111. BMI argued that the ramification of delisting in terms of lost revenue started before the actual delisting and continued after the hospitals were re-included in the network, even though the delisting itself was for a relatively short period. During 2012 BMI's revenue from Bupa fell by [REDACTED] per cent. In its response to the annotated issues statement, BMI argued that this was more noticeable at hospitals that were delisted by Bupa, citing evidence which it argued showed that the effect had been long-lasting as the decline in Bupa work at delisted hospitals continued for at least [REDACTED].
112. Although BMI was clearly concerned about the impact on itself, an update to its board in December 2011 BMI also recognized that the events were damaging to both itself and Bupa:

In parallel with the negotiations, Bupa has delisted 37 BMI units representing some [REDACTED] of Bupa revenues to BMI. This will create [REDACTED] and is in neither party's interest. Negotiations will continue, but against a background of increasing [REDACTED].

Nuffield/AXA PPP delisting

113. Although not a recent occurrence, a number of Nuffield hospitals have remained outside AXA PPP's networks since AXA PPP created its current network structure via a competitive tender in the late 1990s. Nuffield argued that this non-recognition by AXA PPP had caused serious harm [REDACTED], in particular because of its effect on a hospital's ability to attract and retain consultants. In 2007, Nuffield sold nine of its hospitals; analysis presented to the board during the disposal phase suggested that underperformance of five of these facilities was, at least in part, due to the fact that they had not been able to secure AXA PPP recognition.

114. [REDACTED]

Internal documents which consider the credibility and effect of a delisting

115. [REDACTED]

(a) In one undated internal document setting out progress Spire considered [REDACTED]

(b) In a summary of a meeting at the start of its negotiations with Bupa [REDACTED]

(c) In the same internal note Spire considered [REDACTED]

(d) In a internal note of a meeting with Bupa on 9 February 2012, Spire considered [REDACTED]

(e) An internal Spire note of a meeting with Bupa [REDACTED].

(f) An internal Spire note of a meeting between Bupa and Spire [REDACTED].

116. In an internal email in November 2010, [REDACTED] considered how Aviva would approach their upcoming negotiations. [REDACTED]

117. In an internal document reviewing its negotiating strategy with Bupa in January 2009, HCA considered 'Bupa's sources of leverage'. [REDACTED]

118. In a document called 'AXA PPP Update-sept 09', HCA reflected on negotiations with AXA PPP during 2009 in the midst of a contractual dispute over AXA PPP's launch of the corporate pathways product. The document considered HCA's strategy in the event that it served notice to terminate its contract with AXA PPP (see paragraph 59). HCA also considered AXA PPP's possible response to the termination notice, [REDACTED].

119. Paragraphs 25 to 39 set out evidence where PMIs evaluated the anticipated cost to themselves of removing a hospital operator from their network, depending on the location of the operator's hospitals and how it reacted to the delisting (for example, whether it raised prices at any hospitals that were not delisted). In the internal documents below, PMIs evaluate the likely effect of a delisting, either on the hospital operator, the insurer's base of policyholders or the outcome of a negotiation.

120. In January 2009, AXA PPP evaluated its options in the event that no agreement could be reached with Spire before the contract expired. An internal slide pack prepared by Sharon Lyons (Head of Provider Management) for a management committee discussion commented that AXA was prepared to go out of contract with Spire if it did not agree to its commercial proposals. 'However, our belief is that our volume is critical to Spire and that they will agree to our terms rather than go out of network.'

121. Aviva considered the options open to it as it approached its negotiations with [REDACTED]. A June 2010 internal document setting out Aviva's 'clinical procurement strategy' stated that given the risks, there was a 'significant lack of appetite within the business for a confrontation [REDACTED]. Aviva considered a number of options, including not using some or all of [REDACTED]. However, it concluded that the damage to its business would be significant. For example, corporate clients [REDACTED] would not want a scheme that did not [REDACTED].
122. Bupa internal documents suggest that it considered the impact of delisting HCA during its 2012/13 negotiations. An internal briefing document prepared for the Bupa steering group overseeing negotiations with HCA noted [REDACTED].
123. Figure 3, from a presentation prepared by Bupa advisers, shows that Bupa expects that any dispute where it delisted HCA would have [REDACTED].

FIGURE 3

Bupa analysis of delisting on corporate clients

[REDACTED]

Source: Bupa.

124. When negotiations between AXA PPP and HCA looked like they could fail in December 2009, AXA PPP developed an internal project, 'Project Stellar', to explore contingencies in the event that HCA raised its price to the list price. In January 2010, AXA PPP prepared a 14-day contingency plan and detailed communications plan in the event that it opted to delist HCA hospitals. A presentation in January 2010 set out some of the issues. This identified a number of difficulties with this approach, including the fact that it might be perceived as reducing choice/perceived benefits without providing the customer with an alternative and therefore have to pay HCA's claims. The presentation also noted that any delisting was likely to impact new business sales, retention sales (as it would have no options or only expensive options available) and some London-based large corporate renewals.

New networks and adjusting network composition

125. The networks used by different PMIs are not uniform in shape, nor is their composition fixed. One of the tools available to PMIs to assert more control over where their patients are treated is to change the shape of their existing networks without fully delisting a hospital, for example adding or removing a hospital from one network or introducing a new policy that has a different network of hospitals associated with it.

Views of the parties on new networks and adjusting network composition—hospital operators

126. Most hospital operators drew attention to the fact that almost all PMIs operated multiple hospital networks, and argued that the threat to add or remove hospitals from a network could be used to improve the bargaining power of PMIs in negotiations with hospital operators. HCA argued that adjusting the composition of a network

could have the same effect as delisting the hospital operator but avoid any cost associated with a 'full delisting'.⁷¹

127. HCA argued that it continued to be delisted from at least one network offered by each of the six largest PMIs and that on each of these networks a number of HCA's central London competitors had been listed.⁷² Likewise, Ramsay pointed out that all the hospitals initially identified by us as being of potential concern had been excluded from at least one network by at least one insurer.⁷³
128. BMI submitted that the evidence showed directional strategies increasingly being used in practice by insurers, demonstrated by the increase of restricted networks and service line tenders, which also relied on open referrals and other directional techniques. BMI concluded that the CC was unreasonably understating the effect of each of these individually and also their effect collectively.⁷⁴
129. Similarly, HCA submitted that open referral policies, restrictive networks, strategic recognition of new facilities and service-line tenders were all strategies available to PMIs which conferred upon them very significant bargaining power.⁷⁵
130. Spire contended that the evidence showed that PMIs had significant scope to take business away from hospital operators through multiple mechanisms including delisting, restricted networks and service-line tenders and that PMIs leveraged the threat of removing business from hospital operators in negotiations.⁷⁶ According to Spire, the provisional findings acknowledged that hospital providers faced very limited outside options (they were constrained in their ability to replace lost business with business from other sources) and the PMIs had significant options available for directing patients to alternative facilities. Spire argued that the provisional findings then failed to address the obvious conclusion that this situation tipped the balance of bargaining power significantly in favour of PMIs.⁷⁷
131. BMI noted that it had participated in (and in a number of instances proposed to) PMIs' new networks supporting PMI products where it had offered [X] discounts in return for the PMI using its power to direct patients towards BMI. It cited as an example AXA PPP's corporate pathways model. HCA argued that AXA PPP's corporate pathways model was unsuccessful in London because it had not included the better HCA hospitals, demonstrating a competitive market in which consumers chose the better alternative.⁷⁸
132. BMI argued that the CC had failed to reflect in its conclusions in the provisional findings that the weight of evidence demonstrated the ability of insurers to formulate restricted networks to enhance their buyer power and secure lower prices from hospital operators. BMI also noted that restricted networks had been used successfully by PMIs. Where they were not successful, BMI said that the CC should consider carefully why they were not. In particular, BMI said that the reason for the failure to reach an agreement on Bupa's low-cost network was because Bupa was not willing to engage in meaningful negotiations even when BMI had offered discounts.⁷⁹

⁷¹ [HCA response to annotated issues statement](#), paragraph 5.38.

⁷² [ibid](#), paragraph 5.21; [HCA response to provisional findings](#), paragraph 7.20.

⁷³ [Ramsay response to annotated issues statement](#), paragraph 7.9(d).

⁷⁴ [BMI response to provisional findings, Annex 3 Bargaining and Insurer Negotiations](#), paragraph 3.17.

⁷⁵ [HCA response to provisional findings](#), paragraph 7.

⁷⁶ [Spire response to provisional findings](#), paragraph 7.6(a).

⁷⁷ [ibid](#), paragraph 7.8(a).

⁷⁸ [HCA response to provisional findings](#), paragraph 7.21.

⁷⁹ [BBMI response to provisional findings, Annex 3 Bargaining and Insurer Negotiations](#), paragraph 3.27–3.31.

Views of the parties on new networks and adjusting network composition—PMIs

133. Bupa noted that introducing new low-cost networks that offered its policyholders the choice of access to a narrower set of hospitals in exchange for a reduced premium was one tool it was using to focus volume and reward hospitals that were less costly, along with service-line tendering, open referrals and seeking to gain influence over care pathways. However, it noted that all of these things faced resistance from hospital operators.
134. [REDACTED]
135. AXA PPP said that a challenge to introducing a restricted network such as its Corporate Pathways product was securing national coverage, which was important if the policy was to attract corporate customers.
136. Commenting on HCA's view that all PMIs sold products that did not include HCA, AXA PPP stated that it disagreed and that these products, such as lower-cost networks, demonstrated that PMIs had sufficient bargaining power against HCA. Indeed HCA was in a position to impose contractual terms that [REDACTED]. Its expectation was that such low-cost products were very much at the margin and HCA still dominated the lion's share of insurer spend in London.
137. Bupa also said that HCA had [REDACTED].

New networks and adjusting network composition—review of the internal documents

138. The section below considers evidence where PMIs have sought to adjust the composition of their networks or introduce new networks with the objective of achieving further discounts from hospital operators.
139. Examples we have identified where PMIs sought to introduce or amend new networks include:
- (a) AXA PPP's introduction of Corporate Pathways, a low-cost restricted network aimed at corporate policyholders, and Health-on-Line, a low-cost policy aimed at personal customers;
 - (b) Bupa's introduction of a new low-cost network aimed at personal customers in 2011;
 - (c) PruHealth's tendering for several new networks in 2009; and
 - (d) Aviva's introduction of a number of corporate tailored networks. It also considered making further adjustments to the composition of its network in 2009 and 2010.

AXA PPP Corporate Pathways and Health-on-Line

140. In 2010, AXA PPP launched a new policy called Corporate Pathways in conjunction with BMI. In return for a [REDACTED] per cent discount on its existing network rates with BMI, the scheme required a patient to be treated by BMI if they lived within 20 miles of a BMI hospital nationally or 10 miles within London. With PMI skewed towards the South-East and many of its large corporate customers and their employees being based in the Home Counties, AXA PPP noted that providing a cost-effective solution that avoided high-cost treatment in London was a key objective. Once AXA PPP had confirmed that the patient was eligible for treatment, AXA PPP referred the patient to

a BMI call centre if they lived inside a BMI catchment and BMI would arrange treatment, including identifying a relevant consultant.

141. AXA PPP noted that this initial scheme, working exclusively with BMI, had limited success, with only [redacted] corporate clients and [redacted] lives covered, mainly due to limited national coverage. The poor take-up caused AXA PPP to revisit the design of the policy. Drawing on negotiations following the tender for its Health-on-Line product (see paragraph 144), AXA PPP revised the scheme, adding Nuffield hospitals, TLC and some smaller hospitals to the network in order to give it broader national coverage. AXA PPP relaunched the revised scheme in January 2013. The new Corporate Pathways network now consists of around 120 hospitals—with BMI facilities accounting for approximately 50 per cent of the hospitals in this network.
142. BMI stated that the Corporate Pathways product had a major impact on the volumes that BMI undertook for a given corporate customer. Typically, BMI said that it would see its share of an individual company's acute healthcare spend [redacted] after a switch to Pathways. BMI considered that this showed the ability of tight networks to increase volume and capacity utilization, drive discounts and ultimately support industry rationalization.
143. AXA PPP argued that a major challenge was that the introduction of its Corporate Pathways led to a contractual dispute with HCA, which claimed that it was a breach of contract (see paragraphs 59 and 60). [redacted], rendering the provision redundant.
144. AXA PPP also introduced a parallel low-cost directional product for personal customers. As with its Corporate Pathways product, the objective was to seek greater discounts by concentrating business at fewer hospital groups. AXA PPP's approach was to purchase a 'value' band, Health-on-Line, and in May 2011 it launched a tender exercise to construct a new network. Hospitals operators were asked to discount their prices relative to their existing contracts with AXA PPP on the basis that it would be reducing its existing network of providers by 50 per cent with a maximum drive-time for patients being approximately 45 minutes.
145. The final Health-on-Line network included 130 hospitals, made up predominantly of Nuffield and BMI hospitals. BMI said that it was willing to participate as it thought the use of a new brand would attract new policyholders that did not previously have insurance rather than encourage existing policyholders to trade down to a cheaper network. Ramsay offered [redacted] and secured eight hospitals on the network. TLC supported the proposition in return for being the main provider in London. AXA PPP stated that [redacted] and was not part of Health-on-Line. [redacted]
146. Up to the start of 2012 the uptake of the AXA PPP low-cost networks was minimal. Figures provided in response to the market questionnaire suggest that AXA PPP had approximately [redacted] policyholders on its Corporate Pathways (approximately 3 per cent of its corporate membership). However, updated figures provided by AXA PPP suggest that this has grown and there are now [redacted] subscribers insured (representing [redacted] per cent of its insured population). AXA PPP argued that in relation to London its corporate scheme had had very little success. This is discussed below in paragraph 169. At the start of 2012 there were around [redacted] Health-on-Line policyholders (approximately [redacted] per cent of its personal policyholders).

Bupa low-cost network

147. In 2010, Bupa developed plans to introduce a new slimmed-down 'essential access' network, which would support a new low-priced product (Bupa By You). Hospitals were to be selected on the basis of tender exercise, with a target of approximately

170 hospitals. Bupa stated that the principal aim was to offer a new lower-cost product that would attract new customers to PMI. Bupa's tender requested that hospitals bid to be part of the network by offering a discount against their existing rates. It also opted to synchronize the contracts so it could retender in future if it needed to.

148. A clause in Bupa's previous contract with HCA stated that [REDACTED]. Bupa explained that under the new contract [REDACTED].
149. [REDACTED], as set out below BMI and Spire were not able to reach an agreement with Bupa.
150. During June 2011, BMI and Bupa exchanged correspondence as BMI sought more information from Bupa on how the product would work, where other hospitals on the network would be located and how Bupa planned to market the product. BMI stated that it considered this information fundamental in order to be able to make a commercial decision and to price its offer accurately. Citing a need to be fair to all bidders, Bupa declined to provide most of these details.
151. BMI stated that it was unable to price its offer accurately against Bupa's requirement to submit a flat discount across all their hospitals without a clear understanding of how many hospitals would be included as it would not know what volumes to expect. BMI explained that it also had concerns about whether volume assumptions would be robust for the future as Bupa reserved the right to add additional competitor hospitals in the future. In order to address Bupa's wish to choose which BMI hospitals would be included on the network, BMI suggested [REDACTED].
152. BMI was concerned about Bupa policyholders trading down and 'cannibalizing' existing revenue (ie receiving a lower price to treat the patients that it would treat nonetheless) instead of attracting a significant number of new lives to the PMI market. It made a number proposals to address trading down and ensure that the new product accessed new demand, [REDACTED].
153. Spire expressed [REDACTED].
154. Given the non-participation of BMI and Spire, Bupa stated that the construction of the low-cost network had not been as successful as it had hoped, with significant gaps in coverage. It stated that uptake of Bupa By You products had been [REDACTED] covered on these products of which [REDACTED] per cent were on product options that used the low-cost network (as at August 2012). Data provided in response to the market questionnaire confirmed that Bupa had [REDACTED] policyholders on its low-cost network. [REDACTED]
155. An internal email [REDACTED] commented on the outcome of Bupa's tender exercise, noting that their: [REDACTED]

PruHealth network revision

156. In August 2009, PruHealth organized a tender exercise to reconfigure its hospital networks and to launch a series of new insurance products. In an internal document, PruHealth described the rationale: 'Given our size in the market, we can only make a quantum shift in our hospital pricing by restricting the number of hospitals on our network lists and driving volume to these hospitals.'
157. PruHealth's proposal was to introduce a series of new networks with a varying degree of hospital inclusiveness. In response to PruHealth's tender, all hospital groups responded with a discount to some degree. In January 2010, PruHealth informed the parties that it intended to structure its network as follows:

- (a) *Local network*. Made up of BMI and Spire, with a number of gap-fill hospitals included, in particular those from Nuffield.
 - (b) *National network*. Predominantly made up of BMI, Nuffield and Spire, with some backfill from other hospitals.
 - (c) *London network*. All the hospitals in the national network, augmented by BMI's four London hospitals and HCA hospitals. This would be further augmented with a number of key NHS hospitals that PruHealth felt were vital 'from a broker/customer perception'.
 - (d) *Premier network*. All the hospitals in the London network, augmented further by the remaining NHS Private Patient Units, all other NHS hospitals, and the remaining acute private hospitals in London.⁸⁰
158. An internal document reviewing the outcome of the tender exercise noted that PruHealth's view was that it had been very successful in securing 'excellent pricing submissions from the main five hospital groups'. It was also comfortable with the geographic spread of the list it produced, since it allowed for a 30-minute drive-time for 89 per cent of its membership on the local list and 91 per cent of its membership on the national list. Internal documents suggested that PruHealth anticipated saving more than 4 per cent per life per member (PLPM) by the second year of the new contract.
159. [X] PruHealth also stated that in 2010, after the acquisition of Standard Life Healthcare, it commenced a review of its products and associated hospital lists. To streamline the product lists and increase customer choice, Ramsay, Nuffield, Aspen and Circle hospitals were added to both the narrow and national list (which was renamed the 'countrywide' list).

Aviva adjustments to network composition

160. In its response to the market questionnaire, Aviva stated that following a review of its procurement strategy in 2008 it sought to negotiate discounts with some hospital operators in return for increased volume, with the intention of channelling business to these providers. In an internal note prepared in advance of negotiations with [X], Aviva explained that it intended to route patients away if [X] prices were not reduced: 'Perhaps NUHC [Norwich Union Health Care, as Aviva was previously known] has been the "soft touch" However, that is changing and if [X] now fail to heed that change, divergence will be inevitable ... So What's changed ... Routing is a top business priority for NUHC, as part of its transformation to a wellness provider.'
161. As part of this, Aviva sought to introduce tailored policies for corporate customers during 2009 and 2010 that would restrict policyholders to a limited number of lower-cost hospital facilities near to where they lived and worked. Aviva explained that these typically excluded the higher-cost facilities, and the savings generated through reduced claims costs were passed on to the corporate customer by way of a discount from premiums. According to Aviva it developed its tailored networks, aimed at directing business to [X] facilities with which it had negotiated favourable deals that rewarded volume growth. Aviva provided analysis it conducted for several large corporates, showing how their costs could potentially reduce their spend by around 5 or 6 per cent.

⁸⁰ These were: Great Ormond Street Hospital, Guy's Hospital, Moorfields Eye Hospital, Royal Brompton Hospital, St Thomas' Hospital, The Royal Marsden Hospital and University London Hospital.

162. As set out in an internal planning document for its tailored network, Aviva planned to target patients who would otherwise be treated by [X] and, to a lesser extent, [X]. Its target was to reduce [X] revenue by more than £[X], [X] by more than £[X] and [X] by around £[X]. In an email to [X] in August 2009 with which Aviva had agreed a range of volume discounts in return for increased volume, Aviva set out a number of 'proposed network changes' to try to move volumes in [X] favour. This included moving a number of hospitals from its key list to its extended list, reviewing whether to recognize Circle Bath and reviewing whether to include a number of independent hospitals on all its networks.
163. However, Aviva had difficulties where it introduced a tailored network [X] which removed 12 [X] hospitals from the [X] hospital list. [X] The dispute was settled on the pragmatic basis that [X] patients would be allowed to access treatment and be fully funded at any [X] hospital, even though the 12 hospitals that were the subject of the dispute were not listed in the customers' policy documentation. The discount provided by [X] remained in place. In relation to 'tailored networks' generally, [X] stated that were Aviva to treat policyholders using [X] hospitals as going out of network, limiting how much it would pay for treatment, this would be a breach of contract. Internally, Aviva discussed whether or not [X] would commence legal proceedings in relation to tailored networks, noting the fact that [X] had reserved the right to defend robustly further tailored networks beyond [X], which was interpreted by Aviva as a threat to sue for damages if it continued with its approach. Aviva noted that a material breach of its agreement with [X] was defined as 'Aviva persistently undertaking an action with the intention and consequence of diverting volumes away from [X] hospital facilities'.⁸¹
164. In an internal note of a meeting [X].
165. Attempts by Aviva to divert patients away from [X] facilities were also unsuccessful. During 2009 Aviva failed to move [X] hospitals from its key list to its extended list, as a result of [X] stating that it would raise prices significantly at certain hospitals (see paragraphs 54 and 55). Aviva also stated that its contract with [X] gave [X] the right to terminate the agreement if it undertook any action or introduced any schemes (such as those that may divert volumes away from [X]) which had a material adverse impact on [X].⁸²
166. Aviva stated that in its contract with [X] a material breach of the agreement was defined as 'Aviva persistently undertaking an action with the intention and consequence of diverting volumes away from [X] facilities'.⁸³
167. In November 2009, [X] expressed disappointment to Aviva that initiatives to guide patients to BMI that had been the basis of the parties' pricing agreements had not progressed further or faster, citing a number of steps it had expected to see based on Aviva's presentations to it, [X].

PMI networks in London

168. As noted above, HCA argued that it had been excluded from at least some network products of almost all PMIs, while PMIs argued that such exclusions had little impact on HCA in London and had not provided much additional negotiating leverage. This section considers the development of networks in London that do not include HCA.

⁸¹ [Aviva response to issues statement](#), paragraph 5.3.21.

⁸² *ibid*, paragraph 5.3.21.

⁸³ *ibid*, paragraph 5.3.22.

169. AXA PPP stated that its weakened bargaining position in London was reflected in the low take-up of products in London that did not include HCA. AXA PPP stated that so far only one firm with 'a significant city presence' had taken it up. It stated that in 2013, [X] corporate accounts had come up for renewal, and only [X] had transferred on to Corporate Pathways. AXA PPP insured [X] FTSE 250 companies. Of these, [X] have moved to Corporate Pathways. However, these companies had a low presence in London (less than 10 per cent). AXA PPP insured [X] FTSE 100 companies, of which only [X] had transferred to Corporate Pathways. It noted that these companies also only had a small proportion of their staff in London. AXA PPP provided an email from [X] (a large corporate broker) to AXA PPP stating that [X] would not switch to Corporate Pathways as its use of HCA was so high.
170. PruHealth noted that it had offered products to corporates in London that did not include HCA, and that over the past year it had worked relatively well. It noted that it had reduced HCA's share of its London spend by [X] per cent by encouraging the use of other facilities. It noted that although it could potentially persuade existing customers to accept this, it was difficult to win new customers without HCA in the policy, as brokers insisted on full coverage, including HCA, and with PMIs fighting for the business they had to offer full coverage.
171. Aviva currently only included HCA on its premium 'Extended' hospital list but not on its more widely sold 'Key' hospital list. [X] HCA provided evidence of correspondence between itself and Aviva where Aviva indicated that [X] which it argued showed how the exclusion of HCA from the extended hospital list improved Aviva's negotiating position.⁸⁴ The email cited by HCA (from Aviva to HCA) [X].
172. In its hearing, Aviva said that it priced its policies on a postcode-by-postcode basis with a focus on winning business in areas of the country where it felt it got competitive prices from hospitals. Aviva stated that some years ago it tried to increase its volumes significantly in London and wrote policies for big corporates like [X] to increase its volume. However, Aviva claimed that it did not see a notable difference in price with HCA, whose prices continued to increase. At this stage it decided to price at levels that reflected underlying product costs rather than following market prices which Aviva believed to be unsustainable for SMEs and individual policyholders in London. Aviva also decided to separate HCA hospitals from the other London hospitals so that it was clear to all its customers that there was a cost premium for them, over and above the other hospital groups. In its response to the annotated issues statement, Aviva also stressed that its largest corporate clients in London had all chosen products that allowed access to HCA facilities.⁸⁵
173. However, Aviva also noted that while it had not seen a significant number of its large corporate policyholders taking policies that did not include HCA, it was starting to have conversations with corporate customers about how they could reduce their spend in London.
174. On 23 December 2011, HCA internally discussed Aviva's Extended and Key hospital lists and noted that it had only ever been included on Aviva's extended list (although added to Fair & Square list which ended in 2009). On 22 December 2011, Aviva confirmed that it had added three private London hospitals (TLC, Bupa Cromwell and King Edward VII) to its Key list in July 2011 without previously notifying HCA. HCA noted that [X].

⁸⁴ HCA comments on the Aviva response to annotated issues statement.

⁸⁵ Aviva response to annotated issues statement, p2.

Strategic recognition of new facilities

175. Where hospital operators purchase or build a new facility, they will have to seek separate approval of each PMI in order to have the hospital added to the PMI's networks. The PMI may seek to withhold recognition if it perceives that by doing so it can secure improved terms in return for recognition.

Views of parties on the strategic recognition of new facilities—hospital operators

176. Several hospital operators made representations that PMIs had a strong negotiating position where a hospital operator asked a PMI to recognize a new facility that was not previously included on a hospital network.⁸⁶ [REDACTED]⁸⁷ BMI noted that given the risks of PMIs refusing to recognize a facility once a hospital operator had sunk investment to create or purchase, it was to be expected that hospital providers would seek contractual terms to mitigate this risk.⁸⁸ Hospital operators also argued that PMIs could refuse to recognize new facilities or services without assurance that they would receive significant discounts. Citing the additional discounts received by PMIs on treatment prices at new HCA facilities, both inside and outside London, HCA argued that the recognition of new facilities was a powerful lever in negotiations with hospital operators.⁸⁹

Views of parties on the strategic recognition of new facilities—PMIs

177. Bupa said that once it recognized a new hospital, even in a market that had alternatives, that recognition led to consultants establishing referral patterns, care pathways and member usage of the hospital. This gave the hospital operator a degree of power over Bupa in negotiations because once the hospital was added to the network any subsequent derecognition would disrupt those patient journeys. For this reason, Bupa said that it was reluctant to offer recognition until terms were fully agreed in advance.
178. AXA PPP said in its response to our issues statement that where a hospital group acquired a hospital not currently in network, it would expect a significant discount to recognize the hospital.⁹⁰

Strategic recognition of new facilities—review of the internal documents

179. The section below sets out examples where we have identified that recognition of a new facility was part of a negotiation, or where the PMI was able to secure a discount in return for recognizing a new facility:
- (a) When HCA started managing the PPU at Queen's Hospital, Romford, Bupa only recognized the facility for oncology, [REDACTED].
 - (b) When HCA opened its new outpatient centre in New Malden—'Harley Street at The Groves'—in spring 2010, Bupa did not initially recognize it, again arguing that there was sufficient capacity in the area ([REDACTED]). Ultimately it did recognize the centre, [REDACTED].

⁸⁶ BMI response to annotated issues statement, p36; HCA response to annotated issues statement, p51.

⁸⁷ For example, HCA (10.25) gave the example of [REDACTED] (4.27, Spire response to annotated issues statement, p36).

⁸⁸ BMI response to annotated issues statement, p36.

⁸⁹ HCA response to provisional findings, paragraph 7.4.

⁹⁰ AXA PPP response to issues statement, paragraph 8.3.

- (c) When negotiating with Bupa during 2009, Aspen sought an increase in its rates. In an internal email, Bupa stated: [REDACTED]
- (d) Bupa stated internally in a 'market evaluation' document, prepared in 2009 to support of its upcoming negotiations with Ramsay, that [REDACTED].
- (e) According to Spire, [REDACTED].
- (f) When BMI acquired the Abbey Hospitals, [REDACTED].⁹¹
- (g) The most recent contract between HCA and Bupa (agreed in July 2013) contains a clause that [REDACTED].

Steering patients

- 180. The use of networks discussed above is the principal way that PMIs guide patients towards more competitive facilities, given that the normal referral pathway involves a GP and then consultant directing a patient towards a particular hospital. However, PMIs have also been trying to find ways to assert more control where their patients are treated without resorting to reshaping their network. The more flexibility and control a PMI can exert over where a given policyholder is treated and thus the quicker they can reward low-cost hospitals with more patients, or withdraw patients from high-cost facilities, the better their bargaining position is likely to be.
- 181. Some PMIs are therefore actively trying to 'guide' patients at the point of claim. For example, this may be done by requiring the policyholder to get open referral from their GP and assisting the policyholder in finding a consultant, but it may also involve steering patients that do not have an open referral at the point of pre-authorization.
- 182. This section considers attempts by PMIs to guide patients. We also consider the hospital operators' perspectives as to how important this is likely to be going forward and the potential impact on negotiations.

Views of the parties on steering patients—hospital operators

- 183. Several hospital operators noted that contracts with PMIs provided no guarantee of volumes and that there was considerable scope for PMIs to steer policyholders away from a recognized hospital even if included in a network.^{92,93} In particular, hospital operators argued that the increased use of 'open referrals' gave the PMI considerable discretion to direct the patients' treatment path. Spire argued that even where patients did not have an 'open referral' policy, PMIs could and did direct patients' treatment paths. Some hospital operators argued that by steering patients at point of referral, PMIs could control where patients were treated and hence switch demand from one hospital to another, providing considerable leverage in negotiations. Additionally, BMI noted a potential magnifying effect because the ability to steer patients also allowed PMIs to influence consultants and ultimately assert more control over hospital operators in negotiations.⁹⁴

⁹¹ *ibid*, paragraph 8.3.

⁹² [Spire response to annotated issues statement](#), paragraph 4.14.

⁹³ [BMI response to annotated issues statement](#), paragraph 8.5.

⁹⁴ [BMI response to provisional findings, Annex 3 Bargaining and Insurer Negotiations](#), paragraph 3.16.

184. Spire argued that open referral was a growing trend in the market [§], although it noted that not all PMIs had followed this path.⁹⁵ Hospital operators suggested that guiding in this way was no longer new, with AXA PPP and Bupa both having established open referral policies offered to corporate customers. However, Spire noted that open referral remained a relatively new dynamic in the market, and continued to develop. Spire and BMI said that open referral was already a consideration in negotiations with PMIs.⁹⁶ BMI, in particular, expressed a belief that this was an existing feature of the market that would only become more prominent.⁹⁷ HCA told us that the guided referral policies had substantially strengthened the negotiating positions of PMIs and had already changed the balance of negotiating power between hospital operators and PMIs.⁹⁸ Some operators argued that the fact that there was excess capacity in the UK meant that PMIs could readily switch between rival hospitals, and this gave hospitals an incentive to try and attract this business. HCA noted that our review of corporate clients suggested that there was strong support for open referral and that public statements made by PMIs suggested that they envisaged open referral becoming increasingly popular with their corporate clients.⁹⁹
185. BMI said that it had invested significant resources in differentiating itself so as to benefit to the maximum extent possible from PMIs' ability to direct patient volumes, particularly through restricted networks and open referral.¹⁰⁰ BMI has made particular use of its National Enquiry Centre (NEC) to facilitate PMIs' attempts to grow demand through discounted open referral products.¹⁰¹
186. Spire stated that some PMIs offered incentives, including cash payments potentially worth several thousand pounds, and the retention of benefit limits and no-claims bonuses, for patients to be treated on the NHS, rather than through their private scheme. HCA argued that this could improve the bargaining position of a PMI as it could target specific operators, geographic areas (eg London) or services (eg cancer).¹⁰²

Views of the parties on steering patients—PMIs

187. Bupa argued that its open referral service launched in 2011 improved the incentives of hospitals and doctors to compete. While the service was receiving very positive feedback from customers, it was facing significant resistance from some hospital operators. It argued that the service was still in its infancy and was not yet on a scale to provide effective discipline on hospitals.¹⁰³ Furthermore, open referral was of limited use if a single hospital operator dominated a local area.¹⁰⁴
188. Bupa commented that its open referral [§]. However, in the longer term one of its objectives was to make consultants more concerned about costs such that they become more interested in where they practised, how they practised and how the decisions they were making contributed to the end-to-end costs of care.
189. Bupa also stated that under its new agreement with HCA (signed in July 2013) [§].

⁹⁵ [Spire response to annotated issues statement](#), paragraph 4.16.

⁹⁶ [ibid](#), paragraph 4.15; [BMI response to annotated issues statement](#), paragraph 8.36.

⁹⁷ [BMI response to provisional findings, Annex 3 Bargaining and Insurer Negotiations](#), paragraph 3.16.

⁹⁸ [HCA response to provisional findings](#), paragraph 7.15.

⁹⁹ [HCA response to annotated issues statement](#), paragraph 5.135.

¹⁰⁰ [BMI response to annotated issues statement](#), paragraph 8.34.

¹⁰¹ [ibid](#), paragraph 8.35.

¹⁰² [HCA response to annotated issues statement](#), paragraph 5.134; [HCA response to provisional findings](#), paragraph 7.59.

¹⁰³ [Bupa response to issues statement](#), paragraph 1.81.

¹⁰⁴ [Bupa response to annotated issues statement](#), paragraph 2.120.

190. Aviva noted that guiding patients was challenging given that it usually had little input into decisions about where patients were treated. This was typically determined by the consultant or GP making the referral.¹⁰⁵ Aviva said that while the insurer might be able to develop mechanisms to influence the patient's choice of hospital, its experience was that this was not effective at increasing its leverage in negotiations, due to the concentration of the large hospital chains. It noted that clauses in its contracts with [REDACTED] all limited its ability to direct patients towards less costly providers, without jeopardizing its existing agreement.¹⁰⁶

Steering patients—review of the internal documents

191. We set out below internal documents regarding the scope for PMIs to guide patients between hospital operators. This is considered in relation to Bupa, AXA PPP and Aviva policies.

Bupa open referral policies

192. In a slide from a 2011 internal Bupa briefing document in preparation for negotiations with [REDACTED] (Figure 4).

FIGURE 4

Bupa slide setting out its framework for guiding patients to provider of choice

[REDACTED]

Source: Bupa.

193. Another document from a presentation Bupa gave to BMI during negotiations also suggests that [REDACTED].
194. [REDACTED]
195. The main tool Bupa has introduced for directing patients, other than through its networks, is its guided referral product. This requires patients to get an unnamed or 'open referral' from their GP, rather than a referral to a named consultant. When the patient contacts Bupa for authorization it then provides a suggested list of consultants that the patient can choose from and arrange an appointment. This has been offered to all of Bupa's corporate clients since 2012. Bupa has since informed us that it will shortly offer a guided referral policy for individuals too.
196. In presentations Bupa has given to hospital operators, it has noted that hospital cost will feature in its recommendations, noting that 'good end-to-end cost for that speciality' will be taken into account when recommending a consultant to the patient.
197. The documents below consider internal views of hospital operators about the likely effect of Bupa guided referral policies.
198. An internal HCA document called [REDACTED]. HCA identified a number of solutions in response including: [REDACTED].

¹⁰⁵ [Aviva response to issues statement](#), paragraph 4.17.

¹⁰⁶ [Aviva response to annotated issues statement](#), paragraphs 5.3.13–5.3.22.

199. In an email attached to a Spire PMI strategy paper from September 2011, Spire refers to Bupa's overall approach to guiding: [REDACTED]
200. In an internal meeting note, Spire reported a presentation by Bupa on 12 October 2011 at the onset of their negotiations. This states that [REDACTED].
201. In an undated document (that appears to have been produced in November 2011) setting plans for its 2011 negotiations with Bupa, Spire states: [REDACTED].
202. [REDACTED]
203. In March 2012, in an internal 'pricing and contracting report', Spire stated [REDACTED].

AXA PPP guided referral policies

204. The AXA PPP Corporate Pathways product (see paragraph 140) is a guided referral policy and requires the policyholder to get an open referral from their GP. AXA PPP has also developed its own in-house 'Fast Track Appointments Service' and will assist policyholders to choose and make an appointment with a consultant.
205. In February 2012, AXA PPP proposed to hospital operators that were part of its Health-on-Line network (see paragraph 144) that it would refer all patients that presented with an open referral to their hospitals, in return for matching the Health-on-Line discount. AXA PPP explained that it could ensure that any policyholder with an open referral would be treated at a partnering hospital, by identifying those consultants that only carried out treatments at its partner hospitals and offering the patient a choice of specialists from this list initially. It would only refer to a different consultant if the patient requested or if it was a medical necessity. AXA PPP also noted that it had already removed the most expensive consultants by episode cost (ie consultant plus hospital cost) from the list used by its Fast Track Appointment Service. At the time of the market questionnaire, AXA PPP noted that it was still in the process of agreeing additional discounts with its Health-on-Line hospitals in return for referring open referrals to them. [REDACTED]

Aviva directional policies

206. During 2009 and 2010 Aviva considered if it was possible to try and divert patients from [REDACTED] to [REDACTED], with which it had negotiated agreements that rewarded additional volume with price reductions.
207. When Aviva evaluated its agreement with [REDACTED] it stated that it had demonstrated its ability to increase [REDACTED] revenue and market share, from £[REDACTED] million in 2007/08 to £[REDACTED] million in 2008/09 ([REDACTED] per cent growth) and to a projected £[REDACTED] million in 2009/10 ([REDACTED] per cent growth). However, it went on to state that 'the original intent of the deal was for Aviva to shift significant volumes to [REDACTED]. Despite some good progress, our experience over the last 2 years suggests that meeting [REDACTED] minimum requirement of £[REDACTED] m is a real challenge'.
208. Reviewing its strategy in 2010, Aviva stated that it was still keen on having directional policies, but recognized that it had had limited success. It noted that the amounts it could direct might only affect a single digit per cent of a hospital group's turnover. Aviva went on to state that it might take combined efforts of PMIs to influence hospital behaviour: 'we could potentially encourage our competitors to be equally directional, so that our combined 'modest' directionality is enough to change the market dynamic albeit at the cost of some medium term competitive advantage'.

Hospital responses to steering of patients

209. This section considers the views of both BMI and Spire in relation to steering of policyholders by PMIs. This overlaps closely with evidence presented in relation to how PMIs can adjust network composition or introduce new networks. These are the only two providers that have documents that set out a clear strategy in relation to this area.

BMI's approach

210. In a strategy review in December 2009, BMI stated that its approach had been to encourage PMIs to consolidate their volume at its sites. In reviewing this strategy, it asked, 'who do we believe really drives the referral—GP, Consultant or Funder?' If it was the funder it suggested it should 'trade price for volume' and develop products such as 'thin networks', 'guiding' and 'tailored products'. However, BMI stated that if PMIs could not steer referrals they were 'price insensitive', in which case it should 'accept that the influence of the referral is low' and 'reduce discounts to insurers' (noting that this would be incentivizing PMIs to steer work away from BMI). Other slides state: 'examples to date suggest that insurers can steer' patients. As well as 'current Aviva experience may suggest directional power of funders is minimal'.
211. In the same document BMI evaluates the opportunities to work with each PMI on guiding patients to its hospitals.

FIGURE 5

BMI evaluates opportunities to take advantage of insurer directionality

[✂]

Source: BMI.

212. BMI told us that its commercial arrangements since the date of this presentation such as the AXA PPP Pathways proposal and engagement on open referral product innovation such as the Simplyhealth MSK trial continued to reflect a view that PMIs could steer volumes in this way. BMI said that to support its efforts to encourage insurer guiding [✂].

Spire approach

213. Spire provided several documents that discuss its position in relation to insurer attempts to guide patients more closely.
214. In its response to the market questionnaire, Spire stated [✂].
215. In a set of slides considering its relationship with PMIs, Spire noted that [✂].
216. In a 'pricing and contracting report' from May 2011, Spire states: [✂].
217. In a set of slides from Spire's senior leadership team meeting from April 2012, Spire [✂].
218. In a set of internal slides called 'Aviva strategic plan' dated March 2012, Spire [✂].

Service-line tenders/networks

219. On a number of occasions PMIs have identified specific services that could be carved out of the main insurer/hospital contract and procured separately, often via a competitive tender. Policyholders are then required only to use providers that are part of the new service-line network.

Service-line tenders—views of hospital operators

220. Hospital operators noted that PMIs, in particular AXA PPP and Bupa, had used tenders to remove certain services from the scope of their contract with hospital operators.¹⁰⁷ HCA pointed out that when a PMI decided not to recognize a hospital operator for the provision of a particular treatment or service, this had the same effect as a 'delisting'.¹⁰⁸ Furthermore, the removal of a designated specialty or medical procedure was capable of disrupting a hospital operator's ability to offer a service across the full patient pathway, eg delisting of MRI services.¹⁰⁹
221. BMI noted that it was not surprising that there was resistance from hospital operators when service-line networks were first introduced, as BMI took the view that it had competed to provide a 'service bundle' and it was therefore illegitimate for a PMI, mid-term of the contract, to seek to 'salami slice' a service line while leaving other prices the same. BMI could not make commitments to fixed costs if the main service lines contributing to those fixed costs could subsequently be cherry picked away. It took time for such practices to be embedded in hospital business models.¹¹⁰ However, several hospital operators stated that service-line networks were now an established feature of PMI negotiations. BMI suggested that they had been introduced successfully for PMIs, pointing to contractual provisions permitting service-line tenders in support of this statement and evidence of savings made by PMIs by using service-line tenders.¹¹¹ HCA argued that options for service-line tenders further strengthened PMIs' bargaining strength by increasing their options as an outcome to negotiations.¹¹²

Service-line tenders—views of PMIs

222. Bupa argued that service-line tenders could only ever apply to a sub-segment of treatments that were discrete, highly standardized across providers, for example outpatient services such as scans or simple eye operations. Bupa argued that they worked less well for very complicated procedures or medical treatments.¹¹³ While Bupa [redacted], it noted that less than [redacted] per cent of its expenditure was procured in this way.
223. Bupa noted that some hospital operators [redacted]. Bupa said that in its recent negotiations with HCA a key feature of the negotiation was [redacted]. Bupa said that final contract [redacted].

¹⁰⁷ [Ramsay response to annotated issues statement](#), paragraph 7.9(e).

¹⁰⁸ [HCA response to annotated issues statement](#).

¹⁰⁹ *ibid*, paragraph 5.101.

¹¹⁰ [BMI response to annotated issues statement](#), paragraphs 8.31–8.32.

¹¹¹ [HCA response to annotated issues statement](#), paragraph 5.136; [BMI response to annotated issues statement](#), paragraph 8.33; [BMI response to provisional findings, Annex 3 Bargaining and Insurer Negotiations](#), paragraph 3.19.

¹¹² [HCA response to provisional findings](#), paragraph 7.23.

¹¹³ [Bupa response to annotated issues statement](#), p36.

Service-line tenders—review of the internal documents

224. This section sets out which PMIs have introduced service-line networks for which services. It also provides evidence where projected or actual cost savings have been provided.

Bupa service-line tenders

225. Bupa has service-line networks for outpatient MRI scans (2006) and cataract surgery (2007). Although these were originally established by way of a competitive tender, subsequent renewal has been on an 'any qualified provider' basis. Criteria for membership includes: (a) passing specific quality assessments; and (b) agreeing to Bupa's standard outpatient MRI/Ophthalmic agreement (including pricing). Bupa is also in the process of launching an [REDACTED]. In 2012, Bupa launched the Trans Aortic Valve Implantation (TAVI) network (a specialized and relatively complex procedure).
226. Bupa said that the first phase of its ophthalmology network resulted in overall savings in cataract treatment of around £[REDACTED] a year. The network was then retendered on an 'any qualifying provider' basis in April 2009 (with a fixed price of £[REDACTED] outside London and £[REDACTED] inside London). The second phase increased the number of providers to [REDACTED] and resulted in [REDACTED] a year, according to Bupa's estimates.

AXA PPP service-line tenders

227. Over the last decade AXA PPP has held tenders for a scanning network (from 2000), an oral surgery network, primarily wisdom teeth extraction (developed in 2005 rolled out in 2006) and a cataract network (developed in 2006 and rolled out in 2007).
228. AXA PPP has provided claims analysis supporting the launch of its oral surgery network, suggesting in 2006 that it anticipated savings of up to £[REDACTED] million a year. Another piece of analysis suggests that the savings could be around £[REDACTED] million over four years. Further analysis suggested actual savings of £[REDACTED] during 2009, considerably lower than expectations.
229. AXA PPP stated that cataract surgery was one of its most common procedures and it was spending over £[REDACTED] million a year on [REDACTED] procedures at the time it decided to launch a stand-alone network. AXA PPP projected that its tender exercise could achieve savings of £[REDACTED] million a year (or at the top end up to £[REDACTED] million a year). Further analysis suggested actual savings of £[REDACTED] million between 2007 and 2008 and £[REDACTED] million in 2009.

Aviva—service-line tenders

230. In 2008, Aviva introduced an MRI network following a tender exercise. Aviva explained in its response to the issues statement that average costs were reduced from £[REDACTED] to £[REDACTED]. In considering the response to its tender, Aviva estimated that it would save between £[REDACTED] million and £[REDACTED] million a year.

Sponsoring entry

231. It has been put to us by hospital operators that as a longer-term step a PMI could potentially work with other hospital providers to encourage them to enter a particular market.

Sponsoring entry—hospital view

232. Hospital operators argued that sponsorship did not have to take the form of financial assistance, it might involve assurance of recognition. HCA argued that in light of its size, assurance by Bupa would be enough to embolden any entrant.¹¹⁴ HCA also argued that in the past Bupa had sponsored new entrants, in particular an extension of Charing Cross hospitals in 2005.¹¹⁵ BMI (citing a letter between the parties) and Ramsay stated that [REDACTED].

Sponsoring entry—insurer views

233. In its response to the market questionnaire, Bupa stated that it had considered making loans to, investments in, and/or partnering with smaller local competitors in local markets, particularly PPUs. [REDACTED]

Sponsoring new entry—review of the internal documents

234. In the documents provided, we have not identified any examples of a PMI sponsoring a new entrant or assisting the expansion of a hospital. During a period of dispute between St Anthony's and Bupa, Bupa considered delisting St Anthony's [REDACTED].

Size and financial strength of counter party in negotiation

235. The relative size of the parties to a negotiation could influence the strength of their respective bargaining positions. For example, in the case of the PMI, the larger it is, the more revenue could potentially be lost by the hospital operator were the insurer to divert patients to alternative hospitals (ie the worse the outside option of the hospital).
236. A dispute between a hospital operator and a PMI could potentially be costly for both parties involved. The financial strength of either party may influence their negotiating position as it will affect their ability to withstand a dispute, particularly if their expectation is that any costs will be short term and that the other side will make concessions first.

Views of the parties about size and financial strength—hospital operators

237. As reported in paragraph 68, most hospital operators argued that were they to face a 'full delisting' this could have [REDACTED].¹¹⁶
238. Several hospital operators argued that the size of Bupa and AXA PPP in particular gave them significant leverage in negotiations. Given the volume of revenue they represented, BMI argued that both Bupa and AXA PPP were 'must-have' PMIs. Ramsay said that [REDACTED].¹¹⁷ HCA stated that the two major PMIs were unavoidable trading partners, and [REDACTED].¹¹⁸ HCA said that it was reliant on recognition from Bupa and AXA PPP in order to generate the patient volumes required to cover its fixed costs, achieve economies of scale inherent in private healthcare provision and to

¹¹⁴ [HCA response to issues statement](#), paragraph 10.33.

¹¹⁵ [HCA response to annotated issues statement](#), paragraph 5.119.

¹¹⁶ [HCA response to issues statement](#), paragraph 10.44; [Spire response to annotated issues statement](#), paragraphs 4.9 & 4.10; [BMI response to annotated issues statement](#), paragraph 8.29(b); [Ramsay response to annotated issues statement](#), paragraph 7.9(a).

¹¹⁷ [Ramsay response to annotated issues statement](#).

¹¹⁸ [HCA response to issues statement](#), paragraphs 10.52 & 5.97.

attract consultants to its hospital facilities. BMI argued that Bupa's position of great strength was demonstrated by the 2011 negotiation where it delisted 37 of its hospitals and [REDACTED].¹¹⁹

239. HCA said that a hospital wishing to compete to attract consultants had an absolute need to secure recognition of the major PMIs.¹²⁰ BMI argued that a dispute even with a small insurer would risk creating consultant drag effect and gift an advantage to rival hospitals.¹²¹
240. BMI also said that although Bupa was in a unique position of strength, there were many strategies open to all PMIs.¹²² In particular, delisting and tight or narrow network strategies were open to all PMIs regardless of scale, pointing to threats to do this from [REDACTED].¹²³ According to BMI, there was good evidence that smaller PMIs such as [REDACTED] attained good deals from BMI, even without tight networks or delisting. It argued that 'incremental' revenue from small PMIs was very important and hospital operators had [REDACTED].¹²⁴ Ramsay argued that as it [REDACTED], any of the major PMIs could single-handedly constrain its behaviour.¹²⁵
241. HCA also argued that the financial position of PMIs provided an advantage in negotiations. Given the relatively stable and entrenched position of the major PMI providers (in particular, Bupa and AXA PPP), these PMIs were able to withstand a short-term dispute with hospital operators.¹²⁶ BMI told us that as PMIs were significantly bigger than BMI, with balance sheets and cash flow that were much larger they could outlast BMI in any conceivable dispute. BMI argued that the fact that it was in a far weaker financial position than Bupa was a significant factor in the settlement of its 2011 dispute, although stressed that this was related to the structural differences between them—not a one-off event such as a debt refinancing.¹²⁷ [REDACTED]
242. BMI argued that as hospital operators had a high proportion of committed and operational costs, this meant that any immediate disruption to cash flow in the event of a dispute would [REDACTED].¹²⁸ On the other hand, a PMI in dispute with a hospital had stable cash flow from policyholders and at worst faced increase in variable costs before it was able to divert demand elsewhere or reach a settlement with the hospital operator.¹²⁹

Views of the parties about size and financial strength—PMIs

243. Bupa believed that while it was an important customer it was not essential, commenting that its average share of an 'average' private hospital's revenue was now under one-quarter, smaller than the revenues earned from the NHS.¹³⁰
244. Bupa argued that the effect of consultant drag, the idea that consultants might move all their business to a different hospital if they could only treat some insured patients at a hospital, was moderated significantly as:

¹¹⁹ BMI response to annotated issues statement, paragraph 8.29.

¹²⁰ HCA response to issues statement, paragraph 10.49.

¹²¹ BMI response to annotated issues statement, paragraph 8.29(c).

¹²² *ibid.*, paragraph 8.29.

¹²³ *ibid.*, paragraph 8.29(c).

¹²⁴ *ibid.*, paragraph 8.29(c).

¹²⁵ Ramsay response to annotated issues statement, p2.

¹²⁶ HCA response to annotated issues statement, paragraph 5.128.

¹²⁷ BMI response to annotated issues statement, p39.

¹²⁸ *ibid.*, paragraph 8.29(b).

¹²⁹ *ibid.*, paragraph 8.29(b).

¹³⁰ Bupa response to annotated issues statement.

- (a) In many cases there would be no other hospitals to which the insurer could move its business.
 - (b) Consultants retained the option to split their practice during a dispute, particularly if it expected a dispute to be short lived.
 - (c) Hospitals retained a direct relationship with the consultant on a day-to-day basis, meaning that during a dispute the hospital could mitigate the effects with key high-volume consultants to increase loyalty.
 - (d) Consultant loyalty schemes reduced the likelihood that consultants would switch away during a dispute.¹³¹
245. Aviva argued that the threat of delisting was less credible for an insurer of Aviva's size. It stated that its 11 per cent share of the insurance market was insufficient to have a material effect.¹³²
246. Simplyhealth argued that any countervailing buyer power was limited to the largest PMIs and was not reflective of the entire PMI market.¹³³
247. AXA PPP stated that quite often hospital operators would give attractive prices to a smaller insurer in order to 'clip the wings of a larger insurer' as they did not want AXA PPP and Bupa's high market share to persist.
248. Bupa agreed that financial strength was a key factor in a dispute. It noted that [§].
249. AXA PPP argued that HCA adopted a very effective strategy during their dispute by withholding invoices (see paragraphs 59 to 61), but noted that 'it does involve not charging us at all for long periods of time. That I think takes a bit of bottle, essentially, and quite a lot of cashflow'.
250. In response the market questionnaire, Bupa said it had considered, although not attempted, to change billing arrangements where it was in dispute with hospital operators. This could affect hospital cash flow. For example, it noted that it could move from settling bills weekly by BACS to monthly by cheque.

Review of the internal documents

Size of the insurer

251. As can be seen in Figure 6, PMIs make up the single largest source of revenue for each of the hospital operators apart from Ramsay, which earns more revenue from the NHS than it does PMIs. The CC has seen no evidence in internal documents from hospital operators to suggest that they considered they would be able to replace lost insured revenue from other sources, such as NHS revenue or self-pay patients.

¹³¹ *ibid.*

¹³² [Aviva response to annotated issues statement](#), pp3 & 4.

¹³³ [Simplyhealth response to annotated issues statement](#), p1.

FIGURE 6

Total PMI as a share of hospital revenue

[REDACTED]

Source: Hospital data.

Note: Approximately 7 per cent of overall HCA revenue remains unallocated. HCA NHS revenue may include some revenue that should be classified as 'other'. There is a discrepancy in Ramsay data representing approximately 2 per cent of overall revenue.

252. Figure 7 shows the proportion of each hospital operator's overall revenue that each PMI represents. For BMI, HCA and Spire, Bupa represents more than [REDACTED] per cent of their overall revenue. For Nuffield, Bupa represents [REDACTED] per cent and for Ramsay [REDACTED] per cent of overall revenue (reflecting its higher NHS revenues). AXA PPP represents between [REDACTED] and [REDACTED] per cent of revenue for all hospital operators apart from Ramsay where it is [REDACTED] per cent. The share represented by the other PMIs is smaller; with Aviva making up between [REDACTED] and [REDACTED] per cent of hospital revenue, PruHealth between [REDACTED] and [REDACTED] per cent, Simplyhealth between [REDACTED] and [REDACTED] per cent and WPA between [REDACTED] and [REDACTED] per cent.

FIGURE 7

Individual PMI as a share of hospital revenue, 2011

[REDACTED]

Source: CC analysis.

253. Evidence presented in relation to the Bupa BMI dispute shows that Bupa considered the impact of its size and the volume of revenue it potentially controlled in the context of a negotiation. As discussed in paragraph 105, Bupa attempted to model the implications of delisting some of BMI's hospitals and estimated that if these hospitals were delisted, BMI's profit on a per year basis could [REDACTED].
254. In a report to the Bupa Group Chief Executive reporting on developments in negotiations as it was approaching the stage of delisting BMI, Bupa emphasized that [REDACTED].
255. BMI analysis at the early stages of its 2011 negotiations considered how much revenue it thought could be at risk if it entered a dispute with Bupa. This estimated that Bupa could withdraw up to [REDACTED] per cent of its revenue (£[REDACTED] million) from BMI by switching its demand to alternative providers. If this happened BMI [REDACTED].
256. As discussed in paragraph 103 when seeking approval from its board in January 2011, BMI said that if an agreement was not reached with Bupa, [REDACTED].
257. As discussed in paragraph 110, in preparing for negotiations with BMI, Bupa also considered the impact of consultant drag effect on BMI business. Bupa stated: [REDACTED]. However, it also noted that it would expect a significant number of consultants to split their practice between different hospitals as 'consultants often prefer to work out of more than one unit where this is practical'.
258. In an internal email from 2005, Bupa's then Managing Director noted that as part of Bupa's planning for negotiations it wanted to understand the financial robustness of Nuffield's business, given that one of Bupa's options was to redirect business away from Nuffield. The analysis conducted noted that: [REDACTED].

259. In paragraph 113 above we also note documents from Nuffield dating from the sale of a number of hospitals in 2007, which state that non-recognition by AXA PPP was at least a factor in the performance of these hospitals and the decision to sell. We also note that in its issues statement response, Nuffield [REDACTED].
260. We have also identified some evidence where the significance of size was considered in the context of smaller PMIs negotiating with hospital operators.
261. A document reviewing Aviva's strategy in relation to hospital negotiations in 2010 stated that its size was a factor in negotiations with [REDACTED]: 'our ability to exert pressure on the market is minimal—customer choice program¹³⁴ for example will only impact [REDACTED] turnover'. Aviva asked 'what sort of volumes would we need to move to exert pressure?'
262. In a March 2012 document called 'Aviva strategic plan', Spire [REDACTED].
263. We have reviewed documents related to a number of examples where small PMIs have been able to secure specific discounts to help them compete for major corporate accounts. [REDACTED], as well as [REDACTED], where the PMIs were competing against Bupa or AXA PPP for a contract.

Financial strength of the parties

264. Although the size of the PMI may mean that a large proportion of revenue is potentially at risk, the strength of each party's negotiating position may also depend on its ability to hold out in the event of a stand-off during negotiations.
265. Both BMI and Bupa argued that BMI's financial position was a key factor in their negotiation. Bupa, however, suggested that this reflected a short-term opportunity given BMI's debt levels and reports at the time of BMI debt refinancing.¹³⁵ BMI, however, stated that there was no refinancing going on at this stage; its difficult financial position stemmed from loss of cash flow given Bupa's size against committed costs. As noted above in paragraph 103, [REDACTED].¹³⁶
266. When considering its position in parallel negotiations with Spire during 2011/12, Bupa also noted that [REDACTED]. It went on to note that Spire made a net loss in 2010, despite positive EBITDA largely due to debt interest. [REDACTED]
267. Bupa's sourcing strategy, which set out its plan for the negotiation with BMI, contrasted its ability to withstand a dispute with BMI. Bupa estimated that the impact on itself was: [REDACTED]

¹³⁴ Aviva's strategy to try to steer patients to hospitals with which it had negotiated favourable rates—see paragraph 160.

¹³⁵ See, for example: *Financial Times*, 'Vultures circle GHG as restructuring looms', 15 January 2012, available at www.ft.com/cms/s/0/4d2617e4-3e10-11e1-ac9b-00144feabdc0.html#axzz21fhIvAZI; *Financial Times*, 'Hospital group GHG teeters on the brink', 15 January 2012, available at www.ft.com/cms/s/0/8f6efbd6-3df0-11e1-91f3-00144feabdc0.html#axzz21fhIvAZI.

¹³⁶ BMI response to annotated issues statement, paragraph 8.29(b).

Empirical analysis of insured price outcomes

Introduction

1. This appendix sets out the details of our analysis of insured price outcomes. The aim of this analysis was twofold. First, we wanted to compare the prices charged by hospital operators to PMIs. This was a complex task due to the differences between hospital operators in the treatments that they offer and the mix of patients that they treat. Second, we wanted to assess whether and how the prices charged by different hospital operators to PMIs are related to the substitutability of the operators' hospitals in local areas.
2. In line with the issues described above, there are two sections in this appendix:
 - (a) insured price outcomes; and
 - (b) comparisons between insured prices and local substitutability.
3. Each section explains our methodology and then presents the results of our analysis. In each section the results are presented first for central London and then for the rest of the UK.¹ Several annexes at the end of this appendix set out the details of the data used for this analysis (Annex A) and further results (Annex B to Annex D).

Insured price outcomes

4. In this section we set out the methodology and results of our insured prices analysis. The results are presented in three subsections: price comparisons between HCA and TLC (the central London hospital operators); price comparisons between BMI, Nuffield, Ramsay and Spire (the major operators outside central London); and, price comparisons between PMIs and self-pay patients.

Methodology

5. To compare prices between hospital operators we have constructed a measure of price that we refer to as a 'price index'. The price index is a measure that aggregates into a single number, while controlling for patient characteristics and length of stay, the prices paid to a hospital operator by PMIs for patients treated at hospitals owned by the operator. In practice, the price index is equal to a conditional average price that is weighted across several medical treatments. For the reasons set out below, we consider the price index to be the most informative basis on which to compare prices.
6. We use the price index to make several different comparisons. The details of these comparisons are set out below, but it is useful to first describe two aspects of the methodology. The first aspect relates to the fact that our methodology averages the prices across treatments into a single measure. While this adds some complexity to the price index, we considered this to be important as it means our price measure corresponds to a similar concept to that which hospital operators and PMIs actually bargain over (as described in Section 6, paragraphs 6.291 to 6.292). Another benefit

¹ The reasoning for this is explained in the methodology section for insured price outcomes.

is that, to the extent that there may be differences in price between operators for certain treatments but not others, these differences may average out when considered across a large bundle of treatments.

7. The second aspect that is useful to note prior to the details of our methodology relates to the two types of comparisons we make using the price index. We compare between the prices charged by hospital operators for a given PMI (or on average across PMIs) and, separately, between the prices paid by PMIs to a given hospital operator. In principle these types of comparison are very similar. For example, if there was only a single medical treatment, the two types of comparison would produce the same results since there is only a single price agreed between each operator and PMI. In our analysis, however, there are many different treatments. For reasons explained below, our analysis uses different baskets of treatments when constructing each price index and as a result the two types of comparisons do not coincide numerically. To reach conclusions on how prices differ *between operators* and *between PMIs* we therefore conduct both types of comparison.
8. The methodology discussion below is split into the following sections:
 - (a) a description of the underlying data;
 - (b) how we control for cost differences;
 - (c) a step-by-step methodology;
 - (d) sensitivity analysis; and
 - (e) statistical significance testing.

Data

9. The price index is constructed using invoice data received from Healthcode, an intermediary between hospital operators and PMIs.² The Healthcode data provides information on the hospital visits of insured patients. It includes details of the hospital visited, the treating consultant, the treatment received, and the actual prices paid by PMIs.³ We have cleaned and consolidated the data to produce a cleaned data set for our analysis that covers the period 2007 to 2011. Each row in this data set is an 'episode', which we have defined as a single visit to a hospital by a patient. Annex A provides a detailed description of how we have cleaned the data.
10. We use data for our analysis that relates to several hospital operators and PMIs. The hospital operators included in our analysis are (in descending order of admissions in our data): BMI, Spire, Nuffield, HCA, Ramsay and TLC.⁴ The PMIs included in our analysis are (in descending order of admissions in our data): Bupa, AXA PPP, Aviva, Standard Life, SimplyHealth, Cigna, PruHealth, WPA, Exeter Family Friendly and Bupa International.⁵ The amount of data relating to each PMI is skewed towards

² In some of our analysis we also used data on self-pay patients. This self-pay data is described separately in Appendix 6.9.

³ We considered this data, on actual prices paid, to be a better basis for our analysis than the (paper or electronic) contractual agreements between hospital operators and PMIs. The latter were not easily available in a format that was comparable between hospital operators or PMIs, and are typically based on a detailed contract which may span several documents. We noted that PMIs also use the actual prices paid, rather than their contractual agreements, to compare the prices of hospital operators.

⁴ To a lesser extent, we have also analysed data from King Edward VII's Hospital Sister Agnes.

⁵ Some of these PMIs merged during the time period that we have analysed (eg, Pruhealth and Standard Life Healthcare). We have kept the identity of all PMIs separate as we understand in several cases separate contracts for each PMI remained in place for a period after the merger.

Bupa and AXA PPP, which collectively account for over 70 per cent of patient episodes in our cleaned data set.

11. For each episode in the data we observe the medical treatment received by the patient. In the data we have defined a treatment by its CCSD code. This is a standard categorization of surgical procedures for inpatient and day-case treatments. The same categorization does not apply to outpatient treatments and as a result we have not been able systematically to classify outpatient treatments in the same way as inpatient and day-case treatments. We therefore excluded outpatients from our analysis. Outpatient treatments accounted for approximately 25 per cent of the revenue of hospital operators in 2011.⁶ We also excluded a proportion of data and treatments when cleaning the Healthcode data and this is explained in Annex A. We do not have reasons to believe that the exclusions from the data may introduce any systematic bias to our analysis.
12. In addition to information about the treatment received, we also observe other pieces of information for each episode in the data. We observe the price paid by a PMI for the patient's treatment and the particular hospital where the treatment was received. This price variable is defined as the 'episode price', which equals the amount paid for hospital services, excluding the cost of consultant fees and ancillary items.⁷ We also observe the patient's age, gender and length of stay.⁸
13. The parties have raised some concerns about the comparability of our data between hospital operators (eg whether there are material differences between the bundling of pre-assessment and post-operative treatments/tests in the episode prices recorded in the Healthcode data). We considered that the impact of these issues is unlikely to affect the main conclusions reached in this appendix, and we discuss these data issues in Section 6, paragraphs 6.361 to 6.362.

Controlling for cost differences

14. A characteristic of our price index methodology is that it controls for certain cost differences that may exist between hospital operators. This allows for comparisons made using the price index to hold these costs fixed. Here we explain intuitively how our price index controls for these costs before explaining the specific steps and details of the methodology. Our price index methodology controls for cost in the following respects:
 - (a) Differences in the mix of treatments provided by hospital operators. Certain medical treatments cost more to perform than other treatments, for example because less expensive or fewer medical inputs are required (eg a hip replacement is more expensive than cataract surgery). If the mix of treatments provided by two hospital operators is different, then these operators' costs and prices, when averaged across treatments, may be different as a result. To control for this potential cost difference, we have analysed only those treatments that are common to the operators we have compared between (eg treatments provided by both HCA and TLC for Bupa in 2011).^{9,10} We refer to the treatments we analyse as the 'common basket of treatments'.

⁶ This is based on MQ data received from BMI, HCA, Nuffield, Ramsay, Spire and TLC.

⁷ We do not adjust prices for inflation and they are presented in nominal terms throughout this appendix.

⁸ The Healthcode data does not include information on a patient's health status (eg co-morbidities).

⁹ This meant excluding from our analysis the treatments that are not provided by the operators we compare between. We have tested the robustness of our results to changes in this common basket (eg more inclusive baskets vs less inclusive baskets).

- (b) Differences in the mix of patients treated by hospital operators. For the same medical treatment, the cost of treating one patient (eg an older patient) may be different to the cost of treating another patient (eg a younger patient). If the mix of patients treated by two operators is different (eg because certain types of patients choose to attend one operator more often than the other operator), then these operators' costs and prices, when averaged across patients, may be different as a result. To control for this potential cost difference, we have compared the prices of treating the same 'representative patient' at each hospital operator.¹¹
- (c) Regional differences in input costs between central London and the rest of the UK. There may be differences in input costs between these two regions, for example in relation to labour costs. These differences in input costs may affect prices. To control for this potential cost difference, we have separated our price comparisons between central London (ie comparing only HCA and TLC) and the rest of the UK (ie comparing BMI, Nuffield, Ramsay and Spire).^{12, 13, 14}
15. By controlling for these three factors (treatment mix, patient mix, and input costs), we considered that our analysis accounts for the substantive cost differences that may exist between hospital operators that we compare. The parties have raised a number of concerns regarding other cost differences (eg driven by quality differentials such as nurse-to-patient ratios or the range of treatments offered, as a result of patients' clinical requirements, the charity status of TLC and Nuffield, and retro-active rebates). We do not control directly for these cost differences in our analysis, but considered that the impact of these issues is unlikely to affect the main conclusions reached in this appendix. We discuss these issues in Section 6, paragraphs 6.363 to 6.369.

Step-by-step methodology

16. We have calculated three versions of the price index. The first two versions allow for comparisons between the prices charged by different hospital operators, either for each PMI ('insurer-specific price index') or on average across PMIs ('average price index'). The third version allows for comparisons between PMIs and self-pay patients ('PMI and self-pay price index'). Each version of the price index uses a similar methodology as explained below.

Insurer-specific price index

17. This measure allows for comparisons between the prices charged by *different hospital operators for a given PMI*. To calculate the insurer-specific price index for a hospital operator (eg Nuffield) for a given PMI in a given year (eg Bupa in 2011) we have taken the following steps:

¹⁰ When we create the weighted average we also use a weighting scheme that is common to the operators we compare between.

¹¹ To begin to control for patient acuity, BMI suggested calculating the mean (or median) episode price for patients that stayed the modal number of nights. We did not pursue this approach as it excludes a significant portion of the data (ie all patients that did not stay the modal number of nights). Our approach, which is similar to BMI's suggestion but does not exclude as much data, uses regression analysis to control for the length of stay, and also controls for the age and gender of patients.

¹² We noted that this separation between central London and the rest of the UK will also control for any quality differences (which may also lead to cost differences) between the services provided by operators in these two regions.

¹³ We noted that HCA operates two PPUs outside of central London, although these account for a very small proportion of the data that we analyse (less than 1 per cent) and is therefore unlikely to have a material effect on the results.

¹⁴ We did not disaggregate the rest of the UK into smaller geographic areas because we only observe the same (national average) price that applies to hospitals in all areas owned by each of the four national hospital operators. We considered that because the four national hospital operators each own many hospitals that are geographically distributed across the rest of the UK, any regional cost differences, when considered on average across each operator's portfolio of hospitals, are unlikely to materially affect our analysis. Moreover, the parties did not provide evidence of material cost differences in this regard.

- (a) We identify the 'common basket' of treatments for the hospital operators included in the comparison (eg HCA and TLC for central London, or BMI, Nuffield, Ramsay and Spire for the rest of the UK). The common basket includes treatments provided by each operator included in the price comparison for the given PMI in a given year (see paragraph 19 below).¹⁵ This step of the methodology controls for treatment mix.¹⁶
- (b) For each treatment in the common basket, we regress episode prices on patient characteristics (age, gender and length of stay) and a constant term using all episodes associated with the hospital operator for the given PMI in a given year.^{17,18} We noted that these variables and the constant collectively explain the majority of variation in insured episode prices for the majority of treatments.¹⁹
- (c) For each treatment in the common basket, we use the regression estimates from step (b) to estimate the price charged by the hospital operator for the given PMI in a given year for treating a 'representative patient'.²⁰ The representative patient is defined separately for each treatment as a patient with the median characteristics (age, gender and length of stay) across all patients for hospital operators included in the price comparison (eg HCA and TLC for central London, or BMI, Nuffield, Ramsay and Spire for the rest of the UK) and all years and all PMIs.²¹ For example, the age of the representative patient for a hip replacement treatment used in the price comparison between HCA and TLC would be calculated once as the median age of all patients attending either HCA or TLC for a hip replacement, regardless of the PMI, over the period 2007 to 2011. In combination with step (b), this step of the methodology controls for patient mix.

¹⁵ We include only those treatments with over five patient visits because we require at least four observations to estimate the regression in step (b). We have tested the robustness of our results to the use of higher thresholds (15 and 30).

¹⁶ An alternative approach would have been to consider only a small number of high-volume treatments that are common to all operators. However, because negotiations between a PMI and a hospital operator focus on all of a PMI's expenditure, we thought it was more appropriate to compare prices over as wide a range of treatments as possible. For the same reasons, we did not separately examine inpatient and day-case treatments. Note that as part of our sensitivity analysis, one analysis considered only those treatments with more than 30 patients per operator for a given PMI in a given year, and these results are therefore relevant to the more common treatments.

¹⁷ In practice we do not repeat this regression step for every hospital operator when calculating the price index. Instead, we compute the regression for each treatment once for all hospital operators included in the price comparison (eg HCA and TLC for central London, or BMI, Nuffield, Ramsay and Spire for the rest of the UK). This is achieved by including dummy variables for each hospital operator and interactions between these hospital operator dummies and the patient characteristic variables, and this approach is equivalent to running the regression as described in step (b) separately for each hospital operator.

¹⁸ Nuffield questioned whether these patient characteristics were meaningful predictors of their prices. It told us that its prices were set as a package and therefore did not vary with length of stay. It also argued that statistically insignificant patient characteristic variables should be removed from these regressions as they were not reliable predictors of price. We did not agree with these arguments. First, if these patient characteristics are poor predictors of episode price, then they will have zero (or near-zero) coefficient estimates and therefore not affect the estimated prices in step (c). Second, including statistically insignificant regressors can still be beneficial to the price predictions if they meaningfully explain differences in episode prices. Third, to the extent that the predicted prices are imprecise (eg as a result of the patient characteristics not explaining episode prices), this will be reflected in the statistical significance tests that we have conducted (explained later). Nuffield also told us that length of stay should not be included in the regression. Nuffield argued that because it charged on a package basis, its incentives were aligned with the patient's to reduce length of stay. Nuffield suggested that other operators did not charge in the same way, and were therefore incentivized to admit patients for longer periods. This, Nuffield said, meant that using regression analysis to adjust for length of stay unduly depressed the prices of less efficient competitors, as the same patient may stay for fewer nights at Nuffield than at other hospital operators. Nuffield did not provide detailed evidence to support this argument. Our analysis does not distinguish between the different financial incentives hospital operators may have, and assumes that hospital operators treat patients according to their medical need rather than any other incentive.

¹⁹ The adjusted R-squared varied between 48 and 99 per cent in regressions for the four national operators, and between 60 and 99 per cent in regressions for HCA and TLC. Note that the lower range of adjusted R-squared numbers only relates to a small number of regressions for treatments that are uncommon and with a low number of observations, and the large majority of regressions have an adjusted R-squared that is above 80 per cent.

²⁰ We predict prices for a representative patient rather than separately for all patients that actually attend the operators we compare between, as the latter approach may involve predicting prices for patients with characteristics that are outside of the range of patient characteristics for a particular operator (ie uses out-of-sample prediction). We did consider the results using this type of prediction and found that they were broadly comparable.

²¹ We have tested whether our results are robust to changes in the definition of the representative patient. We found that in general our results are robust to changes in this definition. This issue is discussed in more detail below as part of our sensitivity analysis, and then separately for each set of results.

- (d) We then compute the insurer-specific price index as a weighted average of the estimated prices for each treatment obtained in step (c). Each treatment receives a weight equal to the number of admissions for that treatment across all operators included in the price comparison (eg HCA and TLC for central London, or BMI, Nuffield, Ramsay and Spire for the rest of the UK) for the given PMI in a given year. The weighting is therefore common to all operators included in the price comparison. This weighting assigns more weight to those treatments that are more commonly performed.²²
18. Repeating the above steps for each hospital operator in the price comparison produces insurer-specific price index results for a PMI and year pair (eg for BMI, Nuffield, Ramsay and Spire for Bupa in 2011). We then repeat that process for all PMIs and all years to produce the full set of results. Note that the common basket and the weighting can be different in each year. As a result of this we do not interpret the price index results over time but instead focus on the price differences between hospital operators within a given year.
 19. When determining the common basket of treatments in step (a) we had to select a threshold for the minimum number of patient episodes an operator must have in the data for that treatment to be included in the basket. There was a trade-off between a higher threshold, which would include fewer treatments in the basket but guarantee more observations for each regression in step (b) and potentially more accurate price predictions, and a lower threshold, which would include more treatments in the basket and represent a higher proportion of a PMI's revenue. We addressed this by considering several choices of threshold but found in general that the choice of threshold did not materially influence the results.²³ The results we present below are based on a threshold of five patient visits (ie there must be over five patient episodes in the data for each operator included in the price comparison for a given PMI in a given year). We recognize that using this threshold means that certain regressions are run with a very small number of observations. In our sensitivity analysis (explained later) we therefore considered alternative thresholds based on 15 and 30 patient episodes.

Average price index

20. This measure allows for comparisons between the prices charged by *different hospital operators on average across PMIs*. To calculate the average price index, we compute a weighted average of the insurer-specific price index results described above. We weight each insurer-specific price index by the size of the common basket of treatments according to the number of admissions. This means more weight is assigned to results based on the larger common baskets, which in practice are those for the PMIs that represent more patients (ie Bupa and AXA PPP).²⁴
21. We note that, because the common basket of treatments can differ between each PMI, it is possible that the average price index may be influenced by these differ-

²² By giving more weight to treatments that are more commonly performed, this means that more weight is put on the regressions in step (b) that have more observations. This will mitigate the impact of any outlying or extreme price observations and predicted prices that are imprecise as a result of few observations being used in the regressions.

²³ We considered the reason for the consistency between these results, and noted two factors that contribute to this. First, for many treatments the sample sizes are not small and in some cases they are very large. For example, as shown in Table 1 and 2, over 50 per cent of our regressions in 2011 use at least 15–29 observations (for HCA and TLC) or 20–42 observations (for BMI, Nuffield, Ramsay and Spire) depending on the particular price comparison. Second, we average the predicted prices across treatments in step (d) of the methodology, and this averaging assigns less weight to the regressions that use fewer observations. In these weighted averages, for example, the treatments that are collectively assigned 75 per cent of the weight are based on regressions that use at least 52–80 observations depending on the particular price comparison.

²⁴ By giving more weight to the larger common baskets, the average price index puts more weight on the insurer-specific price index results that are estimated with more treatments and larger sample sizes per treatment.

ences in the common basket (eg if the common basket for one PMI happens to include particularly expensive or cheap treatments). However, because the common basket contains many treatments for the PMIs that receive the highest weight in the average (ie Bupa and AXA PPP) this effect is unlikely to be material.

PMI and self-pay price index

22. This measure allows for comparisons between the prices paid by *different PMIs and self-pay patients for a given hospital operator*. As explained above in paragraph 7, this measure is in principle very similar to the insurer-specific price index. The main difference is that the common basket of treatments across PMIs (and self-pay patients) is different to the common basket between hospital operators.
23. To compute this measure we follow the same steps as in paragraph 17(a) to 17(d) with three modifications: (a) we reverse the role of hospital operators and PMIs in the calculation; (b) we include the self-pay patient data (described in Appendix 6.9) and include these patients as a separate category of 'PMI';²⁵ and (c) we define separate representative patients for central London and the rest of the UK. In step (a) of the methodology described above, we therefore identify a common basket of treatments across PMIs and self-pay patients (rather than across hospital operators). We note that in step (b) of this analysis the constant term and patient characteristic variables explain less price variation than in the corresponding regressions for insured patients only.²⁶
24. This analysis focused on comparisons between certain insurers and self-pay patients. Other insurers, which have substantially less data available than [X] and their inclusion constrains the size of the common basket, were considered in our sensitivity analysis (described below). In relation to hospital operators, we include BMI, HCA, Nuffield, Ramsay and Spire. We did not include TLC, as we did not have data on its self-pay patients.

Sensitivity analysis

25. To assess the robustness of our results using the above methodology, we have conducted a number of sensitivity tests. These tests make modifications to the methodology and/or the data included in the analysis. We undertook the following sensitivity analysis:
 - (a) Increasing the common basket by conducting 'pair-wise' analysis. The analysis described above compared groups of operators or PMIs (and self-pay patients) using a common basket of treatments across these groups. This sensitivity compared separate pairs of operators (eg BMI versus Nuffield) or PMIs/self-pay patients (eg Bupa versus self-pay patients), which allowed for a larger common basket of treatments (eg because the common basket for BMI and Nuffield is larger than the common basket for BMI, Nuffield, Ramsay and Spire).²⁷
 - (b) Increasing the common basket by pooling years of data. The analysis described above treats each year separately. This sensitivity pooled together three years of

²⁵ By this we mean that in terms of the methodology and calculation described above, self-pay patients as a group are treated as if they were a PMI.

²⁶ This may be caused by self-pay prices being set as a package price (ie varying less with patient characteristics), but varying more across local areas than insured prices (eg due to the differences in local competitive conditions). To the extent that this issue may cause less precise price predictions, this will be reflected in our statistical significance tests (explained later).

²⁷ This sensitivity does not apply to the central London analysis as that analysis is already pair-wise between only HCA and TLC.

data over the period 2009–2011, which allowed for a larger common basket of treatments (eg because more treatments have over five episodes, and are therefore included in the common basket, when considering three years as compared to a single year).²⁸

- (c) Increasing the threshold of patient episodes to 30. The analysis described above used a threshold of five patient episodes. This sensitivity used a higher threshold of 30 patient episodes, which allows for a higher number of observations per regression and as a result may mitigate the impact of any outlying or extreme price observations and produce more precise price predictions (see paragraph 19 above).²⁹
- (d) Improving the degrees of freedom in the price regressions. The analysis described above used a threshold of five patient episodes to determine which treatments were included in the common basket, and four variables in the price regressions (patient age, patient gender, length of stay and a constant). This sensitivity increased the threshold to 15 patient episodes, increasing the number of observations per regression, and uses only length of stay and a constant in the price regressions, reducing the number of parameters that each regression is required to estimate.
- (e) Alternative definitions of the representative patient. The analysis described above defined the representative patient for each treatment as having median characteristics (age, gender, length of stay) from all patients (ie from all years and all PMIs or operators). We considered two alternatives to this: using modal instead of median characteristics; and using median characteristics defined separately for each PMI or operator.³⁰
- (f) (PMI and self-pay price index only) Including [redacted] in the analysis. The PMI and self-pay price index described above focuses on [redacted]. This sensitivity examined the [redacted], and compares these [redacted] on a pair-wise basis (see paragraph 25(a) above) with self-pay patients. The five largest PMIs in our data set for central London are [redacted]. The five largest PMIs in our data set for the rest of the UK are [redacted]. We did not analyse the PMIs that are even smaller than those named above due to the small amount of data available.

26. Following the main results below, we briefly comment on the results of our sensitivity analysis. Not all sensitivities were conducted for all three measures of the price index (eg because they are not applicable or were of less relevance). Given the number of sensitivity tests that we have run and the volume of results involved in each test, we do not present all graphs and tables in this document. We have included graphs and/or tables for the sensitivity tests that are of most importance (ie those that are

²⁸ Since the common basket in this sensitivity contains some treatments that may have few or no observations in certain years, our regressions (step (b) above) are also pooled across the years. As a result, the estimated effects of patient characteristics and the differences in the price levels between insurers and self-pay are fixed for all years within each regression. Given that these effects may in fact vary over longer periods of time, we have used only three years (rather than the full period 2007–2011) for this sensitivity.

²⁹ BMI suggested using median, rather than mean, price to mitigate the impact of outlying or extreme price observations and 'skewness' in the distribution of prices for a given treatment. We did not pursue this approach because using a median-based approach would require more complex regression analysis (using quantile regression) that had computational drawbacks when applied to many treatments and some treatments with only few observations. We also note that our analysis, which uses a threshold of five patient visits, also controls for outlying or extreme observations by the fact that the predicted treatment-level prices are weighted by patient numbers in the price index; this will mean that those treatments with a small number of patients (where any outlying or extreme observations will have more of an influence) attract less weight in the average.

³⁰ We did not allow for the representative patient to differ between years as this can result in prices that appear to vary significantly between one year and another. Notwithstanding this, we considered it unlikely that this modification would materially affect our results as they are generally very robust to the choice of representative patient.

particularly relevant, or that show noticeable differences from the main results) and we have commented on the results that we have not presented.

Statistical significance testing

27. We have conducted statistical significance tests of the price differences we have estimated. These tests statistically evaluate the hypothesis that the price index results for, say, two hospital operators are equal for a given PMI in a given year.³¹ The results of the tests inform whether the estimated price differences are likely to reflect legitimate differences in the underlying price contracts or have instead occurred as a result of statistical noise (eg because the unobservable differences between patients that are not reflected in age, gender and length of stay resulted, by chance, in one operator's patients being relatively more or less expensive to treat in a certain year).
28. We conducted the statistical significance tests on the insurer-specific price index results and the PMI and self-pay price index results, in both cases using the price differences estimated using the pair-wise analysis (as described in paragraph 25(a) above).³² The standard errors used in the tests were computed using a bootstrap procedure.³³ In general, we found that our price index estimates are very precise, and the majority of price differences are statistically significant.³⁴ We comment on the results briefly in the results section below.

Results for HCA and TLC

29. This section presents the results of our insured price analysis for HCA and TLC. We present four sections of results covering: the common basket of treatments, the average price index, the insurer-specific price and the sensitivity analysis.

Common basket of treatments

30. Table 1 below provides information on the common baskets used to calculate the price index for HCA and TLC in 2011.

³¹ We considered that this test is more informative and superior to a test of the price differences for each individual treatment. Tests conducted for each treatment individually do not provide information on whether one operator is overall more expensive than another operator, and it is this hypothesis that we wished to test. Moreover, tests applied to individual treatments are highly influenced by the number of episodes observed for each treatment: those treatments with a small number of observations are more likely to fail the test than treatments with a large number of observations. Test results for individual treatments can therefore be uninformative. Our approach to testing appropriately aggregates the individual tests into a single test statistic which can then be used to assess the hypothesis we are interested in.

³² We used the pair-wise analysis for the statistical significance tests as this analysis naturally lends itself to direct comparisons between two operators, or between one PMI and self-pay patients. The price differences estimated using the pair-wise analysis (eg BMI and Nuffield) were in the majority of cases very similar to those estimated using groups of comparisons (eg for BMI, Nuffield, Ramsay and Spire).

³³ We used 500 replications in the bootstrap. Each replication re-samples the data with replacement and produces a bootstrap sample the same size as the original sample. For some of the smaller PMIs, and on account of the small samples of data available for these PMIs, in certain replications the bootstrap sample does not contain enough observations for every treatment used in the analysis. For these bootstrap samples the price index program does not successfully estimate a price. This means that the number of (successful) replications used in the bootstrap test for smaller PMIs is sometimes smaller than 500, but in the large majority of years the test is based on more than 100 replications.

³⁴ We used 5 per cent as the threshold for statistical significance, although in the majority of cases the results of the testing were robust to other thresholds (eg 1 per cent or 10 per cent).

TABLE 1 Common basket of treatments for HCA and TLC, 2011

Year	PMI	Number of treatments in the basket	Median number of patient episodes per treatment in the basket	Expenditure in the basket as a % of total inpatient and day-patient expenditure by the PMI	Episodes in the PMI's basket as a % of total episodes in all PMI baskets
2011	Bupa	79	19	[REDACTED]	[REDACTED]
2011	AXA PPP	54	17	[REDACTED]	[REDACTED]
2011	Pruhealth	7	20	[REDACTED]	[REDACTED]
2011	Aviva	9	15	[REDACTED]	[REDACTED]
2011	Cigna	4	25	[REDACTED]	[REDACTED]
2011	Bupa int'l	5	18	[REDACTED]	[REDACTED]
2011	Simplyhealth	5	16	[REDACTED]	[REDACTED]
2011	WPA	4	21	[REDACTED]	[REDACTED]
2011	SLH	2	29	[REDACTED]	[REDACTED]
2011	Exeter	N/A	N/A	[REDACTED]	[REDACTED]

Source: CC analysis.

Note: SLH = Standard Life Healthcare and Bupa int'l = Bupa International. No treatments available for inclusion for Exeter Family Friendly.

31. As shown in Table 1, the common baskets for Bupa and AXA PPP are the most comprehensive. Compared with the other PMIs, the baskets for Bupa and AXA PPP include more treatments and account for a higher proportion of the PMI's overall expenditure on inpatient and day-patient episodes. The final column in the table shows the weight attached to the insurer-specific price index results when forming the average price index. Bupa and AXA PPP collectively receive a weight of [REDACTED] per cent in the average price index in 2011. The results are broadly similar for earlier years (see Annex B, Table 1).³⁵

Average price index

32. Figure 1 shows average price index results for HCA and TLC.

FIGURE 1

Average price index: HCA and TLC

[REDACTED]

Source: CC analysis.

Note: Figures underlying the graph can be found in Annex B, Table 2.

33. As shown in Figure 1, we found that HCA charged higher prices than TLC, on average across PMIs, in each year over the period 2007 to 2011. HCA was more expensive than TLC by [REDACTED] per cent in 2007 and this difference increased to [REDACTED] per cent in 2011. On average over the period 2007 to 2011, HCA was more expensive than TLC by [REDACTED] per cent.

Insurer-specific price index

34. Figure 2 shows the insurer-specific price index results for [REDACTED].

³⁵ With the exception of Aviva, which has no data available for earlier years.

FIGURE 2

Insurer-specific price index: HCA and TLC

[X]

Source: CC analysis.

Note: Figures underlying the graph can be found in Annex B, Table B3.

35. As shown in Figure 2 HCA charges higher average prices than TLC [X]. The price differences between HCA and TLC in each year for [X] are statistically significant.
36. The results for [X] are shown in Annex B, Figure 1 and Table 3. These results are qualitatively similar to the results for [X], showing that HCA charges higher prices than TLC [X]. The price differences between HCA and TLC in each year for the majority of PMIs are statistically significant.³⁶
37. Overall, the results of the insurer-specific price index for HCA and TLC are consistent with the average price index results. Both sets of results, with very few exceptions, show that HCA is more expensive than TLC.

Sensitivity analysis

38. We conducted a number of sensitivity tests to assess the robustness of our results. In each case, we reviewed the results of the average price index. We ran the following sensitivity tests, each of which is described in paragraph 25:
 - (a) Increasing the common basket by pooling years of data.³⁷
 - (b) Increasing the threshold of patient episodes to 30 (see Annex B, Figure B2).
 - (c) Improving the degrees of freedom in the price regressions (see Annex B, Figure B3).
 - (d) Alternative definitions of the representative patient (results not presented, but were very similar to the main results presented above).
39. We found that our results were robust to these sensitivity tests. HCA argued that we should also compare HCA's prices with the prices charged by King Edward VII's Hospital Sister Agnes. We performed this comparison, and found that HCA is more expensive than this operator (see Annex B, Figure 4).³⁸

Results for BMI, Nuffield, Ramsay and Spire

40. This section presents the results of our insured price analysis for BMI, Nuffield, Ramsay and Spire. We present four sections of results covering: the common basket of treatments, the average price index, the insurer-specific price and the sensitivity analysis.

³⁶ The price difference is not statistically significant for [X] in 2007, [X] in 2008 and 2011, and [X] in 2008.

³⁷ This increased the representativeness of the common basket from between [X] and [X] per cent for Bupa and AXA PPP in 2011 to between [X] and [X] per cent for Bupa and AXA PPP across 2009–2011. The price difference, on average across 2009–2011, was [X] per cent.

³⁸ We noted that the common basket of treatments between HCA and King Edward VII for Bupa, the largest PMI, includes [X] treatments and represents around [X] per cent of revenue. This is [X] than the common basket between HCA and TLC for Bupa and AXA PPP.

Common basket of treatments

41. Table 2 provides information on the common baskets used to calculate the price index for BMI, Nuffield, Ramsay and Spire in 2011.

TABLE 2 Common basket of treatments for BMI, Nuffield, Ramsay and Spire, 2011

Year	PMI	Number of treatments in the basket	Median number of patient episodes per treatment in the basket	Expenditure in the basket as a % of total inpatient and day-patient expenditure by the PMI	Episodes in the PMI's basket as a % of total episodes in all PMI baskets
2011	Bupa	240	35	[REDACTED]	[REDACTED]
2011	AXA PPP	136	34	[REDACTED]	[REDACTED]
2011	Aviva	83	29	[REDACTED]	[REDACTED]
2011	Simplyhealth	49	21	[REDACTED]	[REDACTED]
2011	Pruhealth	40	21	[REDACTED]	[REDACTED]
2011	SLH	19	42	[REDACTED]	[REDACTED]
2011	WPA	23	30	[REDACTED]	[REDACTED]
2011	Cigna	23	23	[REDACTED]	[REDACTED]
2011	Exeter	10	20	[REDACTED]	[REDACTED]
2011	Bupa int'l	3	22	[REDACTED]	[REDACTED]

Source: CC analysis.

Note: SLH = Standard Life Healthcare and Bupa int'l = Bupa International.

42. As shown in Table 2, the common baskets for Bupa and AXA PPP are the most comprehensive. Compared with the other PMIs, the baskets for Bupa and AXA PPP include more treatments, typically contain a higher number of admissions per treatment, and account for a higher proportion of the PMI's overall expenditure on inpatient and day-patient episodes. The final column in the table shows the weight attached to the insurer-specific price index results when forming the average price index. Bupa and AXA PPP collectively receive a weight of [REDACTED] per cent in the average price index in 2011. Aviva is the next largest PMI, and receives a weight of [REDACTED] per cent in the average price index in 2011. The results are broadly similar for earlier years (see Annex C, Table 1).

Average price index

43. Figure 3 shows average price index results for BMI, Nuffield, Ramsay and Spire.

FIGURE 3

Average price index: BMI, Nuffield, Ramsay and Spire

[REDACTED]

Source: CC analysis.

Note: Figures underlying the graph can be found in Annex C, Table 2.

44. As shown in Figure 3, we found that for all years the prices charged by BMI, Nuffield and Spire, on average across PMIs, are higher than the prices charged by Ramsay. We noted that the average prices charged by BMI, Nuffield and Spire are broadly similar, and the price differences between these operators range from around [REDACTED] per cent in 2007 ([REDACTED]) to around [REDACTED] per cent in 2011 ([REDACTED]). We also noted that the difference in price between the average of the three higher-priced operators (BMI, Nuffield and Spire) and Ramsay was around [REDACTED] per cent in 2007 and was then relatively stable at between [REDACTED] and [REDACTED] per cent over the period 2008 to 2011.

Insurer-specific price index

45. Figure 4 shows the insurer-specific price index results for [X].

FIGURE 4

Insurer-specific price index: BMI, Nuffield, Ramsay and Spire

[X]

Source: CC analysis.

Note: Figures underlying the graph can be found in Annex C, Table 3.

46. As shown in Figure 4, we found that: [X].
47. The results for [X] are shown in Annex C, Table 3 and Figure 1. These results show that no single operator is consistently the highest or the lowest priced for [X]. The price differences between BMI, Nuffield and Spire, when estimated on a pair-wise basis, are statistically significant for: [X] in all years, and the [X] in most years.³⁹
48. Overall, the insurer-specific price index results for BMI, Nuffield, Ramsay and Spire are not consistent with the average price index results. There are two notable inconsistencies. First, [X]. Second, [X].

Sensitivity analysis

49. We conducted a number of sensitivity tests to assess the robustness of our results. In each case, we reviewed the results of the average price index. We ran the following sensitivity tests, each of which is described above in paragraph 25:
- (a) Increasing the common basket by conducting 'pair-wise' analysis for the comparisons between BMI-Nuffield, BMI-Spire and Spire-Nuffield (see Annex C, Figure 2, Figure 3 and Figure 4).
 - (b) Increasing the threshold of patient episodes to 30 (see Annex C, Figure 5).
 - (c) Improving the degrees of freedom in the price regressions (see Annex C, Figure 6).
 - (d) Alternative definitions of the representative patient (results not presented, but were very similar to the main results presented above).
50. We found that the broad conclusions made above regarding the average price index were robust to these sensitivity tests. The results for the majority of sensitivities show, in line with the main results above, that the prices of BMI, Nuffield and Spire are similar in recent years, and the prices of Ramsay are lower than the other three operators. In some cases, the price differences and ranking between BMI, Nuffield and Spire varies. While we were of the view that our main results are generally preferable to the results of any particular sensitivity test, due to the differences in ranking of the three operators between some sensitivity tests we were not confident in our ability to reliably distinguish between the average prices of these three operators.

³⁹ The price difference between BMI and Spire for [X] is not statistically significant in 2009.

Results for the PMI and self-pay price index

51. This section presents the results of our PMI and self-pay price index. We present four sections of results covering: the common basket of treatments, the price index results for HCA, the price index results for the four national hospital operators, and the sensitivity analysis. Note that the majority of the results in this section apply only to certain insurers and self-pay patients; in the sensitivity analysis we discuss results relevant to [X].

Common basket of treatments

52. Table 3 provides information on the common baskets used to calculate the price index in 2011.

TABLE 3 Common basket of treatments for [X] and self-pay patients, 2011

Hospital operator	Number of treatments in the basket	Median number of patient episodes per treatment in the basket	Revenue in the basket as a % of total inpatient and day-patient revenue by the operator
HCA	103	22	[X]
BMI	254	27	[X]
Nuffield	192	26	[X]
Ramsay	92	27	[X]
Spire	230	28	[X]

Source: CC analysis.

53. As shown in Table 3, while there are some differences in the common baskets between operators, in all cases the basket uses a relatively high number of treatments and is relatively inclusive. The results are broadly similar for earlier years (see Annex D, Table 1). Note that if the [X] were included in this analysis, the representativeness of the common basket (indicated in the far right column) is reduced, particularly for the HCA basket. It is for this reason that we focus primarily on [X].

PMI and self-pay comparison for HCA

54. Figure 5 shows the results of the PMI and self-pay price index for HCA.

FIGURE 5

PMI and self-pay price index: HCA

[X]

Source: CC analysis.

Note: Figures underlying the graph can be found in Annex D, Table 2.

55. As shown in Figure 5, we found that [X] paid prices to HCA that are in most years at least as high as the prices paid by self-pay patients. [X] paid prices that were similar to the prices paid by self-pay patients for all years [X] when its prices were around [X] per cent lower than self-pay patients. [X] paid prices that were around [X] per cent higher than self-pay patients in all years. The price differences between these PMIs and self-pay patients, when estimated on a pair-wise basis, are statistically significant for all years for [X] and for 2010 and 2011 [X].

PMI and self-pay comparison for BMI, Nuffield, Ramsay and Spire

56. Figure 6 shows the results of the PMI and self-pay price index for BMI, Nuffield, Ramsay and Spire for 2011. To allow for easier comparison between the four hospital operators in a single graph, we have indexed the PMI prices to the average of self-pay prices for each operator. A value of 100 indicates that the average price paid by a PMI to the hospital operator is equal to the average price paid by self-pay patients to the hospital operator.

FIGURE 6

PMI and self-pay price index: BMI, Nuffield, Ramsay and Spire

[X]

Source: CC analysis.

Note: Figures underlying the graph can be found in Annex D, Table 2.

57. As shown in Figure 6, [X] typically paid lower prices than self-pay patients to BMI, Nuffield, Ramsay and Spire in 2011. [X] The results for other years are similar (see Annex D, Table 2 and Figures 1, 2, 3 and 4). The price differences between these PMIs and self-pay patients, when estimated on a pair-wise basis, are statistically significant for all years.

Sensitivity analysis

58. We conducted a number of sensitivity tests to assess the robustness of our results. We ran the following sensitivity tests, each of which is described above in paragraph 25:
- (a) Increasing the common basket by conducting 'pair-wise' analysis for the comparisons between self-pay and [X] and self-pay and [X] (see Annex D, Figures 5 and 6).
 - (b) Increasing the threshold of patient episodes to 30 (see Annex D, Figures 7 and 8).
 - (c) Improving the degrees of freedom in the price regressions (see Annex D, Figures 9 and 10).
 - (d) Including [X] in the analysis.⁴⁰
 - (e) Alternative definitions of the representative patient (results not presented, but were very similar to the main results presented above).
59. We found that our results were broadly robust to these sensitivity tests. The results for the four national hospital operators were similar to that presented in Figure 6. The results for HCA, when using a higher threshold of 30 patient episodes, indicated that [X] pays less than self-pay patients by around [X] per cent on average over the years 2007 to 2011, and [X] also pays less than self-pay patients [X]. These apparent differences to the results in Figure 5, however, may be driven by the change in common basket, which when using the higher patient threshold is

⁴⁰ This analysis additionally included [X] and [X] for HCA, and [X] and [X] for the four national operators. This decreases the representativeness of the common basket in 2011 from [X] to [X] per cent for HCA and between [X] and [X] to between [X] and [X] per cent for BMI, Nuffield, Ramsay and Spire.

substantively less representative.⁴¹ Indeed, the sensitivity that allows for more degrees of freedom shows a smaller discount relative to self-pay for [§] of around [§] per cent on average over the period 2007 to 2011. With regard to [§], for the four national hospital operators and HCA, the results showed that these PMIs tend to pay prices that are higher than self-pay.⁴² [§] exceptions are [§], which achieve a small discount relative to self-pay for some operators in some years.

Comparisons between insured prices and local substitutability

60. In this section we explain the methodology and results of our comparisons between insured prices and local substitutability. The objective of this analysis was to assess whether the insured prices that are negotiated by hospital operators with PMIs (either in central London, or for the rest of the UK) are related to the competitive position of the hospitals owned by each operator in local areas. In particular, we compared the price index results above with measures that proxy how substitutable each operator's hospitals are at the local level. As before, results are presented separately first for HCA and TLC, and then for BMI, Nuffield, Ramsay and Spire.

Methodology

61. To assess whether local substitutability plays a role in determining insured price outcomes, we have compared the insured price index results (discussed above) with measures that proxy local substitutability. By local substitutability we mean the degree of local competitive constraints that a hospital faces; a more substitutable hospital faces a higher degree of competitive constraint. We use measures of local concentration as a proxy for local substitutability. Our comparison uses simple graphical analysis. This allows us to see the association and correlation between the two variables but, being a relatively simple approach, does not allow for statistical testing. We comment in more detail later on the limitations of this analysis and the conclusions that can be drawn from it.
62. For the comparison, as a price measure we used the average price index results (discussed above). This is a measure of the price on average across an operator's portfolio of hospitals. Consistent with this average price measure, we have constructed several measures of local concentration that are also an average across an operator's portfolio of local hospitals. We explain our approach to this for central London and the rest of the UK below.

Measures to proxy local substitutability for HCA and TLC

63. The hospitals belonging to the HCA and TLC portfolios are almost entirely located in central London.⁴³ We have assessed the substitutability between these operators in this area where they both operate; see Section 6, paragraphs 6.204 to 6.218. This analysis concluded that:

(a) TLC is HCA's closest competitor; and,

⁴¹ The number of treatments in the [§] and self-pay common basket for HCA is around 100 when the patient threshold is five, and only around 16 when the patient threshold is 30.

⁴² The price paid by [§] was between [§] per cent lower and [§] per cent higher than the price paid by self-pay patients, on average across the years. These price differences, which are estimated on a pair-wise basis, are statistically significant for all insurers at the four national operators, and for most insurers for HCA.

⁴³ The exceptions to this are two PPUs managed by HCA, one of which is in Manchester and one in Greater London.

(b) HCA has a significantly higher share of revenue, admissions and capacity than TLC in central London.

64. We have used the shares of admissions and capacity as a proxy for the local substitutability between HCA and TLC in central London. Note that because the shares of revenue are similar to the shares of admissions and capacity, the results presented below would also be similar if shares of revenue were used.

Measures to proxy local substitutability for BMI, Nuffield, Ramsay and Spire

65. For BMI, Nuffield, Ramsay and Spire, the relevant portfolio of hospitals spans many different and overlapping local areas. Measuring local concentration as an average across these operators' portfolios is therefore more involved than in a single local area such as central London. It is necessary to evaluate local concentration in each local area, and then average these measures to produce a single measure for each hospital operator.
66. For this comparison, we measured local concentration in each local area outside central London using two different measures. These are defined as follows:
- (a) LOCI. This measure is based on a hospital's weighted average market share of insured admissions. Full details of this measure are set out in Appendix 6.4.
- (b) Hospital of concern (HOC). This measure is based on our local assessments of competitive conditions, and records whether a hospital faces insufficient competitive constraints or sufficient competitive constraints. Full details of the methodology used in our local assessments are set out in Section 6, paragraphs 6.161 to 6.199.
67. To allow for easier visual comparisons below, we have scaled the LOCI and HOC measures so that they are both on a scale between 0 and 100. In both cases, higher numbers indicate that a hospital faces weaker competitive constraints and has a lower level of substitutability.⁴⁴ When we refer to LOCI and HOC below, we mean the measures after they have been rescaled.
68. Each of these two measures has relative merit. The LOCI measure provides an indication of the degree of competitive constraints, with numbers closer to zero indicating that a hospital is more substitutable (ie has stronger competitive constraints) and numbers closer to 100 indicating it is less substitutable (ie has weaker competitive constraints). The drawback of the LOCI measure is that it is an indicator that incorporates a limited amount of information (on patient choices), and may therefore be subject to some measurement error. The HOC measure, by contrast, incorporates all available information that we have reviewed and it is therefore very comprehensive in its information set. The drawback of the HOC measure is that it only produces a binary classification (zero which indicates a hospital is sufficiently constrained, or 100 which indicates a hospital is insufficiently constrained) and this does not indicate the degree of constraints a hospital faces.⁴⁵
69. To aggregate each of these measures across an operator's portfolio, we used simple and weighted averages. The simple average HOC can be interpreted as the

⁴⁴ To rescale LOCI, we have subtracted LOCI from 1, and then multiplied this number by 100. To rescale HOC, we have coded insufficiently constrained hospitals as 100 and sufficiently constrained hospitals as 0.

⁴⁵ We have not used the fascia count measure for this analysis as it does not have an advantage relative to the LOCI or HOC measures. It is similar to the LOCI measure in the sense that it is an indicator but, unlike LOCI, it does not reflect the strength of competitors and only records the number of competitors.

proportion of hospitals in an operator's portfolio that face insufficient competitive constraints. For the weighted average measures, we have used as weights the number of insured patients at each hospital. This measure therefore gives more weight to hospitals that PMIs may consider more important due to the higher volume of patients and associated higher levels of spend.⁴⁶

Limitations of this analysis

70. Our analysis of the relationship between insured prices and local concentration has a number of inherent limitations. We noted three particular shortcomings. Each of these stem from the fact that we have not been able to measure insured prices at individual local hospitals.
71. First, we did not have many price observations, only one per operator per year (ie two per year for central London, four per year for the rest of the UK). This precluded a statistical analysis of the type we conducted for self-pay patients (ie PCA).
72. Second, our analysis does not systematically control for certain factors. For example, while we have controlled for certain cost and quality differences (through our price index) we have not controlled for any other differences between hospital operators and/or PMIs. Instead, we have considered the possible circumstances under which we may observe a 'false positive' association between insured prices and local concentration when in reality there is no relationship. There are two possibilities. First is the possibility that there are factors we have not controlled for that systematically bias the association we observe ('omitted variables'). We did not identify factors that we think would systematically bias the association (either positively or negatively).⁴⁷ Second is the possibility that the unobservable differences between hospital operators and/or PMIs have, by chance (ie not systematically), materially influenced the observed association between insured prices and local concentration.⁴⁸ We noted that any influence from this second possibility could go either way—ie the bias could be positive or negative. Due to the small number of observations, we could not rule out this second possibility. We discuss the uncontrolled for factors noted by the parties in Section 6, paragraph 6.357.
73. Third, and only in relation to our analysis outside central London, the fact that insured prices are averaged over many local areas, where the competitive conditions vary, will reduce the average price differences between operators and to a degree dilute any observed average relationship between insured prices and local concentration.⁴⁹ All else equal, it will therefore be harder to identify any relationship between insured prices and local concentration for the rest of the UK as compared with central

⁴⁶ The weights sum to one across all hospitals owned by the four hospital operators.

⁴⁷ In statistical terms, we do not think our results suffer from omitted variable bias (ie as a result of not controlling for factors that positively affect insured prices and are positively correlated with the local concentration variables).

⁴⁸ In statistical terms, it is possible that there are some unobservable differences between hospital operators that affect insured prices which are not systematically related to the average local substitutability variables but have led to certain operators having a lower price (eg Ramsay) and others having a higher price (eg BMI). A statistical analysis would typically be able to rule out this issue by relying on a larger number of observations (in which case these random differences would, in expectation, not lead to bias) and statistical testing.

⁴⁹ An example demonstrates this. Consider the case when there are only two types of hospitals, A and B, and type A faces less competitive constraints than type B such that the insured prices are £1,000 and £900 at each type of hospital, respectively. Now consider two hospital operators, X and Y, each owning 50 hospitals. Operator X owns 40 hospitals of type A and 10 of type B, while operator Y owns 20 hospitals of type A and 30 of type B. In this example, there is a relationship between insured prices and the local substitutability of the hospitals. Operator X has a portfolio of hospitals that are less substitutable at the local level and it charges higher insured prices. When insured prices are measured on average across each operator's portfolio, Operator X will have an average insured price of £980 ($40/50 \times £1,000 + 10/50 \times £900$) while Operator B will have an average insured price of £940 ($20/50 \times £1,000 + 30/50 \times £900$). Thus in this example, while the less substitutable hospitals (type A) attract a price that is £100 (or around 10 per cent) higher than the more substitutable hospitals (type B), when comparing the average prices of two operators the difference appears more muted at £40 (or around 4 per cent).

London—the difference is that we observe insured prices for a single local area rather than as an average across areas.

74. The role played by this analysis in our overall conclusions is discussed in paragraphs 6.478 to 6.496.

Results for HCA and TLC

75. Table 4 shows the shares of admissions and overnight bed capacity for HCA and TLC in 2011.

TABLE 4 **Shares of total admissions and overnight bed capacity in central London for HCA and TLC**

<i>Measure</i>	<i>per cent</i>	
	<i>TLC</i>	<i>HCA</i>
Share of total admissions in central London, 2011	[10–20]	[40–50]
Share of installed overnight bed capacity in central London, 2011	11	

Source: CC analysis.

76. As Table 4 shows, by either measure, HCA has a significantly higher share than TLC. Figure 7 shows a comparison between the average price index results and shares in 2011.

FIGURE 7

Average price index vs shares of admissions and capacity: HCA and TLC, 2011

[✂]

Source: CC analysis.

77. As Figure 7 shows, for 2011, we found a positive association between the average price index and either measure of share. A positive association also appears likely to have remained over time—HCA is more expensive than TLC for each year over the period 2007 to 2011 (see Figure 1) and the 2011 shares figures may be a reasonable proxy for shares in earlier years given the limited entry, exit and expansion in the industry.

Results for BMI, Nuffield, Ramsay and Spire

78. Table 5 shows the average local concentration measures for BMI, Nuffield, Ramsay and Spire.

TABLE 5 **Average local concentration outside central London: BMI, Nuffield, Ramsay and Spire**

Measure	Ramsay	Nuffield	Spire	BMI
Simple average LOCI	[X]	[X]	[X]	[X]
Simple average HOC	[X]	[X]	[X]	[X]
Weighted average LOCI	[X]	[X]	[X]	[X]
Weighted average HOC	[X]	[X]	[X]	[X]

Source: CC analysis.

Note: Before averaging, the hospital-level LOCI and HOC figures were rescaled. LOCI figures rescaled by subtracting LOCI from 1, and then multiplied this number by 100. HOC figures rescaled coding insufficiently constrained hospitals as 100 and sufficiently constrained hospitals as 0. The weights used in averaging are the number of insured admissions at each hospital.

79. As Table 5 shows, the ranking of hospital operators is broadly consistent across the four measures of average local concentration. Ramsay has the portfolio of hospitals that is on average the most substitutable (ie faces strongest competitive constraints), followed by Nuffield and Spire although the ranking between these two operators varies according to the measure, and BMI has the portfolio of hospitals that is on average the least substitutable (ie faces weakest competitive constraints). The weighted measures are smaller in magnitude than the simple average measures because hospitals that are less substitutable (ie face weaker competitive constraints) typically have higher insured admissions than those hospitals that are more substitutable. The differences in scale do not affect the interpretation of this analysis since the focus is only on the relative differences between hospital operators rather than the absolute level of the measures.

80. Figure 8 shows comparisons between the average price index results for 2011 and the measures of average local concentration.

FIGURE 8

**Average price index (2011) vs average local concentration:
BMI, Nuffield, Ramsay and Spire**

[X]

Source: CC analysis.

81. As Figure 8 shows, regardless of the measure of average local concentration, we found a weak positive association between the average price index in 2011 and average local concentration. The correlation between average price and average local concentration is between 0.42 and 0.77 depending on the measure of average local concentration. A positive association also appears likely to have remained over time—in earlier years BMI is more expensive than other operators while Ramsay remains the lowest priced (see Figure 3) and the LOCI and HOC are likely to be a reasonable proxy for average local concentration in earlier years given the limited entry, exit and expansion in the industry.⁵⁰

⁵⁰ The LOCI and HOC figures are also relevant to earlier years because both measures incorporate data from the period 2009–2012.

Data processing

1. This annex provides details of how we have processed the Healthcode data. The self-pay data, which we use for the PMI and self-pay price index analysis but not the other analyses in this appendix, was processed as described in Appendix 6.9, Annex A.
2. The Healthcode data set came in the form of row-by-row invoice data. Each row in these data sets corresponds to a patient's purchase of a single item or service from a hospital, and during a single hospital visit a patient may receive many such items or services. As a result several rows are typically associated with each patient's hospital visit.
3. Our data processing had four main stages:
 - (a) aggregating line item data into episode data;
 - (b) cleaning the data sets;
 - (c) identify the episodes relevant to our analysis; and
 - (d) further cleaning of the price data.
4. Each stage is described in more detail below.

Consolidating episodes

5. We defined an 'episode' as a single patient visit to a given hospital for a given treatment. In the data this was defined as a unique combination of discharge date—visit type—date of birth—gender—patient postcode—hospital postcode. The consolidated data set therefore contains one row per episode, with aggregated information relating to that episode (for example, the type of visit, the treating hospital, the particular treatment that was received, the primary specialty of the treating consultant, and the total episode price paid for all hospital's services). Each episode has a corresponding treatment and the primary specialty of the treating consultant.
6. The key variable that has been created in this process is the episode price. This is the total price paid by a patient for all hospital services received during that episode.¹ This price excludes consultant fees and ancillary services.²

Cleaning the data set

7. While processing the data we noticed certain irregularities. For example, episodes with admission dates occurring after discharge dates, or negative prices. We have applied two filters, defined as follows, to remove these inconsistencies:
 - (a) episodes with admission dates occurring after discharge dates ('date inconsistencies');

¹ This process involved grouping together all invoices that are associated with a single episode.

² For the majority of episodes, the Healthcode data does not include the consultant fee. In cases where the consultant fee is included (eg because a hospital operator bills on behalf of the consultant), we have subtracted this from the episode price.

(b) episodes with negative or zero episode prices.

8. Table 1 below shows the number of episodes excluded in each of these categories.

TABLE 1 **Cleaning of the Healthcode data set**

Total episodes	13,499,931
Date inconsistencies	5
Negative or zero prices	379,632
Total episodes after cleaning	13,120,294
Proportion of total excluded	3%

Source: CC analysis.

Note: Exclusions are sequential, from the top to the bottom of the table.

9. As Table 1 shows, as a result of the data cleaning around 3 per cent of patient episodes were excluded from the data set.

Identifying the relevant data for our analysis

10. Our analysis of the insured data has focused on inpatient and day-case treatments over the period 2007 to 2011. To identify the relevant data, we therefore excluded:

(a) outpatient episodes; and

(b) inpatient and day-case episodes before 2007 or after 2011.³

11. Table 2 shows the number of exclusions made to the data for each of these categories.

TABLE 2 **Identifying the relevant episodes**

Total episodes after cleaning, excluding specialized hospitals	13,120,294
Outpatient episodes	10,202,205
Years before 2007 or after 2011	676,095
Total relevant episodes	2,241,994
Proportion of total excluded	83%

Source: CC analysis.

Note: Exclusions are sequential, from the top to the bottom of the table.

12. As Table 2 shows, the inpatient and day-case episodes that are relevant to our analysis account for around 17 per cent of all episodes. The reason that this proportion appears low is because outpatient episodes account for the majority of patient visits (around 78 per cent of all episodes). Note that while outpatient episodes account for a large proportion of episodes, they only account for around 25 per cent of revenue.⁴

Further cleaning of the inpatient and day-case episode price data

13. The final stage of data processing relates to the episode prices and other episode-specific variables that feature in the insured price analysis. In the large majority of

³ We had previously allocated invoices to a particular year on the basis of the point in time Healthcode received the invoice. For certain invoices this point in time may differ from when the episode took actually place (eg the discharge date). The revised data uses the discharge date to assign invoices to a particular year.

⁴ This estimate of the proportion of revenue associated with outpatient treatments is based on 2011 aggregate data for the hospital operators analysed in the appendix.

cases the Healthcode data showed a significant degree of uniformity compared with, for example, the self-pay data set. We did not identify many issues in the data-cleaning process that we were concerned may distort our analysis. However, we noted a small number of exceptions to this (eg unrealistically low or extreme prices), and noted some missing information (eg unknown treatments or treatments that were recorded together but without separate prices). We therefore made the following exclusions:

- (a) episodes with extreme prices;⁵
- (b) episodes with unknown or with multiple treatments but without separate prices recorded for each treatment; and
- (c) episodes with unknown length of stay.

14. Table 3 below shows the number of exclusions made to the data for each category.

TABLE 3 Irregular episodes

Total relevant episodes after cleaning	2,241,994
Extreme prices	402
Unknown treatments or multiple treatments	749,007
Unknown length of stay	158
Total relevant episodes excluding irregular episodes	1,492,427
Proportion identified as irregular (%)	33%

Source: CC analysis.

Note: The total episodes excluded as irregular is not equal to the sum of the categories of irregular episodes as certain episodes may be counted in more than one category.

15. We therefore identify around 33 per cent of the data as being potentially irregular in some way.⁶ The number of episodes that was available for our analysis is therefore 1,492,427. From this total, our analysis focused on treatments that have over a certain threshold of patient visits per year for each pairing of an operator and a PMI. The details of how we identify these treatments (referred to as the common basket of treatments) are discussed in detail in the relevant sections of this appendix.

⁵ We defined 'extreme' as being below £10 or above £100,000. We noted that this only excluded a small number of observations and that our results were robust to the inclusion or exclusion of these episodes. Moreover, we also tested alternative definitions of 'extreme', for example using the definition adopted in our PCA (see Appendix 6.9, Annex A), and found that our results were robust to this choice.

⁶ We noted that the categories and proportion of exclusions to the Healthcode data set differ from the PCA data set. We have deliberately taken a different approach to cleaning each of these data sets particularly with regard to data exclusions. This is because of the different nature of these data sets. The Healthcode data set came from a single source, required little combination of different raw data files and showed a significant degree of uniformity. By contrast, the self-pay data required consolidating several data sources from each hospital operator, and then combining the different operators' data sets. Each of these self-pay data sets was supplied to us by separate businesses that use separate IT systems. The nature of the self-pay data set is therefore more complicated, and required a more nuanced set of data exclusions.

Further results—HCA and TLC

TABLE 1 Common basket of treatments: HCA and TLC

Year	PMI	Number of treatments in the basket	Median number of patient episodes per treatment in the basket	Expenditure in the basket as a % of total inpatient and day-patient expenditure by the PMI in a given year	Episodes in the PMI's basket as a % of total episodes in all PMI baskets in a given year
2007	AXA PPP	33	17	[X]	[X]
2007	Aviva	N/A	N/A	[X]	[X]
2007	Bupa	44	19	[X]	[X]
2007	Bupa int'l	4	13	[X]	[X]
2007	Cigna	3	21	[X]	[X]
2007	Exeter	N/A	N/A	[X]	[X]
2007	SLH	2	33	[X]	[X]
2007	Simplyhealth	N/A	N/A	[X]	[X]
2008	AXA PPP	61	18	[X]	[X]
2008	Aviva	N/A	N/A	[X]	[X]
2008	Bupa	74	18	[X]	[X]
2008	Bupa int'l	6	15	[X]	[X]
2008	Cigna	4	25	[X]	[X]
2008	Exeter	N/A	N/A	[X]	[X]
2008	Pruhealth	3	13	[X]	[X]
2008	SLH	5	15	[X]	[X]
2008	Simplyhealth	N/A	N/A	[X]	[X]
2009	AXA PPP	57	17	[X]	[X]
2009	Aviva	N/A	N/A	[X]	[X]
2009	Bupa	67	22	[X]	[X]
2009	Bupa int'l	5	20	[X]	[X]
2009	Cigna	4	20	[X]	[X]
2009	Exeter	N/A	N/A	[X]	[X]
2009	Pruhealth	5	24	[X]	[X]
2009	SLH	3	25	[X]	[X]
2009	Simplyhealth	3	13	[X]	[X]
2009	WPA	N/A	N/A	[X]	[X]
2010	AXA PPP	57	16	[X]	[X]
2010	Aviva	N/A	N/A	[X]	[X]
2010	Bupa	69	21	[X]	[X]
2010	Bupa int'l	4	23	[X]	[X]
2010	Cigna	5	15	[X]	[X]
2010	Exeter	1	8	[X]	[X]
2010	Pruhealth	6	28	[X]	[X]
2010	SLH	2	43	[X]	[X]
2010	Simplyhealth	5	20	[X]	[X]
2010	WPA	4	20	[X]	[X]
2011	AXA PPP	54	17	[X]	[X]
2011	Aviva	9	15	[X]	[X]
2011	Bupa	79	19	[X]	[X]
2011	Bupa int'l	5	18	[X]	[X]
2011	Cigna	4	25	[X]	[X]
2011	Exeter	N/A	N/A	[X]	[X]
2011	Pruhealth	7	20	[X]	[X]
2011	SLH	2	29	[X]	[X]
2011	Simplyhealth	5	16	[X]	[X]
2011	WPA	4	21	[X]	[X]

Source: CC analysis.

Note: SLH = Standard Life Healthcare and Bupa int'l = Bupa International.

TABLE 2 **Average price index: HCA and TLC**

<i>Year</i>	<i>HCA</i>	<i>TLC</i>
2007	[X]	[X]
2008	[X]	[X]
2009	[X]	[X]
2010	[X]	[X]
2011	[X]	[X]

Source: CC analysis.

TABLE 3 **Insurer-specific price index: HCA and TLC**

<i>Year</i>	<i>PMI</i>	<i>HCA</i>	<i>TLC</i>
2007	AXA PPP	[X]	[X]
2007	Aviva	[X]	[X]
2007	Bupa	[X]	[X]
2007	Bupa int'l	[X]	[X]
2007	Cigna	[X]	[X]
2007	Exeter	[X]	[X]
2007	SLH	[X]	[X]
2007	Simplyhealth	[X]	[X]
2008	AXA PPP	[X]	[X]
2008	Aviva	[X]	[X]
2008	Bupa	[X]	[X]
2008	Bupa int'l	[X]	[X]
2008	Cigna	[X]	[X]
2008	Exeter	[X]	[X]
2008	Pruhealth	[X]	[X]
2008	SLH	[X]	[X]
2008	Simplyhealth	[X]	[X]
2009	AXA PPP	[X]	[X]
2009	Aviva	[X]	[X]
2009	Bupa	[X]	[X]
2009	Bupa int'l	[X]	[X]
2009	Cigna	[X]	[X]
2009	Exeter	[X]	[X]
2009	Pruhealth	[X]	[X]
2009	SLH	[X]	[X]
2009	Simplyhealth	[X]	[X]
2009	WPA	[X]	[X]
2010	AXA PPP	[X]	[X]
2010	Aviva	[X]	[X]
2010	Bupa	[X]	[X]
2010	Bupa int'l	[X]	[X]
2010	Cigna	[X]	[X]
2010	Exeter	[X]	[X]
2010	Pruhealth	[X]	[X]
2010	SLH	[X]	[X]
2010	Simplyhealth	[X]	[X]
2010	WPA	[X]	[X]
2011	AXA PPP	[X]	[X]
2011	Aviva	[X]	[X]
2011	Bupa	[X]	[X]
2011	Bupa int'l	[X]	[X]
2011	Cigna	[X]	[X]
2011	Exeter	[X]	[X]
2011	Pruhealth	[X]	[X]
2011	SLH	[X]	[X]
2011	Simplyhealth	[X]	[X]
2011	WPA	[X]	[X]

Source: CC analysis.

Note: SLH = Standard Life Healthcare and Bupa int'l = Bupa International.

FIGURE 1

Insurer-specific price index for [✂]: HCA and TLC

[✂]

Source: CC analysis.

FIGURE 2

Average price index: HCA and TLC (30 patient episodes threshold)

[✂]

Source: CC analysis.

FIGURE 3

Average price index: HCA and TLC (improved degrees of freedom)

[✂]

Source: CC analysis.

FIGURE 4

Average price index: HCA and King Edward VII

[✂]

Source: CC analysis.

Further results—BMI, Nuffield, Ramsay and Spire

TABLE 1 Common basket of treatments: BMI, Nuffield, Ramsay and Spire

Year	PMI	Number of treatments in the basket	Median number of patient episodes per treatment in the basket	Expenditure in the basket as a % of total inpatient and day-patient expenditure by the PMI in a given year	Episodes in the PMI's basket as a % of total episodes in all PMI baskets in a given year
2007	N/A	4	N/A	[X]	[X]
2007	AXA PPP	104	31	[X]	[X]
2007	Aviva	55	25	[X]	[X]
2007	Bupa	172	38	[X]	[X]
2007	Bupa int'l	1	18	[X]	[X]
2007	Cigna	19	23	[X]	[X]
2007	Exeter	8	25	[X]	[X]
2007	Pruhealth	N/A	N/A	[X]	[X]
2007	SLH	47	24	[X]	[X]
2007	Simplyhealth	7	20	[X]	[X]
2008	N/A	13	N/A	[X]	[X]
2008	AXA PPP	150	33	[X]	[X]
2008	Aviva	76	30	[X]	[X]
2008	Bupa	262	33	[X]	[X]
2008	Bupa int'l	4	13	[X]	[X]
2008	Cigna	24	27	[X]	[X]
2008	Exeter	11	24	[X]	[X]
2008	Pruhealth	8	20	[X]	[X]
2008	SLH	53	30	[X]	[X]
2008	Simplyhealth	16	23	[X]	[X]
2008	WPA	N/A	N/A	[X]	[X]
2009	N/A	8	N/A	[X]	[X]
2009	AXA PPP	152	32	[X]	[X]
2009	Aviva	76	33	[X]	[X]
2009	Bupa	260	34	[X]	[X]
2009	Bupa int'l	3	17	[X]	[X]
2009	Cigna	23	22	[X]	[X]
2009	Exeter	9	30	[X]	[X]
2009	Pruhealth	16	24	[X]	[X]
2009	SLH	49	29	[X]	[X]
2009	Simplyhealth	25	23	[X]	[X]
2009	WPA	N/A	N/A	[X]	[X]
2010	AXA PPP	152	30	[X]	[X]
2010	Aviva	79	32	[X]	[X]
2010	Bupa	252	34	[X]	[X]
2010	Bupa int'l	2	26	[X]	[X]
2010	Cigna	19	21	[X]	[X]
2010	Exeter	9	31	[X]	[X]
2010	Pruhealth	21	22	[X]	[X]
2010	SLH	51	25	[X]	[X]
2010	Simplyhealth	43	22	[X]	[X]
2010	WPA	29	22	[X]	[X]
2011	AXA PPP	136	34	[X]	[X]
2011	Aviva	83	29	[X]	[X]
2011	Bupa	240	35	[X]	[X]
2011	Bupa int'l	3	22	[X]	[X]
2011	Cigna	23	23	[X]	[X]
2011	Exeter	10	20	[X]	[X]
2011	Pruhealth	40	21	[X]	[X]
2011	SLH	19	42	[X]	[X]
2011	Simplyhealth	49	21	[X]	[X]
2011	WPA	23	30	[X]	[X]

Source: CC analysis.

Note: SLH = Standard Life Healthcare and Bupa int'l = Bupa International.

TABLE 2 **Average price index: BMI, Nuffield, Ramsay and Spire**

Year	BMI	Nuffield	Ramsay	Spire
2007	[X]	[X]	[X]	[X]
2008	[X]	[X]	[X]	[X]
2009	[X]	[X]	[X]	[X]
2010	[X]	[X]	[X]	[X]
2011	[X]	[X]	[X]	[X]

Source: CC analysis.

TABLE 3 **Insurer-specific price index: BMI, Nuffield, Ramsay and Spire**

Year	PMI	BMI	Nuffield	Ramsay	Spire
2007		[X]	[X]	[X]	[X]
2007	AXA PPP	[X]	[X]	[X]	[X]
2007	Aviva	[X]	[X]	[X]	[X]
2007	Bupa	[X]	[X]	[X]	[X]
2007	Bupa int'l	[X]	[X]	[X]	[X]
2007	Cigna	[X]	[X]	[X]	[X]
2007	Exeter	[X]	[X]	[X]	[X]
2007	PruHealth				
2007	SLH	[X]	[X]	[X]	[X]
2007	Simplyhealth	[X]	[X]	[X]	[X]
2008		[X]	[X]	[X]	[X]
2008	AXA PPP	[X]	[X]	[X]	[X]
2008	Aviva	[X]	[X]	[X]	[X]
2008	Bupa	[X]	[X]	[X]	[X]
2008	Bupa int'l	[X]	[X]	[X]	[X]
2008	Cigna	[X]	[X]	[X]	[X]
2008	Exeter	[X]	[X]	[X]	[X]
2008	PruHealth	[X]	[X]	[X]	[X]
2008	SLH	[X]	[X]	[X]	[X]
2008	Simplyhealth	[X]	[X]	[X]	[X]
2008	WPA				
2009		[X]	[X]	[X]	[X]
2009	AXA PPP	[X]	[X]	[X]	[X]
2009	Aviva	[X]	[X]	[X]	[X]
2009	Bupa	[X]	[X]	[X]	[X]
2009	Bupa int'l	[X]	[X]	[X]	[X]
2009	Cigna	[X]	[X]	[X]	[X]
2009	Exeter	[X]	[X]	[X]	[X]
2009	PruHealth	[X]	[X]	[X]	[X]
2009	SLH	[X]	[X]	[X]	[X]
2009	Simplyhealth	[X]	[X]	[X]	[X]
2009	WPA				
2010	AXA PPP	[X]	[X]	[X]	[X]
2010	Aviva	[X]	[X]	[X]	[X]
2010	Bupa	[X]	[X]	[X]	[X]
2010	Bupa int'l	[X]	[X]	[X]	[X]
2010	Cigna	[X]	[X]	[X]	[X]
2010	Exeter	[X]	[X]	[X]	[X]
2010	PruHealth	[X]	[X]	[X]	[X]
2010	SLH	[X]	[X]	[X]	[X]
2010	Simplyhealth	[X]	[X]	[X]	[X]
2010	WPA	[X]	[X]	[X]	[X]
2011	AXA PPP	[X]	[X]	[X]	[X]
2011	Aviva	[X]	[X]	[X]	[X]
2011	Bupa	[X]	[X]	[X]	[X]
2011	Bupa int'l	[X]	[X]	[X]	[X]
2011	Cigna	[X]	[X]	[X]	[X]
2011	Exeter	[X]	[X]	[X]	[X]
2011	PruHealth	[X]	[X]	[X]	[X]
2011	SLH	[X]	[X]	[X]	[X]
2011	Simplyhealth	[X]	[X]	[X]	[X]
2011	WPA	[X]	[X]	[X]	[X]

Source: CC analysis.

FIGURE 1

Insurer-specific price index for [✂]: BMI, Nuffield, Ramsay and Spire

[✂]

Source: CC analysis.

FIGURE 2

Average price index: BMI-Nuffield (pair-wise comparison)

[✂]

Source: CC analysis.

FIGURE 3

Average price index: BMI-Spire (pair-wise comparison)

[✂]

Source: CC analysis.

FIGURE 4

Average price index: Spire-Nuffield (pair-wise comparison)

[✂]

Source: CC analysis.

FIGURE 5

Average price index: BMI, Nuffield, Ramsay and Spire (30 patient episodes threshold)



Source: CC analysis.

FIGURE 6

Average price index: BMI, Nuffield, Ramsay and Spire (improved degrees of freedom)



Source: CC analysis.

Further results—PMI and self-pay price index

TABLE 1 Common basket of treatments: [X] and self-pay patients

<i>Year</i>	<i>Operator</i>	<i>Number of treatments in the basket</i>	<i>Median number of patient episodes per treatment in the basket</i>	<i>Revenue in the basket as a % of total inpatient and day-patient revenue by the operator</i>
2007	HCA	85	18	[X]
2007	BMI	264	24	[X]
2007	Nuffield	179	24	[X]
2007	Ramsay	56	32	[X]
2007	Spire	223	25	[X]
2008	HCA	101	22	[X]
2008	BMI	275	27	[X]
2008	Nuffield	233	24	[X]
2008	Ramsay	96	29	[X]
2008	Spire	243	27	[X]
2009	HCA	101	21	[X]
2009	BMI	261	27	[X]
2009	Nuffield	199	26	[X]
2009	Ramsay	95	27	[X]
2009	Spire	226	28	[X]
2010	HCA	112	21	[X]
2010	BMI	252	27	[X]
2010	Nuffield	205	25	[X]
2010	Ramsay	89	30	[X]
2010	Spire	224	29	[X]
2011	HCA	103	22	[X]
2011	BMI	254	27	[X]
2011	Nuffield	192	26	[X]
2011	Ramsay	92	27	[X]
2011	Spire	230	28	[X]

Source: CC analysis.

Note: SLH = Standard Life Healthcare and Bupa int'l = Bupa International.

TABLE 2 **PMI and self-pay price index: [X] and self-pay**

Year	Operator	Operator-specific price index			Index to self-pay	
		[X]	[X]	Self-pay	[X]	[X]
2007	HCA	[X]	[X]	[X]	[X]	[X]
2007	BMI	[X]	[X]	[X]	[X]	[X]
2007	Nuffield	[X]	[X]	[X]	[X]	[X]
2007	Ramsay	[X]	[X]	[X]	[X]	[X]
2007	Spire	[X]	[X]	[X]	[X]	[X]
2008	HCA	[X]	[X]	[X]	[X]	[X]
2008	BMI	[X]	[X]	[X]	[X]	[X]
2008	Nuffield	[X]	[X]	[X]	[X]	[X]
2008	Ramsay	[X]	[X]	[X]	[X]	[X]
2008	Spire	[X]	[X]	[X]	[X]	[X]
2009	HCA	[X]	[X]	[X]	[X]	[X]
2009	BMI	[X]	[X]	[X]	[X]	[X]
2009	Nuffield	[X]	[X]	[X]	[X]	[X]
2009	Ramsay	[X]	[X]	[X]	[X]	[X]
2009	Spire	[X]	[X]	[X]	[X]	[X]
2010	HCA	[X]	[X]	[X]	[X]	[X]
2010	BMI	[X]	[X]	[X]	[X]	[X]
2010	Nuffield	[X]	[X]	[X]	[X]	[X]
2010	Ramsay	[X]	[X]	[X]	[X]	[X]
2010	Spire	[X]	[X]	[X]	[X]	[X]
2011	HCA	[X]	[X]	[X]	[X]	[X]
2011	BMI	[X]	[X]	[X]	[X]	[X]
2011	Nuffield	[X]	[X]	[X]	[X]	[X]
2011	Ramsay	[X]	[X]	[X]	[X]	[X]
2011	Spire	[X]	[X]	[X]	[X]	[X]

Source: CC analysis.

FIGURE 1

PMI and self-pay price index: BMI

[X]

Source: CC analysis.

FIGURE 2

PMI and self-pay price index: Nuffield

[X]

Source: CC analysis.

FIGURE 3

PMI and self-pay price index: Ramsay

[X]

Source: CC analysis.

FIGURE 4

PMI and self-pay price index: Spire

[X]

Source: CC analysis.

FIGURE 5

PMI and self-pay price index: [✂]-self-pay (pair-wise comparison)

[✂]

Source: CC analysis.

FIGURE 6

PMI and self-pay price index: [✂]-self-pay (pair-wise comparison)

[✂]

Source: CC analysis.

FIGURE 7

PMI and self-pay price index: HCA (30 patient episode threshold)

[✂]

Source: CC analysis.

FIGURE 8

**PMI and self-pay price index: BMI, Nuffield, Ramsay and Spire
(30 patient episode threshold)**

[✂]

Source: CC analysis.

FIGURE 9

PMI and self-pay price index: HCA (improved degrees of freedom)

[✂]

Source: CC analysis.

FIGURE 10

**PMI and self-pay price index: BMI, Nuffield, Ramsay and Spire
(improved degrees of freedom)**

[✂]

Source: CC analysis.

Assessment of profitability

Introduction

1. In this appendix we set out our framework for assessing the profitability of the PHPs. We explain why we have undertaken this assessment and how we have done it. We set out the results from applying this framework and the key provisional findings we draw from these results.
2. The rest of this appendix is structured as follows:
 - (a) purposes of the profitability assessment;
 - (b) our approach to the profitability assessment;
 - (c) our understanding of the nature of the private healthcare industry;
 - (d) an outline of the adjusted ROCE methodology used in our assessment;
 - (e) our approach to the adjustments to the inputs of the ROCE calculation which may be required in a market investigation, and discussion of the responses we received to our approach from the PHPs;
 - (f) the results of our analysis, setting out any specific adjustments for each provider; and
 - (g) a summary of our assessment and interpretation of profitability.

Purposes of the profitability assessment

3. Profitability analysis in the context of a market investigation has a number of purposes, most of which are highlighted in our Guidelines¹ as set out below.

Indicator of whether prices are too high

4. Profitability can be a useful indicator of the competitive conditions in a market. Firms in a competitive market would generally earn no more than a 'normal' rate of profit—the minimum level of profits required to keep the factors of production in their current use in the long run, ie its rate of return on capital employed for a particular business activity would be equal to its opportunity cost of capital for that activity.²

Evidence about entry conditions

5. The ability to earn profits persistently above the competitive level could indicate the presence of entry barriers. Evidence of persistent profits above the competitive level within the industry or among large incumbents could suggest that there may be entry barriers in the market. But such evidence is neither necessary nor sufficient. Conversely, data showing that incumbents consistently fail to earn high profits may

¹ CC3.

² CC3, paragraphs 114 & 116.

be consistent with low entry barriers, but it does not prove that barriers are low and that competition is working dynamically.³

Evidence about trends in profitability

6. The trend in profits will be an important consideration and the CC will seek to understand the reasons for the observed trend. Where the size of the gap between the level of profitability and the cost of capital has grown over a period, the competitive situation may have worsened, whereas a narrowing of that gap may indicate that competitive conditions have improved.⁴

Evidence about the impact of shocks on profitability

7. We may also want to assess profitability over time in order to ascertain the short- and long-term impact on profitability of changing supply and demand conditions, in this case the shock of increasing demand for privately-provided healthcare from the NHS. As of 2007, NHS demand generated revenues of £315 million for PHPs in the UK. By 2011, this increased by 149 per cent to £785 million.⁵ Such evidence may be informative about the nature of competition.⁶

Our approach to the profitability assessment

8. In many cases, our focus is on the largest incumbent firms in the market or market sector. The profitability of firms representing a substantial part of the market can therefore be a useful indicator of competitive conditions in a market.⁷ As already explained in paragraph 4, we assess a firm's profitability against its cost of capital. Furthermore we consider, among other things, whether firms are earning *persistently* high profits against this benchmark.⁸
9. In addition to specifying a relevant profitability measure, we therefore need to define the following parameters to assess profitability in line with this approach:
 - (a) the reference products, ie *the reference markets*;
 - (b) the firms representing a substantial part of the market, ie *the relevant firms*; and
 - (c) the time frame over which we will test for persistence, ie *the relevant period*.

The reference markets

10. We take as our starting point the market referred to us by the OFT in its terms of reference,⁹ namely the supply or acquisition of privately-funded healthcare services in the UK. These are services provided to patients via private facilities and/or clinics including PPUs, through the services of consultants and other medical and clinical professionals who work within such facilities.

³ CC3, paragraphs 119 & 231.

⁴ CC3, paragraph 124.

⁵ Laing & Buisson, *Private Acute Medical Care, UK Market Report, 2012*, Table 2.3. Figures quoted are NHS revenues under local contracting agreements and hence exclude revenues for ISTCs.

⁶ CC3, paragraph 108.

⁷ CC3, paragraph 116.

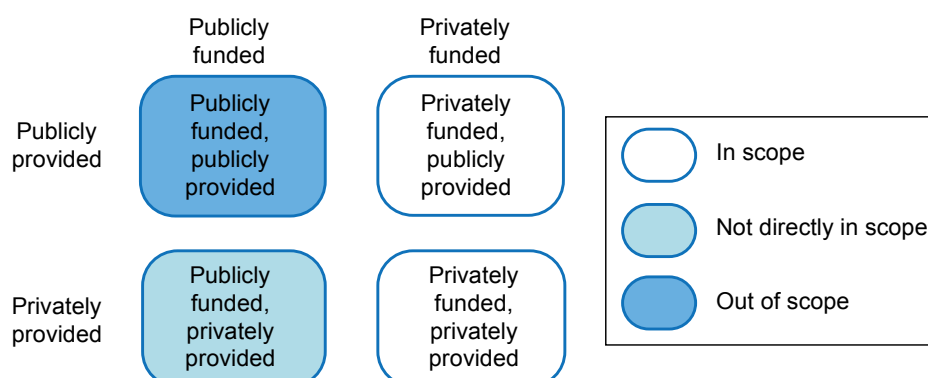
⁸ CC3, paragraph 119.

⁹ www.competition-commission.org.uk/assets/competitioncommission/docs/2012/private-healthcare-market-investigation/healthcare_terms_of_reference.pdf.

11. These privately-funded healthcare services are supplied to patients by PHPs which, in many cases, also supply healthcare services to publicly-funded (NHS) patients. In most instances, both types of patient are treated in the same facilities, although some of the PHPs also have ISTCs, which serve NHS patients only.

FIGURE 1

Scope of OFT reference market



Source: OFT, Report on the market study and final decision to make a market investigation reference. Private Healthcare Market Study, Figure 2.1, p16.¹⁰

12. The focus of our investigation has been on the provision of medically-necessary, acute healthcare services to privately-funded patients in both public and private facilities. We have not focused on services such as cosmetic surgery, mental health care, fertility services and routine maternity care.¹¹
13. For the purposes of the profitability analysis, however, we have assessed the financial performance of the private hospital operations of each of the relevant firms,¹² without seeking to exclude the revenues and costs generated from either their publicly-funded activities or services such as cosmetic surgery, mental health, fertility or maternity care.¹³ We did, on the other hand, exclude all activities that were not carried out within the firms' acute private hospitals, including fitness centres, primary care facilities, ISTCs and separate facilities specializing in cosmetic and IVF treatments.
14. We adopted this approach to assessing profitability in order to reflect the basis on which the firms make investment decisions and assess their own performance and to avoid the potentially arbitrary allocation of costs and capital between the various revenue streams of the PHPs, which are generated using the same asset base. We have taken into account the potential impact of NHS activities on the financial performance of the businesses in our interpretation of our profitability analysis.

¹⁰ www.of.gov.uk/shared_of/market-studies/OFT1412.pdf.

¹¹ See Section 5, Market Definition.

¹² See paragraph 15 for the list of the relevant firms.

¹³ This approach included NHS PPUs and pay beds within the relevant market, although no NHS trust had large enough private revenues to be included as one of the relevant firms.

Relevant firms

15. We selected the largest seven acute PHPs active in the UK as the relevant firms for the purposes of assessing the profitability of the market.¹⁴ Table 1 shows the market shares of these operators in 2011 for privately-funded healthcare services.

TABLE 1 Market shares of the UK private-patient-only hospital market by provider, 2011

Firm	Market share
	%
BMI	20.8
HCA	16.5
Spire	15.4
Nuffield	10.9
Ramsay	4.9
The London Clinic	3.4
Bupa Cromwell Hospital	<u>2.0</u>
Top 7 total	<u>73.9</u>
Others	26.1

Source: Laing & Buisson, *Private Acute Medical Care UK Market Report, 2012*, Figure 1.5.

Note: The market share information is calculated on the basis of UK private-patient-only hospital revenues, ie revenues from private patients in both private and NHS hospitals. Laing & Buisson estimated that the private-patients-only market was worth £3.54 billion in 2011, 86 per cent of which was generated by private providers, with the remaining 14 per cent being generated by NHS PPUs and pay beds.

16. These seven operators represent 74 per cent of the private acute healthcare market in the UK, with a large number of smaller and specialist operators as well as NHS PPUs and pay beds comprising the rest of the market.
17. We recognize the potential issue of ‘survivorship bias’ in focusing only on the profitability of the seven largest PHPs, whereby large, successful firms may exhibit profitability levels that are not representative of those of smaller and potentially less successful firms in the market. However, by assessing the profitability of firms comprising 74 per cent of the reference market, our analysis covers a substantial proportion of the industry. The relevant firms include both commercial and not-for-profit businesses as well as businesses of varying sizes and operational models. Some of these firms have national chains, whilst others operate in only one or two local markets. The largest chain (BMI) has 61 hospitals, whilst both BCH and TLC are single hospitals. Hence, we consider that a profitability assessment based on these seven firms provides insight into competitive conditions across the industry as a whole.

Relevant time period

18. The time frame over which we conduct our profitability assessment should be sufficiently long to detect whether any trends in profitability have been persistent. In market investigations a five-year period is usually considered a representative and sufficient period over which the outcomes of any competitive process might be demonstrated.¹⁵

¹⁴ These firms are: BCH, General Healthcare Group (BMI), HCA, Nuffield, Ramsay, Spire and TLC.

¹⁵ A five-year period was used in a number of previous market investigations, including Local Buses, Home Credit and Aggregates.

19. We considered whether, in light of the extended life cycle of many of the assets employed in the industry,¹⁶ it would be appropriate to assess profitability over a period longer than five years. However, we decided that such an approach was likely to make the analysis less rather than more insightful due to significant changes in the structure of the industry that took place between 2006 and 2008. These changes saw the largest PMI, Bupa, largely exit the private hospital sector as well as the increasing consolidation of the industry by the larger operators:
- (a) In 2005, Bupa sold nine of its smaller hospitals (the Classic Hospitals Group) to Legal & General Ventures. In 2007, Bupa exited the hospital market completely with the sale of its remaining 25 hospitals to Cinven, forming the Spire group. Bupa chose to re-enter the London market with its acquisition of the Cromwell hospital in 2008.
 - (b) In 2005, BMI acquired the Mount Alvernia hospital in Guildford, followed in 2008 by the Woodlands hospital in Darlington, as well as seven Nuffield hospitals.¹⁷ In 2010, BMI acquired a further four hospitals (Covenant Healthcare's Abbey Hospitals portfolio).
 - (c) In 2008, Spire acquired the Classic Hospitals portfolio from Legal & General Ventures, reassembling the former Bupa portfolio of hospitals, as well as a hospital in Gerrards Cross (Spire Thames Valley) from BMI.
 - (d) In 2007, Ramsay entered the UK market via its acquisition of the Capio group of hospitals. Ramsay acquired one further hospital in Nottingham from BMI in 2008 and took on the management of the Orwell PPU in 2009.
20. We consider that these changes in the structure of the market, together with the growth of NHS demand for privately-provided healthcare services, mean that the financial performance of the sector prior to 2007 is unlikely to be a relevant indicator of the current competitive conditions in the market.
21. In addition, we note that in determining the appropriate period for analysis, we must balance the potential benefits of examining a longer time period with the practical difficulties of doing so. These difficulties include both the issue of interpreting the results of such analysis against a background of significant changes in the market structure over time, and the challenge of obtaining (comparable) data over the longer period. A number of the relevant firms told us that they would not be able to provide financial information prior to 2007 due to changes in their ownership.
22. The relevant firms have different financial year ends including 31 December, 30 June and 30 September. For consistency, we have assessed their profitability for the five financial years ending between 1 January 2007 and 30 June 2012 (the relevant period). In each case, we have five years of financial information for each firm, with Ramsay's information covering a 5.5-year period due to a change in its year end in 2007/08.
23. HCA, BMI and Ramsay put forward the view that the proposed five-year period did not reflect the full life cycle of the major assets in the industry and hence may not give an unbiased view of profitability in the longer run. BMI highlighted that, over a

¹⁶ In particular, we note that hospital buildings have lives of 50 years or more, although significant investment is required periodically to maintain them in an appropriate condition and adapt the buildings and medical equipment to the changing requirements of the hospital sector.

¹⁷ BMI acquired nine hospitals from Nuffield in this transaction but disposed of two of them pre-emptively in order to ensure clearance of the transaction by the OFT. The hospitals sold were in Gerrards Cross (to Spire) and Nottingham (to Ramsay).

relatively short period, profits may appear high due to reasons unrelated to market power and anti-competitive behaviour, such that the five-year time period was insufficiently robust for the CC to conclude that any firm was making persistent excessive profits.¹⁸ HCA told us that, following its acquisition of St Martin's Healthcare, 'HCA invested heavily in its business, making improvements and introducing cutting edge technology, which has allowed it to make a reasonable long-term return on its investment'. Similarly, BMI stated that a significant initial outlay was required to construct and equip a hospital, with greater sums spent in early years on recruiting and training staff, advertising etc. In addition, revenues were lower in the early years as utilization of the facility increased. As a result, BMI argued that higher profits may be needed in later years to cover these early losses (or low returns). It told us that BMI made significant outlay prior to 2007 and made lower returns then.¹⁹

24. As set out in our Guidelines,²⁰ we take into account the pattern of investment and the nature of sources of competitive advantage (advertising, research and development, more efficient production) in forming a view on the relevant timescales over which we would expect to see competition playing out in the market. Where firms have made large and risky investments, we may expect to see a normal level of profitability restored over a relatively long timescale. In paragraphs 25 to 31, we have set out our understanding of the nature of the private healthcare market. Although we recognize the long life cycle of many of the assets employed by the PHPs, we believe that the investment lead time of two to three years and the duration of contracts of three years or less mean that a five-year period is likely to be sufficiently long for the competitive dynamics of the industry to play out and hence is appropriate for our assessment of profitability. In addition, we consider that extended lifespan of hospital assets (50 years or more), combined with the relatively short period during which they incur lower returns while starting up, suggests that returns over the rest of the assets' lifespan would not need to be substantially above the cost of capital of the business for it to recoup the lower initial returns.²¹

Our understanding of the nature of the private healthcare industry

25. In this subsection we set out our understanding of the nature of the private healthcare industry which underpins our approach to the profitability analysis.²²
26. The provision of (private) healthcare services is a capital-intensive industry, with significant investment required in land, buildings and equipment. Hospital properties have an extended life cycle, with approximately 20 per cent of the buildings currently used by the relevant firms being more than 50 years old. The lead time on investments in the industry is around two to three years for a new hospital and (generally) less than a year for an investment in extending, refurbishing or adding a new service to an existing hospital.²³ There have been only a few new hospitals opened over the relevant period, with the business plans suggesting that new facilities break even or

¹⁸ BMI Response to provisional findings, Annex 6: profitability analysis, paragraphs 5.17 to 5.22.

¹⁹ BMI Response to provisional findings, Annex 6: profitability analysis, paragraphs 5.17–5.23.

²⁰ CC3, paragraph 121.

²¹ See paragraph 26 for further information on asset lives and start-up costs.

²² Section 2 of our report provides significant additional detail on these and other areas. This section highlights only those characteristics of the industry that we consider have particular relevance to the profitability analysis.

²³ For example, it took Spire approximately two years from the time of deciding to proceed with the construction of a new hospital in Edinburgh to opening the facility. The Shawfair site had been purchased six months prior to making this decision. Similarly, Circle took three years to build and commission its hospital in Bath from the date of obtaining planning permission, although the opening of the hospital was delayed by several months due to some last-minute regulatory issues.

make a small profit in the first year and reach their maintainable level of profit in the second year.²⁴

27. Private healthcare services are supplied to patients jointly by private hospitals and consultants. Consultants diagnose, advise and treat patients using the facilities provided by private hospitals.²⁵ The services provided by the private hospitals include the use of operating theatres, consulting rooms and medical equipment, as well as nursing care and hotel services.
28. Advances in medical technology have had an impact on private hospitals in two main ways. First, developments in medical treatment require hospitals to invest in new equipment, such as MRI and CT scanners. Some of this equipment represents a significant capital investment for the hospitals and the rate of progress in certain areas makes equipment functionally obsolete within a five- to ten-year period. Second, as many types of surgery have become less invasive and there have been advances in anaesthesia, treatments that previously required patients to remain in hospital overnight are now performed on a day-case basis. These developments have had an impact on the ideal configuration of a hospital building, with, for example, fewer overnight and more day-care beds and imaging facilities required.
29. Patients are generally (although not always) referred by their GPs to a specific consultant who specializes in the type of treatment that the patient requires, rather than being referred directly to a hospital. For this reason, PHPs seek to attract consultants to their facilities in order to secure a stream of patients.²⁶ Competition for consultants may take a variety of forms, including investment in equipment and facilities, the payment of incentives and the choice of hospital location. PHPs also target their marketing efforts towards GPs to encourage referrals to consultants practising at their facilities.²⁷
30. The large majority of consultants who undertake private work also hold an NHS post, splitting their time between their NHS and private hospitals. As a result, a private hospital which is located near the NHS hospital at which the consultants practise will generally have a competitive advantage over a hospital that is located further away. The importance of location depends on the number of operators in a local area, with proximity to the local NHS hospital being less important for solus private hospitals than for ones which have a number of private competitors in the same area.
31. The PMIs and PHPs tend to negotiate framework contracts every three years. These set out a detailed price list for each procedure or service but generally do not specify a volume of treatments as this is unknown ex ante.²⁸ During the term of the contract, prices are generally indexed to a measure of inflation but not otherwise subject to negotiation. We might expect, therefore, changes in competitive dynamics to feed through into the prices negotiated between the PMIs and PHPs with some delay.

²⁴ Documents provided by Spire indicate that it planned to make a [£] at both its Shawfair and Brighton hospitals in the first year of operations, with demand approximately [£]. Similarly, TLC's forecasts for its Cancer Centre indicated that revenues were expected to increase significantly from the first to the second year of operation, with revenues growing at or slightly above the rate of inflation thereafter.

²⁵ We note that some healthcare services may be provided solely by hospitals and their employees. In particular, hospitals often employ clinical staff in the area of diagnostics and physiotherapy.

²⁶ See Section 2, Industry Background.

²⁷ For example, Nuffield told the CC that 'it is typically the GP who determines the best course of action for a patient by referring to a consultant, who in turn will choose the most appropriate hospital operator for that patient to use', hence competition is for consultants and GPs. Market research, carried out for Nuffield, highlighted that (a) brand, quality and marketing provide reassurance to patients but the consultant's opinion is the primary driver of choice, and (b) patients do not exhibit significant awareness of hospital brand attributes. *Nuffield response to MQ, question 14*.

²⁸ Some contracts do, however, contain provisions for the prices to be decreased in response to volume above a certain level or increased if volumes fall below a certain level.

The (adjusted) return on capital employed: methodology

Overview

32. There are a number of different metrics that can be used to measure profitability. The Guidelines primarily refer to the rate of return on invested capital, mentioning the IRR, the truncated IRR and the ROCE as possible alternative approaches. The Guidelines also mention return on sales.²⁹ However, this would be an unsuitable profitability measure for the private healthcare market due to its capital-intensive nature. Moreover, unlike profitability measures based on estimating the rate of return on invested capital, there is no robust comparator against which to judge the levels of profitability observed.
33. Spire suggested that rather than adopting the ROCE approach, we should assess profitability using the IRR on the grounds that 'internal rate of return (IRR) and Net Present Value (NPV) are conceptually the correct methods for measuring profitability because they take into account the cash inflows and outflows of a business activity (rather than accounting revenues and costs, which include accruals and non-cash items)'. While we agree that conceptually the IRR is an appropriate method of measuring the profitability of a given project, we believe that the approach we have adopted in estimating the ROCE is often consistent with the IRR methodology, and also has the advantage of avoiding the difficulties inherent in identifying the cash flows of a given activity within a broader business, and is thus a more appropriate measure in the current case.³⁰

Background and general principles

34. The approach that we have taken to estimating the ROCE adjusts accounting information to provide economically meaningful estimates of returns. Two basic principles need to be applied for this to be the case: the first is that capital employed should be valued using the value-to-the-business rules, as set out below; the second is that the accounts should be fully articulated, such that the whole of any change in the value of capital employed flows through the profit and loss account.³¹ In this subsection, we set out this approach in more detail.

Operating returns and assets

35. We determine the ROCE using the operational profits and capital employed by the business and then compare it with the pre-tax weighted average cost of capital. The general principle is therefore that all revenues, costs, assets and liabilities necessarily arising from the operation of the businesses should be included. Any other operating items, whether revenues or costs, which are associated with running the business should also be included. These costs include irrecoverable VAT.³²
36. All financing costs, whether short or long term, are excluded. Similarly, corporation tax and any associated deferred tax charges, as well as any pension deficit or surplus, are excluded.

²⁹ CC3, [Annex A](#), paragraphs 9 & 10.

³⁰ Ramsay and Spire told the CC that they were unable to separate out the cash flows of their private hospitals from those of their other activities. HCA told the CC that it did not track cash flow at a UK level. It was consolidated as part of its parent company accounts.

³¹ These principles are set out in detail in *The Economic Analysis of Accounting Profitability*, Edwards, Kay & Mayer, 1987.

³² The provision of healthcare services is VAT exempt, which means that the non-charitable operators in the sector are unable to reclaim VAT on their inputs. Hence, this VAT represents an operating cost for those businesses. HMRC reference: Notice 701/31, November 2011.

Economic profits and costs

37. The relevant firms' financial information has been prepared under (modified) historic cost accounting rules in accordance with UK or international accounting standards. Following a change of control or for the purposes of raising finance, some of the private hospital operators have revalued some of their fixed assets, in which case the basis of preparation is described as modified historic cost accounting.
38. As set out in our Guidelines,³³ we are interested in understanding the economic rather than the accounting profitability of the relevant firms. Economic costs are the costs of resources used at a price at which they would be traded in a competitive market, where entry to and exit from the market is easy. The value of resources consumed and assets utilized should reflect their current value to the business, not their actual or revalued historical cost. Therefore, as set out in paragraphs 40 to 46, it has been necessary to estimate the current value of certain categories of assets to the relevant firms.
39. For some of the relevant firms, we have conducted the profitability analysis on a subset of their total activities, as discussed in paragraph 13. In these cases, we have sought to ensure that the relevant revenues, costs, assets and liabilities have been attributed to these activities using the principles of causality and objectivity.

*Measurement basis for valuation of assets*³⁴

40. The current value of an asset could be determined by reference to entry value (replacement cost), exit value (net realizable value (NRV)) or value in use (discounted present value of the cash flows expected from continuing use and ultimate sale by the present owner). For some assets—for example, investments in actively-traded securities—these three alternative measures of current value produce very similar amounts, with only small differences due to transaction costs. However, for other assets—for example, fixed assets specific to the business—differences between the alternative measures can be material.
41. The approach to valuing assets should reflect their current value to the business, which is the loss the entity would suffer if it were deprived of the asset involved. That measure, which is also referred to as the deprival value,³⁵ or value to the owner, will depend on the circumstances involved.
42. In most cases, as the entity will be putting the asset to profitable use, the asset's value in its most profitable use (in other words, its recoverable amount) will exceed its replacement cost. In such circumstances, the entity will, if deprived of the asset, replace it, and the current value of the asset will be its current replacement cost.
43. An asset will not be replaced if the cost of replacing it exceeds its recoverable amount. In such circumstances, the asset's current value is that recoverable amount.
44. When the most profitable use of an asset is to sell it, the asset's recoverable amount will be the amount that can be obtained by selling it, net of selling expenses; in other

³³ CC3, paragraph 115.

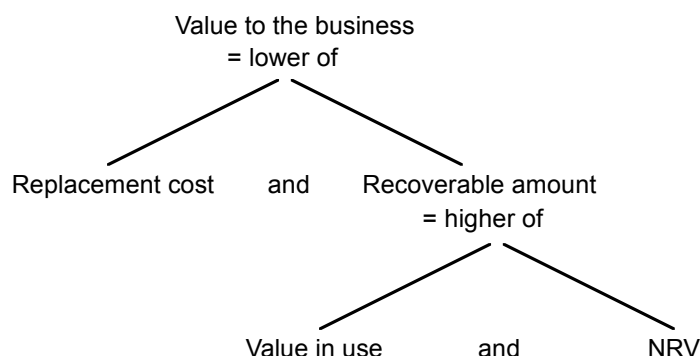
³⁴ The following paragraphs draw heavily on the *Alternative Measures of Current Value* section within The Statement of Principles for Financial Reporting (1999), UK Accounting Standards Board, paragraphs 6.6–6.9.

³⁵ The deprival value of an asset does not need to take into account the physical reality of replacing the asset, for example in terms of the time taken to reinstate a building. It can represent a hypothetical scenario which requires us to estimate, were there a market, what the replacement cost of an asset would actually be. Hence, a deprival value does not need to include the cost of lost business that would be incurred while an asset is replaced, just the cost of replacing the asset.

words, its NRV. When the most profitable use of an asset is to consume it—for example, by continuing to operate it—its recoverable amount will be the present value of the future cash flows obtainable and cash flows obviated as a result of the asset's continued use and ultimate disposal, net of any expenses that would need to be incurred; in other words, its value in use. This can be portrayed diagrammatically as shown in Figure 2.

FIGURE 2

Establishing which valuation basis for an asset gives its value to the business



Source: UK Accounting Standards Board, Statement of Principles (1999).

Estimation of replacement cost

45. Where an asset is worth replacing, its value to the business will be its current replacement cost, or more precisely the replacement cost of an MEA determined in a fully competitive market and allowing for the asset's remaining useful life.³⁶ The MEA value is the cost of replacing an old asset with a new one with the same service capability allowing for any differences both in the quality of output and in operating costs.³⁷ The fact that markets are often not fully competitive does not alter the validity of the assumption of competition as a benchmark for measuring costs.
46. This approach is consistent with our Guidelines, which state³⁸ that the CC considers the MEA value or replacement cost (as defined in the previous paragraph) to be the economically meaningful measure for the purpose of measuring profitability in most cases.

Full articulation of the accounts

47. In order for the ROCE measured using accounting data to be economically meaningful, the accounting profit (EBIT) estimated in each period should be estimated after deducting a depreciation charge that is equal to the difference between the value of capital employed at the beginning of the period and the capital employed at the end of the period. Formally:³⁹

³⁶ This estimate is referred to as the 'depreciated replacement cost' of the asset.

³⁷ An integral requirement of the MEA approach is to adjust the profits of a business as well as the value of its capital employed to reflect the performance of the MEA. For example, a new piece of equipment may be more costly to acquire but may also have lower running costs. Both of these changes should be reflected under the MEA approach. In practice, it may be problematic to make such adjustments where there is limited evidence on the performance of MEAs.

³⁸ CC3, Annex A, paragraph 14.

³⁹ See *The Economic Analysis of Accounting Profitability*, Edwards, Kay & Mayer, Chapter 2.

$$\text{EBIT}_t = \text{EBITDA}_t - \text{Depreciation}_t, \text{ where}$$

$$\text{Depreciation}_t = \text{CapEmp}_{t-1} - (\text{CapEmp}_t - \text{CAPEX}_t)$$

48. In effect, this means that an increase in the value of assets, for example due to an increase in the cost of building a hospital, serves to reduce the depreciation charge over the period, whilst a decline in the value of assets, due to a fall in the replacement cost of assets, increases the depreciation charge. In applying this principle, we have smoothed changes in land and building values over the five-year period to avoid fluctuations in asset prices from one year to the next obscuring the underlying operational returns of the relevant firms. This approach reflects our view that the PHPs may expect relatively gradual changes in the value of their assets over time due to changing relative prices but assets in this industry are not held with a view to short-run, capital gains or losses. Hence, returns from large increases or decreases in asset values from one year to the next represent transitory shocks rather than sustainable returns on investment.⁴⁰
49. Spire put forward the view that increases in the value of assets should not be passed through the profit and loss since this approach 'is not consistent with GAAP' and has 'highly theoretical underpinnings'. It argued that this approach reflected an outdated and incorrect accounting principle, which may have been relevant during a period of higher inflation where the value of assets in use changed significantly within a relatively short period of time, but was not appropriate for the relatively low inflation environment that obtained during the Relevant period. Spire noted that under modern accounting standards, accounts were fully articulated through the use of reserve accounting and an additional primary statement instead which did not reflect such changes in asset values in the profits of a business since these types of movements in building costs are unrealised.⁴¹ We recognize that the framework set out in the previous paragraphs is not consistent with GAAP. Indeed, our approach intentionally departs from GAAP in this respect in order to make the analysis economically meaningful. Depreciation, under this approach, reflects the cost or benefit of owning an asset over the period measured as the change in value of that asset. To the extent that the value of the asset increases, for example due to the increased cost of replacing a building, the business that owns the building has made a return on its investment. Hence, passing any increases in asset values through the profit and loss is the logical corollary of charging depreciation against assets as they decline in value due to age and technical obsolescence. By charging depreciation to the profit and loss but not increases in asset values, our EBIT figures and hence ROCE estimates would be understated.

Comparability, materiality and lack of unnecessary complexity

50. This section sets out the aspects of financial information that are particularly relevant to our profitability assessment.⁴²

Comparability (and consistency)

51. Financial information is particularly useful when it can be compared with similar information about the entity for some other period or point in time. Information about

⁴⁰ This smoothing has been applied to both the asset values and the profit and loss charge. This smoothing does not have an impact on the average ROCE estimate but reduces the volatility of returns across the relevant period.

⁴¹ [Spire response to provisional findings](#), paragraph 5.29.

⁴² This section draws heavily from 'The qualitative characteristics of financial information' chapter of *The Statement of Principles for Financial Reporting*, 1999, UK Accounting Standards Board.

a particular firm is also much more useful if it can be compared with similar information about other entities in order to evaluate their relative financial performance and financial position. Information in financial statements therefore needs to be comparable as far as possible.

52. Comparability generally implies consistency throughout the reporting entity within each accounting period and from one period to the next. However, consistency is not an end in itself. Consistency can also be useful in enhancing comparability between entities, although it should not be confused with a need for absolute uniformity.
53. As noted in paragraph 37, all the relevant firms prepare financial information in accordance with UK or international accounting standards. As a result, we would expect a certain level of consistency in the accounting treatments adopted both between one accounting period and the next and between one PHP and another.

Materiality

54. We only require adjustments to be made to financial information supplied to us by the relevant firms that is likely to make a material difference to our assessments.
55. An item of information is material if its misstatement or omission might reasonably be expected to influence the economic decisions of users (here, the CC) of that information. Whether information is material will depend on the size and nature of the item in question judged in the particular circumstances of the case. The factors to be taken into account are set out below. It will usually be a combination of these factors, rather than any one in particular, that will determine materiality:
 - (a) The item's size is judged in the context both of the financial information as a whole and of the other information available to users that would affect their evaluation of that financial information. This includes, for example, considering how the item affects the evaluation of trends and similar considerations.
 - (b) Consideration is given to the item's nature in relation, for example, to the transactions or other events giving rise to it.
56. If there are two or more similar items, the materiality of the items in aggregate as well as of the items individually needs to be considered.

Lack of unnecessary complexity

57. We also place value on the simplicity (but not at the expense of either comparability or materiality) of the financial information used in the assessment. What we mean by this is that, rather than seeking to make elaborate numerical adjustments (eg in relation to the age profile of equipment) or numerical adjustments involving a high degree of professional judgement (eg efficiency adjustments), we plan to incorporate such aspects, important though they may be, qualitatively into our assessment and interpretation of the relevant firms' profitability. A by-product of this approach is that the numbers that we rely on in our assessment are more likely to be recognized by the individual firms concerned.

Adjustments to the inputs to ROCE calculation: recognition of assets and liabilities

58. Assets are defined as rights or other access to the future economic benefits controlled by an entity as a result of past transactions or events. Liabilities are obliga-

tions of an entity to transfer economic benefits as a result of past transactions or events. Our approach to the recognition of assets and liabilities generally follows the accounting treatment applied by the relevant firms. However, in this subsection, we set out a couple of exceptions to this approach, for leasehold land and buildings, and intangible assets.

Leasehold land and buildings

59. A number of the relevant firms lease at least some of their hospitals and/or clinics from third party landlords.⁴³ The terms of these lease agreements range from long leasehold titles at peppercorn rents, to sale and leaseback agreements and short-term rents at market rates. Our approach to the recognition of these assets has generally followed the accounting treatment adopted by the operators, ie where the parties have capitalized a building on their balance sheet, we have also done so. The (small number of) exceptions to this approach are described and explained in the detailed profitability assessment of each operator. In these cases, a full market rent has been charged to the profit and loss.
60. For those leasehold assets that have been capitalized, we have treated them on the same basis as freehold assets, ie their value has been estimated on a freehold basis and they have been depreciated over their useful economic life rather than over the remaining term of the lease under which they are held. As a consequence, any rental payments made on these buildings have been removed from operating costs.

Intangible assets

61. Our Guidelines state that:
- ... the CC may consider the inclusion of certain intangible assets where the following criteria are met:
 - it must comprise a cost that has been incurred primarily to obtain earnings in the future;
 - this cost must be additional to costs necessarily incurred at the time in running the business; and
 - it must be identifiable as creating such an asset separate from any arising from the general running of the business.⁴⁴
62. BMI, HCA, Ramsay and Spire⁴⁵ put it to us that they had invested in developing and acquiring a range of intangible assets that were employed in generating returns for their businesses and which should, therefore, be recognized as part of the capital employed by their businesses. Spire put forward the view that such intangibles were required by any hospital operator to generate a viable business. In the following paragraphs, we set out the principal categories of intangible assets suggested by these private hospital operators and our proposed approach to their recognition.

⁴³ Over the relevant period, BMI and Spire were structured as separated operating companies and property companies, with the former leasing the hospital buildings from the latter. In assessing the profitability of these firms, we have applied the principle of 'substance over form', basing our analysis on the financial performance of the consolidated entities rather than that of the separate operating and property companies. [§] We did not agree with this argument. We reasoned that the [§] did not have an impact on the economic substance of the original business structure which was put in place following the acquisition of the business in 2006, and that our approach of treating the properties as being owned by the business was the correct one.

⁴⁴ CC3, Annex A, paragraph 13.

⁴⁵ Spire submitted estimates of the replacement cost of each of its most significant intangible assets.

Purchased goodwill

63. Some of the relevant firms have grown through acquisition or been acquired themselves and hence have capitalized purchased goodwill on their balance sheets. This is subject to an annual impairment review.
64. Spire, Ramsay and BMI put forward the argument that some or all of the purchased goodwill held on their balance sheets should be included in the capital employed in our analysis on the basis that this represented payment for intangible assets including, among other things, a skilled workforce, start-up losses, relationships with consultants, GPs and patients, internally-developed intellectual property related to clinical and administrative processes, as well as the value of the reputation or brand of the businesses. Spire highlighted that under IFRS 3, purchased goodwill could be capitalized.
65. Purchased goodwill is not a separately identified asset but rather is a balancing figure. It is the remaining, unallocated element of an acquisition price once all tangible assets and certain (although not necessarily all) intangible assets have been fair-valued and set against the price paid. In principle we agree that, when purchasing a business, goodwill may represent the value of intangible assets not capitalized on the business's balance sheet. The approach that we have taken is to recognize those intangible assets that meet our criteria for recognition, regardless of whether these have been separately identified in the companies' balance sheets or are included in a balancing goodwill figure, but to exclude any remaining goodwill in line with our approach in previous CC market investigations.⁴⁶ This approach ensures that only intangible assets that meet our criteria for recognition are included in the estimate of the capital employed by the relevant firms. It also avoids the risk of capitalizing any 'excess profits' that the business is able to generate, which may be reflected in the purchase price and hence the purchased goodwill.
66. BMI argued that by excluding all of the GHG Group's purchased goodwill on the assumption that this may represent a payment in return for supernormal profits, the CC's approach was self-fulfilling and circular and likely to result in a finding of excess profits. BMI noted that the CC could have assumed that a portion of profits were not supernormal and therefore that purchased goodwill should be included in the ROCE calculation, either in full or in part. On this basis, the GHG Group would have a significantly lower ROCE.⁴⁷ We thought that this argument did not provide a reason to change our approach as set out in paragraph 65, since our approach would effectively capture all relevant intangible assets whether or not they were included within purchased goodwill. It would also ensure consistent treatment across PHPs, some of which have purchased goodwill on their balance sheets due to changes of control and some of which have not. During the relevant period, BMI had purchased goodwill on its balance sheet of approximately £[REDACTED] billion but in FY12 it wrote off £[REDACTED] million of this balance due, predominantly, to a decline in the UK property market.⁴⁸ BMI noted that these valuations were the result of movements in the overall UK commercial property market between 2006 and 2012. This indicates that the large majority of its purchased goodwill balance was unrelated to the intangible assets that BMI argued the CC should include in its capital base, notably its brand, know-how, staff training, hospital licences etc. We consider that it also provides support for our preferred approach of examining each proposed category of intangible assets in turn to assess whether they merit recognition in the capital base and, if so, at what value.

⁴⁶ For example, this was the approach taken in the [Home Credit](#) and [Local bus services](#) market investigations.

⁴⁷ BMI [response to provisional findings Annex 6: CC's profitability analysis](#), paragraphs 5.62–5.65.

⁴⁸ www.netcareinvestor.co.za/reports/ar_2012/uko-hospital-operating-review.php

IT systems and software development costs

67. Spire, Ramsay, BMI and HCA noted that they had invested in developing bespoke IT systems and software to help them manage their businesses. In some, but not all, cases, these investments had been capitalized on the firms' balance sheets under IFRS accounting standards. We accept that the costs of acquiring and/or developing such systems meet our criteria for the recognition of an intangible asset in that they represent an investment in the business incurred primarily to obtain earnings in the future; and such costs are additional to those necessarily incurred at the time in running the business. We had some doubt as to whether they create an asset that is separable from any arising from the general running of the business. However, on balance we considered that this was a reasonable assumption in this case.
68. Hence, we have included the costs of acquiring and/or developing such assets at their cost. The parties proposed differing periods for the depreciation of such assets, ranging from three to seven years. In the interests of ensuring consistency in our analysis, all such assets have been depreciated over a four-year period.

Staff training and recruitment

69. The standard accounting treatment of staff training and recruitment is to write off the costs to expenses as they are incurred. HCA, Spire and Ramsay argued, however, that the costs of recruiting (both medical and non-medical) staff and training them represented an economic asset for their businesses that should be recognized in the capital base. Spire estimated that the total cost of recruiting its staff would be £[redacted] in FY11.⁴⁹ The operators told us that the training provided ranges from induction courses for new joiners to continuing professional development for medical staff and on-the-job learning where experienced staff provided training to more junior staff members.
70. We recognize that in certain past investigations the costs of training staff have been capitalized as intangible assets.⁵⁰ However, we do not believe that this would be an appropriate approach to take in this case due to the nature of the training provided. A review of the submissions made by the parties indicates that most training is aimed at either inducting staff into the hospital operators' specific businesses or maintaining their skill levels in line with professional requirements (CPD), with fundamental training being provided largely by the education system and the NHS. We consider that the former represents recurring expenditure that is necessarily incurred at the time in running the business and we do not see a good case for treating them in any way other than as an operational cost.⁵¹ Hence staff training costs have not been capitalized.
71. We considered whether there was a stronger justification for capitalizing the costs associated with the recruitment of staff. However, we were not convinced that these costs were either additional to costs necessarily incurred at the time in running the business, or that they served to create an asset separate from any arising from the general running of the business. Therefore, we have not capitalized staff recruitment costs.

⁴⁹ This figure was estimated on the basis of interviews conducted with third party recruiters.

⁵⁰ For example, this approach was taken in the investigation into [Local bus services](#).

⁵¹ Information submitted by Spire indicated that induction training generally took between two and three days per staff member, with the large majority of the costs incurred being the opportunity cost of salaries that would be incurred anyway, rather than costs of providing the training.

Relationships with patients, GPs and consultants

72. Spire argued that it invested in developing relationships with GPs, consultants and patients in order to ensure a stream of referrals in the future. HCA also noted that it invested significantly in developing relationships with GPs, consultants and patients in order to raise awareness of its hospitals and increase their attractiveness. Ramsay highlighted that it invested in developing relationships with GPs to increase awareness among GPs of Ramsay hospitals and the services offered. The categories of costs identified by the operators as contributing to the development of their relationships included, among other things, marketing their facilities to GPs, patients and consultants, educational events for GPs, the administrative costs associated with granting practising privileges to new consultants, and investments in providing a quality service to patients. The estimates of the annual costs of such activity provided to us by the relevant firms varied materially across the parties, which we believe was at least partly due to different approaches being taken to identify which costs serve to develop such relationships.
73. We recognize that the marketing of private hospitals to potential patients and clinical professionals represents an expense incurred with the aim of obtaining revenues in the future. However, we do not consider that these relationships with GPs, consultants and patients create assets that are separable from any arising from the running of the business since such relationships are generally either non-contractual or short-lived. We briefly set out our reasoning for this approach in the case of each type of relationship identified by the parties below.
74. We understand that the average contractual relationship between a hospital and a patient tends to be of short duration—in most cases lasting no more than a few days, ie the period during which a patient is admitted to the hospital for treatment. The patient (or their insurer) is subsequently invoiced for the treatment received with no continuing relationship with the hospital. In our view, this indicates that marketing expenditure directed at patients is a current expense of the business rather than investment in an asset that can be expected to generate returns over an extended period of time.
75. In the case of GPs and consultants, we consider that in the absence of any contractual obligations—either to refer patients or to practise at a hospital—these relationships do not meet the criteria as assets separate from any arising from the general running of the business.

Reputation

76. BMI, HCA, Spire and Ramsay argued that their corporate brand and/or the reputation of their individual hospitals should be recognized as an asset of the business. Ramsay stated that ‘the value of this brand and reputation is the product of many years of investment in safe operating procedures, well trained and competent staff and the establishment of a track record for delivering care safely and efficiently in the UK and abroad’. On the other hand, market research commissioned by Nuffield indicated that awareness of the national brands in the private hospital sector was low, with most patients being aware of the local name of the hospital but not the fact that it belonged to a larger group. Moreover, the research indicated that patients perceived

little differentiation between the main hospital groups and were principally concerned to find the 'right' consultant.⁵²

77. We recognize that the reputation of a business, either a group or a local hospital, may be developed over time by providing high-quality products or services. However, as set out in previous investigations, we do not consider that the costs incurred in directly providing a good or service should be capitalized as creating an intangible asset for the business, since they were necessarily incurred in running the business.⁵³

Regulatory approvals

78. Spire and Ramsay argued that healthcare providers must not only adhere to a broad range of regulations, but must also obtain specific approvals and/or licences in order to operate. These included registration with the CQC and the Information Commissioner, as well as licences from the Human Tissue Authority and the Human Fertilisation and Embryology Authority, among others. These operators argued that the CC should include the costs of obtaining such approvals as an intangible asset on their balance sheets.
79. Having reviewed the information provided by the PHPs, as well as information from the various agencies listed, we understand that these regulatory approvals represent a recurring (annual) cost of the businesses rather than a one-off investment.⁵⁴ Hence, we have treated the costs of maintaining these approvals as expenses rather than a capital investment.⁵⁵

Clinical and administrative processes and know-how

80. Ramsay, BMI and Spire put it to us that they had invested in developing clinical and administrative processes that allowed them to offer high-quality treatment to patients as well as manage their businesses effectively. Spire stated that 'This subset of costs includes (but is not limited to) the investments required to develop clinical care pathways, develop patient protocols, implement these pathways and protocols, train staff and develop ICT services'. Similarly, Ramsay highlighted the investment in the development of leadership expertise undertaken by its parent company and used by its UK operations, stating that 'Ramsay UK benefits from the internally developed procedures, processes and systems which are developed by its overseas businesses, as well as from the input of senior executives'.
81. The third criterion for the recognition of an intangible asset is that the expenditure must create an asset 'separate from any arising from the general running of the business'. We recognize that over time a business will develop a range of internal processes for administrative, strategic and operational purposes since these are

⁵² Nuffield off-the-shelf information, Nuffield Health Hospitals: *Identifying Key Differentiators, Presentation from Promise*, 26 March 2010.

⁵³ This principle was articulated in our [report on SME banking, paragraph 2.270](#): 'any or all of the revenue costs of supplying any product could also be regarded as having the effect, provided the product is of good quality, of enhancing the supplier's reputation; on this basis the costs result in a future benefit as well as a current one. However, this creation of the future benefit is incidental in that the costs have had to be incurred in order to supply the product at all, and for this reason the costs are treated for the purpose of economic and financial evaluation as revenue, not capital, costs.'

⁵⁴ For example, the CQC fee for the grant or subsistence of a CQC registration is between £8,500 and £150,000 per year depending on the number of sites; and the Human Tissue Authority charges annual fees which vary depending on the type of work done and the number of sites.

⁵⁵ This approach is consistent with that adopted in the SME banking investigation where the costs of maintaining a banking licence were treated as revenue rather than capital expenditures on the grounds that these were necessary to run the business and not additional to the costs necessarily incurred in running the business. See [report into SME banking, paragraph 2.333](#).

required for the day-to-day running of a business. However, it is not clear that there is an intangible asset of 'clinical processes' separate from the employment of appropriately trained medical directors, matrons and other clinical staff, who are responsible for developing and updating such processes on an ongoing basis. Similarly, management expertise is an asset (human capital) of a management employee, the cost of which to the hospital operator can generally be expected to be reflected in the employee's salary.

82. We have not included clinical processes or management know-how as an intangible asset in our analysis. However, to the extent that such intellectual property has been incorporated into the PHPs' IT systems, we have allowed the development costs of these systems to be capitalized on the basis that such systems represent a separable asset.

'Going concern' value or 'pure goodwill'

83. While our assessment of each type of intangible asset proposed by the PHPs indicates that only IT systems and software development costs meet our criteria for recognition, we thought that in the early years of operation a business is likely to incur a higher level of certain costs, such as staff recruitment and marketing, than it would do on an ongoing basis and that these (additional) costs represent an investment in setting up the business. We did not consider that it would be possible to estimate these reliably and consistently across all operators in the industry. However, we have taken them into account qualitatively in our interpretation of the results of our profitability analysis as the 'going concern' value of the business.⁵⁶

Adjustments to the inputs to ROCE calculation: valuations of tangible assets

84. In this subsection we set out the adjustments that we have made to the accounting valuations of the tangible assets used by the relevant firms. For each type of asset, we provide:
- (a) an overview of the current accounting treatment and the potential issues arising from using this treatment for the purposes of profitability analysis in a market inquiry;
 - (b) the views of the relevant firms as articulated to us; and
 - (c) our view of the appropriate treatment, together with our reasoning. This is the treatment that we have adopted in the profitability analysis.
85. We consider that the general principles outlined in paragraphs 34 to 57 above apply regardless of whether a particular issue is specifically discussed below.

Land and buildings

86. The private hospital operators hold land and buildings on their balance sheets at either the actual historic cost of buying the land and constructing the hospital, or at a (historically) revalued level, in many cases determined during a fair-value adjustment made on acquisition of the business by its current owners.⁵⁷ Historic costs will generally understate the current economic value of hospital properties as a result of both

⁵⁶ See paragraph 185 below.

⁵⁷ According to IFRS 13, the fair value of a non-financial asset takes into account its highest and best use. IFRS 13:27.

general inflation and changes in the real value of assets in the years since acquisition. In certain cases, we note that this difference between historic cost and the current economic value of the property is substantial.⁵⁸

87. Equally, where land and buildings have been revalued, their value in the accounts may not represent the deprival value of the asset but a 'fair' or market value of the business.⁵⁹ This fair value may represent an expert's opinion on what a purchaser would pay for the business conducted using the asset rather than an estimate of the cost of replacing the asset.⁶⁰ For example, BMI told the CC that the value of its land and buildings in its accounts was based on a report, which valued the land and buildings on the basis of the trading potential of the hospital:

Our valuations have been calculated with the application of a multiplier, based on a yield, to the sustainable EBITDA. The EBITDA utilised is based on the Net Operating Profit (NOP) figures provided to us by BMI Healthcare Limited, and is primarily based upon the amalgamation or average of the 2005 Actuals and the 2006 Budget.⁶¹

88. We consider that this valuation methodology is inappropriate for the purposes of profitability analysis, as the property value will reflect the returns generated by the hospital business, which may include any 'excess returns' that it is able to generate and which we are seeking to identify in our analysis.
89. We were also concerned that, to the extent possible, our analysis should be based on comparable information across the relevant firms. As some of the private hospital operators had revalued their land and buildings, while others recorded them at historic cost, we set out in the following paragraphs how we have sought to assess the economic cost of these assets in a consistent way across all PHPs.

Land

90. Our view is that the land owned by the relevant firms should be valued at the cost of replacing it with an equivalent plot rather than at its value in the balance sheet of the firms. In the absence of pre-existing evidence on replacement costs, we commissioned a report from DTZ to estimate the cost to a new entrant of acquiring the existing or equivalent land portfolios of the hospital operators. (See Appendix 6.15 for the DTZ report.)
91. DTZ estimated the price of the plots of land with reference to RICS VS6 Valuation Standards and GN 6 Guidance Note, which related to the depreciated replacement cost method of valuation. The fundamental principle of this approach was that a hypothetical buyer for an MEA would purchase the least expensive site that would be appropriate for its proposed operations. DTZ estimated these prices based on alternative uses, such as residential, employment and agricultural land.⁶²

⁵⁸ For example, Nuffield's financial statements record the value of the land on which its Exeter hospital is sited at £[X], as the land was initially acquired in the early 1960s. DTZ's report puts the cost of such a plot of land (in its current location) at £[X] million.

⁵⁹ Financial Reporting Standards require that when a business is acquired, its assets and liabilities are recorded in the financial statements of the acquiring firm at their 'fair value', which is the value at which the asset could be exchanged in an arm's-length transaction.

⁶⁰ To the extent that these fair values reflect an opinion as to what a purchaser would pay for an asset rather than the costs of replacing the asset, they are subjective, incorporating expected returns.

⁶¹ *Report and Valuation in respect of Portfolio of Forty Five Independent Acute Hospitals and One Development Site*, GVA Grimley, 31 March 2006.

⁶² Where agricultural land has been used as a comparator, the prices reflect those paid for agricultural land for development, rather than agricultural land for farming use.

92. We also collected information on the land values used by the Valuation Office Agency (VOA) in its calculations of business rates. We note that these figures are substantially lower than those estimated by DTZ. However, we do not believe that these estimates are prepared in accordance with the value to the owner principles. For example, in many cases the VOA imputes a land value as a proportion of the replacement cost of the hospital building rather than considering the cost of land in a particular area.⁶³

Relevant firms' views

93. BMI submitted to us a report prepared by Colliers, which put forward the 'fair maintainable operating profits' or 'residual value' methodology as the conceptually appropriate approach to estimating the value of land.⁶⁴ This derives the value of land from the (maintainable) trading performance of the hospital. As set out in paragraph 88, we consider that such an approach would introduce circularity into our analysis and therefore is fundamentally inappropriate.
94. While BMI maintained that the approach set out in paragraph 93 was the conceptually appropriate one for the purposes of profitability analysis, it also submitted a depreciated replacement cost (DRC) valuation (also prepared by Colliers). This valued BMI's current plots of land with reference to their potential alternative uses, which Colliers considered to be either as residential land or as land for care home use. According to Colliers, the total value of land employed by BMI under a DRC valuation was approximately £[§] million, which was 48 per cent higher than the DTZ's estimates (including planning permission costs, stamp duty etc).⁶⁵ The Colliers' International report prepared for BMI noted that the best estimate of the current market value of its land was even higher at approximately £[§] million.
95. Spire provided two land valuations, prepared by Knight Frank, one following RICS Valuation Guidance and one using a slightly modified version of DTZ's approach. The first used recent private hospital land transactions to estimate a range of prices per acre paid for land with planning permission for a hospital. Knight Frank assessed the relative desirability of each of Spire's sites based on site size, site location and site defects/benefits and then applied a value from this range to arrive at a value for the land required to replicate the Spire estate. The second approach used data included in various Knight Frank publications and VOA information⁶⁶ on residential land prices, as well as data on recent care-home transactions to estimate the value of Spire's portfolio on an alternative use basis. Both of these methodologies resulted in a similar land valuation of approximately £[§] million for Spire's 37 hospital sites.
96. HCA submitted two valuation reports. The first, prepared by Altus Edwin Hill (AEH)⁶⁷, estimated the cost of HCA's land using the price of office land in central London as a proxy, while the second, prepared by KPMG, estimated combined land and building values on the basis of the alternative use of the hospitals for residential purposes. KPMG considered that residential developers would be the most likely buyers of

⁶³ The VOA is an executive agency of HMRC. It provides the Government with the valuations and property advice required to support taxation and benefits. The VOA is responsible for setting business rates. For specialized buildings, such as hospitals, the VOA employs a depreciated replacement cost methodology, which is set out in *Practice Note 5: 2010: The Valuation for Rating of Private Sector Hospitals*:

www.voa.gov.uk/corporate/Publications/Manuals/RatingManual/RatingManualVolume5/sect840/ch-rat-man-vol5-s840-pn5-2010.html.

⁶⁴ Ashkirk, Spire's property adviser, also recommended this approach. More detail on this approach is provided in Appendix 6.16.

⁶⁵ BMI response to the provisional findings, Colliers Report *Assessment of Depreciated Replacement Cost Valuations*.

⁶⁶ www.voa.gov.uk/dvs/_downloads/pmr_2011.pdf.

⁶⁷ This report was submitted to the CC in response to a direct request for property valuations. HCA told us that it did not consider the AEH valuation to be appropriate for the purposes of profitability analysis.

HCA's hospitals were they to be made available on the open market. HCA put forward the view that the value in alternative use was the appropriate one for profitability analysis as it represented its opportunity cost of operating hospitals in central London. HCA also highlighted that the AEH report had used incorrect floor spaces, as well as applying a number of inappropriate assumptions, including (a) overly conservative levels of rent, (b) commercial yield assumptions that were too high, (c) an overly conservative ratio of gross to net internal area and (d) an excessive value for developer's profit in its estimates of the residual land value.⁶⁸

Our view

97. A detailed description and assessment of these approaches and that taken by DTZ is set out in Appendices 6.15 and 6.16. We consider that the approach adopted by DTZ was in accordance with the value to the owner principles set out above and hence provided a suitable basis for our profitability analysis. We had some concerns with the Knight Frank valuations, not least that its approach in each case extrapolated from a small number of data points, which we have reason to believe may not be representative, to land values around the country. Similarly, we noted that Colliers did not consider the lowest-cost means of entry in each local area, ignoring business park land⁶⁹ and often taking the highest value use when making the choice between residential and care-home use. In addition, we thought that Colliers' valuations of land on the basis of alternative residential use appeared to be unreasonably high when compared with similar estimates prepared by DTZ. We considered that the DTZ estimates were likely to be more reliable as they were prepared by a team with significant expertise in valuing residential land, whereas the Colliers valuation was prepared by a healthcare team. We consider, therefore, that the valuations submitted by Spire and BMI are likely to overstate the replacement cost of land. Finally, as noted in paragraph 92, we do not believe that the VOA land price estimates are appropriate for profitability analysis as they have not been estimated with reference to the cost of acquiring a plot of land.
98. Consequently, we have used the DTZ land values in our profitability assessment for all operators outside central London. In using these values, we have made allowance for both the costs of obtaining planning permission at a rate of £250,000 per site, which the DTZ report advises is towards the upper end of the range of costs that an operator is likely to incur,⁷⁰ and Stamp Duty Land Tax (at a rate of 5 per cent) and fees (at 0.8 per cent of the purchase price).
99. However, we have also carried out a sensitivity on our analysis on the basis of the Knight Frank report. On average, Knight Frank estimated land values to be approximately [§] per cent higher than those estimated by DTZ (including Stamp Duty Land Tax, fees and planning costs). We have applied this uplift across all national operators.⁷¹ See paragraphs 175 and 176 for a discussion of this sensitivity.
100. For central London hospitals, DTZ provided an estimate of the cost of acquiring a replacement building, rather than a plot of land, whereas the AEH report estimated

⁶⁸ [HCA response to the provisional findings, Appendix 5](#), paragraphs 5.79–5.94.

⁶⁹ In recent years, the large majority of entrants have built hospitals on either business parks (Circle Bath, Circle Reading, Spire Shawfair) or in rural areas (Nuffield Cardiff and KIMS).

⁷⁰ We used a figure at the upper end of the range to reflect the costs of potential delays and uncertainty in obtaining planning. Such delays and uncertainty are more likely to be an issue in the cases where DTZ has estimated replacement costs with reference to the price of agricultural land for development than for other sites.

⁷¹ National operators refer to those that have hospitals that are located predominantly outside London, ie BMI, Nuffield, Ramsay and Spire. The 'London' operators are BCH, HCA and TLC. We note that Colliers land valuations were approximately 48 per cent higher than those estimated by DTZ. We consider that the Colliers and Knight Frank estimates were sufficiently similar to be addressed with this sensitivity.

average land values of approximately £2,500 per square metre of built space using a residual value methodology based on alternative use as offices.⁷² In order to ensure a consistent treatment across operators, we have used an adjusted AEH land valuation⁷³ approach for HCA and TLC rather than DTZ's replacement building cost. It was unclear with the latter whether an operator could acquire a hospital building (as opposed to an office or other building) at the prices estimated by DTZ or, if not, what the costs of converting an office into a hospital would be. Although AEH's land values were not estimated for TLC's buildings, we applied the same price per metre of built area as for the Devonshire, Portland and Princess Grace hospitals. We consider this to be a reasonable approximation given the proximity of these to TLC's site on Devonshire Place.

101. Although land is not depreciated, we have sought to reflect the change in the value of land over the period in the profit and loss. The Knight Frank report provided information on how land values in each part of the country had changed over the relevant period. Based on the Land Registry House Price Index, it showed a 6 per cent decline in land values on the basis of alternative use between 2007 and 2013, ie approximately a 1 per cent decline in land values each year, although this masks significant fluctuations over the period. We have made the assumption that this is representative of the country as a whole and applied it to all national operators.⁷⁴ We did not have specific information on how land values (for hospital use) in London had changed over the period and did not believe that the national index put forward by Knight Frank was likely to be representative. We have, therefore, used the same land value (estimated as of January 2013) for the entire period. We believe that this is likely to be a highly conservative assumption given the outperformance of the London property market in comparison with the rest of the country.⁷⁵

Buildings

102. For freehold and capitalized leasehold buildings, we gathered information from the relevant firms on the reinstatement values of their hospital properties. These estimates had been prepared for the firms by qualified surveyors, independently of our inquiry, as the basis for the firms' insurance policies. They take into account the costs of demolishing the existing structures, clearing the site and reinstating the building and building services, car parking and other external landscaping, as well as professional and planning fees and an allowance for 'unmeasured costs'. In some cases, the reinstatement estimates included the cost of specialist equipment, while in other cases they excluded it.⁷⁶ We also considered the VOA's replacement cost estimates for each hospital.⁷⁷

⁷² AEH stated that the most appropriate and viable alternative use for HCA's buildings was office space. See Appendix 6.16 for a full description of AEH's approach to land valuation. In central London we understand that land prices are largely dependent on the size of building that can be constructed on a plot rather than the size of the site itself.

⁷³ As set out in paragraph 96, HCA argued that the AEH figure understated the value of its land for a number of reasons. Our consideration of each of these points is set out in full in Appendix 6.16. Where we have accepted these arguments, we have adjusted AEH's land values accordingly.

⁷⁴ We have applied a consistent rate of change (decline) in land values rather than including increases in some years and decreases in others. This is to avoid these fluctuations in asset prices causing volatility in returns that are unrelated to the operational performance of the businesses.

⁷⁵ If the value of land increased between 2007 and 2013, by using the value as of 2013 in our analysis, we would be overstating the average level of capital employed over the period and not reflecting the increase in the value of land in the profits of the business.

⁷⁶ For example, CBRE's reinstatement estimates for BMI included the following types of specialist equipment: conduit and cabling for TV and radio, incinerators, medical gases and pipework including manifold and enclosures, conduits for telephone installations, special filtration systems, fire detection systems, autoclaves, Charnley Howarth/laminar flow equipment, steam generating equipment, air-conditioning installation for specialist areas, standby generators, theatre lights, kitchen extract systems and fixed fittings, joinery fittings, nurse call systems, security alarm systems and sound proof booths. On the other

Relevant firms' views

103. BMI argued that the correct method of valuing its buildings was the 'Fair Maintainable Operating Profits' method, a market-based value, as proposed by Colliers.⁷⁸ It suggested that this approach, by using trading results that are adjusted with reference to a range of international hospital benchmarks, was able to remove any element of excess profit and therefore avoid the circularity of capitalizing excess profits. BMI stated that the CC's concern regarding this issue had been excessive and risked predetermining the outcome of its profitability analysis. By applying this approach, Colliers estimated a value for BMI's land and buildings of approximately £[redacted] billion in FY11.
104. BMI stated that adjusting MEA values involved subjectivity on behalf of the CC, with a risk that the CC's conclusions would be determined by its choices with respect to such adjustments. BMI maintained that where there was significant uncertainty, or where adjustments to MEA values yield questionable results, more emphasis should be placed upon values from pre-existing evidence that are known with certainty and are not produced for the inquiry, such as the net book value⁷⁹ of hospital buildings. BMI argued in this respect that there were strong reasons to suspect that the adjustments the CC had chosen were producing questionable results. For example, the reinstatement value used by the CC indicated that a new entrant would be able to enter the market at [redacted] per cent of the capital cost that BMI (or members of the GHG Group) had incurred. BMI submitted that this strongly indicated that the reinstatement values used by the CC understated the value of BMI's hospital buildings. The net book value of BMI's tangible assets (land, buildings and equipment) in its financial statements was £[redacted] as of FY11.
105. BMI put forward the view that its reinstatement cost estimates understated the costs of replacing its hospitals. BMI maintained its view that the correct approach was that set out in paragraph 103. However, given the CC's preference for the DRC approach for valuing properties for the purposes of profitability analysis, BMI submitted up to date DRC valuations prepared by Colliers International to full RICS professional standards following site inspections so as to provide direct evidence of replacement costs and obviate the need to use the insurance reinstatement and VOA obsolescence calculations as proxies. BMI state that the Colliers valuation represented a more appropriate benchmark. Colliers noted that estimates for insurance purposes were not required to include developers' profit, start-up costs, and interest charges for financing the reinstatement.⁸⁰ BMI argued that its reinstatement values were [redacted], having been indexed in [redacted] based on site inspections that took place in [redacted], whereas the Colliers DRC valuations were based on recent site inspections.
106. Finally, BMI provided analysis which compared its hospitals, in terms of the number of inpatient beds and theatres, with those of new facilities constructed in the period

hand, Colliers' reinstatement estimates for Spire excluded specialist equipment. We note that the total reinstatement costs (per square metre) was very similar in both cases.

⁷⁷ Practice Note 5: 2010: The Valuation for Rating of Private Sector Hospitals, VOA.

⁷⁸ Colliers, September 2012. A full description of this approach is set out in Appendix 6.16.

⁷⁹ BMI noted that even if the deprival value of the hospitals were reflected in the reinstatement costs, 'it still leaves open what should be done with this reduction in asset values [from the net book value]. The Core Hospital Business needs to recover this fall in asset value'. In the context of profitability analysis, a difference between the net book value of the assets held by a business and their deprival value does not imply that their value has changed over the period, which would be recognized in the profit and loss. It may imply that the businesses paid more (or less) than the replacement cost of the assets when they acquired them, with the net book value of the assets reflecting the valuation approach adopted on acquisition. The aim of profitability analysis is to identify the level of returns being made on the economic cost of the assets, which in a competitive market should tend towards the cost of capital over time; it is not concerned with the returns being made on the investment by the owners of the assets, since this investment is likely to be increased where it is possible for assets to earn excessive returns.

⁸⁰ Colliers, Assessment of Depreciated Replacement Cost Valuations, p9.

2003 to 2013. From this, BMI estimated the approximate replacement cost of its hospitals. The hospitals that form the basis of this analysis are set out in Table 2.⁸¹ This analysis suggested a DRC of approximately £[§] million for these freehold buildings (on average over the 2007 to 2011 period). It stated that this was an important cross-check to carry out as it compared the valuations against the actually incurred costs of recent new build entry. BMI noted that this cross check analysis was higher than the Colliers' DRC valuation, which gave an average freehold building value of £[§] million over the 2007 to 2011 period (after indexing and depreciation adjustments were made to the data to present it in a comparable format to the CC's analysis).

TABLE 2 Recent hospital build costs

<i>Hospital</i>	<i>Characteristics</i>	<i>Costs (including land and commissioning costs £m</i>
Circle Bath	4 theatres, 28 IP beds, no ICU or HDU	30
Spire Montefiore	3 theatres, 20 IP beds, no ICU or HDU	29
London Clinic Cancer Centre	Specialist cancer equipment, 35 IP beds	90
HCA Christie Clinic	6 NHS theatres, 34 IP beds, no ICU or HDU	35
Circle Reading	5 theatres, 30 IP beds, no ICU or HDU	58
KIMS	5 theatres, 77 IP beds	90
Nuffield Oxford Manor	8 theatres, 71 IP beds, 7-bed ICU	50
Nuffield Leeds	6 theatres, 48 IP beds	40
Average		53
Average excluding LCCC		47

Source: BMI submission to the CC. Note that BMI did not include the London Clinic Cancer Centre in its calculation of average build costs.

107. Spire proposed that the MEA value should reflect both upgrades that had been made to the hospital buildings since the date of the assessment for insurance purposes and the latest construction technology and regulations rather than those used for the current buildings. Spire submitted two property reports as evidence of the costs of replacing its portfolio of hospitals. The first was a revised reinstatement estimate prepared by Knight Frank⁸² which valued Spire's 37 hospitals at £682 million in 2011. The second report was prepared by Mace and estimated the replacement cost of Spire's existing portfolio of hospitals both on the basis of current construction costs and deducting the additional cost generated by changes in building regulations since 1980 (when the majority of the portfolio was built). On these bases, Mace estimated that Spire's buildings were worth between £693 million and £783 million, as of 2013.⁸³ Both of these reports included the cost of replacing specialist equipment. Spire told us that it had submitted the Knight Frank report to its insurers and new insurance contracts were being redrafted on this basis.
108. HCA put forward the view that its properties should be valued with reference to their highest-value potential alternative use, which was for conversion to residential properties. It submitted a report, prepared by KPMG, which valued its (land and) buildings on this basis. HCA submitted details of some recent planning decisions, where a change of use (to residential from another use) was permitted in Westminster, to support its view that residential planning permission would be forthcoming on its

⁸¹ BMI did not use TLC's Clinic Cancer Centre as a comparable.

⁸² This report was prepared for Spire by Knight Frank. Knight Frank's estimate was based on the inspection of 25 of Spire's properties and a desktop review of the remaining 12 sites. Spire has submitted Knight Frank's estimates to its insurers as the basis for its insurance policies from summer 2013 onwards.

⁸³ Mace, Property Cost Review, 2013.

properties. HCA also submitted an estimate of the costs of acquiring and converting four different buildings which it had considered purchasing in recent years. It argued that this analysis demonstrated that a new entrant would need to invest £[~~8~~8] million in order to replicate HCA's portfolio of hospitals.⁸⁴

109. BMI and Spire told us that they spent considerable sums maintaining and improving their buildings such that their value did not depreciate substantially over time. They suggested that this capital expenditure at least offset the depreciation on the buildings over time.
110. Ramsay suggested that we should reflect changes in the market level of rent over the period in the rental charges included in the profit and loss rather than using the actual levels of rent paid in order to ensure consistency between the treatment of owned and rented buildings.

Our view

111. Our detailed assessment of the evidence on buildings values is set out in Appendix 6.17. As explained in paragraphs 86 to 88, we do not consider the net book values of hospital buildings in the financial statements of the relevant firms to provide an appropriate measure of the value of those assets to the business for the purposes of profitability analysis. The net book values of BMI's (and other relevant firms') property assets are based either on historic costs, or on valuation opinions derived from the profits of the business rather than measures of the cost of replacing the assets. Hence, we do not agree with BMI's view that 'more emphasis should be placed upon values that are known with certainty (i.e. net book values)'.
112. On the other hand, we consider that the value at which the relevant firms insure their building assets does provide a measure of replacement costs. These estimates were prepared for the relevant firms by surveyors with reference to the actual hospital buildings owned by the relevant firms and industry-level cost indices. Our review of the reinstatement reports submitted by the parties indicates that the values include the 'Full structural rebuilding costs including appropriate foundations',⁸⁵ as well as the costs of reinstating the on-site car parks, roads and building services within the boundaries of the sites. We recognize that the figures do not include an allowance for either developer's profit or for interest and financing costs. However, they do include an estimate of demolition and site clearance costs which would not be required for a new-build hospital, as well as an allowance for both professional fees⁸⁶ and 'un-measured' costs. These costs comprise around 20 per cent of the total reinstatement cost estimates. Hence, we concluded that the reinstatement cost estimates were unlikely to be materially misstated as a result of excluding certain costs.
113. We agree that improvements made to the hospital buildings after the reinstatement assessments were undertaken should be reflected in the capital value of the buildings. We have capitalized the investments made by the parties in improving their freehold buildings in addition to the reinstatement value.⁸⁷ We considered Spire's argument that it had invested significantly in refurbishing and enhancing its hospitals over the relevant period and this investment should be reflected in lower rates of

⁸⁴ [HCA response to provisional findings, Appendix 5](#), paragraphs 5.95–5.98.

⁸⁵ Colliers CRE, *Buildings Insurance Reinstatement Cost Assessment Report*, August 2008, prepared for Spire. Similarly, Rushton International's reinstatement cost report, prepared for HCA, stated that 'The basis of assessment adopted is full reinstatement inclusive of foundations'.

⁸⁶ We note that the allowance for professional fees includes planning fees, which we have also allowed for in the value of land.

⁸⁷ These improvements have been capitalized from the year of the reinstatement assessment onwards as improvements carried out prior to that assessment would have been included in the reinstatement cost estimate.

obsolescence. We thought that by capitalizing such investments over the period, our analysis fully captured this means by which PHPs could enhance the value of their assets. We did not consider Spire's argument that we charge depreciation against its hospital buildings in the profit and loss account but not reduce the capital value of its buildings to be either logical or reasonable.

114. We carried out a cross-check on our use of reinstatement costs by collecting evidence on the costs of building new hospitals in recent years. This indicated that the majority of new hospitals cost between £3,400 and £3,500 per square metre to build.⁸⁸ We observed that these costs related to the building of MEAs, which are on average smaller than the PHPs' existing hospitals⁸⁹ and would achieve higher levels of operating efficiency in terms of both staff and energy costs. We concluded that Spire's reinstatement costs—uplifted to take into account specialist equipment⁹⁰—were in line with current build costs. As a result, we made no further adjustments. We thought that BMI's reinstatement costs were slightly below the level of current build costs and, therefore, increased them by £200 per square metre. However, we believe that this approach is conservative, since we have also included in BMI's asset base two facilities which were used very minimally by the business over the period.⁹¹ We reviewed Nuffield's reinstatement costs and concluded that these were also approximately comparable to the costs of building new facilities.
115. In the case of HCA, we thought that the AEH report, which was a DRC valuation, provided the most appropriate estimate of the replacement cost of HCA's hospitals. However, we did make two principal adjustments to this report:
- (a) We applied the VOA levels of obsolescence rather than those estimated by AEH in order to ensure consistency with other operators. This approach was highly conservative as AEH estimated a significantly higher level of obsolescence than the VOA.
 - (b) We adjusted the replacement costs of HCA's buildings in order to reflect the corrected floor spaces provided in the KPMG report.
116. We agreed with HCA that the value to the business of a hospital may be influenced by the feasible alternative uses to which that building could be put, since a new entrant would have to pay a price that at least matched that offered by those alternative uses. However, as set out in Appendix 6.17, we thought it was logically inconsistent to maintain that (a) it is relatively straightforward to gain planning permission for change of use to residential, (b) there is a significant difference between commercial and residential property values and (c) a new entrant would have to compete with residential developers rather than commercial developers to obtain a site. In order to obtain a valuation benchmark, we collected information on the rental rates charged for medical space in the area around Harley Street. We concluded that these were comparable with commercial rents and lower than residential rents and, therefore, that the AEH valuation approach was more appropriate than that put forward by KPMG.
117. Our consideration of the appropriate approaches to measuring the obsolescence of hospital buildings and the price index that is pertinent to adjusting their costs is set out in Appendix 6.17. We have applied the VOA estimates of obsolescence (as of

⁸⁸ These figures include contractor's profit, VAT and, in some cases, commissioning costs.

⁸⁹ Colliers report for BMI reduced the average size of a BMI hospital by 17 per cent.

⁹⁰ See Appendix 6.17 for further details on Spire's specialist equipment.

⁹¹ These facilities were Paddocks and Manchester Lifestyle. The fact that BMI was not making reasonable use of them over the period strongly indicates that their value to the business was below the replacement cost and therefore that valuing them at replacement cost is likely to overstate their deprival value.

2008) and the BIS construction output price indices to give a value in each year of the period.⁹² We charged depreciation on all hospital buildings on a straight-line basis at 2 per cent per year, using the level of obsolescence in 2008 as the starting point.⁹³ All refurbishments and improvements to the buildings carried out after the date of the reinstatement assessment have been capitalized (at cost) and added to the depreciated reinstatement cost of the buildings.⁹⁴ This approach has been applied consistently across all the relevant firms.

118. For rented buildings, we did not make any adjustments to the levels of rent paid and we followed the accounting treatment used by the relevant firms, in terms of capitalizing improvements and/or capital refurbishments of these buildings at their (depreciated) historic cost. See paragraphs 160 to 164.

Sensitivity

119. We have carried out a sensitivity on the building values of the hospitals located in central London (HCA and TLC's buildings). These are based on KPMG's valuation, ie assuming a residential alternative use. (See paragraphs 177 to 183 for further details.)
120. We considered whether it was appropriate to apply a sensitivity to the building values based on the reinstatement costs estimated by the VOA. These were generally lower than those used by the firms for insurance purposes, which we understand was due to a lower build cost per square metre being applied. However, when we compared the VOA values with the build costs of recently-constructed hospitals, we noted that the VOA values were significantly lower. We considered, therefore, that these were likely to understate materially the replacement cost of the relevant firms' hospital buildings. Hence, we have not used these figures in our profitability assessment.

Fully depreciated assets

121. Some firms will find that they are still using fixed assets after they have been fully written off in their financial statements. The economic useful lives used in most depreciation calculations are only estimates. If unbiased estimates of economic useful lives are used, there will be an element of averaging, with some assets lasting longer than originally envisaged and others wearing out prior to this.

Relevant firms' views

122. Ramsay and BMI put forward the view that the value of equipment, furniture, fixtures and fittings (referred to here as 'equipment') should be adjusted in an assessment of economic profitability to reflect the continuing economic value of assets that were fully depreciated but still in use over the period. Ramsay suggested that we should adjust the useful economic lives of its fully depreciated assets such that they were written down to zero at the end of the period (June 2012) and recalculate depreciation and capital employed on this basis.

⁹² www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcn%3A77-287916.

⁹³ The 2 per cent straight-line depreciation charge is based on an assumed useful economic life of 50 years in the absence of major refurbishments. By separately capitalizing refurbishment, we have sought to capture both extensions to the hospital buildings and refurbishments/improvements that serve to extend their economic life. We note that for some operators the depreciation charge is lower than the increase in value due to capital expenditure such that their total buildings value increases over the period, whilst for others it is less.

⁹⁴ Some of the relevant firms submitted reinstatement values from 2011 or 2012 and hence no improvements or refurbishments made over the period have been capitalized as these are already reflected in the reinstatement value.

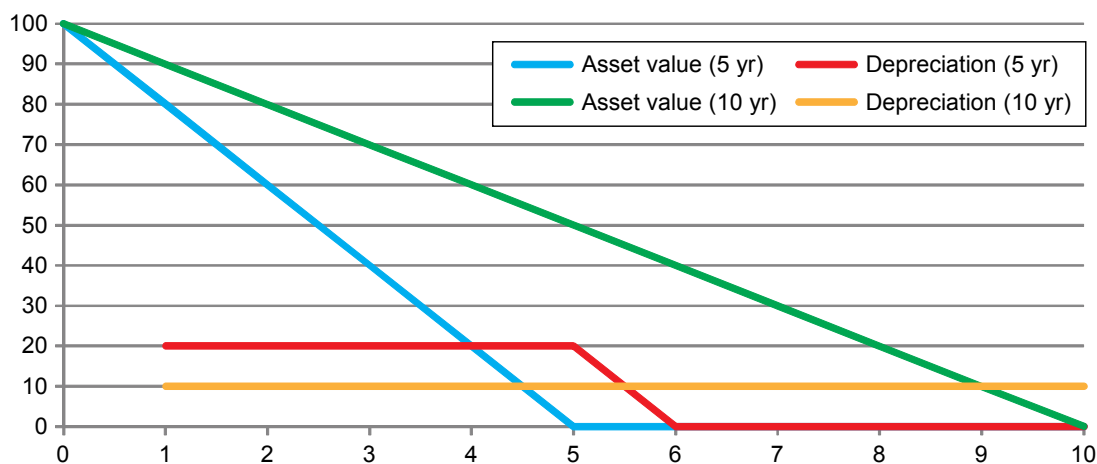
123. Spire submitted a report by LEK putting forward the view that the CC should adjust for fully-depreciated equipment by considering the MEA value of the equipment that a new operator would need to acquire. Spire suggested that its expenditure of £[X] million on equipment for its Brighton hospital could be used as a proxy for the cost of equipping the average hospital. On this basis, LEK estimated that an investment of about £[X] million would be required to reinstate the equipment of the entire group in 2011. However, it suggested that a newly-established operator would be likely to acquire used equipment where practical and, on this basis, it estimated a 'realistic acquisition cost' of £[X] million and a depreciated acquisition cost of equipment of £[X] million in FY11, compared with a net book value of £[X] million.

Our view

124. We agree that assets that are still in use should be reflected in the capital employed according to the value to the business principles. Ideally, all assets should be depreciated over their actual useful economic lives with the pattern of depreciation charged reflecting the stream of economic benefits from those assets. The analysis submitted by Ramsay indicates that assets comprising approximately half the total gross book value of the firm's plant and equipment were fully depreciated at the end of the period but still in use. This implies that the net book value of the assets systematically understates the capital employed by the business. However, it also implies that the depreciation charged against most categories of equipment is too high in early years and too low, ie zero, in later years. In order to rectify this in a consistent manner, it would be necessary to adjust the time frame over which all assets are depreciated to reflect their actual useful economic life, restating both the capital value and the depreciation charge in each period. This adjustment is demonstrated in Figure 3, which shows the pattern of asset value and depreciation for an asset worth £100, when depreciated over five or ten years.

FIGURE 3

Asset value and depreciation profiles



Source: CC analysis.

125. If we were to alter the asset value and depreciation charge of only those assets that are fully depreciated, without making similar adjustments for assets that are not fully depreciated, the total depreciation charge will be overstated. Moreover, the total capital value will remain understated as assets that are not fully depreciated will still have been depreciated too rapidly (on average) in the early years of their life.

126. Adjusting the period over which all assets are depreciated will increase the level of capital employed and, if the business is in a steady state, will leave the overall level of depreciation unchanged. However, where the asset base of a business is increasing, depreciation will be lower over the period. Hence, it is unclear what impact such an adjustment would have on the ROCE. For example, in the case of Spire, we observed that over the relevant period, the total GBV of equipment increased by over 250 per cent but the NBV of equipment only increased by just under 160 per cent, such that the ratio of NBV to GBV fell over the period.⁹⁵ Hence, to the extent that Spire has approximately £30 million of equipment still in use that has a zero NBV, it has also charged significantly more depreciation to its profit and loss over the period than would be justified by the wear and tear of its assets.
127. We considered the approach proposed by Spire. As discussed in paragraph 123, Spire proposed that our analysis should include additional equipment of around £85 million per year over the period, based on Spire's costs of equipping its Brighton hospital, and that we should charge approximately the same level of depreciation as Spire did over the relevant period. Our principal concern with this approach was that it does not adequately address the issue of excessive depreciation being charged over the relevant period. If Spire's assets have been depreciated too rapidly and should be valued more highly, then the level of depreciation charged must be reduced proportionately. Second, we noted that the GBV of Spire's assets in its accounts was [REDACTED] the level estimated by LEK using Brighton as a reference point. When the two main elements of the Spire business were acquired in 2007 and 2008, Spire was required to record its assets at a fair value.⁹⁶ Given that Spire considered the NBV of its assets in 2007/08 to be the fair value at that date, we consider it reasonable to use that reference cost rather than an estimate based on the cost of equipping a single hospital which may or may not be representative of the whole Spire portfolio.
128. In addition to making adjustments for fully depreciated assets, the application of the principle of the value to the business would require an adjustment to be made to reflect the value of assets that would not be replaced by the business if it were deprived of them. We note that there is significant excess capacity in the private hospital industry. For example, in spite of a [REDACTED] per cent increase in hospital patient days between 2006 and 2012, Ramsay reported an average total occupancy rate of [REDACTED] per cent in FY12.⁹⁷ BMI indicated that its theatres were operating at less than [REDACTED] per cent utilization and its beds at just over [REDACTED] per cent utilization.⁹⁸ HCA indicated that its theatres and consulting rooms were operating at around one-third of total capacity. [REDACTED] Similarly, [REDACTED]. A Colliers report for Spire highlighted that there was [REDACTED].⁹⁹
129. We recognize that the nature of private healthcare services requires some spare capacity in the system to ensure the prompt treatment of patients. However, we believe that the current level of spare capacity indicates that not all assets would be replaced by the operators if they were deprived of them.

⁹⁵ CC analysis of Spire's fixed asset register, response to financial questionnaire.

⁹⁶ Under FRS 7, on acquisition businesses are required to value tangible fixed assets at either the market value or the depreciated replacement cost, with the fair value not exceeding the recoverable amount of the asset:
www.frc.org.uk/Our-Work/Publications/ASB/FRS-7-Fair-Values-in-Acquisition-Accounting/FRS-7-Fair-Values-in-Acquisition-Accounting.aspx.

Spire told us that it assessed the fair value of those assets in 2007/8 based on the acquired fixed asset register with the NBV of Bupa's assets becoming the new GBV of the assets for Spire. It noted that as the NBV of fully depreciated assets was zero, these were excluded from the balance sheet.

⁹⁷ The [REDACTED] per cent increase in hospital patient days is a like-for-like figure, ie it excludes the effect of Ramsay opening/acquiring hospitals over the period.

⁹⁸ [REDACTED]

⁹⁹ Colliers CRE report for Spire, 2007.

130. We do not have sufficient information to make either of these adjustments to the value of equipment (and land and buildings, in the case of excess capacity) employed by the relevant firms. Hence, in our profitability analysis, we have not sought to recalculate the deprival value of the relevant firms' assets to correct for either fully depreciated or 'excess' assets. We have, however, taken these issues into account qualitatively in our interpretation of the results of our analysis in paragraphs 184 to 186.

Working capital

131. Submissions from both the relevant firms and some PMIs highlighted a degree of seasonality in the provision of private healthcare services. Our profitability assessment takes this into account by using the average level of (net) working capital held by the private hospital operators during each financial year, rather than using the year-end position.
132. The relevant firms agreed that the use of this average working capital position was reasonable, but HCA and Spire put forward the view that the working capital balance should also include an operational cash balance in order to cover any mismatches that may arise between the timing of cash inflows and outflows. A report by LEK, prepared for Spire, suggested that the business would have needed to hold, 'on a conservative estimate', an average cash balance of £[§] million per year for these purposes. Spire suggested that if it were to use annual average working capital, [§].¹⁰⁰ HCA told us that 'as a conservative assumption' it 'considers that a cash balance of at least monthly staff costs is necessary for the operation of its hospitals'. HCA argued that an overdraft facility was not a direct alternative to a cash balance since the latter was an important component in demonstrating financial robustness that supported the business in negotiating pension fund payments, property lease terms and reducing long-term funding costs. HCA stated that the financing costs of an overdraft would be significantly higher than any interest earned on short-term cash balances [§].¹⁰¹
133. We recognize that the operators will experience mismatches in the timings of cash inflows and outflows from time to time and that they will need to have ready access to funds to cover such mismatches when they occur. However, it is our view that the net working capital balance represents the average level of capital that is required by the business over the period. We recognize that Spire (and other operators) may need additional liquidity for half the year but this is balanced in our analysis by the six months when they require less liquidity. We consider that the additional liquidity requirements described by HCA and Spire represent financing of their business operations, which can be met either through the holding of a cash balance, or through the use of an overdraft facility. The latter may be 'more expensive' than holding cash, making it more attractive to hold cash, but this is still a financing choice. We observe that in spite of the higher relative costs of overdrafts, most businesses hold a combination of cash and overdraft facilities to provide liquidity as and when required. For example, Spire states in its Annual Report (2011) that 'Bank overdrafts that are repayable on demand and form an integral part of the Group's cash management are included as a component of cash and cash equivalents for the purpose only of the statement of cash flows'.¹⁰² Therefore, our assessment does not include an operational cash balance.

¹⁰⁰ LEK Report, November 2013, p41.

¹⁰¹ HCA response to provisional findings, Appendix 5, paragraph 5.148.

¹⁰² Spire Annual Report and Accounts, 2011, p53. Similarly, [§].

Level of working capital

134. We observed a number of differences in both the levels of working capital held by the relevant firms and trends in working capital over time. Figure 5 shows the average working capital balance of the national PHPs over the period, while Figure 6 shows that of the London-based PHPs. The former all demonstrate a downward trend in the level of working capital held over the period, while the latter appear to show an upward trend from FY10 onwards.

FIGURE 4

Average working capital balances, national PHPs

[✂]

Source: CC analysis.

FIGURE 5

Average working capital balances, London PHPs

[✂]

Source: CC analysis.

135. BMI attributed the [✂], while Ramsay and Nuffield indicated that more prompt NHS payment terms accounted for the majority of the declines they experienced.
136. We have not conducted a sensitivity on the level of working capital employed by the relevant firms. However, we discuss the potential impact of these trends in working capital requirements in our interpretation of the analysis.

Profitability analysis

137. Table 3 shows the weighted average ROCE for the seven relevant firms combined. (See [Annex A](#) for details of how the financial information of the seven PHPs has been aggregated to produce these figures.)

TABLE 2 Weighted average ROCE, aggregated figures for relevant firms

per cent

	FY07	FY08	FY09	FY10	FY11
ROCE	12.2	14.0	15.4	17.0	17.1

Source: CC analysis.

138. This analysis indicates that the profitability of the industry has improved over the period from 12.2 per cent in FY07 to 17.1 per cent in FY11, with a weighted average of 15.2 per cent for the period as a whole.
139. In the following subsections, we set out our ROCE calculations for each of the relevant firms, together with details of any specific adjustments that have been made to their financial information that has not been dealt with in the rest of this appendix.

Bupa Cromwell Hospital

140. Table 4 sets out our ROCE calculation for BCH. We have not made any adjustments to BCH's financial information.

TABLE 3 **BCH financial results**

	£'000				
	FY08	FY09	FY10	FY11	FY08–FY11 average
EBIT	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total capital employed	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
ROCE (%)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: Bupa Cromwell financial information (January 2008 to December 2011) and CC analysis.

Note: Financial information for BCH is not available prior to 2008 when it was acquired by Bupa.

BMI

141. Table 5 sets out our ROCE calculation for BMI. The financial information provided by BMI included income from a number of businesses that were outside the scope of our investigation, including their Transform and Care businesses, which specialized in cosmetic surgery and IVF services, respectively, as well as their Netcare¹⁰³ and health screening operations. Therefore, we removed the financial results of these activities from BMI's private hospital operations.

TABLE 4 **BMI financial results**

	£'000					
	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
EBIT	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Total capital employed	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
ROCE (%)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: BMI financial information (October 2006 to September 2011) and CC analysis.

Specific adjustments

142. BMI stated that income and costs associated with the warehouse function should be included in the calculation of EBIT. [REDACTED] BMI further argued that, unless other operators generated revenues from similar activities, it was not rational to assume that any efficient operator would pursue a similar strategy [REDACTED]. Moreover, BMI noted that this was a declining part of its business that could not be expected to continue contributing to its profits in the future.¹⁰⁴ We did not agree with this approach. As explained in paragraphs 13 and 14, in our profitability analysis we have not sought to separate out those revenue streams that are directly within the scope of our investigation from those that are outside the scope of our investigation where these

¹⁰³ BMI's Netcare business provides healthcare services to publicly-funded patients via separate facilities and clinics from BMI's private hospital operations. BMI told us that Transform, Care and Netcare UK had separate management teams and therefore were not supported by the central businesses and hence should not be allocated any portion of central costs.

¹⁰⁴ BMI [response to provisional findings Annex 6: response to profitability analysis](#), paragraphs 4.11–4.22.

are produced using the same assets in order to avoid the arbitrary allocation of capital between revenue streams. In our analysis, we have included all the costs (both capital and operating) of running the warehouse and we consider it appropriate, therefore, to include all the associated revenues. However, we note that the impact on ROCE is not significant whichever approach is adopted.

143. BMI told us that although its Harbour site was now leased, it had been owned by the business up until 2011 when it was sold to a third party. In the interests of simplicity, we have reflected the value of this asset over the period by deducting the rent cost on the building from EBIT in each year (FY07 to FY11), rather than capitalizing the value of the building in earlier periods.
144. BMI argued that the CC should not exclude the rental expense on two buildings ([§]) that were leased but co-located with freehold buildings since these rental expenses had been incurred by the business. We recognize that BMI has indeed paid these rents but note that the freehold value of both the land and buildings of these rented properties has already been included in the capital employed. In the interests of simplicity, since we do not have information on the replacement cost of these properties separate from the owned buildings with which they are co-located, we have removed the rental expense rather than the capital value of the buildings. If we do not adjust the level of capital employed and deduct these rental costs from EBIT, the average ROCE over the period falls by [§] per cent, which we do not consider to be significant.¹⁰⁵
145. BMI provided us with details of 'project and other costs', related to specific strategic and operational projects that are not accounted for at a site level or included in the central costs (such as professional fees, moving and refinancing costs, rebranding costs, pension credits and debits, VAT refunds, certain bad debt expenses, transaction costs and restructuring costs) that the business had incurred over the period but which had not originally been included in the management accounts submitted to the CC. It argued that these should be included in the costs of the business in our profitability analysis as they were real economic costs incurred by the hospital business over the period.¹⁰⁶ We reviewed these costs and included those which we thought reflected ongoing operational costs for the business. Therefore, we excluded costs of reorganization and redundancy, as well as gains/credits on the company pension scheme,¹⁰⁷ but included the costs associated with CEO recruitment and various professional fees.

HCA

146. Table 6 sets out our ROCE calculation for HCA.

¹⁰⁵ We note that this approach double counts the value of the buildings by including them in the capital and including the rent paid on them.

¹⁰⁶ BMI [response to provisional findings Annex 6: profitability analysis](#), paragraphs 4.3–4.6.

¹⁰⁷ These effectively represented income for the business.

TABLE 5 HCA financial results

£'000

	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
EBIT	[X]	[X]	[X]	[X]	[X]	
Total capital employed	[X]	[X]	[X]	[X]	[X]	
ROCE (%)	[X]	[X]	[X]	[X]	[X]	[X]

Source: HCA financial information (January 2007 to December 2011) and CC analysis.

147. For HCA, we had two estimates of the reinstatement costs of the buildings, one prepared by Rushtons and one by Altus Edwin Hill. We have used the latter in our analysis, as it included the correct set of properties, whereas the Rushtons report did not provide a reinstatement cost for all HCA's owned buildings and included some rented buildings.¹⁰⁸ HCA told us that AEH had [X] for several of its hospitals. We adjusted for this by recalculating the reinstatement value of the buildings based on the floor spaces set out in the KPMG report submitted by HCA (these were the VOA estimates). We also adjusted the land values in the AEH report to reflect these correct floor spaces. As discussed in Appendix 6.17, however, we did not consider it appropriate to capitalize the value of HCA's leased buildings.
148. In estimating obsolescence, we used the VOA values in order to ensure consistency with the treatment for other hospital groups. However, we note that AEH also estimated the obsolescence of the buildings and its estimates were significantly higher than those of the VOA, ie its report indicated that the buildings were depreciated to a greater extent. This indicates that our approach of using the VOA obsolescence estimates is likely to be conservative, at least in the case of HCA.
149. HCA submitted a property valuation prepared by KPMG, which valued its buildings on the basis of their alternative use. Despite our reservations regarding the appropriateness of this valuation, we have considered it as one of our sensitivities.
150. HCA provided the CC with its own model of ROCE, which separated the returns made on UK patients from those made on overseas patients by allocating costs between these customer types according to the number of 'inpatient day equivalents'.¹⁰⁹ HCA told us that it considered that [X], with all patients receiving the same treatment, benefiting from the same level of service, and having access to the same facilities. HCA noted that, whilst it occasionally used translators for international patients, [X].
151. We have reviewed this model and have a number of reservations regarding its usefulness for our analysis. In the first instance, we note that it uses the KPMG alternative use property valuation of £[X] million rather than a replacement cost value. This increases the capital employed significantly. In Appendix 6.17 we have detailed our reservations regarding the appropriateness of this valuation basis. In addition, we consider that the large increases in residential property prices in central London between 2007 and 2013 (the date of the KPMG report) means that this approach is likely to overstate significantly the value of capital employed when applied without

¹⁰⁸ For example, the Rushton Report included 212-214 and 234-238 Great Portland Street, which are leased by HCA at a market rent, while it did not include 211 Great Portland Street, which is capitalized on HCA's balance sheet.

¹⁰⁹ In effect, the model weights the volume of inpatient, day-case and outpatient visits according to their relative workload using NHS Reference Cost data in order to derive a common unit of a patient day. Costs and assets are then allocated between UK and overseas patients on the basis of this weighted number of 'inpatient day equivalents'. Revenue does not need to be allocated as HCA has information on the source of revenues.

adjustment to each year of the period. We have made adjustments to reflect these increases in our sensitivity. Our analysis indicates that the KPMG values may be overstated by as much as £[§] at the beginning of the period.¹¹⁰

152. In addition, we note that this model includes construction in progress and freehold building improvements and refurbishments, as well as the associated depreciation charges on the latter, but does not reduce KPMG's initial valuation to reflect the potential costs of affordable housing and section 106 requirements in its valuation. HCA stated that its freehold building improvements and refurbishments averaged a value of between £[§] million and £[§] million but estimated that affordable housing and section 106 requirements could reduce the alternative use value of its buildings by up to £[§] million.¹¹¹ We consider, therefore, that this approach significantly overstates the value of HCA's capital employed.¹¹²
153. Finally, there are a number of other points where we disagree with the approach taken by HCA, including (a) the deduction of amortization of purchased goodwill from profits,¹¹³ although HCA has not included this goodwill or capitalized intangible assets as part of the capital employed in its model, and (b) the inclusion of investments in facilities that are not within the scope of the investigation, such as Rood Lane, the Physicians Clinic at Harley Street, Enhancecorp and HCA purchasing. HCA argued that its investments in these facilities represented a tangible asset value to the facilities within scope and should be considered as part of its active capital employed.¹¹⁴ As a general principle, we do not agree that it is appropriate to include investments in the capital employed by a business without also including the profits generated from them in the returns on capital. HCA did not provide any reasoning as to why such operations—that were outside the scope of our investigation—represented a tangible asset value to the hospital business, nor did the consolidated financial information provided by HCA include the financial results for these operations, with the exception of the Physicians Clinic at Harley Street, which had a very small negative EBITDA figure. We do not consider these businesses to fall within the scope of our investigation and, therefore, have not made any adjustments to reflect these investments.
154. HCA told us that its US parent company incurred approximately £[§] million per year in services provided from the US parent company to HCA in the UK and that this should be reflected in the cost base of the UK business.¹¹⁵ We accepted that this was appropriate and adjusted the cost base accordingly.
155. As regards the allocation of costs between UK and overseas patients, we consider that the approach taken may result in a disproportionate quantity of costs being allocated to UK patients, resulting in a lower ROCE on those patients and a higher ROCE on overseas patients. The allocation of costs is made based on information from the NHS Reference Cost database. This information indicates that a day-case visit and an elective inpatient day are approximately equivalent from a cost point of view. HCA stated that 'there is ... no reason to think that HCA would have relative inpatient-outpatient-day case costs systematically and significantly different to those of the NHS'. We have reviewed the NHS Reference Cost information for 2010/11.¹¹⁶

¹¹⁰ Land registry data indicates that residential property prices in Westminster increased by around 55 per cent between December 2006 and February 2013.

¹¹¹ [HCA response to provisional findings, Appendix 5](#), paragraphs 5.74–5.77.

¹¹² Where we have used reinstatement costs to proxy the replacement cost of a hospital, we have capitalized freehold improvements made after the date of the reinstatement estimate to reflect the higher value of the building and depreciated all refurbishments and improvements from that date onwards.

¹¹³ In several years this is a negative balance, ie amortization increases profits.

¹¹⁴ [HCA response to PFs, Appendix 5](#), paragraph 5.133.

¹¹⁵ *ibid*, Appendix 5, paragraphs 5.126–5.131.

¹¹⁶ www.gov.uk/government/publications/2010-11-reference-costs-publication.

The reference cost for inpatient elective treatment of £3,091 used in HCA's model is based on an average length of stay across all treatments of approximately 2.90 days.¹¹⁷ HCA's model estimates a daily inpatient cost by dividing this total cost by HCA's average length of inpatient stay of [£] days. The resulting day rate of £[£] is then used as a weighting factor for the cost allocations. However, the NHS information indicates that the average cost per day of inpatient treatment is £1,066, ie £3,091 divided by 2.9 days. Hence, we consider that HCA's approach understates the inpatient cost per day relative to the day case cost. Using the £1,066 daily cost in determining the allocation of costs results in a substantial reduction in the difference between the returns earned on UK and overseas patients.

156. In addition, we note that the average UK inpatient at an HCA hospital stays for [£] days, whereas the average overseas inpatient stays for [£] days, indicating that the latter are, on average, receiving treatment for more complex and acute conditions with proportionately greater need for costly ICU/HDU services. Finally, HCA's model does not separate out any costs that are only pertinent to overseas patients, such as the cost of hiring interpreters. These are apportioned evenly on the basis of effective inpatient days.
157. As a result, we do not consider that there is any evidence to support HCA's contention that it earns a higher return on overseas patients than on UK patients. Finally, we note that the scope of our reference includes the provision of privately-funded health-care services in the UK, which includes overseas patients who come to the UK in search of treatment. Hence, we are also concerned to understand the profitability of these services as well as that of providing healthcare services to UK patients.

Nuffield Health

158. Table 7 sets out our ROCE calculation for Nuffield.¹¹⁸ Nuffield told us that it did not have any intangible assets that should be recognized in its capital employed.

TABLE 6 Nuffield financial results

	£'000					
	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
EBIT	[£]	[£]	[£]	[£]	[£]	
Total capital employed	[£]	[£]	[£]	[£]	[£]	
ROCE (%)	[£]	[£]	[£]	[£]	[£]	[£]

Source: Nuffield financial information (January 2007 to December 2011) and CC analysis.

Ramsay

159. Table 8 sets out our ROCE calculation for Ramsay.

¹¹⁷ Based on total patients of 1.6 million and total bed days of 4.7 million.

¹¹⁸ The only specific adjustments made to Nuffield's data were the reversal of a one-off restructuring cost and a reallocation of equipment depreciation across the years of the period.

TABLE 7 Ramsay financial results

£'000

	18 months to June 08	FY09	FY10	FY11	FY12	2008–FY12 average
EBIT	[£]	[£]	[£]	[£]	[£]	
Total capital employed	[£]	[£]	[£]	[£]	[£]	
ROCE (%)	[£]*	[£]	[£]	[£]	[£]	[£]

Source: Ramsay financial information (January 2007 to June 2012) and CC analysis.

*This is calculated on an annual basis (ie the capital employed has been grossed up to 1.5 times the year-end level to take into account the fact that the EBIT relates to an 18-month rather than 12-month period).

Specific adjustments

160. Ramsay put it to us that the capital value of its Nottingham hospital should not be pro-rated in the 18-month period ended June 2008, but rather should be recognized at its full value in accordance with normal accounting principles. We do not agree that this is the correct treatment of the asset for the purposes of our profitability analysis. Nottingham Woodthorpe was acquired by Ramsay in March 2008. The profit generated by the hospital has been included in Ramsay's results from the date of acquisition, rather than for the whole period.¹¹⁹ Hence, we have sought to match the level of capital employed by the business with the returns generated thereon by pro-rating the value of this hospital in the period to June 2008 and including it at its full value in all subsequent periods. We consider that this provides an economically meaningful estimate of ROCE.
161. Ramsay leases [£] of its 24 hospitals from Prestbury Investments, a property fund which acquired the buildings from Capio in 2007. Ramsay put forward the view that, in conducting our profitability analysis, the rental payments made to Prestbury should be increased to reflect their current market value. Ramsay's lease with Prestbury [£] Table 9 sets out the difference between the actual rent charges and those estimated using the formula in Ramsay's leases.

TABLE 8 Ramsay rental charge (Prestbury leases), actual and adjusted

£'000

	FY08	FY09	FY10	FY11	FY12
Actual rental charge	[£]	[£]	[£]	[£]	[£]
Adjusted rental charge	[£]	[£]	[£]	[£]	[£]
Difference	[£]	[£]	[£]	[£]	[£]

Source: Ramsay.

162. Our view is that the deprival value of a rental agreement is not necessarily given by the formula governing rents agreed at the beginning of the period but rather the level of rents that would be agreed at the beginning of each year over the period. We have reviewed the evidence available to us to assess whether this indicates that rents would have increased over the period.

¹¹⁹ In effect the profits of the hospital are included in Ramsay's financial information for approximately three months of the 18-month period.

163. A [REDACTED] property report carried out in [REDACTED] used a rent cover of 1.5x EBITDAR (after head office costs and maintenance capex) to assess the market value of the properties. The report states that 'It should be noted that most market transactions in the public domain are analysed in terms of rent cover on EBITDARM, with **the most recent examples around 2**. A rent cover of 1.5 based on EBITDAR equates to approximately a rent cover of 2 on EBITDARM in most cost cases.'¹²⁰ We calculated the EBITDAR (after head office costs and maintenance capex) for the hospitals covered by this lease and estimated the rental cover using both the actual rental payments made by Ramsay and the adjusted rental charge that Ramsay suggested should be used in our analysis (see Table 10).

TABLE 9 Rental cover for leased properties, actual and adjusted levels of rent

	£'000				
	FY08	FY09	FY10	FY11	FY12
EBITDAR*	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Rental cover (actual rent)	0.81	1.05	1.45	1.45	1.59
Rental cover (adjusted rent)	0.81	1.09	1.19	1.22	1.24
EBITDARM*	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Rental cover (actual rent)	1.52	1.48	1.87	1.82	1.97
Rental cover (adjusted rent)	1.54	1.54	1.54	1.54	1.54

Source: Ramsay, CC analysis.

*EBITDAR is stated after head office costs and maintenance capex, with these costs allocated to sites based on their EBITDA. EBITDARM is stated before head office costs and maintenance capex.

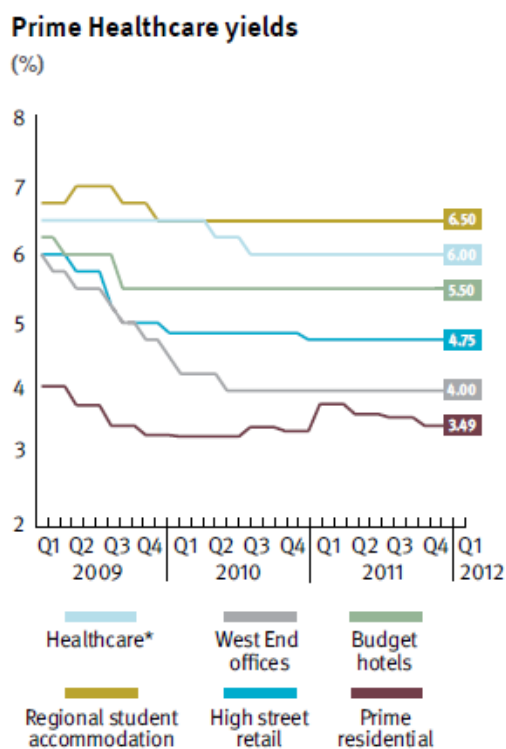
164. This analysis indicates that on the basis of current market expectations of rental cover of between 1.5x EBITDAR and 2x EBITDARM, the actual rent paid is approximately what would be agreed. The adjusted level of rent would result in a substantially lower level of rent cover than is currently being accepted in the market.¹²¹
165. We also considered the evidence from property market research, such as Knight Frank's report on the healthcare investment market.¹²² This indicates that yields on healthcare assets (including hospitals) declined from around 6.5 per cent in 2009 to 6 per cent in 2011.

¹²⁰ [REDACTED]. Emphasis added.

¹²¹ [REDACTED]

¹²² Knight Frank, Healthcare Investment, 2012. <http://my.knightfrank.co.uk/research/?regionid=2&divisionid=2>.

FIGURE 6



166. This information, although only available for 2009 to 2011, indicates that if Ramsay were to have renegotiated its rents each year over the period, the total level of rent payable is unlikely to have increased in line with the terms of the contract agreed in 2007. Moreover, the [X] report indicates that the current level of rents is approximately in line with market expectations. We have not, therefore, adjusted Ramsay's rental payments over the period.

Spire

167. Table 11 sets out our ROCE calculation for Spire.

TABLE 10 Spire financial results

	£'000					
	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
EBIT	[X]	[X]	[X]	[X]	[X]	
Total capital employed	[X]	[X]	[X]	[X]	[X]	
ROCE (%)	[X]	[X]	[X]	[X]	[X]	[X]

Source: Spire financial information (January 2007 to December 2011) and CC analysis.

168. All of Spire's buildings have been capitalized as freeholds, using the reinstatement value of the property and the land value as estimated by DTZ, except for Clare Park, Fylde Coast and Hull, where the Knight Frank land values have been used.¹²³
169. Spire argued that the reinstatement estimates relied upon by the CC undervalued its capital as they excluded specialist plant, which was separately insured by the business. We reviewed Spire's insurance policies and concluded that there was approximately £35 million of plant 'missing' from our initial analysis.¹²⁴ We included this in the capital employed by the business, making the assumption that it would be depreciated over 20 years, which was in line with Spire's depreciation policy for such plant, and that it would be approximately 50 per cent depreciated in the middle of the relevant period.¹²⁵ We considered this assumption to be reasonable given the lack of information on the age/obsolescence of this equipment.

The London Clinic

170. Table 12 sets out our ROCE calculation for TLC.

TABLE 11 **TLC financial results**

	£'000					
	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
EBIT	[X]	[X]	[X]	[X]	[X]	
Total capital employed	[X]	[X]	[X]	[X]	[X]	
ROCE (%)	[X]	[X]	[X]	[X]	[X]	[X]

Source: TLC financial information (January 2007 to December 2011) and CC analysis.

171. We used TLC's reinstatement costs, as provided by CBRE, for its building values and the VOA estimates of obsolescence. However, the DTZ report did not provide estimates of London land values, nor did TLC submit information on this. We have, therefore, used information submitted by HCA to estimate the cost of land for TLC.

Assessment and interpretation of profitability

172. Our assessment of the ROCE of the relevant firms indicates that BMI, HCA and Spire have persistently made profits in excess of their cost of capital.¹²⁶ In addition, Ramsay has demonstrated a significant increase in profitability over the period, moving from a position of making profits that were less than its cost of capital to generating returns in excess of that level. Nuffield has [X], whilst BCH and TLC are making returns that are around their cost of capital on average. These findings are consistent with BMI, Spire and HCA having market power and with there being barriers to entry into the private hospital market both in London and elsewhere in the UK.
173. In this section, we set out our sensitivity analyses and discuss our interpretation of our profitability analysis.

¹²³ Our initial analysis treated these three hospitals as rented and hence DTZ was not asked to provide land values for them. We have revised this treatment in light of further submissions by Spire and used the Knight Frank values as the best estimate of the land values.

¹²⁴ Our analysis is set out in detail in Appendix 6.17.

¹²⁵ We included an appropriate depreciation charge in the cost base of the business.

¹²⁶ See Appendix 6.14 for our assessment of the cost of capital.

Sensitivity analysis

174. Our profitability assessment has required a fairly extensive revaluation of the fixed assets of the relevant firms, using information from a number of sources. We have conducted a number of sensitivities on these asset valuations in order to understand the impact these have on our results.

Land values

175. As described in paragraph 99, we recalculated the ROCE of the national¹²⁷ relevant firms, using the Knight Frank valuation level as opposed to that estimated by DTZ, ie a 40 per cent uplift on the land values used in the base case.¹²⁸

TABLE 12 Land value sensitivity, ROCE

	per cent					
	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
BMI	[X]	[X]	[X]	[X]	[X]	[X]
Nuffield	[X]	[X]	[X]	[X]	[X]	[X]
Ramsay	[X]	[X]	[X]	[X]	[X]	[X]
Spire	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average*	11.7	13.4	14.8	16.3	16.5	14.6

Source: CC analysis.

*The weighted average ROCE is for all seven relevant firms. ROCE for BCH, HCA and TLC are not shown as these are unaltered in this sensitivity.

176. In this sensitivity, the industry ROCE falls by 0.6 percentage points to 14.6 per cent. We believe that this demonstrates that our results are robust to even relatively substantial increases in the value of land used in the analysis.

Buildings values

177. As set out in paragraph 119, despite our reservations regarding the appropriateness of the approach, we recalculated the ROCE of HCA and TLC, using the KPMG approach to valuation, ie assuming that the central London hospitals have a viable alternative use option as residential property. KPMG's methodology derives the value of the properties to HCA by using a market-determined price per square metre to value a residential building of an equivalent size to HCA's hospitals and deducting the costs of converting those hospitals from their current use to flats.
178. However, in light of the substantial increases in residential property prices in prime central London areas, we considered that using a constant value over the period would introduce significant bias into the analysis. Instead, we have adjusted the price of residential property in KPMG's model on the basis of the Land Registry's house price index for each London borough. Table 14 sets out the indices used. We also adjusted the conversion costs used by KPMG in line with the building cost index used

¹²⁷ Bupa Cromwell does not have any land as the hospital is rented. The land values used for both HCA and TLC have not been altered as these are not based on the DTZ report but on information submitted by HCA.

¹²⁸ The Knight Frank land valuations were between 41 and 44 per cent higher than the DTZ valuation (including Stamp Duty Land Tax, fees and planning permission costs). We have used a sensitivity of 40 per cent to reflect the fact that Knight Frank increased the size of some of the plots of land, which we do not consider to be appropriate. Colliers' report for BMI estimated that its land values were approximately 48 per cent higher than the DTZ estimates.

to adjust the reinstatement values of all the relevant firms. HCA argued that our analysis should apply the principle of mean capital employed rather than smoothing the increase in buildings values over the period in order to reflect the fact that much of the increase in buildings values took place early on in the period (between December 2006 and December 2007).¹²⁹ We agreed that this was the appropriate approach and applied the mid-year index value as set out in Table 14 to HCA's hospital and non-hospital properties. As discussed in Appendix 6.17, we did not consider that it was appropriate also to include the value of freehold improvements and refurbishments in this sensitivity as we thought that the KPMG valuation was already likely to be significantly overstated due to its failure to take into account the impact of affordable housing requirements and section 106 costs on the value of HCA's buildings.

TABLE 13 House price indices, central London

Land Registry House Price Index

<i>London borough</i>	<i>February 2013</i>	<i>December 2011</i>	<i>June 2011</i>	<i>June 2010</i>	<i>June 2009</i>	<i>June 2008</i>	<i>June 2007</i>	<i>December 2006</i>
City of Westminster	514	464	435.3	418.1	362.2	405.6	366.4	326
Southwark	451	413	407.2	399.5	349.3	408.2	384.6	351

Source: Land Registry, House Price Index.

179. We conducted this sensitivity on two different bases. In the first case, we adhered to the principle of full articulation of the financial statements, such that the increase in the value of buildings over the period was passed through the profit and loss. The ROCE under this approach is shown in Table 15.

TABLE 14 Alternative use, buildings value sensitivity with full articulation of accounts, ROCE

per cent

	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>	<i>FY10</i>	<i>FY11</i>	<i>FY07–FY11 average</i>
HCA	[X]	[X]	[X]	[X]	[X]	[X]
TLC	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average*	13.7	15.0	16.7	17.7	17.8	16.3

Source: CC analysis.

*The weighted average ROCE is for all seven relevant firms. ROCEs for BCH, BMI, Nuffield, Ramsay and Spire are not shown as these are unaltered in this sensitivity.

180. This approach increases the ROCE for both HCA and TLC due to the significant gains in the value of their properties over the period.
181. In the second case, we did not pass the increase in the value of the property through the profit and loss. The ROCE on this basis is shown in Table 16. Our aim in conducting our profitability analysis is to understand the returns being generated from operating private hospitals in the UK. We consider that the increase in value of central London hospital buildings may represent a 'windfall' to these operators, which is unrelated to competitive conditions in the market for private healthcare. Hence,

¹²⁹ [HCA response to provisional findings, Appendix 5](#), paragraph 5.78.

although the increase in property values has been persistent, we have estimated the ROCE with these gains excluded from our analysis.¹³⁰

TABLE 15 Alternative use, buildings value sensitivity without full articulation of accounts

	<i>per cent</i>					
	FY07	FY08	FY09	FY10	FY11	FY07–FY11 average
HCA	[X]	[X]	[X]	[X]	[X]	[X]
TLC	[X]	[X]	[X]	[X]	[X]	[X]
Weighted average*	12.3	13.8	15.4	16.5	16.6	15.0

Source: CC analysis.

*The weighted average ROCE is for all seven relevant firms. ROCEs for BCH, BMI, Nuffield, Ramsay and Spire are not shown as these are unaltered in this sensitivity.

182. In this case, HCA's average ROCE over the 2007 to 2011 period declines by approximately two percentage points compared with the base case. However, it remains significantly above the cost of capital for the industry. We consider that this demonstrates that our results are robust to even relatively substantial increases in the value of buildings used in the analysis.
183. TLC's ROCE increases slightly as the alternative use value estimated using KPMG's model is lower at the beginning of the period than the replacement costs based on building reinstatement costs and AEH's land values.

Interpretation

184. Our sensitivity analysis indicates that our findings are robust to even relatively significant variations in the value of land and buildings employed by the firms.¹³¹ We have not conducted sensitivity analysis on the value of equipment employed by the business due to the complexity of conducting the analysis in a consistent manner. In addition, we note that it is unclear what impact correcting the depreciation schedules of the PHPs would have on our estimates of ROCE. Where accounting depreciation is too rapid, there will be some assets that incur no depreciation charge despite still being in use and others that are incurring an excessive depreciation charge in light of their useful lives. Hence, the profit effect is unpredictable. The level of capital employed will be understated as a result of the overdepreciation, tending to inflate the rate of return, but where the impact of excessive depreciation on profits is to decrease them, the understatement of capital employed will not necessarily outweigh the negative effect on profits.
185. Our analysis also excludes the 'going concern' value of the relevant firms, in so far as it does not include in the capital base any of the incremental operating costs involved in starting up a hospital. For example, during its first year of operations, a private hospital may incur additional marketing and recruitment costs over and above those required on an ongoing basis. Having reviewed the relevant firms' submissions, we determined that it was not practical to identify the additional element of these costs¹³²

¹³⁰ We note that this approach is not logically consistent and hence will not necessarily produce economically meaningful results as depreciation is charged on some assets (ie equipment and leasehold building improvements and refurbishments) to reflect their decrease in value but the increase in value of the owned hospital buildings is not taken into account.

¹³¹ If we combine the land sensitivity for BMI, Nuffield, Ramsay and Spire with the second buildings sensitivity for HCA and TLC, the weighted average ROCE for the period is 14.4 per cent.

¹³² That is, the element over and above that required on an ongoing basis.

or to quantify them consistently across all operators. However, we recognize that their exclusion means that our estimates of the relevant firms' ROCE will be slightly overstated in this respect.

186. On the other hand, we have not made any adjustments for excess capacity in the industry, which, given the current levels of capacity utilization [X], may have a significant negative impact on the level of capital employed for some of the relevant firms and a consequent increase in the ROCE. Similarly, we note that there appears to be a decline in the level of working capital that the national PHPs need to hold, due to improved payment terms with the NHS, which may lower future capital requirements. While the opposite trend can be observed among the London PHPs, which do not have significant numbers of NHS patients, we would expect the former effect to dominate due to the larger combined size of the national PHPs. However, we have not made any adjustment for these trends in our analysis.
187. Finally, we consider the impact of a number of structural changes in the private healthcare market over the last five to seven years and how these may have had an impact on the profitability of the relevant firms.

Growth in NHS demand

188. Between 2007 and 2011, NHS demand for privately-provided healthcare services increased from £315 million to £785 million (excluding ISTCs), an average annual increase of 26 per cent. Ramsay, in particular, has increased its share of NHS work with [X] per cent of its admissions and approximately [X] per cent of its total revenues in FY12 coming from NHS patients. For [X], Spire and Nuffield, NHS revenues comprised around [X] per cent of their total revenues in FY11. The London PHPs, on the other hand, do a negligible quantity of NHS work. Ramsay told us that a significant benefit of NHS work was that it allowed operators greater flexibility in terms of scheduling operations. As a result, it made it possible for PHPs to operate their assets more efficiently by smoothing volumes over time.
189. The improvement in Ramsay's ROCE over the period provides support for this view, with Spire also telling us that an increase in NHS revenues had contributed to the improvement in its profitability.¹³³ Without this growth in demand, it seems likely that the relevant firms would have had lower profitability over the period, although the extent of the impact is unclear due to some evidence of NHS demand cannibalizing demand from self-pay patients. However, given the fixed-cost nature of the industry, we might also expect this increase in demand to result in lower unit costs in the longer run and hence downward pressure on the prices charged to privately-funded patients, whether PMI or self-pay.
190. Spire submitted a report prepared by LEK, which stated that the revenues it earned from treating NHS patients were more volatile than those earned from PMI patients and that local contract NHS revenues (and to a certain extent choose-and-book revenues) [X]. We recognize that, at the level of individual hospitals, NHS revenues have been volatile over the period due to the existence of spot contracts which have provided significant volumes in some years and none in others. However, NHS revenues have not been as volatile when considered in the context of the larger PHPs' estates as a whole. Moreover, although there may be some political risk involved in providing services to publicly-funded patients, the recent NHS reforms are likely to result in an increase in private sector involvement in the long run rather than a decrease. On balance, therefore, it seems more likely that NHS demand for

¹³³ [X] We note that these improvements should also lower the long-run average cost of providing services to patients.

privately-provided healthcare will increase in the future rather than decrease, such that the impact on profitability can be expected to continue in the long run.

Recession

191. Between January 2008 and December 2011, the size of the UK economy declined by around 4 per cent, with unemployment increasing from 5.3 to 8.5 per cent. This downturn has had a differential impact on the market for PMI and that for the services of PHPs. The total number of PMI policyholders has declined by approximately 351,000 people, or 8.1 per cent, between 2008 and 2011, which Laing & Buisson attributed to a combination of job losses and a reduced willingness among consumers to spend on non-discretionary items.¹³⁴ As a result, expenditure on private medical cover declined by 7 per cent between 2008 and 2011, in real terms. In contrast, expenditure on privately-funded healthcare services increased by £344 million between 2008 and 2011, which represented a real increase of 2.2 per cent.
192. As a result of this recession, it seems likely that expenditure on private healthcare services, although resilient, would have been depressed relative to a situation in which the UK economy was growing. Consequently, our estimates of profitability may understate the returns that could be earned in more 'normal' market conditions.

¹³⁴ Laing & Buisson, *Health Cover UK Market Report, 2012*, Table 1.1. Approximately two-thirds of PMI policies are provided by firms to their employees, hence reductions in employment can directly reduce the number of PMI policyholders.

Aggregation of financial information

Table 1 shows the periods that have been aggregated to give the profitability analysis for the industry as a whole.

TABLE 1 **Periods aggregated for the purposes of industry-level financial analysis**

<i>'Financial year' for aggregated results</i>					
<i>Firm</i>	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>	<i>FY10</i>	<i>FY11</i>
BMI	Oct 06–Sep 07	Oct 07–Sep 08	Oct 08–Sep 09	Oct 09–Sep 10	Oct 10–Sep 11
BCH	-	Jan 08–Dec 08	Jan 09–Dec 09	Jan 10–Dec 10	Jan 11–Dec 11
HCA	Jan 07–Dec 07	Jan 08–Dec 08	Jan 09–Dec 09	Jan 10–Dec 10	Jan 11–Dec 11
Nuffield	Jan 07–Dec 07	Jan 08–Dec 08	Jan 09–Dec 09	Jan 10–Dec 10	Jan 11–Dec 11
Ramsay	Jan 07–Jun 08	Jul 08–Jun 09	Jul 09–Jun 10	Jul 10–Jun 11	Jul 11–Jun 12
Spire	Jan 07–Dec 07	Jan 08–Dec 08	Jan 09–Dec 09	Jan 10–Dec 10	Jan 11–Dec 11
TLC	Jan 07–Dec 07	Jan 08–Dec 08	Jan 09–Dec 09	Jan 10–Dec 10	Jan 11–Dec 11

Source: CC analysis.

Assessment of the cost of capital

Introduction

1. The approach to assessing profitability, as set out in our Guidelines,¹ is to compare the profits earned with an appropriate cost of capital. In this appendix, we set out our estimate of the nominal pre-tax weighted average cost of capital (WACC) for the private hospital operators in the UK, based on data for the period January 2007 to June 2012.
2. Our estimated range for the industry WACC for this period is 7.2 to 10.5 per cent with a midpoint of 8.8 per cent (see Table 1). In response to the financial questionnaire, six of the seven largest private hospital groups (BMI, BCH, HCA, Nuffield, Ramsay and Spire²) provided the CC with WACC estimates, either for their UK operations or for their broader group. These are set out in [Annex A](#).

TABLE 1 CC estimate of UK private healthcare nominal pre-tax WACC

	Low	High
Nominal risk-free rate (RFR) (%)	3.0	4.0
Equity risk premium (ERP) (%)	4.0	5.0
Asset beta	0.50	0.70
Pre-tax Ke (%)	8.9	12.7
Pre-tax cost of debt (Kd) (%)	5.5	7.0
Gearing (%)	50	50
Tax rate (%)	28	28
Pre-tax WACC (%)	7.2	10.5
Mid-point estimate (%)	8.8	

Source: CC analysis.

3. We consider the above range to be a reasonable estimate of the cost of capital that would have been faced by a hypothetical stand-alone UK private hospital operator.
4. The remainder of this section sets out our methodology and the analysis we have conducted. As set out in our Guidelines,³ we generally look to the capital asset pricing model (CAPM) when considering the cost of capital, and this is the approach we have adopted in estimating the cost of equity for the private healthcare providers. We have estimated the cost of debt for the private healthcare providers with reference to both the actual interest rates paid by the private hospital operators and corporate bond yields over the period.

Relevant firms' views

5. Some of the private hospital operators suggested that the CC should adopt a different approach, either to the overall assessment of the cost of capital, or to the calculation of individual elements of the WACC. We address their suggestions regarding how elements of the CAPM should be estimated in the relevant subsections below. In the final section of this appendix, we also discuss the broader conceptual points raised by the firms.

¹ CC3.

² TLC did not submit an estimate of its WACC to the CC. It considered that its charitable status and lack of shareholders made the calculation of a WACC problematic.

³ CC3, [Annex A](#), paragraph 16.

CC estimation of WACC

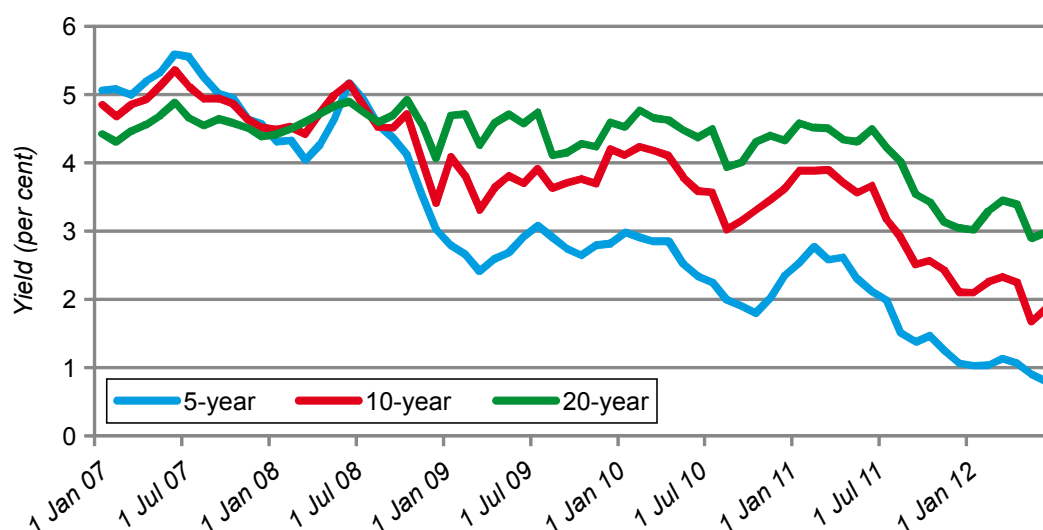
6. This section sets out the analysis that we have undertaken in order to estimate the components of the WACC calculation, which includes both generic and industry-specific components. The former comprise: the RFR, the ERP and the tax rate; while the latter comprise: beta, cost of debt, and gearing.
7. In conducting our cost of capital analysis, we have had reference to our price determination for Bristol Water, which was undertaken in 2009/10, ie during the relevant period for our analysis.⁴

Risk-free rate

8. In this section, we consider the RFR relevant to calculating the cost of equity. In paragraphs 45 to 51, we estimate the cost of debt directly.
9. In the provisional findings, we took into account the yields on both nominal and index-linked gilts as potential proxies for the nominal and real RFRs, respectively. We note that the yields on nominal gilts can be biased upwards as a measure of the RFR as the returns on these instruments contain an element of inflation risk for which investors would require a premium.
10. Figure 1 shows the yields on nominal gilts with maturities between 5 and 20 years.

FIGURE 1

UK nominal gilt yields 2007 to 2012



Source: Bank of England Monthly average yield on government securities.

11. The yields on nominal gilts have demonstrated a downwards trend over the period from between 4 and 5 per cent in 2007 and 2008, to between 1 and 3 per cent in June 2012. Yields on five-year maturities have been the most volatile, ranging from around 5.5 per cent in mid-2007 to just under 1 per cent by mid-2012. In addition, the difference between the yields on the various maturities has increased over the period

⁴ Bristol Water plc: determination on a reference under section 12(3)(a) of the Water Industry Act 1991, August 2010.

from around half a percentage point in 2007 to in excess of two percentage points in the first six months of 2012.

12. Table 2 shows the average yields for each year and each maturity over the relevant period.

TABLE 2 **Average annual yields, UK gilts, 2007 to 2012**

	<i>per cent</i>							
	2007	2008	2009	2010	2011	2012 (6 months)	<i>Arithmetic mean 2007 to 2012</i>	<i>Geometric mean 2007 to 2012</i>
5 years	5.1	4.3	2.8	2.4	2.0	1.0	3.1	2.7
10 years	4.9	4.5	3.8	3.7	3.2	2.1	3.8	3.6
20 years	4.6	4.6	4.5	4.4	4.0	3.2	4.3	4.3

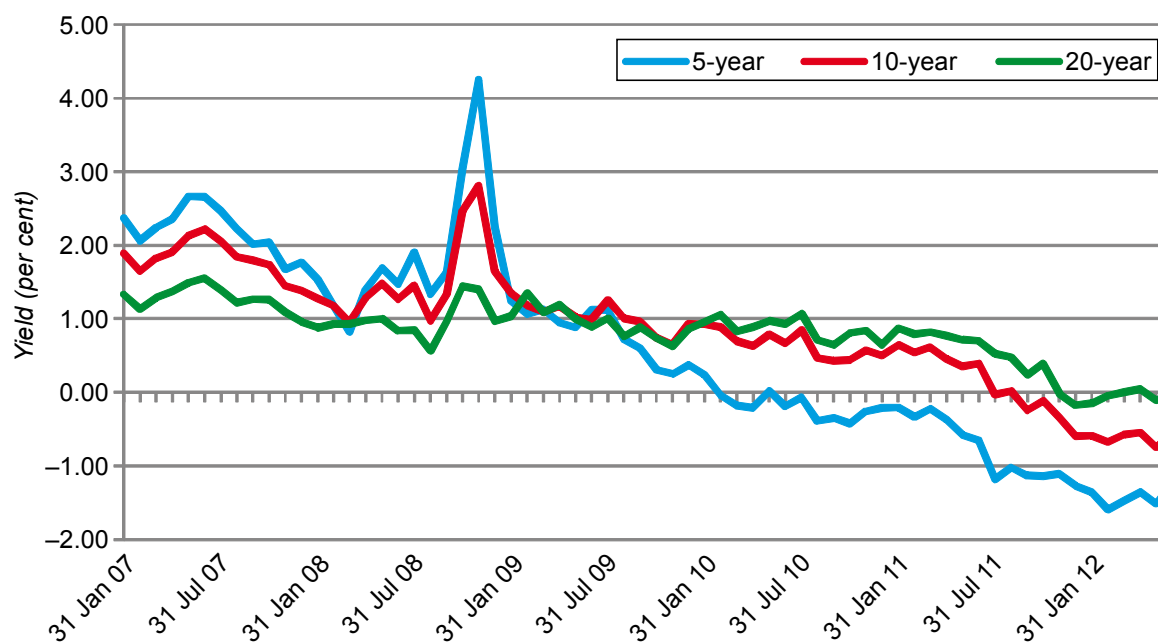
Source: Bank of England Monthly nominal zero coupon yields.

13. In previous market investigations, we have taken the view that long-dated yields, whilst in principle the most suitable basis for estimating the RFR, are often affected by market distortions (associated, for example, with pension fund dynamics) which make them an inappropriate proxy for the RFR.⁵ Consequently, we have tended to use yields on shorter- and medium-term gilts as a proxy for the RFR. However, the effects of the financial crisis and the response by external agents to the market, such as the Bank of England, have caused volatility in gilt yields, with shorter-dated gilts particularly affected. We believe that this volatility, together with the emergence of a significant gap between the yields on gilts of varying maturities over this period, may make short-term gilt yields a less reliable indicator of the RFR. Consequently, we have placed greater weight on the yields on ten-year gilts in reaching our view on an appropriate RFR. This results in a (slightly) higher estimate of the nominal RFR than would be the case if we had focused on five-year gilt maturities.
14. The yield on nominal gilts ranged between 2 and 5 per cent over the relevant period, with an average of between 3.6 and 3.8 per cent for ten-year gilts. On this basis, and taking into account the potential for an upward bias due to the inclusion of an inflation risk premium, we used a range of between 3.0 and 4.0 per cent as the nominal RFR.
15. Figure 2 shows the real RFR with reference to the yields on UK index-linked gilts between January 2007 and June 2012.

⁵ See CC analysis on local bus services market investigation: www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/inquiry/ref2010/localbus/pdf/cost_of_capital_working_paper.pdf.

FIGURE 2

UK indexed-linked gilts, implied real yields



Source: Bank of England 'UK implied real spot curve'.

16. This graph shows the same downward trend as for nominal yields, with all maturities providing a negative real yield by the beginning of 2012. The real yields on ten-year gilts varied from -0.8 per cent to 2.8 per cent over the period and averaged between 0.60 and 0.91 per cent.⁶ On this basis, we used a range of 1.0 to 2.0 per cent for the real RFR, which was consistent with the approach that we took in our Bristol Water determination.
17. HCA argued that our approach resulted in a combination of real and nominal RFRs which implied that inflation over the period was 2 per cent, which was inconsistent with the observed level of RPI inflation of 3.5 per cent. It put forward the view that rather than examining both nominal and real gilt yields over the relevant period in order to come to a view on the nominal RFR, we should have taken the approach used in Bristol Water of estimating the real RFR on the basis of index-linked gilt yields and then made allowance for actual RPI inflation over the period. On this basis, HCA suggested that a reasonable nominal RFR over the period was between 4.5 and 5.5 per cent, composed of a real RFR of between 1 and 2 per cent and the average RPI inflation over the relevant time period of 3.5 per cent.⁷
18. We observed that the range proposed by HCA for the nominal RFR was above the average yield on nominal gilts (of all maturities) over the relevant period. In determining the range of real RFR to use in our analysis, we considered that it was plausible that index-linked gilt yields are artificially low due to the imperfections associated with RPI as a measure of underlying inflation. We note the historical gap between RPI and CPI measures of inflation of around 0.8 per cent. To the extent that CPI better reflects underlying inflation, measures of return relative to RPI (of which index-linked gilts are one such measure) may be artificially reduced as a result of that gap.

⁶ This range shows the geometric and arithmetic means (respectively) of the yields.

⁷ [HCA response to provisional findings, Appendix 5](#), paragraphs 5.168–5.179.

As a result, we considered it appropriate to use a range for the real RFR that was above the average rate over the relevant period.

19. Our profitability analysis seeks to compare actual returns achieved in the private healthcare sector with the required cost of capital of investors for the relevant period. The nominal RFR that forms an element of the cost of capital is composed of the real RFR and an allowance for inflation over the period. Our estimates of a real RFR of between 1 and 2 per cent and a nominal RFR of between 3 and 4 per cent are consistent with a rate of inflation of 2 per cent, as HCA highlighted. We thought that our decision to use a real RFR that was somewhat higher than the average yield on index-linked gilts in order to reflect the potential imperfections associated with RPI as a measure of underlying inflation, meant that the appropriate measure of inflation to use in the nominal RFR was a CPI rather than an RPI measure, as proposed by HCA. Next, we considered whether it was more appropriate to use the actual or expected rate of inflation over the period. We note that the actual level of inflation over the period may be higher or lower than the expected rate and that the actual inflation experienced by a given industry may be above or below that experienced by the economy as a whole. We thought that the appropriate comparison to make was between required nominal cost of capital, which is based on inflation expectations, and the actual returns achieved. We consider that the appropriate measure of expected inflation is the Bank of England target for CPI inflation which was 2 per cent over the relevant period.⁸ This range (of between 3 and 4 per cent) was consistent with the yields on nominal gilts over the period.
20. However, we also considered the impact of using the higher nominal RFR proposed by HCA of between 4.5 and 5.5 per cent. With all other elements of the WACC held constant, this would increase the midpoint of our WACC range from 8.8 per cent to 9.9 per cent. We note that this midpoint remains (slightly) below the conservative 10 per cent cost of capital that we have used as our benchmark for estimating customer detriment. We concluded, therefore, that the use of a higher nominal RFR would have no material impact on our assessment of the extent to which the private healthcare providers were earning excessive returns.

Equity risk premium

21. The Equity Risk Premium (ERP) is the additional return that investors require to compensate them for assuming the risk associated with investing in equities rather than in risk-free assets. The ERP cannot be directly observed from market data because the future yields on equities are uncertain.
22. There are two types of approach that can be used to estimate the ERP. Historical methods seek to derive the ERP from a long run of data on realized returns on equities. Forward-looking approaches seek to estimate the expected ERP based on either the reported expectations of market participants or the ERP implied in asset prices at the start of the period.

Historical approach

23. The motivation for the historical approach is that expected returns remain constant over time and hence that average realized returns reflect the expected return. DMS estimated the average ERP for a number of countries, including the UK, on the basis of equity and gilt yields over the last 112 years. These ERPs are estimated as the

⁸ www.bankofengland.co.uk/monetarypolicy/Pages/framework/framework.aspx.

difference between the real return on equities and the real return on gilts over the period.⁹ As DMS explained, ‘To understand risk and return, we need to examine long periods of history. This is because asset returns, and especially equity returns, are extremely volatile. Even over periods as long as ten or twenty years, we can still observe “unusual” returns.’ On this basis, we have used the full 112-year mean equity returns estimates in our analysis.¹⁰

24. We note that there is a long-running debate among academics regarding which mean—arithmetic or geometric—is the most appropriate for the purposes of estimating a cost of capital. HCA suggested that the arithmetic mean should be used on the basis that it provided a ‘more unbiased means of estimating the average market return since it ignores estimation error and serial correlation in returns and unbiased estimators have been found to be closer to the arithmetic than the geometric mean’.¹¹ Whilst the arithmetic average is the simplest approach, we also note that it is likely to be an upwards biased measure.¹² We therefore consider that it is reasonable to place some weight on geometric averages.
25. Table 3 shows the geometric and arithmetic average returns on equities, bonds and bills over the period between 1900 and 2011, together with the historic equity risk premium implied by these returns.

TABLE 3 Real returns on UK equities and government debt, 1900 to 2011

	per cent	
	Geometric mean	Arithmetic mean
<i>UK real returns</i>		
Equities	5.2	7.1
Bonds	1.5	2.4
Bills	1.0	1.2
<i>ERP</i>		
Bonds	3.6	4.6
Bills	4.2	5.8

Source: Credit Suisse *Global Investment Returns Sourcebook*, 2012, Dimson, Marsh & Staunton.

26. An alternative approach suggested by Fama and French is to estimate the underlying return from the sum of the average dividend yield and the average rate of dividend growth.¹³ Using the full run of historical data for the UK, this suggests an underlying market return of 5.5 per cent.¹⁴
27. Fama and French’s work on US securities provides evidence of a fall in expected returns over time, with expected returns being lower since 1950 than before. The statistical evidence for the UK is less extensive¹⁵ but, as illustrated in Figure 3, the

⁹ The formula used to estimate the ERP is: $((1 + \text{Equity rate of return}) / (1 + \text{Riskless return})) - 1$, which is approximately equivalent to deducting the riskless returns from the returns on equities. DMS categorises ‘gilts’ into two groups for the purposes of its analysis; shorter-dated ‘treasury bills’ and longer-dated ‘treasury bonds’. The former have maturities of up to ten years, whilst the latter have an average maturity of 20 years. The difference between ‘bond’ and ‘bill’ returns is referred to as the ‘maturity premium’.

¹⁰ *Credit Suisse Global Investment Returns Sourcebook* 2012, p7. The advantage of this approach is also that the larger sample size (ie number of years), increases the accuracy of the estimates—the standard errors of the estimations are reduced, narrowing the confidence interval.

¹¹ See <http://faculty.london.edu/cooper/assets/documents/ArithmeticVersusGeometric.pdf>.

¹² See *Bristol Water (Competition Commission, 2010) Appendix N, Annex 5*.

¹³ E F Fama and K R French, ‘The Equity premium’, *Journal of Finance*, April 2002.

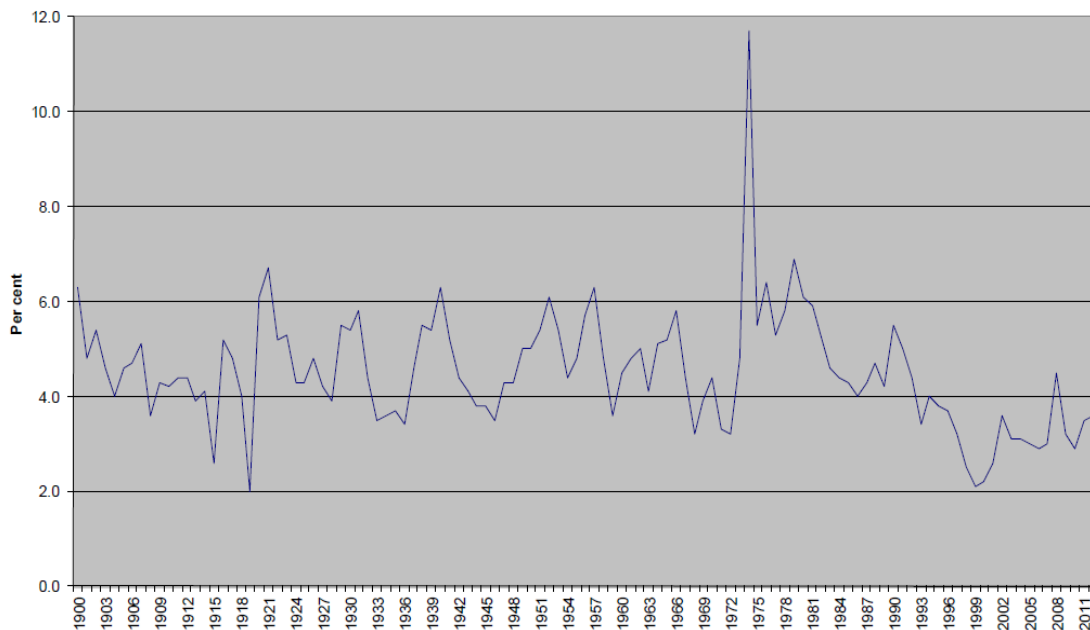
¹⁴ This result is derived from an average dividend yield of 4.5 per cent and dividend growth of 1 per cent a year (Barclays Equity Gilt Study data).

¹⁵ Two papers that find evidence of a reduction in the expected market return or ERP for the UK (albeit at different times) are N Buranavityawut, M C Freeman & N Freeman, 2006, ‘Has the equity premium been low for 40 years?’, *North American Journal of Economics and Finance*, 17, pp191–205; and A Vivian, ‘The UK equity premium, 1901–2004’, *Journal of Business*

dividend yield as of the start of the relevant period (of about 3.5 per cent) was below the historical average (4.5 per cent). Unless future dividend growth is higher than in the past, this would suggest that expected returns are about 1 per cent lower than the past average, implying a market return of about 4.5 per cent (using Barclays data).¹⁶

FIGURE 3

Dividend yield for UK market (Barclays data)



Source: Barclays Equity Gilt study, 2013.

Forward-looking approaches

28. DMS, noting that dividend yields were lower than in the past (paragraph 27), inferred that, for the world index, a forward-looking risk premium (over Treasury Bills) would be 4.5 to 5.0 per cent, implying a market return of 5.5 to 6.0 per cent based on a real RFR of 1 per cent.¹⁷
29. The ERP is also commonly estimated using projected dividends from analysts' forecasts (which extend out by four or five years) and a longer-term dividend growth rate. The expected return is then the discount rate at which the present value of future dividends is equal to the current market price. A limitation of this approach is that it is necessary to make an assumption about future long-term growth of dividends (which has a major effect on the calculation since dividends beyond year four or five account for a large part of present value at plausible discount rates).
30. Figure 4 shows estimates of ERP using this methodology published in a 2010 article in the *Bank of England Quarterly Bulletin*. These estimates are based on the assumption that the future long-term growth in dividends per share is equal to an

and *Financial Accounting*, 2007. The first paper suggests that the expected equity premium may have fallen in the 1960s in the UK and other countries, while the second paper suggests that there was a permanent decline in the UK market dividend-price ratio during the early 1990s.

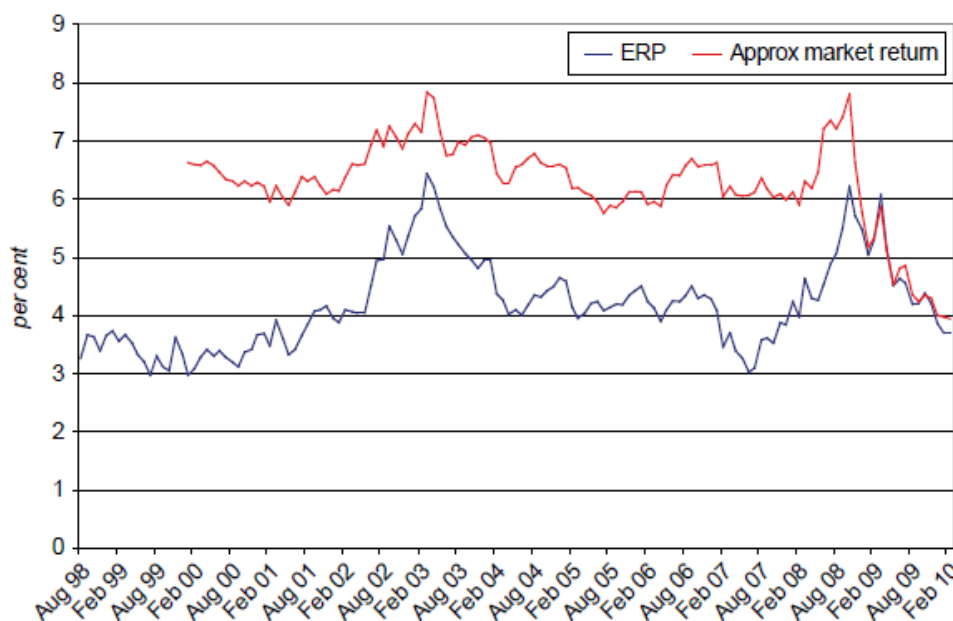
¹⁶ These figures do not take into account payments to shareholders other than dividends, for example share repurchases.

¹⁷ *Credit Suisse Global Investment Sourcebook 2012*, section 2.6.

estimate of the potential growth of the economy. However, the authors of the article noted that this choice of future long-term growth rate is essentially arbitrary.¹⁸ The estimates in Figure 4 suggest that the expected ERP has fluctuated around 4 per cent. We attempted to calculate the expected market return implied by these estimates of the ERP: this appeared to have fluctuated around 6.5 per cent in the period up to the credit crunch, since when it has declined markedly.

FIGURE 4

Estimated ERP and approximate implied real market return



Source: Mika Inkinen, Marco Stringa & Kyriaki Voustinou: 'Interpreting equity price movements since the start of the financial crisis', *Bank of England Quarterly Bulletin*, 2010 Q1.

31. The geometric and arithmetic averages of historical market returns over the last 110 years suggest a range for the market return of between 5 and 7 per cent; Fama and French's evidence suggests a long-run market return of 5.5 per cent with a short run (since 1950) of 4.5 per cent, although with less extensive statistical data. Forward-looking approaches suggest a market return of 5.5 to 6.5 per cent. Based on this evidence, we have used a range of 5 to 7 per cent average return on equities which, together with a real RFR of between 1.0 and 2.0 per cent, implies an ERP of between 4.0 and 5.0 per cent.¹⁹
32. HCA argued that a more appropriate range for the market return was between 5.5 and 7.25 per cent on the basis that:

¹⁸ Mika Inkinen, Marco Stringa and Kyriaki Voustinou, 'Interpreting equity price movements since the start of the financial crisis', *Bank of England Quarterly Bulletin*, 2010 Q1.

¹⁹ The lower end of the range is calculated by deducting the lower estimate of the RFR (1.0 per cent) from the lower estimate of mean equity returns (5 per cent). The upper end of the range is calculated by deducting the upper estimate of the RFR (2.0 per cent) from the upper estimate of the mean equity return (7 per cent). This approach to estimating the ERP ensures consistency between the real RFR used in the cost of capital calculation and that used in estimating the ERP. It also has the advantage of bypassing concerns about the volatility of the historic ERP and hence the RFR. As the Smithers Report explains:

There is considerably more uncertainty about the true historic equity premium and hence the risk-free rate than there is about the true cost of equity capital ... For this reason we regard the standard approach to building up the cost of equity from estimates of the safe rate and the equity premium as problematic. We would recommend, instead, that estimates should be derived from estimates of the aggregate equity return (the cost of equity for the average firm) and the safe rate.

- (a) the arithmetic mean is more appropriate than a geometric mean since in the presence of estimation error and serial dependence in returns, the corrected discount rate is closer to the arithmetic mean of a historical series than the geometric mean;
- (b) DMS data indicates that the long-run return on the UK market has been 7.0 or 7.1 per cent in real terms, while recent Ofgem estimates of the cost of equity for RIO, National Gas and National Grid used an estimate of 7.25 per cent; and
- (c) DMS forward-looking estimates imply an expected arithmetic average return on the market in the range of 5.5 to 6.0 per cent.²⁰
33. We have already considered the question of whether the arithmetic or geometric mean is the most appropriate and concluded that it is reasonable to place some weight on geometric averages in this context (see paragraph 24), although most of the estimates we have used are arithmetic. Equally, we have already taken into account both the DMS upper bound historical estimate of 7.1 per cent and its forward-looking estimate of a market return of between 5.5 per cent and 6.0 per cent in coming to the view that an appropriate range was between 5 and 7 per cent. This estimate of the market return is consistent with both the Stansted and Bristol Water regulatory reports, which took place during the relevant period for our market investigation. While recent Ofgem reports may have used an upper bound of 7.25 per cent for the market return, we note that our recent provisional decision on NIE used a range of between 5 and 6.5 per cent, stating that ‘it may be appropriate to move away from this upper limit [of 7 per cent] based on historical realized returns and place greater reliance on forward-looking estimates which tend to support an upper limit of 6.5 per cent.’²¹ Given that our analysis focuses on the period between January 2007 and June 2012, whereas the NIE determination and recent Ofgem reports) are forward-looking, we thought that our approach in Bristol Water was more relevant. We did not consider, therefore, that it was appropriate to alter our range for the market return to HCA’s proposed one of 5.5 to 7.25 per cent.

Tax rate

34. The corporation tax rates applicable over the period are set out in Table 4. For the purpose of estimating the WACC, we have used an average of the tax rates over the period of 28 per cent.

TABLE 4 **UK corporation tax rates**

						<i>per cent</i>
2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
30	30	28	28	28	26	24

Source: HMRC.

Equity beta

35. The beta of an asset measures the correlation between the volatility of the returns on the asset and the returns on the market as a whole, or the exposure of the firm to

²⁰ HCA response to provisional findings, Appendix 5, paragraphs 5.195–5.202.

²¹ Northern Ireland Electricity Limited price determination: A reference under Article 15 of the Electricity (Northern Ireland) Order 1992, provisional determination, paragraph 13.144.

systematic or 'non-diversifiable' risk. It is in return for assuming this (market) risk that investors require an (equity risk) premium over the risk-free return.

36. According to the CAPM, the beta value of a listed firm can be directly estimated as the covariance between the stock's returns and the market's returns, divided by the variance of market returns. It is not possible, however, to estimate directly the beta value of a privately-held company.²²
37. We have estimated a range of beta values for a stand-alone UK private healthcare operator on the basis of beta information from listed comparable companies (see [Annex B](#)). This group includes some of the parent companies of the private hospital operators active in the UK market. Table 5 provides a summary of our analysis on the beta values of comparable companies.

TABLE 5 Comparable companies, beta estimates

Company	Levered betas		Unlevered betas	
	Weekly	Monthly	Weekly	Monthly
Netcare	0.62	0.55	0.26	0.23
Ramsay	0.39	0.24	0.28	0.17
HCA	1.24	1.51	0.45	0.55
Lifepoint Hospitals	0.98	1.07	0.65	0.71
Tenet Healthcare	1.38	2.21	0.62	0.99
Rhoen Klinikum	0.47	0.37	0.39	0.31
Universal Health Services	0.98	1.24	0.70	0.89
Community Health Systems	1.43	1.49	0.46	0.48
Health Management Associates	1.59	2.16	0.67	0.92
Fortis Healthcare	0.85	0.83	0.70	0.69
Apollo Hospitals Enterprise	0.48	0.31	0.44	0.29
Mean beta	0.95	1.09	0.51	0.56

Source: Bloomberg data.

Note: The beta values used were unadjusted (raw) figures calculated in local currencies for the period January 2007 to June 2012. The beta values for HCA, Life Healthcare and Fortis Healthcare were estimated for the (shorter) period from the date of their listing to June 2012. Betas have been unlevered using the statutory tax rates in each jurisdiction.

38. HCA put it to the CC that monthly data should be used to estimate beta values:

as they constitute a closer proxy to annual data than weekly beta estimates, and therefore provide a better matching of the ROCE and WACC analyses. In addition, over a five-year time period monthly betas are more likely to deal with potential non-synchronous trading problems in smaller stocks.

We do not agree that estimating betas from monthly data is necessarily preferable to using weekly data. Indeed, the latter permits a more statistically robust estimation due to the larger number of data points available for the calculation and hence the lower standard errors. In our analysis, we have taken into account both the weekly and monthly beta estimates produced by Bloomberg.

32. HCA put forward the view that a number of these businesses did not provide suitable beta values for comparison with a stand-alone UK private hospital operator. HCA highlighted that

²² We recognize that it is possible to estimate accounting betas for unlisted companies. However, as earnings information is only available on an annual basis, we would have very few data points from which to derive beta values. As a result, the beta estimates would be unreliable.

The CAPM assumes efficient markets, and perfect information for investors. This is obviously a simplification of the real world, and is only a reasonable starting point where share trading is highly liquid, and shareholders are provided with good information on which to make choices. [...]

A problem arises where the observations of equity betas are distorted by low levels of trading liquidity, either for the stock in question or the exchange/index on which the stock is traded. In these circumstances, it may not be possible to obtain an accurate estimate of the beta from direct observation of the stock/index.

33. In particular, HCA argued that:

- (a) the Thai, Indian and South African stock exchanges were either thinly traded and/or had a low total market capitalization and hence were an unreliable source of beta estimates;
- (b) a number of the companies used by the CC as comparables were thinly traded and hence an unreliable source of beta estimates; and
- (c) several of the companies operated in markets with very different levels of economic development and/or healthcare systems when compared with the UK and hence could not be considered comparable businesses.

34. HCA presented evidence in relation to a few key areas that it considered to indicate that the South African and Indian stock exchanges were not liquid or efficient and frictionless markets (a requirement for the CAPM to hold and the efficient-market hypothesis to be satisfied).²³ These were their relatively poor scores on Transparency International's Corruption Perception Index, on which India was ranked 94th and South Africa was ranked 69th in 2012; and the example of the long-running tax dispute between Vodafone Plc and the Indian government. HCA further suggested that local CAPM betas did not adequately capture the systematic country risk incurred by local operators in emerging markets.²⁴

35. HCA argued that the fact that Apollo, Fortis, Netcare and Ramsay were not rated by any of the three main credit rating agencies suggested that they might not be regarded as part of the investable universe by large international investors, casting doubt on their suitability for the purposes of this analysis. Finally, HCA put forward the view that Ramsay's beta was an unsuitable comparator as the Australian stock market was dominated by resource companies, which meant that betas for non-resource companies would be lower than expected elsewhere and the Australian market will be more risky in general (as evidenced by the DMS data). HCA suggested that the lower beta estimate for Ramsay provided evidence to support this argument and that it was not credible to believe that the beta value for a healthcare provider with exposure to the Indonesian market had a lower asset beta than Bristol Water.²⁵

²³ In [HCA's response to provisional findings](#), appendices, paragraph 5.206, it stated that the following elements were needed for markets to be considered efficient and frictionless:

- good standards of governance;
- tightly regulated markets; and
- rules to prevent abuse, for example, restrictions on insider trading.

²⁴ [HCA response to provisional findings, Appendix 5](#), paragraphs 5.210–5.218.

²⁵ [ibid](#), paragraphs 5.214–5.224.

36. HCA suggested that the CC should focus on US-listed comparables as the main source of beta values on the basis that ‘the most highly-developed, competitive and liquid market for healthcare providers is the US market’. It noted that the R-squared values on the beta estimates of the US comparable companies tend to be significantly higher than those of the non-US hospital businesses. ‘This is the market that provides the greatest scope and broadest range of comparator data for UK healthcare providers’. It proposed another comparable company, HealthSouth, but excluded HCA itself on the basis that it had not been listed throughout the period and hence could not provide a beta value for the period as a whole. HCA highlighted that the beta value for HCA Inc was distorted by thin trading, with a true value closer to 2.2.²⁶
37. HCA also argued that the beta values of US companies were likely to significantly understate the level of risk of a UK private healthcare provider as:
- (a) UK consumers had the option of relying on the NHS during tough economic times such that the returns of UK private healthcare providers would be expected to be more cyclical in nature and present a higher level of systematic risk than those of US providers; and
 - (b) government contracts tended to represent a significant share of the business of US private healthcare operators and, as these presented very low volatility, the beta factors for such companies were likely to be lower than those of providers relying solely on ‘purely’ private business. HCA made an adjustment to the beta factor to take account of this impact (in its WACC estimate adjusted for government revenues).²⁷
38. We recognize that certain markets and/or stocks may provide less reliable beta estimates due to thin trading and or stock market composition. We reviewed the original list of comparable companies²⁸ and removed Générale de Santé, Bangkok Dusit and Mediclinic International on the basis that these companies were relatively thinly traded and hence might produce biased beta estimates.²⁹ However, we do not agree with HCA’s view that the South African and Indian markets are too small, illiquid or otherwise underdeveloped to provide reliable beta estimates. The Johannesburg Stock Exchange had an average market capitalization of US\$650 billion over the period, and turned over around 60 per cent of its total market capitalization each year. Similarly, the Mumbai Stock Exchange had an average market capitalization of US\$550 billion and turned over approximately 26 per cent of its total market capitalization each year. While these exchanges may be smaller and less liquid than the US or UK markets, and these countries are developing rather than developed economies, we consider that they are sufficiently large and liquid to provide reasonably reliable beta estimates.
39. Similarly, we recognize that the systematic risks faced by the private healthcare operators in Table 5 may not be entirely representative of those faced by a stand-alone UK operator due to differences in healthcare systems across countries. We considered HCA’s argument regarding the ability of UK customers to ‘fall back’ on the NHS in difficult economic times but we did not think that the evidence of returns over the relevant period, which was characterized by a deep recession, supported their

²⁶ *ibid*, paragraph 5.227.

²⁷ *ibid*, paragraphs 5.237–5.240.

²⁸ See [Profitability working paper](#), 1 March 2013.

²⁹ In the case of Bangkok Dusit, we also recognize that the market capitalization of the Stock Exchange of Thailand is relatively small and hence may produce biased beta estimates. We have also removed Life Healthcare from the list of comparable companies as its beta estimates appeared to be inconsistent, with those estimated on weekly data being positive and those on monthly data being negative.

assertion that this would make the returns earned by UK providers more cyclical. The compound annual growth rate of EBIT for the seven private healthcare providers for which we have analysed profitability was 8.5 per cent per year between FY08 and FY11.³⁰ This indicates that while there has been a reduction in the number of PMI customers during the recession, the impact on the hospital operators has been mitigated by a combination of the selective opting out of PMI by customers according to their risk and the increase in NHS commissioning of private services over the period which has diverted patients back into private hospitals.³¹ We observed that this evidence of relatively strong returns being generated over a period of recession was not consistent with industry-level equity beta values of between 1.5 and 2, ie those of a strongly pro-cyclical sector, as proposed by HCA.

40. We considered HCA's argument regarding the importance of government contracts to private healthcare operators in the USA. We observed that the large majority of UK private healthcare providers also provide substantial volumes of services to the NHS under a range of contracts, including 'choose and book' and spot contracts. On average, these comprised a smaller proportion of total revenues over the period than for the US providers but the proportion increased rapidly over the period, with NHS revenues accounting for more than [X] per cent of Ramsay's revenue in the year to June 2012.³² We did not think, therefore, that the purely private beta estimates prepared by HCA were relevant to the UK market.
41. We reviewed HCA's detailed arguments about the relevance of particular stocks to our analysis and concluded that the issue of potential differences between healthcare systems is best addressed by considering a range of operators across a number of countries rather than by focusing exclusively on US-listed stocks, the beta values of which will be influenced by the specific characteristics of the US healthcare market. It is not clear that the factors influencing the betas of US private hospital operators are more pertinent to a stand-alone UK operator than the factors influencing the betas of Australian, German, South African or, indeed, Indian or Indonesian private hospital operators. In particular, we consider that the beta values of Netcare, Ramsay and HCA are relevant due to their exposure to the UK healthcare market.³³ We thought that to exclude all three from our analysis would be perverse. We have not included HealthSouth in our list of comparable companies as the business focuses on the provision of long-term rehabilitation services rather than acute healthcare.³⁴
42. We asked the private hospital operators to provide us with an estimate of their own, or their parent companies', WACC. The asset beta values used by the parties are shown in Table 6. These estimates have not been prepared on a consistent basis, with HCA and Ramsay providing estimates for their worldwide operations and the other operators using estimates based on comparable companies.

³⁰ The CAGR of EBIT from FY07 to FY11 is significantly higher but this is partly boosted by acquisitions made during 2008, hence we consider that the FY08 to FY11 growth rate is a more accurate reflection of the underlying growth in returns over the period.

³¹ In effect, the customers that opt out of having medical insurance are those less likely to claim, resulting in a worsening of the risk pool for the insurers.

³² NHS revenues comprised between 10 and 20 per cent of total revenues over the period for BMI, Spire and Nuffield and around [X] per cent of the total for Ramsay. [X]

³³ While betas may change over time due to changes in the activities of firms, we do not have reason to believe that HCA's beta would have been significantly different for the first four years of the period than for the last 15 months or so. Hence, we consider it reasonable to use a beta value for HCA that was estimated over part of the period only.

³⁴ For example, HealthSouth's services include a range of physical and occupational therapies for patients recovering from a range of illness and treatments, including: amputation, arthritis, brain injury, cardiac surgery, Parkinson's disease, oncology, spasticity management, stroke etc.

TABLE 6 Private hospital operators' asset beta estimates

	Low	High
BMI	[X]	[X]
BCH		[X]
HCA		[X]
Nuffield	[X]	[X]
Ramsay	[X]	[X]
Spire	[X]	[X]
TLC		-
Average		0.57

Source: Responses to CC financial questionnaire.

*Ramsay indicated that [X] was its actual group-level asset beta (calculated from market data) but that it considered this to be biased by recent market volatility. We have excluded the upper value ([X]) from the average value as no evidence was offered to support this figure.

Note: The asset beta estimated by HCA is for HCA Inc for (Q1 2012) rather than the group's UK operations.

43. The asset beta values used by the operators are similar to those of the comparable listed companies, with all estimates indicating that on an unlevered basis private hospitals experience significantly less volatility than the market as whole. We note the very similar ranges of values provided by Spire and [X], whose beta estimates were prepared for them by UBS and [X] (respectively), and were based on these firms' views of the set of comparable companies. The range of values is large (0.26 to 0.77), with an average asset beta of 0.57.
44. Taking into account our own comparator analysis suggesting an average (unlevered) beta of 0.51 to 0.56 (see Table 5) and the views of the parties suggesting a range of 0.26 to 0.77 with an average of 0.57 (see Table 6), we consider that a range of 0.5 to 0.7 is appropriate for the asset beta in our analysis. We have slightly increased the upper end of our range, from 0.6 to 0.7, to reflect the weekly beta estimates for several of the US hospital groups that HCA argued should be the focus of our analysis, including Lifepoint, Tenet, Universal and HMA. We consider this to be a conservative approach.

Cost of debt

45. In order to estimate the cost of debt for a typical UK stand-alone private hospital operator, we have considered information on both the interest rates actually paid by the operators over the relevant time period and the redemption yields on corporate bonds over gilts.
46. We consider that the effective interest rates paid by the private hospital operators on debt raised in the UK provide the most relevant benchmark for our analysis. We note, however, that the interest rates paid by the private hospital operators will reflect their actual levels of gearing rather than the 'typical' level of gearing assumed in our WACC calculation (see paragraphs 53 to 57). To the extent that this actual level of gearing exceeds the 50 per cent we have used in our analysis, the interest rates paid by the operators may exceed those of a 'typical' operator over the period and, similarly, to the extent that it falls below 50 per cent, the interest rates paid by the operators may be lower than that of a 'typical' operator.
47. Table 7 sets out the effective interest rates paid by each of the operators in each year where they were able to provide this information. BCH, HCA and Ramsay were funded at a group level and provided estimates of their blended cost of debt for the group as a whole.

TABLE 7 Effective interest rates paid by private hospital operators, FY07 to FY11

	<i>per cent</i>				
	FY07	FY08	FY09	FY10	FY11
BMI	[X]	[X]	[X]	[X]	[X]
Nuffield	[X]	[X]	[X]	[X]	[X]
Spire	[X]	[X]	[X]	[X]	[X]
<i>Group funding costs</i>					
BCH			[X]		
HCA			[X]		
Ramsay			[X]		
TLC			[X]		

Source: Responses to CC financial questionnaire.

Note: Ramsay and HCA funding costs are for the whole group and not just their UK operations.

48. The effective interest rates paid by the operators have varied from around 5 to 7.5 per cent, with [X] paying higher rates of interest than the other operators. The interest rates paid by [X] and [X] declined between 2007 and 2011. There is no evidence that the costs of debt of the operators vary according to their size.
49. We recognize that the interest rates payable by the private hospital operators may reflect market conditions at a single point in time; for example, on acquisition of the business. They may not, therefore, be representative of the costs of debt over the whole period. In order to reflect changes in the cost of debt, we have also taken into account the level of redemption yields on corporate bonds over the whole period. As Figure 5 shows, the yield on BBB-rated bonds varied from 4.4 to 8 per cent over the period, with an average of 6.1 per cent.

FIGURE 5

UK corporate bond redemption yields, 2007 to 2012



Source: Thompson Reuters, based on ten-year corporate bonds.

50. HCA suggested that a stand-alone private hospital operator in the UK would achieve a B or BB credit rating, on the basis of the credit rating of comparable US companies,

and hence that—due to a lack of data relating to B- and BB-rated companies—an additional (0.7 per cent) yield should be added to the cost of debt of BBB-rated companies to reflect this lower creditworthiness. Table 8 sets out the credit ratings of a number of private hospital operators.

TABLE 8 Credit ratings, private hospital operators

Company	Credit rating			
	Standard & Poor's	Fitch Ratings	Moody's	Others*
Netcare	-	-	-	A/A1
HCA	-	B+	-	-
Lifepoint Hospitals	BB-	BB	Ba2	-
Tenet Healthcare	B	B	B2	-
Rhoen Klinikum	-	-	Baa3	-
Bangkok Dusit	-	-	-	A+
Universal Health Services	BB	BB	Ba2	-
Community Health Systems	B+	B+	-	-
Health Management Associates	B+	BB-	B1	-
Mediclinic International	-	-	-	A-
Fortis Healthcare	-	-	-	A-
Apollo Hospitals Enterprise	-	-	-	AA

Source: Bloomberg data.

*Netcare and Mediclinic had credit ratings provided by Global Credit Ratings. Bangkok Dusit's rating was provided by Thai Rating and Information Service Co. Fortis and Apollo's ratings were provided by CRISIL, a subsidiary of Standard & Poor's. Note: Ramsay did not have a formal credit rating.

51. The information that we have collected on the credit ratings of private hospital operators in overseas markets is mixed. While the US operators tend to have a BB or lower rating, the South African and Indian groups tend to have a higher credit rating. Therefore, we regard data on bond yields as consistent with the data on bank debt. In our analysis, we have used a cost of debt of between 5.5 and 7.0 per cent, with the upper end of this range allowing for a stand-alone UK private hospital group to have a credit rating below BBB. We consider this to be a reasonable estimate, noting that it is in line with the effective interest rates submitted by the relevant firms and the observed costs in the market.
52. HCA did not make any specific arguments regarding the cost of debt in its submission. However, we note that based on its arguments in relation to the use of actual inflation rates, HCA's estimate of the required return on debt increased from our range of between 5.5 and 7.0 per cent to between 7.0 and 8.5 per cent on the basis of a nominal RFR of 4.5 to 5.5 per cent and a corporate debt premium of between 2.5 and 3.0 per cent. We observed that this was inconsistent with both the actual cost of debt incurred by the UK hospital operators over the relevant period and the yields on BBB-rated bonds (which averaged 6.1 per cent). We also noted that the evidence on corporate debt yields tended to support an RFR of below the 4.5 to 5.5 per cent proposed by HCA. For example, if the 2.5 to 3.0 per cent corporate debt premium proposed by HCA were deducted from our range of 5.5 to 7.0 per cent, which is consistent with average corporate bond yields³⁵ over the period, this gives a nominal RFR of between 3.0 and 4.0 per cent.

³⁵ Both the yields on BBB- or BB-rated bonds and those actually paid by the private hospital operators.

Gearing

53. As all of the relevant firms are privately held, it is not possible to estimate directly their levels of gearing.³⁶ We have, therefore, used the following analyses to inform our judgement of the appropriate gearing for a stand-alone UK private hospital operator:

(a) the gearing of comparable companies that are listed; and

(b) the operators' gearing used in their WACC calculations.

54. Table 9 provides details of the levels of gearing of the listed comparable private hospital operators.

TABLE 9 Gearing of listed private healthcare businesses

	<i>per cent</i>				
	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>	<i>FY10</i>	<i>FY11</i>
Netcare	70.0	78.0	69.2	59.9	62.5
Ramsay	33.7	50.3	44.2	33.0	25.6
HCA	N/A	N/A	N/A	N/A	74.3
Lifepoint Hospitals	46.7	52.2	40.8	42.2	45.7
Tenet Healthcare	63.4	88.7	60.4	55.4	68.6
Rhoen Klinikum	19.8	27.3	16.5	21.2	23.7
Bangkok Dusit	21.2	32.8	24.4	11.0	9.9
Health Management Associates	73.2	88.0	63.1	56.2	65.8
Mediclinic International	14.4	66.8	65.8	56.6	52.6
Universal Health Services	31.7	39.7	28.7	49.5	50.8
Community Health Systems	72.6	87.3	73.1	72.3	85.3
Apollo Hospitals Enterprise	7.8	4.0	14.6	12.7	9.6
Fortis Healthcare	N/A	17.3	22.9	41.3	12.7
Mean	41.3	52.7	43.6	42.6	45.2

Source: Bloomberg data.*

*For the purposes of estimating the average level of gearing of comparable companies, we have used a broader range of comparable companies, including several that were excluded for the purposes of estimating beta values. We consider that these businesses are relevant comparables in terms of capital structure even if a relative lack of liquidity may make their beta values unreliable.

Note: N/A = not available.

55. A review of the information on comparable companies indicates that average levels of gearing are between 40 and 50 per cent over the period. Gearing appears to be higher among firms operating in the USA and South Africa than those with activities elsewhere in the world.

56. Table 10 sets out the gearing levels used by the operators in their WACC estimates.

³⁶ Some of the operators have listed parent companies in other countries but their UK operations are privately held. See the [Cost of Capital: planned methodology working paper](#), paragraphs 31–35, for further explanation of this point.

TABLE 10 **Gearing levels used by UK private hospital operators**

	Gearing %
BMI	[REDACTED]
BCH	[REDACTED]
HCA	[REDACTED]
Nuffield	[REDACTED]
Ramsay	[REDACTED]
Spire	[REDACTED]

Source: Responses to CC financial questionnaire.

*The report prepared for BMI by American Appraisal used gearing of [REDACTED] per cent for the opco alone and [REDACTED] per cent for the Group. We believe that the Group figure is the most comparable for our analysis.

Note: The gearing ratios quoted for both Ramsay and HCA are for their group operations rather than their stand-alone UK operations.

57. The gearing levels of comparable operators and those assumed by the relevant firms in their WACC calculations are similar, averaging between 40 and 50 per cent. On the basis of this information, we have used a gearing ratio of 50 per cent in our estimate of the WACC. We note that using a slightly lower level of gearing of 40 per cent does not have a significant impact on our cost of capital estimates.
58. In our analysis we did not allow for debt beta to be greater than zero. We noted that the Bloomberg unlevered betas (see Table 5) were based on a simple formula assuming a debt beta of zero, and for consistency we therefore assumed a debt beta of zero in our calculation of industry WACC. We noted also that assuming a small positive debt beta would be unlikely to change materially the industry WACC, providing it was included both in the calculation of unlevered betas for comparator companies and in the calculation of WACC.

Interpretation of the cost of capital

Use of a single industry WACC

59. Ramsay and HCA put forward the view that a single industry WACC would not reflect the cost of capital for their businesses due to their different mix of customers. Ramsay highlighted its strong dependence on the NHS with the associated political risk, while HCA argued that the revenues it earned from overseas customers were more volatile than UK PMI and self-pay revenues, and that due to its heightened exposure to the property market, which contributed to the enterprise value of the business, its business model (combining both healthcare services and property management) was likely to be riskier than that of the other UK private healthcare providers.
60. We consider that the systematic risk profile, as measured by the beta value, of one private hospital operator in the UK does not differ materially from that of another private hospital operator. This does not mean that there will not be some variation in risks across local markets and customer types but that all private hospital businesses are exposed to systematic risks to broadly the same extent. We have reviewed HCA's overseas revenues over the 2006 to 2011 period and have come to the conclusion that there is no evidence to suggest that they demonstrate a higher level of market-related volatility than revenues from UK patients.³⁷ Similarly, although Ramsay's dependence on NHS revenue may expose it to a higher level of political risk, this is unrelated to the systematic risk measured by the beta value of a stock

³⁷ [REDACTED]

and, under the assumptions of the CAPM, could be diversified away by holding a portfolio of assets, many of which are not exposed to such risks. An investor would not, therefore, expect a higher return for assuming this political risk. Finally, we note that, although the risks associated with managing property in central London may be higher than those of operating a hospital business, it is not necessary for a hospital operator in the UK to own its buildings and assume this risk. HCA could adopt the same approach as Ramsay, which leases the majority of its buildings. Our concern is to understand the cost of capital of a typical, stand-alone hospital operator in the UK.

61. Ramsay also put forward the view that the level of gearing assumed by the CC was significantly higher than Ramsay's actual level of gearing such that the industry WACC was not relevant to Ramsay's capital structure. The purpose of the CC's profitability analysis is to understand how the operational returns in the industry compare with a reasonable or typical cost of capital. For this reason, we use the WACC of a hypothetical typical, UK stand-alone private hospital operator of a similar size to the relevant firms. We recognize that the private hospital operators will have made different choices in terms of their capital structures. However, financing costs and the ability to raise funds should also be similar across all operators based on risk profile. Consequently, we have estimated a single WACC for the private healthcare industry.³⁸

Use of an average WACC for January 2007 to June 2012

62. Ramsay suggested that 'The use of a single average WACC over a 5-year period means the significant variations in the cost of capital are effectively "lost" by averaging' making it 'impossible for the CC's analysis to differentiate between profits in excess of the cost of capital in a given year ... and annual variations in profits which keep pace with cost of capital'. We do not agree with Ramsay that there is any risk of misdiagnosis of excess profits by using a single cost of capital over the period. We have taken account of the volatility in financial markets and downward trend in gilt yields over the period by using a range of values for both the ERP and the RFR. We do not consider that estimating a separate cost of capital for each year would provide additional useful information for our analysis.
63. HCA put it to us that we should base our estimate of the cost of capital in so far as it formed a benchmark for its results on the five years ending 31 December 2011, on the basis that we were assessing HCA's profitability over this period. We do not disagree with this point conceptually. However, we have chosen to use the five-and-a-half-year period ending 30 June 2012 to match the period over which we have considered the profitability of the private hospital operators as a whole. We do not consider that this slightly longer period has any significant impact on our calculation of the cost of capital.

Size premium

64. In their estimates of their cost of capital, BMI, BCH and Nuffield all specified a small company premium, with [X] also adding a company-specific premium to its cost of capital. Their estimate of these premiums ranged from 3 to 7.5 per cent in total. HCA also put forward the view that the CC should have reference to the Fama-French model when interpreting its analysis on the cost of capital for the private healthcare industry. The Fama-French model includes both a size and a value factor in its formula for estimating the cost of equity.

³⁸ We note that using a lower level of gearing has a very small impact on the WACC, for a given level of asset beta.

65. In relation to the Fama-French model, we note that such models fail to describe reliably the cross-section of returns in the UK.³⁹ Moreover, even if there were such evidence in relation to the UK market, we consider that it would not necessarily be right to infer from this that the typical stand-alone private hospital operator would require a size premium. In the first instance, we note that the private hospital operators active in the UK are not particularly 'small'.⁴⁰ Second, it is not clear that these businesses would necessarily share any (unknown) general characteristics of small firms that increase their cost of capital due to higher risk. In line with previous CC decisions, therefore, we have not applied a small company premium in our estimate of the cost of capital.⁴¹
66. We have not included any company-specific premiums in our analysis since this is at odds with the basic hypothesis of the CAPM, which is that investors only receive a return for assuming risk which cannot be diversified away.

Impact of charitable status

67. BMI drew our attention to the charitable status of two of the operators, Nuffield and TLC, and their consequent exemption from corporation tax. The impact of this is that these operators would require a lower pre-tax return in order to generate the same post-tax return as their competitors. The basis of our estimate of the WACC in this analysis is that which would apply to a hypothetical stand-alone UK operator which was liable to the prevailing rates of corporation tax as a commercial entity. This may mean that our pre-tax WACC estimate is above that which would be appropriate for a charity. However, we consider that the 'commercial' benchmark is the most appropriate for the purposes of our profitability analysis.

³⁹ See *Constructing and Testing Alternative versions of the Fama-French and Carhart Models in the UK*, Gregory, Tharyan & Christidis, University of Exeter, 2011, and *On the Information Content of the Fama and French Factors in the UK*, Michou, Mouselli & Stark, 2008.

⁴⁰ [§]. Since these transactions, both businesses have expanded substantially via bolt-on acquisitions and organic growth.

⁴¹ HCA also estimated a cost of capital using the Fama-French model and US data and comparable companies. Given the sensitivity of the size and value factors to the market for which they are estimated and the use of a small set of companies in a different market, we do not consider that the estimates produced provide reliable information for our cost of capital calculation. See [Bristol Water](#) decision.

Relevant firms' WACC estimates

The table below shows the relevant firms' estimates of their UK or group-level WACCs.

Relevant firms' estimates of their UK or group-level WACC

	<i>per cent</i>					
	<i>BMI</i>	<i>BCH</i>	<i>Nuffield</i>	<i>HCA</i>	<i>Ramsay</i>	<i>Spire</i>
Real RFR	[X]	[X]	[X]	[X]	[X]	[X]
Nominal RFR	[X]	[X]	[X]	[X]	[X]	[X]
ERP	[X]	[X]	[X]	[X]	[X]	[X]
Small company risk premium	[X]	[X]	[X]	[X]	[X]	[X]
Company-specific risk premium	[X]	[X]	[X]	[X]	[X]	[X]
Asset beta	[X]	[X]	[X]	[X]	[X]	[X]
Equity beta	[X]	[X]	[X]	[X]	[X]	[X]
Pre-tax Ke	[X]	[X]	[X]	[X]	[X]	[X]
Pre-tax Kd	[X]	[X]	[X]	[X]	[X]	[X]
Gearing	[X]	[X]	[X]	[X]	[X]	[X]
Tax rate	[X]	[X]	[X]	[X]	[X]	[X]
Pre-tax WACC	[X]	[X]	[X]	[X]	[X]	[X]

Source: Responses to CC financial questionnaire.

*BCH describes this as an alpha factor, reflecting business-specific risks including size premium, financing and forecasting risks. This was increased to adjust for the fall in the RFR in 2011 which was considered not to be reflective of long-term market conditions.

Notes:

1. The estimates provided by Ramsay and HCA are for their whole groups rather than for their stand-alone UK operations. All other estimates are for the UK firms only.
2. BMI gave a real RFR of [X] per cent. The CC has assumed that this would give a nominal RFR of [X] per cent higher, ie [X] per cent.
3. Nuffield ranges are taken from its response to the FQ and the Deloitte report on the WACC (2009).

Beta estimates

The table below sets out the beta values of a number of listed private hospital operators.

Beta estimates for listed private hospital operators

<i>Company</i>	<i>Levered betas</i>		<i>Debt/equity ratio</i>	<i>Statutory tax rate %</i>	<i>Unlevered betas</i>	
	<i>Weekly</i>	<i>Monthly</i>			<i>Weekly</i>	<i>Monthly</i>
Netcare	0.623	0.547	2.12	34.55	0.26	0.23
Ramsay	0.393	0.236	0.60	30	0.28	0.17
HCA	1.239	1.51	2.90	40	0.45	0.55
Lifepoint Hospitals	0.977	1.067	0.84	40	0.65	0.71
Tenet Healthcare	1.377	2.209	2.06	40	0.62	0.99
Rhoen Klinikum	0.472	0.365	0.28	29.50	0.39	0.31
Health Management Associates	1.587	2.162	2.25	40	0.67	0.92
Universal Health Services	0.982	1.244	0.67	40	0.70	0.89
Community Health Systems	1.433	1.493	3.57	40	0.46	0.48
Apollo Hospitals	0.476	0.307	0.11	34	0.44	0.29
Fortis Healthcare	0.845	0.829	0.31	34	0.70	0.69

Source: Bloomberg data.