

ANNEX 4

INCONSISTENCIES IN THE CC'S REASONING

1. INTRODUCTION

1.1 In this section, the logical inconsistencies of the CC's findings of local market power in relation to the [REDACTED] [CONFIDENTIAL] Ramsay hospitals will be considered. These inconsistencies relate to four key areas of the CC's case:

- (a) first, in relation to the link that the CC draws between local market power and the national prices that PH operators negotiate with insurers;
- (b) second, the changes that have occurred in the results of the CC's Price Concentration Analysis ("**PCA**") in relation to Ramsay, and the general lack of evidence that this provides to support a finding that Ramsay has local market power;
- (c) third, the low level of correlation that exists between the two metrics that have been used for identifying local market power (i.e. LOCI and fascia count), and, in particular, the additive way in which these tests have been applied by the CC; and
- (d) fourth, the CC has consistently overstated the strength of Ramsay's hospitals in the provision of private treatment in its local market assessment (i.e. by failing to consider the importance of NHS funded treatment at those facilities).

2. NATIONAL PRICES FOR INSURED PATIENTS AND LOCAL MARKET POWER

2.1 In assessing the effects of local market power on national negotiations, the CC explains in paragraph 6.232 that *"hospitals located in more concentrated areas are those for which a PMI has fewer alternatives (i.e. outside options) to consider when negotiating with the hospital operator, and, therefore, are less substitutable for the PMI"*.¹ The CC goes on to state in paragraph 6.234 that *"we have investigated whether, and to what extent, a low substitutability of hospitals at the local level... lead to higher insured prices"*.

2.2 According to these statements, the CC is investigating the simple hypothesis that if an operator is able to negotiate higher prices to insurers, then it is indicative that the operator has local market power. Indeed, the CC has set out that the economic rationale employed in this case is that: (i) the more outside options (i.e. alternatives) that the PMI has at the local level, then (ii) the stronger is the PMI's bargaining position vis-à-vis the PH provider, which in turn can (iii) be expected to result in lower prices to insurers. This is confirmed in paragraph 6.242 where the CC states that *"higher insured prices at the national level arise because of the lack of sufficient competitive constraints faced by hospital operators at the local level"*. [Emphasis added]

2.3 It is clear, therefore, that the CC is drawing a link between the presence of local market power and the existence of higher prices to insurers at the national level. This logic must, however, also apply in reverse (i.e. that low prices negotiated with insurers demonstrates a lack of market power at the local level as the insurer has other "outside options" to constrain the prices of the PH operator). This is confirmed in paragraph 6.189 where the CC states that *"PMIs will pay higher (lower) prices the weaker (stronger) their outside options. The relationship holds for hospital operators - they will charge higher (lower) prices the stronger (weaker) their outside options"*. [Emphasis added]

¹ The CC explains in paragraph 6.155 that *"the outside options for the PMIs are the other hospitals they could use to replace those hospitals they currently use or are contemplating using"*.

- 2.4 In this regard, the CC's national pricing analysis is entirely inconsistent with its local market analysis. In particular, the CC has concluded that Ramsay has local market power in relation to [REDACTED] [CONFIDENTIAL] hospitals (i.e. [REDACTED] [CONFIDENTIAL] per cent of the PH facilities that it operates). However, Table 15 of Appendix 6.12 shows that Ramsay also offers the lowest national prices to insurers out of the four national PH operators (across all the different pricing metrics considered by the CC). This low pricing is obviously inconsistent with a finding of "local market power" in respect of over a quarter of Ramsay's hospitals.²
- 2.5 The CC has also observed that there is a correlation between the average insured prices of the four national PH operators and various characteristics of competition, including local market concentration. In particular, the CC states in paragraph 6.237 that "*in relation to these characteristics, we note that: BMI has 20 hospitals with low LOCI, compared with 10 Spire hospitals, 6 Nuffield hospitals and 3 Ramsay hospitals [REDACTED] [CONFIDENTIAL].*"³
- 2.6 In other words, the CC has itself found in other aspects of its national pricing analysis that the low insured prices offered by Ramsay to insurers is consistent with it having a lack of market power at the local level. Indeed, a lack of local market power in relation to Ramsay's hospitals is as the CC notes the most plausible explanation as to why Ramsay's average prices to insurers are so low, and why the insurers are in such a strong bargaining position vis-à-vis Ramsay. This is also confirmed in paragraph 6.238 where the CC states that "*BMI and Spire are shown to obtain higher average prices with PMIs than Nuffield and Ramsay, and it is also the case that, on the basis of the characteristics considered, BMI and Spire have hospitals which are less substitutable at the local level on average and/or hospital portfolios which are less substitutable as a whole.*"
- 2.7 Accordingly, Ramsay is deeply concerned that the CC's local market analysis, which claims to have identified [REDACTED] [CONFIDENTIAL] Ramsay hospitals as having local market power, is significantly overstated and entirely inconsistent with its national pricing analysis. It is simply not plausible for Ramsay to have local market power across [REDACTED] [CONFIDENTIAL] per cent of its PH estate, and yet for this not to translate into any market power in relation to the national price negotiations with insurers; there is an inherent contradiction in this analysis. Ramsay would, therefore, urge the CC to revisit its local market analysis as a matter of urgency in order to correct the failings in that analysis.

3. PRICE CONCENTRATION ANALYSIS

- 3.1 In its response to the Annotated Issues Statement of 2 April 2013, Ramsay observed that the operator by operator analysis set out in the Annotated Issues Statement showed that a decrease in concentration at Ramsay's hospitals (i.e. more competition) actually lead to higher prices. This was contrary to the hypothesis being tested by the CC and demonstrated that on the CC's own analysis Ramsay did not have local market power.
- 3.2 However, in a highly inappropriate and opaque "remodelling" exercise the CC now purports to advance a set of PCA results in respect of Ramsay that are the complete opposite of the CC's original findings. In particular, the CC now claims to have identified a positive relationship between concentration (as measured by both LOCI and fascia count) and prices for Ramsay.⁴ The large variation in the results of the analysis, and, in particular, the change in the sign of the relationship between concentration and prices in relation to the Ramsay hospitals raises a number of very serious issues:
- (a) first, as a minimum, the results of any PCA that are this sensitive to last minute adjustments by the CC cannot be considered to be robust on any reasonable

² As the national pricing information was not disclosed, we have no way of being able to determine how material is the magnitude of this pricing effect.

³ Where a low LOCI is equivalent to high market share.

⁴ Table 13 and paragraph 95, Appendix 6.9.

measure. The CC's analysis has confirmed that slight changes to the dataset and methodology used in the PCA have produced very different results, including the opposite direction of effect for both Ramsay and Spire.⁵ This is wholly inadequate and unsatisfactory for the purposes of assessing whether individual hospital operators have local market power and discredits the CC's PCA analysis as not fit for purpose;

- (b) second, despite the change in the direction of the effect of concentration (LOCI) on self-pay prices for Ramsay, it noteworthy that the results of the PCA are not statistically significant (whereas the previous calculations reported in the Annotated Issues Statement, which reported the opposite effect, were statistically significant at the one per cent level).⁶ This means that the "remodelled" results in the PFs cannot be used to infer any meaningful positive correlation between concentration and prices in relation to Ramsay's hospitals;
- (c) third, it is noteworthy that there has been a substantial reduction in the remodelled analysis in the amount of data points used in the individual operator analysis.⁷ This is of great concern given that almost half of the data points initially considered in the previous calculations are no longer taken into account in the PFs. The CC itself acknowledges that *"in general it is not unusual for estimation results to change if large and relevant parts of a sample are removed or modified; and, by excluding parts of the data, the interpretation of what is being estimated also changes."*⁸ Ramsay expressed serious reservations in relation to the data cleaning process employed by the CC in its response to the Annotated Issues Statement. By using just 806 data points, the CC has now effectively excluded over 98 per cent of the observations submitted by Ramsay. Therefore, by reducing the size of dataset further, the CC has further compromised the validity of an already questionable PCA;
- (d) fourth, Ramsay has a number of serious reservations in relation to the methodology used in the analysis, and, more importantly, the conclusions that the CC is trying to derive from the analysis. In particular,
 - (i) the results are obviously internally inconsistent depending on the methodology used, as demonstrated by a simple comparison of the CC's previous calculations and those reported in the PFs;
 - (ii) the CC has failed to take account of the heterogeneity and co-morbidities of different patients, which means that the data between patients is not directly comparable (even within CCSD codes).⁹ The CC itself acknowledges that *"a characteristic of our price measure is that it contains significant variation. This is true when comparing prices for a specific treatment type at a specific hospital site"*. However, the CC has completely failed to understand why such variation in prices exists, which raises the prospect of entirely spurious correlations being identified;

⁵ The CC also previously claimed that result is also statistically significant at the 1 per cent level.

⁶ Table 13, Appendix 6.9.

⁷ The dataset for Ramsay has been reduced from 1,349 data points to just 806 data points. There were 59,062 episodes of treatment included in the original data set provided by Ramsay (see Table A1 of Appendix 6.9).

⁸ Paragraph 90, Appendix 6.9.

⁹ As Ramsay explained in its response to the data questionnaire of 7 September 2012, the price for treatments that are categorised under the same CCSD code will vary significantly depending on a number of different factors, including: the complexity of the procedure, the biological variation of the patient and the individualised nature of healthcare; the prosthesis used; and, whether patients elect to stay in hospital longer than is clinically necessary. This variation is clearly evident from the large range in treatment prices reported in Table 3 of Appendix 6.9.

- (iii) it is unclear why the CC has reduced the number of 'focal' treatments used in the PCA to just four specific treatment types.¹⁰ The CC's previous calculations included eight 'focal' treatments, which the CC described as being "*representative of the self-pay PH market as a whole; and... amenable to the type of analysis we are conducting*".¹¹ This reduction is likely to have led to a further distortion of the results, whilst it is clear that the results of just four treatment types cannot be used to produce general findings in relation to the PH market as a whole (i.e. it cannot simply be assumed that the same relationship exist in relation to other treatment types as it does in relation to just four 'focal' treatments);
- (iv) the measures of concentration used in the PCA (LOCI and fascia count) are inconsistent and unreliable proxies for market power. In particular:
- (A) the catchment areas used for the fascia count (e.g. using bands of 0-9 miles, 9-17 miles, and 17-26 miles) bear absolutely no resemblance to the catchment areas that the CC has calculated in its local market assessment, or indeed the CC's survey which indicated an average travel time of 44 minutes for self-pay patients.¹² This approach will result in concentration being overstated in some areas (e.g. with a broad catchment area), yet concentration will be potentially understated in other areas (e.g. with a small catchment area). This approach clearly has the potential to pick up relationships between prices and the number of fascias that are completely unrelated to market power;
- (B) Ramsay set out very serious concerns with the LOCI measure of concentration in its response to the Annotated Issues Statement.¹³ The CC's revised analysis, which has calculated LOCI market shares on the basis of a much smaller self-pay data set, serves to heighten those concerns further. In particular, the smaller number of data points and the broader catchment areas for self-pay patients means that the data points are likely to be much more thinly spread. This has the potential to result in many more so called "monopoly submarkets", and which will fail to consider the greater patient choices over this broader geographic area. Of note, the CC claims that "*the insured LOCI and self-pay LOCI are highly correlated*"¹⁴, but it has failed to report this analysis. Given the drastic difference in the results of the PCA reported for Ramsay, it seems implausible that the insured LOCI and self-pay LOCI are highly synchronised; and
- (v) the analysis continues to suffer from an omitted variable bias (i.e. it fails to take into account a range of other factors that potentially impact on self-pay prices). This includes the characteristics of individual patients, the differences in the treatment received, as well as various demand- and supply-side factors that may affect prices. Unless these factors are isolated and controlled for, Ramsay believes that the analysis will be suffering from an omitted variable bias, which means that the results will not be reliable.

¹⁰ These are hip replacement, knee replacement, prostate resection and gallbladder removal.

¹¹ AIS, Appendix B, Annex 3, slide 8.

¹² See slide 48 of the CC's patient survey.

¹³ e.g. that it is over-concentrative, does not reflect patient choices, excludes important competitive constraints, is inconsistent, sensitive to the submarkets used, an unreliable proxy for market power, and so on. See Annex 3 of Ramsay's response to the Annotated Issues Statement.

¹⁴ Paragraph 16, Appendix 6.9.

- 3.3 In summary, Ramsay remains deeply concerned that the PCA continues to contain a number of serious shortcomings and inconsistencies, which are clearly highlighted by the drastic changes in the results of the analysis in relation to Ramsay. Not only are these results deeply implausible, but they further highlight the sensitivity of the overall analysis to slight changes in the data sample and the methodology used in the analysis. It should be noted, however, that the lack of statistical significance in relation to Ramsay's results means that the PCA does not provide any meaningful basis for concluding that Ramsay has local market power, which further contradicts the CC's local market analysis.

4. **CONCENTRATION MEASURES USED FOR ASSESSING LOCAL MARKET POWER**

- 4.1 As set out in detail in Ramsay's response to the Annotated Issues Statement (of 2 April 2013), Ramsay has reservations in relation to the metrics used to determine whether a hospital has local market power (see Annex 3 of the Annotated Issues Statement response), particularly in relation to the LOCI measure of concentration, which is inconsistent and over-concentrative. For the sake of brevity, however, these points are not repeated again here.

- 4.2 There are two specific issues in relation to the CC's local concentration analysis that Ramsay would like to comment on:

- (a) first, the seemingly low level of correlation between the LOCI and fascia count measures of concentration, both of which are being used a proxy for assessing local market power; and
- (b) second, the additive nature in which the concentration measures have been applied, which creates a confirmation bias in favour of identifying a concern when one simply does not exist.

Low correlation between LOCI and fascia count

- 4.3 In its local market analysis, the CC has used two different measures of concentration, namely LOCI and fascia count. It should be noted, however, that the aim of using concentration measures of this nature should be to provide a proxy for market power. If there is no clear link between market power and the specific measure of concentration being used, then it will lead to wholly inaccurate conclusions being reached.

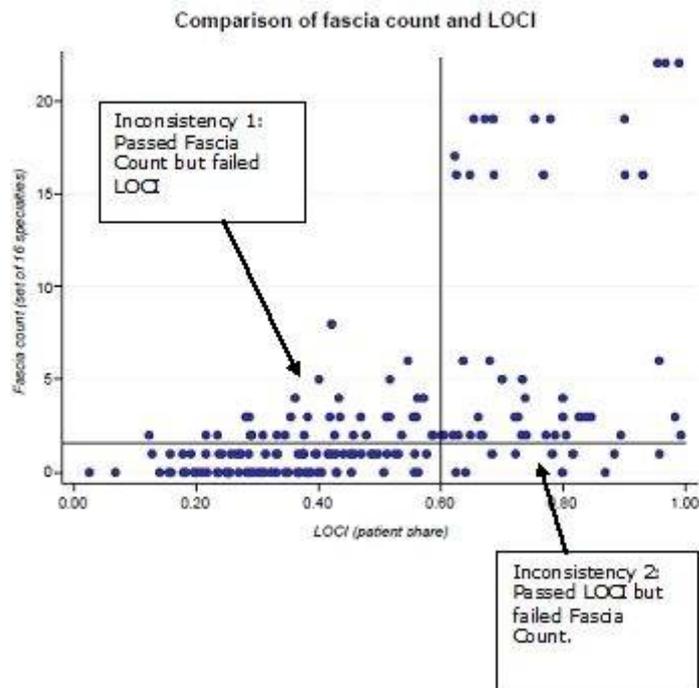
- 4.4 There is an obvious advantage in the CC using two different measures of concentration as it allows comparisons to be made. This raises the obvious question, however, as to whether the two different measures of concentration are identifying the same hospitals as being of potential concern. Clearly, if the two metrics are reliable indicators of market power, then they should be highly synchronised in relation to the hospitals with market power that they identify. In this regard, the CC explains that the "*LOCI measure and fascia count measure are positively related*"¹⁵, and that "*this is expected since hospitals facing fewer nearby competitors (lower fascia count) are expected to have a higher weighted average market share (lower LOCI)*".¹⁶

- 4.5 However, it is noteworthy that the correlation between the LOCI and fascia count measures of concentration is just 0.51.¹⁷ This means that there is significant variation between the two measures in terms of the hospitals identified as being of concern (as highlighted in the following chart, which is extrapolated from Figure 3 of Appendix 6.5 of the PFs). The chart highlights a very clear inconsistency in the CC's local market analysis, as the two measures of market power are not consistently identifying the same hospitals as being of potential concern.

¹⁵ Paragraph 32, Appendix 6.5.

¹⁶ Ibid.

¹⁷ Footnote 13 to Appendix 6.5.



4.6 In particular, the above chart shows that there are around 32 hospitals of the 116 hospitals that fail the LOCI test, which actually pass the fascia count test, whilst there are a further 10 hospitals that pass LOCI but fail on fascia count. Indeed, the fact that some 37 per cent of the hospitals of "potential" concern fail one test but not the other provides further clear evidence that these metrics are not a reliable proxy for market power. Moreover, in relation to the [REDACTED] [CONFIDENTIAL] Ramsay hospitals that have been identified as having market power, there are [REDACTED] [CONFIDENTIAL] that pass at least one of the tests employed by the CC (and where those tests themselves exaggerate the degree of concentration for reasons stated elsewhere).

4.7 Accordingly, to continue using two different measurements of market power that do not conform in any meaningful way raises serious concerns as to the reliability and accuracy of the CC's local market analysis. These concerns are further compounded by the additive way in which the measures of concentration have been applied, as considered further below.

Additive nature of the tests

4.8 The issue relating to the low positive correlation between LOCI and the fascia count analysis is compounded by the additive way in which the CC has applied the decision rule as to which hospitals should be identified as being a potential concern.

4.9 In particular, the CC has identified hospitals of potential concern if they fail just one of the following tests, irrespective of whether they pass on all the others:

- (a) LOCI (patient share) and/or LOCI (revenue share) is below 0.6; and
- (b) fascia count (set of 16 specialities) and/or fascia count (oncology) is equal to or below 1.

4.10 As mentioned above, the low correlation between LOCI and the fascia count analysis means that there is significant variation between the two measures in terms of the hospitals identified as being of concern ([REDACTED] [CONFIDENTIAL] Ramsay hospitals [REDACTED] [CONFIDENTIAL] pass at least one of these tests).

- 4.11 The additive way in which the CC is applying these tests (i.e. by only focussing on the 'fails' and ignoring all the 'passes') in relation to both revenue and patient numbers means that the CC will be identifying many false positives (i.e. identifying concerns on the basis of one metric, when the other metrics suggest that such concerns do not exist). This approach will always result in too many local market concerns being identified, which provides a very clear demonstration of the role of confirmation bias on the part of the CC.
- 4.12 Accordingly, the CC has simply created a set of hospitals of "potential concern" that bears absolutely no relation to market power, and certainly not in relation to the [X] [CONFIDENTIAL] Ramsay hospitals that have been identified as having local market power.

5. **OVERSTATING THE IMPORTANCE OF RAMSAY'S HOSPITALS IN THE PROVISION OF PRIVATE TREATMENT**

- 5.1 It is clear from the CC's local market analysis that when considering the [X] [CONFIDENTIAL] allegedly problematic Ramsay hospitals, the CC has consistently overstated the importance of these Ramsay hospitals in relation to the provision of private treatment in its competitive assessment. In particular, when comparing the [X] [CONFIDENTIAL] Ramsay hospitals with those of rival operators, the CC has focussed on comparing the following metrics: "total number of admissions"; "total number of inpatients"; "total revenue"; and "total inpatient revenue".
- 5.2 All of these metrics include both NHS-funded (which is outside the scope of the investigation) and private treatment. As Ramsay conducts a higher proportion of NHS-funded treatment than other PH providers, this analysis presents a misleading picture of the importance of the Ramsay hospitals in the provision of private treatment, and more specifically, private inpatient treatment only (which is the focus of the CC's concerns) in those specific local areas, which represents a material error in the analysis.
- 5.3 **Please refer to the Confidential Appendix to this Annex for examples based on data which was disclosed by the CC pursuant to Confidentiality Undertakings.**