



**2015/16 National
Tariff Payment
System:
Engagement on
national prices**

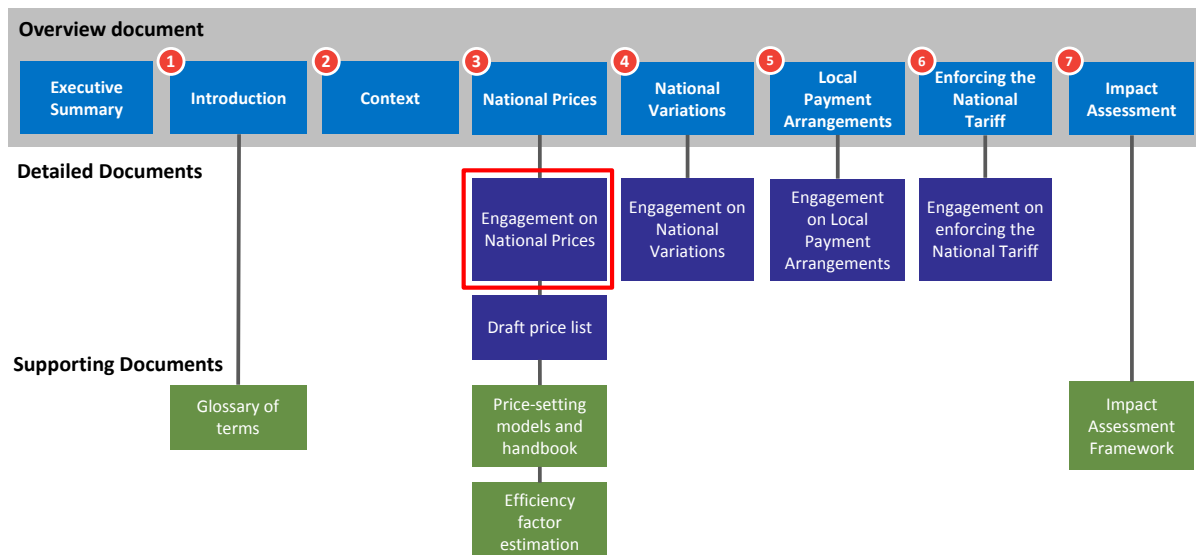
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1. Introduction

This paper describes Monitor and NHS England’s proposed changes to national prices set out in the [‘2014/15 National Tariff Payment System’](#). The process for setting national prices consists of defining the currencies that should be priced, the method for modelling national prices, and any adjustments made to determine final prices. Our proposals build on the options outlined in the [‘National prices methodology discussion paper’](#) (‘the methodology paper’) that we published on 25 April 2014, and the views that providers, commissioners, clinicians and other stakeholders provided in response to the methodology paper. This paper is part of a [set of engagement documents](#) we are publishing on the ‘2015/16 National Tariff Payment System’ (see Figure 1).

Figure 1: Map of ‘2015/16 National Tariff Payment System’ engagement documents



Alongside this paper we have published [preliminary draft national prices](#) and are interested in your comments on them. **These prices are not final – they illustrate proposed changes in prices relative to one another in 2015/16, and do not indicate what the final price levels will be.** The draft prices are issued for the purposes of this engagement exercise, and should not be used or relied on for any other purpose. For ease of comparison we have adjusted the draft national prices so that the weighted average price is the same as for 2014/15 national prices.

We are consulting on this basis for a number of reasons. For 2015/16 we are proposing to move away from the rollover method we used for 2014/15, and instead model prices using an updated version of the model the Department of Health (DH) used to set the [2013/14 Payment by Results \(PbR\) National Tariff](#). We also propose to use updated information as model inputs (including more recent Reference Costs). So we expect individual price levels, relative to one another, to be different in 2015/16 to what they were in 2014/15.

However, we do not yet have proposed values for any prospective cost adjustments (eg efficiency and cost uplift factors). We may also need to make further adjustments to the Reference Costs we use, to ensure that the proposed national prices that we consult on in the statutory consultation notice reflect the efficient costs of provision. These adjustments will be informed by the responses we receive to this engagement document and will be set out in the statutory consultation notice in the autumn.

Early versions of the draft prices were reviewed by the Health and Social Care Information Centre's (HSCIC) expert working groups of clinicians,¹ and their recommendations for manual adjustments to prices were shared with Monitor and NHS England's National Tariff Advisory Group (NTAG) for comment.² As this advisory group has only recently formed, members felt the group was not in position to undertake a review of the expert working groups' recommendations. Consequently, this review was undertaken by Monitor and NHS England staff. However, before we consult on the proposed national prices in the statutory consultation notice, we will ask NTAG to review the proposed prices and consider their advice.

1.1 Summary of proposals for national prices

This document sets out how we propose to calculate national prices for 2015/16. We have grouped these proposals into three categories:

- **National currencies:** We are proposing to update the currency design on which national prices are set to the 2011/12 Reference Cost design, with adjustments that were included in the 2014/15 national tariff. This will help keep national prices clinically relevant. We are also proposing to introduce national prices for four additional services, where new information allows us to do so. We are proposing to introduce a best practice tariff (BPT) for heart failure, and to move to more ambitious thresholds considered achievable by clinicians for four existing BPTs. These would encourage high-quality care and value for money. We are also proposing to update the way patients are grouped within the maternity pathway currency, and to update the lists of high-cost drugs and devices that are separately reimbursed.
- **Price-setting model:** We are proposing to model national prices from 2011/12 Reference Costs – the latest collection that closely matches the proposed currency design – rather than applying a rollover as we did for 2014/15. We are also taking steps to improve the quality and transparency of

¹ The expert working groups reviewed prices that were based on averaging three years of Reference Costs, while the prices published alongside this paper are based only on 2011/12 Reference Costs. The expert working groups were asked to comment on relative prices, rather than absolute levels.

² NTAG was set up by Monitor and NHS England to advise on the suitability of methods for setting national prices and national variations; and on the proposed policies for local payment arrangements. The group's membership consists of representatives from providers, commissioners, clinicians and HSCIC.

the modelling by applying extensive data cleaning rules to the Reference Cost inputs, engaging with clinician expert working groups and NTAG to identify any required adjustments to prices, as well as updating the short stay emergency tariff bands. We also want to ensure that prices are based on the appropriate cost level, and are interested in stakeholders' views on this issue.

- **Cost adjustments for national prices:** We are proposing to retain the approach used in previous national tariffs for indexing Reference Costs up to the tariff year, and for estimating the cost uplift factor. However, we will be engaging with the sector on any service development costs associated with new requirements in NHS England's Mandate, as appropriate. We are proposing to set a single efficiency factor, which stakeholders have told us is a reasonable approach given current data limitations. We are proposing an efficiency factor in the range of 3–5%, based on data from acute providers and our expectation that next year will require an exceptional effort from all parts of the sector, including providers, to overcome the financial challenge. We have also identified a number of potential policy measures we could use to address leakage and are looking to engage on this issue.

As part of our engagement on national prices, we encourage stakeholders to provide feedback on the potential impacts of the policy proposals in this document on groups with protected characteristics (as defined under the Equality Act 2010) or any other impacts on patients, including evidence that is relevant to identifying those impacts.

1.2 Structure of this document

The rest of this document is structured as follows:

- Section 2 reiterates the principles we apply when setting national prices
- Section 3 sets out our proposed changes to national currencies
- Section 4 outlines the price-setting model we propose to use as part of the proposed method for calculating national prices
- Section 5 describes the adjustments we are proposing to make to modelled prices to reflect efficient costs of providing NHS services
- The annexes provide additional information on our impact assessments of the proposals in this paper, and further detail on some of the proposals.

2. Price-setting principles

This section outlines the principles we propose to apply when setting national prices, as previously set out in the '2014/15 National Tariff Payment System' and in the methodology paper. Our aim is to set prices that encourage better and more cost-effective patient care within the budget available. We consider that two principles support this overall aim and reflect our statutory duties, best practice in price regulation and input from the sector. These principles are:

- prices should reflect efficient costs
- prices should provide appropriate signals

Both principles are explained below.

2.1 Prices should reflect efficient costs

In competitive or price-regulated parts of the economy, prices for a product or service generally reflect the resource costs of efficient provision. Consistent with our duties, and in particular Monitor and NHS England's duty in relation to ensuring that national prices for the provision of NHS healthcare services are set at a fair level for providers of the services,³ we consider that national prices should reflect the efficient costs of providing these services. 'Efficient costs' in this context means the costs that a reasonably efficient provider should expect to incur in supplying these services to the level of quality expected by commissioners.

Providers should be able to recover efficiently incurred costs (which will typically include provisions for the depreciation and financing of capital expenditure, as well as operating expenditure). Full recovery of efficient costs is particularly important for the long term, as it enables providers to invest in new equipment and innovation. To plan ahead effectively, providers need to be confident that efficiently incurred costs will be remunerated in full through national prices or local payment arrangements.

However, in setting prices we need to balance the need for prices to reflect efficient costs and the need for the National Tariff Payment System to be as simple and as transparent as possible. On one hand, a sophisticated approach that results in a proliferation of prices for different types of services and different types of patients may reflect underlying efficient costs more accurately than a system with fewer prices. However, it could be complex, hard to understand and relatively costly to administer. A simpler approach to setting prices, while reimbursing the total costs of all services, may reflect the underlying costs of individual services less accurately. The advantage of a simpler system is that it is easier to understand and operate, and cheaper to administer.

³ See, in particular, the Health and Social Care Act 2012 ('the 2012 Act'), section 119(1).

2.2 Prices should provide appropriate signals

When prices reflect efficient costs they signal to buyers the resource costs of a product or service. In the National Tariff Payment System, prices signal to commissioners the costs of each service they commission from providers. They also signal to budget-setters the overall cost of providing the desired scope of NHS services.

To ensure that the interests of people who use healthcare services are protected and promoted,⁴ it is important that national prices provide appropriate signals to commissioners, providers and budget-setters to inform crucial decisions about NHS services. We want the national tariff to enable better patient care for a given budget. So the signals sent by prices are appropriate if:

- they encourage commissioners to make the most effective use of available budgets, ie they enable commissioners to make the best decisions about the mix of services likely to offer the highest value to their local population
- they incentivise providers to reduce their unit costs by finding ways of working more efficiently.

We are mindful that, in aiming to serve patient needs better, we may have to balance short-term and long-term considerations. We also recognise that setting national prices either above or below efficient costs may not be in the interest of patients. The former may disadvantage patients by reducing the volume of services that commissioners can purchase, and may also reduce the incentive for providers to find cost savings. The latter may not adequately compensate providers for the cost of services, potentially leading to withdrawal of services, compromise on service quality, and/or under-investment in the future delivery of services. Prices that are too low may also result in commissioner over-purchasing those services at the expense of purchasing other services.

⁴ 2012 Act, section 62(1).

3. National currencies

This section outlines our proposals for the currencies for which we intend to set national prices in 2015/16. Currencies are specifications of health services, used as the basis for payment for NHS healthcare services. The national tariff sets out the currencies for the services that are subject to national prices, as well as some currencies to be used for local price-setting. For admitted patient care, the currencies used are Healthcare Resource Groups (HRGs), which group together diagnoses, treatments and care for a spell of care. The specified groups are intended to reflect similar levels of utilisation of resources by providers. These HRG groupings are updated regularly to reflect changes in clinical practice and to refine the way in which they are designed.

For the 2015/16 national tariff, we propose to:

- base national prices on the HRG design that formed the basis of the 2011/12 Reference Costs collection, with updates to the design to reflect any additional currencies that were included in the 2014/15 national tariff
- introduce new national prices for four groups of treatments, under four HRGs that were not priced in 2014/15
- introduce a new best practice tariff (BPT) for heart failure, and make amendments to the criteria of four existing BPTs
- update the way patients are grouped within the maternity pathway currency
- add 35 drugs and one device to the high-cost drugs and devices list, and adjust the national price of one HRG for the cost of drug eluting balloons.

Questions:

1. Do you agree with our proposal to introduce new national prices for:
 - a. complex therapeutic endoscopy?
 - b. dialysis for acute kidney injury?
 - c. cochlear implants?
 - d. Transcatheter Aortic Valve Implantation (TAVI)?
2. Do you agree with our proposal to introduce a new best practice tariff for heart failure that is based on one or more of the identified care processes?
3. Do you agree with our proposal to move to more ambitious thresholds on the best practice tariffs for:
 - a. hip and knee replacement?
 - b. endoscopy procedures?
 - c. operations to manage female incontinence day case procedures?
 - d. tympanoplasty day case procedures?
 - e. diagnostic hysteroscopy outpatient procedures?
4. Do you agree with our proposal to add six factors to the maternity pathway currency, to improve allocations?
5. Do you agree with our proposed additions to the high cost drugs list?

3.1 HRG-based currency design

Clinical practice evolves over time, with changes to the mix of services and how they are carried out. These changes have implications for the costs of treatment.

Similarly, the HRG design on which Reference Costs are reported is updated every year by HSCIC. The various designs carry identifying labels – for example, the 2010/11 design on which the 2013/14 and 2014/15 national tariffs were based is called the ‘HRG4’ design.

In order to continue to set prices to reflect efficient cost of providing services, currencies and the costs reported under them need to be internally consistent and kept up to date. This means we must identify the most appropriate HRG design on which to set the scope for national prices, and the corresponding Reference Costs on which to base national prices.

In the methodology paper we set out three options for HRG design for the 2015/16 national tariff:

1. base prices on the HRG4 2010/11 Reference Cost design, in line with the 2013/14 and 2014/15 national tariffs
2. update to the HRG4 2011/12 Reference Cost design
3. update to the HRG4+ 2012/13 Reference Cost design.

We expressed a preference for the second option, noting that the impact of moving to the latest available design (HRG4+ 2012/13 Reference Costs) was too uncertain at present and required further work, and that retaining the 2010/11 design would mean prices would be based on a design and corresponding cost data that is five years old, and may not adequately reflect the situation in 2015/16.

The majority of responses to the methodology paper supported our preference as reasonable in the circumstances. In light of this feedback we are proposing to use the 2011/12 Reference Costs design as the basis for setting 2015/16 national prices.⁵ The proposal would introduce greater granularity, resulting in around 200 new or changed HRGs that would require a national price.

We also note that many stakeholders also sought early engagement on a potential future move to the HRG4+ design, so that we and the sector could work through the potential impacts of such a move. We agree that this is important and will continue to engage on a potential future move to the HRG4+ design.

In addition to using the 2011/12 Reference Cost design as the basis for 2015/16 national prices, we are also proposing to retain additional currency design adjustments that were included in the 2014/15 national tariff. These additional

⁵ HSCIC, [‘HRG4 2011/12 Reference Costs Grouper Documentation’](#).

changes are set out in Table 1. They are also captured in HSCIC's engagement grouper.⁶

Table 1: Additional adjustments to currency design included in 2014/15 national tariff

Code	Treatment
LB63A	Major Open or Laparoscopic, Kidney or Ureter Procedures, 18 years and under with complications and comorbidities (CC)
LB63B	Major Open or Laparoscopic, Kidney or Ureter Procedures, 18 years and under without CC
LB60A	Complex Open or Laparoscopic, Kidney or Ureter Procedures, with Major CC
LB60B	Complex Open or Laparoscopic, Kidney or Ureter Procedures, without Major CC
LB61A	Major Open Kidney or Ureter Procedures, 19 years and over with Major CC
LB61B	Major Open Kidney or Ureter Procedures, 19 years and over without Major CC
LB62A	Major Laparoscopic Kidney or Ureter Procedures, 19 years and over with CC
LB62B	Major Laparoscopic Kidney or Ureter Procedures, 19 years and over without CC
LB74Z	Implantation of Penile Prosthesis
NZ13A	Planned Lower Uterine Caesarean Section with CC
NZ13B	Planned Lower Uterine Caesarean Section without CC
NZ14A	Emergency or Upper Uterine Caesarean Section, with CC
NZ14B	Emergency or Upper Uterine Caesarean Section, without CC
SC97Z	Same Day External Beam Radiotherapy Admission or Attendance

Preliminary impact assessment

It is difficult to isolate the impacts of adopting the proposed HRG design from the impacts of using 2011/12 Reference Costs as the basis for calculating national prices (see Section 4 for more detail). Below we discuss our preliminary qualitative assessment, while Section 4 and Annex A outline the combined preliminary quantitative assessment of the combined effect of the proposed HRG design change and the proposed use of 2011/12 Reference Costs to set national prices.

The main benefit of moving to the proposed HRG design is to make prices reflect costs more accurately. Specifically, the proposed currency design will define service units that reflect more up-to-date clinical practice. This means that the relative costs of each HRG (the basis for relative prices), as reported by the data, should more closely align with the actual costs associated with treating individual patients.

⁶ The grouper is [available here](#).

In practice, this means that the national tariff should deliver better value for money. Commissioners will have a better understanding of the costs of individual services, which will help them to make better purchasing decisions on behalf of patients. Providers can be more confident that payments from commissioners will cover the costs of the most up-to-date clinical practice.

These important benefits will come at some cost. Change always brings at least some disruption to the way services are currently remunerated, and this may particularly affect providers with a narrow range of services. We may consider transitional arrangements if disruption could have an adverse impact on patients.

An important risk in this area is that our currency design proposal for 2015/16 could end up being inconsistent with the longer term design of the national tariff.⁷ It is possible that the 2011/12 design is influenced by factors that are unusual or inconsistent with the long-term direction of clinical practice or service costs. This risk is greater at the level of individual HRGs or sub-chapters. It is also one of the areas where we need feedback from interested stakeholders to highlight the risks and possible consequences of our proposals.

3.2 Proposed new national prices⁸

The national tariff provides a consistent basis for commissioning services from providers. Having nationally-set prices can help clinical commissioning groups (CCGs) and specialised commissioners by reducing the need for local negotiations. National prices also set consistent incentives across services for providers to deliver unit cost reductions, through the application of the efficiency factor (see Section 5). For these benefits to be realised, we need activity to be correctly specified and priced. Given the HRG design available and the additional information gathered through Reference Costs, we have two options regarding the scope of prices:

1. leave the scope of national prices as it is in the proposal in Section 3.1
2. introduce additional new prices⁸ where activity and prices can be correctly specified.

We note that not all currencies in a particular HRG design are currently priced. There are a number of reasons for this, including uncertain or inappropriate specification of some HRGs, and uncertain or inappropriate cost estimates for others.

In deciding whether to develop new prices, we need to weigh the benefits (such as increasing the likelihood of prices reflecting efficient costs of service) against the costs and risks (for example, whether relative prices are accurate). To do so, we

⁷ Note that we are currently developing our vision for the design of the long-term national tariff and will be engaging on this in due course.

⁸ Note that in this section we are only discussing proposals for new national prices that are in addition to new prices arising from the proposed use of the 2011/12 Reference Costs design.

have engaged with commissioners. Additionally, clinicians have had input into the refinement of the HRG design through their engagement with the HSCIC.

Based on our engagement, we have identified three additional HRGs where we believe the activity is now correctly specified. For 2015/16, we are proposing to introduce national prices for these HRGs:

- complex therapeutic endoscopy
- dialysis for acute kidney injury
- cochlear implants.

The design has had considerable clinical engagement to ensure that appropriate activity is identified. We are also proposing to introduce a national price for Transcatheter Aortic Valve Implantation (TAVI). We now have additional information about the costs of this service, of which the medical devices used make up a significant share. The services with proposed new national prices are listed in Table 2.

Table 2: Proposed HRGs to introduce as new national prices

Treatment	HRG code
Complex Therapeutic Endoscopy	FZ89Z
Dialysis for Acute Kidney Injury	LE01A (19+), LE01B (<18),
Cochlear Implants	CZ25A (unilateral) CZ25B (bilateral)
TAVI	EA53Z

Following inputs from clinicians, we are also considering whether changes need to be made for photodynamic therapy (HRG chapter J) and complex colonoscopy (HRG chapter R), as we are aware of improved designs in the HRGs that would potentially improve the recognition of activity. We have not set out a proposal in this document since we still need to assess whether the data is of sufficient quality for us to make such changes.

We have performed a preliminary assessment of the impact of these proposed new national prices. We expect the main benefit will be improved transparency in setting prices for these services, while the main cost will be a small administrative cost associated with introducing these new national prices. If these prices are not appropriate in specific circumstances, providers and commissioners could adjust prices locally by agreeing local variations or local modifications. Further detail on our preliminary assessment is provided in Annex A.

3.3 Best practice tariffs

BPTs are currencies with national prices designed to incentivise high quality and cost-effective care. They aim to reduce variation in the care patients receive by

encouraging the adoption of best practice standards (for example, as defined by the relevant clinical bodies), or to incentivise shifting of care to lower-cost settings.

We have reviewed all existing BPTs and, unless stated below, we intend to roll forward all of them, with updates for latest input data (such as latest Reference Costs) and the updated HRG design. However, these updates are not yet fully reflected in the preliminary draft national prices published alongside this paper. As a result, some of the published draft prices for some BPTs are based on a rollover of 2014/15 prices, and for a small number of BPTs associated with the new HRGs we have not published a draft price. We intend to propose updated prices for these in the statutory consultation notice.

The changes we are proposing for the 2015/16 national tariff are to introduce a new BPT for non-elective heart failure admissions, and to make amendments to four existing BPTs:

- primary hip and knee replacements
- endoscopy procedures
- day case procedures
- outpatient procedures.

For these BPTs, the draft national prices published alongside this paper still reflect the methodology used for 2014/15.

New heart failure BPT

Heart failure is currently one of the most common reasons for emergency admissions and accounts for more than a million bed days per year in the UK. The National Institute for Health and Care Excellence (NICE) published a guideline on the management of chronic heart failure in August 2010.⁹ A guideline on the management of acute heart failure is currently in consultation.¹⁰ In addition, NICE has issued a Quality Standard on heart failure, which covers both primary and secondary care.¹¹

There is evidence of poor outcomes for people with heart failure.¹² These outcomes may be improved by more consistent implementation of NICE guidelines. We have noted variation in the implementation of the NICE guidelines and adherence to the NICE Quality Standard, as measured by the National Heart Failure Audit. We consider that the national tariff may be able to incentivise better adherence to NICE

⁹ NICE, '[Chronic heart failure: Management of chronic heart failure in adults in primary and secondary care](#)'

¹⁰ NICE, '[Acute heart failure](#)'

¹¹ NICE, '[Chronic heart failure quality standard](#)'

¹² For example, Department of Health, '[Cardiovascular Disease Outcomes Strategy](#)'

guidance through the application of a BPT. We are, therefore, proposing to develop a new BPT for emergency admissions to secondary care with a primary diagnosis of heart failure (HRGs: EB03H and EB03I). We are proposing to use the National Heart Failure Audit data as the source for measuring best practice for heart failure care in secondary care.

To develop our proposals for the potential design of this BPT, we consulted with heart failure specialists, the National Heart Failure Audit team, healthcare providers and commissioners, as well as receiving input from NHS England's National Clinical Director for heart disease. Stakeholder engagement to date has highlighted the following care processes as important in the provision of care for patients with heart failure, which could be considered when designing a BPT:

- specialist input
- timely diagnosis (echocardiography)
- treatment with appropriate medication (ACE-I/ARBs and Beta blockers)
- discharge arrangements
- submission of data to the National Heart Failure Audit.

The first four are consistent with the NICE guidelines and Quality Standard, and are measured by the National Heart Failure Audit.¹³ Clinical engagement to date has emphasised specialist input as being particularly important to patient outcomes.

We are considering two options for a possible heart failure BPT:

1. a BPT that includes submitting data to the National Heart Failure Audit as the only best practice criterion
2. a BPT that includes one or more of the recommended care processes above in addition to submitting data to the National Heart Failure Audit.

Under the first option, the full BPT price would be paid if the provider submitted the required data to the National Heart Failure Audit, while a lower price would be paid if the provider did not submit the required data. We note that submitting data to the Audit should be a part of the regular provision of care. This option would incentivise a flow of information that would make it possible to assess whether the other four care processes are followed, which could inform future BPT design changes.

Under the second option, we could adopt one of two potential approaches:

- The full BPT price would be based on the methodology used to set national prices and be paid if the provider fulfilled the best practice criteria (ie one or

¹³ See the National Heart Failure Audit's [website](#)

more of the care processes and submitting data to the Audit), while a lower price would be paid if the provider did not fulfil the criteria.

- The full BPT price would be set above the price implied by the methodology for national prices and be paid if the provider fulfilled the best practice criteria, while a lower price would be paid if the provider did not fulfil the criteria. Under this approach, the two price levels would be set such that expected total expenditure on heart failure would remain unchanged.

We are proposing to link payment of the BPT to requirements of data submission and one or more of the care processes (option 2). We recognise the need to mitigate the potential adverse consequences identified above, and intend to set criteria that are reasonable and achievable. We are interested in views on the proposal and how to mitigate any potential adverse consequences.

Our preliminary qualitative assessment of the impact of introducing a BPT for heart failure in general (rather than any specific BPT design option) indicates that the likely benefit for patients appears to outweigh the costs and risks. We do not expect the changes to have a significant impact on providers' overall financial position. Further detail on our preliminary assessment is provided in Annex A.

However, there are implementation risks that we need to balance against the potential for better patient outcomes. If the requirements of this BPT are too onerous, or if we underestimate the cost to providers of implementing them, then providers may not be able to cover their costs. Such a situation would not be sustainable, and would not be in patients' interests, because providers might scale back or withdraw services.

Primary hip and knee replacement BPT

In the 2014/15 national tariff we introduced the first currency based on patient outcomes. The purpose of the BPT for primary hip and knee replacements is to link payment to the outcomes that are important from the patient's perspective. The aim of these BPTs is to reduce the unexplained variation between providers in the outcomes reported by patients.

Payment of the BPT for primary hip and knee replacement surgery is conditional on criteria linked to data collected through the National Joint Registry (NJR) and Patient Reported Outcome Measures (PROMS).

The thresholds for payment of the BPT in 2014/15 are:

- a minimum NJR compliance rate of 75%
- an NJR known consent rate of 75% (where patient consent was recorded as a 'yes' or 'no')
- pre-operative PROMs response rate of 50% or more

- the provider achieving an average health gain that is not significantly below the national average.¹⁴

The minimum thresholds for data submissions described above were intentionally set lower than those providers should aspire to. This was intended to allow providers time to adopt mechanisms needed to improve submission rates.

We signalled in the '2014/15 National Tariff Payment System' that the minimum thresholds were likely to increase in future years. We are proposing to raise the NJR thresholds for 2015/16. In considering potential changes, we have engaged with the NJR, NHS England's PROMS team and the HSCIC, as well as receiving input from clinical advisors including the National Clinical Director for musculoskeletal conditions.

We considered three options for amending this BPT:

1. keeping the NJR thresholds unchanged at 75%
2. increasing the NJR threshold to 85%
3. increasing the NJR threshold to 95%.

The submission of NJR data is already mandated and some stakeholders engaged to date support increasing the threshold to 90-95%. We consider that the long-term objective should be to bring the BPT into line with these recommended thresholds. However, as a transition measure we propose an intermediate increase in accordance with the second option. The purpose of this change would be to ensure that the BPT continues to act as lever for quality improvement. By increasing the achievement target for the NJR, we expect that outcomes from services will also improve.

We expect that there would be benefits for individual patients through higher quality care, but we also recognise that there may be costs to providers and implementation risks. Our preliminary assessment is that expected patient benefit are likely to outweigh the costs and risks, but we are interested in collecting further evidence and views from stakeholders to make sure that the implementation of the proposed change to the BPT is appropriate. Further detail on our preliminary assessment is provided in Annex A.

In light of the above:

- we are proposing to increase the threshold for NJR compliance and consent to 85% in 2015/16

¹⁴ Defined as 3 standard deviations (99.8% significance) below the mean and termed an 'alarm' in the PROMs publication.

- we are considering whether the best practice criteria linked to PROMS data should also change, and would welcome views on this.

Endoscopy procedures BPT

The endoscopy procedure BPT was introduced in 2013/14 to encourage endoscopy units to achieve and maintain the required quality levels to meet the Joint Advisory Group's (JAG) accreditation standard for endoscopy services. JAG accreditation provides formal recognition that an endoscopy service meets required competence and delivers against measures in the endoscopy global rating scheme.

When the BPT was introduced, payment of the best practice price was made both to those units fully accredited and those assessed to be working towards accreditation. These arrangements were put in place for 2013/14 in recognition of the lead-in time required to gain full accreditation, with the intention of reviewing the arrangements in future years. For those units not engaged in the accreditation process, or those which are judged to have failed, a price 5% below the best practice price applied. These arrangements were retained for the 2014/15 national tariff.

Although the proportion of endoscopy units achieving full accreditation has improved since the introduction of the BPT, there remain units that have not met the necessary standard, or that have not engaged in the accreditation process. To provide additional incentives for units to meet necessary standards, we considered two possible changes for 2015/16:

1. changing the rules for payment of the BPT from a two-tier to a three-tier payment structure
2. changing the price differentials applied to the BPT.

JAG provides three levels of site accreditation, as set out in Table 3.¹⁵

Table 3: JAG accreditation levels

Level	Description
Level 1	Units have met the necessary standard for full JAG accreditation, or are in a period of accreditation award deferral
Level 2	Units have been assessed as not meeting all of the JAG criteria. However, they have provided evidence to JAG of progress in addressing issues and will be reassessed within a specified timeframe
Level 3	Units have been assessed as not meeting the minimum standard, or are not participating in the JAG accreditation scheme

Source: JAG

We have considered three possible options for amending the BPT. These options have been developed with input from JAG and the National Clinical Director for

¹⁵ Further details regarding the accreditation process are available on the JAG [website](#).

Diagnostics and Imaging, who argue that a move to the three-tiered system will incentivise further improvements in endoscopy services. The options are:

1. No changes to the existing BPT rules. Units achieving JAG accreditation levels 1 or 2 will continue to receive full payment of the BPT. Level 3 units would receive a price 5% below the BPT.
2. Only units achieving JAG accreditation status level 1 will receive the full BPT price, with 2.5% and 5% reductions for levels 2 and 3, respectively.
3. Only units achieving JAG accreditation status level 1 will receive the full BPT price, with 5% and 10% reductions for levels 2 and 3, respectively.

We are proposing to implement the third option.

Our preliminary assessment of the impact of the proposed changes to this BPT is that patient benefits through likely improvement in quality of care would outweigh any costs and risks. We do not expect the changes to have a significant impact on providers' overall financial position. We are interested in collecting further evidence and views from stakeholders to make sure that the implementation of the BPT is appropriate.

Further detail on our preliminary assessment is provided in Annex A.

Day case procedure BPT

The day case procedure BPT aims to increase the proportion of elective activity performed as a day case, where clinically appropriate. Performing procedures as a day case offers advantages to both the patient and provider. For many patients it is safer and more convenient to be treated in a day case setting, while the local health economy benefits from reduced pressure on admitted patient beds.

The BPT is made up of two prices for each procedure: one applied to day case admissions and one applied to ordinary elective admissions. By paying a relatively higher price for day case admissions, the BPT creates an incentive for providers to treat patients as day case patients.

The British Association of Day Surgery (BADs) publishes a directory¹⁶ of procedures that are suitable for day case admissions along with proportions that it believes are achievable in most instances. Procedures selected for this BPT were chosen as they are high volume and have day case proportions that currently vary significantly between providers.

For some procedures, the target proportion used to calculate the relative prices currently differs from the BADs proportion. Clinical stakeholder engagement at the

¹⁶ See the BADs [website](#).

time of introduction suggested the BADS proportions could have been too ambitious for providers to achieve immediately, so transitional targets were put in place for some procedures.

We have reviewed the BPTs that use transitional proportions and are proposing to recalculate the BPT prices based on the BADS proportions for two procedures where national performance has improved to meet the transitional targets (as shown in Table 4):

- operations to manage female incontinence (HRG: LB51Z)
- tympanoplasty (HRGs: CZ10U, CZ10V, CZ10Y).

Table 4: Achieved and target rates for day case BPTs

	Target in 2014/15 national tariff	Achieved in 2012/13	Achieved in 2013/14 (part year)	BADS achievable proportion	Proposed target for 2015/16
Operations to manage female incontinence	45%	48%	50%	60%	60%
Tympanoplasty	50%	39%	45%	80%	80%

Sources: BADS, and NHS England analysis of HES data.

These updates have been discussed with leading clinicians involved in the initial development of the BPTs, who agree the proposed proportions are achievable and that the BPTs should target these in 2015/16. In some instances the achievable proportions are significantly higher than those actually achieved according to the latest available data. We welcome views on whether the proposed changes are achievable for 2015/16.

We have performed a preliminary qualitative assessment of the impact of the price changes for this BPT. The effect of the proposed change in proportions would be to reduce national prices for these services, all other things being equal. The proposal should have a positive impact on patients generally by encouraging the delivery of care at a lower cost, so more patients would benefit from the same level of expenditure by commissioners. The proposal should have very little impact on providers if they meet the targets.

The proposed changes should create little or no administrative burden. We would not seek to change the specifications of the services, or the way that the payment system operates. The only change is to price levels.

We recognise the risk that our proposed targets could be too high or too low. If, as a result of the proposed changes, prices are too low there is a risk that the change would have a negative impact on providers' financial position, or that it could (unintentionally) incentivise compromises on quality of care.

Overall, our preliminary qualitative assessment is that the potential benefit of this proposal outweighs the risks. We are, therefore, proposing to change the target proportions to those specified in Table 4. Further detail on our preliminary assessment is provided in Annex A.

Outpatient procedure BPT

The outpatient procedure BPT aims to increase the proportion of elective activity performed on an outpatient basis, where clinically appropriate. Performing procedures in an outpatient setting offers advantages to both the patient and the provider. Outpatient procedures provide the patient with a quicker recovery, as well as allowing the patient to recuperate at home. There are also wider benefits of performing an outpatient procedure, importantly that patients can get back to work and daily life sooner. Providers benefit from reduced operating theatre and anaesthetic time.

It is recognised that patient choice and need must be accounted for, and not all cases of these procedures will be suitable for the outpatient setting. Expert clinical advice has suggested the proportion of procedures which may safely be performed in an outpatient setting.¹⁷

For one of the procedures covered by the outpatient BPT (diagnostic hysteroscopy), the target proportion used to calculate the relative prices differs from those thought ultimately to be achievable. Clinical feedback at the time of introduction suggested the achievable proportion may be too ambitious for providers to achieve immediately, so the BPT was introduced with a transitional target proportion.

We have reviewed the outpatient BPT for diagnostic hysteroscopy (HRG: MA21Z) and since national performance has now caught up with the transitional target (see Table 5), we are proposing to recalculate the BPT price based on the proportion thought to be achievable.

Table 5: Achieved and target rates for outpatient BPT

	Target in 2014/15 national tariff	Achieved in 2012/13	Achieved in 2013/14 (part year)	Achievable proportion	Proposed target for 2015/16
Diagnostic hysteroscopy	60%	58%	59%	80%	80%

Sources: Clinical advice and NHS England analysis of HES data

The amendment has been discussed with leading clinicians involved in the initial development of the BPTs who agree the proposed proportions are still relevant and that the BPTs should target these in 2015/16. We welcome views on the

¹⁷ Clinical advice to supplement evidence for diagnostic hysteroscopy, by Gulumser C, Narvekar N, Pathak M, Palmer E, Parker S, Saridogan. *See-and-treat outpatient hysteroscopy: an analysis of 1109 examinations*. Reprod Biomed Online.

appropriateness of using these levels in the BPT for 2015/16 and if there are other barriers or considerations we should take into account.

We have undertaken a preliminary qualitative assessment of the impact of changes to this BPT. The costs, benefits and risks of the proposal are similar to those for the proposed change to the day case BPTs. Our preliminary assessment is that the potential benefit of this proposal outweighs the risks. Further detail on our preliminary assessment is provided in Annex A.

3.4 Maternity pathway payment

The maternity pathway payment was first mandated from April 2013 to encourage providers to focus on the provision of high-quality, co-ordinated care. It has wide support in principle, but stakeholders have suggested a number of potential improvements to the currencies used in the pathway payment, and raised a number of implementation issues.

We reviewed the suggestions and for 2015/16 are proposing six additions to the factors that are used to assign the correct antenatal pathway currencies to women. These factors are listed in Table 6.

Improving the allocation of the right pathway to women will improve the way that providers are reimbursed for the care they give. It should also make the pathway allocation more clinically intuitive.

Table 6: Factors considered for inclusion in 2015/16 pathway

Factor	Proposal for 2015/16
Cystic fibrosis	Add this factor to the intensive pathway
Previous organ transplant	Add this factor to the intensive pathway
Serious neurological conditions (not epilepsy as this is already in the intermediate pathway)	Add this factor to the intensive pathway
Serious gastroenterological conditions	Add this factor to the intermediate pathway
Body mass index (BMI) >49	Add a factor of BMI>49 to the intensive pathway
Women with a low pregnancy-associated plasma protein A (PAPP-A) reading	Add this factor to the intermediate pathway

This proposal would not impact on total funding allocation to maternity services. For a given set of inputs into our price-setting model (specifically, Reference Costs for maternity services, and the number of women given birth in the corresponding year as recorded in HES), the proposal would result in lower prices for each of the three pathways. That is because the model would assume that more women will be allocated to the (more expensive) intermediate and intensive pathways by providers.

We have used HES data on comorbidities recorded at delivery and research data¹⁸ to estimate the effect of the proposed change on allocations of the pathways, which is shown in Table 7.

Table 7: Expected change in allocation to maternity pathways

Pathway	Allocations based on current factors	Expected allocations based on proposed changes
Standard	65.5%	64.0%
Intermediate	27.3%	28.2%
Intensive	7.1%	7.8%

Sources: NHS England analysis of HES data

Stakeholders have also told us about a number of implementation issues; including payment for foetal medicine, cross-provider charging and information flows. We will be issuing supplementary guidance to help providers address some of these concerns. We are also exploring options for giving women more control and choice over how they access maternity services.

3.5 High-cost drugs and devices

A number of high-cost drugs and devices are named within the national tariff for separate reimbursement¹⁹ – ie their costs are not included in the national prices for the relevant services, and their reimbursement is subject to the rules for local prices. These items have a particularly high cost relative to the national price of the service they are used for, and their use is concentrated among a relatively small number of providers. Including these drugs and devices in the national prices proportionately to their use would systematically under-reimburse the providers whose patients require them, and over-reimburse those providers whose patients do not.

Updating the list keeps the national tariff clinically relevant and responds to changes in treatment for patients. This would ensure that providers can use the most appropriate care for patients. Additionally, keeping the list current encourages competition between manufacturers, resulting in lower prices and better value for money in the NHS.

¹⁸ Centre for Maternal and Child Enquiries (CMACE), (2010), '[Maternal obesity in the UK: Findings from a national project](#)'; Knight, M. et al, 'Extreme obesity in pregnancy in the United Kingdom', *Obstet Gynecol*, 2010,115(5), pp.989-97.

¹⁹ [2014/15 National Tariff Payment System: Annex 7B - High cost drugs, devices and listed procedures](#)

Proposed additions to the list of high-cost drugs and devices

In order to be included on the list, a drug needs to meet the following criteria:

- the drug and its expected associated costs of care are disproportionately high compared to the other expected costs of care within the HRG, which would affect fair reimbursement
- there is, or is expected to be, more than £1.5 million spend or 600 cases in England per annum.

For devices, the criteria are necessarily less prescriptive, as there is less information available on each device. The criteria used are:

- the device is high-cost and represents a disproportionate cost relative to the relevant HRG
- the device is used in a subset of cases within an HRG and/or used in a subset of providers delivering services under a specific HRG.

To identify whether any new drugs and devices that have been recently adopted or become available to the NHS should be proposed for inclusion on the high cost list:

1. We compiled a comprehensive list of new drugs and devices based on evidence from NICE, submissions to an HSCIC portal, the UK Medicines Information's list of drugs that are likely to be launched in the UK in the near future, and the British National Formulary.
2. We then asked steering groups consisting of NHS and industry representatives to consider the list of new drugs and devices against the criteria identified above.

Based on the steering groups' recommendations, we are proposing to add 35 drugs to the high-cost drugs list (see Annex B for the list of drugs) and to add subcutaneous Implantable Cardioverter-Defibrillator (ICD) to the existing ICD exclusion in the high-cost devices list.

We are also considering whether any drugs or devices should be removed from the 2014/15 list, and whether categories of drugs associated with the BPT for chronic kidney disease that are separately reimbursed should be updated.

Proposed adjustment to national prices

In some circumstances it is appropriate to adjust the national price of an HRG to take account of the cost a drug or device that has been introduced after the relevant Reference Costs were collected. In particular, this would be the case where NICE guidance recommends using the drug or device, or if there is expectation that the drug or device would be used widely.

Drug eluting balloons²⁰ (HRG EA31Z) have been introduced after 2011/12 Reference Costs were collected, and are expected to be widely used across many providers. Consequently, we propose to adjust the national price to reflect the cost of the device.

²⁰ NICE, [‘SeQuent Please balloon catheter for in-stent coronary restenosis’](#)

4. Price-setting model

In this section we set out our proposed approach to modelling national prices for 2015/16. These proposals build on the options we set out in the methodology paper and the feedback we received on them. Specifically, for 2015/16 we are proposing to:

- model prices from updated Reference Costs, rather than applying a rollover (as we did for 2014/15)
- use an updated version of the price-setting model used by the DH to set the PbR national tariff for 2013/14
- base prices on 2011/12 Reference Costs
- apply a comprehensive set of data cleaning rules in order to improve the quality of the inputs into the model
- use Hospital Episode Statistics (HES) activity data grouped by HSCIC to the appropriate HRG design
- update the methodology for calculating the short stay emergency (SSEM) tariff bands, as well as the inputs into the calculation
- apply a transparent process for any manual adjustments to modelled prices, which is informed by comments from HSCIC's clinical expert working groups
- model prices for new or modified HRGs on the same basis as for HRGs with existing prices.

We discuss each of these proposals in turn in this section. Additionally, we raise in this section the question of what is the right level of Reference Costs on which we should base national price. We are looking for input from stakeholders' on how to resolve this issue.

In addition to the model described in this section, the proposed method for determining national prices would include the cost adjustments set out in Section 5. Those adjustments would be applied to the figures produced under the model discussed in this section, to produce the final proposed national prices.

Questions:

6. Do you have any views on how we should identify the appropriate cost level on which to set prices; including which costs, if any, should be stripped out of the Reference Costs used to model national prices?
7. Do you have any comments on the proposed data cleaning rules, and the proposed process for manual adjustments to modelled national prices?
8. Do you agree with our proposed changes to the SSEM bands and eligibility?

4.1 Modelling approach

In the methodology paper we said that we could either calculate national prices from updated Reference Costs, or apply another ‘rollover’ in which 2015/16 national prices would be calculated by adjusting the 2014/15 national prices for the efficiency and cost uplift factors. We expressed a preference for the former option, as we feel it is important to keep prices in line with clinical practice. Respondents to the methodology paper largely supported our preference. In light of the feedback, we are proposing to base 2015/16 national prices on updated Reference Costs.

In the methodology paper we also outlined the modelling options available to us: either developing and updating a model which follows that used by the DH to set national prices for 2013/14 (the last time prices were modelled from costs), or developing a new model from scratch. We expressed a preference for the former since it would be a significant task to develop a new model in the time available, and the DH model has been used for a number of years and is broadly understood by the sector. The majority of responses to the methodology paper supported our preference and considered it reasonable given current constraints. In light of the feedback, we are proposing to calculate 2015/16 national prices using a model developed on the basis of the DH PbR model for 2013/14. In the remainder of the section we discuss the updates we are proposing to make to that model for 2015/16.

Where we are not able to replicate the modelling approach used to set the 2013/14 national price, we are proposing that 2015/16 national prices will be calculated by applying either:²¹

- a rollover of the 2014/15 national price, in order not to introduce an unexplained discontinuity in prices (eg the BPT for paediatric epilepsy), or
- the principles (rather than the exact method) employed in the DH method (eg SSEM – see below).

4.2 Managing model inputs

It is important that the model we use for national prices is both transparent and produces prices that accurately reflect efficient costs of provision. To achieve this, inputs to the model need to be of the highest achievable quality. In this section we discuss our approach to ensuring high-quality inputs. This covers:

- Reference Cost inputs
- data cleaning rules applies to Reference Costs

²¹ Which of the alternative approaches we will apply will depend on the circumstances. In exceptional circumstances we are proposing to apply a bespoke solution if any of the solutions cited here are not appropriate.

- how we determine the appropriate cost base from which to calculate national prices
- HES activity data
- updating the SSEM tariff bands.

Reference Cost inputs

In the methodology paper we stated that our main objective is to create a more stable and reliable tariff, and we think that there are changes we could introduce to the model for 2015/16 that would mitigate the potential for inappropriate price volatility from year to year. One of the changes we discussed was using an average of Reference Costs from a number of years in order to set national prices. We expressed a preference for using this approach where possible and appropriate.

A broadly equal number of respondents to the methodology paper were for and against this option. Respondents noted a number of concerns in using averaged three-year Reference Cost data, including:

- using data from years other than the most recent would mean that improvements in Reference Cost quality would not be fully reflected in prices
- similarly, any changes in clinical practice, innovation and efficiency might not be fully reflected in national prices
- considerable judgment would be required in deciding what weight to use for each year.

Even respondents who supported the approach in principle noted that additional work needed to be done, especially to understand the impact of using averaged Reference Costs, before the approach could be adopted. Our own analysis did not show a significant difference in price volatility between using averaged Reference Costs (2010/11, 2011/12 and 2012/13) and using 2011/12 Reference Costs. In light of our own analysis and stakeholder feedback, we are proposing to base 2015/16 national prices on Reference Cost data from a single year.

Some stakeholders preferred setting prices on the latest available data – 2012/13 Reference Costs. However, since those costs are reported on the basis of an HRG4+ currency design, they are not well aligned with the proposed currency design for the 2015/16 national tariff (as described in Section 3). Basing prices on 2012/13 Reference Costs would require remapping the costs onto the 2015/16 currency design (which is closely aligned with the 2011/12 Reference Cost design). Our initial analysis of such a remapping identified a number of risks and challenges.

We think the risks involved in mapping 2012/13 Reference Costs onto the proposed 2015/16 currency design mean a significant amount of work would need to be done

before such a proposal could be implemented. Our revised proposal, therefore, is to base 2015/16 national prices on the 2011/12 Reference Costs dataset, which is closely aligned with the proposed 2015/16 currency design.

Reference Cost data cleaning rules

Another option we outlined in the methodology paper to reduce inappropriate volatility in national prices from year to year is to apply comprehensive data cleaning rules to the Reference Costs data we input into the model. These data cleaning rules were described in detail in a supporting document published alongside the methodology paper.²²

We think that using cleaned data would improve the robustness of the tariff overall, because it should result in fewer implausible inputs into the model (for example, fewer very low-cost recordings for a particular service). This, in turn, should reduce the number of modelled prices that require manual adjustment. We think this benefit outweighs the disadvantage of losing a number of data points as a result of the data cleaning process. A large majority of stakeholders supported this approach, but sought transparency on any cleaning rules we apply to the data.

In response to stakeholder feedback, we propose to use the data cleaning methods set out in the methodology paper. In summary, this means that we are proposing to apply the following rules to the 2011/12 Reference Cost inputs into the model:

- applying the data cleaning only to Reference Cost inputs to the model for admitted patient care (APC) at this stage
- excluding outliers from the raw Reference Cost dataset based on the Grubbs method, also known as the 'maximum normed residual test'²³
- excluding providers with at least five unit cost submissions below £5 and at least 10 unit cost submissions above £50,000, subject to an average unit cost check
- excluding providers who submitted Reference Costs that are more than 50% lower than the national average for more than 25% of HRGs submitted, and who also submitted Reference Costs that are 50% higher than the national average for more than 25% of HRGs submitted
- excluding providers who reported Reference Costs that include more than 75% duplicate costs across HRGs and departments
- excluding providers who submitted Reference Costs containing more than 15% illogical relativities.

²² Deloitte, ['Reference Cost Data Quality – A Final Report for Monitor'](#)

²³ See Annex C for an explanation of the Grubbs method.

Applying these rules to Reference Costs used to set national prices for admitted patient care has led to 2.4% of observations being removed to improve the quality of the data set. The most significant impact was to remove all admitted patient care Reference Costs submitted by a small number of providers. Further detail on the data cleaning rules is provided in Annex C.

Establishing the appropriate cost base for national prices

One of our price-setting principles is that prices should reflect efficient costs. That means we must try to ensure that the costs on which prices are based are indeed the appropriate basis for setting national prices. Our starting point for establishing the cost base is the reported Reference Costs. However, we may need to adjust these to make them an appropriate base on which to set national prices. For example, we may need to exclude costs that are remunerated by non-tariff revenue.²⁴ We are interested in stakeholders' views on which costs, if any, should be removed from Reference Costs for the purposes of setting national prices and how to estimate that potential deduction.

HES activity data inputs

In the methodology paper we said that we aim, as part of increasing transparency in the tariff setting process, to use a publicly available HES pre-processing and grouping method data as input to the 2015/16 model. However, we have so far not been able to test our current draft of this methodology sufficiently. As a result, for setting 2015/16 national prices we are proposing to use a version of HES data grouped for us by HSCIC (in line with the 2013/14 PbR method).

For the draft national prices published alongside this document, we have used 2011/12 HES data grouped by casemix using the 2011/12 Reference Costs grouper. Over the next few months we are planning to explore whether it is feasible to use 2011/12 Reference Costs and 2011/12 HES data grouped by the 2015/16 engagement grouper²⁵ instead of the 2011/12 Reference Costs grouper. This is because the 2015/16 payment grouper is better aligned with the proposed 2015/16 currency design.

Updating the short stay emergency (SSEM) tariff bands

In the methodology paper we set out three options for the SSEM bands:

- making no change (ie using the same inputs as for 2014/15)
- updating the inputs to the SSEM calculation (ie recalculating SSEM reductions based on the most recent input data)

²⁴ An example of this might be winter monies, which may compensate for some of the cost counted in Reference Costs.

²⁵ The grouper is [available here](#).

- updating both the method of calculation and the inputs for the SSEM calculation.

Most respondents to the methodology paper supported the third option. Respondents also stressed the importance of assessing the impact of any such change to the bands.

Alongside the methodology paper we published a supporting document setting out the potential change to the method of calculation.²⁶ The main methodological change would be to base the banding payment calculation on HES data for length of stay, which would be consistent with the allocation of bands to eligible HRGs. In light of stakeholder feedback, we are proposing to update both the method of calculation and the inputs into the SSEM band calculation on this basis. However, the work on this proposal is not yet complete.

Consequently, the draft prices published alongside this paper are based on the existing bands. Subject to feedback to the above proposal, we will publish the updated bands and our impact assessment of the change in the statutory consultation notice in the autumn.

SSEM eligibility

We have identified the proposed new HRGs that would be eligible for an SSEM tariff, and have also reviewed existing currencies to identify whether any changes to SSEM eligibility would be necessary. We based this assessment on a review of the average length of stay for all standard non-elective HRGs. Table 8 summarises the proposed changes to SSEM eligibility for 2015/16.

²⁶ Deloitte, [‘Short Stay Emergency Tariff Review – a final report for Monitor’](#)

Table 8: Proposed changes to SSEM eligibility

Code	Treatment
Existing currencies newly eligible for 2015/16	
DZ21J	Chronic Obstructive Pulmonary Disease or Bronchitis without NIV without Intubation with CC
MB01A	Lower Genital Tract Disorders with CC
QZ17A	Non-Surgical Peripheral Vascular Disease with Major CC
SA01D	Aplastic Anaemia with CC
SA08F	Other Haematological or Splenic Disorders without CC
VA10B	Multiple Trauma Diagnoses score 24-32, with no Interventions
VA10D	Multiple Trauma Diagnoses score ≥ 51 , with no Interventions
WA06W	Other Viral Illness with CC
WA12V	Complications of Procedures with Major CC
WA21Y	Other Procedures and Healthcare Problems without CC
Existing currencies no longer eligible for 2015/16	
QZ13A	Vascular Access for Renal Replacement Therapy with CC
QZ13B	Vascular Access for Renal Replacement Therapy without CC
QZ14B	Vascular Access except for Renal Replacement Therapy without CC
Proposed new currencies eligible for 2015/16	
HC29Z	Inflammatory Spinal Conditions
HC32B	Low Back Pain with CC
HC32C	Low Back Pain without CC
WA15V	Respite Care with length of stay 4 days or less

We are also aware that some local health economies have agreed ‘assessment tariffs’ as an alternative approach to reimbursement for very short lengths of stay. We would be interested in learning more about any such local approaches that are being used.

4.3 Approach to manual adjustments

While the above section focused on how we could improve the model inputs, we recognise that we may also need to make some manual adjustments to a number of modelled prices to correct for illogical relativities and implausible prices.²⁷ In order to ensure the transparency of any such manual adjustments, we will be undertaking the following process for determining those adjustments:

1. we modelled draft national prices on the basis described in this section

²⁷ Implausible prices would be, for example, a national price that is lower than the cost of using the equipment involved in providing the service.

2. the modelled prices were sent to HSCIC's expert working groups of clinicians for review
3. the expert working groups' proposed adjustments were shared with members of NTAG for further comment
4. we implemented manual adjustments to the draft national prices based on the above recommendations²⁸
5. draft national prices are published alongside this document for comment
6. we will re-calculate national prices, with any changes to the methodology to reflect feedback to the proposals in this document
7. we will discuss any further manual adjustments based on the re-calculated prices with HSCIC's expert working groups of clinicians
8. any proposed adjustments by the expert working groups will be consolidated and sent to NTAG members for further comment
9. re-calculated national prices and the reasons for any adjustments will be published as part of the statutory consultation notice in the autumn.

4.4 Setting prices for new or changed HRGs

Moving to the proposed 2011/12 Reference Cost design as the basis for national prices would introduce greater granularity, resulting in around 200 new or changed HRGs that would require a national price. Additionally, we are proposing to introduce national prices for four services that were not priced in 2014/15 (see section 3). We propose to set the price for these new or changed HRGs in the same way that prices are set for HRGs that already have a national price. This means that we propose to set prices using the calculation methods used in the 2013/14 PbR model and the approach proposed in this section.

4.5 Engaging on the price-setting models

As set out in the methodology paper, our aim is that the modelling work for the 2015/16 national prices will be transparent, to give stakeholders the best opportunity for comment. We believe that this approach will, over time, maximise the quality of the model and lead to better price-setting. Alongside this paper we are publishing a number of Excel models that show a large part of the calculation steps for the draft national prices, together with an explanation how some of the inputs to the model for APC are generated. We aim to expand the model documentation further over time and to make it available on Monitor's website.

²⁸ Note that we have yet to implement any manual adjustments to 'trim points'. We will make any such adjustments, as appropriate, for the national prices that would be proposed in the statutory consultation notice.

4.6 Assessing the impact of the price-setting proposals

This section has proposed several changes for 2015/16 that affect the level of national prices **relative** to each other. We have conducted a preliminary assessment of the financial impacts of the main proposals in this section, based on analysis using HES activity data from 2012/13. We discuss the results of our assessment below, with additional detail provided in Annex A.

Our preliminary analysis looks at the distributional effects of changes to currency design and [draft national prices](#), as published alongside this document. This includes changes in income for providers, changes in funding for HRG chapters, and impacts on commissioners' expenditure.

We have identified some changes in expenditure resulting from the relative changes to national prices of different specialties, with greater volatility in some specialties than others. In particular, our analysis suggests the prices of orthopaedic services would decrease relative to other prices, while the prices of children's services would increase relative to others. All else being equal, this would indicate that providers of orthopaedic services would be worse off and providers of children's services would be better off.

In general, the changes, if applied in final national prices, would lead to a small decrease in expenditure for CCGs, while specialised commissioners would see an increase in expenditure if they purchased the same volume and mix of services as they have in 2012/13.

We are investigating the underlying reasons for the changes described above. This includes conducting a prioritised quality assurance process for [our price-setting models](#) (which are also published alongside this document). As part of this work we would welcome the opportunity to work with the sector in developing our impact assessment for the statutory consultation notice.

Depending on the final modelled prices and impact assessment, we may propose adjustments to modelled prices or national variations, where these would be in the best interests of patients. This could include proposing changes to prices to reduce volatility or adjustments to top-ups, if changes to the currency design and updates to the cost base mean that current variations are no longer appropriate.

5. Cost adjustments to national prices

Cost adjustments are additions to or subtractions from the prices that would be produced by our model (as described in Section 4). They reflect our expectations of increases or achievable reductions to the efficient costs of providing NHS services, which are not already captured in the model inputs since they relate to years beyond the input data. The national prices that would be specified in the national tariff are the prices after any such adjustments have been applied. We are proposing to apply two types of cost adjustment, which are:

- cost uplift factors – these reflect cost pressures such as inflation, capital cost changes, additional service development costs and changes in the Clinical Negligence Scheme for Trusts (CNST)
- the efficiency factor – this reflects our expectation that providers should become more efficient over time.

We propose to make two sets of each of the above types of adjustment:

1. one set will relate to the years between the relevant Reference Costs collection (in this case 2011/12) and the current year (inclusive) (in this case 2014/15) – henceforth referred to as ‘indexation’
2. the other set will be prospective adjustments relating to the tariff year (in this case 2015/16).

For 2015/16 we propose to:

- apply indexation using the cost adjustment factors that were in the national tariffs²⁹
- follow the same approach for setting the cost uplift factor as we did for the 2014/15 national tariff, including estimating any service development costs
- apply a single efficiency factor for national prices, which we propose should be in the range of 3–5%
- further develop the evidence base around leakage, and potentially take any of a range of actions.

For the avoidance of doubt, if we were to make an adjustment to national prices to correct for leakage, the sum of the efficiency and leakage factors would not be higher than the 5% identified as the top end of the range for 2015/16.

The remainder of this chapter sets out the rationale for each of the above proposals.

²⁹ ‘National tariffs’ here refer to both national tariffs as defined under the 2012 Act (eg the ‘2014/15 National Tariff Payment System’) and past tariffs published by the DH under the PbR system.

Questions:

9. Do you agree with our proposals to retain the previously used approaches for indexing costs up to the tariff year, and for setting the cost uplift factor?
10. Do you agree with our proposed process for coming up with any service development uplift?
11. Bearing in mind our proposed range of 3–5%, what do you think the efficiency factor applied to national prices in 2015/16 should be?
12. What do you think are the appropriate policy measures to address any undesirable 'additional actions' that are potential sources of leakage?

5.1 Indexation

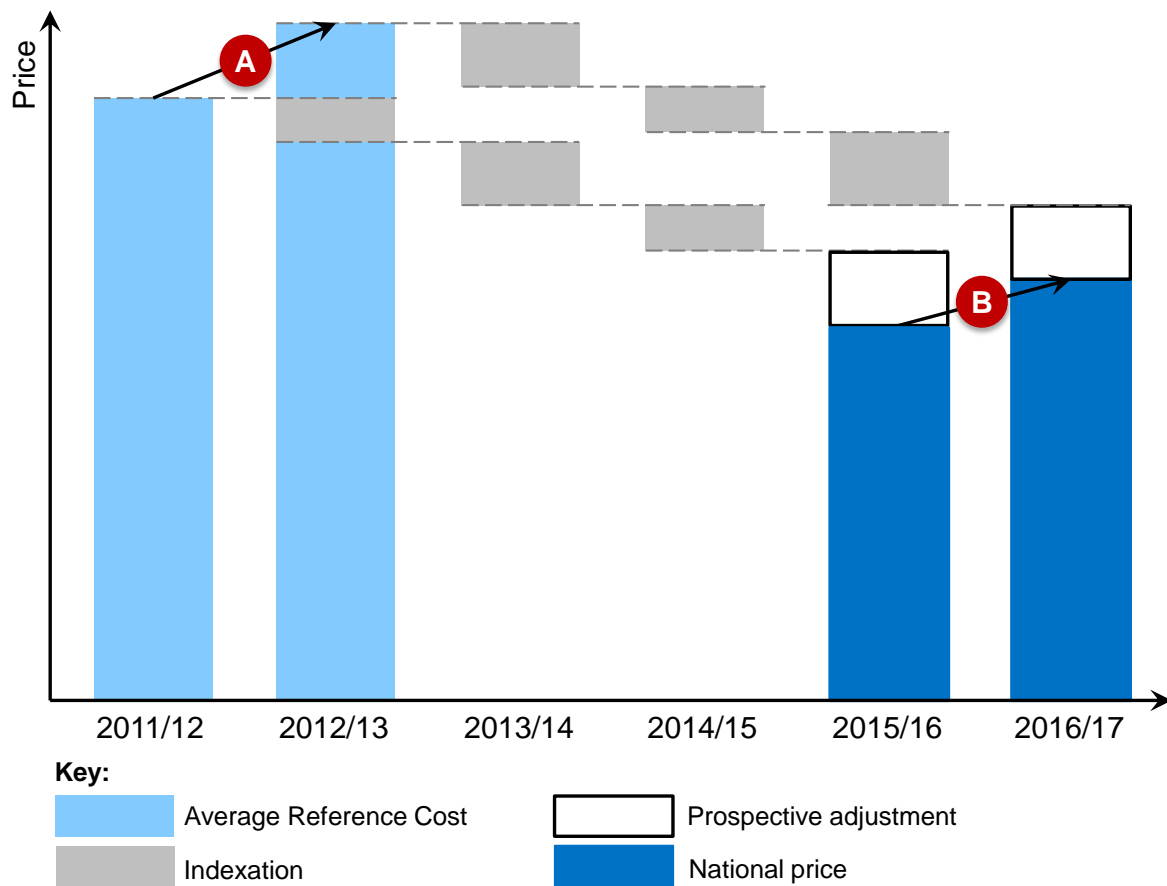
Our proposal is to model national prices on Reference Costs from 2011/12. We need to adjust these prices to reflect our expectation of what happened to efficient costs since then ('indexation'). Previously, this was done by using the cost adjustment factors from the national tariffs that applied to the intervening years.³⁰ We propose to continue with this approach.

While newer information may be available that would allow us to revisit some of the forecasts that underpinned past cost adjustment factors, using the cost adjustment factors from previous national tariffs is an appropriate approach if we can reasonably assume that past forecasts were unbiased, so that any estimation errors even out across estimates and over time. We think this is the case, so we propose to retain the cost adjustment factors from previous national tariffs.

In future years, when a new year of Reference Costs is used to calculate a new set of national prices, the information from the new year of Reference Costs would overwrite the cost adjustment from the same year (illustrated by 'A' in Figure 2), and a new prospective cost adjustment will be set (illustrated by 'B' in Figure 2). Therefore, any estimation inaccuracies will be overwritten as new cost information becomes available.

³⁰ See, for example, Department of Health, ['Payment by Results Step-by-Step Guide: Calculating the 2013-14 National Tariff'](#)

Figure 2: Illustration of annual updates to price-setting process³¹



For national prices in 2015/16, this means applying the prospective cost adjustment factors that were applied in the 2012/13, 2013/14 and 2014/15 national tariffs. These are set out in Table 9.

Table 9: Cost adjustment factors from previous national tariffs

	2012/13	2013/14	2014/15
Cost uplift factor	2.2%	2.7%	2.5%
Efficiency requirement	-4.0%	-4.0%	-4.0%
Total cost adjustment	-1.8%	-1.3%	-1.5%

Sources: 'Payment by Results Step-by-Step Guide: Calculating the 2013-14 National Tariff' and '2014/15 National Tariff Payment System'.

³¹ While the figure illustrates an increase in national prices as a result of updating the Reference Cost inputs, in any year the process of updating the Reference Cost inputs could result in national prices either increasing or decreasing.

5.2 Cost uplift factor

In line with our price-setting principle that national prices should reflect efficient costs of providing each service, we consider it appropriate to adjust the modelled prices to reflect expected cost pressures in the tariff year (ie 2015/16). For the '2014/15 National Tariff Payment System', we used an approach consistent with that used by the DH under PbR, which is tailored to the expected cost pressures facing NHS providers. This approach may include uplifts in four categories:

- input cost inflation – this includes pay increases, drug costs and changes in operating costs, as well as general inflation
- changes in the cost of the CNST
- changes in capital costs (ie changes in costs associated with depreciation and private finance initiative (PFI) payments)
- additional costs as a result of new requirements in NHS England's Mandate. We call these 'service development'.

For each of these factors, we calculated price adjustments to reflect a reasonable contribution towards additional expected cost pressures in 2014/15 for an average provider. We are proposing to retain this approach for 2015/16. In determining the cost uplift factor we will need to exercise our judgement as to the appropriate levels of the components of the cost uplift factor.

We propose to include an indicative cost uplift factor in the statutory consultation notice, if possible. However, it is unlikely that all the required information will be fully determined at time to set a final cost uplift factor in the statutory consultation notice. Table 10 sets out when we expect to have the relevant input data to calculate the final cost uplift factor for 2015/16.

Table 10: Timing of data inputs to the cost uplift factor

Item	Known by Statutory Consultation Notice?	Estimate in Statutory Consultation Notice	Additional input post-Statutory Consultation Notice
Pay settlements ³²	Yes	As provided by DH	None
Pay drift	Yes	As provided by DH	None
Drugs inflation	Yes	As provided by DH	None
Non-pay, non-drugs inflation	No	Use latest forecast from the Office for Budget Responsibility (OBR)	Update for latest OBR forecast available in November/December after Chancellor's autumn Statement
Revenue consequences of capital	Yes	As provided by DH	None
CNST	Yes	As provided by NHS Litigation Authority	None
Service Development	No	See below	See below

Service development

NHS England and Monitor are committed to setting the national tariff in a manner consistent with our principles of transparency, evidence-based policy-making, consultation with the sector, and impact assessment; as well as in accordance with our statutory duties.³³ We are also keen to produce the national tariff in a timely manner in order to inform commissioning rounds, which typically begin the spring of the year before they come into effect. That requires publication of the national tariff statutory consultation notice no later than the autumn.

However, the timetable for publication of NHS England's Mandate by the DH is not currently known and may not be aligned with these time constraints. The 2014/15 Mandate was published on 13 November 2013 – too late to inform the decisions that were captured in the tariff's statutory consultation notice.

In the methodology paper we expressed our commitment to reviewing our processes with regard to the service development uplift and, in particular, how we engage with stakeholders and how we consider relevant evidence. We had extensive discussions on the issue at the workshops we held following the publication of the methodology paper. In light of these discussions, we will engage on service development once the Mandate is published, and will ensure that we hear from a broad range of relevant

³² The Government has set out its expectation that pay settlements for 2015/16 will follow the same approach as for 2014/15. Under this approach, there would not be a general pay rise, but staff who are not eligible to receive incremental pay will receive a non-consolidated payment of 2% of pay, whilst other staff will only receive incremental progression.

³³ This includes creating an environment in which providers and commissioners are challenged to operate as efficiently and innovatively as possible.

stakeholders (including providers for all service types, commissioners and clinicians). We will incorporate the information into the service development uplift published in the final National Tariff document.

5.3 Efficiency factor

Our price-setting principles are that national prices should reflect efficient costs, and that they should provide appropriate signals to providers and commissioners. The 'efficiency factor' is an adjustment to the prices generated by the model and one of the mechanisms through which we aim to achieve our price-setting principles. Patients and taxpayers expect that providers will become more efficient over time. This means that they should deliver services at a lower cost while improving value and quality. The efficiency factor quantifies our expectation.

For the purpose of the national tariff, we are only measuring efficiency as far as it relates to providers delivering a service for a lower unit cost. Our efficiency estimate does not include system-wide savings (for example, reducing activity levels), as these savings accrue to commissioners and should not be reflected in prices. We are also only interested in the efficiency gain that can be achieved in a single year (in line with the time frame of the national tariff), although in using our regulatory discretion we should bear in mind the potential trade-off between short-term savings and investment that results in longer term efficiency gains.

Estimation approach

Setting the efficiency factor is an inherently complex task that requires an element of judgement. In the methodology paper we proposed to develop a consistent framework for estimating and setting the efficiency factor for 2015/16 and in subsequent national tariffs. Such a framework would offer more predictability and clarity for providers and commissioners. In turn, that should provide confidence, allow for better planning and, ultimately, support better outcomes for patients. However, we recognise that it may not be possible at this stage to apply an ideal framework, owing to limitations in data quality and availability. In light of these constraints, we set out our views on the best option for setting prices for 2015/16 in the methodology paper published earlier this year.

We think there may be reason to expect different scopes for future efficiency gains across different parts of the healthcare sector. However, in the methodology paper we noted that the data currently available from different services are insufficient and not always comparable – in particular for services provided outside acute settings – for us to estimate disaggregated efficiency factors with confidence. In light of this, we proposed to set a single efficiency factor for the 2015/16 national tariff, estimated from acute sector data, which is currently the most robust. We proposed that the approach we would take to identifying that single efficiency factor would involve weighing evidence from both top-down econometric techniques and case study

bottom-up models, and would be further informed by stakeholder views and our impact assessments.

Stakeholder engagement on this proposal has been extensive – it was one of the main topics of discussion at our recent workshops, and we have received upwards of 70 written responses to the methodology paper. Most respondents agreed that while there may be different scopes for efficiency gains across the sector, we could not differentiate them accurately for 2015/16. As such, most respondents agreed with our proposed approach of setting a single efficiency factor, based on an estimate from the acute sector. The exception was some providers of mental health services, who strongly objected to our proposal. Some stakeholders suggested that one way of addressing this issue might be to set an efficiency factor range in the guidance we provide for negotiating services without a national price.

The efficiency factor is primarily used in the method for setting national prices, which currently applies mainly to acute services. The estimation approach is also based on services provided in acute settings. But in addition the efficiency factor has implications for local prices, where the rules require commissioners and providers to have regard to the factor (and the other cost adjustments) when setting local prices. We therefore want to engage with stakeholders in order to understand how the efficiency factor could best be applied in setting the prices of services that do not have a national price (these are typically services provided in non-acute settings) and how best to explain it in the guidance we provide for setting these prices. We also note that, under the rules of the '2014/15 National Tariff Payment System', providers and commissioners are able to agree local prices that reflect different assumptions about efficiency, where they have good reasons for doing so.

Overall, we consider that our proposal for setting the efficiency factor for national prices represents a well-balanced approach in light of current constraints. The process that we are following for setting the efficiency factor for 2015/16 is set out below.

1. **Producing an initial range:** We commissioned an independent study from Deloitte to carry out a thorough analysis of the evidence for an efficiency factor in 2015/16, based on data from the acute sector.³⁴
2. **Assessing the impact:** We conducted a preliminary impact assessment by adjusting the preliminary [draft national prices](#) published alongside this document by a number of different estimates from the efficiency factor range and running them through our impact assessment model.³⁵ We did so in order to identify potential costs, benefits and risks of various points within the range.

³⁴ Deloitte, '[Evidence for the 2015/16 national tariff efficiency factor – a report for Monitor](#)'

³⁵ For a detailed explanation of the approach, see Annex A.

We discuss the results of our preliminary impact assessment in the next section.

3. **Listening to stakeholders:** We are seeking stakeholders' views on the range published in this paper, including the extent to which it is appropriate for non-acute services. We will also be running workshops and webinars to discuss this topic further. We will also be seeking views on the final proposals for the efficiency factor as part of the statutory consultation in the autumn.
4. **Deciding based on our statutory objectives:** Ultimately, our proposals and final decision will need to reflect Monitor's duty to set the national tariff in a way that promotes the economic, efficient and effective provision of services that deliver good quality care to meet patients' needs, and the other objectives and factors that Monitor and NHS England are required to consider by legislation. We will be transparent about the way our decision has been informed by these objectives and factors. The price-setting principles set out in Section 2 will be relevant to this decision and we expect to face difficult judgement calls.

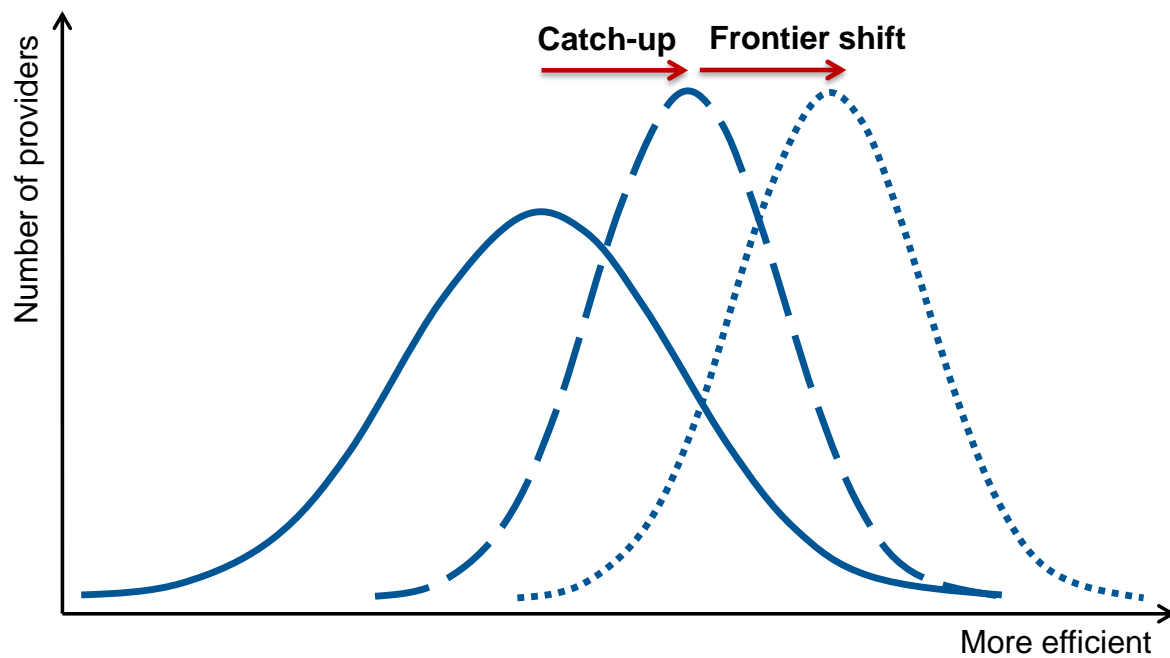
In the remainder of this section we explain how we have arrived at our estimated range for this single efficiency factor.

Estimating the efficiency factor for 2015/16

The scope for future efficiency gains can be thought of consisting of two elements:

- Catch-up – this captures the saving to be gained from an average provider becoming as efficient as a more efficient comparable provider (ie when controlling for casemix, demographics, quality and input costs).
- Frontier shift – this captures the sector-wide savings to be gained from technological advances and service delivery optimisation.

These are illustrated in Figure 3.

Figure 3: Illustration of frontier shift and catch-up efficiency gains

Setting the efficiency factor would, at a minimum, include an estimate of the frontier shift. However, since national prices are based on average costs of providing NHS services, it may be reasonable for the efficiency factor to also include the catch-up component. The Deloitte study estimated how much more efficient a provider of average efficiency would have to become to achieve the efficiency of providers at the 60th, 70th, 80th and 90th percentiles. In deciding on the efficiency factor, we will need to apply judgement to identify what is the appropriate catch-up target for the average provider in terms of percentiles.

Econometric techniques were the main method for estimating both the catch-up and frontier shift elements. These techniques allow estimation of the scope for efficiency gains while controlling for differences between providers in terms of scale, casemix, quality, local health needs, and uncontrollable cost pressures. That is, econometric techniques allow us to distinguish between the variables that providers can control and those that they cannot.

The Deloitte study developed two 'core models', which have slightly different statistical properties. Additionally, the study tested how sensitive the results were to the inputs and modelling assumptions, by running versions of the core models with different sets of inputs (for example, different measures of input cost inflation) and different modelling assumptions (for example, allowing statistical parameters to vary from year to year). In general, the results of the core models were robust to changes in the inputs and modelling assumptions. Given the range of estimates from the models, we will need to apply our discretion in basing the efficiency factor on specific frontier shift and catch-up rates. We also need to recognise that the estimation is, necessarily, based on historical data and that there may be reason to expect future

efficiency gains to be different (either higher or lower) than those achieved in the past.

A sense-check case study was provided by a bottom-up model developed for an acute trust with 'average' characteristics (size, efficiency, quality scores, financial position). The bottom-up model allowed us to identify what actions a provider could take to improve efficiency, and what savings would be achieved within a year. While a single trust cannot be representative of the majority of providers, we think that basing a case study on a provider with typical characteristics allows for a reasonable sense-check of the extent to which the econometric results line up with the actions providers could take to improve their efficiency, even though the precise available actions and impacts would differ from provider to provider.

Table 11 summarises the estimates for both elements of the efficiency factor from the econometric models. The analysis has estimated frontier shift across acute providers of 1.2–1.3% (in the core models) per annum on average over the period 2008/09 to 2012/13. The bottom-up model estimated a range of 1.0–1.4% for the catch-up component. Given that the bottom-up model cannot capture all catch-up actions, and is based on a single provider, the Deloitte study identifies the range from the bottom-up model to be broadly consistent with the catch-up to the 60th or 70th percentiles in the econometric models occurring over a single year.

Table 11: Summary of the Deloitte study's estimates for 2015/16

	Frontier shift	Averagely efficient provider catching up to			
		60 th percentile	70 th percentile	80 th percentile	90 th percentile
Core models	1.2–1.3%	0.9–1.2%	2.2–2.4%	3.7–4.0%	5.0–5.6%
All models and sensitivities	1.0–1.8%	0.7–2.0%	2.2–2.9%	3.2–4.2%	4.3–5.9%

Source: ['Evidence for the 2015/16 national tariff efficiency factor – a report for Monitor'](#)

In our judgement, the estimates in Table 11 indicate that a range of 2–4% efficiency gains in a single year is supported by historical evidence on the frontier shift and on the scope for catch-up. However, the financial challenges that the sector is expected to face in 2015/16 are significant. As a result, it is expected that extraordinary effort will be required to achieve efficiency improvements across all parts of the sector to outpace historical trends. For providers, this would mean that either the frontier shift, catch-up rate, or both will need to exceed previously delivered efficiency gains. Subsequently, we are proposing to engage on a range of 3–5% for the efficiency factor for 2015/16, and would expect to set a final figure within that range.

We have modelled a range of illustrative scenarios about the efficiency savings achieved by providers in comparison to the efficiency factor used for national

prices.³⁶ Our preliminary analysis suggests that a significant number of providers would be face operating deficits in 2015/16 if they missed the efficiency factor by 2% or more. As an illustrative example, if we set an efficiency factor of 5% but providers were only able to reduce operating expenditure by 3%, we would expect more than half of providers to have operating deficits in 2015/16. However, if providers meet our efficiency target or miss it by less than 1%, the expected impact would be much smaller, with a much lower number of providers projected to face operating deficits in 2015/16. This analysis is based on the draft national prices, which are adjusted so that the weighted average prices are the same as for 2014/15 national prices. However, any subsequent changes to the cost base on which national prices are based (as discussed in Section 4.2) would have an impact on providers that may exacerbate or mitigate that of the efficiency factor.

5.4 Leakage

We discussed the concept of leakage in recent guidance documents³⁷ and in the methodology paper. It is based on the observation that estimated achieved efficiencies have typically been lower than the efficiency requirement applied to prices in recent tariffs, while the financial position of providers has typically not deteriorated by a commensurate proportion. We recognised, however, that there is a great deal of uncertainty around the scope of leakage and how it might be occurring.

We need to understand the range of factors associated with leakage better to achieve maximum value for money, and to ensure the financial sustainability of NHS services. However, leakage is a complex issue and we do not currently understand its magnitude, trends and composition very well.

In the methodology paper we set out the issue and sought views on:

- what the causes of leakage might be
- what forms leakage might take.

Some stakeholders pointed to leakage being caused by a perception that national prices do not fully cover service costs. Forms of leakage identified by stakeholders include block contracts, non-recurrent payments, commercial revenue, prices lagging behind service changes, coding and margins on specialist services without national prices.

In light of the feedback, we have developed the following working definition for tariff leakage: *the 'additional actions' that providers (or providers and commissioners) take to protect or improve their financial position, other than improving their efficiency.*

³⁶ For local prices, we made the simplifying assumption that they would be adjusted using the efficiency factor (and cost uplifts) for national prices.

³⁷ Monitor, ['Guidance for the Annual Planning Review 2014/15'](#); and NHS England, ['Everyone Counts: Planning for Patients 2014/15 to 2018/19'](#).

Leakage can impact policy in several ways that we will need to understand and manage:

- **Value for money** – Cross-subsidies from non-tariff to tariff services could diminish providers' incentives to become more cost efficient and maintain or improve quality.
- **Financial sustainability** – The requirements on the health sector should be matched by the resources available with providers and commissioners being financially sustainable. To the extent that some providers may be reliant on leakage to maintain financial balance, we need to understand the scope for leakage to continue in the future.
- **Choice** – Cross-subsidies may lead to services being provided at prices below cost which can prevent new providers offering services at a competitive rate, limiting the scope of patient choice.

For the foregoing reasons, it is important that we understand leakage well and consider the policy options in response to leakage.

Preliminary analysis of leakage

To understand the composition of leakage better, we have conducted quantitative analysis of providers' income data, patterns in providers' coding, Reference Cost data, as well as taking on board responses to the methodology paper. Our analysis indicates that the following activities are potentially sources of leakage:

- coding – improvements and 'changes' in incentives to inflate counting and coding (or 'upcoding')
- transfers from commissioners, not linked to activity or quality
- surpluses negotiated on non-tariff NHS services, including new services and non-recurrent income
- surpluses on specialist activity
- reductions in investment.

Appropriately addressing each of these sources of leakage may require a different policy response. We consider these responses below.

Potential policy responses to leakage

The analysis outlined above points to distinct sources of leakage. Our preferred ('first-best') solution would be to take direct action on each of the causes or enablers

of leakage, insofar as leakage has negative outcomes for patients. The range of first-best solutions primarily relates to improving transparency and includes:

- extension of services covered by national prices
- auditing of coding and improved guidance on recording of activity
- more accurate and comprehensive costing³⁸
- enforcement of the national tariff
- improved commissioning.

The categories of leakage and the relevant potential responses are outlined in Table 12.³⁹

Table 12: Source of leakage and potential interventions

Category	Source	Potential regulatory action
Coding and recording	Changes to coding and counting	Enforcement Coding audit Offsets to pricing uplift to factor in likely annual coding drift
Negotiate non-tariff contracts	Non-tariff, non-NHS income	None
Negotiate non-tariff contracts	Surpluses negotiated on NHS services that do not have a national price	Extension of services covered by national prices Reporting requirements and enforcement Improved commissioning
Negotiate non-tariff contracts	Commissioner transfers not linked to activity or quality	Extension of services covered by national prices Reporting requirements and enforcement Improved cost allocation Improved commissioning
Non-efficiency cost savings	Lower investment (such as in estates) and training	Improved quality monitoring (such as patient experience monitoring)

Because of the magnitude of leakage and the task involved in surveying local contracts, achieving our policy objectives by implementing the first-best approach may not be fully achievable in the short term. Not intervening, however, could lead to less value for money in the sector – eg leakage activities may still take place and the pressure for improved efficiency may be diminished.

³⁸ Such as patient level information costing systems (PLICS).

³⁹ We note that not all of the potential responses fall within Monitor or NHS England's remits.

A 'second best' solution may be needed in the short run – for example adjusting national prices for leakage or other solutions – while continuing to develop the relevant interventions identified in Table 12. This approach could balance value for money considerations with the timescale required to change provider and commissioner behaviour. It is an approach taken in a number of other countries. However, any decision to adjust national prices would need to consider the wider impacts of this change. We will also need to make sure that any proposal we make to address leakage meets our principles of transparency, evidence-base, effective consultation with the sector and impact assessment.

For the avoidance of doubt, any adjustment to national prices to correct for leakage would not take the sum of the efficiency and leakage factors above the 5% identified as the top end of the range for 2015/16. If we were to implement the second best approach, we will need to estimate the magnitude of leakage. We outline how we might do this in the next section.

Estimating the magnitude of leakage

We have identified three potential measures of leakage:

- **Directly measuring the surplus/deficit to services with national prices.** By subtracting total Reference Costs from providers' total national tariff revenue, we can obtain an estimate of the surplus or deficit for services with national prices. If the amount is a deficit and providers' margins have not decreased by a commensurate amount, then the services must have been cross-subsidised by other activities.⁴⁰ This will indicate the magnitude of leakage, assuming no change in the efficiency of services without national prices.
- **Comparing providers' planned cost improvement plans (CIPs) to outturn CIPs.** CIPs measure the improvements in costs that providers expect to make in order to be financially sustainable. If providers fail to improve costs quickly enough but do not enter into financial distress, then they may have taken additional actions to improve their financial positions.⁴¹ We intend to compare planned and outturn CIPs to measure these additional actions.
- **Comparing the difference between the efficiency improvements that we have set providers in the national tariff and the actual efficiencies achieved.** In order to develop better estimates of the efficiency factor, Deloitte has estimated the actual efficiency improvements by the sector (the 'frontier shift'). We can compare this to the efficiencies that we expected providers to achieve (the efficiency requirement in national tariffs over the same time

⁴⁰ We recognise such observation may also be influenced by what costs providers allocate to services with Reference Costs.

⁴¹ It is also possible that the assumptions on which the planned CIPs were based did not materialise.

period) to see if the sector successfully met our expectations. In the event that the sector did not meet our efficiency expectations, then there must have been other things happening that bridged the gap.⁴²

We are interested in stakeholders' views on whether we identified the appropriate policy measures to address any undesirable 'additional actions'.

⁴² We can sense-check these observations by substituting Deloitte's estimates for other measures such as productivity measures produced by the Office of National Statistics and the Centre for Health Economics at York University.

Annex A: Detail on preliminary analysis of impacts

This annex provides supplementary detail on our preliminary analysis of the impact of the proposals in this document, the results of which are included in the body of the document. Specifically, this annex discusses our analysis relating to:

- updating the currency design and modelling prices from updated Reference Costs
- introducing new national prices for four services
- introducing a BPT for heart failure, and amending existing BPTs for primary hip and knee replacements and endoscopy
- amending existing BPTs for day case and outpatient procedures
- adding factors to the maternity pathway payment
- setting the efficiency factor in the range 3–5%.

Final impact assessments for all our proposals for 2015/16, including an equality analysis, will be published alongside the statutory consultation notice in the autumn. We encourage stakeholders to provide feedback on the potential impacts of the policy proposals in this document on groups with protected characteristics (as defined under the Equality Act 2010) or any other impacts on patients, including evidence that is relevant to identifying those impacts.

Table A1: Preliminary assessment of proposals to update the currency design and Reference Cost inputs into the price-setting model

Issue	Options assessed
<p>We need to define the basis for national prices. This needs to be clinically relevant, and use information that sends appropriate signals about relative costs of different service. The decisions about the currency design and cost basis are linked because the currency design affects what Reference Costs data can be used to set national prices. We have, therefore, assessed their combined impact.</p>	<p>Option A (baseline): Use the same currency design and cost inputs as for 2014/15 (2010/11 Reference Cost design and corresponding Reference Costs). Option B (proposal): Update currencies and cost inputs to 2011/12 Reference Cost design and corresponding Reference Costs.</p>
Proportionality test	Form of assessment
<p>National prices are a major part of the national tariff and the decisions that affect them are highly material. The relative levels of national prices are important for all providers of acute services, and for all commissioners. These decisions affect the tariff year, but will also set the baseline for future years, thus having a lasting impact. The time available for assessment is very short.</p>	<p>Quantitative and qualitative. We expect to produce additional analysis for the statutory consultation notice based in part on feedback to this publication.</p>
Input from stakeholder engagement	Model specification and key assumptions
<p>Stakeholder responses to the methodology paper supported the proposal to update the currency design to 2011/12 basis. Respondents were marginally in favour of using a single year of Reference Costs as inputs into the price-setting model, with some preference for 2011/12 and some for 2012/13.</p>	<p>We run our draft impact assessment models twice – once with the baseline scenario and once with the proposal – while keeping the volume of services fixed. The only difference between the two model runs, therefore, is the relative levels of national prices.</p>
Interaction with other policies	Risks
<p>The choice of currency design and cost base are closely related to other decisions on national currencies and cost adjustments to national prices. However, those decisions are not dependent on the choice between the baseline option and the proposal.</p>	<p>One of the most important risks is that the changes we propose for 2015/16 may not be consistent with the longer-term direction of the national tariff. This risk is greater at more granular levels (ie individual HRGs or HRG sub-chapters). Specialist providers could be affected disproportionately.</p>
Benefits	Costs
<p>Currencies more closely reflecting current clinical practice and Reference Costs more closely capturing current service costs, making national prices more accurate. This would send better signals to commissioners and providers.</p>	<p>Change to currencies and base reference costs could lead to disruption, particularly for providers with a narrow range of services.</p>

Our preliminary assessment of is based on the draft national prices, where the weighted average price for 2015/16 across admitted patient care (APC), A&E, outpatient procedures (OPROC) and outpatient attendances (OPATT) was set to the same level as for 2014/15. Our analysis takes account of national variations such as the Market Forces Factor, but does not include best practice tariffs, the maternity pathway or non-mandatory prices.

Our preliminary assessment looked only at providers of predominantly acute care. For local prices, we made the simplifying assumption that they would be adjusted using the efficiency factor (and cost uplifts) for national prices. We use the latest available financial statements for providers, and project them forward to 2015/16 to calculate impacts on providers' normalised net surplus/deficit margin (pre public dividend capital).

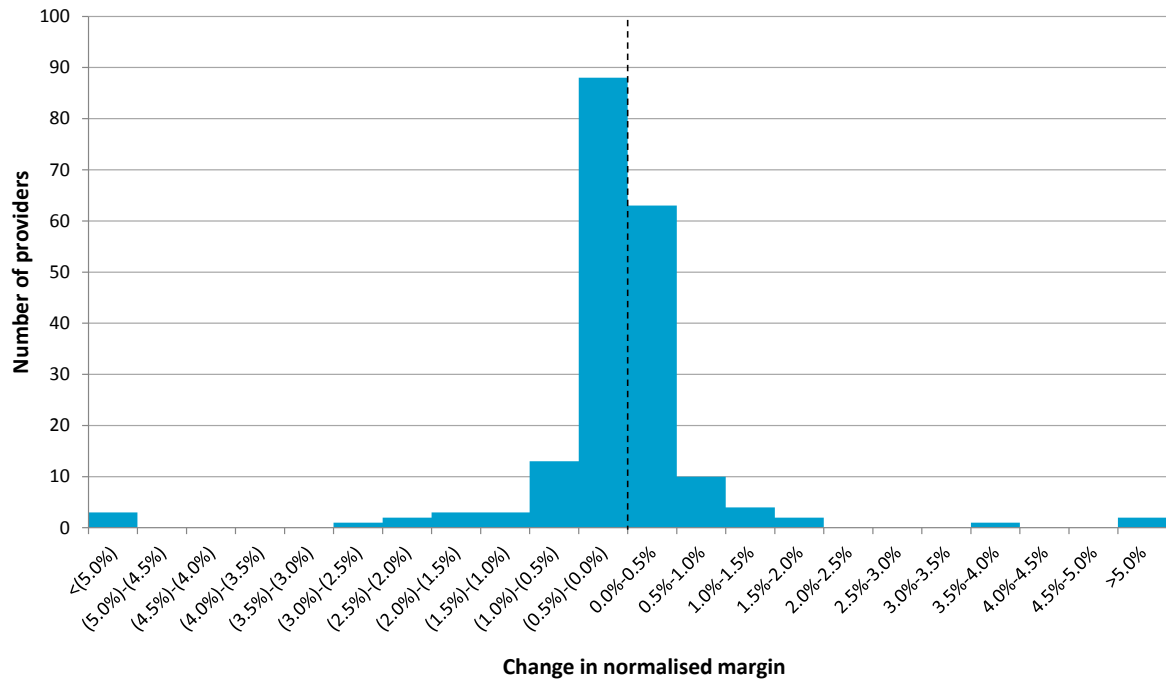
For the impact assessment that supports the statutory consultation notice, we will update key inputs such as the latest financial statements for providers and cost uplift factors.

Below we summarise the findings from our preliminary assessment. The effects identified are driven by direct changes to individual prices (relative to their level for 2014/15), and by changes to the allocation of services according to the proposed new currency design.

Providers:

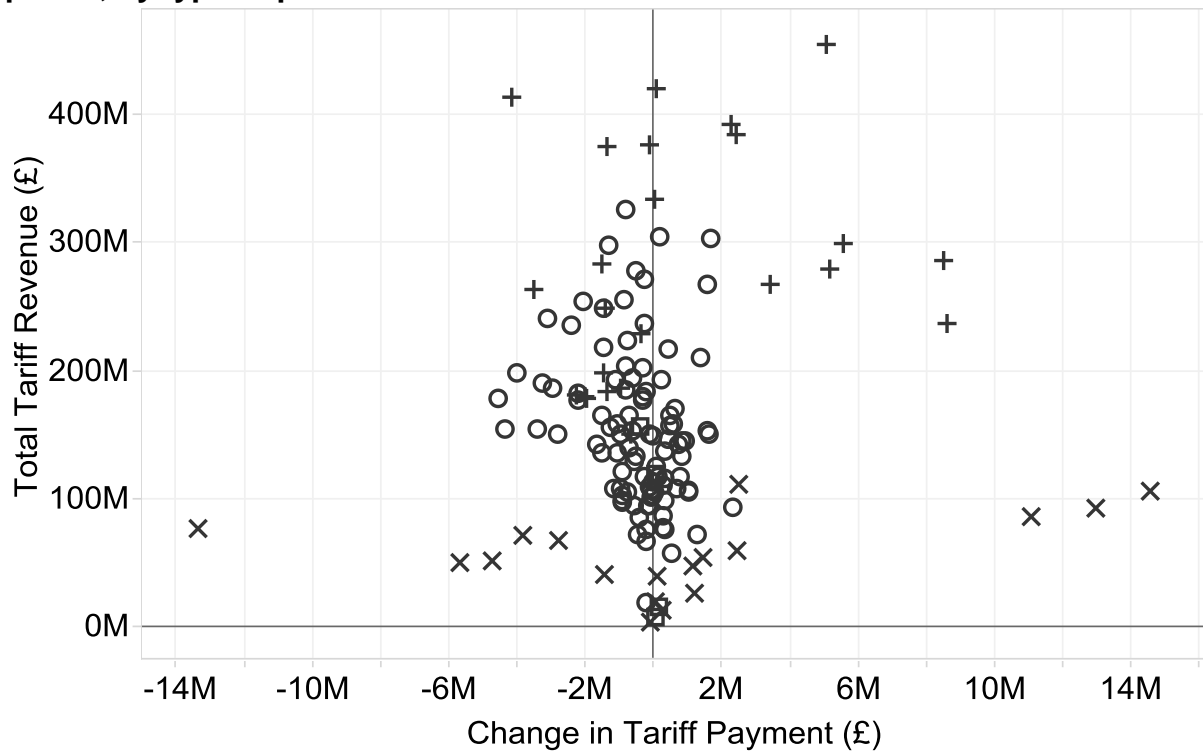
- for the majority of providers, normalised net surplus/deficit margins show changes of less than +/-1% as a result of the relative change in prices (see Figure A1)
- a small number of providers show significant reductions in their normalised net surplus/deficit margins – initial analysis shows that these are mainly specialist providers of orthopaedic services (Figure A2)
- a small number of providers show significant increases in their normalised net surplus/deficit margins – initial analysis shows that these are mainly specialist providers of children's services (Figure A2).

Figure A1: Change in providers' surplus/deficit margins due to relative changes in national prices



Source: Monitor analysis

Figure A2: Change in national tariff income due to relative changes in national prices, by type of provider



TrustCategory

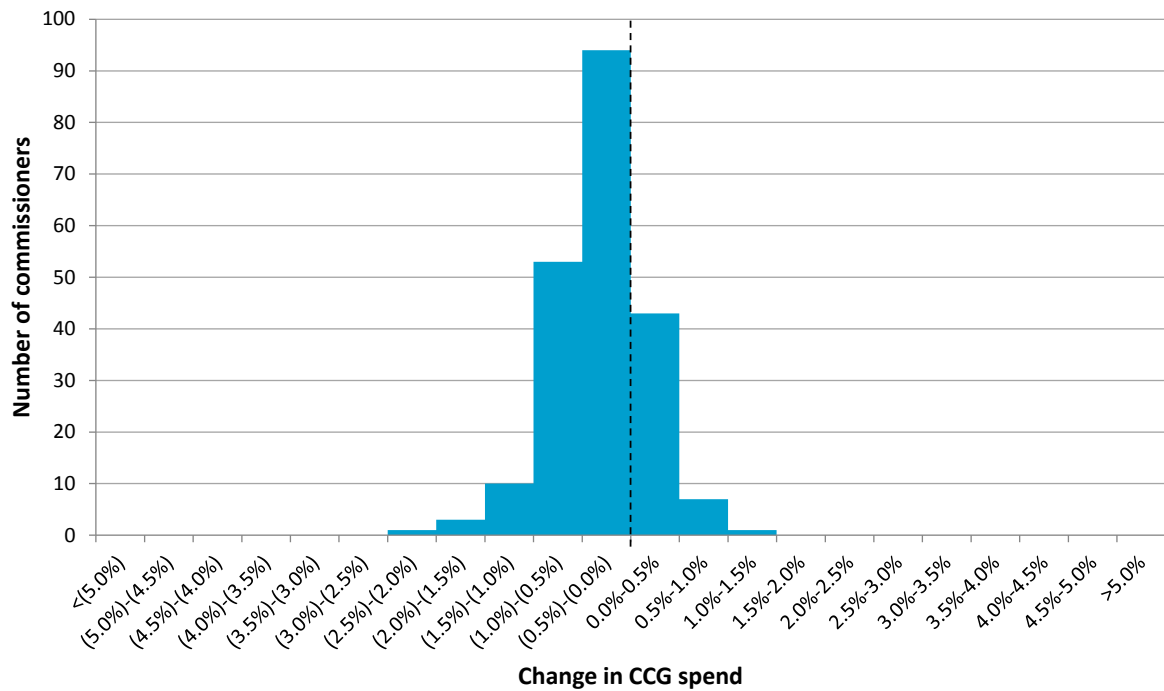
- Acute - General
- Acute - Multi-servi..
- + Acute - Teaching
- × Acute Specialist

Source: Monitor analysis

Commissioners:

- most CCGs show a change in spending of between 0% and -1% as a result of the relative change in prices compared to 2014/15 (see Figure A3)
- the overall reduction in CCG spend is estimated to be offset by an increase in centrally commissioned services.

Figure A3: Change in CCGs' expenditure due to relative changes in national prices

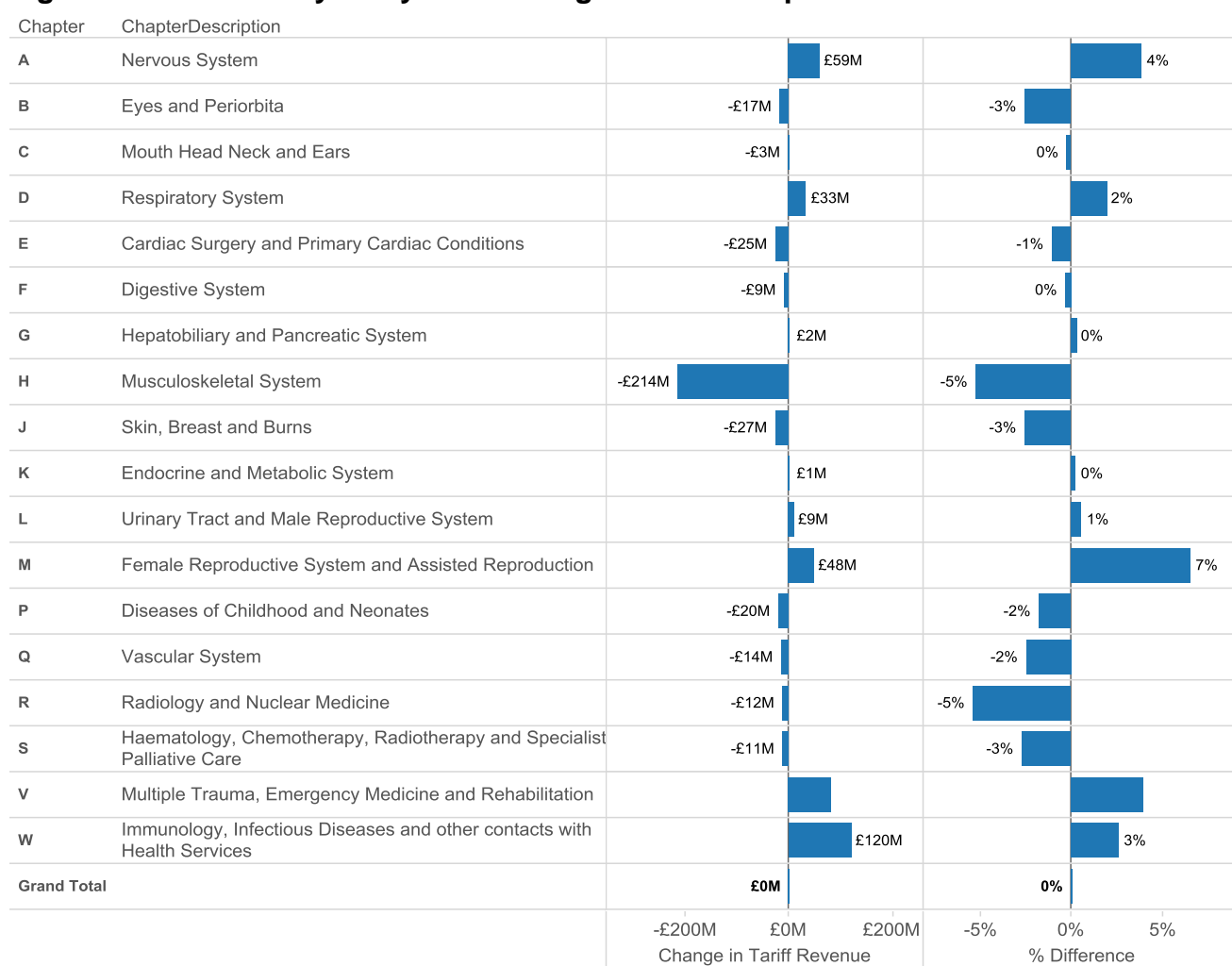


Source: Monitor analysis

HRG chapters:

- there are significant changes in the relative prices of some chapters of HRGs (Figure A4)
- chapters H (musculoskeletal system) and R (radiology and nuclear medicine) show the biggest decreases in expenditure as a result of relative changes in prices
- chapters M (female reproductive system and assisted reproduction) and V (multiple trauma, emergency medicine and rehabilitation) show the biggest increases.

Figure A4: Preliminary analysis of changes in relative prices



Source: Monitor analysis

Table A2: Preliminary assessment of proposals to introduce four new national prices

Issue	Options assessed
<p>The coverage of national prices should be kept up to date, reflecting clinical advice and data availability. Having a national price strengthens the signal that a service should be provided at efficient cost.</p>	<p>Option A (baseline): No additional national prices. Option B (proposal): Add national prices for complex therapeutic endoscopy, dialysis for acute kidney injury, cochlear implants and TAVI.</p>
Proportionality test	Form of assessment
<p>We expect that the proposal will not be sensitive. These are not major service groups, so any impacts will be isolated, and unlikely to be significant for providers as a whole. We have limited data for exploring the likely impacts associated with the proposals. This means that we are restricted to a qualitative analysis.</p>	<p>We consider a high-level, qualitative impact assessment is appropriate for these proposals.</p>
Input from stakeholder engagement	Model specification and key assumptions
<p>We discussed the proposal with NTAG, whose members noted that more information was needed on the costs and benefits before they could make a recommendation.</p>	<p>The analysis in this impact assessment relies on the assumption that providers and commissioners will use the new national prices as the basis for payments.</p>
Interaction with other policies	Risks
<p>New national prices would be subject to our proposals for modelling national prices (Section 4) and cost adjustments to national prices (Section 5).</p>	<p>The main risk associated with the proposal compared to the baseline scenario is that the new prices are set at the wrong level. If this happens, the price signals will not work as we expect, and the effects proposal will be undermined or counterproductive.</p>
Benefits	Costs
<p>The main benefits of the proposal relative to the baseline are:</p> <ul style="list-style-type: none"> • clearer signals about the efficient costs of providing the services in question, which should ultimately result in greater purchasing power for commissioners on behalf of patients • more transparency for the services in question, because these services would be incorporated into the data collection and reporting processes for services that have a national price. Over time, we expect this to lead to better use of resources, to the benefit of patients. 	<p>The main cost of the proposal relative to the baseline is likely to be any administrative costs associated with introducing the new prices, as payment system tools must be adjusted. We expect these costs to be small, as the introduction of new prices from year to year is common.</p>

Table A3: Preliminary assessment of proposals to introduce a BPT for heart failure, and amend existing BPTs for primary hip and knee replacements and endoscopy

Issue	Options assessed
<p>We would like to encourage provision of high-quality care through financial incentives in the national tariff.</p>	<p>Option A (baseline): No changes. Option B (proposal): Introduce one new BPT (heart failure) and increase the thresholds for two existing BPTs (hip and knee replacements, endoscopy).</p>
Proportionality test	Form of assessment
<p>These proposals are specific, and unlikely to be financially significant on their own for providers as a whole. However, specialist providers and clinicians working in these areas will want to be sure the proposals are consistent with clinical practice. At this preliminary stage of assessment we have not conducted a detailed quantitative assessment. The time available for assessment is very short.</p>	<p>We consider a qualitative impact assessment is appropriate for these proposals.</p>
Input from stakeholder engagement	Model specification and key assumptions
<p>We developed these proposals using input from internal and external working groups, including clinicians. We also discussed the proposal with NTAG, whose members noted that more information was needed on the costs and benefits before they could make a recommendation.</p>	<p>Not applicable at this stage. The analysis in this impact assessment relies on the assumption that providers and commissioners will use the BPTs as the basis for payments.</p>
Interaction with other policies	Risks
<p>The national prices derived by these proposals would be subject to our proposals for modelling national prices (Section 4) and cost adjustments to national prices (Section 5).</p>	<p>There is a risk that the proposed changes do not create the incentives that are intended, or that providers are unable to take the required actions to achieve best practice in 2015/16, resulting in the deterioration of their financial position. If providers incur additional costs to achieve best practice, these may not be fully reimbursed.</p>
Benefits	Costs
<p>The proposal has the following incremental benefits compared to the baseline:</p> <ul style="list-style-type: none"> • Higher quality of care for individual patients, due to a stronger financial incentive to meet best practice standards. • Increased awareness of best practice. 	<p>These proposals are expected to create administrative costs, as payment system tools must be adjusted. We expect these costs to be small, as the introduction and amendment of BPTs will follow an established process.</p>

Table A4: Preliminary assessment of proposals to amend existing BPTs for day case and outpatient procedures

Issue	Options to be assessed
<p>We would like to signal to the sector that a greater proportion of care should be delivered in lower-cost settings. Specifically, we propose to do so for day case procedures to manage female incontinence, tympanoplasty day case procedures and diagnostic hysteroscopy outpatient procedures.</p>	<p>Option A (baseline): No changes. Option B (proposal): Increase the assumed proportion of patients treated as day case or outpatient (as relevant) in the price-setting model. The effect will be to reduce national prices for these services, all other things being equal. Sensitivity: As above but with an assumption that providers are not able shift care to lower-cost settings in the proportions that we have assumed in modelling the prices.</p>
Proportionality test	Proposed form of assessment
<p>We expect this proposal to be of moderate interest for providers and commissioners. Although the changes are quite specific, we expect that any changes to price levels will attract some interest. The time available for assessment is very short.</p>	<p>Quantitative assessment of the main impacts, supported by qualitative assessment.</p>
Input from stakeholder engagement	Proposed model specification and key assumptions
<p>We have discussed these updates with the clinicians involved in the initial development of the BPTs. We also discussed the proposal with NTAG, whose members noted that more information was needed on the costs and benefits before they could make a recommendation.</p>	<p>We will run our impact assessment models once for the baseline scenario, and once for the proposal scenario. For the sensitivity, we will run a scenario in which providers match the proportions of care provided in lower-cost settings that are assumed in modelling the prices, and then run scenarios in which they do not.</p>
Interaction with other policies	Risks
<p>The national prices derived by these proposals would be subject to our proposals for modelling national prices (Section 4) and cost adjustments to national prices (Section 5).</p>	<p>If the new prices are too low, providers will not be able to cover their costs. This would not be sustainable long term, and would not be in patients' interests because providers might scale back or withdraw services.</p>
Benefits	Costs
<p>This proposal should have a positive impact on patients, by encouraging the delivery of care at a lower cost. Reducing the price levels would increase the spending power of commissioners, and would have very little impact on providers that can meet our expectations for shifting care between settings.</p>	<p>There should be little or no administrative burden from the proposed changes. We are not changing the specifications of the services, or the way that the payment system operates. The only change is to price levels, to incentivise a shift to lower-cost settings. By design, the new prices will be less cost-reflective.</p>

Table A5: Preliminary assessment of proposals to add factors used for determining maternity pathway payments

Issue	Options assessed
Feedback from the sector has suggested that allocation of the pathways to women could be improved by adding factors to the antenatal pathways.	Option A (baseline): No changes. Option B (proposal): Add six factors to the maternity pathway currencies.
Proportionality test	Form of assessment
Maternity in general is a sensitive area of healthcare, and the maternity pathway is an important new initiative that is still developing, but we expect that this particular proposal will not be controversial since they were based on feedback from the sector. The proposed changes are unlikely to be financially significant on their own at a whole-of-provider level.	We consider a high-level, qualitative impact assessment is appropriate at this stage. For the statutory consultation notice we will assess the likely differential impact on providers both qualitatively and quantitatively.
Input from stakeholder engagement	Model specification and key assumptions
These proposals are made in response to feedback received about the maternity pathway payment since implementation in April 2013.	The analysis in this impact assessment relies on the assumption that providers and commissioners will use the new coding factors to allocate cases to each maternity pathway.
Interaction with other policies	Risks
<p>The proposal to add new factors to maternity pathway currencies can be considered in isolation. For the avoidance of doubt, this impact assessment is separate to the impact assessment for two other proposals that would affect the maternity pathways in 2015/16:</p> <ul style="list-style-type: none"> • Removing transitional arrangements for risk sharing (see ‘2015/16 National Tariff Payment System: Engagement on national variations’) • Other changes to the price levels for pathway payments. 	This proposal is unlikely to have major new risks. It is possible that the new prices for each pathway (rebalanced to account for the new proportions of cases on each one), will either overestimate or underestimate the likely changes in average costs across each pathway. However, the number of cases that correspond to the new factors are small and we believe this risk is manageable.
Benefits	Costs
The main benefit of the proposal is that it should make pathway payments more cost-reflective for individual cases. It should also be helpful for midwives to see that pathway allocations are clinically intuitive.	The proposal is expected to carry small implementation costs. The pathway payment is already established and the proposal does not affect its overall design. We do not see any other reason for this change to be disruptive.

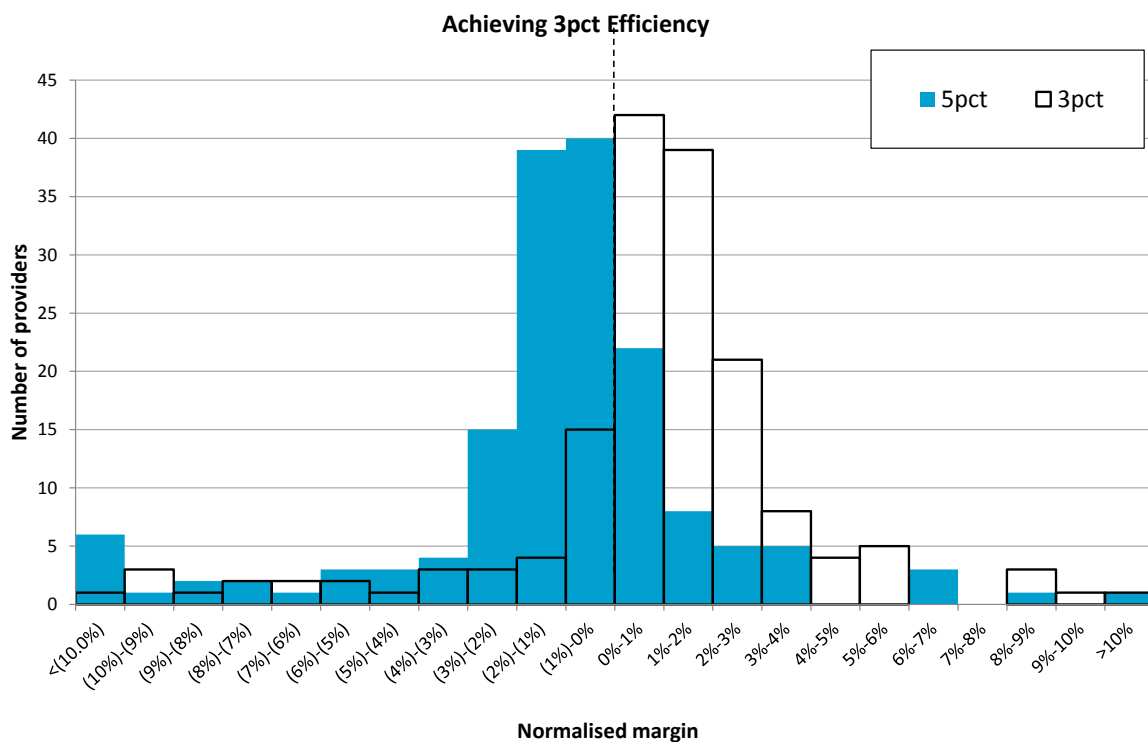
Table A6: Preliminary assessment of proposed range for the efficiency factor

Issue	Options assessed
<p>Our price-setting principles are that prices should reflect the efficient costs of providing a service and that they should send appropriate signals to providers and commissioners. The efficiency factor is one of the mechanisms by which we can adjust national prices to accord with our price-setting principles.</p>	<p>Option A (baseline): No change to price levels from 2014/15. Option B (proposal): 2014/15 prices are adjusted by one of a number of points from within the proposed efficiency factor range of 3–5%. Sensitivities: As above but with assumptions about providers’ achieved efficiency savings differing from the efficiency factor.</p>
Proportionality test	Form of assessment
<p>The efficiency factor gives an important signal to all providers and commissioners. It could have significant implications for the services available to patients and the care patients receive. The efficiency factor affects the tariff year, but will also influence expectations future years. The time available for assessment is very short.</p>	<p>Quantitative. We will consider whether additional qualitative assessment is required for the statutory consultation notice on the basis of feedback to this publication.</p>
Input from stakeholder engagement	Model specification and key assumptions
<p>Some stakeholders, either in response to the methodology paper or as part of NTAG, have stated that the efficiency factors should either be lower than in previous years (some providers) or sufficiently large in order to make the provision of services in 2015/16 affordable given budgetary constraints (some commissioners).</p>	<p>We will run our impact assessment models for a range of values within the proposed range of 3–5%. We will run the models with a range of assumptions on the level of efficiency savings achieved by providers. (Figure A5 provides an illustrative example).</p>
Interaction with other policies	Risks
<p>The efficiency factor is one of the possible cost adjustments to national prices, along with the cost uplift factor. If we were to add a leakage factor, it would also fall into this category. The efficiency factor for national prices is a reference point for local price setting.</p>	<p>If providers (or to a lesser extent commissioners) consider that the efficiency factor we set is unrealistic or unjustified, there is a risk that they will not respond to the intended signal of the efficiency factor. That could lead providers to engage in additional activities in order to bridge the gap between their costs and the revenues they receive from services with a national price.</p>
Benefits	Costs
<p>An appropriately set efficiency factor would have the benefit of incentivising providers to deliver services at a lower cost, which would allow commissioners to purchase more services for a given budget, or change the mix or quality of services commissioned.</p>	<p>The cost of setting the efficiency factor too high is that providers would be less likely to achieved the required savings, and their financial position would deteriorate. The cost of setting the efficiency factor too low is the commissioners would not be able to commission all of the service that their local health economy requires.</p>

Figure A5 is an example of the sensitivity analysis that we will run as part of our impact assessment for efficiency. This example shows that if we set an efficiency factor of 5% and assume that local prices are also adjusted by the same factor, but providers only achieve a 3% reduction in operating expenditure, we would expect more than half of providers to have an operating deficit in 2015/16. This is based on our preliminary assessment, which uses the draft national prices published alongside this document.

We will run a range of these scenarios as part of the process to inform the decision on an efficiency factor for the statutory consultation notice.

Figure A5: Provider normalised net surplus/deficit margins in 2015/16 assuming providers achieve 3% efficiency between 2014/15 and 2015/16 (illustrative example)



Source: Monitor analysis

Annex B: Detail on proposed changes to high-cost drugs list

Table B1: Proposed additions to high-cost drugs list

HSCIC Reference number	Generic Name	Clinical Indication
291	baricitinib	Rheumatoid arthritis (RA)
294	ciprofloxacin inhalation	Bronchiectasis
295	ciprofloxacin liposomal	Bronchiectasis
301	forigerimod acetate	Systemic lupus erythematosus (SLE)
302	gevokizumab	Uveitis
307	ixekizumab	Ankylosing spondylitis (AS)/Psoriatic arthritis
322	tabalumab	Systemic lupus erythematosus (SLE)
329	ABT-450 + ritonavir + ABT-267 + ABT-333	Hepatitis C
336	alpha-mannosidase recombinant human	Metabolic disease
346	balugrastim	Neutropenia
356	brodalumab	Psoriasis
377	daclatasvir	Hepatitis C
392	efraloctocog alfa	Haemophilia A
393	eftrenonacog alfa	Haemophilia B
398	epratuzumab	Systemic lupus erythematosus (SLE)
416	human parathyroid hormone-related protein analogue	Osteoporosis
419	immunoglobulin	Primary immunodeficiency
432	lumacaftor + ivacaftor	Cystic fibrosis
445	ocrelizumab	Multiple sclerosis (MS)
446	octocog alfa	Haemophilia A
449	ofatumumab	Pemphigus vulgaris
458	pomalidomide	Myelofibrosis
471	sarilumab	Rheumatoid arthritis (RA)
472	siltuximab	Castleman's disease
474	sirukumab	Rheumatoid arthritis (RA)
483	trenonacog alfa	Haemophilia B
300	eprodisate	Amyloidosis
304	idebenone	Duchenne muscular dystrophy
311	macimorelin	Growth hormone deficiency
323	vapreotide	Oesophageal varices
287	amikacin inhalation	Pneumonia
341	asfotase alfa	Hypophosphatasia
389	drisapersen	Duchenne muscular dystrophy
423	ixazomib	Amyloidosis
452	orteronel	Prostate cancer – treatment

Annex C: Data cleaning rules

This annex provides more detail on some of the proposals in relation to the 2015/16 national tariff (as set out in Section 4). Better data cleaning is one opportunity for improvement of the inputs to the national tariff model. ‘Cleaning’, in this context, means working through data at a granular level to find and remove data points that appear to be unreliable before they are inputted into the model.

For the draft prices published alongside this paper, we applied the following cleaning rules to admitted patient care 2011/12 Reference Costs (RC) data:

1. *Removing outliers from the raw reference cost data set based on Grubbs’ method, also known as the ‘maximum normed residual test’.*⁴³

The Grubbs test is defined for following hypotheses:

- H_0 : the sample doesn’t have outliers
- H_1 : the sample has one outlier

The Grubbs score is calculated using the following formula:

$$G = \frac{\max |X_i - \mu|}{sd}$$

where G is the Grubbs score; X_i is the unit cost after the market forces factor (MFF) is removed in a specific sample, μ and sd is the sample mean and standard deviation respectively. Then the outliers are identified (and subsequently removed) by comparing the Grubbs score for each observation in the sample to the test’s critical value for the sample.⁴⁴

The test detects one outlier at a time. This outlier is temporarily deleted from the dataset and the test is iterated until no outliers are detected. This test is undertaken across the natural logarithm of the unit cost after the MFF is removed for each HRG and department.⁴⁵

2. *Removing providers with at least five unit cost submissions below £5 and at least 10 unit cost submissions above £50,000 (subject to an average unit cost check).*

⁴³ For further explanation of the method see Grubbs F. (1969), Procedures for Detecting Outlying Observations in Samples, *Technometrics*, 11(1), 1-21; Stefansky W. (1972), Rejecting Outliers in Factorial Designs, *Technometrics*, 14, 469-479.

⁴⁴ The values of Grubbs Statistic can be found at: http://pages.towson.edu/rsours/docs/210/Statistics_Tables.pdf

⁴⁵ The following departments are considered in APC: day case, elective inpatients, elective inpatients excess bed days, non-elective inpatients short stay, non-elective inpatients long stay and non-elective inpatients long stay excess bed days.

3. *Removing providers submitting RC which are more than 50% lower than the national average for more than 25% of the HRGs submitted and who at the same time also submitting RCs which are 50% higher than the national average for more than 25% of the HRGs submitted.*
4. *Removing providers who report reference costs that include more than 75% duplicate costs across HRGs and departments.*
5. *Removing providers submitting reference costs containing more than 15% illogical relativities.* Illogical relativities arise when unit costs for similar HRGs are inconsistent under a clinical perspective. For example, Table C1 indicates an illogical relativity because the provider submitted a higher unit cost for the HRG with lower complexity.

Table C1: Illustration of illogical relativities⁴⁶

Provider code	HRF code	HRG description	Day case unit cost
RD3	AA02A	Intracranial Procedures for Trauma with Diagnosis of Intracranial Injury with complexities and co-morbidities	£2,000
RD3	AA02B	Intracranial Procedures for Trauma with Diagnosis of Intracranial Injury without complexities and co-morbidities.	£2,500

⁴⁶ Costs are fictitious and used as an illustrative example.

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