Establishing a relationship between provider costs and national prices

FINAL REPORT

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Executive Summary

The 2012 Health and Social Care Act (the ‘2012 Act’) granted joint responsibility to Monitor and NHS England for setting the ‘national tariff’ for NHS services. The national tariff, which is subject to a formal consultation process, forms a major part of the NHS payment system and is a key element of the overall framework under which providers of healthcare services contract with commissioners of these services.

The national tariff sets out, among other things, a methodology for determining the national prices of certain specified healthcare services. The cost information used to inform how prices are set under the current methodology is known as ‘reference costs’ and is submitted each year by providers of national tariff services. This in turn forms the basis of payments to providers by commissioners.

Monitor commissioned FTI Consulting to consider what the relationship should be between the costs reported by providers and the national prices set by Monitor and NHS England. This report sets out our findings.

Our focus has been on what the enduring framework for determining the relationship between the reported costs and national prices should be. Given this requirement to establish a long-term framework, we have had particular regard to:

- the principles that should underpin the relationship between reported costs and prices;
- which types of costs incurred by providers should be reported through cost submissions used to set prices (we refer to this as the ‘cost set’) and whether Monitor should adjust these reported costs in determining national prices; and
- how Monitor should ‘benchmark’ costs given the wide variation in reported costs among providers.

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1 The first national tariff published under this joint responsibility was the 2014/15 National Tariff Payment System which we refer to in this document as the ‘2014/15 national tariff’.

2 We note that the 2015/16 National Tariff Payment System Consultation Notice (which we refer to in this document as the ‘2015/16 consultation notice’) uses the term ‘cost base’ to refer the more general concept of a price ‘level’ (see, for example, Figure 5.2 in Section 5 of the 2015/16 consultation notice). In this document we use the term ‘cost set’ to refer to the more narrow concept of the types of cost and accounting items that are included in the cost submissions used to set prices.
Our conclusions, in principle, could be also implemented in future years if the coverage of national prices changes, including if national prices are introduced for mental health services. In developing our conclusions, we have drawn upon lessons learned from other regulated sectors and healthcare systems, and a number of informal stakeholder engagement activities ranging from interviews with provider cost accountants to an expert panel discussion involving senior healthcare leaders and academics.

As well as providing recommendations for the enduring framework for price-setting, we have also been asked to provide specific recommendations for the 2016/17 national tariff. In doing so, we have drawn upon our long-term recommendations but recognise the fact that Monitor is already part way through the process of developing the 2016/17 national tariff and the relevant ‘reference costs’ have already been collected.

Our key recommendations are as follows.

- We consider Monitor and NHS England’s stated principles for price-setting are in line with good regulatory practice but recommend that the principles should include the commitment to be as transparent in possible in setting prices. Following these principles, we recommend that **prices should be set such that reasonably efficient providers can fund the costs of service provision**.

- We recommend that the overall pricing framework (that is, the overarching framework by which provider cost data is used to set prices) should:

  o apply **the latest relevant reference cost data**, with a cost set that **reflects the cost of the delivery of NHS patient care** (in this report we make specific recommendations on which types of costs we consider reflect the delivery of NHS patient care, and provide recommendations on how best to differentiate those costs in future);

  o apply **the weighted median of reported costs** for each currency (rather than the weighted mean that is currently used); and

  o be **transparent** in reflecting any separate adjustments made to reflect policy decisions.

We discuss each of these in turn below and then summarise the implications of our recommendations. This includes pragmatic adjustments to prices that could be made in the short term in the case where our proposed enduring framework cannot be implemented in full.
Recommended changes to the principles for price-setting

Monitor has specific pricing duties under the 2012 Act, which include the duties to “promote the provision of healthcare services which (a) is economic, efficient and effective, and (b) maintains or improves the quality of the services”\(^3\) and “secure that the prices result in a fair level of pay for providers”\(^4\).

These duties are reflected in Monitor and NHS England’s joint pricing principles set out in the 2015/16 consultation notice. These are that prices should ‘reflect efficient costs’ and ‘provide appropriate signals’\(^5\).

We consider these pricing principles are **consistent with regulatory good practice.** In particular:

- Prices that are reflective of reasonably efficient costs provide appropriate signals (to commissioners, providers and other stakeholders) to encourage the appropriate allocation of scarce resources and ensure the sustainability of reasonably efficient providers. This has the benefit of enabling better long-term planning to deliver sustainable patient care – for example, if providers expect that reasonably efficient costs will be recovered through national prices on an ongoing basis, they are likely to be able to make better long-term planning and investment decisions.

- By contrast, to the extent that providers (in general) need to rely on other sources of income to deliver national tariff services, then the positive potential benefits of the national tariff regime may be diluted and not provide appropriate signals. This is particularly likely to be the case where these ‘non-tariff’ funding streams are ‘ad-hoc’ or uncertain in nature as this will reduce the certainty of funding flows and make long-term planning for providers more difficult.

Consistent with the regulatory principles summarised above, we recommend that national prices should be set such that **reasonably efficient providers can fund the costs of service provision.** This implies that the cost set on which prices are based should:

- **reflect the delivery of NHS patient care as represented in the unit of currency itself.** This criterion would exclude the costs of activities that are not related to delivery of the services themselves as defined by the currencies (such as education and training); and

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3 2012 Act, section 62(1).
4 2012 Act, section 119(1).
5 2015/16 consultation notice, Section 5.
• **reflect the fully absorbed cost of providing services.** This would ensure that a reasonably efficient provider can be sustainably financed through the national tariff rather than relying on additional non-tariff funding streams.

However, the price-setting process must also reflect the NHS England Mandate and NHS England’s key role (as purchaser) in the regulatory framework. This means that the overall budget available for services could be a key constraint in price-setting. A potential tension to price-setting is therefore introduced where, given expected volumes, the aggregate expected spend (based on reasonably efficient costs) may be higher than the overall budget available.

As a result of this tension, we recommend that, in line with good regulatory practice, Monitor is **transparent in how it sets prices and in particular how it reflects the budgetary constraint in its pricing methodology.** We consider this will assist the sector in forming expectations around prices, in turn leading to better long-term decision making.

**Recommended changes to the price-setting framework**

In our view, the current price-setting framework could be improved by introducing a principled and transparent approach for considering the combined interaction between:

- historic reported costs;
- changes to those costs over time; and
- other policy objectives.

With this in mind, we have recommended an overall framework which should allow greater transparency whilst better reflecting Monitor and NHS England’s previously stated pricing principles.

Within the scope of this project, we have four principal recommendations regarding the overall price-setting framework.

**First,** we recommend that the cost set should reflect the actual costs incurred by providers in delivering patient care activities. This has two aspects:

• **The most up to date cost data relevant to the chosen currency design should be used to set prices.** This cost data can then be adjusted by inflation and efficiency factors (quantification of which is outside the scope of this report) to reflect the lag between data collection and the application of prices based on that data and also by the expected inflation and efficiency factor in a forthcoming national tariff period.
There should be no adjustment to reflect any differences between ‘outturn’ costs as reported in the submitted cost data and the ‘expected’ unit costs that were envisaged at the time the national tariff was set for that year.

Our reasoning for this is that the current pricing regime, as well as the regulatory regime more generally, provides incentives for providers to be efficient and this efficiency is subsequently revealed in the reported cost data. Hence, to make an adjustment to the data on the grounds, for example, that a historic efficiency target had not been met would run counter to the principle of using the best information that has been revealed through the operation of the regulatory regime.

- **The cost set should reflect only the cost of NHS patient care activities reimbursed through national prices.** We have examined the types of costs that constitute the cost set and for each element we have made a recommendation on the long-term treatment of the costs (with reference to the proposals set out in Monitor’s costing roadmap). Where relevant we have made a more pragmatic recommendation for 2016/17.

**Second,** we consider that the cost ‘benchmark’ used to set national prices should be assessed at the **weighted median level of costs** rather than the weighted mean6. Our quantitative analysis of reported admitted patient care costs has demonstrated that in aggregate the presence of a relatively small number of providers reporting particularly high costs typically leads to a ‘skewed’ distribution in reported costs. On the basis that prices should be ultimately seeking to represent reasonably efficient costs, certain factors leading to high reported costs (including inefficiency) can be addressed through selecting an appropriate point in the distribution rather than reflecting the entire distribution of reported costs7. We consider this approach also means the price-setting process would better account for the range of regulatory interventions applied in the health sector (such as local modifications and external support for distressed providers).

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6. We have been advised by Monitor that the relative costs of currencies are already under scrutiny by expert working groups (EWGs) and as a result our recommendation for 2016/17 in regard to assessing benchmarking costs is constrained to an overall pro-rata adjustment to national prices.

7. In principle, an alternative percentile could be used (such as, say, the lower quartile or decile). However, we consider there are some significant challenges to doing so and further work would be required.
We note that our recommendation to use the weighted median as the cost
‘benchmark’ in the pricing methodology may have implications for how the historic and
prospective efficiency factors are calculated and applied in the price-setting process.
Under the current approach, the impact of the higher (and lower) cost providers is kept
within the calculation process by the use of the weighted mean of the reported costs as
the cost benchmark from which to calculate prices. The use of the weighted median as
the cost benchmark will remove the impact of higher reported unit costs from the price
calculation process. (Higher reported unit costs are more likely to be associated with
‘inefficient’ providers, although we recognise there are other factors that affect relative
reported levels of unit costs – for example, where the currency design does not fully
reflect complex care). Under our recommended approach, the efficiency factor would
likely be lower than would otherwise be the case, to reflect the fact it would be applied
to the weighted median provider in the distribution of reported costs rather than the
(typically higher) weighted mean of the reported costs as is currently the case.
However, we do not comment further on this matter as it is outside the scope of this
report to provide recommendations on the quantification of the efficiency factor.

Third, we recognise that national prices may reflect policy decisions regarding
behaviours that Monitor may wish to either encourage or discourage. We recommend
in future that the price-setting framework accommodates such policy decisions in a
transparent way.

In particular, we recommend that in future the costs and income of non-tariff activities
are collected in such a way that decisions regarding cross-subsidisation of national
tariff services can be made in a transparent way. As an example:

- The current approach is for providers to remove the income relating to
  commercial activities (such as revenue from car parks and cafés) when
  calculating their reference cost submissions. Assuming these activities in
  aggregate generate a surplus, this effectively means that reference costs
  submissions are reduced not only by the costs of commercial activities but also
  the associated surplus (as income = cost + surplus). Since the reference cost
  submissions feed into national prices, this means that the national prices are
  correspondingly reduced. In essence, therefore, assuming commercial activities
  generate a surplus, it follows that national tariff services would effectively be
  subsidised by surpluses from commercial activities.

- Our recommendations for the cost set in the long term would seek to remove
  this distortion by removing the costs of commercial activities rather than the
  income.
If this transpires, we recognise that Monitor may choose to make a separate policy decision about whether national tariff activity should be subsidised by surpluses generated from commercial activities. Such a policy would need to be considered carefully by Monitor – however, there are precedents from other sectors that could support such an approach. Monitor would also need to consider whether the cross-subsidisation should be generic across the sector or provider specific and, if so, how the level of cross subsidisation should be evaluated.

Fourth, there are a range of options to address the tension created between cost reflectivity and the budget constraint. Consistent with our recommendation on the principles, if an adjustment to prices is made to reflect other policy objectives (such as the budget constraint), it should be made in a manner that is as transparent and fully justified as practicable.

Implications of our recommendations

In line with our recommended framework, we consider that to set the 2016/17 national tariff, 2013/14 reference costs should be used as the primary source of information for provider costs by currency, but recognise that it may be appropriate for Monitor and NHS England to place some weight on the overall quantum of costs reported in 2014/15.

We have examined the ‘cost set’ reflected in 2013/14 reference costs (which we refer to as the ‘current cost set’). In light of the level of cost data that has already been collected, we would not recommend any further adjustments to the cost set for 2013/14. However, we have considered the role of non-tariff funding streams available to providers that appear to be used in part to fund the provision of national tariff services. Our recommendation is that in general non-tariff funding streams that are used to fund the provision of national tariff services should be incorporated into the overall scope of national tariff payments as, without this, it would follow that the national tariff services would not be funded through the national tariff alone. This would be contrary to the principle we have recommended. Therefore, if non-tariff funding streams continue we recommend that, where relevant, there should be a transparent adjustment to national prices.
We set out below the particular items that are affected by the issue of non-tariff funding streams:

- The purpose of CQUIN is to deliver increased quality in services based on national and local targets. However, on the basis of our review, it appears that CQUIN income is predominately (although not entirely) used to deliver services as defined in national currencies. In essence, therefore, CQUIN appears to be another payment flow to support the provision of national tariff services that purport to be funded by the national tariff. Our recommendation for the enduring framework is that the basis for paying CQUIN should be reviewed.

  For 2016/17, however, if CQUIN payments are to continue, then aggregate expected CQUIN income should be netted off from prices. We recommend this because the costs of delivering CQUIN are reflected in the reference costs that will be used to set national prices for 2016/17. We recommend that to determine the adjustment Monitor should request data on aggregate expected CQUIN income from NHS England. If these data are not available, we would recommend that, instead, Monitor apply the best available current estimate. We have been advised that 2% of contract value is a reasonable estimate of what has been achieved nationally, but there are other indicators suggesting different values. Recognising the uncertainty in this figure, we would recommend a 1.5% to 2.0% downward adjustment to national prices in the absence of alternative data.

- Some providers receive additional payments to meet the costs of winter pressures. On the basis of our review we believe that, like CQUIN, this income is predominately (although not entirely) used to deliver services as defined in national currencies. Our recommendation for the enduring framework is that winter costs continue to be included in the cost set, and income should not be paid to providers separately but included in the funding available through national tariff.

  For 2016/17, if winter payments to providers are to continue, then in principle, a corresponding downward adjustment to national prices should be made. The aggregate expected winter payments to providers (over and above national tariff payments) should be netted off from prices. We recommend that to set the adjustment Monitor should request these data from NHS England. If this data are not available, we would recommend that, instead, Monitor apply the best available current estimate.
For 2015/16, £350m has been allocated to CCG winter monies\(^8\), which represents approximately 0.5% of the overall current spend on services within the scope of the national tariff services of some £70bn. It is not clear how much of this £350m allocation will be used to fund CCG payments to providers outside the national tariff, and how much will be used to instead fund CCGs’ national tariff payments to providers. If the total amount is used for the former purpose, a 0.5% downward adjustment to national prices would be appropriate. If the total amount is used for the latter purpose, no adjustment to national prices would be necessary. Recognising the uncertainty, we would recommend a 0.0% to 0.5% downward adjustment to national prices in the absence of alternative data\(^9\).

In any given year, some providers are identified as financially distressed and receive additional revenue to help them cover the costs of providing NHS patient care. These costs are embedded within those reported by providers and the reference costs collection therefore captures these costs. The interim revenue support is specifically targeted and, as such, there are a relatively small number of providers receiving a relatively large amount of income. We consider that assessing benchmark costs by reference to the weighted median rather than the weighted mean will significantly reduce the distortion created by these distressed providers which are likely to have higher costs.

For 2013/14, DH interim support revenue was £509m. This represents approximately 0.7% of the overall current spend on services within the scope of the national tariff services (£70bn). For 2016/17, we recommend that no adjustment should be made to the cost set to reflect this, on the basis that using the weighted median cost rather than the weighted mean cost to set prices would mitigate the impact of any distortions introduced by distressed costs. However, as noted in Section 5, if the use of the weighted mean benchmark continues, then we recommend making a downward adjustment to national prices of approximately 0.7%.

As noted above, we recommend that, rather than assess costs by reference to the weighted mean, a weighted median should be used instead. Our analysis has shown that, for admitted patient care (APC) only, the effect (in isolation) of using the weighted median rather than the weighted mean results in benchmark costs that are lower by approximately 5% for both 2011/12 and 2013/14 reference costs.

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\(^8\) See Monitor, Operation resilience funding for 2015/16: updates.

\(^9\) For the purposes of this report, in the absence of certainty as to the scale and scope of winter monies provision to providers, we recommend a conservative approach which distributes the adjustment over the greatest number of services.
We have not been required to perform a formal impact assessment of the combined effect of our recommendations. However, we have undertaken some analysis to estimate the combined effect of our recommendations for APC only:  

- For 2015/16, the price ‘level’ under our recommendations would have been 4.5% lower than the published 2015/16 draft prices (that is, the national prices set out in the 2015/16 consultation notice).
- For 2016/17, the price level (before application of cost uplift and efficiency factors for 2016/17) would be 0.9% lower than the 2015/16 draft prices.

In general, the price level is particularly sensitive to both the historic and prospective efficiency factors applied to reference costs in the price-setting process. It is outside the scope of this report to provide recommendations on the quantification of these factors, but we would note that using the weighted median of reported costs strips out some inefficiency (by excluding the impact of particularly high cost providers). This implies that, all else being equal, it may be appropriate to apply lower historic and prospective efficiency factors to the cost benchmark in the future than has historically been the case.

Hence in the transition to adopting the weighted median we recommend not to use the full historic efficiency factor as applied to the weighted mean of reported costs.

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10 The CQUIN and winter monies adjustments are expressed in terms of a range; the mid-points of those ranges are used in this analysis.

11 Further, in the case of the 2015/16 price level, this was influenced by efficiency factors set between 2011/12 and 2013/14 before Monitor and NHS England assumed responsibility for setting national prices. We observe that between 2011/12 and 2013/14, providers’ unit costs rose by approximately 1.5% whereas the cost uplift and efficiency factors applied in that period implied a fall in costs of 2.0%.
1 Introduction

Monitor is the sector regulator for health services in England. Its primary duty is to protect and promote the interests of patients. Under the 2012 Act, one of Monitor’s core duties is to work with NHS England to design the payment system for NHS services. This payment system determines the flow of funds between commissioners (who are the purchasers of NHS healthcare services) and NHS healthcare providers (such as hospitals, ambulance trusts and community providers). NHS England specifies how services should be grouped for payment purposes (known as currencies), and Monitor sets the methodological framework for how prices should be determined, along with some associated rules. The pricing framework is set out in a national tariff which must be agreed by Monitor and NHS England and is subject to a formal consultation process.

FTI Consulting (‘FTI’, or ‘we’) have been engaged by Monitor to recommend a framework for using cost data submitted by providers of NHS healthcare services to set national prices. This report contains our independent recommendations in this regard and an explanation of how we have formed those recommendations.

In this introductory section we:

- provide a brief background to the price-setting framework;
- summarise the objectives and scope of this project;
- describe the overall approach we have taken; and
- set out how the remainder of this report is structured.

1.1 Background

The current pricing framework uses cost data submitted by providers of NHS healthcare services to set national prices. The process currently used is complex. However, the key steps relevant to this project are as follows:

1. A set of ‘currencies’ is developed for the purposes of pricing. NHS England identifies ‘currencies’ which are groups of services that are clinically similar and are assessed as incurring similar resource costs by providers. The majority of currencies are defined as Healthcare Resource Groups (HRGs), of which there were approximately 1,500 for 2014/15, covering a spectrum of services from the adjustment of a dental device (unit price: approximately £100) to the treatment of major trauma with complexities (unit price: approximately £25,000).
Providers report the costs of service provision of individual services through an annual ‘reference cost’ collection, using guidance and tools provided by Monitor, the Health and Social Care Information Centre (‘HSCIC’) and the Healthcare Financial Management Association (‘HFMA’). This guidance includes rules on which types of costs should be included in the reference cost submission. We refer to this set of costs as the cost set. Each provider’s reference cost submissions reflects the average cost of delivering each unit of service over a one-year period.

Monitor assesses, for each currency, the activity-weighted mean\(^{12}\) of the unit costs reported by each provider.

Monitor then uses these weighted mean costs as a basis for setting national prices for each currency. Additional to this, the price-setting process requires three key decisions. These are:

- the level of adjustments that should be made to reflect expected changes in providers’ input costs and productive efficiency up to the current year, given the time lag between providers incurring the costs, providers reporting the cost data, and prices being set based on this cost data\(^{13}\);
- the extent of further adjustments that should be made to reflect future expectations of changes in providers’ input costs and productive efficiency, considering national prices are set on a prospective basis; and
- how, if at all, to reflect budget constraints in the price-setting process.

1.2 Objectives and scope of this project

This project has three key objectives. These are:

- First, to propose a consistent set of principles that can be applied to determine the national prices.

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\(^{12}\) For the remainder of this report, we use ‘weighted mean’ as shorthand for ‘activity-weighted mean of the distribution of provider cost submissions’. For clarity, we continue use the generic term ‘average’ in other contexts (such as, for example, when discussing other price regulation systems).

\(^{13}\) In the 2015/16 national tariff engagement documents, Monitor and NHS England refer to this as ‘indexing’ or ‘indexation’.
Second, drawing on those principles, to review the types of costs or accounting items included in the cost submissions used to set prices, primarily in the context of the current paradigm which employs reference costs collection as the primary data source but also considering alternative data sources.

Third, to recommend an enduring framework that can be used to set prices in the future, in light of the findings from the two steps above. Ultimately, the framework should specify how the cost data reported by providers should be used to inform Monitor’s price-setting processes.

In this report, we therefore recommend a framework covering the relationship between provider costs and national prices. In particular, we focus on:

- which types of costs and accounting items reported by providers should be reported through cost submissions used to set prices (the ‘cost set’); and
- how variation in reported costs should be treated (for each currency).

Our recommendations are directed toward an enduring framework. In doing so, we highlight where further work may be needed. As well as providing recommendations for this enduring framework, we have also been asked to provide specific recommendations for the 2016/17 national tariff. To do this, we have drawn upon our longer term recommendations but recognise the current data constraints and the fact that Monitor is already part way through the process of developing the 2016/17 national tariff. Therefore, our specific recommendations for 2016/17 take into account both technical and policy constraints.

The scope of this report is limited to certain aspects of the overall price-setting process, as described above. Because of this, this report makes no recommendations regarding:

- currency definitions;
- quantification of the appropriate historic and prospective inflationary and efficiency factors to apply to reported costs;
- quantification of the market forces factor (MFF) or top-ups for specialised services; and
- calculations relating to data-cleaning, excess bed days, short stay emergency tariffs, or changes to pricing structures.
We also note that the work we have performed has been based on the assumption that the payment system would continue to be largely ‘activity-based’ – that is, prices are defined as ‘unit prices’ based on defined currencies\(^{14}\).

1.3 Approach

Our approach to this project has drawn on consideration of Monitor and NHS England’s pricing principles and duties, examined in the light of pricing principles used in other sectors and healthcare systems. We have reviewed in detail the different types of data available to inform price-setting and, in particular, we have examined the cost set and potential adjustments to the methodology. Throughout this project we have tested and refined our recommendations through stakeholder engagement activities. The main stakeholder engagement activities were as follows:

- We held informal interviews with three providers\(^{15}\), focused on the reference costs collection, treatment of current exclusions and inclusions, non-tariff funding streams, and views on patient-level information costing systems (PLICS).

- We held discussions with members of Monitor’s costing team to discuss Monitor’s ‘costing roadmap’, current issues with reference costs, and future developments in provider costing.

- We convened an expert panel to hold a ‘round-table’ discussion on the lessons that could be learned from other regulated industries and healthcare systems regarding pricing principles and some key issues. The expert panel included experts from business, academia, regulation, and healthcare funding as well as senior representatives from Monitor and NHS England.

- Towards the latter stages of the project, we convened a workshop with Monitor, NHS England and representatives from the NHS Trust Development Authority (NTDA) and the Healthcare Financial Management Association (HFMA) to discuss our work and test our emerging recommendations.

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\(^{14}\)Whilst there would be no particular reasons to think that our findings would not apply to other approaches for payment (such as those proposed for urgent and emergency care), further work would be required to confirm that that this was the case.

\(^{15}\)The interviews were held with one smaller NHS Trust, one larger Foundation Trust (‘FT’) and one larger specialist FT.
1.4 Structure of this report

This report has five further sections:

- In Section 2, we consider pricing principles that are applied in other contexts (such as other sectors undergoing price regulation, and healthcare systems in other jurisdictions) and compare and contrast these with the pricing principles previously articulated by Monitor and NHS England. Partly informed by this but mindful of the context of the health sector, we recommend principles for pricing and a set of criteria that we consider should apply when setting national prices.

- In Section 3, we summarise the current framework for setting prices, with a particular focus on how reference costs are calculated and collated. We set out the issues with the current framework and in particular the extent to which the criteria developed in Section 2 are met.

- In Section 4, we articulate our recommendations for the framework for setting national prices, drawing together the principles and criteria identified in Section 2 and building on the issues identified in Section 3.

- In Section 5, we explain our recommendations for the cost set within the context of the framework articulated in Section 4.

- In Section 6, we explain our recommendations for how benchmark costs are assessed within the context of the framework articulated in Section 4.

In separate appendices we set out more detailed information and discussion:

- In Appendix 1, we summarise our review of the principles and issues emerging in other sectors in the UK where pricing regulation is applied.

- In Appendix 2, we summarise our review of the principles and issues emerging in healthcare payment systems in other jurisdictions.

- In Appendix 3, we provide a review of the data sources we have examined in order to determine any potential application to pricing.

- In Appendix 4, we review specific services that are currently excluded from the cost set, in light of our proposed framework and criteria.

- In Appendix 5, we describe some of the quantitative analysis we have undertaken for the purposes of this project.
2 Recommendations for principles for setting national prices

As described above, the aim of this project is to develop an enduring framework for the relationship between the costs of providing care (as reported through reference costs or other current or potential data sets) and national prices.

To assist in developing this relationship, we examine what the purposes of national prices should be, and, in turn, what the principles underlying the relationship should be. To inform our analysis we draw on findings from a number of sectors in the UK, as well as other healthcare payment systems, where prices are subject to a form of national regulation. Therefore, in this section:

- we summarise the key statutory duties applicable to the NHS payment system and Monitor and NHS England’s stated principles for pricing;
- we review the main principles applied to pricing in other regulated sectors in the UK;
- we review the main principles applied in some other relevant healthcare pricing systems around the world;
- having examined other sectors and healthcare systems, we comment on Monitor and NHS England’s current duties and principles in regard to price-setting; and finally
- drawing on the above, we recommend the criteria that should be employed when assessing costs for the purposes of price-setting.

2.1 Summary of pricing principles and duties applicable to the NHS payment system

Monitor and NHS England both have specific statutory duties. Monitor has an overarching duty to protect and promote the interests of patients, whilst NHS England has a mandate to promote a comprehensive health service. These duties arguably have the potential to conflict with each other, but also inform how prices should be set.

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16 2012 Act, section 62(1)
As well as these general duties, Monitor and NHS England also have specific duties in relation to pricing under the 2012 Act. In particular, Monitor has responsibility for price-setting and NHS England has power of veto over national prices. Importantly, the 2012 Act is not prescriptive in how prices are set, but contains a number of provisions that Monitor must abide by. These provisions include:

- Monitor must promote provision of healthcare services which (a) is economic, efficient and effective, and (b) maintains or improves the quality of the services\(^\text{17}\).
- Monitor must secure that the prices result in a fair level of pay for providers\(^\text{18}\).
- Monitor must exercise its functions with a view to preventing anti-competitive behaviour\(^\text{19}\).
- Monitor must have regard to the objectives and requirements specified in NHS England’s annual mandate\(^\text{20}\).

The provisions set out above, combined with other provisions in the 2012 Act relevant to pricing, form a complex set of considerations for Monitor. In the first national tariff published by Monitor (the 2014/15 national tariff), Monitor and NHS England set out two pricing principles. These were that\(^\text{21}\):

- Price should **reflect efficient costs** – “prices should reflect the costs that a reasonably efficient provider ought to incur in supplying healthcare services at the quality expected by commissioners”; and
- Price should **provide appropriate signals** – prices should enable commissioners to “make the best decisions about which mix of services is likely to offer the highest value to patients” and incentivise providers to “reduce their unit costs by finding ways of working more efficiently”.

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\(^{17}\) 2012 Act, section 62(1).

\(^{18}\) 2012 Act, section 119(1).

\(^{19}\) 2012 Act, section 62(3).

\(^{20}\) 2012 Act, section 116(13).

\(^{21}\) 2014/15 national tariff, Section 5.1.
In the 2015/16 consultation notice, these principles were repeated and again linked specifically to Monitor’s duties under the 2012 Act\textsuperscript{22}. Specifically, it said:

“Consistent with our duties, and in particular our duty in relation to ensuring that prices for providers are set at a fair level for providers, we consider that prices, as in other parts of the economy, should \textit{reflect the efficient costs of provision}.”

The two principles stated above – ‘reflect efficient costs’ and ‘provide appropriate signals’ – are sometimes in alignment and sometimes not. For example, in general, the ‘appropriate signal’ is the ‘efficient cost’ (commissioners can make the best decisions regarding the mix of services to purchase given a scarce pool of resources and providers can observe a benchmark by which to assess their own efficiency). However, in some cases, a judgment can be made to depart from one of these principles in favour of the other. For example, the prices of best practice tariffs (BPTs) are intended to provide a signal (that the treatment is valued and desirable) and provide a financial incentive for providers to change the way in which care is provided but are not necessarily intended to be cost-reflective.

\subsection*{2.2 Experience of other regulated sectors in the UK}

Pricing regulation of some form has been in force for approximately 25 years across a number of sectors in the UK, and the evolution of such regulation has been shaped over time by policymakers, regulators and industry stakeholders. Historically, such regulation has generally been applied to sectors where it has been considered difficult to introduce competition and monopoly provision of a good or service persists. Policy makers in such sectors therefore developed regulatory regimes with the aim of delivering higher quality goods and services at a lower cost by seeking to proxy some of the outcomes of a competitive market. A key outcome of a competitive market, that regulators have sought to replicate, is that prices reflect the reasonably efficient costs of service provision.

We have examined the principal sectors in the UK where some form of price regulation exists. These sectors are:

- electricity distribution\textsuperscript{23} (regulated by Ofgem in the UK);
- water (regulated by Ofwat in England and Wales);

\textsuperscript{22} 2015/16 consultation notice, Subsection 5.1.1.

\textsuperscript{23} Whilst we only summarise the approach to electricity distribution regulation, Ofgem applies the same approach to the other segments that it regulates (electricity transmission, gas distribution and transmission).
airports (regulated by CAA in the UK); and

telecoms (regulated by Ofcom in the UK).

We have also reviewed the postal sector, but formal pricing regulation has now been largely withdrawn and as a result only five per cent of Royal Mail’s revenue is subject to direct price control and relates to its status as the sole provider of the universal postal service obligation.\(^\text{24}\)

In Appendix 1, we detail the key principles and key issues that have emerged in price-setting in these sectors.

Broadly, across the sectors, the common key principles that regulators have developed can be summarised as follows:

- **Cost reflectivity.** Prices should reflect costs insofar as is practical, to signal resource costs, enable better purchasing decisions, and ensure that reasonably efficient providers of services are sustainable and can serve future as well as current consumers. As an example, regulated electricity distribution companies are required by Ofgem to set charges which "reflect, as far as is reasonably practicable...the costs incurred".\(^\text{25}\) Related to this is a duty to ensure companies are able to finance their licensed activities. Because of the strength of this principle, UK regulated businesses are generally considered a very safe investment, which in turn feeds through to savings for consumers through a lower cost of capital for the regulated businesses. We also note that in most UK regulated sectors it is a fundamental premise that capital costs should be recovered through the regulated revenue streams – regulated prices allow for a return on cost of capital and depreciation, both determined by reference to a regulatory asset base (RAB).

- **Incentivising efficiency.** Prices should play a role in driving cost efficiency in the system, which ultimately allows a given amount of money to purchase more services whilst maintaining service sustainability.

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\(^\text{24}\) See [website of the Royal Mail Group](https).

\(^\text{25}\) Standard conditions of the electricity distribution licence ([Standard Licence Conditions](https)).
Promotion of competition. Where applicable, prices should allow for fair access to the market. This is most relevant in industries where the charges applying to certain parts of the ‘value chain’ may, in the absence of regulatory intervention, restrict the potential for new entrants. There is also precedent for regulators to allow more generous terms to smaller firms to encourage new entry. For example, in energy distribution regulation, Independent Gas Transporters (IGTs) have on occasion had a more generous weighted average cost of capital (WACC) because Ofgem considered that the costs of financing for small firms is likely to be higher.

Overarching duty to protect and promote the interests of the end-users of the service. In some cases this stretches explicitly to future users, often expressed in the form of a duty to promote long-term resilience. For example, one of the primary duties of Ofwat under the Water Industry Act 1991 is to ensure the long-term resilience of the associated water sector infrastructure. With this overarching duty serving as an ‘anchor’, regulators typically have some latitude to set prices (or target revenues) in the way that best meets this duty – that is, the primary statutory instrument by which pricing regulation is introduced is not prescriptive about how prices should be set.

These factors, whilst distinct, are overlapping and in some cases mutually reinforcing. As an example, prices that reflect reasonably efficient costs (satisfying the first principle above) should allow for a reasonably efficient new entrant (helping to satisfy the third principle).

There are, of course, some respects in which these regulated sectors typically differ from the healthcare sector. Four particularly important examples are:

Healthcare is largely publicly funded, with a budgetary constraint. As we discuss further below, this has the potential to introduce significant tensions between competing principles.

In a typical industry, firms are owned by shareholders, and the management’s goal is to maximise the long-term level of profits that can be distributed to shareholders. By contrast, public providers of NHS services (which constitute the vast majority of providers) are not constituted in this way and surpluses generated are not distributed to shareholders (although we note the payment of public dividend capital dividends by NHS organisations). However, given Monitor’s duty to engender a ‘fair playing field’ for both public and private providers, this goal (which is arguably more relevant to private providers) is still a relevant consideration.
In a typical regulated industry there is only one or a handful of providers, and industry regulators can therefore perform detailed forensic estimates of individual firms’ efficient costs. By contrast, the NHS payment system develops prices applicable to c.250 public providers, as well as independent providers, and it is not practical for Monitor to estimate the efficient costs of individual providers in the same way. There are however some regulated industries in other jurisdictions where a proliferation of providers is observed and in those circumstances benchmarking studies (using statistical analyses to compare across providers) are typically performed rather than detailed forensic studies of individual providers.

In many regulated industries, it is common for the industry regulator to set an overall allowed revenue that the company is allowed to recover in aggregate and the regulated firms to set the prices (based on activity assumptions and complex methodology determining the relative price levels for different services or users to recover the level of allowed revenue). The regulator has a duty to review the prices and a power of veto, but does not calculate the individual prices. In the NHS payment system, by contrast, the regulator is responsible for the calculation of the prices of individual services (albeit grouped as ‘currencies’) and does not have a specific duty regarding providers’ overall revenues.

However, despite these structural differences, similar regulatory issues need to be tackled in the healthcare sector. For example, the signals that are sent through pricing are as important (if not more important) in the healthcare sector, as a way of signalling to providers’ management how their costs compare to ‘benchmark’ prices and helping inform decisions about future investment. Similarly, prices provide signals to commissioners and budget setters to help inform decisions about the allocation of scarce resources.

Another consideration is the overall budgetary constraint. Although in other sectors the regulators must have regard to the affordability of the regulated products or services – particularly in the case of economically disadvantaged or vulnerable consumers – there is a general consensus that the budgetary constraint has a greater weight in the NHS payment system than is observed elsewhere. There is a potential tension between this constraint, and Monitor’s pricing duties under the Health and Social Care Act 2012 – including, in particular, the duty to set prices that result in a “fair level of pay” for providers.

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26 For example, Norway, where there are c. 150 electricity distribution network companies each serving their own locality.
Moreover, the budgetary constraint can be characterised as a tension between principles – it is common in regulation for tensions between principles to exist, and good regulatory frameworks should recognise those tensions. In our expert panel it was observed that the NHS payment system regulatory framework has a higher degree of tension than other regulated sectors because of the regulator’s (Monitor’s) need to agree the national tariff with the ‘budget holder’ (NHS England).

More generally, the regulatory framework – and in particular the formal consultation requirement – means that Monitor must engage with the sector when setting prices and the method used to set prices must be transparent. In this sense, the regulatory framework applied to healthcare pricing in England has a significant parallel with other regulated sectors in the UK.

### 2.3 Experience of other healthcare systems

As well as examining other regulated sectors, we have also reviewed healthcare pricing systems in selected other countries. In Appendix 2 we detail the key principles and key issues that have emerged in price-setting in these healthcare systems.

We find that across the systems we have reviewed a universal theme is that the regulatory system should seek to incentivise efficiency driven by the political imperative to contain costs where the system is at least partly funded by the public.

However, as would be expected, even amongst countries that use activity-based pricing systems (as currently used for the majority of acute care in the NHS), there are a wide variety of approaches to pricing, reflecting a broad spectrum of healthcare systems, regulatory frameworks and legal regimes. In particular, the NHS payment system has certain distinguishing features which reduce comparability with other healthcare systems including:

- a provider-commissioner split;
- a system largely funded through general taxation (i.e. a limited role for private insurers and patient charges); and
- a regulatory framework for pricing where the price-setting process is subject to formal consultation, giving commissioners and providers the opportunity to challenge the method used to set prices. (As noted above, this characteristic means that the regulatory framework applied to healthcare pricing in England has significant parallels with other regulated sectors in the UK).

For the purpose of this report we selected four countries to examine in further detail. These countries, and the primary reason why they have been selected, are as follows:

- Australia: selected as there is an independent regulator tasked with determining a ‘national’ price level that should reflect the efficient cost of service delivery.
- United States (Medicare and Medicaid): selected as there are national regulations regarding tariff methodology and for Medicare in particular the regulations seek to set prices to reimburse costs incurred by hospitals as closely as possible.
- France: selected as there is an annual price-setting process based on a set of nationally reported costs.
- Germany: selected as the German system uses a DRG costing methodology\(^\text{27}\) (but there are several mechanisms in place for adjusting hospital revenues downwards where necessary to reflect agreed budgets).

In our view, although comparability between healthcare pricing systems is generally limited, the most comparable healthcare pricing system is that of Australia, in that the Independent Hospital Pricing Authority (IHPA) sets a tariff to provide price signals reflecting the efficient cost of providing healthcare services. There are, however, some important points to note:

- the IHPA’s nationally set prices are used as a method to allocate funds to states. States have discretion to vary from nationally set prices;
- prices assume no cap on spending, although a marginal rate\(^\text{28}\) is applied for activity volume above the previous year; and
- small, rural hospitals are generally reimbursed through a separate system (a block grant based on an assessed ‘National Efficient Cost’).

Despite the above characteristics (described in greater detail in Appendix 2), we note that the IHPA’s aim of calculating a price that reflects efficient costs is similar to the aims developed in typical regulated industries in the UK. By contrast, there are a greater number of healthcare payment systems where prices are more strongly linked to the overall available budget (prices are a budget allocation tool). Examples of such systems are France and Germany. For example, in the French system, there is an separate (albeit opaque) step in the pricing methodology where prices are adjusted to conform to the associated national budget.

\(^{27}\) Since 1983, when Medicare adopted diagnosis-related groups (DRGs) as the basis for paying hospitals in the United States, DRG-based hospital payment systems have become the basis for paying hospitals and measuring their activity in most high-income countries. In Germany, DRGs are used as synonym for payment rates. See Diagnosis-Related Groups in Europe, European Observatory on Health Systems.

\(^{28}\) A ‘marginal rate’ means providers are paid only part of the full price for additional activity above a given threshold.
It is also important to recognise that in the NHS payment system context, prices are calculated and applied on a national basis meaning that each provider receives the same price for a given service. This tends not to be the case in other healthcare systems where price-setting is typically devolved to a regional level.

2.4 Commentary on Monitor’s price-setting principles and duties

In the above subsections we have described Monitor and NHS England’s pricing duties and the principles they have articulated with regard to pricing. We consider these pricing principles are broadly consistent with regulatory good practice. In particular:

- Prices that are reflective of reasonably efficient costs not only provide the right signals (to commissioners, providers and other stakeholders) but should ensure the sustainability of reasonably efficient providers. This has the benefit of enabling better long-term planning to deliver sustainable patient care – for example, if providers expect that reasonably efficient costs will be recovered through national prices on an ongoing basis, those providers are likely to be able to make better long-term planning and investment decisions.

- By contrast, to the extent that providers (in general) need to rely on other sources of income to deliver NHS services, then the positive potential benefits of the national tariff regime may be diluted and not provide appropriate signals. This is particularly likely to be the case where other such sources of income are ‘ad-hoc’ or uncertain in nature as this will reduce certainty of funding flows and make long-term planning for providers more difficult.

We have also described nuances which are important to recognise: for example, sometimes the appropriate signal in pricing should be the assessed resource cost of services (so that commissioners can make the best judgments of the mix of services to suit the local population); and sometimes the appropriate signal may be something else (such as a higher price to encourage a particular set of behaviours in the case of best practice tariffs).

The interaction of competing principles and duties introduces certain tensions. Figure 2-1 below summarises the key tensions and illustrates how principles and duties cannot be considered in isolation of one another.

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29 Excepting the market forces factor (MFF) which is an adjustment to national prices to reflect the difference in input costs faced by providers as a result of their geographical location.

30 Setting prices to incentivise a particular behaviour (other than just incentivising efficiency gains) has strong regulatory precedent. For example, in airports regulation landing and take-off charges are set such the use of larger aircraft is incentivised (reducing noise pollution and runway congestion).
Similar tensions are observed in other systems of pricing regulation – the presence of such tensions is not unique to the health sector, and in other sectors regulators frequently make judgments between competing principles. As an example, in airports regulation the CAA must balance the interest of present users in lower airport charges with the interests of future users in an airport’s ability to continue to be able to invest in modern infrastructure and services in a timely manner. Under the terms of the legislation, if there is a potential conflict between the interests of different classes of users, the CAA is directed to carry out its functions in a way that will “further such interests as it thinks best”\textsuperscript{31}.

We have described above how, via the NHS England Mandate (and NHS England’s power of veto over national prices), the national prices should have regard to budgetary constraints. This constraint, which is observed in other jurisdictions\textsuperscript{32}, has the potential to be in significant tension with the key principle that prices should reflect ‘efficient’ (or even ‘reasonably efficient’) costs as well as Monitor’s duty to set prices at a “fair level of pay”\textsuperscript{33}.

\textsuperscript{31} Civil Aviation Act 2012, section 1 (1).
\textsuperscript{32} In France and Germany, for example, whilst prices seek to reflect the relative costs of services and ensure the sustainability of service providers, the overall level of prices is chiefly driven by the overall budget.
\textsuperscript{33} Health and Social Care Act 2012, section 119 (1)
Monitor must therefore make a judgment when price-setting, and in doing so must have regard to its overarching duty to act in the best interests of patients. This is analogous to other regulated sectors, where regulators typically must have regard to an overarching duty to current or future consumers when making judgements between principles. However, following discussions with stakeholders, it appears there is scope for greater transparency in the application of that judgement.

With this in mind, we recommend that Monitor should, when exercising its price-setting functions:

- recognise where principles may conflict (either with each other, or in certain cases, with other duties); and
- be transparent in the judgments made in those circumstances, such as, for example, when reflecting policy decisions.

### 2.5 Criteria for costs that should be reflected in national prices

As described in Section 1, one of the key outputs of this project is a set of recommendations for what the ‘cost set’ should include – in other words, what costs national prices should seek to reflect. In turn, this requires a view as to the purpose and function of national prices.

Having reviewed the principles applied in other contexts and the reasons for so doing, we recommend that national prices should be set such that reasonably efficient providers can fund the costs of service provision. By analogy with the principles discussed above, there are three main reasons for so doing. These reasons are:

- **Cost reflectivity.** Prices that are reflective of reasonably efficient costs not only provide the right signals (to commissioners, providers and other stakeholders) but should ensure the sustainability of reasonably efficient providers. This has the benefit of enabling better long-term planning (for example, lowering funding costs to the extent there is greater certainty).

- **Principle of efficiency.** Prices should play a role in driving efficiency in the system, to allow over the long term more care to be delivered to patients. All else being equal, the more that providers have to rely on external revenue streams to deliver NHS services, the weaker the impact of the national tariff and the less Monitor and NHS England are able to influence provider (and commissioner) behaviour.
Promotion of competition. A key rationale for the current system of national prices is that ‘money follows the patient’\(^{34}\) and Monitor has a duty to prevent anti-competitive behaviour\(^{35}\). Where national prices are insufficient to fund a reasonably efficient provider (and therefore providers must seek alternative revenue sources to remain sustainable) this rationale is undermined.

In broad terms, our recommendation that prices should be set such that reasonably efficient providers can fund the costs of service provision means that the ‘cost set’ should reflect the actual costs of patient care (with appropriate consideration given to how efficiency is determined). We note that this is consistent with the existing 2013/14 reference costs guidance which states that reference costs should\(^{36}\):

“...emphasise the cost of delivering the service, and not the location of the service or the funding streams that are used to recover these costs. The services covered are those provided to NHS patients regardless of location under a range of contractual arrangements... where the provider incurs a cost.”

However, we consider that greater clarity is required and an output of this project is a firmer set of criteria for the costs that providers include in their reference costs. These criteria are as follows:

- **The cost set should reflect the delivery of NHS patient care as represented in the unit of currency itself.** This criterion would exclude the costs of activities that (whilst they may indirectly contribute to better patient care) are not related to delivery of the services themselves (as defined by currencies). For example, the national currencies set out in the national tariff reflect an ‘embedded’ level of quality, and the national prices should reflect the costs of delivering to this embedded level of quality. In principle, if there are additional costs incurred by providers to provide levels of quality which exceed those expected by the commissioner then those additional costs should be excluded from the cost set.

- **The cost set should reflect the fully absorbed cost of providing services.** This means that reasonably efficient providers can be sustainably financed through the national tariff and would not require funding from additional sources. This allows for the possibility of market entry (for example, where commissioners identify a benefit to patients of competition for providing a service).

\(^{34}\) See, for example, ‘Money follows the patient’ a note from the Department of Health dated March 2007 before the introduction of the ‘payment by results’ regime.

\(^{35}\) 2012 Act, section 62(3).

\(^{36}\) See Reference costs collection guidance for 2013-14, DH, paragraph 4(e).
The principles and criteria set out in this report inform our recommendations as to which costs should be reflected in the cost set. Based on our stakeholder discussions, we consider that providers would benefit from more prescriptive guidance regarding which costs should be included in the cost set. Whilst our overarching recommendation is that national prices should be set such that reasonably efficient providers can fund the costs of service provision, there are two important caveats to this. These are as follows:

- Firstly, we recognise the overall budget constraint as an important consideration, that Monitor must have regard to. Our recommendation is that Monitor and NHS England are transparent in how decisions are influenced by this.

- Whilst our central recommendations are focused on what we consider should be reflected in the cost set (and correspondingly, what should be then reflected in national prices rather than non-tariff revenue streams) we understand that, for policy reasons, some non-tariff revenue streams may continue to be made available to providers in ways that are contrary to our recommendations. To prevent funding the same costs twice, an adjustment may be needed to national prices. This means that prices themselves will not have the right signalling properties but at least ensures that, given continued payment through other revenue streams, providers’ reimbursement is sufficient to meet the costs of a ‘reasonably efficient’ provider.
3 Review of current price-setting framework

In Section 2, we reviewed Monitor and NHS England’s current pricing principles and considered good regulatory practice from other sectors and healthcare systems. In light of this, in this section we review the current price-setting framework and consider where there is scope for improvements in the current approach.

For 2015/16, Monitor formally consulted on a price-setting process more akin to that used in national tariffs prior to the 2014/15 national tariff\textsuperscript{37}. This approach involves using an updated set of reported costs as a key input in the price-setting process. This approach has been referred to as a ‘modelled’ approach, reflecting the fact that individual prices are calculated by reference to cost data submitted by providers.

Figure 3-1 below illustrates the key steps in a stylised ‘modelled’ approach.

**Figure 3-1: Stylised ‘modelled’ approach**

The key components of this stylised ‘modelled’ approach as illustrated above are as follows:

- **Step 1**: Providers determine their aggregate reference costs, based on their financial accounting systems and using guidance provided by Monitor and the HFMA.

\textsuperscript{37} The approach for 2014/15 price-setting was described as a ‘rollover’ approach. Under this approach the previous year’s set of prices was used as base and adjusted upwards to reflect exogenous cost changes and expectations for improved efficiency. This approach does not require updated cost data.
They then allocate their aggregate reference costs to national currencies\(^{38}\) and submit the data to the Department of Health as part of the national reference cost collection.

- **Step 2**: Monitor currently assesses the ‘benchmark’ cost by reference to the weighted mean of reported costs.
- **Step 3**: Historic inflation and efficiency adjustments are applied to reflect, respectively, the average cumulative expected increase in provider input costs and the average cumulative efficiency requirement since the year the cost data was captured. Prospective inflation and efficiency adjustments are then applied to reflect expectations for input cost inflation and provider efficiency gains.

We discuss each in turn below.

### 3.1 Cost collection – reference costs

Reference cost guidance states that reference costs are “intended to capture the costs of all services provided by NHS trusts and NHS foundation trusts to support national price-setting, currency development and benchmarking”\(^{39}\). However, the current reference cost collection does not cover all NHS funded services and does not capture detail on the variation of costs incurred at a patient-level\(^{40}\) (rather, each provider submits the average cost per patient over the year of providing that particular service). These are two of the reasons for which Monitor wishes to move towards a single patient-level cost collection\(^{41}\) which would combine the following three national annual cost collections:

- reference cost collection from both NHS Trusts and NHS Foundation Trusts (collected by the Department of Health on behalf of Monitor);
- education and training costs (collected by Health Education England for the first time in 2013/14); and
- a voluntary PLICS submission to Monitor since 2012/13 (In 2012/13 there were submissions from 66 providers and in 2013/14 there were there were submissions from 68 providers).

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\(^{38}\) Technically, providers submit total cost and activity information on an episode basis which Monitor then later maps to unit costs by currency (units of activity for which payments are made, usually ‘spells’).

\(^{39}\) See *Reference costs collection guidance for 2013-14*, DH.

\(^{40}\) *Costing Roadmap, Summary Report and Findings, July 2014*, BDO.

\(^{41}\) *Improving the costing of NHS services: proposals for 2015-2021*, Monitor.
The proposal is for the single patient-level cost collection to take effect in a phased process, with acute and ambulance sectors leading in 2017/18 and finally community health in 2020/21. The single patient-level cost collection will still allow for reference costs to be calculated from the data, but intends to provide a more comprehensive, standardised and detailed view of costs at the patient-level.

The current reference cost submission process has evolved to support the price-setting process and as such provides cost information at a currency level. Whilst the other reported financial accounts (e.g. Financial Information Management System (FIMS) accounts and Foundation Trust Consolidation (FTC) accounts) and cost collections (e.g. PLICS) provide valuable sources of information for other purposes, they are not currently suitably detailed to allow differentiation between costs incurred to deliver national tariff services and costs incurred for other purposes.

For each provider, the reference cost submission process begins by determining the aggregate ‘reference cost quantum’. The reference cost quantum is calculated starting with the provider’s operating expenses (obtained from the general ledger) to which various amounts are then either added (such as finance costs and PDC dividend payments) or subtracted (such as the costs of providing care to non-NHS patients). The subtracted items typically relate to non-national tariff activities. For each provider, the determination of the reference cost quantum is referred to as the ‘reconciliation’ process. The reference cost quantum is then input into the provider’s costing system, which allocates the reference cost quantum across the activity undertaken by the provider over the course of the year.

Figure 3-2 below illustrates the aggregate amounts in the reconciliation process across all providers for 2013/14.
As Figure 3-2 above shows, in aggregate, the largest adjustments made in the reconciliation process are:

- **Education and training/Research and Development (R&D)** - excluded through an adjustment (using income as a proxy for costs) to reflect the fact that these are separately funded activities that do not relate directly to patient care.

- **Non-patient care activities** - excluded through an adjustment (using income as a proxy for costs) to reflect the fact that these are commercial activities that do not relate directly to the provision of patient care. Activity that does relate to patient care is then added back, through a separate line in the reconciliation (‘not-allowable income’).

- **Service exclusions** – excluded through deducting costs on a full-absorption basis. These services are excluded based on criteria that includes: "no national requirement to understand the costs; lack of clarity as to the unit that could be costed; no clear national definitions of the service; and no clear identifiable currency."  

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See [Reference costs collection guidance for 2013-14](#), DH
Taken together, all the adjustments in Figure 3-2 result in a cost set purportedly reflecting services funded through the national tariff.

We have reviewed the current cost set collection and consider there are two main issues. These are:

- First, costs are not captured in such a way that the existing exclusions from the cost set can be made easily or consistently e.g. some costs are excluded using income as a proxy.

- Second, the cost submission captures all costs related to patient care, regardless of funding stream\(^{43}\). Some costs therefore may be funded both through the tariff and through additional sources of revenue.

The second issue identified above is particularly relevant to our recommendations in this report and is in part a consequence of the significant complexity observed in terms of the range of activities undertaken by providers and the range of revenue sources providers receive. For example, there is no explicit guidance in the 2013/14 reference cost guidance on how the costs associated with winter monies should be treated. Whilst these are likely (in at least some cases) to relate to patient care and do form part of the reference cost submission, they are then funded through both national prices and a separate revenue stream (see Figure 3-3 below).

\(^{43}\) Costs should “emphasise the cost of delivering the service, and not the location of the service or the funding streams that are used to recover these costs” See Reference costs collection guidance for 2013-14, DH.
Figure 3-3: Hypothetical effect of non-tariff revenue streams

Note: in this figure the time lag between reported costs and national prices has been simplified.

Figure 3-3 above illustrates that, as national prices are set on the basis of reference cost submissions, there is a potential for some activities and their costs to be captured in the cost set used to set national prices in subsequent years. One implication of this is that (all else being equal) the price level becomes ‘inflated’ by virtue of costs funded through alternative sources becoming reflected in national prices. However, removing significant costs from the cost set to correct for these distortions may have the perverse effect of increasing providers’ reliance on non-tariff revenue streams, reducing the potentially beneficial signalling properties of the national tariff itself discussed in Section 2 above.

3.2 Benchmarking

For each provider, each reference cost submission reflects costs at the episode level\(^{44}\). At the national level, therefore, for each type of episode, there is a distribution of reported unit costs across providers. The price-setting process must therefore consider how to use this observed distribution of unit costs to determine national prices.

\(^{44}\) Reference cost submissions also include spell based reference costs but these are not currently used in the price-setting process.
The unit costs submitted by each provider reflect a combination of provider-specific factors. The main factors include:

- input costs (the prices that providers pay for inputs, such as labour);
- casemix (that is, the type and complexity of the services);
- the impact of certain revenue streams external to the national tariff (such as, for example, commercial services where the income is netted off reference costs at the provider level); and
- operational efficiency (which is influenced by a number of factors, some of which may be outside the control of the provider’s management).

Variance in **input costs** is adjusted for, in principle, via the MFF. The discussion in this report is predicated on the assumption that the MFF reasonably adjusts for legitimate differences in provider input costs.

Variance in **casemix** is adjusted for, in principle, by the currency design itself which differentiates between less complex and more complex services\(^\text{45}\).

Therefore, after adjusting for MFF, the distribution of costs reported by providers for each type of service largely represents a combination of the latter two factors above – the influence of non-tariff revenue streams and operational efficiency\(^\text{46}\).

\(^{45}\) However, we recognise that, in practice, no given standard currency design can fully reflect the differences in services provided.

\(^{46}\) As noted above, a providers’ operational efficiency reflects a number of factors, some of which may be outside the control of management. We note that in the English health sector there is a range of regulatory interventions to support comprehensive service provision, such as the local modifications regime and support for distressed providers. These interventions are more likely to be applied to providers for which national prices do not adequately reimburse the costs of service provision.
In the current price-setting process, for each type of service, a benchmark cost level is determined, which will inform how prices are set, calculated as a weighted mean across providers (step 4 in Figure 3-1). We note that in other regulated sectors weighted mean costs are not used as the benchmark. Instead, benchmark costs are typically determined by reference to some direct estimate of the costs of a ‘reasonably efficient’ provider. This is the case, for example, in relatively complex benchmarking techniques such as data envelopment analysis (DEA) and stochastic frontier analysis (SFA) which are commonly used in other regulated sectors (especially where there is a large set of regulated firms to observe)\(^{47}\).

The weighted mean measure currently used to assess benchmark costs applies equal weight to different levels of reported costs (subject to identification and elimination of outliers). As described below, we have found that some providers report costs that are significantly higher than the weighted mean which leads to a ‘skew’ in the distribution of reported unit costs.

We have examined reported cost data at a provider level, focusing on admitted patient care (APC) data, accounting for the majority of spend on services with national prices, in the 2011/12 reference costs submissions\(^ {48}\). Within this data set the four ‘largest’ HRGs (in terms of overall aggregate reported cost) are:

- DZ11A: Lobar, Atypical or Viral Pneumonia with Major CC (nonelective) (£307m);
- AA22A: Non-Transient Stroke or Cerebrovascular Accident, Nervous System Infections or Encephalopathy with CC (nonelective) (£285m);
- HB21C: Major Knee Procedures for Non-Trauma category 2 without CC (elective) (£243m); and
- EB01Z: Non-Interventional Acquired Cardiac Conditions (nonelective) (£243m).

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\(^{47}\) Data Envelopment Analysis (DEA) uses linear programming to determine the efficient frontier - each provider is benchmarked against the most efficient provider in the sample. Stochastic frontier analysis (SFA) also allows for an estimation of an efficiency frontier, but is controlled for random events.

\(^{48}\) The 2011/12 reference costs submissions are the submissions that the draft prices in the 2015/16 consultation notice are based on.
The distribution of reported unit costs for these episode HRGs are shown in Figures 3-4 to 3-7 below. The figures show the unit cost (for inlier stays\textsuperscript{49}) reported by each provider, arranged from lowest average unit cost to highest average unit cost. It is important to note that each figure shows the data after having been subject to Monitor’s data-cleansing processes\textsuperscript{50}.

**Figure 3-4: Lobar, Atypical or Viral Pneumonia with Major CC (nonelective)**

\textsuperscript{49} For each HRG there is a nationally-set standard length of stay, known as ‘trim points’. Costs that fall inside the trim point are referred to as inlier costs. Costs that fall outside the trim point are referred to as excess bed day costs.

\textsuperscript{50} See 2015/16 consultation notice Annex 5b: Data cleansing method.
Figure 3-5: Non-Transient Stroke or Cerebrovascular Accident, Nervous System Infections or Encephalopathy with CC (nonelective)

Figure 3-6: Major Knee Procedures for Non-Trauma category 2 without CC (elective)
Figure 3-7: Non-Interventional Acquired Cardiac Conditions (nonelective)

The distributions shown in Figures 3-4 to 3-7 above show a broadly similar pattern: a distribution with a prominent ‘cluster’ of high-cost providers (toward the right-hand side). For each of these distributions, we have calculated the weighted mean cost and the weighted median cost. This is shown in Table 3-1 below.

---

51 While not all providers report costs for all HRGs, we note that there is some correlation between the top reported costs for HRGs and particular providers. For example, for the three non-elective HRGs listed in Table 3-1, there are three providers which report costs within the top 10 reported costs for all three HRGs, and there are four providers that report costs within the top 10 reported unit costs for two of the three HRGs. This means that for each HRG, the presence of the clusters at the top end of the spectrum is likely to represent ‘high-cost’ providers, rather than simply an artefact of potentially different cost allocation processes.
As shown in Table 3-1 above, for each of the individual HRGs examined the weighted median is lower than the weighted mean. This suggests that the weighted mean measure is being ‘skewed’ upwards by the presence of a cluster of high-cost providers.

To test whether this is true in the aggregate, we have assessed the overall effect of using the weighted median rather than the weighted mean for each episode type in the data set. The results are shown in Table 3-2 below.

**Table 3-2: Implied aggregate reference costs totals for 2011/12**

<table>
<thead>
<tr>
<th>Benchmark assessment type</th>
<th>Implied total cost</th>
<th>Percentage difference from original</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original (weighted mean)</td>
<td>£18,311,436,555</td>
<td>N/A</td>
</tr>
<tr>
<td>Weighted median</td>
<td>£17,383,647,159</td>
<td>-5.1%</td>
</tr>
</tbody>
</table>

---

To do this, with assistance from Monitor personnel, we executed two versions of the admitted patient care structured query language (SQL) model for 2015/16 which calculates prices for each spell HRG, based on 2011/12 reference costs. The outputs from each model (which are equivalent in all other respects) were then multiplied by the actual 2011/12 activity levels to derive an implied total cost under each of the two methods. This analysis excludes Subchapter NZ (maternity).
Table 3-2 above shows that for APC in 2011/12, selecting the weighted median results in an implied aggregate cost 5.1% less than is the case using the weighted mean. This is consistent with our hypothesis that the weighted mean cost measure is systematically higher than the weighted median due to the distribution pattern of reported unit costs. If the unit costs were normally distributed or more evenly distributed, there would not be expected to be a significant difference at this level between the weighted median and the weighted mean.

A similar analysis was conducted for the 2013/14 reference costs submissions (anticipated to form the basis of the 2016/17 national prices) and the effect is similar at 4.9%.

3.3 Historic and prospective inflation and efficiency adjustments

As explained above the cost collection is annual, and as with most types of full-year reporting, there is a time delay between the end of the financial year in question and the submission of data which reflects appropriate collection, audit and validation processes. This, combined with the fact that Monitor and NHS England consult on and publish the national tariff on a prospective basis, means there is a lag of at least three years\(^53\) between the year in which the costs are collected and the year in which the prices based on those costs are effective.

Because of this time delay, the reference costs used to set prices under the ‘modelled’ approach may not reflect the current costs of service provision. This is because, in the intervening period, providers’ input costs will have changed, and providers will have been expected to increase their productive efficiency. Indexing is used to adjust the level of the reported costs to a ‘current-year’ basis by applying the factors that were estimated in the price-setting process for each of the years in between the reference costs year and the current year\(^54\). Prospective inflation and efficiency adjustments are then applied to reflect expectations for input cost inflation and provider efficiency gains. This is similar in principle to the ‘RPI – X’ approach observed in pricing regulation in other contexts\(^55\).

The approach to the adjustment to reported to reflect changes in historic and prospective inflation and efficiency seems reasonable, but it is outside the scope of this project to consider the inflation and efficiency adjustments in detail.

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53 We note that whilst the three-year lag is often cited, the time ‘delay’ is only in fact two years since prices are set on a prospective basis.

54 This step may also potentially involve a judgment on the extent to which reference costs needs to be adjusted to reflect historic unrealised efficiency gains.

55 See Telecoms in Appendix 2.
However, we would note that the current treatment does not provide clarity on how the overall budget constraint is reflected. In particular, we are aware that up to 2013/14 (i.e. before Monitor’s formal assumption of its pricing powers), adjustments were introduced to the price-setting process to reflect ‘affordability’\textsuperscript{56}. Because of the historical indexing approach described above, the 2014/15 national prices and the 2015/16 draft prices were both influenced by these ‘affordability’ factors\textsuperscript{57}.

\textsuperscript{56} See, for example: (i) the 2012/13 PbR Step-by-step guide where a -0.95% affordability adjustment was applied to APC and outpatient prices and a -6.6% affordability adjustment was applied to A&E prices; and (ii) the 2013/14 PbR Step-by-step guide where a -1.2% affordability adjustment was applied to APC prices, a -2.8% affordability adjustment was applied to outpatient prices, and a -7.1% affordability adjustment was applied to A&E prices.

\textsuperscript{57} The 2014/15 national prices were set on a ‘rollover’ basis and therefore directly influenced by the 2013/14 national prices. For the 2015/16 draft prices, the 2015/16 consultation notice explains that a scaling factor was implemented as an alternative to making some of the same ‘cost set’ adjustments that are the subject of this report. We note that the scaling factor was practically applied by reference to the 2014/15 national prices. In this way, the 2015/16 draft prices were indirectly influenced by policy decisions pertaining to the 2013/14 national prices and in particular the affordability adjustments implemented at the time.
4  Recommendations for the enduring framework

In this section, in light of our considerations for improvements in the price-setting framework detailed in Section 3 based on the proposed principles, we discuss our recommendations for the enduring framework for a revised price-setting framework. This section is not intended to represent a ‘step-by-step’ guide to the entire price-setting process (the documentation for which is extensive) but instead reflect the key decisions and factors relevant to the scope of this project.

The overall impetus behind this framework is transparency and credibility; in our discussions throughout this project, various stakeholders expressed the view that these themes need to be reflected better in the pricing framework. As a result, we recommend a clearer split between the elements of the framework more directed toward technical assessment of efficient costs and the elements of framework that are more directed towards policy decisions, not least because the latter would, if applied, potentially lead to departures from prices that reflect the reasonably efficient costs of delivering patient care. This framework is illustrated in Figure 4-1 below.

Figure 4-1: Recommended framework

The documentation relating to the 2015/16 consultation notice comprised approximately 20 separate annexes with details of currencies and the methodology for determining the prices of those currencies. See Monitor’s consultation portal.
Figure 4.1 above summarises the steps that we propose for an overall enduring framework. It begins with collecting updated cost data that reflect the costs of NHS patient care as represented in the unit of currency itself. The second step is to determine the benchmark cost, which we propose should use the weighted median. Thirdly, if Monitor and NHS England wish to use prices to send signals to the sector, these should be implemented in a transparent way, and finally the last step is to consider the best approach to deal with any tensions that may arise between cost reflectivity and the budget constraint and again should be addressed transparently.

In the remainder of this section we discuss in more detail the four elements of the framework.

### 4.1 Updated cost data reflecting the costs of patient care

As described in Section 3, reference cost data is currently collected on an annual basis, and a single patient-level cost collection (if implemented) would also operate on an annual basis. Therefore, when Monitor sets national prices each year (assuming continuation of the current approach of an annual national tariff) updated cost data should be available each year. The overall costs represented in this updated cost data may be higher or lower than Monitor expected to be the case. This leads to a question as to whether any ex-post adjustment should be made to reflect any differences between:

- ‘outturn’ costs as reported by providers; and
- ‘expected’ efficient costs.

We recommend that this updated cost data should be used to set prices without seeking to adjust this data to reflect any differences between ‘outturn’ costs and ‘expected’ costs (whether driven by efficiency, inflation, or otherwise). Our primary rationale for this is that the current pricing regime, as well as the regulatory regime more generally, provides incentives for providers to be efficient and this efficiency is subsequently revealed in the reported cost data. Hence, using updated cost data makes use of the best information that has itself been revealed through the operation of the national tariff regime.  

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59 We would also note that, in particular, implementing ex-post adjustments to reflect ‘undelivered’ efficiency would be undesirable because the evidence base for assessing this is not likely to be sufficient to make a systematic mechanical adjustment. It is therefore likely to require significant judgment and it may be difficult to implement this policy in a consistent way from year to year such that stakeholders can form reasonable expectations as to the evolution of prices over time.
We therefore recommend that in future the most recent reference cost (or single patient-level cost collection) information relevant to the chosen currency design available should be used to set provider costs. We would caveat this by recognising that reference cost data (or future patient level cost data) needs to undergo certain assurance processes, and Monitor and NHS England will need to consider what information sets are best suited to setting prices given the nature of those assurance processes.

We therefore recommend that to set the 2016/17 national tariff, 2013/14 reference costs should be used as the primary source of information for provider costs by currency, but recognise that it may be appropriate for Monitor and NHS England to place some weight on the overall quantum of costs reported in 2014/15.

We also recommend that the reported costs should be, in line with current practice, adjusted to reflect the following items:

- historic cost uplift and efficiency factors to reflect cost inflation and expected productive efficiency gains since the year in which the costs were reported and the year in which the national prices are calculated; and

- prospective input cost inflation and productive efficiency gains between the year in which the national prices are calculated and the year in which they are applied.

As well as reflecting the most recent provider cost data, we also recommend that, under the enduring framework, the reported costs should be, as far as is possible, reflective of the actual costs incurred in providing national tariff services. This means that, as far as is possible, cost data is collected that is relevant to the services being reimbursed through tariff, with the clear exclusion of costs related to other activities e.g. commercial activities and the cost of provision of non-NHS patient care.

Under the current framework, these commercial activities are excluded using income as the basis for the adjustment. If the income from such activities is greater than the costs, the required adjustment results in the reported cost set (for patient care) being lower than its true value. Assuming these activities are in aggregate profitable, this effectively means that reference costs submissions are reduced not only by the costs of commercial activities but also the associated surplus (as income = cost + surplus). Since the reference cost submissions feed into national prices, this means that the national prices are correspondingly reduced. Therefore, assuming commercial activities generate a surplus, it follows that national tariff services would effectively be subsidised by surpluses from commercial activities. This is illustrated in Figure 4-2 below.
In principle, to avoid this distortion, the costs should be excluded from the cost set, rather than the income. This would result in a cost set that would more accurately reflect the costs of NHS patient care as per the principles set out in Section 2 above.

We recognise that this approach, absent any further adjustments, would ‘ring-fence’ the provision of national tariff services. The question of whether to reflect cross-subsidisation of national prices is primarily a policy decision and outside the scope of this project (although we note the discussion below does consider precedent from other sectors in this regard).

4.2 Determining benchmark costs

The current method used to assess ‘benchmark costs’ relies on the calculation of a weighted mean for each currency. We recommend that the cost ‘benchmark’ used to set national prices should be assessed at the weighted median level of costs rather than the weighted mean. Our quantitative analysis has demonstrated that in aggregate, the presence of a relatively small number of providers reporting particularly high costs (which are, in turn, more likely to be the same providers relying on external revenue sources) leads to a ‘skewed’ distribution in reported costs. On the basis that prices are ultimately seeking to represent reasonably efficient costs, factors leading to high reported costs – such as the impact of revenue streams external to the national tariff, data quality, variations in casemix not reflected in the currency design, and operational efficiency – can be addressed through selecting an appropriate percentile point in the distribution rather than reflecting the entire distribution of costs.

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We have been advised by Monitor that the relative costs of currencies are already under scrutiny by expert working groups (EWGs) and as a result our recommendation for 2016/17 in regard to assessing benchmarking costs is constrained to an overall pro rata adjustment in the price level.
As such, we consider that the weighted median would be a more appropriate measure of benchmark costs. In Section 6, we explain our reasoning in further detail and also explain the implications this recommendation may have for the efficiency factor used to set prices.

4.3 Policy adjustments

We recognise that national prices may reflect policy decisions regarding behaviours that Monitor and NHS England may wish to either encourage or discourage, using prices as a signal. We propose that policy decisions that affect the relationship between costs and prices should be made in a transparent way and with due consideration of the impact on the rest of the framework. Below, we discuss three examples of such policy considerations. These are:

- whether to set national prices to reflect cross-subsidisation of national tariff services by non-NHS activities;
- sending signals to the sector regarding preferred treatment methods e.g. best practice tariffs; and
- ‘smoothing’ factors.

4.3.1 Cross-subsidisation

Within our framework, we would recommend that if it is decided that national prices should be set so as to reflect cross-subsidisation from non-NHS activities, then it should be made transparent and implemented as a separate step after the cost set has been determined. This means, for example, that the costs of private patient care should continue to be excluded from the cost set. Even if it is decided as a policy that the associated surpluses are in some way reflected in national prices at a later stage in the process, this recommendation would ensure that the costs reported by providers are undistorted by providers’ differential levels of commercial income.

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In principle, an alternative percentile could be used (such as the lower quartile) or even more sophisticated techniques (such as DEA and SFA noted in Section 3) to identify the efficient frontier. However, we consider there are some significant challenges to doing so and further work would be required before this could be recommended.
We would make the following observations regarding the question of cross-subsidisation:

- A ‘ring-fenced’ approach – where no cross-subsidisation is assumed – is observed in electricity distribution and telecoms sectors in the UK, where ‘regulated’ and ‘non-regulated’ parts of the business are separated. Firms subject to regulation are permitted to engage in activities outside of the ‘ring-fenced’ regulated business, but this has no direct impact on the price levels set for the regulated business itself. That is to say that the revenue allowed by the regulator to be recovered from customers is set such that, it should be sufficient to cover all of its (reasonably efficient and incurred) costs without requiring additional revenue support from any ‘unregulated’ activities. As a result, economic profits earned in the ‘non-regulated’ parts of the business are wholly retained by the company.

- There is regulatory precedent however, for an alternative approach whereby economic profits earned in the ‘non-regulated’ parts of the business, are to some extent, used to cross-subsidise the prices that regulated firms are allowed to charge in the ‘regulated’ part of the business. An example of this is in airport landing charges regulation, where the economic profits from airport retail facilities are used to subsidise the prices that airlines pay to use the airports (and, indirectly, the airfares paid by passengers).

- Translating this principle to the healthcare sector is a policy decision for Monitor. Clearly, it might be beneficial as it would, all else being equal, lower the prices paid by commissioners and therefore be beneficial to patients. However, one consideration is that setting prices lower (to reflect, for example, an ‘average’ level of cross-subsidy) would disadvantage providers who are not able to subsidise their operations in this way. Conversely, not making any adjustment may confer an unfair advantage to those providers who have a greater potential to benefit from commercial income.

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62 Airports have a regulated business – the provision of landing services for airlines, and an unregulated business – the provision of retail space to airline passengers (e.g. ‘duty-free’ zones). The latter business is typically highly profitable. The ‘single-till’ approach is so-named because the regulator assesses the costs of the airport’s entire operations, before deducting an estimate of the expected revenue stream from the unregulated business to calculate allowable revenue for the regulated business. In effect, a proportion of the assumed profits from the unregulated business subsidise prices for the regulated services.
Two further areas for consideration are:

- Whether an adjustment should reflect providers’ potential for commercial income or their actual levels of commercial income. The former would have to be assessed using a consistent set of metrics as Monitor would not be able to perform a case-by-case review (given the number of NHS providers). The latter could introduce perverse incentives.

- Whether an adjustment should be implemented at the provider-level or at the national-level. The latter would disadvantage providers with a lower-than-average potential to generate commercial income.

4.3.2 Incentivising specific types of treatment

A further example of a policy decision that could be made at this stage is where prices for individual services are set in such a way as to encourage or discourage provision of that service, such as best practice tariffs. Best practice tariffs are designed to incentivise high quality and cost effective care\textsuperscript{63}. For example, adult renal dialysis prices have been set to incentivise home therapies. The 2014/15 price was set to reflect a week of dialysis sessions, irrespective of how many sessions are actually required during that week\textsuperscript{64}. More generally, best practice tariffs could depart from prices that are cost reflective, but provide the desired signals to providers and therefore remain consistent with Monitor and NHS England’s pricing principles. The basis for best practice tariffs are currently clearly set out in the national tariff documentation, and we would suggest that such other policy adjustments are communicated clearly.

4.3.3 Smoothing factors

We recognise that Monitor and NHS England may choose to apply ‘smoothing’ factors (or similar techniques) to national prices, to dampen the year-on-year change in prices that may result from a combination of policy decisions, currency design changes, the use of updated cost data, or other factors\textsuperscript{65}.

In our view, the use of such smoothing factors (or similar techniques) is in line with regulatory good practice, but should be transparent to the sector.

\textsuperscript{63} 2014/15 national tariff, Section 4.

\textsuperscript{64} 2014/15 national tariff, Annex 4A.

\textsuperscript{65} This could mean, for example, that adverse changes to particular providers’ income as a result of any of the changes recommended in this report could be mitigated to some degree.
4.4  Potential adjustment to reflect available budget

Our understanding of Monitor’s duties relevant to the scope of this project is summarised in Section 2, where we explain that to the extent that Monitor must have regard to the available budget there is the potential for this to be in conflict with its duties (among others) to set prices at a “fair level of pay” for providers. If there is such a conflict, then Monitor (together with NHS England) must make a decision consistent with its overarching duty to patients.

The recommendations of this project will not resolve the tension (or potential tension) between the budgetary constraint and the aim to set prices that are cost reflective.

We would note that if the overall expected spend on services at a given level of national prices exceeds the expected overall budget available, there are a number of ways in which the budget constraint could be addressed. For example, a transparent approach would mean that the national tariff would be clear on what combination of reductions in price, quality or volume has been applied to ensure the overall expenditure is not expected to breach the available budget.

There are likely to be a significant number of trade-offs involved in this decision. For example, setting prices artificially low to meet a budget constraint, whilst more ‘affordable’ for purchasers, puts sustainability of providers and services at risk and may introduce perverse incentives for providers.

However, within our high-level framework, we recommend that if an adjustment to prices is made to reflect the budget constraint, it should be made in a transparent and fully justified manner.
5 Specific recommendations for the cost set

In this section we describe the application of our proposed principles and framework to the cost set, setting out our recommendations for the way in which costs are recorded and used to inform tariff-setting. Given Monitor’s costing roadmap, we set out recommendations both for application under a future single patient-level cost collection and for the short term. For our short term recommendations, we have predicated our recommendations on our understanding that the 2016/17 national tariff is likely to be set using 2013/14 reference costs.

As part of our work, we have reviewed a number of other national data collections, including the education and training cost collection, Financial Information Management System accounts (FIMS), Foundation Trust Consolidation accounts (FTCs) and the Annual Plan Review (APR) to assess their usefulness in understanding the materiality of current adjustments and the data currently available to help inform tariff-setting. A summary of these data sources is in Appendix 3 and where they are relevant to our recommendations, additional information is described below.

In general, we consider that the current cost set represents, as far as is possible given current data constraints, a good estimate of the costs incurred to deliver national tariff services. However, there is significant scope in future, under a revised cost collection, to improve both the quality and detail of the cost set.

We have considered the role of the different non-tariff funding streams available to providers that appear to be used in practice to fund national tariff services. Our recommendation is that, in principle, such non-tariff funding streams should be incorporated into the overall scope of national tariff payments as, without this, our principle of national tariff services being funded through the national tariff alone would not be met. If there was a policy decision for such funding streams to continue we recommend that where relevant there should be a transparent corresponding downward adjustment to national prices.

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66 This project is focused on how national prices are set but we note it may be appropriate for Monitor to consider analogous adjustments to the rules for local price-setting.
In the remainder of this section we set out:

- an outline of the current cost items which are adjusted (excluded or included) from the reference cost collection. We also outline cost items that are not currently adjusted in the reference cost collection but do not align with the principles that are set out in Section 2;
- our proposed recommendations under a future single patient-level cost collection; and
- our proposed recommendations for 2016/17.

5.1 Outline of cost set adjustments

In Section 3 we explained how a provider’s operating expenditure is adjusted so that a set of reference costs can be derived. In Table 5-1 below, drawing on reference cost guidance, we set out the basis for the current adjustments to the cost set (using 2013/14 reference costs for indicative magnitudes). We also introduce cost items for which there are no existing adjustments, but where, based on our review, we consider adjustments could be made.

**Table 5-1: Summary of current major cost set adjustments and potential adjustments**

<table>
<thead>
<tr>
<th>Costs</th>
<th>Description</th>
<th>2013/14 adjustment</th>
<th>Basis for current adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-NHS patients</td>
<td>Private and overseas patients and armed forces patients.</td>
<td>£764m</td>
<td>Fully-absorbed costs of caring for non-NHS patients as calculated by providers.</td>
</tr>
<tr>
<td>Research and development</td>
<td>Costs incurred for, separately funded, private and public research. Also includes costs for patient care such as clinical trials.</td>
<td>£1,020m</td>
<td>R&amp;D designated as unrelated to patient care is excluded from the cost set as it is funded by sources other than the national tariff. R&amp;D costs that are considered part of the standard currency, are included within the cost set i.e. the relevant income is not deducted.</td>
</tr>
<tr>
<td>Education and training</td>
<td>Costs incurred for medical and non-medical training (income used as proxy).</td>
<td>£2,584m</td>
<td>All education and training activity is excluded from the cost set as it is funded by Health Education England (HEE).</td>
</tr>
<tr>
<td>Costs</td>
<td>Description</td>
<td>2013/14 adjustment</td>
<td>Basis for current adjustment</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>NHS patient care – excluded services</td>
<td>Various costs related to patient care and non-patient care.</td>
<td>£4,620m</td>
<td>Various reasons for adjustment including: activities for which there is no requirement to understand the cost, where there is an ‘overlap’ of funding or where currencies do not exist.</td>
</tr>
<tr>
<td>Depreciation/Impairments</td>
<td>Adjustments to exclude certain specific ‘disallowed’ depreciation or impairment costs. For example, one-off write down of an asset or depreciation on donated assets etc.</td>
<td>£957m</td>
<td>One-off cost and not related to patient care.</td>
</tr>
<tr>
<td>Finance costs</td>
<td>Finance costs including interest and financial gains/losses.</td>
<td>+£777m</td>
<td>Included to recognise recurrent, fully-absorbed costs of running services.</td>
</tr>
<tr>
<td>PDC dividends</td>
<td>Return on asset payment due to DH.</td>
<td>+£773m</td>
<td>Included to recognise recurrent, fully-absorbed costs of running services.</td>
</tr>
<tr>
<td>Commercial activity</td>
<td>Non-patient care related costs such as car parking, catering and shop leases</td>
<td>Part of larger adjustment to remove ‘non-allowable’ income</td>
<td>Excluded to remove activity that is not related to patient care.</td>
</tr>
<tr>
<td>NHS patient care – extraordinary costs</td>
<td>Additional revenue support is given to providers to sustain services.</td>
<td>No adjustment</td>
<td>No specific adjustment made although providers are requested to exclude ‘transitional income. Reference cost guidance is not explicit regarding the nature of ‘transitional’ income. Therefore there are varying treatments of these income streams in reference cost reconciliations.</td>
</tr>
<tr>
<td>Winter activity</td>
<td>Additional costs incurred in winter, which historically has been funded partially through winter funding.</td>
<td>No adjustment</td>
<td>No specific adjustment made although providers are requested to exclude ‘transitional income. Reference cost guidance is not explicit regarding the nature of ‘transitional’ income. Therefore there are varying treatments of these income streams in reference cost reconciliations.</td>
</tr>
</tbody>
</table>
5.2 Recommendations for price-setting under a single patient-level cost collection

In general, a single patient-level cost collection will allow for adjustments (both inclusions and exclusions) to be based on an assessment of the costs, rather than the related income. This change in methodology is likely to have an impact on the cost set, unless the income is exactly equal to the related costs.

As such, we recommend that in addition to performing a cost collection, Monitor should also seek to capture detailed information regarding non-tariff revenue sources. This will allow Monitor to have a more complete understanding of provider finances and ensure it is able to reconcile both the total costs and total income streams, and therefore have sufficient information to make decisions on policy adjustments as described in Section 4. Understanding the income streams will also allow Monitor to understand the extent to which the aggregate income received by trusts is likely to be sufficient to cover the costs of a ‘reasonably efficient’ provider.

In this subsection we set out our recommendations for the significant items that may require adjusting in the cost set to align with our proposed principles and enduring framework, under a single patient-level cost collection (as proposed in Monitor’s costing roadmap). These are:

- Non-NHS patients;
- Research and development;
- Education and training;
- NHS patient care – excluded services;
- Commercial activities;
- CQUIN;
- Winter monies;
- NHS patient care – extraordinary circumstances; and
- Other specific reference cost reconciliation adjustments.

Note: There are a number of other specific reference cost reconciliation adjustments which are in aggregate not material and as such we do not comment on them individually in this report.
5.2.1 Non-NHS patients

Under a single patient-level cost collection we recommend that the exclusion of non-NHS patient activity continues using fully absorbed costs as the basis for the adjustment. This is in line with the proposed principle that only the cost of NHS patient care activities should be included. As discussed in Section 4 above, whilst a policy decision should be made later in the price-setting process as to whether surpluses generated from non-NHS patient activity should subsidise NHS patient care, the costs should still be removed from the cost set.

As with the current PLICS format, ensuring non-NHS patients are clearly flagged and separately identifiable is important. We note that trusts with separate private patient wards are more easily able to identify the overheads associated with private patients, whereas this is less clear for those trusts where private patients are treated in the same wards as NHS patients. We therefore also recommend clear guidance as to how costs are allocated to non-NHS patients to ensure overheads are shared appropriately and consistently in all provider cost allocations.

5.2.2 Research and development

R&D costs are not separately identified in the current cost collection. There are two types of R&D income, non-patient care related and patient care related. In turn, there are two types of R&D costs that are considered related to patient care. These are:

- treatment costs that are covered by “normal commissioning arrangements”; and
- in exceptional circumstances, ‘excess’ treatment costs which are reimbursed through subventions from the Department of Health.

R&D designated as unrelated to patient care is currently excluded from the cost set by deducting R&D income (the implicit assumption being that the income from R&D is equal to the cost of provision). The costs associated with those activities that are designated as patient care remain in the cost set, as the residual income (i.e. after deductions for non-patient care) is not subject to any further deductions.

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67 See Reference costs collection guidance for 2013-14, DH

68 See, for example, Guidance on funding Excess Treatment Costs related to non-commercial research studies and applying for a subvention, 2009, DH.
In the long term, identifying the costs of R&D would allow a clearer separation of those that are embedded and intrinsically part of patient care, and those that are related to patient care but not part of the ‘standard’ currency as set out in the national tariff. This would allow the application of the principle to include only NHS patient care related costs.

We recommend that:

- R&D costs that contribute to patient care\(^{69}\) continue to be included in the cost set; and
- all other R&D costs are excluded by identifying the costs specifically related to these elements.

Providers have told us that R&D costing is complex and our review of financial information indicates that the level of R&D varies significantly across providers. We would therefore recommend that clear guidance on the determination of which R&D costs should be included in the cost set and which should be excluded is provided in the single patient-level cost collection process. We note that this would result in an increased burden of determining these costs so it would be important to assess the costs and benefits of this in detail before proceeding.

### 5.2.3 Education and training

Education and training activities are separately funded by Health Education England (HEE). The income is tariff-based and is split into:

- medical staff training income;
- income required to support consultants’ salaries to support training; and
- the income required to support non-medical education and training.

Currently, education and training income is excluded from the cost set (rather than costs) To avoid the potential for cross-subsidisation between national tariff activity and education and training activity in a future single patient-level cost collection, it is important to understand the costs of delivering education and training activities to ensure that providers receive sufficient funds to meet the costs of a ‘reasonably efficient’ provider.

We recommend separating out the costs of education and training activities to:

- identify the costs of training that relate to patient care and ‘on-the-job’ training; within the cost set and therefore be funded through the national tariff; and

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\(^{69}\) Excluding those costs that related to patient care but are privately funded.
• identify non-patient care related training costs.

Recommendations on education and training funding streams are outside the scope of this project. However, we would note that once these activities and the related costs are separately identified, Monitor and other relevant parties such as Health Education England may be in a position to review the split of funding from the relevant revenue sources, to avoid cross-subsidisation or double-funding.

Given the significant resources involved in allocating the costs of education and training at patient-level, developing a consistent methodology that can be used across providers is particularly important. Also, as the tariff based payment is per student, HEE will need to provide clear guidance on the allocation of these costs to patients so that it can be included in a patient-level costing system. HEE is working to collect education and training costs from all relevant providers by March 2017 and it will then be necessary to understand the relationship between the costs incurred for education and training and the total income received. In future, application of our recommendation to use cost information to exclude education and training activity from the cost set (rather than income) is likely to have an impact on the cost set, and therefore on national prices themselves. As noted above, the HEE process in progress will enable a review of the education and training funding sources, and it may be important to ensure that such funding adjustments are considered alongside any potential impact on national prices. However, any recommendation on this is outside the scope of this project.

5.2.4 NHS patient care – excluded services

The reference costs guidance currently outlines a number of ‘excluded services’, which are activities for which the related costs are removed from the cost set. Examples include specific ambulance services, learning disability services, prison health services and specific national screening programmes.

Services meeting the criteria defined in Section 2 should be included in the cost set. As with the current practice, we recommend the exclusion of the total fully absorbed costs of providing services that do not meet the criteria. In Appendix 4 we review the current list of service exclusions against the criteria and consider if they should be included in or excluded from the cost set.

Where the costs of these services are funded outside of the national tariff but meet the criteria, we recommend that the funding is moved into the remit of the national tariff and the costs are included in the cost set. If this is not possible the fully absorbed cost of those services should be excluded from the cost set and the activity should continue to be funded outside of national tariff.
5.2.5 Commercial activities

Currently commercial activities are excluded from the cost set through the exclusion of the associated income. Under a single patient-level cost collection, the costs of delivering commercial activities should be separately identified and excluded before costs are allocated at a patient-level. This is so that the cost set only reflects the costs to deliver NHS patient care.

The costs should still be collected in aggregate for transparency and to allow for reconciliation back to total operating expenses. In line with HFMA guidance, where commercial costs are deemed to be immaterial by the assessment tool, for ease, these costs should not be separated out but allocated at a patient-level as part of the cost set.

By separately reporting the cost of commercial activities within the single patient-level cost collection reconciliation, greater transparency will be achieved. This can then be used to inform policy development regarding whether surpluses from commercial activities should be used to subsidise NHS patient care and if so, to what extent.

5.2.6 CQUIN

NHS England state in their 2014/15 CQUIN guidance that CQUIN income should “be used to deliver quality and innovation improvements over and above the baseline requirements set out in the NHS Standard Contract, whether this be incremental improvement or radical service redesign”. On this basis, CQUIN is an incentive to pay for additional higher quality outcomes. However, there is no adjustment to the cost set to reflect the costs of CQUIN delivery, and as such, national prices do, in aggregate, reflect the cost of CQUIN delivery. As a result, there is a risk that CQUIN is effectively ‘double-funded’ i.e. funded through the national tariff and funded through CQUIN monies additional to the national tariff.

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Commissioning for quality and innovation (CQUIN) 2014/15 guidance (February 2014)
Moreover, it is our understanding that the costs directly associated with CQUIN delivery are, in practice, low relative to the associated income. This is based on two pieces of evidence. Firstly, under the 2014/15 APR process, FT’s reported their ‘costs to deliver CQUIN’. Results of this data collection indicate that for foundation trusts with estimated maximum potential CQUIN income of £731m71 (based on 2.5% of total clinical income), incremental costs of delivering CQUIN costs were only £43m i.e. 95% weighted average gross margin. Secondly, in our stakeholder discussions we have heard from providers that, whilst the incremental cost of delivering CQUIN is variable between trusts, providers consider the incremental costs associated with CQUIN to be predominantly the costs to report the additional quality metrics, rather than costs of changing the services provided.

If it is the case that the costs associated with CQUIN delivery are low, as suggested by the above, then the implication is that:

- CQUIN income predominately (although not entirely) used to deliver services as defined in national currencies; and
- funding that is designated as CQUIN is a necessary part of providers’ income for the delivery of tariff services (assuming that providers are not retaining significant surpluses).

In essence, therefore, CQUIN appears to be another payment flow to support the provision of national tariff services that purport to be funded by the national tariff. Our recommendation for the enduring framework is that the basis for paying CQUIN should be reviewed, to establish whether CQUIN costs should continue to be included in the cost set.

We would also note that an alternative approach would be to not pay CQUIN separately, but rather that the monies previously designated as CQUIN should be incorporated into the total monies considered as the overall budget for national tariff services72. This would support the principle that the cost set should reflect the costs of delivery of NHS patient care as represented in the unit of currency itself. Under this approach, no adjustment would be necessary to the cost set. However, this may have significant implications for NHS England and the methods by which it sets and achieves quality improvement objectives.

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71 2015/16 APR data provided by Monitor for the purpose of this project
72 This recommendation is predicated on the assumption that the current costs of delivering CQUIN are negligible. To the extent that costs are non-material, the amount incorporated should be reduced by the assessed costs of CQUIN delivery.
5.2.7 Winter monies

Winter monies are used to help fund the additional pressures of delivering patient care in winter. In previous years, monies have been disbursed using a variety of mechanisms. We highlight this particular example as it appears to be a source of revenue that most, if not all, providers receive annually, although the extent of the funding is difficult to determine.

Our discussions with providers have confirmed that it is not currently possible to separate out the ‘extra’ costs of caring for patients in winter, as these are embedded in the costs of patient care. The costs of this activity, and the associated revenues received, are not reported separately by providers and there is no central report of monies disbursed as ‘winter funding’ by commissioners (although there are published statements regarding monies given to systems)\(^73\). From our discussions with stakeholders it appears that ultimately winter monies funds a combination of:

- additional activity during winter; and
- higher unit costs of care during winter.

However, the balance between the two factors is currently unclear and further work would need to be done to understand this in detail.

We would suggest, therefore, that as winter pressure costs are costs incurred in delivering patient care, then, in line with the principles recommended in Section 2, the costs should continue to be included in the cost set and therefore reflected in national prices. To avoid funding winter pressure costs through additional allocations and through national prices, our recommendation for the enduring framework is that winter costs continue to be included in the cost set, and income should not be paid to providers separately but included in the funding available through national tariff. This should then mean that a reasonably efficient provider should, in principle, be able to recover their ‘winter pressure’ costs through the national tariff.

5.2.8 NHS Patient care – extraordinary circumstances

In addition to tariff revenues, additional revenue support is given to providers to sustain services. We discussed in the previous section the specific case of winter monies, but other examples include, ad-hoc local support, specialist funding such as Project Diamond, local modifications and distressed funding paid through the Department of Health.

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\(^73\) For example, Operational resilience and capacity planning for 2014/15, NHS England, Monitor, NTDA, Adass.
The reference cost guidance states that ‘not allowable income’ related to patient care which may include ‘transitional relief provided to offset exceptional costs’ is included in the cost set. The guidance does not cover all the potential income streams that may fall within this category and when explored with providers it appears that different approaches are employed.

In general, our view is that clearer guidance should be given to providers on how significant ad-hoc expenses and receipts should be reported. Currently, there is little transparency as to how much additional expenditure is incurred, or how much funding is received, over and above that nominally achieved through delivering services funded by the national tariff. As discussed in Section 3, this has resulted in a lack of clarity to how much price signalling can be achieved through the national tariff.

The majority of these revenue streams appear to fund the costs of patient care delivery, but do not necessarily reflect the reasonably efficient costs of providing that care. Our recommendation to use the weighted median cost benchmark rather than the weighted average would mitigate the impact of any distortions introduced by these costs.

If our recommendation on using the weighted median of reported costs to set prices is not used, we believe that the additional income received by providers which is related to national tariff services but funded separately, should be adjusted out of national prices. In the longer term, a greater understanding of additional revenue streams must be achieved, in order to make this adjustment. Agreeing protocols for the reporting of additional funding (including specialist top-ups) would allow greater transparency and help Monitor to determine where national prices may be insufficient to cover the costs incurred by providers.

### 5.2.9 Other specific reference cost reconciliation adjustments

There are a number of other specific reference cost reconciliation adjustments which are in aggregate not material and as such we do not comment on them individually in this report.

In general, under a single patient-level cost collection, costs should be included within reference costs unless there are specific reasons for exclusions. Each cost category should be tested against the criteria set out in Section 2 to ensure that the inclusion of that cost category is appropriate. In addition, where non-tariff funding streams are made available to providers, a further test must be performed to ensure that national tariff services are not funded once by a specific revenue stream and secondly through tariff.

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See [Reference costs collection guidance for 2013-14](#), DH
5.3 Specific recommendations for tariff-setting for 2016/17 using 2013/14 reference cost collection

Current data constraints and the stage of development of the 2016/17 tariff (as advised by Monitor) means that our long-term recommendations set out in the previous section cannot be implemented for 2016/17 prices. Therefore, below we set out our short-term recommendations for 2016/17 tariff-setting. Where a revised approach is required in the short term, we also recommend potential improvements to the data and information collected, to improve longer-term tariff-setting.

Table 5-2: Specific recommendations for tariff-setting for 2016/17

<table>
<thead>
<tr>
<th>Cost</th>
<th>Proposed 2016/17 treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-NHS patients</td>
<td>Continue to exclude the fully absorbed costs of non NHS patient care.</td>
</tr>
<tr>
<td>Research and development</td>
<td>Continue to exclude the R&amp;D income for non-patient care related R&amp;D activity, recognising that to the extent that income for R&amp;D for patient care exceeds the costs of provision, this effectively builds cross-subsidisation into national prices. On a like-for-like basis and all other things being equal, providers that undertake more R&amp;D activity may have an advantage under this approach. We explored the possibility of a short-term solution to adjust for costs of undertaking the service instead of income. There is a diversity of views on the ‘profit margin’ of R&amp;D activity and there is insufficient detail in data sources such as FTC and FIMS returns to allow calculation of the likely R&amp;D margin across the sector.</td>
</tr>
<tr>
<td>Education and training</td>
<td>Continue to exclude related income from the cost set. This will ensure stability in the pricing system whilst a more accurate determination of the costs is developed. This would continue to build cross-subsidisation into national prices in the short term.</td>
</tr>
</tbody>
</table>
Establishing a relationship between provider costs and national prices

<table>
<thead>
<tr>
<th>Cost</th>
<th>Proposed 2016/17 treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial activities</td>
<td>Continue excluding commercial income from the cost set, whilst recognising that this effectively builds cross-subsidisation into national prices. We explored the possibility of a short-term solution to adjust for costs incurred in the provision of commercial activities instead of income. There is insufficient granular data in the FTC and FiMs returns to calculate an average margin of commercial income. We reviewed a sample of trusts’ financial statements and some trusts indicated that their commercial activities were included in ‘other’. However, calculating the margin using other operating expenses and other operating income resulted in margins that ranged from 23% to 67% and we therefore consider that using an average margin would not be appropriate given the wide variation across providers and the inability to determine fully absorbed costs using this data.</td>
</tr>
<tr>
<td>CQUIN</td>
<td>As described above, we recommend that the basis for paying CQUIN should be reviewed, to establish whether CQUIN costs should continue to be included in the cost set. For 2016/17, if commissioners continue to pay CQUIN separately to the national tariff then aggregate expected CQUIN income should be netted off from prices. We recommend this because the costs that CQUIN income funded in 2013/14 will be reflected in the reference costs that will used to set national prices for 2016/17. We recommend that Monitor should request data on aggregate expected CQUIN income from NHS England. If this data is not available, we recommend that instead, Monitor apply the best available current estimate. We have been advised that 2.0% of contract value is a reasonable estimate of what has been achieved nationally, but there are other indicators suggesting different values. Recognising the uncertainty in this figure, we would recommend a 1.5% to 2.0% downward adjustment to national prices.</td>
</tr>
</tbody>
</table>

30 OCTOBER 2015 FINAL REPORT
<table>
<thead>
<tr>
<th>Cost</th>
<th>Proposed 2016/17 treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter monies</td>
<td>Winter monies should form part of the monies available to national tariff, and not be paid as non-tariff funding and the costs associated with winter monies should remain in the cost set used to calculate 2016/17 national prices.</td>
</tr>
</tbody>
</table>

**If our recommendation is not applied:**

If winter payments are to continue, we propose that a corresponding downward adjustment to national prices should be made. The aggregate expected winter payments to providers (over and above national tariff payments) should be netted off from prices. We recommend that Monitor should request this data from NHS England. If this data is not available, we recommend that Monitor apply the best available current estimate.

This approach, all else being equal, would reduce all national prices. We note that providers of nationally priced services that do not benefit from winter funding may be adversely impacted by this adjustment.

For 2015/16, £350m has been allocated to CCG winter monies, which represents approximately 0.5% of the overall current spend on services within the scope of the national tariff services (£70bn). It is not clear to what extent this income will be used to fund CCG national tariff payments to providers and to what extent it will be used to fund CCG payments to providers outside the national tariff. Given this uncertainty, for 2015/16 our methodology would have implied a 0.0% to 0.5% downward adjustment to national prices.

We note that the treatment of these monies in reference cost submissions will need to be confirmed with providers.

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75 Operational resilience funding for 2015/16: updates.
<table>
<thead>
<tr>
<th>Cost</th>
<th>Proposed 2016/17 treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extraordinary funding</strong></td>
<td>We recommend that these costs should remain in the cost set used to inform national prices and so that the national tariff funds the ‘reasonably efficient costs of delivery’, we would look to remove the effect of funding the most inefficient providers through taking a weighted median cost benchmark rather than a weighted mean (see Section 4).</td>
</tr>
<tr>
<td>If our recommendation is not applied:</td>
<td>If the weighted mean is still used to set the cost benchmark in the price-setting process, then we consider there should be, in principle, a corresponding downward adjustment to national prices. The aggregate expected interim support funding should be netted off from prices. We recommend that to set the adjustment Monitor should request this data from DH. If this information is not available, we would recommend that, instead, Monitor apply the best available current estimate.</td>
</tr>
<tr>
<td>For 2013/14, DH interim support revenue was £509m(^76). This represents approximately 0.7% of the overall current spend on services within the scope of the national tariff services (£70bn). This figure does not include any additional local support that CCGs may have made available to providers.</td>
<td></td>
</tr>
<tr>
<td>We note that the treatment of these monies in reference cost submissions will need to be confirmed with providers.</td>
<td></td>
</tr>
<tr>
<td><strong>Excluded services</strong></td>
<td>We set out our recommendations for each of the current excluded services in Appendix 4. There are no specific adjustments we would recommend for 2016/17.</td>
</tr>
<tr>
<td><strong>Other specific reference cost adjustments</strong></td>
<td>These other specific adjustments are in aggregate not material and as such we do not comment on them individually in this report.</td>
</tr>
</tbody>
</table>

\(^76\) Department of Health 2013/14 Financial assistance under section 40 of the National Health Service Act 2006 publication.
Specific recommendations for cost benchmarking

In the previous section, we discussed how the reported costs of providers should be adjusted in the reference cost submission process to ensure, as far as is possible, the final cost submission reflects the underlying fully absorbed costs of provision of national tariff services. In this section, we now discuss our recommendations for how the provider-level cost submissions should be treated in the price-setting process.

Irrespective of how the cost set is defined, for each service there will be a distribution of reported costs which Monitor must use to set a single, national price. Currently, the weighted mean of the distribution of reported costs for each currency is used as the ‘reference point’ or what we term the ‘cost benchmark’ from which prices are calculated (by applying, among other things, historic and prospective inflation and efficiency adjustments). However, in Section 3, we demonstrated that the weighted mean of these reported costs is typically skewed upwards by providers that report relatively high costs. We also suggested that one way to adjust for this apparent skew would be to use some point in the cost distribution, such as the 50th percentile (i.e. the weighted median), as the cost benchmark from which prices for the forthcoming national tariff might be set.

Whilst we consider that the suggested changes to the way in which reported costs are calculated (set out in the previous chapter) may remove some of the costs that are reimbursed through non-tariff revenue streams, we anticipate that the observed skew in prices will persist. This is because other forms of additional payment (for example, local modifications) will need to continue. Therefore, in this section we discuss our recommendation for Monitor to use the weighted median as the cost benchmark in further detail, focusing in turn on:

- the options for addressing the apparent systematic skew in reported costs, and why we consider using the weighted median would be most appropriate;
- the effect of this recommendation on the relative prices of services; and
- the implications that using the weighted median percentile as a cost benchmark may have for the assessment and application of the efficiency factor.
6.1 Options for reflecting provider variability in prices

As already noted, following the reporting of costs by providers, Monitor needs to consider how to use this data to inform how it sets prices. We consider there are three main options for selecting benchmark costs, as illustrated in Figure 6-1 below.

**Figure 6-1: Options for selecting benchmark costs**

As Figure 6-1 illustrates, a first consideration is whether benchmark costs should be selected by reference to the weighted mean of each currency or to a (weighted) percentile.

As discussed in Section 3, the unit costs submitted by each provider reflect a combination of provider-specific factors, including, in particular, the impact of certain revenue streams external to the national tariff, data quality, variations in casemix not reflected in currency design, and operational efficiency.
On the basis that prices are ultimately seeking to represent reasonably efficient costs rather than average costs, these factors can be adjusted by selecting an appropriate percentile point in the distribution rather than reflecting the entire distribution. For example, an inherent problem with using the weighted mean is that, by definition, it reflects the costs of inefficient providers as well as those that are more efficient. This would not necessarily be an issue if high cost and low cost providers were equal and opposite in number and magnitude. However, our analysis shows that, for two separate years’ reference cost submissions across admitted patient care, the weighted mean is in aggregate 5% higher than the weighted median – implying persistent upwards skew in the distribution of prices.

As also illustrated in Figure 6-1 above, there is a choice in which percentile to apply. As discussed in Section 3, in some regulatory pricing contexts the benchmarking approach aims to produce a direct estimate of the costs of a ‘reasonably efficient’ provider. Typically, a more stretching target than the weighted median (such as the lower quartile of costs) is used as regulators would expect all companies to ‘catch up’ to the efficiency levels of the more efficient providers.

However, for the time being, our recommendation would be to use the 50th percentile. The primary reason for this is that, in contrast to most other regulatory pricing contexts, Monitor has a duty to set prices for individual services (rather than at the aggregate cost level). Selecting a lower percentile than the weighted median would introduce a risk that national prices are unduly influenced by providers’ differential approaches to cost allocation.

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77 This would continue to be the case even if our long-term recommendations to the cost set are implemented, as many revenue streams for supporting high cost providers are likely to persist (such as external support or local modifications).
This is because selecting (say) the first decile of reported costs might reflect different approaches to cost allocation by providers rather than true lower costs – consistently selecting the cost at the first decile as the cost benchmark across a large range of service means there would be a risk that overall even the most efficient provider could not recover its costs.

Using the weighted median should reduce the risks of this issue arising. However, Monitor might wish to consider further work to assess whether, in the future, a more stretching percentile point may be appropriate.

### 6.2 Relative price levels

As discussed above, selecting the weighted median rather than a weighted mean has the aggregate effect of reducing the implied aggregate cost by approximately 5%. We are mindful that the effect on each currency will be different, depending on the exact shape of the distribution of costs reported for that service. There will be some currencies, for example, where the weighted median may be significantly different (and perhaps larger) than the weighted mean.

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78 By way of illustration: Consider a situation where there are two providers (Provider A and Provider B) each providing 1 unit of each of two currencies (Currency Y and Currency Z) in a year. The aggregate running costs of Providers A and B are both £10. Due to differences in cost allocation methodology, Provider A allocates £6 to Currency Y and £4 to Currency Z whereas Provider B allocates £4 to Currency Y and £6 to Currency Z. The lower quartile price of Currencies Y and Z are both £4, so if the lower quartile is used as the cost benchmark then both Provider A and Provider B are reimbursed £8 in total. Since they have equal total costs and equal casemix there is no rationale for concluding either Provider A or Provider B are inefficient. However, the use of the lower quartile means the assessed prices lead to under-reimbursement for both.

79 As described in Section 3, we have performed some limited analysis which suggests that there is correlation between the top reported costs for HRGs and particular providers. In other words, the variation in reported unit costs at the HRG level is not simply an artefact of potentially different cost allocation processes.
We have performed analysis of the relative price impact of selecting a weighted median rather than a weighted mean, using 2011/12 reference costs. The results of this analysis are set out in Appendix 5. We find that at the HRG level the relative price change for the vast majority (84%) of HRGs is less than ±20%. However:

- For HRGs with more than £1 million in total reported costs, 98% of HRGs experience a relative price change of less than 20%.
- For the vast majority of providers the estimated national tariff revenue impact of the relative price changes is less than ±1%.

Therefore, whilst for some individual episode HRGs there is significant variation, the estimated relative impact at the provider or subchapter level is moderate. On this basis, we consider that the relative price level impact of taking the weighted median should not be considered an impediment to moving forward with this approach.

For 2016/17, we have been advised by Monitor that the relative prices of currencies have already been derived – using the weighted mean of the reported 2013/14 reference costs. This is to allow for an assessment by expert working groups (EWGs) to review the relative prices. As a result, further changes to the relative price levels for 2016/17 would require clinical engagement that has already taken place to be repeated.

As a consequence, our recommendation for 2016/17 is that there should be an overall adjustment to the national prices for 2016/17 to reflect the impact of assessing prices at the weighted median level rather than the weighted mean level.

For the future, Monitor of course will need to continue considering the impact of the totality of national tariff policy changes from year to year.

6.3 Implications for the efficiency factor

As noted in Section 2, there are a number of steps in the price-setting process which are outside the scope of this report. One such step is the assessment and application of the efficiency factor.

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Analysis of relative price impacts to assess distributional effects was used in Monitor’s impact assessment of the proposals in the 2015/16 consultation notice. Essentially, a pro rata adjustment is applied to the ‘new’ prices such that the total implied payment amount is kept constant. See Section 2 of Impact assessment for the proposals set out in the ‘2015/16 National Tariff Payment System: A consultation notice’.
However, we note that the current approach to calculating the efficiency factor would need (either implicitly or explicitly) to take into account the fact that the cost benchmark reflects a weighted mean and therefore the entire distribution of costs – including particularly high reported costs that are more likely to be associated with inefficient providers. Moving to the use of a weighted median means that, for each currency, such particularly high reported costs will be given less weight in the cost benchmark. All else being equal, therefore, the efficiency factor applied to the weighted median cost benchmark would be commensurately lower under our recommended approach - reflecting the fact that the implicit ‘catch-up’ component of the efficiency factor would be reduced (potentially, to zero) if the median benchmark is used instead.

Further, as noted in Section 4, whilst our enduring framework would continue the practice of using the set efficiency factor to index historic costs, there may be a case for using different figures in a transitional period. This is because the efficiency factor has historically been set against a benchmark calculated as a weighted mean rather than a weighted median.
Illustration of estimated impact of recommendations

As noted in Section 2, this report is focused on determining the enduring framework for the relationship between provider costs and national prices. However, we have also been asked to provide specific recommendations for the 2016/17 national tariff. In doing so, we have drawn upon our longer term recommendations but recognise the current data constraints and the fact that Monitor is already part way through the process of developing the 2016/17 national tariff.

The overall price-setting process for 2016/17 is therefore still in development and subject to both informal engagement and formal consultation with the sector. As with previous national tariffs, the price-setting process is likely to reflect a number of policy decisions, including many which are outside the scope of this report (such as the efficiency factor). Therefore, as with previous national tariffs, for 2016/17 Monitor will need to conduct an impact assessment of the total national tariff proposals including any recommendations from this report if they are implemented.

We have not been required to perform a formal impact assessment of our recommendations. However, we have undertaken some analysis to show the effect of our recommendations, in isolation, for APC only. We have considered both the effect our recommendations would have had on the 2015/16 draft national prices, and the effect our recommendations could have on the 2016/17 national tariff.

7.1 Quantitative impact

For the purposes of this illustration, we use a generalised ‘price level’ where the price level based on 2011/12 reference costs (after applying historic cost uplift and efficiency factors) is set at £100 by construction.

Table 7-1 below summarises the analysis, followed by accompanying notes.

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81 The 2015/16 consultation notice was published in November 2014, setting out Monitor’s proposals for the 2015/16 national tariff. It was published alongside a comprehensive suite of data and methodology so that stakeholders could understand the price-setting methodology. For this reason, as well as providing an illustration for what our recommendations might imply for 2016/17 we provide an illustration of what recommendations would have implied for 2015/16. We also note that the scenarios illustrated do not reflect the default tariff rollover or enhanced tariff options set out in Monitor and NHS England’s letter of 18 February 2015.
Table 7-1: Estimate of hypothetical impact of recommendations for APC

<table>
<thead>
<tr>
<th>National tariff for financial year</th>
<th>2015/16</th>
<th>2016/17</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency factor profile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference cost ‘base’ year used</td>
<td>2011/12</td>
<td>2013/14</td>
<td>(1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£103.3</td>
<td>£102.0</td>
<td>£101.3</td>
<td>£100.0</td>
<td>£102.4</td>
<td>(2)</td>
</tr>
</tbody>
</table>

**Current methodology:**

| National ‘base’ price based on weighted mean | £100.0 |
| Scaling factor to reconcile to ‘target cost base’ | (2.6%) | (3) |
| Base national price | £97.4 |
| Effect of 2015/16 inflation/CNST/efficiency | (£1.0) |

**Implied 2015/16 price level**

|                   | £96.4 | £102.4 |

**Effect of proposed methodology:**

| Add back scaling factor | 2.6% | (3) |
| Benchmark costs using weighted median | (5.1%) | (4.9%) | (4) |
| Reduction to reflect separate CQUIN funding | (1.5%) to (2.0%) | (1.5%) to (2.0%) | (5) |
| Reduction to reflect separate winter monies | (0%) to (0.5%) | (0%) to (0.5%) | (6) |

**Implied 2015/16 price level**

|                   | £92.0 | £95.5 |

Notes:

1. Reference cost ‘base’ year is the relevant reference costs year which informs each national tariff. For the 2015/16 national tariff, 2011/12 reference costs were used (even though 2012/13 reference cost data was available) as the currency design of the 2011/12 reference cost collection better aligned with the currency design of the 2015/16 national tariff.
2. Application of historic cost uplift and efficiency factors based on estimates from Monitor.
(3) For the 2015/16 draft national prices, a scaling factor was applied to national prices such that the expected total expenditure, before the prospective cost uplifts and efficiency factor, would reimburse the same total quantum as the 2014/15 tariff (when using 2012/13 HES activity). We have been advised by Monitor that for APC the effect of this scaling factor was estimated as 2.6%. Our framework does not include a separate adjustment to prices to reconcile the expected spend to reflect a ‘target’ cost base.

(4) As described in Section 3, we estimate that using the weighted median rather than the weighted mean to assess benchmark costs would have a 5.1% impact for 2015/16 and a 4.9% impact for 2016/17.

(5) As described in Section 5, we would estimate (in the absence of alternative data) a 1.5% to 2.0% downward adjustment to national prices to reflect CQUIN funding. Where ranges are quoted the mid-point of the range is used in subsequent calculations. This analysis assumes CQUIN funding continues.

(6) As described in Section 5, we would estimate (in the absence of alternative data) a 0.0% to 0.5% downward adjustment to national prices to reflect winter funding. Where ranges are quoted the mid-point of the range is used in subsequent calculations. This analysis assumes winter funding continues.

(7) As described in Section 5, when using the median cost benchmark, we would not make a separate adjustment to adjust for distressed costs. This is because using the weighted median cost rather than the weighted mean cost to set prices would mitigate the impact of any distortions introduced by distressed costs. As also noted in Section 5, if the use of the weighted mean benchmark continues, then it may be appropriate to make a downward adjustment to national prices of approximately 0.7%.

### 7.2 Observations

We would make the following observations on the quantitative results shown above:

- First, the actual cost ‘level’ for 2013/14 as reported in reference costs was £104.9 whereas applying two years of cost uplift and efficiency factors to the actual 2011/12 costs results in a cost level of £101.3. In other words, between 2011/12 and 2013/14, providers’ unit costs rose by 1.5% rather than falling by 2.0% as would have been implied by the cost uplift and efficiency factors used in the intervening years. Another interpretation of this is that providers’ unit costs are 3.5% higher than would have been the case had outturn inflation and efficiency been in line with those set out in the national tariffs for 2012/13 and 2013/14.

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82 £104.9 compared to £103.3.

83 £101.3 compared to £103.3.
For the 2016/17 national tariff we would recommend that national prices are based on the actual cost level implied by 2013/14 reference costs, and no weight should be given to what the expected 'outturn' cost level was. A significant factor in the expected 'outturn' cost is the efficiency factor applied; as a result, one interpretation of our recommendation is that unmet efficiency requirements from years prior to 2013/14 are not carried forward.

- Second, the quantitative analysis suggests that applying our methodology in isolation (that is, using the weighted median rather than the weighted mean to assess the cost benchmark and adjusting national prices to reflect CQUIN and winter funding) would have resulted in a 2015/16 price level 4.5% lower than the 2015/16 draft prices.

- Third, the quantitative analysis suggests that applying our methodology in isolation would result in a 2016/17 price level (before application of cost uplift and efficiency factors for 2016/17) that is 0.9% lower than the 2015/16 draft prices.

We would note that our recommendations, *in isolation*, would appear to imply that the 'correct' price level for 2016/17 (before application of future cost uplift and efficiency factors) would be 0.9% lower than the 2015/16 price level. However, we reiterate that:

- the 2016/17 price level is particularly sensitive to the *historic* efficiency factors applied to index 2013/14 reference costs. Whilst our enduring framework would continue the practice of using the set efficiency factor to index historic costs, there may be a case for using lower figures in this transitional period; and

- as explained in Section 6, all else being equal the prospective efficiency factor applied to the weighted median cost benchmark may also be lower under our recommended approach.

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84 £92.0 compared to £96.4.

85 £95.5 compared to £96.4.
Appendix 1 Experiences of other regulated sectors

Below we set out the key principles and key issues emerging when setting tariffs in the following regulated sectors:

- electricity distribution;
- post;
- water;
- airports; and
- telecoms

For each sector, we start by noting the key source documents that have helped inform our review.

A1.1 Electricity Distribution

Key source documents:

- Standard Licence Conditions, 13
- Ofgem Charging Methodologies note

A1.1.1 Key principles in tariff setting

**Overall framework**

Each regulated network company aims to set its individual tariffs in such a way that it collects the allowed revenue as determined by the regulator. The regulator has the power to veto the methodology for determining the individual tariffs, but not the charges themselves. Any change in the methodology must be consulted upon and users must be notified 6 months in advance of changes in tariffs.

Standard conditions of the Electricity Distribution Licence (condition 13) sets out objectives that tariff methodology must meet. However, these are at a relatively high level. The principles of the Licence are further explained in Ofgem consultation documents and Charging methodology change approval letters. However, conscious of its desire not to ‘fetter its discretion’, Ofgem has tended not to state definitively how the Licence principles should be interpreted.
According to the legislation, Ofgem must carry out the following principal duties:

- protect the interests of existing and future consumers of gas and electricity; and
- where possible, do this by promoting effective competition.

**Principles of the framework**

The principles are set out in Standard Licence Condition 13 of the Electricity Distribution Licence. They are that the methodology:

- facilitates the discharge by the licensee of the obligations imposed on it;
- facilitates competition in the generation and supply of electricity, and does not restrict, distort, or prevent competition in the transmission or distribution of electricity;
- results in charges which reflect, as far as is reasonably practicable (taking account of implementation costs), the costs incurred by the licensee in its Distribution Business; and
- as far as is reasonably practicable, properly takes account of developments in the licensee’s Distribution Business.

**Rationale for principles**

Through the principles outlined above, the regulator has two key aims:

- First, to facilitate competition in other parts of the supply chain. For example, it is (or was) generally believed that the supply (or retail) of electricity to customers was a competitive business. Hence, the network tariffs paid by suppliers (reflecting the usage of the network by their customers) should reflect the costs incurred in the provision. There is a risk that this might unduly advantage some sets of customers over others and, in so doing, distort competition.

- Second, to minimise the costs to the generality of customers. One reason why the regulator wishes to promote cost reflective tariffs is that by having charges that vary by location, the siting and closure decisions of network users are influenced. Hence, if a customer wishes to site at a distant point of the network it makes sense to have a higher charge (reflecting the higher costs of provision) as this will ensure the decision made by the newly connecting customer factors in the true costs. If charges were not reflective and, say, lower, then there would be a tendency for customers to ‘over-demand’ the use of the network – the costs of which would need to be recovered from the generality of other network users.
A1.1.2 Key issues that have emerged in tariff setting

Revenue sources: to what extent are revenues or profits from non-regulated parts of the business reflected in prices (i.e. cross subsidisation)?

A key concern at the time of privatisation (and since) was that the monopoly parts of the value chain should not be able to cross-subsidise the competitive parts. A perceived risk was that the joint owner of a monopoly network business and a competitive business would have an incentive to over-allocate common costs to the network business. In so doing, it would make its competitive business appear more efficient than it actually was – thereby undermining competition itself. The natural asymmetry of information between the regulator and the regulated company meant that there was a concern that this would be difficult to prevent. Furthermore, the regulators were concerned that even the perception that this might occur might be sufficient to reduce the potential for new entrants to the market.

As a result, regulatory ring-fencing was introduced: revenue sources from other parts of any unregulated businesses are kept outside of the regulatory ring-fence. This means that, at the very least, there is accounting separation between the two companies. In practice, separation has meant complete ownership unbundling.

Hence, tariffs set by electricity distribution companies are designed to recover all of the costs of the entire regulated network business. There are no sources of additional revenue that are required to fund the ongoing operation of the business.

The ring fence also applies when multiple electricity distribution networks have a single owner, i.e. each network’s tariffs recover the allowed revenue for that company.

Common costs/Shared costs: how are common or shared costs between regulated and non-regulated parts of the business dealt with?

As noted above, the requirements to unbundle (either in an accounting, business or legal sense) mean that the regulatory ring fence is applied.

Reconciliation/Scaling: do prices have to be reconciled or ‘scaled’ in some way to meet an overall allowable revenue or spend target?

When first derived, the tariffs calculated through the company specific tariff methodology are typically not high enough to recover all of the allowed revenue for that network company. In part (but only in part) this is because the tariff methodology does not allow for the costs of spare capacity to be recovered. The costs recovered in the provision of spare capacity benefit future users – but clearly, these cannot be recovered from them.
The tariffs are calculated through some form of Long Run Incremental Cost (LRIC) pricing. These tariffs are then adjusted in some way so that when the tariffs are multiplied by the expected volumes of network usage the overall amount of revenue expected to be recovered from customers equates to the overall amount of revenue that the company is allowed to recover as set by the regulator.

The approach to this reconciliation has been subject to much debate. The preferred approach by the regulator has been for charges to be scaled by the same fixed amount for each tariff so that the absolute difference between each calculated tariff remains the same as when it was calculated initially under the Long Run Incremental Cost approach. The rationale for this is that it preserves the same marginal price signal between two tariffs. Hence, a customer choosing where to site between two parts of the network still faces the same marginal difference in the price it pays or using the network.

**Trade-off between simplicity and accuracy: how is this tension dealt with – what are the main factors?**

There are three tiers of an electricity distribution network:

- The Extra High Voltage (EHV) network connects large customers (and generators) directly to the network and transports electricity to the High Voltage (HV) network.
- The High voltage network is used to connect some large customers and transport electricity to the Low Voltage (LV).
- The low voltage network is used to connect most domestic customers.

LV customers pay charges associated with all three tiers of the distribution network (as effectively it uses all three tiers) whereas the EHV connected customers pay only charges associated with EHV network itself.
Because each EHV customer tends to be large, the costs of such a user connecting to
the network tend to be correspondingly high. Hence, typically the charging methodology
for the EHV network will be significantly more complex than for the LV network. The
reasoning for this is twofold:

- First, the overall cost impact of a large customer connecting to the EHV network
can be high. Hence, it is desirable to set tariffs in a way that influences the
connecting customers decision so that the connecting customer faces the full
(or at least appropriate) cost of its decision on where to site. By contrast, an
individual domestic premises connecting to the network has very little impact on
the costs incurred by the network. Hence, it is considered not worthwhile
accurately signalling a cost to the domestic premises.

- Second, the number of different tariffs that would be required to extend the
same approach used for the EHV tier of the network to the LV tier would make it
far too complex. Typically, the EHV network has about 100 – 200 tariffs. These
tariffs vary by location. Hence, a customer that is sited at a distant part of the
network will pay a considerably higher charge than one sited near the centre of
the network. The number of offtake points reflects the number of large
customers typically connected to the EHV network. Whilst this is possible to
differentiate between customers at the EHV level, the many millions of offtake
points connected to the LV network mean that it would be impractical to extend
this principle to the LV network.

Facilitating competition: Is there a specific aim to facilitate competition? If so how
is this reflected in the methodology?

As discussed above, one key facet of promoting competition is to ensure that the
monopoly parts of the value chain are separated from the competitive parts. The
allowed revenue for tariffs must also be set with the aim of facilitating competition in
the competitive parts of the value chain. In practice, Ofgem and network companies
have interpreted this requirement as one in which the tariffs must be reflective of costs
insofar as is practicable i.e. it would tilt the playing field in favour of some electricity
suppliers over others.

Firm heterogeneity: are the prices set intended to reflect different circumstances of
provider firms?

Philosophically, the overall regulatory regime is supposed to be neutral to size of firm –
so that the ‘market’ can establish the most appropriate configuration of electricity
distribution. However, in its quest to bring in smaller new players into the electricity
(and gas) distribution there have been instances of more generous settlements for the
smaller players.
For example, Independent Gas Transporters (IGTs) have on occasion had a more generous WACC because Ofgem considered that the costs of financing for small firms is likely to be higher i.e. Ofgem have on occasion tilted the playing field to encourage new entry.

Methodology: what methodology is used?
Typically Long Run Incremental Cost methodology is used.

Other issues: other pertinent issues that have determined how tariff has been set in this industry.
Change of approach has been increasingly difficult. This is partly as any change would have ‘winners and losers’, and partly due to a cumbersome governance process and the threat of judicial reviews.

A1.2 Post
Ofcom no longer sets price controls for Royal Mail services (Postcomm used to do this), for the following reasons:

- the uncertainty in demand is such that setting a price trajectory is not practical;
- the efficiency incentives in RPI-X may not work where Royal Mail is struggling financially; and
- a price control reduces Royal Mail’s flexibility to adapt to market changes.

Royal Mail is subject to a Universal Service Obligation (USO) which requires it to deliver and collect letters six days a week, at prices which are affordable and uniform throughout the UK. Ofcom’s primary duty is to secure the provision of this USO.

To protect the USO, Ofcom sets a ‘safeguard cap’ on the price of some second class formats (letters, large letters and packets), and has a process of ongoing monitoring of Royal Mail’s efficiency, quality of service and affordability.

The level of the safeguard cap is set to protect vulnerable users, rather than to provide efficiency incentives to Royal Mail or users of the service.

A1.3 Water
Key source documents:

- Ofwat water company licence register
- Ofwat’s PR14 price control Final Determinations
- Government policy paper on 2010 to 2015 government policy: water industry

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A1.3.1  Key principles in tariff setting

**Overall framework**

Water companies in England & Wales are vertically integrated providers of a range of services, ranging from water abstraction, treatment, distribution and retail through to sewerage retail, collection, transportation, treatment and disposal. Competition is currently permitted for certain types of retail and water resource activities, though to date competition has been very limited. Companies therefore typically have to calculate a wide range of tariffs, such as wholesale tariffs (covering a bundle of services excluding retail), retail tariffs and network access charges. Tariffs are set for several different types of customers, such as metered/unmetered and household/non-household.

Ofwat sets price controls for wholesale water, wholesale wastewater, household retail and non-household retail. The form of each price control is slightly different e.g. wholesale price controls set an allowed revenue, whereas the retail price control is set on the basis of an average revenue per customer.

Ofwat’s duties primarily arise from the Water Industry Act 1991:

- Protect the interests of consumers, wherever appropriate by promoting competition;
- Ensure that companies properly carry out their functions
- Ensure that companies can finance their functions
- Ensure long-term resilience

Each regulated network company sets tariffs to be consistent with the price controls set by Ofwat. However, Ofwat does not precisely specify tariffs, nor exactly how they should be calculated, so there is no common charging methodology and each company tends to take a slightly different approach e.g. the tariff structures (fixed/variable, definition of customer categories etc.) all differ. Consequently, there are 18 different methodologies for calculating tariffs – although there are many similarities between them.

Currently Ofwat approves water company retail tariffs (and will do so again in 2015 for the 2015/16 charging year), but Ofwat intends to stop approving tariffs from 2016/17 and simply issue guidance which companies must follow.

Part B of the water company licenses sets out objectives that tariff methodology must meet – for example, the methodology must not discriminate between customers within the same class. Companies must also comply with Competition Act requirements e.g. avoid margin squeeze or predatory pricing. The principles of the Licence are further explained in Ofwat price control documents and associated charging guidance.
**Principles of the framework**

Ofwat does not currently specify precisely how a company must set its tariffs, but there are a range of restrictions on how companies can set tariffs.

Part B of the water company licences requires that tariffs:

- are cost reflective; and
- are not unduly discriminatory e.g. a company cannot charge a different tariff to customers within the same class of customers.

The Competition Act and associated law places further restrictions on companies’ freedom to set tariffs however they please. There have been a number of cases about the appropriate way to set network access charges and there is a significant ongoing debate across the sector about exactly how to set tariffs (e.g. to avoid a margin squeeze) for non-household customers ahead of that market being further liberalised from 2017.

Another key principle of tariff setting in the water sector is regional averaging – companies must charge the same tariffs (except network access charges) to customers in their region, regardless of where those customers are located in their regions. This means that customers in rural and urban areas are both charged the same.

**Rationale for principles**

Through the principles outlined above, Ofwat aims to:

- enable companies to recover their allowed revenues and to maintain their financial viability;
- facilitate competition in certain parts of the value chain;
- avoid cross-subsidies between customer classes; and
- avoid undue discrimination between customers.

**A1.3.2 Key issues that have emerged in tariff setting**

**Revenue sources: to what extent are revenues or profits from non-regulated parts of the business reflected in prices (i.e. cross subsidisation)?**

Non-regulated activities are a very small part of the activities carried out by the licensed (ring-fenced) water company (non-regulated activities are typically carried out by an entirely separate legal entity). However, there are some non-price controlled activities performed by water companies.
Ofwat employs a single-till regulatory framework, whereby revenues from any non-price controlled activities are deducted from the overall revenue requirement (which reflects aggregate costs of the company, including non-price controlled activities) that the water company is allowed to recover through tariffs for regulated activities. Charges for the non-price controlled activities are meant to be cost-reflective, in line with licence requirements, so there should not be any cross-subsidy between non price-controlled and price-controlled activities.

**Common costs/Shared costs: how are common or shared costs between regulated and non-regulated parts of the business dealt with?**

Because non-regulated activities are a very small part of the activities carried out by the licensed (ring-fenced) water company issues relating to common costs of this nature do not typically arise. Nevertheless, Ofwat has issued guidance on transfer pricing between related entities to ensure that charges between these related entities are at arm’s length.

**Reconciliation/Scaling: do prices have to be reconciled or ‘scaled’ in some way to meet an overall allowable revenue or spend target?**

As part of its price controls Ofwat has traditionally set a ‘K’ factor, which is the percentage amount that the weighted average tariffs set by each water company is allowed to increase by (in real terms). The K factor has reflected each company’s allowed revenue i.e. is designed to enable allowed revenue to be recovered.

From PR14, the role of the K-factor will be limited to the wholesale price controls. Those price controls will (as the PR09 price controls did) include a revenue correction mechanism whereby any over- or under-recoveries of revenues are adjusted for in future. For the retail price controls, the allowances are set in per customer terms, so the same issues do not arise – allowed revenue will automatically scale with the outturn number of customers.

**Trade-off between simplicity and accuracy: how is this tension dealt with – what are the main factors?**

Each company has its own discretion to evaluate this trade-off for itself, subject to guidance from DEFRA and Ofwat which has not yet been issued. Some companies have adopted more complex approaches than others; with an array of different tariffs e.g. one company has recently proposed 33 different non-household retail tariffs. Other companies have sought to achieve a much simpler set of tariffs and it may be expected that the methodology for calculating those tariffs is commensurately similar.
Facilitating competition: is there a specific aim to facilitate competition? If so how is this reflected in the methodology?

As discussed above, one key facet of promoting competition is to ensure that the monopoly parts of the value chain are separated from the competitive parts. The allowed revenue for tariffs must also be set with the aim of facilitating competition in the competitive parts of the value chain. In practice, Ofwat and water companies have interpreted this requirement as one in which the tariffs must be reflective of costs insofar as is practicable.

Firm heterogeneity: are the prices set intended to reflect different circumstances of provider firms?

Each company receives separate price control allowances from Ofwat, reflecting its specific circumstances and costs. Further, each company is given freedom to set its tariffs however it wishes to, subject to the principles set out above. Consequently, the methodology allows for – and has led to – significant heterogeneity across the industry.

Methodology: what methodology is used?

Unbundling of tariffs has recently been introduced in the water sector. As such, the methodologies used by companies are not yet fully developed and are subject to further review and consultation with Ofwat. It is likely that the way companies have allocated allowed revenues across the different tariff categories will be revisited. LRIC is one methodology companies are likely to consider, but this is all subject to upcoming guidance to be issued by both DEFRA and Ofwat.

A1.4 Airports

Key source documents:
- Economic regulation at Heathrow from April 2014: final proposals
- CAA price control documentation register

A1.4.1 Key principles in tariff setting

Overall framework

The Civil Aviation Authority’s (CAA) primary duties, which arise through civil aviation legislation, are as follows:
- further the interests of users of air transport services regarding the range, availability, continuity, cost and quality of airport operation services; and
- where appropriate, to do this by promoting competition.

The 2012 Civil Aviation Act prohibits an operator of a dominant airport area at a dominant airport from charging for airport operation services unless it has a licence granted by the CAA. An airport area is dominant if the CAA determines (and publishes) that the market power test is met in relation to the area by the relevant operator. The test has three parts:

- Test A: the relevant operator has, or is likely to acquire substantial market power (SMP) in a market, either alone or taken with such other persons as the CAA considers appropriate;
- Test B: that competition law does not provide sufficient protection against the risk that the relevant operator may engage in conduct that amounts to an abuse of that SMP; and
- Test C: that, for users of air transport services, the benefits of regulating the relevant operator by means of a licence are likely to outweigh the adverse effects.

The licence from the CAA sets a maximum average charge or yield per passenger which the airport may recover in respect of its core aeronautical services. This yield, based on assumed passenger numbers and the mix thereof, should allow the company to recover its net costs. These net costs are those costs incurred in its entire operations which cannot be met through commercial revenues (e.g. retail, advertising, car parking and property), other revenues (e.g. rail income and inter-company income) or other regulated charges (e.g. from airside licences, check-in desks, baggage systems, staff car parking, electricity, fixed electrical power, gas, water and sewerage, staff ID cards, bus and coach facilities and IT infrastructure).

This method of determining the maximum allowable revenue is referred to as the single till.

The calculation of the regulated revenue requirement and the maximum allowable revenue per passenger under the single till approach is illustrated in the diagram overleaf:
Figure A1-1: Airport regulation allowed revenue

The setting of the price control is the subject of a regulatory process involving the production of methodology and issue papers by the regulator, submission by the regulated entity of business plans, the review of these by the regulator (with extensive use of consultants), the issue of draft proposals for consultation, the issue of final proposals and the issue of licence modifications.

An important feature of the price control process in the airports sector is the involvement of customers. Airlines are formally involved through the Constructive Engagement process in challenging/commenting on capex and opex plans. The objective of this process is to try and reach as great a degree of agreement as possible on outputs and the costs incurred in delivering them, thereby reducing the scope for decision making by the CAA. This process has had mixed success. Where it has failed this has frequently been because the requirements of airlines and their passengers differ, and accommodating these differences in a plan that is acceptable to all is frequently not possible. When setting the price control the CAA is also advised by a Consumer Panel.

When setting the price control and assessing users’ interests the CAA must balance the interest of present users in lower airport charges with the interests of future users in an airport’s ability to continue to be able to invest in modern infrastructure and services in a timely manner. Present and future users may often be, but will not necessarily be, the same. Under the terms of the legislation, if there is a potential conflict between the interests of different classes of users, the CAA is directed to carry out its functions in a way that will further such interests as it thinks best.

Once the allowable revenue and maximum average charge per passenger has been set by the CAA, it is the responsibility of the airport to convert this into the individual tariffs that it will levy.
Principles of the framework

As noted above, the current starting point for regulation of airport tariffs is the Civil Aviation Act 2012. This specifies the circumstances in which activities require a licence and it is through the terms of the licence that the regulator gives effect to price control regulations.

At a high level, the framework aims to:

- Secure that each holder of a licence is able to finance its provision of airport operation services in the area for which the licence is granted;
- Secure that all reasonable demands for airport operation services are met; and
- Promote economy and efficiency on the part of each holder of a licence.

The method by which the price control is set is the product of the evolution of the regulatory regime over a period in excess of 20 years. Many of the relevant consultation documents, draft and final determinations and responses to consultations and decisions are readily available on the CAA’s website (others are available from the Competition Commissions and Monopolies and Mergers Commission archives). Together this body of literature represents principles and practice of economic regulation and the setting of price controls in the airport sector in the UK.

Rationale for principles

The overall rationale for the price control process is to protect the users from exploitation by those with significant market power, whilst ensuring, inter alia, that each licence holder is able to finance its provision of airport operation services in the area for which the licence is granted and secure that all reasonable demands for airport operation services are met. The price control is set to allow recovery of a specified total revenue. The structure of the individual tariffs is frequently set to provide incentives on airlines that will maximise the efficient use of the available capacity.

A1.4.2 Key issues that have emerged in tariff setting

Revenue sources: to what extent are revenues or profits from non-regulated parts of the business reflected in prices (i.e. cross subsidisation)?

As noted above, the setting of the maximum average charge per passenger price control for core aeronautical activities under the single till approach involves considering the total costs incurred by the regulated airport and then deducting from these the revenues from commercial activities and from other regulated activities (or non-aeronautical services). A key consideration for the regulator when setting the price control is therefore establishing a robust and challenging (but realistic) estimate for these other sources of income.
During the price control review process the regulated airport, its airline customers and the CAA will typically make extensive use of external consultants, particularly specialists in property and retail, to develop, review and challenge the projections.

The key issues in the projections of commercial revenues which need to be considered are typically specific to the airport and/or to the period covered by the price control. Examples of issues which impact on the potential for generating commercial revenues which have required consideration in past reviews have included the ending of duty free sales to passengers travelling on flights within the EU and hence the reduced scope for making such sales, and the need to release space within buildings from commercial use to accommodate additional space for increased security screening in response to changing regulations. Another issue the CAA and the airports have had to consider is the changing mix of airlines using the airports, and the extent to which revenue can be maximised in a limited physical space from changing and potentially highly differentiated types of passengers.

In the most recent review of Heathrow the key issue was the timing and potential impact on duty free sales of restrictions on the advertising and display of tobacco products.

The overall anticipated revenue from other services has typically been a less contentious issue, as have the levels of tariffs charged for individual services. There have, however, been a number of disputes between airlines and regulated airports over such charges. These have included in relation to baggage and passenger check-in facilities and bus and coach parking/pick-up/drop-off charges.

**Common costs/Shared costs: how are common or shared costs between regulated and non-regulated parts of the business dealt with?**

One of the advantages of the single till approach is that within an airport/airport company there is not a need to allocate common costs between regulated and unregulated activities because all costs are taken into consideration when determining the price control.

Notwithstanding the above, the historical transparency obligations imposed on regulated airports when setting the tariffs for other regulated charges typically results in airports having relatively sophisticated approaches to identifying the direct costs of providing individual services and for the allocation of common and shared costs between activities. The approach adopted by the airports has generally been to seek to match charges to costs and avoid cross-subsidisation between these charges.
Historically, when Heathrow, Gatwick and Stansted were all subject to regulation but were also under the common ownership of BAA, the allocation of centrally incurred and corporate costs to each of these airports and to BAAs other airports and businesses was an issue that was subject to extensive review by the CAA during price control reviews.

**Reconciliation/Scaling: do prices have to be reconciled or ‘scaled’ in some way to meet an overall allowable revenue or spend target?**

The average revenue per passenger price cap is intended, based on assumed volumes, to allow the airport to generate the overall allowable revenue. As noted above, the price control formula includes a K factor which allows the airport to adjust tariffs and revenues in subsequent years to address differences between actual and assumed per passenger yields.

**Trade-off between simplicity and accuracy: how is this tension dealt with – what are the main factors?**

The process by which the allowable revenue is determined is relatively sophisticated, detailed, consultative and time consuming. The conversion of the allowable revenue into the individual aeronautical and other charges levied by the airport is also a detailed exercise, as is setting the level of the non-aeronautical charges.

In the case on non-aeronautical charges the level at which these are charged is typically reflective of the underlying costs.

In the case of aeronautical charges the situation is more complex since the overall allowable revenue, whilst expressed on a per passenger basis, is typically recovered from a range of charges including passenger handling fees, take-off and landing charges and aircraft parking charges. These are typically related to the underlying costs, for example passenger security charges typically differ between international, domestic and transit passengers to reflect differences in cost whilst take-off and landing charges are typically structured to vary with the weight of the aircraft because, over the long term, this drives capital and maintenance costs.

It is, however, common for the level of certain charges to be set so as to incentivise particular behaviours. Examples of this include varying landing and take-off charges during the day, between weekdays and weekends and between seasons to reflect the availability of spare capacity (or the lack thereof), making the noise and pollution performance of aircraft (and not just weight) factors in determining the level of landing and take-off charges and changing the boundaries between the weight categories of landing and take-off charges. The last of these can be used to encourage airlines to switch to larger aircraft so that passenger numbers can be increased at airports where runway capacity is a binding constraint.
Facilitating competition: is there a specific aim to facilitate competition? If so how is this reflected in the methodology?

The CAA’s primary duty is to “carry out its functions .... in a manner which it considers will further the interests of users of air transport services regarding the range, availability, continuity, cost and quality of airport operation services.” However, the Civil Aviation Act 2012 also states that “The CAA must do so, where appropriate, by carrying out the functions in a manner which it considers will promote competition in the provision of airport operation services.”

It is unclear how this has been reflected explicitly in the current price control. During the last price control review process and the associated market power assessment it was suggested to the CAA by Gatwick Airport that setting price controls on the basis of LRIC would be consistent with this duty.

Firm heterogeneity: are the prices set intended to reflect different circumstances of provider firms?

When setting price controls the CAA has typically sought to take into account the specific circumstances and costs of individual airports. This is consistent with the recognition that whilst benchmarking between airports and comparisons between airports and other sectors may be useful in assessing efficiency, no two airports are directly comparable. The lack of comparability is driven to a significant degree by the lumpy nature of significant increases in capacity and the resultant situation that airports will typically be at different stages in their utilisation of capacity and therefore have, all other things equal, significant differences in average and incremental unit costs.

The CAA’s consideration of differences in costs between airports has extended to determining the appropriate cost of capital. In recognition of both the differences in the extent to which airports have surplus capacity and the sensitivity of their differing passenger mixes to changes in economic circumstances, when setting the Q5 price controls the CAA set a different WACC for each of the three London airports. When setting the Q6 price controls the CAA also concluded that the appropriate WACC for Heathrow and Gatwick were different.

Methodology: what methodology is used?

The overall approach to setting the price control is described above.

Other issues: other pertinent issues that have determined how tariff has been set in this industry.

Quality of service
Since the start of the Q4 price control (i.e. from 2003 onwards) a quality of service bonus and rebate system has formed part of the price control. For example, during the Q5 price control the scheme covered five areas of service quality:

- passenger satisfaction – with metrics taken from Heathrow Airport Limited’s (HAL) Quality of Service Monitor (QSM) survey and covering flight information, cleanliness, way-finding, and departure lounge seating availability;
- security queue times – with metrics based on queue times for central search, transfer search, staff search and control posts;
- passenger operational elements – with metrics based on the availability of passenger-sensitive equipment, track transit system, and arrivals reclaim (baggage carousels);
- airline operational elements – with metrics covering pier service stands, jetties, fixed electrical ground power, preconditioned air, and stand entry guidance. Metrics generally based on the availability of these elements; and
- an aerodrome congestion term.

For each of these elements, the CAA sets a standard to be met. Where an airport has multiple terminals, the CAA has generally split the targets and the penalty and rewards by terminal to incentivise consistent service quality across terminals and to discourage airport operators from putting airlines and their passengers in one or more terminals at a disadvantage.

The standards are subject to financial incentives. For Q5, the total amount of Heathrow’s airport charges at risk per year was around 7%, spread across the various elements. HAL also had the opportunity to earn bonuses where certain elements outperform the CAA’s targets. The maximum aggregate bonus that could be earned was slightly above 2% of total airport charges. The scale of risk and reward during the Q6 price control are similar to those that applied during the Q5 period.

The rebates are based on a ‘knife edge’ rather than sliding scale basis.

**Funding of capital expenditure**

The delivery of significant increments of capacity in the airport sector typically requires the expenditure of very significant sums over an extended period. Some of the expenditure on planning and design can be incurred up to a decade or more before the associated capacity comes into use. An important issue for setting the price controls therefore becomes who bears the costs of this expenditure and when.
If the costs are added to the RAB when they are incurred, even if the associated additional capacity or capability cannot yet be brought into service, the effect of this is the passengers in one period are potentially paying for capacity from which they will not benefit in the future. This approach is generally supported on the basis of it providing greater protection/encouragement for investment, potentially lowering the cost of capital and providing a smoother trend in charges. The scale of BAA’s investment in Terminal 5 at Heathrow was such that the price control resulted in a very high degree of such pre-funding.

No decision has yet been made about where additional future runway capacity will be constructed in the South East of England. On the basis that it is not certain that this capacity will be located at Heathrow, in setting the Q6 price control the CAA has not made any allowance for the costs that the airport has already spent or those it anticipates that it will spend.

**Security charges**

Airports have, over recent decades, been required to respond at short notice to changes in security requirements. Meeting the changes obligations can have capex and opex implications which could not have been anticipated when the price control was set. Rather than deal with this uncertainty by making conservative (i.e. high) estimates of future security costs in the base case for setting the price cap, the CAA’s preferred approach has been to allow airports to pass the actual variances in costs as they arise.

When setting recent price controls the CAA has set a ‘dead band’ within which the airports cannot recover additional costs, beyond which the airports are allowed to pass through a percentage of the additional costs. For the Q5 period at Heathrow the dead band was £17 million and the pass through was set at 90%. For the Q6 period the dead band has been increased to £20 million to reflect inflation, whilst the entire security charge mechanism has been made symmetrical so that in the event of a relaxation in security standards, any cost savings can ultimately be shared with airlines.

**Rates revaluation**

A national revaluation of commercial property for the purposes of calculating business rates is expected in 2017 – during the Q6 price control period. In determining whether to allow for the pass through of any change in Heathrow’s costs caused by this review, the CC had regards to the following principles:

- the cost item is of uncertain magnitude;
- the regulated company has little or no control over the cost item; and
- the cost item is likely to be a significant proportion of the regulated company’s total costs.
The CAA concluded that an increase in business rates during the price control would likely pass all of these criteria, and therefore the Q6 price control includes a pass through condition which allows 80% of any increase to be passed through to airlines. In the CAA’s view one of the beneficial features of this decision is that it reduces the cost of capital as compared to the situation in which there is no provision for passing through such uncontrollable cost shocks.

Rolling opex incentive mechanism

In other sectors subject to economic regulation, regulators have sought to address some of the negative incentive properties of the RPI-X approach by introducing a mechanism to increase the incentive on regulated companies to make opex savings towards the end of the control period has been introduced. When considering the form of the Q6 price control the CAA considered introducing such a rolling incentive to the airports sector. However, this has not been introduced owing to the difficulties in agreeing the scope for operating efficiency during the constructive engagement process.

A1.5 Telecoms

Key source documents:
- EU Draft Recommendation on regulated markets:
- Ofcom’s WLR / LLU charge control 2014

A1.5.1 Key principles in tariff setting

Overall framework

The communications regulator, Ofcom, sets price limits for certain communications services in markets for which operators are deemed to have Significant Market Power (‘SMP’).

In the UK regulated operators include fixed line operators (BT, KCOM - Kingston Communications) for which prices are set in around five price controls (regulating over 100 individual products) and all mobile network service providers for which mobile termination rates are regulated.

Ofcom does not regulate retail telecoms prices on the basis that there is sufficient competition in retail markets to protect consumers, but it does regulate the provision of certain wholesale services – typically for interconnection services enabling one operator to connect to another operators network or for access services which enable one operator to rent capacity on another operators network.

Powers to set tariffs are set out in the Communications Act 2003.
Telecommunications regulation is governed by European Union (EU) directives which include a range of recommendations and guidelines relating to markets which should be examined and costing principles. In 2014, the EU reduced the number of regulated markets to four. Ofcom is required to have due regard to European Commission (EC) recommendations, and all pricing decisions are passed to the EC for approval before final publication.

Ofcom’s primary duties under the Communications Act are:

- Further the interests of citizens in relation to communication matters
- Further the interests of consumers in relevant markets, where appropriate by promoting competition

**Principles of the framework**

At a high level, the framework aims to:

- Promote competition in the provision of electronic communications networks, electronic communications services and associated facilities and services; and
- Contribute to the development of the internal market and promote the interests of the citizens of the European Union.

The determination of SMP is determined in Market Reviews, which are based on a series of markets recommended by the EC. Market reviews are required by the EC to be carried out every three years for certain markets, but national regulators can also identify SMP and impose remedies in additional markets as long as within these markets there are i) barriers to entry, ii) a market structure that doesn’t tend towards competition and where iii) competition law would be inadequate.

Having identified SMP in certain markets, the regulator then considers what ‘remedies’ are needed in order to prevent the potential abuse of that SMP. One remedy includes the setting of prices through charge controls.

Both the determination of SMP and the setting of price limits are set out in ‘Decisions’ which are subject to consultation.

General pricing principles are set out in EU directives, and have been developed over time by the regulator.

**Rationale for principles**

The underlying principle is to set limits on prices where there is a risk that an operator could abuse its SMP to the detriment of competition or consumers.
Price limits are generally set to encourage efficient investment whilst preventing an operator from making excessive profits. The price limits are set based on the costs of an efficient operator, although these costs are typically derived from the actual firm’s costs with Ofcom making a number of adjustments.

Prices are generally set using an RPI-X factor where prices over the charge control period are set to move to a level of expected costs at the end of the charge control period, taking into account expected efficiency cost reductions (the ‘X’ factor). If operators actual costs turn out to be lower (or higher) than expected, Ofcom does not adjust the price control retrospectively.

The price control may regulate specific prices (as in LLU charge controls), or some services may be grouped together to give the regulated firm more flexibility.

A1.5.2 Key issues that have emerged in tariff setting

**Revenue sources:** to what extent are revenues or profits from non-regulated parts of the business reflected in prices (i.e. cross subsidisation)?

Prices for individual services, or baskets of services are set at levels which reflect the costs of those services only. However, this requires the calculation of costs for individual services and cost allocation is a significant issue. Cross-subsidisation therefore remains an important issue, particularly in markets where margin squeeze is a risk.

**Common costs/Shared costs:** how are common or shared costs between regulated and non-regulated parts of the business dealt with?

Generally, costs are allocated to individual services on the basis of an activity based costing system used to calculate fully allocated costs. A wide range of cost drivers are applied to shared/common costs including staff costs and assets employed.

**Reconciliation/Scaling:** do prices have to be reconciled or ‘scaled’ in some way to meet an overall allowable revenue or spend target?

Individual prices are set at a level which enables costs to be recovered in the final year of the charge control, based on the regulator’s forecast of future costs and service volumes.

**Trade-off between simplicity and accuracy:** how is this tension dealt with – what are the main factors?

In assessing costs, Ofcom considers the materiality of individual cost categories in relation to specific services.

For some services, the differential in costs between different services is particularly important and Ofcom may focus on those cost categories giving rise to differences in costs and hence prices.
Facilitating competition: is there a specific aim to facilitate competition? If so how is this reflected in the methodology?

Facilitating competition is an explicit aim of telecommunications regulation. It is embodied in the principle of non-discrimination – the SMP operator should not set prices in a way that unduly favours its own downstream arm.

Firm heterogeneity: are the prices set intended to reflect different circumstances of provider firms?

In principle, the regulator sets prices on the expected costs of an ‘efficient’ operator. It may therefore adjust the costs of the regulated firm where it considers that these have not been efficiently incurred. Where a firm other than BT/KCOM are regulated it may be subject to looser price controls than BT or KCOM.

In the case of mobile operators, Ofcom historically set different prices for the new entrant on the basis that it has a different (higher) cost structure than its competitors. In 2011 it also set different prices for the large operators and the smaller ‘virtual’ operators, but its current proposal for the next price control is that all operators will receive the same rate.

Methodology: what methodology is used?

Prices are typically set on the basis of fully allocated costs using current cost accounts.

In the past Ofcom has used set prices on a long-run incremental cost basis – adding a mark-up for common costs.

The EC directive on call termination services requires prices to be set on a pure LRIC basis (with no mark-up for common costs) and this has been implemented in the UK.

Technology Change: how are prices set when the technology used to provide a service is expected to change in the future?

Ofcom has adopted different approaches depending on the price control. For the most recent price control of call termination, the costs of a next generation network (NGN) were modelled, even though BT does not deliver voice calls using an NGN network – this approach is known as the modern equivalent asset (MEA) approach. In other charge controls, the costs are based on the technology BT is using, even where the products or costs may change in the future – this approach is known as the anchor price approach.

Other issues: other pertinent issues that have determined how tariff has been set in this industry.

The retail telecommunications market is highly competitive and the level of wholesale charges is subject to a good deal of litigation and challenge, with the majority of charge controls in recent years being appealed to the Competition Appeals Tribunal / Competition Commission (now Competition and Markets Authority).
There has been significant debate in the industry around the tensions between different regulatory objectives of promoting competition (and hence benefiting consumers), and ensuring the regulatory regime does not disincentivise investment. This issue is seen as particularly important in relation to investment in new, risky, superfast broadband networks. Currently these services are not price regulated (though they are expected to be subjected to an ex ante margin squeeze test).
Appendix 2 Experiences of healthcare payment systems in other jurisdictions

In this appendix we set out the key principles and experiences from the healthcare payment systems in Australia, America, France and Germany. Our review of other international health care systems confirmed that there are a number of differences between the UK healthcare payment system and that of the other countries. This includes:

- in some countries there is no purchaser/provider split;
- in some countries nationally-set prices are used for intra-regional flows only; and
- the regulatory approach adopted in England is unique. Further, the national tariff sets out not only prices but also currencies and rules – which in other jurisdictions are not necessarily updated as frequently as prices.

We selected the following countries as being most comparable to the UK:

- Australia - selected as it we consider it to be highly comparable to the UK system having nationally determined prices. However we note that there is some scope for regional variation in these prices.
- America (Medicare and Medicaid) – selected as there are national regulations regarding tariff methodology, particular similarities noted with Medicare which seeks to reimburse costs incurred by hospitals as closely as possible.
- France – selected as there is an annual price-setting using a set of nationally reported costs. However these are adjusted to take into account the national budget and the methodology is not clear.
- Germany - selected as the German system using a DRG costing methodology. However there are several mechanisms in place for adjusting hospital revenues down to agreed budgets.
A2.1 Australia

A2.1.1 Key principles in tariff setting

**Overall framework**

The Independent Hospital Pricing Authority (IHPA – an independent government agency, with a commitment to accountability and transparency) sets the tariff. The IHPA’s primary function is to “calculate and deliver an annual National Efficient Price (NEP)”, designed to provide a price signal reflecting the efficient cost of providing health services.

The [IHPA Pricing Framework for Australian Public Hospital Services 2015-16](#) sets out both the National Efficient Price (NEP) used to calculate prices for in-scope activity-based hospital services and the National Efficient Cost (NEC) used to calculate payments for block-funded hospitals.

- The NEP is seen having two key purposes. Firstly, it is one of the major drivers of growth in funding of public hospital services (the other being volume) and secondly, it is the price signal for efficient cost. Hospitals can therefore use the NEP to benchmark their cost structures and it allows governments to determine the level of funding necessary whilst making choices about which services to fund and provide. The NEP also determines the payment that is contributed by the Australian government to the states and territories. However, the NEP is not mandated beyond that meaning that states and territories are free to determine the level of funding they invest i.e. **pay a higher or lower value than is determined by the NEP.**

- The NEC is calculated to provide funding levels for hospitals that meet the block funding eligibility criteria i.e. hospitals or services that are sub-scale. The Pricing Framework states that the block funding price model for small rural hospitals “assigns each hospital an efficient cost on the basis of the size and location of the hospital. The efficient cost is the average cost of all hospitals in the same size and location grouping.”

**Principles of the framework**

The overarching principles for determining the tariff are set out in the IHPA Pricing Framework. They are that the framework:

- provides a price signal for the efficient cost of providing health services with the ultimate aim of improving efficiency; and

- facilitates accountability and transparency, improving the transparency of funding contributions for each local hospital network across Australia.
The IHPA also publishes a set of more detailed pricing guidelines that underpin these principles, broken down into overarching, process and system design guidelines.

**Overarching guidelines**: timely-quality care, efficiency, fairness and maintaining agreed roles and responsibilities of governments determined by the NHRA.

**Process guidelines**: transparency, administrative ease, stability and evidence-based.

**System design guidelines**: fostering clinical innovation, price harmonisation, minimising undesirable and inadvertent consequences, activity-based funding pre-eminence, patient-based and public-private neutrality.

When setting the NEP, IHPA seeks to balance three of the above guidelines: timely-quality care, fairness and efficiency.

**Rationale for principles**

The IHPA was created by the Australian Government in order to provide a single framework for payment for all public hospitals in Australia. The framework aims to provide transparency in the calculation and also, balance national policy objectives including improving the efficiency and accessibility of public services. The principles and guidelines therefore aim to provide transparency as to the method of calculation and how policy decision in relation to pricing are made. The guidelines also aim to allow stakeholders, such as regional governments, to undertake an assessment as to whether the IHPA is meeting its objectives.

**A2.1.2 Key issues that have emerged in tariff setting**

**Revenue sources: to what extent are revenues or profits from non-regulated parts of the business reflected in prices (i.e. cross subsidisation)**

The National Health Reform Agreement (NHRA) requires IHPA to exclude funding that is provided by public bodies to public hospitals other than through the NHRA to prevent the hospital receiving double funding for the same service. The particular services noted are blood products and pharmaceuticals. A number of other adjustments are also made including both a “Remoteness area adjustment” and “Indigenous patient adjustments” which provide increased funding for higher costs incurred.
Cost collection for private patients is problematic as some areas use a method of collecting private patient revenue which means that the funds do not appear in hospital accounts used for costing. Indeed the relevant costing standards appear to suggest that the labour cost of separately-funded medical specialists is the sole exclusion to the ‘fully absorbed’ costing scope. This leads to an under-attribution of total medical costs across as patients as costs associated with medical staff are applied equally across public and private patients. The IHPA corrects for this by applying a 1.7% cost uplift to all patients (determined by comparing reported patient costs in the National Hospital Cost Data Collection (NHCDC) versus the reported patient costs in the Hospital Casemix Protocol (HCP) data collection. The HCP data is a data collection which includes clinical, demographic and financial information for privately insured admitted patient services.

Payments for private patients are deducted at the DRG level to reflect the revenue the hospital receives in order to prevent the hospital being paid twice. The payment is determined by using HCP Data to identify actual payments made.

Common costs/Shared costs: how are common or shared costs between regulated and non-regulated parts of the business dealt with?

Out of scope costs are removed through modifying the cost model to show in-scope activity only (after calculation of averages). Private patients costs are excluded as described above. Costs associated with specific government programs such as blood products and pharmaceuticals are excluded by first calculating the costs as a percentage of total estimated costs and then deflating the cost model by that percentage.

Reconciliation/Scaling: do prices have to be reconciled or ‘scaled’ in some way to meet an overall allowable revenue or spend target?

Since 2014/15, funding for activity-based services in Australia has moved to an ‘uncapped’ basis, meaning that funding will vary based on changes in activity. The IHPA publishes a formula to calculate funding stating that governments should:

- Pay 45 per cent of the NEP for ‘growth’ above the volume of services provided in the previous year; and
- Take into account changes in the NEP by paying a price adjustment. This is calculated by multiplying previous year’s volume of services, multiplied by the change in the NEP over the previous year multiplied by 45 per cent.

This means that in terms of overall Commonwealth funding to states, the NEP is a major factor (but not the only factor).

Note: whilst the NEP determines Commonwealth funding for public hospital services, it does not require the states and territories to fund those services at the NEP.
Trade-off between simplicity and accuracy: how is this tension dealt with – what are the main factors?

The IHPA recognises the trade-off and there are multiple references to transparency throughout its published documents. The IHPA has received some feedback that its methodology is more complex than is necessary to determine the NEP. The publication of its detailed methodology for determining the NEP along with its explicit pricing guidelines aims to balance the trade-off.

Facilitating competition: is there a specific aim to facilitate competition? If so how is this reflected in the methodology?

The NEP aims to improve efficiency rather than to explicitly facilitate competition. However, the guidelines make reference to fairness, being the same price for services across all providers and public-private neutrality stating that “Activity Based Funding pricing should not disrupt current incentives for a person to elect to be treated as a private or public patient in public hospital.”

Firm heterogeneity: are the prices set intended to reflect different circumstances of provider firms?

The IHPA is given authority in statute to determine “adjustments to the NEP to reflect legitimate and unavoidable variations in the costs of delivering health care services”. In addition, the NHRA sets out an additional specification indicating that the IHPA “must have regard to legitimate and unavoidable variations in the wage costs and other inputs which affect the costs of service delivery including hospital type and size; hospital location, including regional and remote status; and patient complexity, including indigenous status”.

The IHPA has been examining potential adjustments based on patient-based characteristics e.g. specialist psychiatric patients and Intensive Care Unit patients. It will also consider provider-based characteristics but describes these as a lesser priority. The IHPA established a framework in 2013 to enable areas to make applications for pricing variations but has only received one application as of 2014.

It should also be noted that a whole defined class of hospitals are reimbursed through the NEC rather than the NEP. Criteria for NEC block funding is largely based on low volume thresholds based on number of ‘weighted-average’ episode units per year.

Methodology: what methodology is used?

Costs are collected through the NHCDC (the National Hospital Cost Data collection). This is the primary data collection used to develop the NEP for a National Weighted Activity Unit (NWAU). Each collection (Round) is made up of several components including the public hospital report and an independent financial review of the public hospital collection.
The NEP is based on “the arithmetic weighted mean cost at the patient level”, mindful of the following factors:

- The maturity of the national costing systems
- Provides a strong incentive for stakeholders to “examine their underlying cost structures” and
- Significant efficiency benefits if high-cost providers move costs towards average.

Alternative scenarios were considered during a consultation in 2014/15. These are summarised in Table A2-1 below.

**Table A2-1: IHPA consultation options**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Option</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using average price is simple and sends strong signal</td>
<td>Continue as-is</td>
<td>IHPA analysed cost profile and quantified effect on NEP if highest cost quartile hospitals moved to second-highest cost quartile. Jurisdictions strongly supported retaining this.</td>
</tr>
<tr>
<td>Using average price moves away from efficient cost as distorted by high cost hospitals</td>
<td>Remove high-end outliers from calculation</td>
<td>IHPA analysed cost profile and quantified effect on NEP</td>
</tr>
<tr>
<td>Avoidable costs in the system also distort the NEP</td>
<td>Quantify unexplained costs by reference to best performers in peer groups</td>
<td>IHPA analysed cost profile and quantified effect on NEP. One stakeholder argued that with the concept of avoidable costs saying that an unexplained cost does not necessarily lead to the cost being avoidable, but other stakeholders thought the weighted median cost could be worth exploring.</td>
</tr>
</tbody>
</table>

There is a three year time lag between the cost data and setting the price. In order to adjust for this lag, the methodology uses the average growth in the past five years’ cost data to estimate the expected growth in costs over the three year time lag. For 2015/16 IHPA state they have decided that there is no case to alter this methodology.
Other issues: other pertinent issues that have determined how tariff has been set in this industry.

The IHPA is currently exploring the potential for “Pricing for Quality and Safety” i.e. how quality considerations can be incorporated into the NEP.

A2.2 United States

A2.2.1 Key principles

Overall framework

In the US, there are two primary government-run programs that pay for citizens’ healthcare expenses–Medicare and Medicaid. The Centers for Medicare and Medicaid Services (CMS) set national regulations that apply to both of these programs. The Medicare program serves everyone over 65 years old whilst Medicaid covers low-income families and individuals. Medicare is completely managed at the national level by CMS, whereas Medicaid’s tariffs and eligibility rules are dictated by each state’s Departments of Health or other state agencies specifically charged with such duties.

Both Medicare and Medicaid use different methodologies to set tariffs for inpatient and outpatient settings. Additionally, about 25% of Medicare and 70% of Medicaid patients are covered under a managed care system. Under this system, a private insurer receives a capitated payment to cover medical expenses incurred by the patient. The insurer then bears the burden of paying for that individual’s care throughout the year. The amount the insurer receives is determined by CMS for Medicare and the individual states for Medicaid.

The Prospective Payment Systems (PPS) that covers the 75% of the non-managed care Medicare patient population is used to determine reimbursements for inpatient (IP) care; it was created and is updated by CMS. CMS was given the power to develop a payment system by act of Congress. Prices are determined based on CMS’s analysis of labour and resource input costs for different medical services and providers. They are set to, as closely as possible, cover the costs hospitals incur by treating Medicare patients. Tariffs are set for IP procedures, physicians’ fees, ambulatory services, clinical laboratory services, as well as durable medical equipment, prosthetics, orthotics, and supplies.

Principles of the framework

Medicare IP: Key principles underlying the PPS design framework are as follows:

- Equity in payments: Through pre-determined prices that reflect differences in the level of resources needed during a hospitalisation, Medicare’s PPS aims for horizontal equity, which means that it pays hospitals in similar situations the same price for the same service.
Access to care: Per-discharge unit of payment and the inclusion of adjustment factors under the PPS help ensure equal access to care, particularly for patients who require higher resources due to the nature of their hospitalization.

Fairness and transparency: By publishing detailed pricing guidelines in the Federal Register and publicly defending any policy changes, the government makes prices transparent to all market participants.

Improved quality of care: The implementation of the Hospital Value Based Purchasing (VBP) Program aims to promote efficiency by reimbursing hospitals based on their overall performance on a set of quality measures.

Accountability: CMS must remain accountable to the taxpayer and its beneficiaries.

Medicaid: Because Medicaid is not as significant a source of income for physicians and hospitals as Medicare, physicians especially could be less likely to participate. It is therefore important that tariffs be set to ensure meaningful access to care for its beneficiaries. Other principles of Medicaid involve covering costs and sustaining the long-term viability of the program as well as accountability. Each state has power to determine its own rate of Medicaid contribution and may have its own principles.

**Rationale for principles**

Medicare IP: Section 1886(d) of the Social Security Act established a payment system for the operating costs of acute care hospital inpatient stays under Medicare Part A (Hospital Insurance) based on prospectively set rates. The rationale for the Prospective Payment System (PPS) is to control costs and promote efficiency. In the inpatient PPS, Medicare pays hospitals a flat rate per case for an inpatient hospitalisation so that efficient hospitals are rewarded for their efficiency whilst inefficient hospitals have an incentive to become more efficient.

Medicaid: Medicaid is most concerned with covering the cost of health services. The program grants states a certain degree of autonomy by allowing states to establish policies that are suited for their individual circumstances—for example, eligibility requirements differ by state as does the degree of cost sharing. CMS requires a minimum allocation from each state for its Medicaid program and requires that states "assure that payments are consistent with efficiency, economy and quality of care and are sufficient to enlist enough providers so that care and services are available under the plan."
A2.2.2 Key issues that have emerged in tariff setting

Revenue sources: to what extent are revenues or profits from non-regulated parts of the business reflected in prices (i.e. cross subsidisation)

Certain hospitals receive ‘add-on payments’ in addition to the base payment (the payment to reimburse for patient care) to subsidise costs for programs that are not directly related to Medicare beneficiary patient care. These ‘add-on payments’ are designed to offset the financial burden hospitals incur by providing medical education and training, providing care to low-income patients, and operating in rural areas.

Medical education payments include the indirect medical education (IME) adjustment and the graduate medical education (GME) payment. Whilst the amount of the IME increases incrementally based on the resident-to-bed ratio, the GME is a per-resident payment. Hospitals that serve a disproportionate share of low income patients receive a Disproportionate Share (DSH) Payment that is calculated based on a complex formula. Hospitals in isolated and/or rural areas (e.g. hospitals located in geographies where there are no other nearby hospitals) may also be eligible for Sole Community Hospital (SCH) program add-on payment. Qualifying hospitals for SCH program receive a payment that is based on a rate indexed to historical costs and adjusted for current patient mix. The Medicare-dependent hospital (MDH) program provides an additional payment to low-volume facilities and this payment is in the form a percent increase over the prospective rate.

Many states make similar adjustments with their Medicaid payments. Additionally, Medicaid payments are based solely on Medicaid beneficiaries, and so are not meant to subsidise either the privately insured or Medicare patients. In fact, Medicaid reimbursements tend to be lower than Medicare’s, which themselves tend to be lower than private insurers’ rates.

As mentioned previously, the different hospital services (prescriptions, physician payments, lab tests) are generally reimbursed separately and have their own methodologies to determine tariffs.

Common costs/Shared costs: how are common or shared costs between regulated and non-regulated parts of the business dealt with?

A portion of the total payment for a Medicare or Medicaid beneficiary’s inpatient stay is designated to cover hospital operating and capital costs. These include labour and supply costs, depreciation, rent, interest, insurance, and taxes. The cost reimbursement is not hospital specific, but is instead an estimate of what “efficient facilities would be expected to incur in furnishing covered inpatient services (Medpac).” The portion of the payment that is designed to cover hospital operating and capital costs is not adjusted for the size of the hospital or based on actual costs incurred.
Reconciliation/Scaling: do prices have to be reconciled or ‘scaled’ in some way to meet an overall allowable revenue or spend target?

Medicare: The payment rate is adjusted annually to “reflect patient conditions, market condition, and other factors recognised under Medicare’s payment system” (Medpac). However, there is no spending target or revenue cap at the provider level. Payments paid to a hospital are based on patient volume and patient characteristics (principal diagnosis, procedure, and comorbidities).

Medicaid: As the states each administer the program individually and set their own prices, and each state is subject to a balanced budget, they frequently alter their tariff schedules as financial conditions warrant. In expansionary times, states generally increase payments to move them closer to Medicare/private rates whilst in contractionary times, they mainly hold steady or are even decreased.

Trade-off between simplicity and accuracy: how is this tension dealt with – what are the main factors?

For Medicare, CMS does not explicitly mention the trade-off, but the payment system is designed to be transparent and the formula for calculating payments is freely available. However, payment amounts are not reflective of the actual expense incurred by an individual provider in treating a patient. Instead, they are an estimate of what an efficient provider would incur. Medicare may also include additional ‘add-on payment’ components dependent on the hospital’s teaching status and community served, for example.

Medicaid reimbursement transparency varies from state to state, with most states neither publishing their methodology nor the rates themselves publicly. In the past, when policy-makers or news outlets wanted to compare reimbursement rates between states or between payers, tariffs have been determined by national surveys.

Facilitating competition: is there a specific aim to facilitate competition? If so how is this reflected in the methodology?

The current Medicare payment methodology includes both penalty and bonus components designed to improve quality. As performance is measured relative to a national average, this may facilitate competition. Hospitals receive a payment penalty capped at 2% of the base DRG payment if their readmissions for certain conditions exceed the national average. Value-based incentive payments, which are mandated by the Affordable Care Act, makes a pool of money available to be distributed to hospitals based on their performance on a set of quality measures. The hospital performance score is determined, in part, by performance relative to the national average. Both of these programs may facilitate improvements in quality of care as hospitals strive to maximise payment rates by ranking above the national average.
Firm heterogeneity: are the prices set intended to reflect different circumstances of provider firms?

Payment rates are adjusted to reflect different circumstances of provider firms. Hospitals that provide medical training, treat a disproportionate share of low-income patients, or that are geographically isolated receive an ‘add-on payment’. In addition, hospitals located in markets with high input costs receive payments that are scaled up to account for local market conditions. This applies to Medicare and some states have adopted similar policies for Medicaid.

Methodology: what methodology is used?

Medicare categorises all inpatient care into distinct medical-severity adjusted diagnosis-related groupings (MS-DRGs). Inpatient episodes are first grouped by principal diagnosis and then subdivided by the nature of co-morbidities or complications. Each DRG has a payment weight assigned to it, based on the average resources used to treat Medicare patients in that DRG. Other factors that may influence DRG assignment include a beneficiary’s gender, age, or discharge status disposition.

The Inpatient Prospective Payment System (IPPS) per-discharge payment is based on two base payment rates: base rate for operating expenses and base rate for capital expenses. The base payment has two components: a labour-related share and a non-labour share. The labour-related share is adjusted by a wage index to reflect geographic differences in the cost of labour. The non-labour component is adjusted by a cost of living adjustment factor. This base payment rate is multiplied by the DRG relative weight.

For a given case, Medicare pays hospitals one single bundled payment to cover the cost of all the supplies and services that a hospital with average efficiency would use in managing that particular case. Figure A2-1 overleaf shows how an inpatient payment is calculated.
Adjustments are made to the IPPS payment if applicable. Additional payment is made to teaching hospitals to reflect the higher indirect patient care cost associated with them. Additionally, hospitals treating a disproportionate portion of low-income patients, hospitals treating cases with new technologies and other high-cost outlier cases are also reimbursed to account for additional costs.

Medicare reimburses physicians independently using the Physician Fee Schedule (PFS). The PFS system relies on national Relative Value Units (RVU) for physician work, practice expense, and malpractice. The Physician Work RVU captures the amount of work required by physicians to perform the procedure. The Practice Expense RVU captures the direct and indirect costs of running a practice (other than the physicians). It accounts for supplies and equipment and administrative costs. The Malpractice RVU covers the cost of liability insurance.

These values are updated periodically (at least every 5 years) by a panel of physicians. For physician services, procedures are identified by a Current Procedural Terminology (CPT) code, and each CPT code has the three RVUs associated with it. The three RVU components also have a geographic price index to correct for regional variations in prices. They are converted to dollar amounts by a Conversion Factor which is updated annually according to a formula specified by statute.

Medicaid reimbursement rates differ from state to state. However, every state has some combination of Managed Care (MCO) and Fee for Service (FFS). There is a national trend in moving from FSS to MCO as the latter proved to deliver better outcome at lower cost. Currently 70% of Medicaid enrollees are covered by MCO.
Under FFS, states Medicaid agency develops their own rate by considering the following factors:

- Similar payments through Medicare and commercial payers
- Prevailing charges and cost

There are no nationwide standard on what the FFS rate should be, but CMS must approve a state’s rate plan amendment and ensure that the state has funding sources available to cover the proposed rate.

Each state has developed its own methodology for determining tariffs. Many states, such as Texas and West Virginia use a methodology similar to the Medicare PPS, but apply their own adjustment factors. Vermont uses Medicare rates multiplied by an adjusting factor for outpatient procedures and a relative values scale methodology similar to Medicare for physician payments.

Under the MCO model, CMS worked with the Actuarial Standard Board to publish a guide that helps state-hired actuaries to develop a capitation-rate (insurance premium). Actuaries rely on data and information provided by the state Medicaid agency and MCO to develop the capitation-rate, which has to be reviewed and approved by CMS. State Medicaid agency and MCO may hold public meetings to review the rate and CMS may submit questions to state Medicaid agency regarding the capitation-rate.

Each state uses actuaries (all but one use private firms) to determine the actuarially fair rate. Then states do one of the following:
  - Announce the rate and allow insurers to participate or not;
  - Negotiate the rate with insurers privately; or
  - Use the range as a reference and set up a competitive bid among insurers for participation.

**Other issues: other pertinent issues that have determined how tariff has been set in this industry.**

In an effort to improve transparency regarding the quality of care delivered, hospitals that do not report specified quality measures are subject to a payment reduction of 2%.
A2.3 France

A2.3.1 Key principles in tariff setting

**Overall framework**

The French Ministry of Health sets prices on an annual basis based on reference costs. The DRG methodology was introduced to improve efficiency, create a level playing field between private and public hospitals and improve the transparency of hospital activity.

The Technical Agency for Hospital Information (ATIH) is the institution responsible for developing the GHM patient classification system and calculating prices. It was created in 2002 and is an independent public administrative institution co-funded by the government and the national health insurance funds. It has an advisory committee, involving representatives of public and private healthcare facilities.

**Principles of the framework**

The concept of ‘médecine libérale’ underpins the French system. This refers to the direct payment made by the patient to the doctor at the point of use, according to the services provided. It is seen as protecting the patient’s freedom to choose a doctor and the doctor’s freedom of prescription or practice.86

**Rationale for principles**

Activity based funding was introduced to:

- improve efficiency;
- create a level playing field between private and public hospitals; and
- improve the transparency of hospital activity.

A2.3.2 Key issues that have emerged in tariff setting

**Reconciliation/Scaling: do prices have to be reconciled or ‘scaled’ in some way to meet an overall allowable revenue or spend target?**

Average costs are collated by a national cost study (ENCC). The cost database does not cover all hospitals (only c.16% of hospitals) therefore costs per DRG are weighted by hospital to calculated reference costs.

Once prices have been calculated using reference costs they are further adjusted to take into account the national budget. These adjustments are not reconcilable, this has resulted in the payment system often being described as opaque.

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Trade-off between simplicity and accuracy: how is this tension dealt with – what are the main factors?

The French system is criticised for the lack of transparency in calculating prices.

Firm heterogeneity: are the prices set intended to reflect different circumstances of provider firms?

Prices differ between public and private hospitals. The tariff for public hospitals includes all costs linked to a stay (including medical personnel, all tests and procedures provided and overheads), whilst those for the private sector do not cover medical fees paid to doctors, the cost of biological and imaging tests.

Methodology: what methodology is used?

Reference costs are calculated based on an annual national cost study, there are currently 110 hospitals participating in the survey which accounts for c.16% of hospital cases.

Public hospitals receive additional payments to compensate for some specific costs. These include: education, research and innovation related activities; activities of general public interest such as meeting national or regional priorities (e.g. developing preventive care); and the financing of some investments contracted with the Regional Health Agencies.

Emergency care costs are paid by fixed yearly grants, plus a fee-for-service element taking into account the yearly activity of providers.

High cost drugs and medical devices are reimbursed fully retrospectively.

A2.4 Germany

A2.4.1 Key principles in tariff setting

Principles of the framework

The German system of social insurance was first established on the national level in 1883 by Otto von Bismarck. The founding principles of his scheme are commonly identified as solidarity, subsidiarity, and corporatism.
This is reflected through the health care system through the government taking responsibility for ensuring universal access to health care (solidarity). This is delivered through a decentralised system under which policy is implemented by the smallest feasible political and administrative units in society (subsidiarity). Corporatism is seen to be reflected through the democratically elected bodies that negotiate the terms of medical care, ensuring that it difficult for any one group to change the rules or fees without the consent of other parties.  

**Rationale for principles**

The rationale for using an activity based pricing system is:

- to increase the efficiency of hospital production with the aim of containing/reducing hospital costs;
- to encourage competition among hospitals as a means of increasing efficiency; and
- to reduce excess capacity in the hospital sector.

### A2.4.2 Key issues that have emerged in tariff setting

**Revenue sources: to what extent are revenues or profits from non-regulated parts of the business reflected in prices (i.e. cross subsidisation)**

German DRG-costing excludes the costs of teaching and research.

Capital costs are excluded from tariff prices and funded separately, by the local states. Capital investment is therefore funded from tax revenues whilst running costs (including replacement of assets with average economic life of up to three years) is funded from health insurance (which can be either public or private).

Payments for DRGs are supplemented by (partly self-negotiated) payments for special treatments or technological innovation.

**Common costs/Shared costs: how are common or shared costs between regulated and non-regulated parts of the business dealt with?**

Costs are allocated to DRGs based on an activity-based costing methodology.

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87 Healthcare Systems: Germany, Civitas  
88 Germany Health System Review, WHO  
Reconciliation/Scaling: do prices have to be reconciled or ‘scaled’ in some way to meet an overall allowable revenue or spend target?

There are several mechanisms in place which act to adjust hospital revenues based on agreed budgets, as follows.

A ‘base rate’ is calculated for each state. Hospital-specific case mix is then used to scale this base rate to determine payment.

Where actual hospital revenue in a year exceeds the agreed budget for the year, the hospital is only paid 35% of the excess (or only loses 25% of the shortfall). In addition to this, extra volume is only compensated at 75%.  

Facilitating competition: is there a specific aim to facilitate competition? If so how is this reflected in the methodology?

Hospitals play only a small role in ambulatory general practice and outpatient services which are mostly delivered by physicians working in solo practices. More than 90% of medical practitioners are recognised by the systems of health insurance. Patients are free to choose directly between these physicians or hospitals and can refer themselves directly to a specialist.

There have been recent efforts to promote competition for privately provided statutory health insurance, but these have largely been related to insurance switching rules.

The majority of hospitals are privately run, although only around a third are run ‘for-profit’. However, private hospitals tend to be smaller than public hospitals.

Recent reforms have focussed on cost-containment and the development of a sustainable financing system.

Firm heterogeneity: are the prices set intended to reflect different circumstances of provider firms?

Prices are the same for public and private providers.

Since 2005 state-wide base rates have been annually negotiated at the state level by representatives of the associations of statutory sickness funds, the association of private health insurers and the German Hospital Association.

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90 [Germany Health System Review, WHO.](#)
91 [Healthcare Systems: Germany, Civitas.](#)
92 [Healthcare Systems: Germany, Civitas](#)
93 [Healthcare Systems: Germany, Civitas](#)
94 [Germany Health System Review, WHO.](#)
National base rates are set for DRGs on the basis of cost submissions from some hospitals (16% of all hospitals in 2009) which are then adjusted by individual states.95

**Methodology: what methodology is used?**

The German DRG-based payment system is a variant of the Australian DRG-based payment system.

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Appendix 3 Review of data sources

In order to apply the proposed principles to tariff-setting we have reviewed the relevant and available data sources both to understand the limitations of the data used in the current process, and to explore the data required to support a new methodology. In this appendix we summarise our review.

A3.1 Education and training cost collection

There have been two education and training cost collections to date by Health Education England (HEE). HEE is working towards having all trusts submitting their education and training costs by March 2017, for use in the education and training 2018/19 tariff process. Currently only the costs that a trust incurs to deliver training are collected, and the costs of ‘on-the-job’ training are not collected. This is discussed further in Section 5.

In future, the costs of delivering education and training will need to be understood if the aims of the single patient-level cost collection i.e. to capture all of a provider’s costs, are to be fully achieved. Therefore integration and alignment with the single patient-level cost collection should be a key aim of this process and we understand that Monitor and HEE are already collaborating in this regard.

A3.2 FIMS

FIMS (Financial Information Management System) is the system through which NHS trusts report their financial results to the Department of Health and the NTDA. The results capture forecast and actual income and expenditure (on a monthly basis) and serve the purposes of both monitoring and statutory reporting. Summary results are then passed to Monitor. Whilst the FIMS returns represent a rich data source for accounting and sector consolidation purposes, we have not identified additional specific detail that can be used to inform potential cost set adjustments in the short term. We also note that NHS Trust returns (FIMS) and Foundation Trust returns (FTC) are not identical and contain different levels of detail which creates additional challenges when considering their use in price-setting.
A3.3 FTC

FTC (Foundation Trust Consolidation) files are the financial data submitted to Monitor by FTs for the purpose of statutory reporting and consolidation of the sector’s financial position. The final submission is based on audited accounts of FTs. There is also specific guidance in the NHS FT ARM (accounting reporting manual) as to how items should be treated. For both these reasons FTC data probably represents the most consistent and accurate financial data on FTs, including total costs and income. Key subjective codes are then captured by Monitor, uploaded into its central database and consolidated into Monitor’s submission for the Whole of Government Accounts. Again, as described above, we have not identified additional specific detail that can be used to inform potential cost set adjustments in the short term.

A3.4 APR

We also explored the usefulness of the annual plan review data collected annually from NHS Trusts and FTs by Monitor and TDA respectively. In particular, APR sets out FTs financial plan broken down by financial quarters for the subsequent two financial years (Years 1 to 2) and broken down annually for the following three financial years (Years 3 to 5). We note that the number of financial years’ data collected does sometimes vary year to year.

We have reviewed the data included in the lines of the APR template (which are completed in line with the specific NHS FT ARM\(^96\)). The income and expenditure lines mirror the quarterly returns, although there are some variations. The APR is not a statutory accounting process and Monitor therefore has some flexibility to add rows (within reason) in order to capture more granular data or additional information. The APR data contains some useful subjective codes (such as planned CQUIN income) and Monitor has some flexibility to request additional information if it is considered useful for the sector. However, at this time, the data collected (similar to that of FTC and FIMS) does not provide consistent cost categorisation or additional details that are useful for capturing information regarding potential adjustments to the cost set.

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\(^96\) Technical guidance for completion of the 2015/16 financial templates.
Appendix 4 Service exclusions from the cost set

Table A4-1 below details other significant service exclusions from the cost set, and our proposed treatment under a single patient-level cost collection.

Table A4-1: Current service exclusions

<table>
<thead>
<tr>
<th>Cost</th>
<th>2013/14 total reference cost exclusion</th>
<th>Proposed treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific ambulance services</td>
<td>£269m</td>
<td>There are currently no suitable currencies for these services. If currencies for these services are developed they should be included in the cost collection as they relate to the service provided for patient care. We recommend that the exclusion of these costs continues in the short term, whilst currencies are developed.</td>
</tr>
<tr>
<td>Discrete external aids and appliances</td>
<td>£150m</td>
<td>There are currently no suitable currencies for these services. If currencies for these services are developed they should be included in the cost collection as they relate to the service provided for patient care. We recommend that the exclusion of these costs continues in the short term, whilst currencies are developed.</td>
</tr>
</tbody>
</table>

97 We have defined significant for these purposes as having an adjustment with a value greater than £100m.

98 2013/14 reference cost reconciliation total for NHS trusts and FTs.
<table>
<thead>
<tr>
<th>Cost</th>
<th>2013/14 total reference cost exclusion</th>
<th>Proposed treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health promotion programmes</strong></td>
<td>£198m</td>
<td>These services, where funded by CCGs rather than the local authority should be included in the cost collection. If provided on a block contract then the services should not be included in the cost collection.</td>
</tr>
<tr>
<td><strong>Home delivery of drugs and supplies</strong></td>
<td>£1,317m</td>
<td>These are delivered directly to patient homes without any associated medical care. It is equivalent to non-NHS services such as commercial activities, and as such we recommend that the costs of providing these services should be determined and then excluded from the cost set on the basis of costs rather than income.</td>
</tr>
<tr>
<td><strong>Learning disability services</strong></td>
<td>£716m</td>
<td>We understand that currency development is underway for these services and therefore once currencies are tested, the costs of these should be included within the cost set.</td>
</tr>
<tr>
<td><strong>Mental health trusts – specified services</strong></td>
<td>£93m</td>
<td>This relates to services delivered for acquired brain injury and neuropsychiatry. Costs related to this care are not included as there are no suitable currencies. On this basis, the costs should be excluded. However, if applicable currencies are developed in the future, these costs should be included.</td>
</tr>
<tr>
<td><strong>NHS continuing healthcare</strong></td>
<td>£309m</td>
<td>These costs are for those services delivered as package requiring primary care. The reason for the service exclusion is so that the currencies can be tested. Once these currencies are tested, we propose that the costs of these services should be included in the cost collection.</td>
</tr>
<tr>
<td><strong>Patient transport scheme</strong></td>
<td>£302m</td>
<td>This service is provided as free transport to and from hospitals for patients with a medical need. This is not directly attributable to a currency on a recurrent basis, therefore should not be included in reference costs.</td>
</tr>
<tr>
<td>Cost</td>
<td>2013/14 total reference cost exclusion</td>
<td>Proposed treatment</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Primary medical services</td>
<td>£157m</td>
<td>These are out of scope for cost collection for the national tariff. These should continue to be excluded.</td>
</tr>
<tr>
<td>Pooled or unified budgets</td>
<td>£480m</td>
<td>Where costs cannot be discretely allocated to NHS patients, the costs are excluded. This is consistent with the principles described above and should continue to be excluded.</td>
</tr>
<tr>
<td>Prison health services</td>
<td>£167m</td>
<td>Prison services have been excluded due to poor activity data. As activity data improves the costs related to these services should be included in the cost collection for the national tariff.</td>
</tr>
<tr>
<td>Screening programmes</td>
<td>£282m</td>
<td>There are no clear reasons for why certain screening programmes are excluded. These should be included in the costs of the national tariff and the funding associated with the screening should be considered part of the overall budget available for national tariff services.</td>
</tr>
<tr>
<td>Specified hosted services</td>
<td>£130m</td>
<td>The costs cannot be allocated to patients, as such the costs are excluded. This is consistent with the principles described above and should continue to be excluded.</td>
</tr>
<tr>
<td>Other</td>
<td>£50m</td>
<td>Various small adjustments – not considered material for the purposes of this report.</td>
</tr>
<tr>
<td>Total</td>
<td>£4,620m</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 5 Estimates of relative price level impacts

As discussed in Section 6, selecting the weighted median rather than a weighted mean will have different effects for different services, depending on the exact shape of the provider-level reported cost distribution for each service. There will be some services, for example, where the weighted median may be significantly different (and perhaps larger) than the weighted mean.

This appendix summarises the relative impact of selecting cost benchmarks at the weighted median level for each episode HRG rather than the weighted mean. Isolating the relative impact of the price changes weighted means that the distributional effects can be more clearly assessed. This analysis has been performed for the 2011/12 reference costs data set for admitted patient care only.
A5.1 Episode HRG level impacts

Figure A5-1 below shows the relative cost benchmark change for each episode HRG plotted against the aggregate reported cost\textsuperscript{99}.

**Figure A5-1: Relative cost benchmark changes of episode HRGs**

Figure A5-1 above shows there are a relatively large number of HRGs where the relative cost change is significant. However, the more significant cost changes are observed for HRGs where the aggregate reported cost is relatively low (in total, for 84\% of the HRGs the weighted median is within ±20\% of the weighted mean, whereas for HRGs where the total reported cost is greater than £1m, 98\% are within ±20\% of the weighted mean).

The quantitative analysis shows that the effect of moving from the weighted median to the weighted mean is likely to be more significant at the currency level for those currencies reported by fewer providers. This would not be an issue for 2016/17 since our recommendations are constrained to an overall price level change (as explained in Section 6). The approach to take in the future would need to be considered in light of:

- the ‘usual’ year-on-year changes in relative prices as a result of applying updated cost data (assuming a ‘modelled’ rather than ‘rollover’ approach is applied);
- the changes in relative prices caused by application of new currency designs;

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\textsuperscript{99} The aggregate reported cost for an episode HRG is the total costs recorded by providers in 2011/12 against the HRG. It is mathematically equivalent to the product of the aggregate activity level and the weighted mean cost.
potential future application of PLICS (whereby, in principle, the number of data points would be even larger as the benchmarking could be done on the basis of a patient-level distribution rather than a provider-level distribution; and

- steps in the methodology that Monitor may apply to ‘smooth’ relative price changes from year to year.

A5.2 Provider level impacts

Figure A5-2 below estimates how providers would be impacted by the relative price changes were the cost benchmark for each episode HRG to be assessed at the weighted median level rather than the weighted mean level.

On the y-axis we plot the relative quantum change for each provider:

$$\frac{\sum_{Provider \ HRGs}(Weighted \ median, \ adjusted \ x \ provider \ activity)}{\sum_{Provider \ HRGs}(Weighted \ mean \ x \ provider \ activity)}$$

where the Weighted median, adjusted is set for each HRG in the following way:

$$Weighted \ median, \ adjusted = Weighted \ median \ \frac{\sum_{All \ HRGs}(Weighted \ mean \ x \ All \ activity)}{\sum_{All \ HRGs}(Weighted \ median \ x \ All \ activity)}$$

This ensures that it is the relative price changes that are being assessed rather than the absolute price changes.

On the x-axis we plot the implied provider quantum at the (original) weighted-mean price level:

$$\sum_{Provider \ HRGs} (Weighted \ mean \ x \ provider \ activity)$$
Figure A5-2: Changes in implied revenue at the provider level

Figure A5-2 above shows that for the vast majority of providers, the implied relative revenue change would be ±1% as a result of assessing benchmark costs at the weighted median level rather than the weighted mean.

A5.3 Subchapter level impacts

Figure A5-3 below estimates how each subchapter would be impacted by the relative price changes were the cost benchmark for each episode HRG to be assessed at the weighted median level rather than the weighted mean level.

On the y-axis we plot the relative quantum change for each subchapter:

\[
\frac{\sum_{Subchapter\ HRGs}(Weighted\ median,\ adjusted \times \text{Subchapter\ activity})}{\sum_{Subchapter\ HRGs}(Weighted\ mean \times \text{Subchapter\ activity})}
\]

where the Weighted median, adjusted is set for each HRG in the following way:

\[
Weighted\ median,\ adjusted = Weighted\ median \times \frac{\sum_{All\ HRGs}(Weighted\ mean \times \text{All\ activity})}{\sum_{All\ HRGs}(Weighted\ median \times \text{All\ activity})}
\]
This ensures that it is the relative price changes that are being assessed rather than the absolute price changes.

On the x-axis we plot the implied subchapter quantum at the (original) weighted mean price level:

\[
\sum_{\text{Subchapter HRGs}} (\text{Weighted mean} \times \text{Subchapter activity})
\]

**Figure A5-3: Changes in implied revenue at the subchapter level**

Figure A5-3 above shows that for the majority of subchapters, the implied relative quantum change would be within ±2% as a result of assessing benchmark costs at the weighted median level rather than the weighted mean. There is, however, a significant minority of subchapters where the total quantum change would be between -2% and -4%.