Improving coding, costing and commissioning

Annual report on the Payment by Results data assurance programme 2010/11

September 2011
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We also help public bodies manage the financial challenges they face by providing authoritative, unbiased, evidence-based analysis and advice.
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Part one: summary

The PbR assurance programme

1 Payment by results (PbR) is the tariff system that governs payments to hospitals by local NHS commissioning organisations. It is fundamental to many policies. It seeks to ensure fair funding for hospitals for the work they do and to encourage greater efficiency, best practice, greater patient choice and competition between providers. The government intends to extend the tariff beyond the £26 billion of acute services currently covered to most, or all, of the £51 billion of hospital activity. This would include specialist hospital activity, community services and mental health care providers.

2 Good quality data is essential to setting fair tariff prices and to ensuring that payments to hospitals are correct for the work done. The NHS also uses the data underpinning PbR to hold providers to account for the quality of their services, to inform the public and to plan service provision.

3 Over the last four years the Audit Commission has reviewed the accuracy of all data used to underpin PbR payments. This year we undertook:
   - the first audit for seven years of reference costs which are key to determining individual tariff prices;
   - clinical coding and other data audits at trusts that had performed poorly in previous audits to identify whether they were accurately charging for the work done;
   - the first major review of major independent sector hospitals as part of our clinical coding audit programme;
   - a review of the strength of primary care trusts' (PCT) arrangements for ensuring good quality data in contracting for acute services;
   - a project with other national organisations looking at how to improve national data definitions to reduce errors; and
   - two major releases of our National Benchmarker providing analysis to help the NHS.

Good quality data is essential to setting fair tariff prices and to ensuring that payments to hospitals are correct for the work done.
This report summarises our findings. It has important messages for:

- the Department of Health that currently sets the tariff, and the NHS Commissioning Board and Monitor that will do so in the future;
- NHS Connecting for Health, the organisation responsible for defining data and issuing guidance about it;
- PCTs and their clinical commissioning group successors who commission and pay for services; and
- acute trusts that charge for them and whose costing data informs individual tariff prices.

What did we find?

Reference Costs

5 Reference costs describe how the NHS spent over £51 billion on acute hospital services. Each acute trust completes an annual return showing the cost of individual procedures and services according to a national specification. The primary use of reference costs is to determine the national tariffs used for payments under for PbR.

6 Most trusts’ reference costs submissions were accurate in total, although one in eight were not. However, the accuracy of individual unit costs varied and, in some cases, was poor. One in four trusts had one or more individual unit costs that were materially inaccurate.

7 Unit costs for items covered by the tariff were usually accurate. Most of the errors occurred in services not yet covered by tariff under PbR, such as community services, chemotherapy and other specialist areas. Auditors recommended three-quarters of trusts review how they assigned costs in one or more areas.

8 These findings have local and national implications. Reference costs in non-tariff areas inform local contracts. Our findings suggest these contracts are often based on data that is of poor quality. This may be one reason why trust income from non-tariff activity increased by 45 per cent between 2007/08 and 2009/10, although activity increased much more slowly.

9 Nationally, extending the tariff’s coverage is a key government policy. However the data is often of such poor quality that it would be unwise to seek to develop a tariff based on reference costs without first addressing that issue. Improving data quality in these areas would require considerable investment as much of the data comes from non-standard patient administration systems. Because of the timetable for tariff development these issues need to be addressed quickly if they are to have an impact on the accuracy of future national prices.
In addition, the wide variance in unit costs in some cases suggests that a single tariff may not be suitable for some services at the moment. There are alternative ways to set the tariff without using reference costs, but they still rely on good data and broadly standard clinical practice to arrive at a plausible single national price. Monitor and the proposed National Commissioning Board should explore these options.

Greater use of simple, basic checks by trusts would lead to improved data quality. These include checking submissions against other data sources, and benchmarking unit costs against those of other providers. Better senior leadership within organisations and greater clinical involvement are also needed. Board engagement on data quality is important in bringing about improvement.

To help address these issues we have provided a checklist covering 10 key areas that senior hospital managers can use to improve the quality of reference costs submissions. This checklist can be found at the end of this summary.

We are also making the tools we used to target our investigations during the audits available online through our award-winning National Benchmarker. These will enable trusts to check the accuracy of their submissions.

**Coding audits**

We undertook inpatient clinical coding and outpatient data audits at trusts that had performed consistently poorly in previous audits. Each review included a specialty previously audited, where we found much improvement. This shows data quality improves when trusts carry out recommendations from previous audits, and demonstrates the benefit of a consistent national assurance programme.

Performance improved in three key causes of poor data quality:

- inadequate training;
- limited clinician involvement; and
- weak policies and procedures.

We will review how well trusts have delivered recommendations from all previous audits as part of the 2011/12 assurance programme.

Coding individual patients who have several different health problems (‘comorbidities’) continues to be an issue for the NHS. NHS Connecting for Health has issued new guidance on the subject which trusts had not yet fully put in place. Accurate coding of comorbidities is important in determining payment and in understanding the true nature of a trust’s activity.
Source documentation was once again highlighted as an area of concern.

**Independent sector**

We also audited the main independent hospitals that provide acute services to the NHS. We found that error rates were higher than the NHS. This was caused by problems with coding diagnoses, particularly when the patient had comorbidities. This reflected the focus of the hospitals on interventional procedures rather than management of long-term conditions. Also, they did not need to code such conditions in order to receive appropriate payment under their contracts.

Source documentation in independent sector hospitals was of good quality compared with the NHS.

**Commissioners**

We completed the first phase of our review of the arrangements in commissioning organisations for ensuring good quality data in contracting for acute services. Most primary care trusts are delivering minimum requirements.

PCTs performed better against themes where they worked with acute trusts over data, but struggled to perform well in other areas. These were:
- accountability for data quality;
- engagement with GPs;
- procedures to follow up PbR queries; and
- lead commissioner responsibilities.

Phase two in 2011/12 will review the outcomes of these arrangements.

**Data definitions**

We have also worked with the Department of Health, the NHS Information Centre and NHS Connecting for Health to look at key areas of concern about data definitions that are often the cause of reference cost and payment inconsistencies. National guidance is difficult to find and in some key areas not clear enough. We have reviewed guidance on recording short-stay surgery and short-stay emergency admissions. We will publish our findings before the end of the year.

Revising and implementing the guidance to ensure more consistent recording will carry financial implications. Commissioners and providers may suffer gains and losses as work is defined and paid for differently. This will need to be managed by the new NHS Commissioning Board.
National Benchmarker

26 As well as adding tools for checking reference costs to help trusts, we have developed benchmarking analysis further to help PCTs. This identifies exceptionally high or low volumes of hospital activity, after taking account of the characteristics of the local population. The benchmarker calculates the financial impact of over and under performance and is a prompt for investigation. The benchmarker also provides other information for trusts and PCTs. Both could do more to use the information available to bring about improvement locally.

Next steps

27 Our work over the last four years has shown that direct action on specific areas of data can improve its quality. Publication of wider health data, including outcome measures, mean the quality of underpinning data routinely collected by the NHS has never been so important. There needs to be a more coherent, consistent framework to define, assure and support improving data quality in the NHS. We will work with national and local organisations to share learning and ensure improvements realised from our work are not lost.

Further information

28 We publish summary results from all the audits on our website alongside comparative profiles for all trusts, PCT clusters and independent sector providers at www.audit-commission.gov.uk/pbr. Access to our National Benchmarker, which contains the analysis used to target our audits, is also freely available to the NHS from our website.

Recommendations

Primary care trusts should:
- focus on areas identified through the commissioner arrangements reviews, and support trusts to deliver action plans outlined in local audit reports;
- examine the non-tariff part of their contracts to ensure they are set on robust data, and support providers to improve the quality of costing in these areas;
- ensure that local contracts with the independent sector use current PbR rules;
- use the National Benchmarker to explore costs and activity to ensure the levels of activity they are commissioning are reasonable for their population, and they are receiving value for money in their local contracts;
- support providers in putting into effect guidance on recording short-stay surgery and short-stay emergency admissions, managing any financial impact through a transition process; and
- inform new commissioning groups of the work of the assurance programme to inform clinical commissioners about the quality of acute data.
Trusts should:
- carry out the action plans from all local audit reports;
- ensure they review their own approach to reference costs for the key issues identified nationally, using the checklist provided;
- put into effect guidance on recording short-stay admissions, managing any financial impact through a transition process with commissioners;
- review, and where necessary, improve their source documentation to promote accurate coding; and
- use the tools available in the National Benchmarker to help improve data quality and to understand better their activity in relation to others.

Independent sector providers should:
- carry out action plans from all local audit reports, focusing specifically on coding diagnoses; and
- understand how the more sophisticated coding required under current PbR rules will affect local contracts.

NHS Connecting for Health should:
- ensure that the new guidance on coding comorbidities is applied effectively, and further updated if necessary;
- work with national stakeholders to improve the quality and accessibility of guidance to the NHS on data items used for PbR; and
- work with national stakeholders to develop medium and long-term plans for ensuring the existing datasets that underpin PbR (and their guidance) are fit for purpose.

The Department of Health should:
- address weak areas of national reference costs guidance identified during the audit programme, including guidance on how to complete the reconciliation sheets;
- undertake national work on areas of consistent error in reference costs to identify ways of improving data quality;
- review the suitability of reference costs for non-tariff services to inform tariff development, and consider alternative ways of developing tariffs for these services;
- review the appropriateness of using data items from non-Patient Administration Systems (non-PAS) to support payment of nationally mandated tariffs;
- support the NHS in putting into effect revised guidance on short-stay admissions, focusing on managing the financial impact of any changes through local commissioning arrangements; and
- work with national stakeholders to develop medium and long-term plans for ensuring the existing datasets that underpin PbR (and their guidance) are fit for purpose.
The NHS Commissioning Board, when established, and Monitor should:
- ensure there are satisfactory arrangements in place to assure and improve PbR data quality under the proposed new commissioning and regulatory arrangements, including exploring how provider licensing arrangements could support this;
- explore different ways of setting the tariff in areas where reference costs are weak; and
- ensure that guidance on PbR data items is improved and that the responsibilities of national organisations in this area are clarified.

The Audit Commission will:
- work with the Department of Health, the future NHS Commissioning Board, the NHS Information Centre and regulators to develop a new data quality framework;
- work with national stakeholders to improve data definitions;
- share best practice from the assurance programme; and
- deliver audit programmes in 2011/12 and 2012/13.

Checklist to improve the quality of reference costs

29 Senior leadership and involvement are important in producing good quality data. The checklist contains questions senior managers and board members can ask staff to assure themselves their reference costs submission is correct.

30 The prompts included are specifically for reference costs, but the general principles also apply to any costing model, including patient level information costing systems (PLICS) and service line reporting or monitoring (SLR/SLM).

31 The 10 key areas that will improve the quality of costing information are described on the next page.
<table>
<thead>
<tr>
<th><strong>Checklist to improve the quality of reference costs</strong></th>
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<tr>
<td><strong>1 Total costs</strong></td>
</tr>
<tr>
<td>■ Is the total cost quantum correct?</td>
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<td>■ Has the guidance on standard adjustments been correctly applied?</td>
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<td><strong>2 Sense check</strong></td>
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<tr>
<td>■ Has a simple sense check been completed?</td>
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<tr>
<td>■ Are unit costs under £5 and over £50,000 justifiable?</td>
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<tr>
<td>■ Do other unit costs seem correct?</td>
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<tr>
<td>■ Are the reasons for outliers documented and signed off?</td>
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<tr>
<td><strong>3 Checking against other sources</strong></td>
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<tr>
<td>■ Has the activity information used in the reference costs submission been reconciled to other sources, such as Hospital Episode Statistics (HES) or contract monitoring information?</td>
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<tr>
<td>■ Has the reference costs submission been compared with last year’s, particularly the reported unit costs?</td>
</tr>
<tr>
<td>■ Are the reasons for outliers documented and signed off?</td>
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<tr>
<td><strong>4 Benchmarking</strong></td>
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<td>■ Has the previous submission been benchmarked against national data, both for individual unit costs and for activity volumes? (This information is available in the Audit Commission’s National Benchmarker.)</td>
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<tr>
<td>■ Are the reasons for outliers documented and signed off?</td>
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<td><strong>5 Non-PAS systems</strong></td>
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<tr>
<td>■ Where non-PAS systems are used is there a consistent and robust approach to accessing and producing information in the currency required for costing?</td>
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<td><strong>6 Known data quality issues</strong></td>
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<tr>
<td>■ Where data quality is known to be poor, is there a suitable approach to producing activity and cost information?</td>
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<td>■ Is there a plan in place to address the poor data quality?</td>
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<td><strong>7 Documentation</strong></td>
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<td>■ Are there documented processes in place for completing reference costs submissions?</td>
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<tr>
<td>■ Have the areas of difficulty been adequately explained?</td>
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<tr>
<td>■ Has this been tested and signed off?</td>
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<td><strong>8 Reporting and clinician engagement</strong></td>
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<tr>
<td>■ Is costing information routinely reported to clinicians and other service leaders?</td>
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<td>■ Are they supported in using this information to run their departments?</td>
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<tr>
<td>■ Are the implications of poor data quality on funding understood?</td>
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<td><strong>9 Board engagement</strong></td>
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<tr>
<td>■ Is the reference cost index (RCI) reported to the board, with suitable information on the implications of changes and national performance?</td>
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<tr>
<td>■ Is the board updated on known data quality issues and the work to resolve them?</td>
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<td><strong>10 PCT engagement on non-tariff</strong></td>
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<tr>
<td>■ Is the PCT properly engaged in the non-admitted patient care, non-tariff parts of reference costs when they underpin local contracts?</td>
</tr>
<tr>
<td>■ Is the PCT involved in resolving known issues?</td>
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</tbody>
</table>

*Source: Audit Commission, 2011*
Introduction

32 The Payment by Results (PbR) data assurance programme helps improve data quality in the NHS. This report presents the key findings from the 2010/11 programme. This included an audit of reference costs at all acute NHS trusts and foundation trusts. We also undertook reviews of inpatient coding and outpatient data at trusts with a history of poor performance, and coding audits at the main independent hospitals providing services to the NHS. This report also contains the main messages from a project looking at key data definition issues, and from the first stage of reviews looking at commissioner arrangements.

33 We publish summary results from all the audits on our website alongside comparative profiles for all trusts, PCT clusters and independent sector providers at www.audit-commission.gov.uk/pbr. Access to our National Benchmarker, which contains the analysis used to target our audits, is also freely available to the NHS from our website.

34 This report is supplemented by supporting information online. These are:

- a document explaining the methodologies used in our audits, which can found at www.audit-commission.gov.uk/nhsdataqualitymethodologies; and
- a glossary of technical terminology used in the report, which can be found at www.audit-commission.gov.uk/nhsdataqualityglossary.

i Audits at the poorest 20 per cent of trusts in inpatient and outpatient coding based on results from previous years.
Reference costs audits

Background

35 In 2010/11 the Audit Commission undertook the first comprehensive review of reference costs in seven years, auditing the 2009/10 reference costs submissions at all acute NHS trusts and foundation trusts in the country. This followed a pilot review in 2009/10 (Ref 1). The Audit Commission last reviewed reference costs submissions in 2004 as part of its then programme of data quality reviews (Ref 2).

36 Reference costs are a nationally mandated data submission that calculates the average cost to the NHS of providing a defined service in a given financial year. In 2009/10, reference costs described how the NHS spent over £51 billion.

37 The primary use of reference costs is to inform the national tariff setting process for PbR. This ensures that tariffs properly reflect the national average cost of activity for each Healthcare Resource Group (HRG).\(^i\) The Department of Health (DH) also uses them to support programme budgeting data and HRG design, and to inform PCT allocations. A review by DH (Ref 3) found that academic bodies used reference costs in research, such as NHS productivity analyses, and in calculating overall gross domestic product (GDP) figures.

38 To support this review, the Audit Commission surveyed all PCTs and acute, mental health and ambulance trusts to understand their uses of reference costs (Ref 4). We found that over 90 per cent of respondents used reference costs locally, in particular, to inform pricing and activity levels for the non-tariff parts of local contracts.

39 Respondents in both reviews expressed concern about the quality and accuracy of reference costs submissions, affecting confidence in the PbR tariff.\(^ii\) Recently DH introduced HRG4 for costing and

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\(^i\) HRGs are a case mix grouping methodology organised by the body system and given clinical coherence by clustering diagnosis and procedure code combinations into groups which consume a similar level of resources. This and other terms are described in the glossary which can be found at www.audit-commission.gov.uk/nhsdataqualityglossary.

\(^ii\) In response to this review DH now publishes guidance earlier and collect reference costs later.
for payment, which more than doubled the number of HRGs used.\textsuperscript{i} However the full implementation of HRG4 for payment in some areas was not possible because of problems with data quality.

40 The objectives of the 2010/11 national programme of reference costs audits were to:
\begin{itemize}
  \item form a view on the data quality and therefore accuracy of individual 2009/10 reference costs submissions from acute and specialist trusts;
  \item identify issues and areas for improvement for trusts and PCTs; and
  \item identify national messages and best practice.
\end{itemize}

**The accuracy of reference costs submissions**

41 Each review looked at:
\begin{itemize}
  \item the organisational arrangements for ensuring the accuracy of submissions;
  \item the accuracy of the total cost quantum used;
  \item the quality of activity reporting by service; and
  \item the accuracy of individual unit costs.
\end{itemize}

42 It was not practical to assess the accuracy of every data item in each submission. The reviews were targeted using comparative analysis and reconciling data to other sources to identify potential local anomalies in cost and activity data. These outliers were then investigated and a judgement made on their accuracy. The analytical tools used to do this are available online in our National Benchmarker.\textsuperscript{ii} This approach was consistent with the other aspects of the programme. A detailed description of our audit methodology is available online at www.audit-commission.gov.uk/nhsdataqualitymethodologies.

43 Auditors reached two judgements on each trust’s 2009/10 reference costs submission:
\begin{itemize}
  \item the accuracy of the trust’s overall reference costs submission: whether the total activity and total costs used within the submission were materially accurate; and \textsuperscript{iii}
  \item the accuracy of individual unit costs: whether one or more unit cost was materially incorrect.\textsuperscript{iv}
\end{itemize}

\textsuperscript{i} HRG4 was a new HRG version replacing HRGv3.5. HRG4 increased the number of groupings from approximately 650 to 1400.
\textsuperscript{ii} The National Benchmarker can be accessed at www.audit-commission.gov.uk/pbrbenchmarking.
\textsuperscript{iii} Materially accurate means the impact would cause a movement of over 1 per cent of the trusts total cost quantum. An overview of the reference costs audit methodology can be found online at www.audit-commission.gov.uk/nhsdataqualitymethodologies.
\textsuperscript{iv} At individual unit costs material accuracy meant a movement of less than 0.3 per cent of the total costs quantum.
Figure 1 shows:
- at 12 per cent of trusts the reference costs submissions were not materially correct; and
- at 24 per cent of trusts one or more unit costs were not materially correct.¹

Figure 1: The accuracy of 2009/10 reference costs submissions at acute NHS trusts and foundation trusts

Source: Audit Commission, 2011

Faults at the 12 per cent of trusts with submissions that were not materially correct included:
- material under or overstatement of activity and therefore unit costs;
- significant amounts of data error in the submission;
- inappropriate inclusion or exclusion of services;
- poor arrangements, especially in cost allocations;
- lack of a costing system leading to the use of national averages; and
- inappropriate adjustments to the total cost quantum.

¹ Not all trusts with incorrect submissions had materially inaccurate unit costs. 6.6 per cent of all trusts had materially inaccurate unit costs that caused their reference costs submission to be incorrect.
Examples of incorrect submissions and incorrect unit costs

One trust with a materially incorrect submission allocated 95 per cent of its admitted patient care expenditure at HRG level to day case activity, leaving only 5 per cent of costs to be allocated to elective inpatient and non-elective activity.

However there were very few instances of such a systemic error that affected large numbers of unit costs. In the majority of trusts, the errors were within individual service areas. Errors could occur despite seemingly strong arrangements at a trust.

A trust with good arrangements overstated the activity of a single high cost drugs HRG by 55 times – recording activity of 1.2m when it should have been 23,277. This resulted in a national reference cost of £4. Without the trust’s data it would have been £521.

Costs included in the reference costs submission

46 Trusts must compile reference costs data using a ‘full absorption’ costing method – in other words, including all the relevant costs associated with the hospital activities. DH provides guidance on which costs and activities should be included.

47 Audits showed that 11 per cent of trusts had an incorrect total cost quantum. In the majority of cases the impact of this error was not material. But for 3 per cent of trusts it led to their reference costs submission being materially incorrect.

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i High cost drugs currently do not have a nationally mandated tariff.
Examples of not getting the total costs right

One trust incorrectly included £2.4 million supplementary income from the PCT in the quantum, which increased the trust’s RCI by 2.5 percentage points.¹

And in the most extreme case one trust failed to exclude impairments of £42.4 million, which artificially inflated the trust’s RCI by 8 points to 111.

48 As part of the submission process trusts complete a reconciliation workbook where they enter high-level figures from the accounts. This is checked against the total cost quantum calculated through the reference costs submission by DH. A submission needs to be within 5 per cent of the figures entered via the reconciliation process for the submission to be accepted by DH.

49 There is no formal guidance as to how to complete the reconciliation sheets and different areas are open to interpretation. Errors in the reconciliation statement were common. While these errors do not affect the overall cost quantum, they increase the work required to prepare the reference cost submission and reduce the effectiveness of the reconciliation process.

Activity reporting and cost allocation

50 Individual unit costs are used to define the national tariff, to inform tariff development in new areas, and to define activity levels and costs in local contracts for non-tariff services. Twenty three per cent of trusts had individual unit costs that were not materially correct.

51 In addition, auditors recommended that 75 per cent of trusts review their cost allocations in one or more area. The questionable cost allocations may not have had a material impact, but they will still have an effect given the important secondary uses of reference costs data nationally and locally.

52 Reference costs are split between admitted patient care (APC) and non-admitted patient care (non-APC). APC is routine inpatient activity and is covered by the national tariff. Non-APC covers all hospital services not delivered as routine inpatient activity. Some

¹ The reference cost index (RCI) is a single figure that acts as a measure of the relative efficiency of NHS organisations. It reflects as a percentage how expensive a trust is relative to a theoretical trust with national average costs (100 being the average). This and other terms are described in the glossary which can be found online at www.audit-commission.gov.uk/nhsdataqualityglossary.
Improving coding, costing and commissioning

Audit Commission  |  Reference costs audits

non-APC has a national tariff but most non-APC is outside it. Table 1 describes the different services included in APC and non-APC.

Table 1: Services included in reference costs

<table>
<thead>
<tr>
<th>Admitted patient care</th>
<th>Non-admitted patient care (tariff)</th>
<th>Non-admitted patient care (non-tariff)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine inpatient activity (including emergencies and day surgery).</td>
<td>Consultant-led outpatients and accident and emergency (A&amp;E).</td>
<td>Specialist services, such as critical care, renal services and chemotherapy. Also covers community services and other low cost high volume activity, such as diagnostic imaging.</td>
</tr>
</tbody>
</table>

Source: Audit Commission 2011

Admitted patient care

There were few problems with unit costs in APC. Where there were, they were caused by system errors such as recording theatre time, or by misallocation or double-counting of activity between APC and non-APC. Appendix A contains more information on consistent errors in APC.

Examples of material errors in admitted patient care

One trust with a submission that was not materially correct double counted 1,680 patient episodes in General Medicine and Geriatric Medicine.

At another trust, mismatches between time allocations from consultant job sheets and activity on the patient administration system (PAS) resulted in materially inaccurate unit costs for 10 APC services.

Non-admitted patient care (tariff)

For non-APC covered by the tariff, the main errors related to activity reporting (A&E) or misallocation of consultant led, non-consultant led and community activity, especially for obstetric related activity. Such variations mean the current tariff for this activity uses an inconsistent sample and may not accurately reflect the average national cost for the service.
Examples of material errors in outpatients

One trust overstated General Medicine outpatients by 71,000 cases because of a classification error that reduced the trust’s RCI by 4.6 percentage points.

Non-admitted patient care (non-tariff)

56 The main errors were in non-APC services outside the tariff and this will significantly impede tariff development. Extending the scope of the tariff is a key government policy but these findings suggest that data is not accurate enough to set a national tariff for these services.

57 In some services the national spread of costs was wide, but these different costs were a genuine reflection of the outlay of the trust on that activity. This suggests that, if these different service models are of equal quality, then there is a more efficient way of delivering care in many trusts for non-APC services.

58 Alongside variation in costs there was also significant variation in the hospital setting reported for some services. Activity that was recorded as an inpatient at one organisation was an outpatient at another, and a regular attender at yet another. Our data definitions work has also highlighted such inconsistencies are caused by historic practice. This has implications for tariff setting in both APC and non-APC services.

59 There are alternatives to using the average of reference costs to set the tariff. However, they still rely on good quality data and broadly standard clinical practice and treatment location to set a plausible single national price. A single national price for many non-APC services, set either through reference costs or by alternative means, would carry serious financial implications for many commissioners and providers.

60 Some of our findings have implications for current tariff development.

- A new national data set and tariff is planned for community services, but our findings suggest the implementation will be difficult for most organisations.
- There is national interest in developing a chemotherapy tariff, but chemotherapy has a wide variation of costs delivered across many settings (see case study below).
- Critical and coronary care use many different service models, and tariff development has been consistently difficult in this area.
Example of material errors in community services

One trust’s double-counting of community paediatrics within other specialties led to their submission being materially inaccurate.

Another trust overstated activity for community nursing services and rehabilitation bed days that artificially lessened their RCI by 2.8 percentage points.

61 The use of disparate IT systems caused many non-APC errors. Tariff development in some areas is dependent on data from non-standard PAS yet the poor quality of reference costs data from such systems suggests developing tariffs from them will be difficult. The problem will increase for acute providers as more trusts take on the responsibility for community services from PCTs, and as care pathway redesign moves more services into a community setting. Addressing the problem is likely to require significant investment.

62 Issues identified with reference cost data quality need to be addressed quickly if they are to have an impact on the accuracy of future national prices. Based on the current timetable, tariffs for 2014/15 will be set using costs in the current financial year (2011/12).

63 Locally, the non-tariff parts of contracts use non-APC reference costs to inform pricing and activity levels. Between 2007/08 and 2009/10 trust income from non-tariff activity increased by 45 per cent nationally (Ref 5). Our findings suggest that this increase is based on data of variable quality. Appendix A contains more information on the consistent errors in non-APC.

Chemotherapy: the implications on national tariff and local payment

64 In chemotherapy, where activity covers all settings, and where only some activity falls under tariff, there were differing views on how to record same day admission and attendances.

65 Figure 2 shows a breakdown of unit costs for one particular chemotherapy HRG. For tariff setting the majority of activity and costs should group into a single cost band. It clearly shows activity and costs ranging from under £500 to over £3000, with no clear indication of the suitable cost band for this activity.

i Non-APC activity accounted for 30 per cent of hospital income in 2009/10.
66 The activity shown here covers outpatients, day cases, inpatients and regular day and night attenders. The unit costs in each setting show a similar spread of costs and activity: for example, 13 trusts had substantial outpatient activity with unit costs over £3,000.

67 Not only will commissioners be charged inconsistently across the country for this activity, but setting a tariff based on such a spread of costs would be inappropriate. The national average of costs is not representative of most of the trusts in the sample.

Figure 2: Unit costs and activity levels for SB09Z – Procure chemotherapy drugs for regimens in band 9
The bars represent the number of trusts with unit costs in that cost band (left axis). The line represents the national activity that each cost band represents (right axis).

Source: Department of Health, reference costs submission 2009/10

The reasons behind poor reference costs

68 We measured each trust’s arrangements for securing good quality reference costs data against four themes.

- Engagement – there is senior-level engagement in and support for the data quality of reference costing data.
- Activity reporting – there are arrangements to support recording all relevant activity right at final submission.
- Approach to costing – there are arrangements to ensure a robust approach to costing.
- Data capture systems – the organisation’s IT systems produce robust activity and costing information.
Figure 3 shows that against every theme most trusts were either below or at minimum requirements.

Figure 3: Arrangements for accurate reference costs submissions

Source: Audit Commission, 2011

The themes where most trusts struggled to perform above minimum requirements were activity reporting and systems support data capture, in part because this involved bringing together information from several different systems. Trusts with submissions that were not materially correct performed worst against the activity reporting theme. These are the areas that need to be addressed to improve data quality.

Only three trusts (1.7 per cent) performed strongly against one or more of the themes. All three trusts are foundation trusts.

Often the issue was not just poor data quality. Trusts were aware that data quality was poor but often submitted the data without trying to address it. Figure 4 shows that where trusts were aware of issues with activity reporting, a third were happy to provide inaccurate data.
Figure 4: **What did trusts do to address known issues with activity reporting?**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left as poor data quality</td>
<td>30%</td>
</tr>
<tr>
<td>Estimates based on activity</td>
<td>25%</td>
</tr>
<tr>
<td>Manual data collection</td>
<td>20%</td>
</tr>
<tr>
<td>Samples extrapolated</td>
<td>15%</td>
</tr>
<tr>
<td>Extrapolation from last year or further back</td>
<td>10%</td>
</tr>
<tr>
<td>No error in costing information</td>
<td>5%</td>
</tr>
<tr>
<td>Activity of one submitted</td>
<td>3%</td>
</tr>
<tr>
<td>Overhead in different currency</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Source:** Audit Commission, 2011

73 Improving the arrangements for producing reference costs will improve the quality of the data. Figure 5 shows the top 10 issues behind the inadequate arrangements and poor data quality in reference costs.
Figure 5: **Top 10 causes of poor data quality in reference costs**

- No / limited reconciliation to HES / other data
- Issues with supporting activity systems
- No / limited benchmarking in place
- No / limited clinician/organisational involvement
- Reference cost index not reported to Board formally
- Issue on treatment of item in accounts
- Improve reporting within trust
- Lack of written procedures
- No / limited formal sign off
- Issues with data quality policy

**Source:** Audit Commission, 2011

74 National guidance states that trusts should ensure reference costs activity data is an accurate reflection of the activity data reported in other activity returns such as HES data and signed service level agreements (SLAs). The Commission’s audit showed the relevance of this. Yet more than half of trusts had no processes to ensure their submissions were in line with other outputs from the trust, such as contract monitoring information or HES.

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\[i\] There are areas of acceptable variation around services excluded from reference costs, or with unbundled HRGs where costs are reported elsewhere in the submission.

\[ii\] Foundation trust performance was broadly similar to non-foundation trusts, apart from one area: they were much better at reconciling their admitted patient care activity to HES. 67 per cent of foundation trusts could do this easily, as opposed to 47 per cent of non-foundation trusts. This reflects the stronger business focus of FTs on the core PbR aspects of their income.
Similarly, more than a third of trusts did not benchmark their unit costs or activity levels against other trusts. Nor did they consider whether their proportion of national activity was reasonable. The latter was a key part of the Commission’s methodology, identifying significant issues at individual trusts.

Case study 1

Benchmarking and reconciliation: Oxford Radcliffe Hospitals NHS Trust

Oxford Radcliffe Hospitals NHS Trust undertakes extensive checks against other data sources to ensure the accuracy of its submissions.

Externally the Trust benchmarks its activity to local costs within South Central Commissioning Group. Internally the contracting and internal trading information is used to check the reference costs submission. The Trust is also transparent when working with commissioners, and this has resulted in an improvement in local pricing for renal.

This approach has resulted in a submission with no validation errors, which is evidence the Trust is working to Level 4 of the NHS Costing Manual.

Source: Audit Commission, 2011

Undertaking these simple checks before and as part of the submission process will improve the accuracy of reference costs nationally, and will provide important extra intelligence on areas where trusts are struggling to report activity correctly. The Audit Commission has made its reference costs analysis freely available to the NHS through the National Benchmarker to help with this. Trusts and PCTs can use these tools to do more investigation into variances to improve the quality of future submissions.

Clinician engagement is important in producing good quality data. Clinical engagement increases if consultants receive the support they need to use the data effectively to meet their individual, professional needs. Reference costs are no exception to these rules.
Case study 2

Clinician engagement: University Hospitals of Leicester NHS Trust

The University Hospitals of Leicester NHS Trust has achieved clinician engagement throughout all stages of the reference costs submission through a divisional approach to the review and approval of reference costs reports.

Divisional finance and performance managers work with senior management and clinicians to review reference costs apportionment methods yearly. They compare outcomes to the prior year and compare national unit prices across trusts and PCTs to highlight and examine any differences. Each Divisional Board receives a report summarising the method undertaken by the trust after the final reference costs submission. Monthly service line reporting and PLICS analysis use the same systems and attribution methods.

The benefits of this approach go beyond the quality of the trust’s reference costing submission. Involving clinicians in the data gathering and allocation processes, and proving the rigour of these processes, ensures clinicians are fully engaged in improving service economics.

Source: Audit Commission, 2011

78 Senior leadership and involvement are also important in producing good quality data. Guidance requires the trust director of finance to sign off each reference costs submission as correct. This check was unsatisfactory at 13 per cent of trusts. We found 11 per cent of trusts had no data quality policy or were not carrying out the policy properly. Fifty four per cent of trusts did not perform simple checks against other data sources, so it is questionable how senior management at those trusts gained assurance about the submission’s accuracy before signing it off.

79 At the very least directors of finance should look for evidence that:
- the total cost quantum used is correct;
- activity data is compared with another source; and
- individual unit costs are benchmarked.

We have provided a checklist covering 10 key areas that senior hospital managers can use to improve the quality of reference costs submissions.
At a quarter of trusts the RCI was not reported at board level, although this is a good indicator of a trust’s overall relative efficiency.

We have provided a checklist covering 10 key areas that senior hospital managers can use to improve the quality of reference costs submissions. This can be found in the summary.

**Case study 3**

**Approach to data quality linked to reference costs: University Hospital of South Manchester NHS Foundation Trust**

The University Hospital of South Manchester NHS Foundation Trust has an integrated approach to data quality and executive reporting that has reinforced reference costs data quality.

- The Trust reports its draft and final RCI to the Executive Board, with supporting detail at specialty and point of delivery level.
- The Trust uses the RCI to support the costing of service development plans and cost savings plans. HRG reference costs are compared with the national tariff by specialty and point of delivery.
- A monthly PbR group meeting links the reference costs activity with PbR activity data, and a Data Quality Steering Group oversees progress of all data quality action plans.

Reference costs are subject to high level review within the Trust and all data quality issues are addressed on a continuing basis. This has minimised the errors within the reference costs submission.

*Source: Audit Commission, 2011*

**National guidance**

National guidance that is unclear or open to interpretation caused inconsistent reference costs in some areas. Table 2 outlines the key areas identified in the 2009/10 reference costs guidance. Greater clarity in these areas would improve reference costs.
Table 2: **Areas where national guidance is unclear**

<table>
<thead>
<tr>
<th>Area</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outpatient midwifery</td>
<td>Reference costs guidance and the costing manual provide contradictory guidance</td>
</tr>
<tr>
<td>Clinical haematology and clinical oncology</td>
<td>Lack of clarity on recording same day attendances with little cost</td>
</tr>
<tr>
<td>Treatment function codes</td>
<td>Guidance requires that several inpatient and outpatient treatment codes are reported differently from HES</td>
</tr>
<tr>
<td>Direct access pathology and biochemistry tests</td>
<td>Guidance unclear and poor national definition of what a test is</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>General confusion on the use of a newly introduced specific zero cost HRG for drug delivery</td>
</tr>
<tr>
<td>Pathology</td>
<td>Current reference costs requirements to group particular tests do not fit with the outputs from regular pathology systems</td>
</tr>
</tbody>
</table>

*Source: Audit Commission, 2011*

83 Activity reporting or costs allocations in some services also caused consistent problems, such as in diagnostic imaging (diagnostic plain film) and anticoagulant services. National work to identify problems and provide more or better guidance to the NHS would improve the quality of reference costs in these areas. Appendix A contains more examples. The reference costs guidance for 2010/11 has been updated in some of these areas and we will review the impact of this as part of our follow-up work next year.

84 **Patient Level Information Costing Systems**

A patient level information costing system (PLICS) is a ‘bottom-up’ approach to costing where an organisation records individual events connected to a patient’s care from the time of admission until the time of discharge. The direct and indirect costs of the resources used during those events are allocated to the patient, much like an itemised bill for a hotel stay. DH encourages organisations to set up patient level information and costing, but has reiterated that improving the quality of reference costs is the priority.

85 We considered the different characteristics of performance for sites using PLICS, looking for evidence that:

- systems compile and produce reference costs data in the required format;
- the reference costs submission is reconciled with reports from PLICS or SLR; and
any unit cost variances at HRG or specialty level resulting from using PLICS data are examined.

86 During the pilots it was clear implementation of PLICS had an adverse affect on the quality of reference costs (Ref 6). Trusts often used patient level costing instead of reference costs data locally and did not reconcile reference costs to PLICS data.

87 However, these problems were not evident during this year’s audits. Instead, where trusts used PLICS well it had introduced a business culture that had improved data quality through, for example, increasing the understanding of the importance of costing throughout the organisation. At one trust the rapid implementation of PLICS had been so effective that our benchmarking tools identified half as many outliers in their data compared with any other trust in their local area.

Case study 4

Implementation of PLICS: York Teaching Hospital NHS Foundation Trust

York Teaching Hospital NHS Foundation Trust has carried out a rapid and effective implementation of its SLR and PLICS.

A programme approach has helped this, using a dedicated programme manager and benefits register to capture benefits. A senior-level implementation board that includes executive, non-executive and clinical leaders ensures senior sponsorship.

Each directorate has a named clinical lead. The PLICS system reports costing data quarterly for divisions, and in divisional presentations to Executive Board for performance management. This has resulted in engagement of staff across the Trust in costing.

This has not just led to a robust reference costs submission. It has provided financial benefits, including income generation and cost saving, and identified areas for improvement, such as enabling the Trust to fulfil the requirements of the cholecystectomy best practice tariff.

Source: Audit Commission, 2011
Overall, it may be too early to gauge the impact of PLICS on reference costs. PLICS sites' performance was similar to non-PLICS sites on many of the audit tests. However, the individual unit costs were more accurate: 88 per cent of PLICS sites had correct unit costs, compared to 71 per cent of non-PLICS trusts.

We found that some trusts were expecting the introduction of PLICS to improve their data quality, but they had not agreed formal timescales to complete the implementation. Also there is a risk that PLICS might introduce a false sense of accuracy because of its potential for overreliance on estimates and weightings. PLICS need to use actual and timely activity and costs to drive improvement.
Findings

90 In line with our overall strategy to move towards a more risk-based approach, we focused our inpatient clinical coding audits and outpatient audits at the most poorly performing 20 per cent of trusts in each area. We undertook 60 audits in all.\(^1\)

91 We found much improvement in both inpatient and outpatient data this year.

92 For our inpatient audits:
   - Eighty seven per cent of trusts audited this year reduced their HRG error rates compared with last year;
   - the largest improvement was 21 percentage points for one trust, with an average improvement of 9 percentage points;
   - only four trusts got worse, with an average change of 2.7 percentage points; and
   - the financial impact of errors at the trusts audited has also reduced:\(^2\)
     - the net change has halved from 1.8 per cent of the total sample last year to 0.9 per cent this year; and
     - the gross impact of the errors reduced from 7.8 per cent to 4.7 per cent.

93 There was a similar picture in outpatients:
   - Eighty per cent of trusts audited this year reduced the number of errors affecting payment compared to last year;
   - one trust reduced its error rate by 34 percentage points, and there was an average improvement of 10 percentage points; and
   - only five trusts got worse, with an average change of 4.8 percentage points.

94 Looking across all four years of the assurance programme shows the impact the programme has had on improving inpatient data quality. Figure 6 shows the 30 trusts audited this year (columns) and the

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\(^1\) We used the same audit methods as in previous years: NHS Connecting for Health Clinical Coding Audit Methodology for inpatient audits, and our own outpatient data audit methodology.

\(^2\) Our online methodology document describes how we calculate the financial impact of errors. This can be found at [www.audit-commission.gov.uk/nhsdataqualitymethodologies](http://www.audit-commission.gov.uk/nhsdataqualitymethodologies)
national performance for the three years when we audited all acute providers (dark green).

Figure 6: **HRG, procedure and diagnosis error rates 2007-2011**

![Graph showing HRG, procedure and diagnosis error rates from 2007/08 to 2010/11.]

Source: Audit Commission, 2011

95 The HRG and coding error rates have clearly reduced nationally. In addition, focusing on the poor performing trusts and revisiting previously audited specialties has had a clear effect compared with the previous three years. Diagnosis and procedure coding errors have nearly halved compared with the average of the previous three years. This improvement brings the average for the 30 trusts audited in line with the average performance for all trusts last year.

96 While this reflects large improvement for the poor performing trusts, there is still more work required nationally. An average error rate of 9 per cent (based on last year’s national results) means that just under one in ten of payments are wrong for the cases audited. Our work has shown that significant under performance can be addressed. The challenge now is to improve the quality of the average trusts to that of high-performing trusts. We will look at how trusts can achieve this as part of our best practice project next year.

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i HRG error rates for this comparison are all HRG4

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Causes of improvement

97 Each audit contained at least one follow-up area, a specialty audited in previous years. Effectiveness in implementing previous years’ audit recommendations was a key factor in securing improvement.

- For outpatients, 83 per cent of revisited areas showed improvement, with the average error rate for those areas falling by two thirds – from 23 per cent to 7.9 per cent.
- For inpatients, 72 per cent of follow-up areas showed improvement, with the average error rate for these areas falling by about a third – from 18.9 per cent to 12.4 per cent.

98 Addressing some of the main causes of poor data quality has enabled trusts to deliver this improvement in error rates, which will have a trust wide benefit beyond the follow-up areas.

99 Last year’s report on the assurance programme outlined the key areas for improvement based on learning from the first three years of our work (Ref 7). These were:

- inadequate training;
- weak policies and procedures;
- no, or limited, clinical involvement;
- coders not following national coding standards;
- lack of, or inadequate, internal audit; and
- poor source documentation.

100 Figure 7 shows the issues identified at the 30 inpatient audits this year, and compares them to last year. There has been a marked improvement in all but one of the key areas we highlighted.
At the trusts audited this year the number of trusts where weaknesses in training that led to error has halved. Clinician involvement has also disappeared as an issue, as have policies and procedures. Auditors also identified an overall strengthening in the governance over data quality in both inpatient and outpatient settings, which will have led to these improvements.

By continually focusing on these areas through national and local reporting the PbR assurance programme has ensured that trusts worked to address them. The result is a marked improvement of data quality.
Carrying out recommendations: Newham University Hospital NHS Trust

Carrying out the recommendation from previous audits to improve its coding arrangements has led to improved coding accuracy. This included:
- restructuring the clinical coding department to ensure staffing levels are satisfactory for the work;
- providing extra training for the clinical coders;
- updating local policies and removing those identified in previous audits as incorrect and not following national standards;
- good comprehensive discharge summaries; and
- regular internal reviews by the coding managers, with results fed back to the coding staff.

Using the recommendations from the assurance programme led to an improvement of 11 percentage points, from 15.7 per cent in 2009/10 to 4 per cent this year.

Source: Audit Commission, 2011

103 Coding to national standards has improved, but problems with coding comorbidities have increased. Coding comorbidities was identified as a problem at 90 per cent of the trusts audited this year, more than double the previous audits at these trusts. New guidance was introduced for 2010/11 which provided clinical coders and auditors with standards for coding comorbidities. Many of the problems coding comorbidities relate to trusts not implementing the new national standards. Further guidance was released in March 2011 which should help trusts improve the accuracy of coding comorbidities. We will review the implementation of comorbidity guidance as part of our programme for next year.

104 Poor quality source documentation continues to be a problem in both inpatient and outpatient coding. This is another long-term problem that will not be resolved quickly but it is important that more work is done in this area. Medical records are an integral part of effective patient care and improvements here would have benefits far beyond PbR.
Independent sector coding audits

Findings

105 Following successful pilots, we audited 30 independent sector (IS) hospitals. The HRG error rates for the IS hospitals audited were slightly worse than for the NHS as a whole.

106 Figure 8 shows HRG error rates for the IS compared to the upper and lower quartiles from last year’s national audit programme. The average IS error rate was 14.2 per cent compared to 9.1 per cent for the NHS. The upper quartile for the IS was 22 per cent compared to 11.7 per cent for the NHS, showing that poorly performing providers struggle to achieve accuracy.

107 However the lower quartile was slightly better than the NHS (5 per cent compared to 5.2 per cent) showing IS providers can code with a good degree of accuracy. The hospitals for one IS provider represented seven of the top 10 best performing IS hospitals.

Causes of errors

108 Figure 9 shows the IS was slightly worse than the NHS at coding procedures, but its average error rate for diagnosis coding is more than twice that of the NHS.
Figure 8: **Percentage of HRGs derived incorrectly for independent sector providers 2010/11**

![Graph showing percentage of HRGs derived incorrectly for independent sector providers 2010/11.]

Source: Audit Commission 2011

Figure 9: **Average diagnosis and procedure error rates for the independent sector and the NHS**

![Graph showing average diagnosis and procedure error rates for the independent sector and the NHS.]

Source: Audit Commission 2011
This reflects the focus of independent sector business. The insurance companies paying for private patients only require a single intervention (procedure) code for payment; and the service provided to the NHS is for interventional surgery, not managing long-term conditions.

During the period audited, IS hospitals were often not paid under PbR rules; usually contracts used local tariffs and HRGv3.5, or sometimes simple procedure codes. As such the IS approach to coding is suitable for current payment purposes. However, it led to an underemphasis on diagnosis coding, and a resulting under-reporting of the complexity of the activity undertaken.

If this performance continues when the IS uses full PbR for payment, it will result in commissioners being undercharged. Based on our findings, 70 per cent of hospitals would not have received enough income for the activity they delivered. This potential undercharge was often the result of the coding grouping to less complex HRGs under HRG4 than they would have done under HRGv3.5.\(^i\)

The three key issues leading to errors identified through the audits are all related to delivering the complexity of coding required by PbR:
- relevant comorbidities are omitted, recorded inconsistently or overcoded (53 per cent of IS hospitals);
- the information coded is not relevant to the episode of care (47 per cent); or
- coding is not carried out to national NHS Connecting for Health clinical coding standards (43 per cent).

Introducing PbR drove improvement in the completeness and accuracy of coding throughout the NHS (Ref 8). The full implementation of PbR for IS payments should lead to similar improvement. Evidence suggests the IS is able to respond quickly to the change required to ensure it is properly paid for the activity it delivers to the NHS.

Source documentation in IS hospitals was of good quality compared with the NHS. Auditors reported only a quarter of providers had weaknesses in this area, compared to 90 per cent of all the NHS trusts audited last year. The simpler nature of patients and treatments accounts for much of this, but there are areas of learning from IS hospitals that could improve the standards of new case notes in the NHS.

\(^i\) HRG4 is more sensitive to errors in clinical coding accuracy than HRGv3.5, both through design and because HRG4 contains more than twice as many HRGs as HRGv3.5.
Case study 6

Good source documentation: Shepton Mallet NHS Treatment Centre

The excellent order and quality of the case notes improved the quality of clinical coding. Each set of notes is sequenced identically for the same procedure, which made it easy to navigate the case notes. This helps both speed of coding and accuracy.

In addition most operation sheets are typed, comprehensive and well-structured, and there is a policy and procedure document that describes a rigid pathway for case note flow and structure that the hospital complies with.

The quality of source documentation was a key factor in a HRG error rate of 7 per cent, which was lower than the average of 9.1 per cent for NHS Trusts in 2009/10.

Source: Audit Commission, 2011
Interim findings

115 In 2010/11 we started a two-phase review of commissioner arrangements for ensuring good data quality in contracts subject to PbR. Phase one reviewed arrangements during 2010/11. Phase two, which we will deliver in 2011/12, will test outcomes in different areas to gauge the effectiveness of these arrangements. An overall judgement cannot be made until both phases are completed.

116 We judged commissioners against six characteristics, from accountability for improving poor provider data quality within a PCT, to the PCT’s ability to perform responsibilities under lead commissioning arrangements. Figure 10 shows the findings from phase one of the review.

117 PCTs performed better against themes where they worked with acute trusts over data but struggled to perform well in other areas, such as engaging with GPs or their roles as lead commissioners. Only four PCTs managed to perform strongly against any characteristic.

118 Table 3 describes what PCTs need to do to perform well in the four characteristics where performance was not as strong.
Figure 10: **Findings from phase one of commissioner arrangements**

![Bar chart showing findings from phase one of commissioner arrangements](image)

- **Accountability for data quality**
- **Agreement with providers on data quality**
- **Engagement with GPs**
- **Provider data is validated and shared effectively**
- **Procedures in place**
- **Lead commissioner (where applicable)**

- Performing strongly
- Performing well
- Performing adequately
- Below minimum requirements

*Source: Audit Commission, 2011*
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percentage of PCTs at minimum requirements</th>
<th>What PCTs needed to do to perform well</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountability for improving poor provider data quality supported by clear policies and procedures.</td>
<td>58</td>
<td>■ The PCT shares data quality issues with a board committee and with other commissioners.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Roles and responsibilities for data quality are clearly defined and incorporated within job descriptions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ A financial value is assigned to data quality risks in the risk register.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Data quality is firmly embedded in the arrangements for Information Governance.</td>
</tr>
<tr>
<td>Engagement with GPs to promote understanding of data quality and its impact on finances.</td>
<td>64 (including 5 per cent below minimum)</td>
<td>■ GPs routinely check and challenge data quality issues.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ GPs work at senior level within the PCT to raise awareness of data quality.</td>
</tr>
<tr>
<td>Procedures to follow up PbR data quality queries and audit recommendations at providers.</td>
<td>66</td>
<td>■ Identifies potential issues of data quality for future internal audits.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Undertakes joint site or desktop reviews with trusts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Uses evidence from analysis and benchmarking with providers.</td>
</tr>
<tr>
<td>PCTs perform responsibilities under lead commissioning arrangements effectively.</td>
<td>76 (of relevant PCTs)</td>
<td>■ A written down, well understood clear division of responsibilities exists between PCT and cluster, and is being followed.</td>
</tr>
</tbody>
</table>

*Source: Audit Commission, 2010*
Case study 7

Engaging GPs to improve data quality: Cumbria Teaching PCT

Cumbria Teaching PCT has improved its data quality arrangements for monitoring contracts in 2010/11 through the engagement with GPs.

The Cumbrian health economy needed sustainable solutions to its financial situation. The PCT introduced an innovative approach through six GP localities and a Clinical Senate with devolved budgets. Data and information analysts support the lead GPs in analysing the quality of cost data and the format of the information used. In 2010/11 the PCT devolved 60 per cent of the budget to the GPs in the localities, with full devolution taking place in April 2011.

Work in the localities has helped to identify data quality issues with cost implications. Work in one locality identified provider miscoding resulting in a favourable adjustment of £350k to the contract in place for 2010/11.

Alongside these cost savings the new arrangements encourage accountability for monitoring of data quality and improved decision making based on suitable and accurate information.

Source: Audit Commission 2011

Benchmarking analysis

119 To support the commissioner arrangements reviews we have developed some PCT-focused analysis for our PbR National Benchmarking online tool.i

120 This analysis identifies exceptionally high or low volumes of hospital activity, after taking account of the characteristics of the local population. It also estimates the financial impact of over or underperformance. Users asked for this analysis.

121 Poor data quality often causes extreme outliers in this analysis. It can also be used with other analysis in the benchmarker to provide in-depth understanding of the trends and characteristics of activity in a health economy.

i The National Benchmarking can be accessed at www.audit-commission.gov.uk/pbrbenchmarking.
Data definitions

Background

122 Our work repeatedly identifies that poor data definitions lead to poor data quality.¹ This year’s reference costs audits show the same care is counted and costed differently across the NHS, adversely affecting local contracts and the national tariff. NHS feedback shows that data definitions are the single biggest source of local contractual disputes between commissioners and providers.

123 The Audit Commission has undertaken a project with the Department of Health, the NHS Information Centre and NHS Connecting for Health to highlight what the issues are and find ways forward. We will publish a briefing outlining the full findings of the review in the autumn.

Key findings of the review

124 We focused on the two main areas of conflict: differentiating day cases and outpatients, and recording short-stay emergency admissions. The guidance is difficult to find and not clear enough. NHS Connecting for Health, supported by the other organisations, is now reviewing the guidance for these areas. We will be recommending that all national guidance on PbR data items is reviewed to improve its quality and accessibility, and to ensure it is joined up across the different national organisations.

125 Consistent implementation of national guidance will bring financial challenges for individual organisations. The recording of key data items in reference costs and in NHS contracts (and therefore payments) is governed more by historic practices than current guidance. The NHS wants its currency and costs to be right, but faces difficulties when changes to a more accurate recording of activity reduce acute income significantly. In addition, new ways of delivering care take time to become adequately reflected in tariff. This acts as a financial disincentive to accurately record data items (such as the setting of care) accurately from the start.

¹ ‘Data definitions’ is a commonly used term referring to the definitions in national guidance for data items used by the NHS.
A clear understanding of costs, with accurate reflection of how care is delivered, is the only way to properly understand how the NHS can deliver more care within a restrained budget. The new NHS Commissioning Board will want to ensure that activity is commissioned consistently in a manner that provides the best value for money. But it will also need to consider how to make sure that local organisations are not financially destabilised through the accurate recording of key data items, and the implication this has for tariff payments.

There is an appropriate business separation between the three national organisations that look after the data definitions used in PbR. However this separation was not understood by the NHS and has led to gaps in responsibility. This has impacted on the clarity and accessibility of guidance, and on the consistent application of guidance in this area by the NHS.

There was also concern within the NHS that no single organisation would be taking a view on all PbR data related issues. As the NHS moves care into more efficient settings that are more convenient for the patient, so data definitions and payment structures need to adapt to reflect these changes. The NHS Commissioning Board and Monitor should develop a long-term, joined-up approach to PbR data recording.
Next steps

The 2011/12 assurance programme will help the NHS to continue improving the accuracy of data that underpins PbR by:

- undertaking a detailed follow-up programme to review the effectiveness of local health economies in addressing recommendation from all previous audits, including the reference costs and independent sector audits undertaken this year;
- broadening our inpatient audit programme beyond clinical coding, to the other data items that drive payment – we will use SUS as the audit source for the first time, and half the audit will use a randomised sample to allow extrapolation of the results across the trust;
- completing phase two of our commissioner arrangements looking at the effectiveness of arrangements to provide PCT and PCT cluster boards with assurance over what works well and what needs improving;
- sharing best practice from the assurance programme, providing case studies from all areas of the programme, from the clinical coding audits to the use of the National Benchmarker;
- continuing to work with Department of Health, the NHS Information Centre and NHS Connecting for Health to support the work addressing data definitional issues;
- updating the National Benchmarker for the PbR rules for 2011/12; and
- working with national organisations to develop a new data quality framework.
Appendix A: areas of common error in reference costs

We found common problems nationally in activity reporting and unit cost allocation in reference costs submissions. Staff responsible for costing and reference costs submissions should review their cost allocations and underlying data in these areas, benchmarking their costs against other organisations and investigating outliers, to ensure their submissions are accurate.

<table>
<thead>
<tr>
<th>Admitted patient care</th>
<th>Problem</th>
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</thead>
<tbody>
<tr>
<td>Treatment function codes (General Medicine, General Surgery and their related subspecialties)</td>
<td>National variation in how trusts recorded activity to main and subspecialties. There was also inconsistency between reference costs and other data sources at individual trusts.</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>National variation in how trusts recorded activity to specialties: obstetrics, midwifery and gynaecology. Areas of misallocation or double-counting of activity between admitted and non-admitted patient care.</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>Inaccuracy in excluding day case activity with unbundled HRGs.</td>
</tr>
<tr>
<td>Admit method</td>
<td>Difficulty in allocating costs when there are small levels of emergency activity in specialties with large amounts of elective activity.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-admitted patient care (tariff)</th>
<th>Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outpatients (consultant led)</td>
<td>Apportionment of costs and activity to treatment function codes often based on job plans.</td>
</tr>
<tr>
<td>Outpatient procedures</td>
<td>Problems with identifying procedure activity and/or costs.</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>Antenatal scans sometimes double counted as outpatient attendances (or day cases occasionally.) Reference costs guidance and the costing manual provide contradictory guidance for outpatient midwifery.</td>
</tr>
<tr>
<td>A&amp;E</td>
<td>Transposition of admitted and non-admitted A&amp;E activity, and between other areas (such as 24 hour and non-24 hour.)</td>
</tr>
<tr>
<td>Area</td>
<td>Problem</td>
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<tr>
<td>Critical care and coronary care</td>
<td>Different approach to counting days can cause confusion. Guidance stipulates that you count days as 24 hour periods, not as overnight stays, which is the case with other areas of activity reporting. Large number of different models in use, including low-intensity outreach units, made comparing costs across organisations difficult.</td>
</tr>
<tr>
<td>Outpatients (non-consultant led)</td>
<td>Double-counting with community activity (such as physiotherapy).</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>Duplication of activity across settings (such as inpatient and regular attenders). Unclear guidance on the approach to recording low-cost same-day admissions. Use of regimens in costing that are different from outputs of pharmacy systems. General confusion on the use of a newly introduced specific zero-cost HRG for drug delivery.</td>
</tr>
<tr>
<td>Pathology</td>
<td>Current approach to counting/grouping tests not in line with outputs from pathology systems. Confusion around non-direct access pathology as indirect costs.</td>
</tr>
<tr>
<td>Community services</td>
<td>Large variation in the way activity is reported across the country. Non-PAS systems (or no systems); often used historic activity or limited sampling to inform costing.</td>
</tr>
<tr>
<td>Diagnostics imaging (diagnostic plain film) and anti-coagulant services</td>
<td>Inconsistent approach to recording activity nationally.</td>
</tr>
</tbody>
</table>

*Source: Audit Commission 2011*
References


2  Introducing Payment by Results: Getting the Balance Right for the NHS and Taxpayers, Audit Commission, July 2004.


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We welcome your feedback. If you have any comments on this report, are intending to implement any of the recommendations, or are planning to follow up any of the case studies, please email: nationalstudies@audit-commission.gov.uk