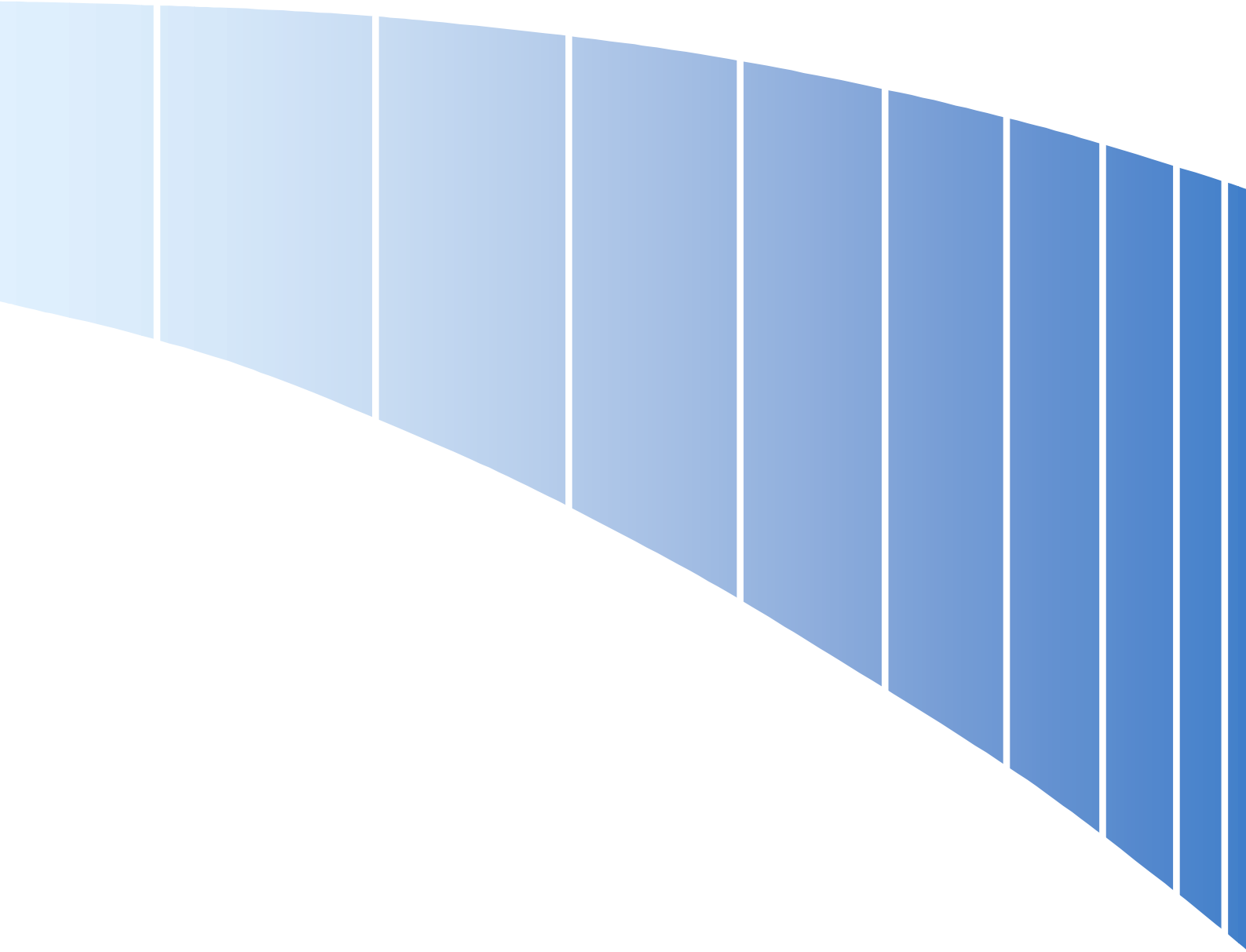


# 2009-10 reference costs publication



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<b>Document Purpose</b>	For Information
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<b>For Recipient's Use</b>	

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## Introduction

1. This document supports the publication of 2009-10 reference costs, which provide the most detailed picture available about how £51 billion of NHS expenditure was used by over 400 NHS organisations to treat patients in 2009-10.
2. This is the first publication of the reference costs since the review of reference costs was published in July 2010<sup>1</sup>. The review found that the data has many uses but suggested that the publication of the data could be improved to further help users of the data and improve the quality of future submissions.
3. As a result, we have made the following changes to this year's publication:
  - a) Improved the supporting publication document to give users a better understanding of the basis and potential uses of the data;
  - b) the publication package now includes both summary level data and also some organisation level data;
  - c) the structure and the content of the Reference Costs Database (RCDB) csv files have been improved to increase user friendliness,
  - d) Included several standard queries for the RCDB to make data analysis easier, and allow users to manipulate and understand the data more easily.
4. As well as assessing the uses of reference costs, the review of reference costs also included a pilot audit of the 2008/09 reference costs for 16 sites. In response to the review, the Department asked the Audit Commission to integrate the audit of reference costs in the PbR assurance framework. The results of the audit of the 2009-10 reference costs will be published in the spring.

## Background – what are reference costs?

5. All organisations need to understand where and how resources are used. The NHS has always accounted for its expenditure in terms of staffing, goods, services and so on. Reference costs originated from a desire to compare unit costs of healthcare, down to the level of treatments and procedures, and we have collected them each year since 1997-98 from all NHS providers of health services to NHS patients in England.
6. The 2009-10 reference costs publication is the outcome of the collection of cost and activity data from all provider organisations in the NHS. Costs are collected at an aggregate level on an annual basis. Providers submit a single composite cost return for activity they have provided and

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<sup>1</sup> Outcomes of the Review can be found at the following link:  
[http://www.dh.gov.uk/en/Managingyourorganisation/NHScostingmanual/DH\\_104762](http://www.dh.gov.uk/en/Managingyourorganisation/NHScostingmanual/DH_104762)

for which they are responsible (OWN data); data for activity they have contracted out to the Independent Sector (OUT data). PCTs submit a single composite return as above which also contains data for activity commissioned from the Independent Sector (COM data). Further information on this can be found in Appendix 1 of the current reference costs guidance, available at the following link:

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_112590](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_112590)

7. Meaningful unit costs cannot be derived simply by dividing total expenditure by the number of patients. Reference costs use casemix adjusted measures where they are available, in which the care provided to a patient (case) is classified according to its complexity (mix). The casemix measure for acute care in England is Healthcare Resource Groups (HRGs). HRGs are maintained by the NHS Information Centre. They are defined by clinicians and reflect clinical practice in the UK, providing standard groupings of similar treatments that use similar resources<sup>2</sup>. The latest version, HRG4, has been used in reference costs since 2006-07. Outpatient attendances are classified according to their treatment function code (TFC), and other classifications are used for other services.
8. The collection of reference costs is supported each year by detailed guidance and the NHS costing manual<sup>3</sup>, designed to eliminate variation caused by different costing methodologies. Reference costs are submitted on a full absorption basis, which simply means that all the running costs of providing these services are included within the return. Each reported unit cost therefore includes:
  - a) direct costs – which can be easily identified with a particular activity (e.g. consultants and nurses)
  - b) indirect costs – which cannot be directly attributed to an activity but can usually be shared among a number of activities (e.g. laundry and lighting)
  - c) overheads – which relate to the overall running of the organisation (e.g. finance and human resources).
9. NHS providers undertake a reconciliation of the reference cost financial statements with their final accounts, to ensure that they have reported all relevant costs.

## **Patient level costing**

10. The Department has been encouraging organisations to implement Patient Level Information and Costing Systems (PLICS) to help them better understand their underlying costs and in the long term drive up the quality of reference costs. PLICS represent a change in the costing methodology in the NHS from a predominantly "top down" allocation

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<sup>2</sup> Information about HRGs is available at [www.ic.nhs.uk/casemix](http://www.ic.nhs.uk/casemix)

<sup>3</sup> Information about NHS costing is available at [www.dh.gov.uk/nhscosting](http://www.dh.gov.uk/nhscosting)

approach, based on averages and apportionments, to a more direct and sophisticated approach based on the actual interactions and events related to individual patients and the associated costs.

11. 46 organisations reported that their 2009-10 reference costs have been underpinned by data from PLICS.

## Uses of reference costs

12. The publication of reference costs is a significant component of the Department of Health Information Strategy and contributes to key input indicators in the 2011-15 Business Plan<sup>4</sup> including 'unit cost for patients visiting hospital for treatment' and 'unit cost of patients receiving community care'.
13. The most high profile use of reference costs is to underpin the calculation of the payment by results national tariff<sup>5</sup>. These 2009-10 reference costs will inform the 2012-13 tariff, although there are a number of reasons why national average costs may not be closely reflected in tariff prices, not least that reference costs are collected by finished consultant episode (FCE) whereas the tariff is based on a spell<sup>6</sup> of care.
14. NHS organisations use the data for reporting to executive teams, benchmarking, contract negotiations and local pricing of non-tariff areas.
15. Outside the NHS, reference costs are used by:
  - a) Department of Health – to support national programme budgeting<sup>7</sup>, which is an analysis of expenditure in healthcare programmes, such as cancer, cardiovascular diseases and mental health
  - b) Department of Health – to inform the input indicators in the Department of Health Business Plan 2011-2015
  - c) NHS Information Centre – to inform the design of HRGs
  - d) Office for National Statistics – to help calculate public service healthcare output
  - e) Audit Commission<sup>8</sup> – in auditor's local evaluations (ALE), which assess how well NHS organisations manage resources, in other improvement work, and in research
  - f) Monitor – use the RCI for NHS foundation trust applications
  - g) academics and think tanks – for research

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<sup>4</sup>[http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/@ps/documents/digitalasset/dh\\_121413.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_121413.pdf)

<sup>5</sup> See "A simple guide to payment by results", available at [www.dh.gov.uk/pbr](http://www.dh.gov.uk/pbr) for an introduction to the national tariff.

<sup>6</sup> A spell is the period from admission to discharge within a single provider and may comprise of more than one FCE.

<sup>7</sup> Programme budgeting data offers an alternative method of assessing NHS expenditure across broader categories of illness. More information is available at [www.dh.gov.uk/programmebudgeting](http://www.dh.gov.uk/programmebudgeting).

<sup>8</sup> The Audit Commission have recently developed an analysis tool based on reference costs.

- h) Treasury
  - i) Parliament – to hold the Department and Ministers to account for the costs of NHS services.
16. There are many other uses of reference costs, as we discovered when the Department of Health, in partnership with the Audit Commission conducted a review of reference costs in 2010. A summary report, which includes the Department's Action Plan in response to the review, as well as further outcomes from the review have been published on the Department's website (see footnote 1).

### **Content and potential uses of the data publication**

17. Further information regarding the contents of the publication is attached at Annex A. The annex also includes further detail around the headline figures and some guidance on how the data could potentially be used.

### **Queries**

18. The volume of information in reference costs is vast. We hope this guide assists readers in using and finding information.
19. If you have a query, please see if the information that you are seeking is already available using the resources (e.g. schedules, database, code to group workbooks) described in this guide. If you request information that is already available, then we will simply refer you to the published source.
20. If you are unable to find the information you require using these resources we can be contacted at [pbrdatacollection@dh.gsi.gov.uk](mailto:pbrdatacollection@dh.gsi.gov.uk)

## Annex A – Content of the publication and potential uses of the data

1. The information within the publication is presented in three ways:
  - a) [national schedule of reference costs](#). This shows the national average unit costs derived from the unit costs of NHS providers
  - b) [reference cost index](#). This gives an index for each NHS provider that compares the actual cost of it's casemix with the same casemix calculated using national average unit costs
  - c) [database](#) of source data. This allows a more detailed analysis of organisation level costs.
2. Further information relating to each of these three areas is included below for information.

### Headlines

3. The following headlines represent significant top-level information from the data collected in 2009-10.
  - 2009-10 reference costs cover over £51 billion of NHS expenditure, an increase of £3.7 billion (8%) over 2008-09
  - This represents about 50% of all NHS expenditure
  - Detailed costs are provided on over 1,500 treatments or procedures covering over 15 million episodes within admitted patient care alone
  - Reference costs OWN data was collected from 404 NHS providers (Schedule 4)
  - The average cost of a day case is £675
  - The average cost of an elective inpatient stay<sup>9</sup> is £2,845
  - The average cost of a non-elective inpatient stay<sup>10</sup> is £1,360
  - The average cost of an excess bed day is £255
  - The average cost of an outpatient attendance is £100
  - The average cost of an A&E attendance is £95
4. Annex B provides some further summary statistics from 2006-07 to 2009-10.

### National schedule of reference costs

5. The national schedule of reference costs shows the national average cost for each treatment, procedure or service for which unit costs were collected from NHS providers in the 2009-10 reference costs collection. It covers services provided in hospitals, in the community and in a range of other settings. Thus, services included range from a visit by a district nurse to the provision of high-level secure placements for mental health

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<sup>9</sup> Excluding excess bed day costs

<sup>10</sup> Excluding excess bed day costs



patients, and from ultrasound scans to renal dialysis and transplant surgery.

6. The schedules show:
  - a) activity, i.e. the number of appointments, attendances, bed days, clients, episodes, tests or treatments appropriate to the service
  - b) the national average (mean) unit cost<sup>11</sup>
  - c) the lower and upper quartile unit costs<sup>12 13</sup>
  - d) the number of data submissions.

7. Table 1 below shows which data feeds into which schedule:

**Table 1** Schedule Data Sources (please see Annex D for list of schedules)

Schedules feed into:		Supplier type		
		OWN	COM*	OUT <sup>+</sup>
Org type	Trusts	NSRC1 & 4	-	NSRC5
	PCTs	NSRC2 & 4	NSRC 5	NSRC5
	PMS +	NSRC3	-	NSRC5

Note: Only PCTs can report COM services

\* Commissioned activity from Non NHS providers by PCTs

+ Contracted Out activity to Non NHS providers by Trusts or PCTs

8. Each schedule shows the national average unit cost calculated from the unit costs of all organisations of that type. The costs included in the schedule reflect the actual costs and unavoidable cost differences across the country, which are reflected in the market forces factor (MFF) index, have not been removed.
9. Within each schedule, and where the service has been provided by organisations of that type, information is shown separately for:

**elective inpatients** - where the patient's admission to hospital is planned and requires staying in hospital for longer than a day

**non-elective inpatients** – where the patient's admission is not planned, including emergency admissions and admissions for maternity, births, and non-emergency patient transfers, and requires staying in hospital for more than one day

**day cases** – where the patient has a planned admission and discharge on the same day

**outpatients attendances** – at clinics in hospital, community health centres or general practices, split by whether or not the attendance was (i) under the clinical direction of a consultant, (ii) face to face (iii) first or follow up, and (iv) single or multi-professional

**outpatient procedures** – HRG4 allows the separate reporting of certain procedures in outpatients

<sup>11</sup> National average, lower and upper quartile unit costs are weighted by activity.

<sup>12</sup> National average, lower and upper quartile unit costs are weighted by activity.

<sup>13</sup> Note that it is sometimes possible for the national average unit cost to be less than or more than the lower and upper quartiles.

**accident and emergency (A&E) services** split by 24 hour, non-24 hour, minor injury unit and walk-in centre, and by whether or not the attendance led to an admission

**audiological services** – services for people with hearing difficulties, split by fitting, repair or neonatal screening

**regular day and night admissions** – patients admitted electively during the day or night, as part of a planned series of regular admissions for an on-going regime of broadly similar treatment and who are discharged the same day or next morning

**day care facilities** - provided for the clinical treatment, assessment and maintenance of function of patients, in particular, though not exclusively, those who are elderly, mentally ill or have learning difficulties. They do not have hospital beds and function separately from any ward

**coronary care units** – reported on bed day basis

**hospital at home and early discharge schemes** (fractured neck of femur and other) - these schemes allow the early discharge of patients from hospital in order for them to continue receiving healthcare in their homes

**cystic fibrosis** – collected separately in line with the specialised service national definition set for cystic fibrosis

**unbundled<sup>14</sup> HRGs** for a number of services:

- (i) critical care (adult, neonatal, paediatric, and outreach) – costs associated with critical care services are high and only relate to a limited number of patients. Including these costs as an overhead on treatments and procedures would significantly distort costs and lead to wide variations. They are therefore reported separately. The HRG4 design is based on the number of organs supported in a critical care period
- (ii) chemotherapy – drug costs for cancer patients, split between procurement (regimen) and delivery, with other costs included in the relevant admitted patient or outpatient setting
- (iii) high cost drugs
- (iv) diagnostic imaging - including MRI and other scans (plain film x-rays are not reported separately due to their high volume and low cost)
- (v) radiotherapy – treatment costs for cancer patients
- (vi) rehabilitation – covering a wide range of rehabilitation taking place under a specialist rehabilitation consultant or within a discrete rehabilitation unit
- (vii) specialist palliative care – care provided under the a specialist palliative care medical consultant either in a palliative care unit or in a designated palliative care programme
- (viii) renal dialysis – covering both haemodialysis and peritoneal dialysis

**community nursing services** – a range of district nursing and health visitor services covering routine and specialist services outside hospitals and often in patients' homes, local health centres, etc.

**other community services** – treatments and services provided by staff in local areas in the wider community (including hospital bases if necessary) such as midwifery, podiatry, speech therapy etc.

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<sup>14</sup> HRG4 introduced unbundled HRGs.

**mental health services** – reported by providers of specialist mental health service only

**paramedic services** – provided by NHS ambulance service providers

**hospital travel cost scheme** – provides financial assistance to NHS patients who do not have a medical need for patient transport services, but who require assistance in meeting the cost of travel to and from their care

**patient transport services** - non-urgent, planned, transportation of patients with a medical need for transport to and from a premises providing NHS healthcare and between NHS healthcare providers

10. This list reflects the range of services and locations in which the NHS operates. By splitting the costs, it is possible to build up the total costs of treatment across the patient pathway, e.g. diagnostic tests requested by GP, an outpatient attendance following referral, inpatient stay (including critical care) or day case, outpatient attendances following discharge and district nurse visits.
11. The elective and non-elective inpatient schedules exclude<sup>15</sup> the costs of bed days that fall outside nationally set lengths of stay, known as trim points. The NHS Information Centre has calculated trim points<sup>16</sup> from 2008-09 hospital episode statistics (HES). We have separately identified the costs beyond these trim points, as submitted by NHS organisations, as excess bed days in the schedules. This assists in giving a like for like comparison of activity and costs.
12. Within each schedule, we have provided a summary of:
  - a) the total cost of each activity (by HRG etc.) across all settings.
  - b) the total cost of all activity in each setting (inpatients, day case, outpatients etc.)
13. In line with previous years, we have excluded UZ01Z (data invalid for grouping), and WD (mental health) HRGs reported by non-specialist mental health providers from the schedules.
14. Reference costs are not always directly comparable between years because of changes to:
  - a) the scope of the collection
  - b) the way in which costs and activity are reported
  - c) currencies, e.g. the move from HRGv3.5 to HRG4 in 2006-07.
15. Appendix 6 of the 2009-10 reference costs collection guidance lists the key changes between 2008-09 and 2009-10.

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<sup>15</sup> using an established statistical technique known as data truncation.

<sup>16</sup> Available at <http://www.ic.nhs.uk/services/the-casemix-service/using-this-service/reference/downloads/costing/hrq4-2009-10-reference-costs-grouper-documentation>. The calculation is as follows: trim point = upper quartile + (1.5 \* interquartile range). There is one trim point covering both elective and non-elective long stay.

16. Below are some examples which illustrate how the schedules can be used to analyse and investigate costs across the NHS.

## Examples of how to use the schedules

### Example one: Normal delivery in an inpatient setting - calculating average costs

17. To determine the average cost for the normal delivery of a baby in an inpatient setting. The first step is to identify the relevant HRGs (Table 2), depending on the OPCS codes recorded within the episode.

**Table 2: Normal delivery HRGs**

HRG code	Description
NZ11A	Normal Delivery with CC
NZ11B	Normal Delivery without CC
NZ11C	Normal Delivery with Epidural with CC
NZ11D	Normal Delivery with Epidural without CC
NZ11E	Normal Delivery with Induction with CC
NZ11F	Normal Delivery with Induction without CC
NZ11G	Normal Delivery with Post-partum Surgical Intervention

18. The second step is to identify a weighted average unit cost from the total activity and costs across the required settings (Table 3). As described above, Inpatient costs are split between those below the trim point (inlier) and those beyond the trim point (excess). When calculating a weighted average cost, the inlier and excess costs need to be summed but the excess bed day activity, which is already included in the inlier activity, must be ignored.

**Table 3: Calculating the average cost of a normal delivery**

Setting	Activity (A)	National average unit cost (£) (B=C/A)	Total cost (£) (C)
Elective Inpatient	4,739	1,429	6,769,847
Elective Inpatient Excess Bed Day*	545	344	187,537
Non-Elective Inpatient (Long Stay)	186,978	1,926	360,149,664
Non-Elective Inpatient (Long Stay) Excess Bed Day*	40,186	467	18,754,344
Non-Elective Inpatient (Short Stay)	212,081	948	201,069,881
Day Cases	46	1,127	51,856
Total	403,857	1,453	586,995,220

Please note: Figures are taken from schedule 4.

\* Excess bed days are not included in activity total

19. The national average unit cost of an inpatient normal delivery is £1,453. Note that these costs relate to the delivery episode itself, and no costs are incurred in health terms for a healthy baby. If the baby requires health care in its own right, then this becomes a separate episode with its own costs. These costs also do not represent the total cost to the

NHS of a birth, which may also include other events such as GP consultations and antenatal and postnatal outpatient attendances.

## Example two: Coeliac disease - using the code to group

20. Reference costs are not collected by individual diagnoses or procedures. With thousands of codes in primary classification systems used to describe information from patient notes, this would clearly be impractical.
21. However, it is possible to use the Code to Group workbook<sup>17</sup>, published by the NHS Information Centre, to understand how HRGs are derived from a given set of ICD-10 codes for diagnoses and OPCS-4 codes for procedures. Such an approach for estimating the costs of a particular diagnosis or procedure would need to be undertaken with caution. The precise grouping to HRGs depends on other ICD-10 and OPCS-4 codes and patient characteristics (e.g. age, length of stay, complications and co-morbidities) present in the episode of care, and the resulting costs will be affected by other diagnoses and procedures in the HRG. For example, the costs associated with coeliac disease (ICD-10 code K900) map to HRG root FZ33 Intestinal Disorders (Excluding Inflammatory Bowel Disease), which has splits dependant on length of stay and complications/co-morbidities. Once the required HRGs have been identified, the method described in example one can be followed to obtain the average cost for this and clinically similar disorders.

## Example three: Cholecystectomy - comparing costs over time

22. To examine the difference between the day case and elective inpatient costs of performing a cholecystectomy (gall bladder removal) between 2005-06 and 2009-10, the first step is again to identify the relevant HRGs. However, a complicating factor when comparing reference costs between years, especially over an extended period, is that they have been collected on different versions of HRGs. Table 4 shows the relevant HRGs under HRGv3.5 for 2005-06, Table 5 shows the relevant HRGs under HRG4 for 2006-07 to 2008-09 and Table 6 shows the relevant HRGs under HRG4 for 2009-10<sup>18</sup>.

**Table 4: Cholecystectomy HRGs under HRGv3.5 in 2005-06 reference costs**

HRG code	Description
G13	Cholecystectomy >69 or w CC
G14	Cholecystectomy <70 w/o CC

**Table 5: Cholecystectomy HRGs under HRG4 in 2006-07 to 2008-09 reference costs**

<sup>17</sup> Available at <http://www.ic.nhs.uk/services/the-casemix-service/using-this-service/reference/downloads/costing/hrg4-2009-10-reference-costs-grouper-documentation>.

<sup>18</sup> The HRGs were redesigned for the introduction of a best practice tariff for cholecystectomy in 2010-11, which illustrates that the primary purpose of HRGs is to support the payment system.

HRG code	Description
GA10A	Cholecystectomy with CC
GA10B	Cholecystectomy without CC

**Table 6: Cholecystectomy HRGs under HRG4 in 2009-10 reference costs**

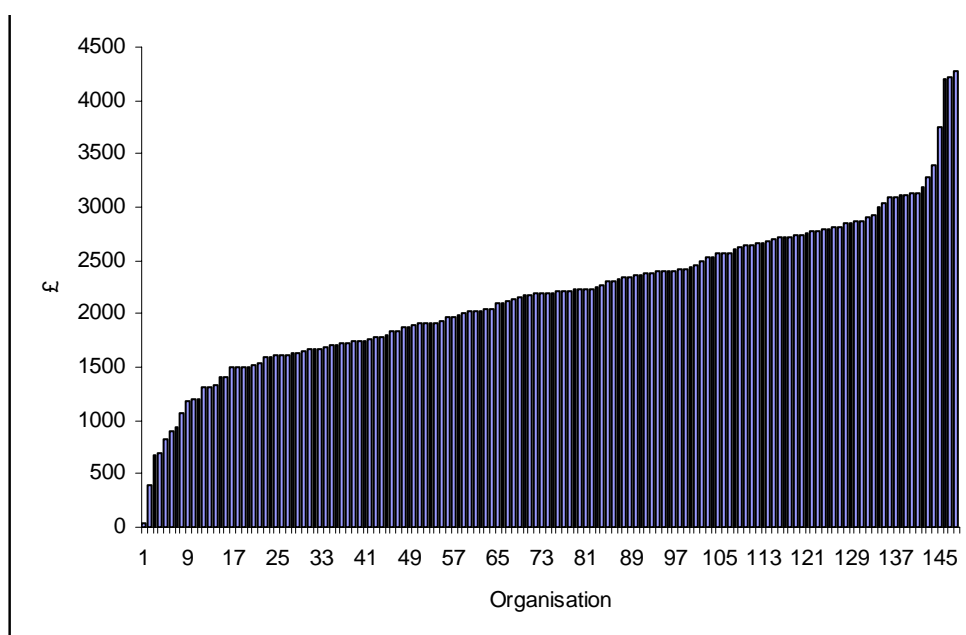
HRG code	Description
GA10C	Open Cholecystectomy without CC
GA10D	Laparoscopic Cholecystectomy with length of stay 1 day or more without CC
GA10E	Laparoscopic Cholecystectomy with length of stay 0 days without CC
GA10F	Open or Laparoscopic Cholecystectomy with CC

23. Once the required HRGs for each year have been identified, the method described in example one can be followed to obtain the required average cost.

#### **Example four: Normal delivery - comparing costs between organisations**

24. Table 3 showed the national average unit cost for the normal delivery HRGs across all organisations. We can drill into this data at organisation level. To do this, we need to use the RCDB csv files provided on our website. Figure 1 shows the organisation level data for Normal Delivery with CC (NZ11A) for non-elective inpatient (long stay). Even though the national average unit cost is £2,138, the organisational level data shows a large range of variation across organisations.

**Figure 1: Inlier unit costs for Normal Delivery with CC, non-elective inpatient (long Stay) - NHS Trusts and PCTs, OWN data, 2009-10**



## Reference cost index

25. Whereas the schedule provides detailed information on the average costs for each treatment or procedure, the reference cost index (RCI) provides an at a glance comparison of costs at the aggregate level for each NHS provider.
26. The RCI shows the actual cost of an organisation's casemix compared with the same casemix delivered at national average cost. An organisation with costs equal to the national average will score 100, with higher cost organisations scoring above 100 and lower cost organisations scoring below 100. For example, a score of 110 means that the costs are 10% above the average whilst a score of 90 shows costs are 10% below the average.
27. In the appendices, RCI scores are grouped separately for each provider type:
  - a. NHS trusts and NHS foundation trusts
  - b. PCTs
  - c. PMS+ sites.
28. The RCI is based on the average for the provider type, rather than for all NHS organisations. This allows for meaningful comparison by similar organisations. For example, an RCI of 100 for a PCT shows that its costs are equal to the national average for PCTs and not an average across all types of organisation.
29. Within each provider type, the RCI is presented in two different ways:
  - a) the non-MFF adjusted RCI based on reported actual costs
  - b) the MFF adjusted RCI, which is the preferred index because it gives a fairer comparison of costs once unavoidable location specific cost differences are removed.
30. Organisations in some parts of the country have higher costs because labour, land and buildings cost more in these areas. The purpose of the MFF<sup>19</sup> is to compensate for the unavoidable cost differences of providing healthcare in different parts of the country.
31. We adjust the RCI by dividing each organisation's index by its latest MFF<sup>20</sup>. Organisations located in areas with higher than average unavoidable costs have an MFF greater than 1, so their index values

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<sup>19</sup> The MFF is described in more detail in *PbR and the market forces factor 2010-11*, available at [www.dh.gov.uk/pbr](http://www.dh.gov.uk/pbr). We will revise this guide when publishing the 2011-12 tariff.

<sup>20</sup> Note that the MFF used for this adjustment is the underlying index centred around one. It therefore has a different form to the payment index used for MFF payments alongside tariff payments, which has the lowest value of 1. The relative differences in costs between organisations are the same for both indices. The latest MFF is that implemented for 2011-12 PCT allocations and the 2011-12 tariff following routine data updates recommended by the Advisory Committee on Resource Allocation.

will decrease. Those in lower than average cost areas will have an MFF of less than 1 so their index values will increase. For example:

- the RCI for Royal Cornwall Hospitals NHS Trust increases from 93 to 100 (MFF value of 0.92)
  - the RCI for University College London Hospitals NHS Foundation Trust decreases from 136 to 114 (MFF value of 1.20)
32. Organisation wide RCIs are presented both including and excluding excess bed days, with the former normally preferred when comparing relative efficiency.
33. As well as organisation wide RCIs, RCIs are also published broken down by the following services:
- a) elective inpatient and day case
  - b) non-elective inpatient
  - c) excess bed days
  - d) critical care
  - e) outpatient services
  - f) other acute services
  - g) community services
  - h) mental health
  - i) transport
  - j) paramedic services
  - k) A&E
  - l) unbundled.
34. Where organisations ceased to exist in 2009-10, the successor organisation(s) reported one reference cost return for their organisation, incorporating the activities and costs of predecessor organisations. In these circumstances, no comparable RCI data exists for 2009-10. The data reflects the organisations in existence at 31 March 2010. Any subsequent change in status (for example, NHS foundation trust approval) is not reflected in this publication.
35. The calculation of the RCI is shown in the worked example in Table 7.

**Table 7: Worked example of RCI calculation**

	A	B	C	D = (A*B)	E = (A*C)	F = (D/E*100)	G	H = (F/G)
	Activity	Cost	National average cost <sup>21</sup>	Actual cost	Expected cost	RCI (not MFF adjusted)	MFF	RCI (MFF adjusted)
HRG A	10	10	15	100	150			
HRG B	20	30	20	600	400			
Total				700	550	127	0.95	134

<sup>21</sup> for organisation type.



36. We base the RCI calculation on each organisation's own data only, and exclude commissioned and contracted out activity, UZ01Z (error codes) and WD (mental health) HRGs. The national average unit costs for Daycase and elective inpatient are combined to give the national average unit cost. The same methodology is also applied to derive the service specific RCIs, but only activity, unit costs and national average costs relevant to that service are included in the calculation.

## **Database**

37. We have provided the source data submitted for the 2009-10 reference costs collection in a series of comma separate variable (CSV) files. Annex C lists the files and their contents. Instructions for downloading and importing the data into Microsoft Access are available as part of the publication package. These instructions also include a few useful queries to allow easy data analysis.
38. The publication of the organisation level data is in line with the Department's commitment to improve data transparency, this is a component of the Information Strategy within the Department's Business Plan 2011-2015. This document can be found at the following location:

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_121393](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_121393)

## Annex B: Reference costs key figures

Quantum (£bn)	2006-07	2007-08	2008-09	2009-10
<b>Total</b>	<b>41.3</b>	<b>43.9</b>	<b>47.6</b>	<b>51.2</b>
Elective Inpatient	4.4	4.7	5.1	5.3
Non-Elective Inpatient	10.3	10.7	11.8	12.6
Day Case	2.5	2.8	3.1	3.4
Outpatient Attendance	5.7	6.2	6.8	7.4
Outpatient Procedure	0.3	0.3	0.5	0.7
Accident and Emergency	1.4	1.5	1.6	1.8
Other Non-Acute	16.8	17.6	18.6	20.0
Schedule 1 – NHS Trust Reference Cost Schedules	36.2	37.4	41.5	44.7
Schedule 2 – Primary Care Trust Reference Cost Schedules	4.4	4.7	5.2	5.5
Schedule 3 – PMS+ Sites Reference Cost Schedules	0.0	0.0	0.0	0.0
Schedule 4 – NHS Trust and PCT Combined Reference Cost Schedules	40.6	42.2	46.7	50.3
Schedule 5 – Non NHS Providers Reference Cost Schedules	0.5	0.5	0.6	0.7
Chapter A – Nervous system	1.1	1.1	1.1	1.3
Chapter B – Eyes and periorbita	0.4	0.5	0.5	0.5
Chapter C – Mouth, head, neck and ears	0.7	0.7	0.8	0.8
Chapter D – Respiratory system	1.1	1.1	1.4	1.5
Chapter E – Cardiac surgery and primary cardiac conditions	1.7	1.8	1.9	2.0
Chapter F – Digestive system	2.1	2.3	2.5	2.7
Chapter G – Hepatobiliary and pancreatic system	0.5	0.5	0.5	0.6
Chapter H – Musculoskeletal system	3.1	3.4	3.7	3.8
Chapter J – Skin, breast and burns	0.8	0.8	0.9	0.9
Chapter K – Endocrine and metabolic system	0.2	0.2	0.2	0.2
Chapter L – Urinary tract and male reproductive system	1.2	1.2	1.4	1.5
Chapter M – Female reproductive system and assisted reproduction	0.6	0.6	0.6	0.7
Chapter N – Obstetrics	1.3	1.4	1.5	1.7
Chapter P – Diseases of childhood and neonates	0.8	0.8	0.9	0.9
Chapter Q – Vascular system	0.5	0.5	0.5	0.6
Chapter S – Haematology, chemotherapy, radiotherapy and specialist palliative care	0.4	0.4	0.5	0.5
Chapter U – Undefined groups	0.1	0.1	0.1	0.1
Chapter V – Multiple trauma, emergency medicine and rehabilitation	0.2	0.1	0.2	0.2
Chapter W – Immunology, infectious diseases and other contacts with health services	0.5	0.6	0.7	0.8
Chapter Z – HRGs entirely comprised of unbundled items	-	0.0	0.0	-
Own data	40.8	43.2	46.9	50.5
Commissioned	0.3	0.3	0.3	0.4
Contracted Out	0.2	0.2	0.3	0.3

### Notes:

Chapter breakdown covers Elective Inpatient, Non-Elective Inpatient and Day Case only.

UZ01Z, WD HRGs, non-elective inpatient (short stay), excess bed-days and reserve codes are not included in the schedules

## Annex C: Source data

<b>CSV file name</b>	<b>Contents</b>
1 Data	All organisation level data. Means, actual cost, expected cost and mapping pot
2 Organisation description	Data provider code and name, SHA code and name, organisation type and MFF value
3 Department description	Department code and name
4 Service description	Service code and name
5 Currency description	Currency code and name
6 Units	Shows unit of data

## **Annex D: Reference Costs 2009-10 Appendices**

### **RC - Reference Cost Index (RCI)**

Appendix RC1 – Reference Cost Index

### **SRC – Reference Cost Schedules**

Appendix NSRC1 – NHS Trust Reference Cost Schedules

Appendix NSRC2 – Primary Care Trust Reference Cost Schedules

Appendix NSRC3 – PMS+ Sites Reference Cost Schedules

Appendix NSRC4 – NHS Trust and PCT Combined Reference Cost Schedules

Appendix NSRC5 – Non NHS Providers Reference Cost Schedules

### **DRC – Organisation Level Reference Cost Data**

Appendix DBRC – Organisation Specific Reference Cost Data