



Department
of Health

Reference Costs 2015-16

December 2016

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Foreword

This document supports the publication of 2015-16 reference costs, which give the most comprehensive picture available about how 237 NHS providers (86 NHS trusts and 151 NHS foundation trusts) spent £64.2 billion delivering healthcare to patients in 2015-16.

Reference costs are the average unit cost to the NHS of providing defined services to NHS patients in England in a given financial year and have been collected annually by the Department of Health (the Department) since 1997.

These 2015-16 reference costs are produced under the arrangements put in place following the Health and Social Care Act (2012), which transferred responsibility for the National Tariff Payment System in England from the Department to NHS Improvement (formerly Monitor and the Trust Development Authority who were brought together on 1st April 2016) and NHS England. NHS Improvement is accountable for the reference costs collection, with the Department collecting reference costs on its behalf.

The reference costs collection is the nationally mandated collection of cost data from NHS trusts and NHS foundation trusts for delivering services in the NHS. It is an incredibly rich data source and has many different uses, from informing local price setting to public accountability to parliament.

The data can be used to understand:

- a) the total cost of delivering activity by key service areas;
- b) the unit cost of specified activities, and
- c) relative efficiency and assessment of productivity.

The quality of the data that informs the collection is, therefore, extremely important.

It is the responsibility of NHS providers to improve their internal costing processes and systems to help them better understand the cost of delivering services, leading in turn to improved reference cost data submitted. National bodies have a responsibility to ensure the costs collected are fit for purpose, complemented with comprehensive and clear guidance. Nationally, there is an ongoing collaborative process to support providers to improve their costing and to improve the cost collection process. This is led by NHS Improvement with support from the Department and the other Arm's Length Bodies (ALBs) through the Costing Transformation Programme (CTP).

The following stakeholders supported the collection of 2015-16 reference costs:

- The National Casemix Office (NCO) at NHS Digital developed the Healthcare Resource Group (HRG) currencies to differentiate more effectively between levels of care complexity;
- The Healthcare Financial Management Association (HFMA), the representative body for NHS finance professionals, has continued to develop the clinical costing standards on behalf of NHS Improvement which sets out best practice for deriving cost data; and
- The Reference Costs Advisory Group, with members from national bodies and a representative sample of NHS providers, provided advice on the design of the guidance and collection.

The document covers the following aspects:

- (a) Background to what reference costs are and how they are costed and collected
- (b) Headlines and analysis from the 2015-16 cost collection
- (c) Explanation of the data that are published alongside this document
- (d) Actions taken to further enhance the quality of the 2015-16 collection

If the information you are looking for is not available in this publication or on our web pages please contact us at [referencecosts@ dh.gsi.gov.uk](mailto:referencecosts@dh.gsi.gov.uk)

Our shared ambition is for costing data that supports the delivery of high quality care for patients and better value for the NHS.

Department of Health

NHS England

NHS Improvement

Chapter 1: Background to reference costs

Background

1. The collection of reference costs was introduced in 1997-98, from a desire to understand how hospital costs compared to each other. Reference costs are now used to inform a number of local and national decisions.
2. NHS providers and commissioners use reference cost data for:
 - (a) reporting to executive teams;
 - (b) benchmarking;
 - (c) contract negotiations; and
 - (d) local pricing of non-tariff areas.
3. Reference costs are also used by the Department, NHS Improvement, NHS England, NHS Digital and other organisations and individuals to:
 - (a) hold the Department and its ministers to account for the use of NHS resources in replies to parliamentary questions, freedom of information requests and other official correspondence;
 - (b) calculate the reference costs index (RCI), a long-standing measure of relative efficiency and inform the development of new efficiency and productivity metrics. More information about these metrics can be found in chapter 4;
 - (c) inform the design of payment currencies and prices;
 - (d) support implementation of the European Union cross border healthcare directive, which requires transparent and objective mechanisms for the reimbursement of patient costs between member states;
 - (e) provide comparative costs to support evaluation of new or innovative medical technologies; and to
 - (f) inform academic research.
4. The NHS has always accounted for its expenditure in terms of staffing, goods and services. Reference costs allow unit costs of healthcare in hospital providers to be compared at the level of treatments and procedures. Unit costs are simply the costs incurred in providing one unit of care. An example might be an inpatient episode of care for a hip replacement or an outpatient attendance. Each year, the Department collects and publishes reference costs from all NHS providers of secondary healthcare services¹ to NHS patients in England.
5. Reference costs are supported each year by detailed costing² and cost collection³ guidance, designed to minimise variation caused by different costing methodologies.

¹ With the exception of Calderstones Partnership NHS Foundation Trust as they only deliver learning disability services which are excluded from reference costs

² <https://www.hfma.org.uk/our-work/costing/clinical-costing-standards/previous-years'-clinical-costing-standards>

³

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/497127/Reference_costs_guidance_2015-16.pdf

NHS Improvement's *Approved Costing Guidance*⁴ brings existing guidance into a single framework, which is to be used by providers when producing reference costs.

6. Providers cost reference costs on a full absorption basis, which means that all the running costs of providing these services are included within the submission. Each reported unit cost includes:
 - (a) **Direct costs** - relating directly to the delivery of patient care, e.g. medical staffing costs;
 - (b) **Indirect costs** - indirectly related to the delivery of care, but cannot always be specifically identified to individual patients, e.g. catering and linen; and
 - (c) **Overhead costs** - costs of support services that contribute to the effective running of the organisation, and that cannot be easily attributed to patients, e.g. payroll services.
7. The HFMA produces +costing standards, which set out costing principles that should be applied to all NHS costing exercises. All providers submitting reference costs are strongly encouraged to apply the standards when preparing their submission. The costing standards standardise costing processes where possible allowing better comparability between provider costs.
8. Although reference costs are collected at a currency level, in recent years organisations have been encouraged to cost at a patient level as part of the move to improve:
 - (a) data quality;
 - (b) clinical engagement, and
 - (c) organisational understanding of the cost of delivering care.
9. As part of the 2015-16 reference costs survey, 149 organisations reported that they used patient level information and costs (PLICS) to underpin some part of their reference costs return. Use of PLICS is most prevalent in core Admitted Patient Care⁵ (APC) with 79% (£21billion) of the total APC costs being underpinned by patient level data.
10. 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). These classifications are referred to as currencies; there are different currencies for each service area (acute, mental health, community and ambulance).
11. The currency measure for acute care in England is HRGs⁶. HRGs are maintained by the NCO at NHS Digital, and provide standard groupings of similar treatments that use similar resources. The current version, HRG4+, has been used since the 2012-13 reference costs collection. The HRG classification system covers admitted patient care, outpatients and emergency care.

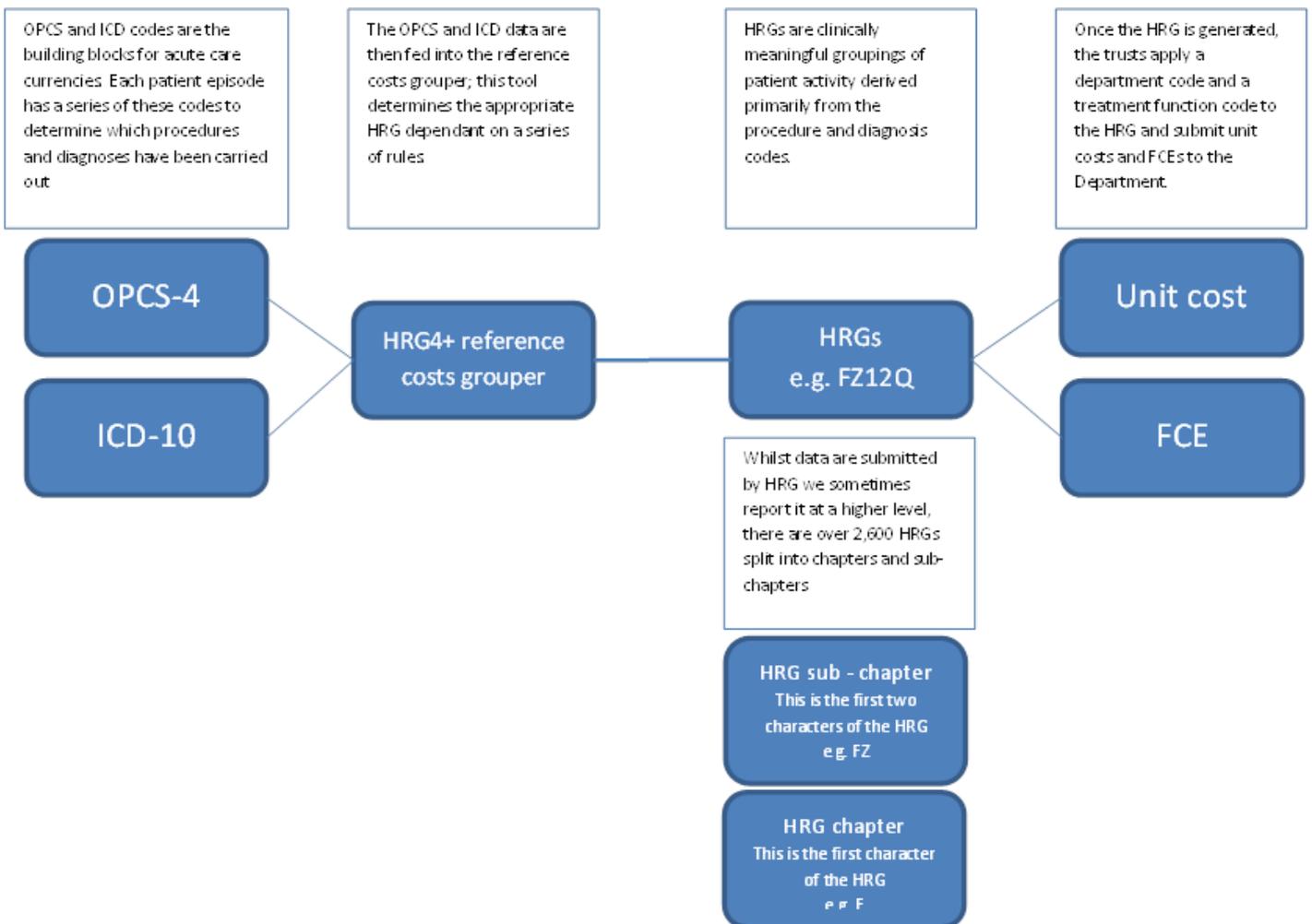
⁴ <https://www.gov.uk/government/publications/approved-costing-guidance>

⁵ Core APC, for reference costs, includes data from day case, elective and non-elective

⁶ <http://content.digital.nhs.uk/casemix/costing?tabid=3>

12. Outpatient attendances are classified according to their specialty (e.g. general surgery or trauma and orthopaedics). Mental health services primarily use a currency called the care cluster that defines patient need over different periods depending on the severity of the condition. Other services use a range of different currencies⁷.
13. Reference costs are the average cost to the provider for each unit of currency. They therefore do not give any information on the variation of costs between patients in the currency. Nor do they usually give any information on individual diagnoses or treatment, because HRGs are a secondary classification system based on underlying primary classification systems for diagnoses and procedures. Figure 1 shows show the primary classification systems build up to currencies and reference costs.

Figure 1: Flow of primary classifications to reference costs



⁷ A detailed breakdown of the units of currency can be found alongside this publication in the organisation level source data 4 zip file.

Chapter 2: 2015-16 reference costs collection – headlines and analysis

Headlines

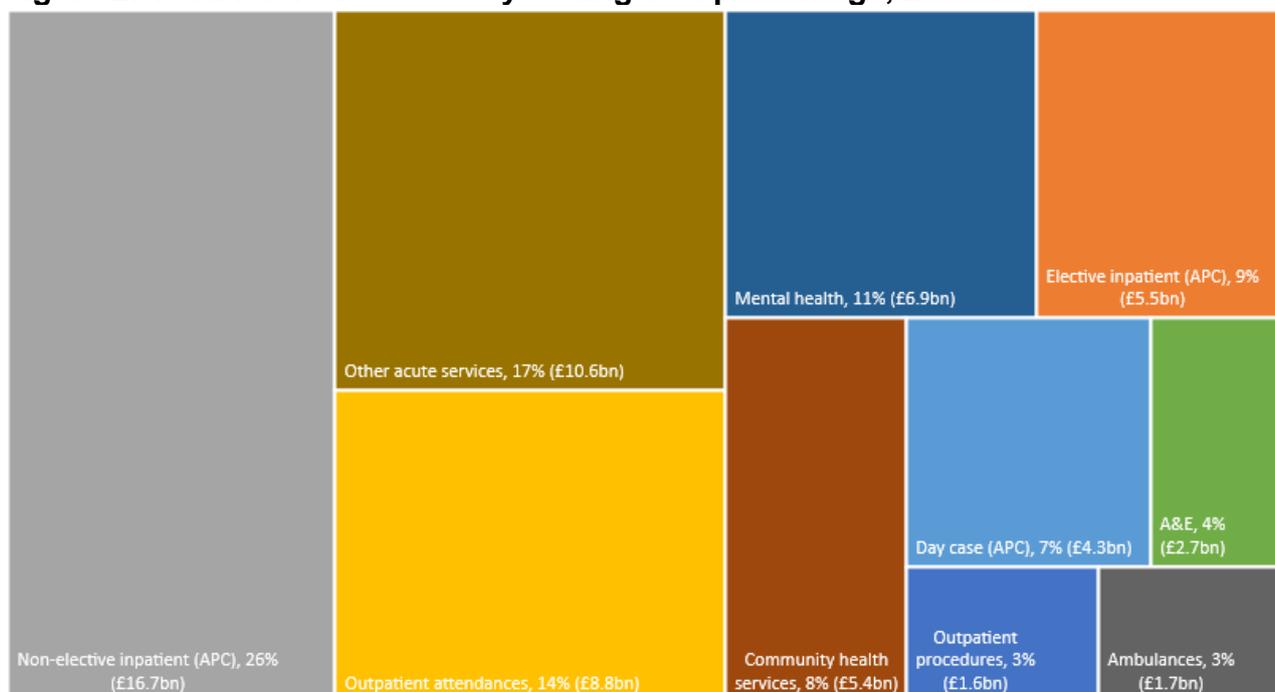
14. The reference costs collected for 2015-16⁸:

- cover £64.2 billion of NHS expenditure, an increase of £3.0 billion (4.9%) from the £61.2 billion collected in 2014-15;
- represent 56% of £114.7 billion total NHS revenue expenditure⁹;
- comprise of core APC costs of £26.4 billion in 2015-16, mental health costs of £6.9 billion, community costs of £5.4 billion and ambulance costs of £1.7 billion.

15. Figure 2 shows the total costs reported in 2015-16, split by setting¹⁰. The largest single proportion of costs is non-elective inpatient care, which accounts for 25.9% of total costs alone. Combining this with elective inpatient care (8.6%) and day cases (6.7%), core APC services in total amount to 41.2% of total costs.

16. The other acute services department accounts for 17% of costs, and is the second largest single proportion of costs. This department covers non-core APC activity such as critical care, chemotherapy and radiotherapy.

Figure 2: Total reference costs by setting as a percentage, 2015-16



⁸ Figures exclude HRG UZ01Z – Data invalid for grouping.

⁹ Department of Health Annual Report and Accounts 2015-16, p.32, table 5. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/539602/ THE DEPARTMENT Annual Report Web.pdf

¹⁰ Figures may not sum due to rounding

17. Table 1 shows the breakdown of the quantum, by department for the last five years. Changes in quantum over the period could be due to changes in the scope of the collection, changes in activity or changes to the cost of delivering services.

Table 1: Total costs split by department, over time

Total cost by department (£ billion)	2011-12	2012-13	2013-14	2014-15	2015-16
Day case	3.5	3.6	3.8	4.0	4.3
Elective inpatient	5.3	5.2	5.3	5.4	5.5
Non-elective inpatient	13.7	14.3	15	15.6	16.7
Sub-total core-APC	22.5	23.1	24.1	25.0	26.5
Other acute services	10.2	10.5	10.8	9.9	10.6
Outpatient attendance	7.4	7.6	8.1	8.5	8.8
Outpatient procedure	0.9	1.1	1.3	1.5	1.6
Accident and emergency (A&E)	2.0	2.1	2.3	2.5	2.7
Sub-total all acute services	43	44.4	46.6	47.4	50.2
Mental health ¹¹	6.5	6.5	6.6	6.7	6.9
Community health services	3.9	4.2	5.1	5.3	5.4
Ambulances	1.5	1.6	1.6	1.7	1.7
Total	54.9	55.1	58.3	61.2	64.2

Acute services

18. Acute services are made up of APC services and non-admitted services provided in outpatients and accident and emergency departments.
19. Average unit costs 2013-14 to 2015-16, by point of delivery, are set out in Table 2.

¹¹ MH data includes costs for adult IAPT

Table 2: Unit costs¹² by point of delivery, 2013-14 to 2015-16

Point of delivery (£)	2013-14 ¹³	2014-15	2015-16
Day case	698	721	733
Elective inpatient (excluding excess bed days)	3,375	3,573	3,749
Non-elective inpatient (excluding excess bed days)	1,542	1,565	1,609
Excess bed day ¹⁴	283	303	306
Outpatient attendance	111	114	117
A&E attendance	124	132	138

20. Table 3 provides summary statistics for the reference costs collected by HRG chapter in 2014-15 and 2015-16. HRG chapters are groupings of clinically similar treatments (e.g. HRG chapter A groups together treatments related to the nervous system, and chapter B groups together treatments related to eyes and periorbital).
21. Normally care must be taken when comparing reference costs between years due to changes to the scope of the collection, the collection guidance, and the currencies against which costs are reported, which means that data are often not comparable year on year¹⁵. In 2015-16 however, there were no currency changes in acute services, so a year-to-year comparison with 2014-15 is possible.
22. In 2015-16, as in previous years, the largest proportion of costs sit in chapter H (musculoskeletal system - £4.1 billion).

¹² The unit costs of day case, elective inpatient and non-elective inpatient are per finished consultant episode (FCE). An FCE is the time a patient spends in the care of one consultant. Where two or more consultants in the episode provide care, one consultant takes overriding responsibility and only one FCE is recorded. The unit cost of an excess bed day is per day. The unit cost for outpatient and A&E attendance is per attendance.

¹³ The figure for excess bed days has been updated since the 2013-14 publication. The figure reported that year (£275) was found to be incorrect following the publication.

¹⁴ Each HRG has a maximum expected length of stay (the upper trim point) and any stay in hospital beyond this upper trim point is referred to as an excess bed day

¹⁵ *HRG4+ 2014-15 Summary of Changes* provides a description of the changes to HRGs since the 2013-14 reference costs collection. This can be found at: http://content.digital.nhs.uk/media/19403/HRG4-201516-Reference-Costs-Grouper-Summary-of-Changes/pdf/HRG4_201516_Reference_Costs_Grouper_Summary_of_Changes_v1.0.pdf

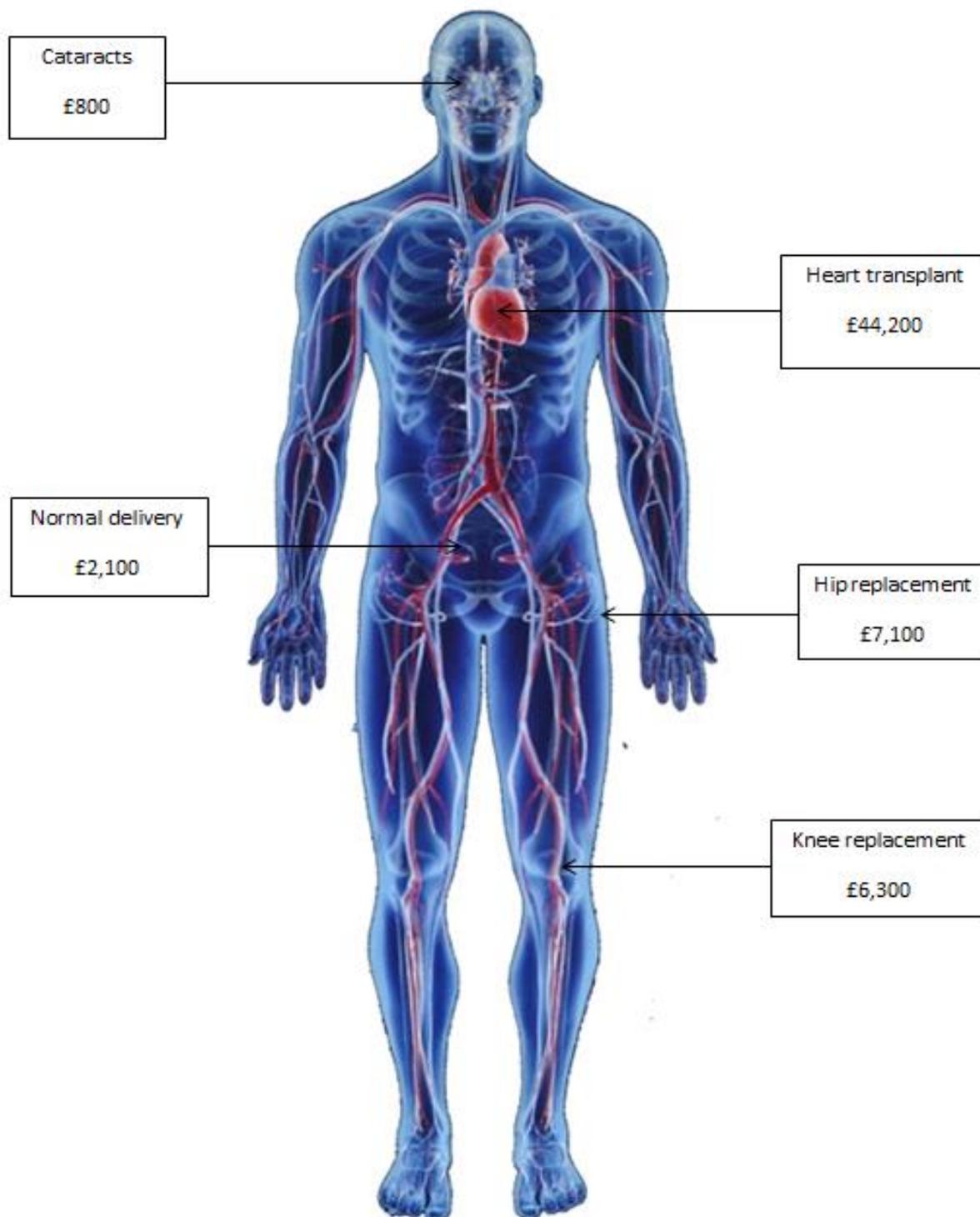
Table 3: Summary statistics by chapter for core APC services¹⁶ between 2014-15 and 2015-16

Cost split by HRG chapter, £ billion	2014-15	2015-16
A - Nervous System	1.5	1.6
B - Eyes and Periorbita	0.6	0.6
C - Ear, Nose, Mouth, Throat, Neck and Dental	0.9	1.0
D - Respiratory System	2.1	2.2
E – Cardiac	2.4	2.6
F - Digestive System	3.1	3.3
G - Hepatobiliary and Pancreatic System	0.8	0.8
H - Musculoskeletal System	3.9	4.1
J - Skin, Breast and Burns	1.0	1.0
K - Endocrine and Metabolic System	0.3	0.3
L - Urinary Tract and Male Reproductive System	1.8	1.9
M - Female Reproductive System and Assisted Reproduction	0.7	0.7
N – Obstetrics	2.0	2.2
P - Diseases of Childhood and Neonates	1.2	1.3
Q - Vascular System	-	0.0
R - Diagnostic Imaging and Nuclear Medicine	-	0.0
S - Haematology, Chemotherapy, Radiotherapy and Specialist Palliative Care	0.6	0.6
U - Undefined Groups	0.1	0.1
V - Multiple Trauma, Emergency Medicine and Rehabilitation	0.3	0.3
W - Infectious Diseases, Immune System Disorders and other Healthcare contacts	1.0	1.1
Y - Vascular Procedures and Disorders and Imaging Interventions	0.8	0.8
Total	25.1	26.5

¹⁶ Where costs are shown by HRG chapter this is for admitted patient care departments (day case, elective inpatient and non-elective inpatient) only. Please note that some figures may not add due to rounding

23. Each chapter is made up of multiple HRGs that have been designed to reflect the different cost of providing care depending on the complexity of the procedure or treatment. This means one commonly known procedure, such as a hip replacement, can be reported over several HRGs. The weighted aggregate unit costs for some high volume treatments and procedures are illustrated in Figure 3. [Annex A](#) gives detail on the HRGs used to provide the unit costs.

Figure 3: Unit costs¹⁷ for treatments or procedures



¹⁷ Rounded to nearest £100, full details can be found in annex A.

Mental health

24. The total value of mental health services in 2015-16 was £6.6 billion¹⁸, of this £4.4 billion (67%) was costed against mental health care clusters with the remaining £2.2 billion (33%) relating to other mental health services, which are collected based on different units of activity¹⁹, most often a care contact or single attendance.

Mental health care clusters

25. Mental health care clusters group service users according to their mental health needs and difficulties. They cover a period of care rather than individual contacts. Clusters identify a needs based profile that determines what 'core' and 'essential' interventions and support are offered to meet the patient's needs as well as expected outcomes. Each care cluster has a built in review period to monitor progress and effectiveness of intervention.
26. Prior to being allocated to a specific cluster, each service user is assessed. Once they have been placed in a cluster the associated cost and activity of the assessment is assigned to the same cluster.
27. Table 4 indicates the unit costs and total costs for mental health care clusters between 2013-14 and 2015-16. The cost of initial assessment is per patient assessed and may cover multiple attendances, though the assessment is usually expected to be completed in two contacts. The cost of cluster days is not per contact; instead, it is the total cost of a cluster period divided by the number of days spent in the cluster²⁰.

Table 4: Summary statistics for mental health care clusters between 2013-14 and 2015-16

Service area	2013-14		2014-15		2015-16	
	Unit cost (£)	Total cost (£m)	Unit cost (£)	Total cost (£m)	Unit cost (£)	Total cost (£m)
Initial assessment (cost per assessment)	281	209,851	293	176,971	312	193,144
Cluster days (Cost per cluster day)	16	4,050,076	16	4,056,042	17	4,156,962
		4,259,926		4,233,013		4,350,106

28. Table 5 shows a more detailed breakdown of the individual care clusters in 2015-16, as with Table 4 this is split by initial assessments and care clusters.

¹⁸ This figure excludes adult Improving Access to Psychological Therapy (total value £355 million). See paragraph 31 for explanation of the exclusion.

¹⁹ A detailed breakdown of the units of currency can be found alongside this publication in the organisation level source data 4 zip file.

²⁰ Example of the cluster day calculation:

Total cost of the cluster	Days in the cluster	Cost per cluster day
£1,000,000	59,000	16.95

Table 5: Summary statistics for mental health care clusters between 2013-14 and 2015-16

Currency description	Initial assessment		Mental health care cluster	
	National average unit cost (per assessment) – (£)	Total cost of initial assessments (£m)	National average unit cost (per day in care cluster) – (£)	Total cost of care cluster (£m)
Cluster 00: Variance (unable to assign mental health care cluster code)	341	3.5	11	24.6
Cluster 01: Common mental health problems (low severity)	258	2.4	9	16.1
Cluster 02: Common mental health problems (low severity with greater need)	278	3.4	10	26.5
Cluster 03: Non-psychotic (moderate severity)	270	12.9	10	121.2
Cluster 04: Non-psychotic (severe)	286	18.7	12	246.3
Cluster 05: Non-psychotic (very severe)	372	10.6	21	199.9
Cluster 06: Non-psychotic disorders of over-valued ideas	354	4.4	14	73.1
Cluster 07: Enduring non-psychotic disorders (high disability)	276	8.4	14	235.4
Cluster 08: Non-psychotic chaotic and challenging disorders	352	7.7	23	267.4
Cluster 10: First episode psychosis	407	7.0	30	216.5
Cluster 11: Ongoing recurrent psychosis (low symptoms)	291	5.7	13	290.3
Cluster 12: Ongoing or recurrent psychosis (high disability)	319	4.8	23	431.8
Cluster 13: Ongoing or recurrent psychosis (high symptom and disability)	314	3.1	42	462.9
Cluster 14: Psychotic crisis	507	5.1	148	255.6
Cluster 15: Severe psychotic depression	390	1.1	78	51.2
Cluster 16: Dual diagnosis	338	1.4	41	106.6
Cluster 17: Psychosis and affective disorder (difficult to engage)	354	1.2	58	203.0
Cluster 18: Cognitive impairment (low need)	280	18.7	4	132.6
Cluster 19: Cognitive impairment or dementia (moderate need)	280	12.7	7	207.1
Cluster 20: Cognitive impairment or dementia (high need)	303	4.4	20	202.6
Cluster 21: Cognitive impairment or dementia (high physical or engagement)	307	1.8	25	99.1
Cluster 99: Patients not assessed or clustered	324	54.1	14	287.2
IA98: Patient assessed but not accepted into service	283	86.9		

Other mental health services

29. The remainder of mental health services are collected using different activity measures and cover areas such as drug and alcohol services and secure mental health services.
30. Table 6 summarises the unit cost and total costs of each of these service areas.

Table 6: Unit cost and total costs by contact for non-cluster mental health services between 2013-14 and 2015-16

Service area	2013-14		2014-15		2015-16	
	Unit cost (£)	Total cost (£m)	Unit cost (£)	Total cost (£m)	Unit cost (£)	Total cost (£m)
Children and adolescent mental health services	283	539,386	280	611,611	290	636,146
Drug and alcohol services	127	197,268	109	226,506	115	180,457
Mental health specialist teams (excluding adult IAPT)	137	424,052	162	306,275	165	347,836
Secure mental health services	516	797,126	522	816,737	524	823,011
Specialist mental health services	350	125,942	336	165,557	328	180,314
		2,083,774		2,126,686		2,167,764

31. For the first time we collected Improving Access to Psychological Therapy (IAPT) for adults by cluster. In previous years, this was captured by contact and was delivered as part of the mental health specialist teams. The figures in the table above exclude IAPT for each of the three years reported in order for consistent comparison to be made.

Community services

32. The total value of community health services in 2015-16 was £5.4 billion. These services are primarily collected using care contact as the unit of activity; however, there are some exceptions²¹ to this such as some audiology services, elements of intermediate care and wheelchair services.
33. Care contacts are nationally standardised definitions of a unit of care, which can be discrete activity (e.g. a home assessment or a diagnostic image) or a bundle of care that forms a treatment for people with similar needs (e.g. a course of talking therapy).
34. Table 7 indicates the unit cost and total costs for community health services.
35. In 2015-16, the area with the largest unit cost was wheelchair services; this has been consistently the largest unit cost since 2013-14. The wheelchair services unit cost has decreased however, from £210 in 2013-14 to £177 in 2015-16. The reason for the change in costs is that the wheelchair currencies are relatively new, having only been introduced in 2013-14, so as the quality of the data reported has improved we see a truer reflection of the cost of delivering wheelchair services.

²¹ A detailed breakdown of the units of currency can be found alongside this publication in the organisation level source data 4 zip file.

36. Within community health services, the largest single area of cost is nursing, at £2.1 billion in 2015-16. This has been the largest area since 2011-12.

Table 7: Costs by area for community health services between 2013-14 and 2015-16

Service area	2013-14		2014-15		2015-16	
	Unit cost (£)	Total cost (£m)	Unit cost (£)	Total cost (£m)	Unit cost (£)	Total cost (£m)
Allied health professionals	62	882,266	63	857,349	63	880,408
Audiology	55	192,271	56	193,500	57	200,959
Community rehabilitation teams ²²			92	69,308	85	91,428
Day care facilities regular attendances	146	34,856	131	34,858	131	31,586
Health visiting and midwifery	55	991,408	61	1,060,454	61	1,053,419
Intermediate care	114	650,174	118	696,527	127	723,880
Medical and dental	115	208,703	126	204,704	137	205,398
Nursing	44	1,995,552	44	2,021,039	45	2,081,528
Wheelchair services	210	136,582	192	143,388	177	134,967
		5,091,812		5,281,128		5,403,574

Ambulance services

37. The total cost of ambulance services in 2015-16 was £1.7 billion, of which £1.2 billion (70%) was reported against the 'see and treat and convey' currency.

38. Ambulance services are split into four currencies, with units of activity as follows:

- a) calls – per call;
- b) hear and treat or refer – per patient;
- c) see and treat or refer – per incident; and
- d) see and treat and convey – per incident.

39. Further information on what services are included within each currency can be found in the 2015-16 reference costs guidance²³, section 13.

40. Table 8 shows the unit cost and total costs for ambulance services between 2013-14 and 2015-16.

²² Community rehabilitation data weren't collected in 2013-14

²³

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/497127/Reference_costs_guidance_2015-16.pdf

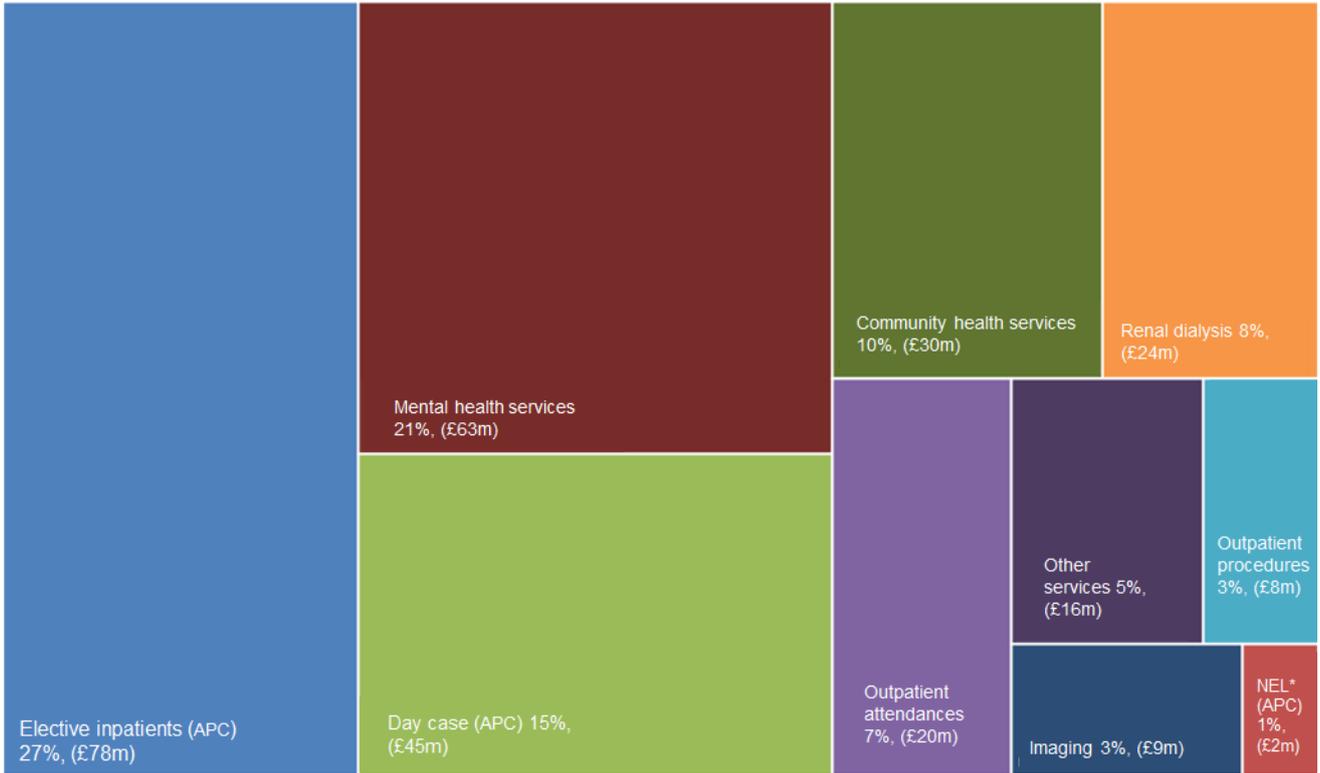
Table 8: Costs by currency for ambulance services between 2013-14 and 2015-16

	2013-14		2014-15		2015-16	
	Unit cost (£)	Total cost (£m)	Unit cost (£)	Total cost (£m)	Unit cost (£)	Total cost (£m)
Calls	7	62,096	7	62,062	7	67,672
Hear and treat or refer	44	17,514	35	20,274	34	26,958
See and treat or refer	180	379,499	180	408,259	181	424,980
See and treat and convey	231	1,170,892	233	1,190,243	236	1,221,894
		1,630,001		1,680,838		1,741,504

Sub-contracted data

41. For the second year running, we have collected the costs and activity, at currency level, to NHS trusts and NHS foundation trusts of sub-contracting activity to the independent sector. They will do this for a number of reasons, but most commonly when they are unable to meet capacity requirements.
42. Unlike in other sections of this document, we have chosen not to include any year-on-year comparisons for the sub-contracted data. This is because we are aware that the collection of this data is still very new and it is difficult to be assured that the quality or consistency of the data will be consistent over the two years, making comparisons less meaningful.
43. The cost of contracting out services will not be the same as the cost of a provider delivering the activity itself, with the difference varying on a case-by-case basis depending on local arrangements.
44. High level analysis of the sub-contracted data shows £294 million of activity was sub-contracted out in 2015-16, representing 0.46% of the total costs.
45. Figure 4 presents sub-contracted costs by department, indicating that approximately 42% of total sub-contracted costs are accounted for by core APC services. This is made up of elective inpatients (27%), day cases (15%) and non-elective inpatients (1%).
46. Mental health and community health services account for 21% and 10% respectively, and outpatient attendances account for 7% of total sub-contracted costs.

Figure 4: Total sub-contracted reference costs by setting as a percentage, 2015-16



*NEL = Non-elective inpatients

Chapter 3: Introduction to the 2015-16 data

Introduction to the data

47. The reference costs data are presented in four ways:

- the national schedules of reference costs;
- the reference cost index (RCI) (see chapter 4 for more information);
- the reconciliation statement; and
- a database of source data.

National schedules of reference costs

48. The National Schedules of Reference Costs (NSRC) show the national average unit cost for each service submitted by the 237 NHS providers in 2015-16. There are three schedules:

- NSRC01 – the main schedule, showing data for the whole range of services provided by provider, including admitted patient care on an FCE basis;
- NSRC02 – showing admitted patient care services on a spell basis; and
- NSRC03 – showing the data for sub-contracted services.

49. The schedules show:

- activity, measured by the number of attendances, bed days, clients, episodes, tests, or other unit of activity appropriate to the service;
- the national average (mean) unit cost, i.e. total cost divided by total activity;
- the lower and upper quartile²⁴ unit costs²⁵; and
- the number of data submissions, i.e. the number of providers reporting costs against each service.

50. The costs included in the schedules are the average of the actual reported costs. We have not removed unavoidable cost differences due to geographic location, which are reflected in the market forces factor (MFF) index.

²⁴ Quartiles are the values that divide a list of ordered numbers into quarters.

²⁵ In very rare circumstances it is possible for the national average mean unit cost to be less than or more than the lower and upper quartiles. In the following example, provider B has a high proportion of the total activity and therefore the mean (£529) lies outside the lower and upper quartiles (£600).

	Unit cost	Activity	Total cost
Provider A	£100	1	£100
Provider B	£600	6	£3,600
Mean	£529	7	£3,700

Quartile		Lower quartile		Median		Upper quartile	
Unit cost	100	600	600	600	600	600	600

51. Information is shown separately for the following services:

- (a) **Elective inpatients** – where the patient has a planned admission to hospital with the expectation that they will remain in hospital for at least one night;
- (b) **Day cases** – where the patient has a planned admission and is discharged on the same day;
- (c) **Non-elective inpatients** – where the patient has an unplanned admission. This includes emergency admissions and admissions for maternity, births, and non-emergency patient transfers from another hospital;
- (d) **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;
- (e) **Outpatient attendances** – at clinics in hospital, community health centres, general practices or other locations, 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;
- (f) **Outpatient attendances where a procedure is performed** – HRG4+ allows the separate reporting of procedures in an outpatient setting;
- (g) **Cancer multi-disciplinary teams** – meetings between healthcare professionals to discuss treatment plans for cancer patients;
- (h) **Emergency medicine** - split by A&E department type, and by whether or not the attendance led to an admission;
- (i) **Unbundled HRGs** for a number of services. These costs are generally high and only relate to a limited number of patients. Including them as an overhead on treatments and procedures would significantly distort costs and lead to wide variations. Providers therefore report them separately as:
 - **Chemotherapy** – drug costs for cancer patients, split between procurement of regimens and delivery, with other costs included in the relevant admitted patient or outpatient setting;
 - **Critical care (adult, neonatal, and paediatric)** – costs associated with critical care services;
 - **Diagnostic imaging** - including MRI and other scans (plain film x-rays that are part of an admission or outpatient attendance are not reported separately due to their high volume and low cost);
 - **Nuclear medicine** – these procedures differentiate on type of test and also to patient age;
 - **High cost drugs** – for certain high cost drugs;
 - **Radiotherapy** – treatment costs for cancer patients;
 - **Rehabilitation** – covering a wide range of rehabilitation taking place under a specialist rehabilitation consultant or within a discrete rehabilitation unit; and
 - **Specialist palliative care** – care provided under a specialist palliative care medical consultant either in a palliative care unit or in a designated palliative care programme.
- (j) **Renal dialysis** – covering renal dialysis for both chronic kidney disease and acute kidney injury;
- (k) **Direct access services** – diagnostic or pathology services that are undertaken in admitted patient care, critical care, outpatients or emergency medicine are included as part of the composite costs of these types of care. Where these

services are provided independently of an admission or outpatient attendance, because a patient is referred by a GP for a test or self-refers, the reference costs collection classifies these as direct access services. A range of diagnostic services, including physiological and clinical measurement tests (reported by HRG), plain film x-rays, and pathology services are covered;

- (l) **Adult mental health care clusters** – costs were collected against mental health care clusters for working age adults and older people. The clusters reflect service user needs over extended periods of time from four weeks to one year, and may contain multiple different care interventions. For the first time, we have collected adult IAPT by cluster, previously this was collected by contact.
- (m) **Other mental health services** – covers children and adolescent mental health services, drug and alcohol services, specialist mental health services (e.g. autistic spectrum disorder and eating disorder services) and secure mental health services;
- (n) **Community services** – costs cover a range of staff groups providing community services, including allied health professionals, health visitors and midwives, community paediatricians and dentists, and specialist and district nurses;
- (o) **Ambulance services** – costs were collected from NHS ambulance service providers against currencies which reflect the number of emergency and urgent calls received, whether an ambulance was dispatched, and whether the patient was treated at the scene or conveyed to another healthcare provider; and
- (p) **Cystic fibrosis** – costs were collected against a year of care currency which allocates cystic fibrosis patients into one of seven bands, each one describing an increasingly complex year of care.

52. To ensure a like-for-like comparison of activity and costs, the main schedule shows separately the costs of bed days - for elective and non-elective inpatients - that fall inside and outside nationally set lengths of stay, known as trim points²⁶. Costs that fall inside the trim point are known as inlier costs. Costs that fall outside the trim point are known as excess bed day costs.

53. Within the schedules, we have used unit costs and activity reported by the NHS to estimate:

- (a) the total cost of each activity (by HRG etc.) across all settings; and
- (b) the total cost of all activity in each setting (inpatients, day cases, outpatients etc).

54. We continue to exclude HRG UZ01Z (data invalid for grouping) from the schedules, as in previous years.

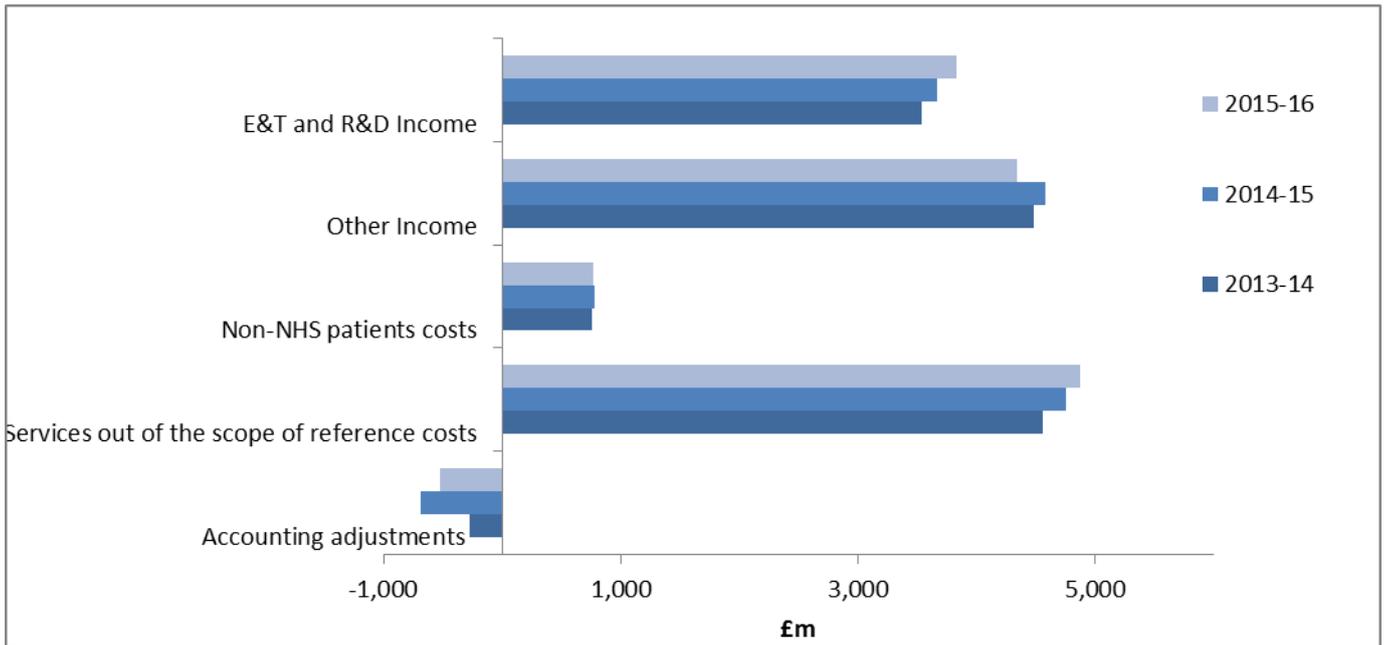
²⁶ The trim point is defined as the upper quartile length of stay for the HRG plus 1.5 times the interquartile range of length of stay. HRG4+ 2014-15 Reference Costs Grouper trim points are published at <http://content.digital.nhs.uk/casemix/costing?tabid=3>

Reconciliation statement

55. The data from the reconciliation statement is also published. The reconciliation statement is an integral part of the reference costs return and shows the adjustments made to get from provider audited financial accounts to their reference cost quantum. There are a number of adjustments made to derive the reference costs quantum such as accounting for services outside the scope of reference costs collection, income received for private patients, research and development (R&D) and education and training²⁷ (E&T).
56. Publishing the reconciliation statement allows a comparison between providers to understand how they have derived their reference cost quantum and transparency on how the adjustments are made.
57. The data published includes:
 - (a) data from the reconciliation statement, showing the adjustments made to get from providers' audited operating expenses to their reference costs quantum;
 - (b) details of the value and volume of high cost drugs and devices; and
 - (c) details of the answers provided on the self-assessment checklist.
58. Figure 5 shows the value of the adjustments made to total operating expenses to arrive at the reference costs quantum over the past three years.
59. The other income category includes items such as car parking, commercial income and charitable donations. A more comprehensive list can be found in table 66 of the 2012-13 reference costs guidance²⁸.
60. The income deducted for E&T and R&D income and services out of scope has increased over the years. The increase in income for the E&T and R&D category is primarily due to the R&D income and increase of 15% from 2014-15 to 2015-16. Costs relating to services out of scope mainly relate to new models of delivery within the NHS such as vanguard sites and better care fund activities delivered jointly with local authorities.

²⁷ The rationale for netting income on the reconciliation statement is due to the assumption that income received for private patient, research & development, education & training is equivalent to the costs incurred for those services.

²⁸ <https://www.gov.uk/government/publications/reference-costs-guidance-for-2012-13>

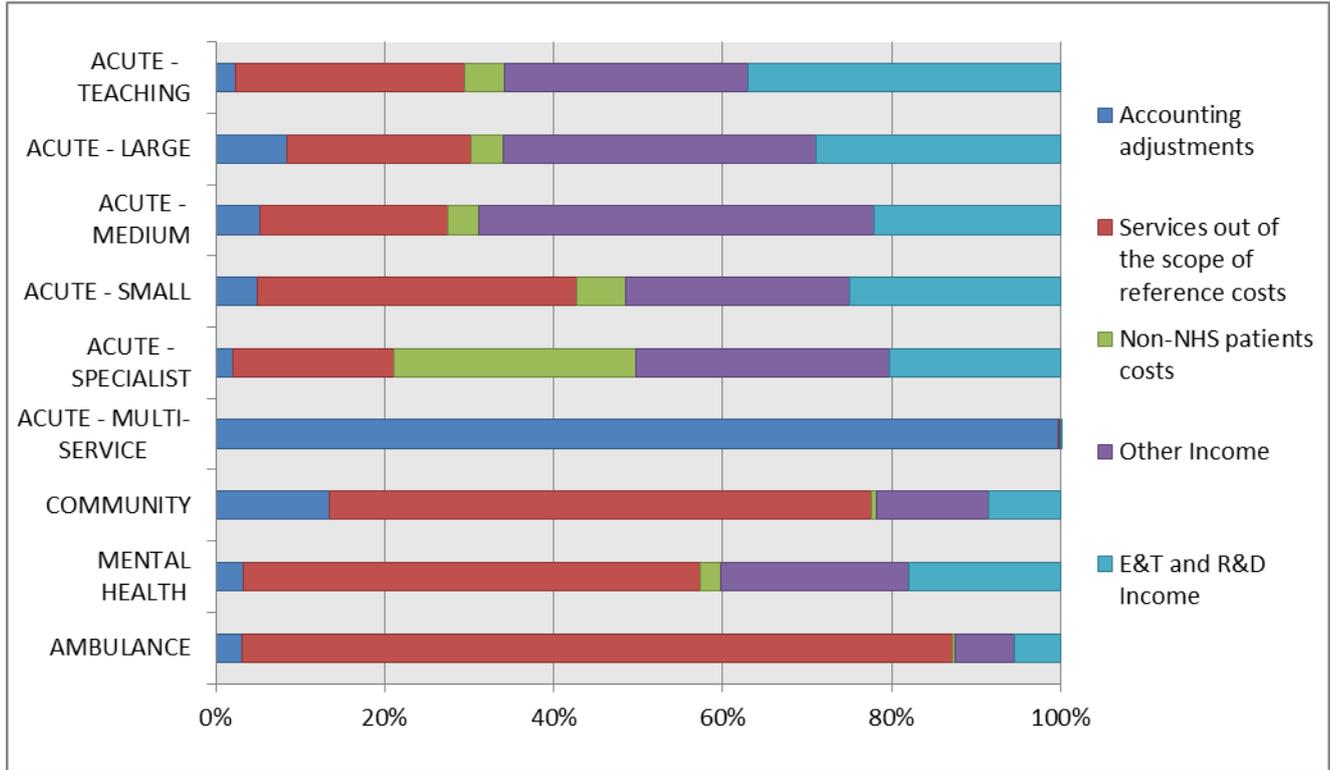
Figure 5: Value of adjustments to operating expenses 2013-14 to 2015-16 (£m)

61. Figure 6 shows the percentage of the adjustments from operating expenses to the reference costs quantum, broken down by provider cluster type for 2015-16 only.
62. It is worth noting that although ambulance providers exclude a much higher percentage of services than other cluster types this is expected, as there are a number of specific exclusions from reference costs for ambulance services.
63. Services outside the scope of reference costs include things such as prison health services and patient transport services. A full list can be found in section 15 of the 2015-16 reference costs guidance.²⁹

29

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/497127/Reference_costs_guidance_2015-16.pdf

Figure 6: Percentage adjustments to operating expenses by provider cluster, 2015-16



Database of source data

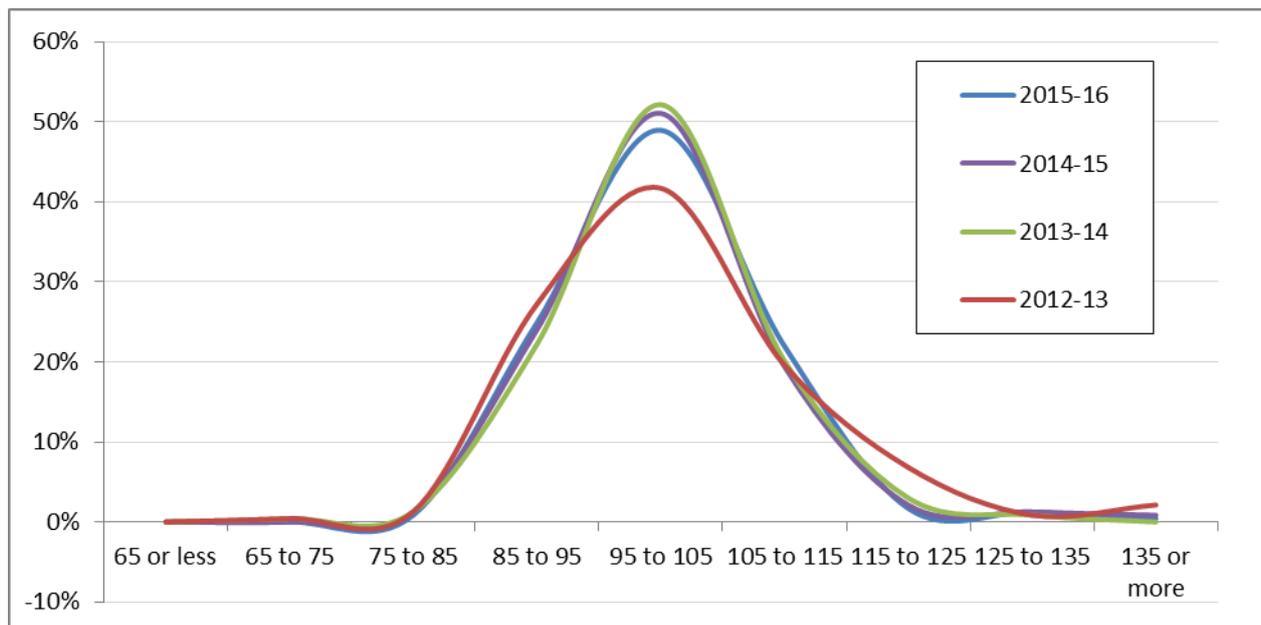
64. A technical explanation of how to understand and use the data can be found in [Annex B](#).

Chapter 4: Efficiency metrics

Reference costs index

65. The RCI is a measure of the relative cost difference between NHS providers. It shows the actual cost of a provider's casemix compared with the same casemix delivered at national average cost. A provider with costs equal to the national average will score 100. Providers with higher costs will score above 100 and providers with lower costs will score below 100. For example, a score of 110 suggests that costs are 10% above the average whilst a score of 90 suggests costs are 10% below the average.
66. Whereas the schedule provides detailed information on the national average cost for each treatment or procedure, the RCI provides a comparison of costs at the aggregate level for each provider.
67. Figure 7 presents the 2015-16 RCI distribution compared with that from previous years. It indicates that since 2013-14, the RCI distribution has been converging, leaving 2012-13 data as a slight outlier. This could indicate improvements in data quality and greater consistency in costing.

Figure 7: RCI distribution over time

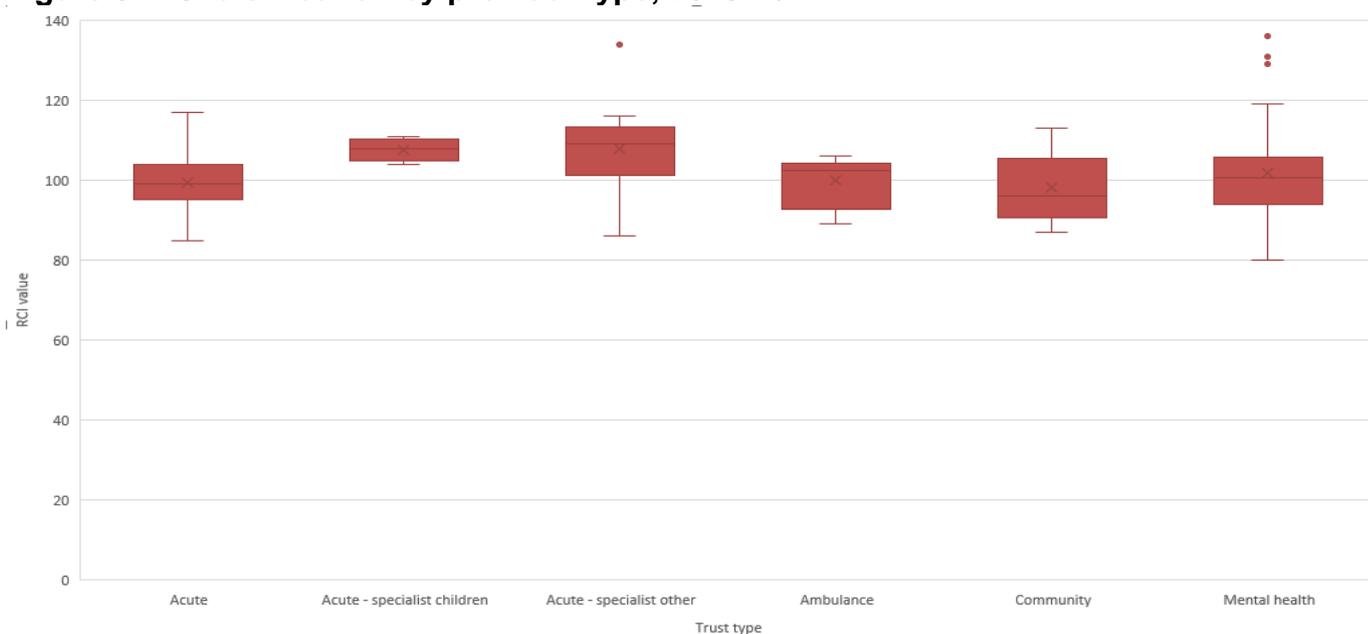


68. Figure 8 shows a box-plot³⁰ of the RCI distribution by provider type. It indicates that acute providers have a relatively tight distribution around 100. Mental health providers demonstrate the widest variation; this is probably attributable to the fact that currencies for mental health have only been collected since 2012-13.

³⁰ Guidance on how to read a box-plot graph is at <http://flowingdata.com/2008/02/15/how-to-read-and-use-a-box-and-whisker-plot/>

69. It should be noted that whilst specialist providers are separately identified in a single cluster, the individual organisations within the group provide a range of very different services that cannot be compared e.g. ophthalmology, orthopaedics, cancer and children's services.
70. It is also worth noting that it is not unexpected for specialist providers to have an RCI in excess of 100, this is due to the higher complexity and therefore cost of the services that they deliver.
71. In addition, the wider variation for specialist, community, mental health and ambulance providers may be explained by the relatively smaller number of providers in those categories.

Figure 8: RCI distribution by provider type, 2015-16



72. Each provider's RCI is calculated by dividing its actual costs (unit costs x activity) by the expected costs (national average mean unit cost x activity), and multiplying the result by 100. Table 9 illustrates the calculation of the RCI for two providers.

Table 9: Worked example of RCI

		A	B	C	D = C/A	E	F = B*D	G = B*E	H = F/G*100
Provider	HRG	MFF	Activity	Unit cost (£)	Unit cost adjusted for MFF (£)	National average unit cost adjusted for MFF (£)	Actual cost adjusted for MFF (£)	Expected cost adjusted for MFF (£)	RCI adjusted for MFF
Provider A	HRG1	1.1	10	12.0	10.9	11.2	109.1	112.0	
Provider A	HRG2	1.1	20	22.0	20.0	23.6	400.0	472.0	
Total							509.1	584.0	87
Provider B	HRG1	0.9	15	10.0	11.1	11.2	166.7	168.0	
Provider B	HRG2	0.9	15	25.0	27.8	23.6	416.77	354.0	
Total							583	522.0	112

73. As well as organisation wide scores, RCIs are provided for:

- (a) ambulance services
- (b) community services
- (c) critical care
- (d) elective inpatient and day case
- (e) emergency medicine
- (f) excess bed days
- (g) mental health
- (h) non-elective inpatient
- (i) other acute services
- (j) outpatient services, and
- (k) unbundled services.

74. We use the same methodology for deriving each provider's overall RCI as used for the service specific RCIs. Only activity, unit costs and national average costs relevant to that service are included in the calculation. The source database includes an RCI "mapping pot" to enable costs to be mapped to the above services.
75. Where providers ceased to exist in 2015-16, the successor reported one reference cost return for their organisation. This return incorporates the activities and costs of predecessor(s). In these circumstances, no comparable RCI data exists for 2014-15. The data reflect organisations in existence on 31 March 2016, and do not reflect any subsequent change in status (e.g. NHS foundation trust approval).

Weighted activity unit and cost per weighted activity unit

76. A key recommendation of the Carter review³¹ was the need for a set of metrics that would allow providers to compare themselves with their peers, taking into account the complexity of care provided. In terms of measuring productivity, an important step is to have a common currency to measure hospital output. To this end, the Carter review team developed the Weighted Activity Unit (WAU). Developing a measure where one WAU is a unit of activity equivalent to a typical patient episode was central to Lord Carter's review.
77. The cost per WAU compares inputs (costs) to outputs (the amount of work providers do for the NHS) to obtain a measure of productivity, or value for money: providers that use fewer inputs per unit of output are more productive. The cost per WAU represents the typical expenditure by the provider to deliver one WAU.
78. The WAU approach effectively repackages reference costs data into a format that is more engaging for clinicians, non-executives and managers. The initial aim is to get the data out and raise its profile so that organisations start comparing, asking questions, understanding variations and identifying opportunities for cost improvement. The ultimate aim is to give providers comparable information to help them identify where they may be able to make better use of limited financial

³¹ Operational productivity and performance in English NHS acute hospitals: Unwarranted variations, An independent report for the Department of Health by Lord Carter of Coles
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/499229/Operational_productivity_A.pdf

resources, showing – at national and local level – where efficiencies may lie, and quantifying the likely benefits of addressing those efficiency opportunities.

Chapter 5: Quality

Costing

79. Good quality control in the both the costing and collection process will deliver robust reference costs helping providers and national bodies understand the cost of NHS services aiding better decision making.
80. NHS providers have a responsibility to improve their internal costing processes and systems to help them better understand the cost of delivering services, leading to improved quality of data being submitted. It is the national bodies' responsibility to improve the collection process so that correct data are collected to inform national decisions.
81. It is acknowledged from recent publications that improvement is required in provider costing processes and there is a need for greater granular costs data. The CTP aims to improve both the costing and collection process to address issues highlighted with the current processes.
82. Good quality cost data are an essential element in developing a strong cost collection. The data collected helps to deliver high quality care for patients and better value for the taxpayer as well as assisting providers with decision making by providing the data for benchmarking tools.
83. Better cost information will also help the leaders in NHS providers to manage their organisations by:
 - (a) highlighting variations in cost;
 - (b) eliminating waste and reducing avoidable costs;
 - (c) informing the efficient redesign of pathways; and
 - (d) facilitating meaningful dialogue between clinicians and managers.
84. Over the years the Department has worked with its ALBs to raise the profile of costing in NHS providers and improve quality;
 - (a) a self-assessment quality checklist is embedded in the reference costs return to put the onus on the providers to confirm production of sound, accurate and timely data that are right first time³²;
 - (b) annual updates on the HFMA costing standards to aid improvements in providers costing processes and reflect change in delivering of service; and
 - (c) a targeted external assurance process.
85. Overall there has been an improvement in the way reference costs are being costed with the 2015-16 reference costs collection showing;

³² The results of the self-assessment survey for all 237 providers can be found in Annex B

a) Providers using granular patient level costing data to underpin reference costs

- 129 of the 138 (93%) providers that have implemented PLICS used the data to support some or all of their reference cost return, which has meant that £21 billion (79%) of admitted patient care costs were informed by PLICS data.

b) Increased consistency between provider costs

- 137 (99%) of the 138 providers that have implemented PLICS reported using some part of the HFMA clinical costing standards to support their reference costs return.

Collection

86. Year on year changes are made by the Department to ensure the collection process is adequate to collect the data required.
87. To prevent invalid data being submitted in the reference costs collection validations are checked in the workbooks prior to submission. There are two types of validation, mandatory and non-mandatory³³.
88. The mandatory validations are designed to assure the basic integrity of the data. Each provider must clear all mandatory validations before they are able to submit their reference costs data.
89. An additional validation was built into the workbooks for the 2015-16 collection to prevent some impossible data sets being generated, such as diagnosis driven HRGs being reported in outpatient settings. The Department has worked with NHS Digital to draw up all impossible data combinations and where possible prevented these from being submitted in the collection workbooks.
90. The final 2015-16 data passed all of the mandatory checks.
91. We also conducted a number of non-mandatory validations designed to improve the quality and accuracy of the data. A non-mandatory validation is not in itself an indication that the data are incorrect but an opportunity for providers to investigate their data further. We ask only that these are considered and any necessary revisions made. Some providers are running these checks through their costing systems at appropriate intervals (e.g. quarterly) during the year in preparation for the annual cost collection, and the self-assessment quality checklist asked providers whether they had considered these and made necessary revisions.
92. For the 2015-16 cost collection, a new non-mandatory validation was introduced to improve the quality of data captured in A&E departments. A comparison was made between department types submitted for 2015-16 reference costs and the NHS National Statistics for Quarterly A&E activity Q4 (2015-16) to ensure the A&E department types on both returns matched.

³³ These can be found in section 4 of the 2015-16 reference costs guidance, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/497127/Reference_costs_guidance_2015-16.pdf

Resubmissions of data

93. As part of the data validation process, the Department performs an initial analysis of the reference costs data, by provider, to establish if any provider has submitted reference cost data so materially incorrect that the provider would be required to resubmit their data. Unless data are so incorrect that it would have a material impact on any national average unit cost in tariff, the policy is to not allow resubmissions. This encourages providers to get data right first time. Providers identified as having significant outliers were contacted to discuss their data submission and the impact on the overall collection.

Glossary

Admitted patient care	An overarching term covering the following classifications of patients who have been admitted to a hospital: ordinary elective admissions; ordinary non-elective admissions; day cases; regular day admissions; and regular night admissions.
Adjusted Treatment Cost (ATC)	An annual productivity measure produced using the reference cost collection and from the published accounts of NHS providers. The ATC metric produces the potential savings if trusts reduced their costs, to the average cost for each department and service code combination.
Casemix	A system whereby the complexity (mix) of the care provided to a patient (cases) is reflected in an aggregate secondary healthcare classification. Casemix adjusted payment means that providers are not just paid for the number of patients they treat in each specialty, but also for the complexity or severity of the mix of patients they treat.
Complications and comorbidities	Many HRGs differentiate between care provided to patients with and without complications and comorbidities. Comorbidities are conditions that exist in conjunction with another disease, e.g. diabetes or asthma. Complications may arise during a period of healthcare delivery.
Core Healthcare Resource Group (HRG)	An HRG that represents a care event (e.g. finished consultant episode, outpatient attendance or A&E attendance).
Cost driver	Activity that influences the cost of a service, e.g. length of stay or theatre minutes.
Costing Transformation Programme (CTP)	A programme of work that will transition from reference costs collection to patient-level costing collection. The CTP will be a gradual process, stretching over six financial years.
Currency	A unit of healthcare activity such as spell, episode or attendance.
Data quality	The degree of completeness, consistency, timeliness and accuracy that makes the data appropriate for a specific use.
Direct costs	Costs that directly relate to the delivery of patient care. Examples include medical and nursing staff costs.
Excess bed days	Days that are beyond the trim point for a given HRG.
Finished Consultant Episode (FCE)	An episode of patient treatment under the care of one consultant that has finished.
Healthcare Resource Group (HRG)	Standard groupings of clinically similar diagnosis and procedure codes that use similar levels of resources.
Hospital Episode Statistics (HES)	A national source of patient non-identifiable data.
ICD-10	International Classification of Disease and Related

	Health Problems. An internationally defined classification of disease, managed by the World Health Organisation (WHO) and currently in its 10th Revision
Indirect costs	Costs that are indirectly related to the delivery of patient care. They are not directly determined by the number of patients or patient mix but costs can be allocated on an activity basis to service costs.
Market Forces Factor (MFF)	An index used to estimate the unavoidable cost differences of providing healthcare.
Materiality and Quality Score (MAQS)	A measure of the materiality and quality of an organisations costing process devised by HFMA.
National Tariff	From 1 April 2014 the term National Tariff will refer to the legal framework, within which Monitor and NHS England discharge their responsibilities in relation to the NHS payment system. This includes nationally set prices, the methodology for setting them and the payment rules for variations to national prices (including local modifications) and local price setting. See also Payment by Results.
Overhead costs	Costs that are not driven by the level of patient activity and which have to be apportioned to service costs as there is no clear activity-based allocation method. An example would be the chief executive's salary.
Patient-level costing	Costs that are calculated by tracing the actual resource use of individual patients.
Patient-Level Information and Costing Systems (PLICS)	IT systems which combine activity, financial and operational data to cost individual episodes of patient care. This is a 'bottom-up' approach to costing where an organisation records individual interactions and events that are connected with 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 interactions are allocated to the patient, much like a bill someone would receive at the end of a hotel stay.
Payment by Results	The previous term used for the payment system in England, within which there was a national tariff that referred to the nationally set prices paid for each currency. The Department of Health publication, <i>A simple guide to Payment by Results</i> ³⁴ , provides a useful introduction. See also National Tariff.
Quantum	The total monetary amount available at a trust to be allocated within reference costs.
Service line reporting (SLR)	A method for reporting cost and income by service lines to improve management's understanding of the contribution of each service line to performance.
Spell	The period from date of admission to date of discharge for one patient in one hospital. A spell may consist of more than one FCE.
Trim point	A defined length of stay for each HRG. Technically defined as the upper quartile length of stay for the HRG

³⁴ <https://www.gov.uk/government/publications/simple-guide-to-payment-by-results>

	plus 1.5 times the inter-quartile range of length of stay.
Unbundled Healthcare Resource Group (HRG)	An unbundled HRG represents an additional element of care. An unbundled HRG will always be associated with a core HRG that represents the care event, and will always be produced in addition to a core HRG.
Unit cost	The unit cost is the cost incurred by an organisation to produce, store and sell one unit of a particular product. Unit costs include all fixed costs and all variable costs involved in production.

Annex A: Weighted average unit costs for a selection of common procedures

Cataracts

Currency	Currency Description	Activity	Total Cost	Unit Cost
BZ30A	Complex, Cataract or Lens Procedures, with CC Score 2+	2,303	£ 3,828,853.33	£1,662.55
BZ30B	Complex, Cataract or Lens Procedures, with CC Score 0-1	4,956	£ 8,187,978.26	£1,652.13
BZ31A	Very Major, Cataract or Lens Procedures, with CC Score 2+	9,434	£ 9,228,000.14	£ 978.16
BZ31B	Very Major, Cataract or Lens Procedures, with CC Score 0-1	18,614	£ 18,313,145.85	£ 983.84
BZ32A	Intermediate, Cataract or Lens Procedures, with CC Score 2+	1,577	£ 1,542,403.02	£ 978.06
BZ32B	Intermediate, Cataract or Lens Procedures, with CC Score 0-1	7,255	£ 5,111,971.40	£ 704.61
BZ33Z	Minor, Cataract or Lens Procedures	58,326	£ 9,739,509.61	£ 166.98
BZ34A	Phacoemulsification Cataract Extraction and Lens Implant, with CC Score 4+	8,357	£ 8,281,645.95	£ 990.98
BZ34B	Phacoemulsification Cataract Extraction and Lens Implant, with CC Score 2-3	52,574	£ 48,973,795.15	£ 931.52
BZ34C	Phacoemulsification Cataract Extraction and Lens Implant, with CC Score 0-1	217,147	£ 193,251,492.67	£ 889.96
		380,543	£ 306,458,795.38	£ 805.32

Heart transplants

Currency	Currency Description	Activity	Total Cost	Unit Cost
ED02A	Heart Transplant, 19 years and over	164	£ 41,467.56	£ 6,800,679.12
ED02B	Heart Transplant, 18 years and under	42	£ 55,042.14	£ 2,311,769.94
		206	£ 44,235.19	£ 9,112,449.06

Normal deliveries

Currency	Currency Description	Activity	Total Cost	Unit Cost
NZ30A	Normal Delivery with CC Score 2+	16,619	£ 33,625,808.97	£ 2,023.34
NZ30B	Normal Delivery with CC Score 1	28,383	£ 52,841,089.06	£ 1,861.72
NZ30C	Normal Delivery with CC Score 0	158,743	£ 260,816,157.65	£ 1,643.01
NZ31A	Normal Delivery, with Epidural or Induction, with CC Score 2+	24,798	£ 70,834,460.29	£ 2,856.46
NZ31B	Normal Delivery, with Epidural or Induction, with CC Score 1	24,088	£ 59,286,974.04	£ 2,461.27
NZ31C	Normal Delivery, with Epidural or Induction, with CC Score 0	78,020	£ 167,692,811.80	£ 2,149.36
NZ32A	Normal Delivery, with Epidural and Induction, or with Post-Partum Surgical Intervention, with CC Score 2+	9,425	£ 33,561,797.68	£ 3,560.93

Reference costs 2015-16

NZ32B	Normal Delivery, with Epidural and Induction, or with Post-Partum Surgical Intervention, with CC Score 1	9,583	£ 29,319,755.43	£ 3,059.56
NZ32C	Normal Delivery, with Epidural and Induction, or with Post-Partum Surgical Intervention, with CC Score 0	22,288	£ 59,820,294.32	£ 2,683.97
NZ33A	Normal Delivery, with Epidural or Induction, and with Post-Partum Surgical Intervention, with CC Score 2+	1,560	£ 5,412,523.11	£ 3,469.57
NZ33B	Normal Delivery, with Epidural or Induction, and with Post-Partum Surgical Intervention, with CC Score 1	3,755	£ 10,530,469.52	£ 2,804.39
NZ33C	Normal Delivery, with Epidural or Induction, and with Post-Partum Surgical Intervention, with CC Score 0	4,593	£ 12,168,203.98	£ 2,649.29
NZ34A	Normal Delivery, with Epidural, Induction and Post-Partum Surgical Intervention, with CC Score 2+	1,295	£ 5,301,953.15	£ 4,094.17
NZ34B	Normal Delivery, with Epidural, Induction and Post-Partum Surgical Intervention, with CC Score 1	1,824	£ 6,410,720.01	£ 3,514.65
NZ34C	Normal Delivery, with Epidural, Induction and Post-Partum Surgical Intervention, with CC Score 0	1,825	£ 5,988,330.90	£ 3,281.28
		386,799	£ 813,611,349.91	£ 2,103.45

Hip replacements

Currency	Currency Description	Activity	Total Cost	Unit Cost
HN12A	Very Major Hip Procedures for Non-Trauma with CC Score 10+	524	£ 7,016,198.44	£ 13,389.69
HN12B	Very Major Hip Procedures for Non-Trauma with CC Score 8-9	839	£ 9,026,851.89	£ 10,759.06
HN12C	Very Major Hip Procedures for Non-Trauma with CC Score 6-7	2,177	£ 19,386,218.79	£ 8,905.02
HN12D	Very Major Hip Procedures for Non-Trauma with CC Score 4-5	5,859	£ 43,589,893.72	£ 7,439.82
HN12E	Very Major Hip Procedures for Non-Trauma with CC Score 2-3	15,565	£ 102,227,107.58	£ 6,567.76
HN12F	Very Major Hip Procedures for Non-Trauma with CC Score 0-1	27,471	£ 164,610,686.63	£ 5,992.16
HT12A	Very Major Hip Procedures for Trauma with CC Score 12+	834	£ 10,485,605.96	£ 12,572.67
HT12B	Very Major Hip Procedures for Trauma with CC Score 9-11	2,590	£ 27,822,280.12	£ 10,742.19
HT12C	Very Major Hip Procedures for Trauma with CC Score 6-8	6,022	£ 53,864,476.10	£ 8,944.62
HT12D	Very Major Hip Procedures for Trauma with CC Score 3-5	10,595	£ 79,974,792.81	£ 7,548.35
HT12E	Very Major Hip Procedures for Trauma with CC Score 0-2	9,947	£ 66,370,254.39	£ 6,672.39
		82,423	£ 584,374,366.43	£ 7,089.94

Knee replacements

Currency	Currency Description	Activity	Total Cost	Unit Cost
HN22A	Very Major Knee Procedures for Non-Trauma with CC Score 8+	993	£ 10,187,235.34	£ 10,259.05
HN22B	Very Major Knee Procedures for Non-Trauma with CC Score 6-7	2,195	£ 17,870,423.27	£ 8,141.42
HN22C	Very Major Knee Procedures for Non-Trauma with CC Score 4-5	6,987	£ 49,692,256.24	£ 7,112.10
HN22D	Very Major Knee Procedures for Non-Trauma with CC Score 2-3	20,283	£ 129,272,874.68	£ 6,373.46
HN22E	Very Major Knee Procedures for Non-Trauma with CC Score 0-1	31,302	£ 176,959,228.82	£ 5,653.29
HT22A	Very Major Knee Procedures for Trauma with CC Score 4+	136	£ 1,765,501.33	£ 12,981.63

Reference costs 2015-16

HT22B	Very Major Knee Procedures for Trauma with CC Score 2-3	137	£ 1,430,675.11	£ 10,442.88
HT22C	Very Major Knee Procedures for Trauma with CC Score 0-1	795	£ 5,703,921.07	£ 7,174.74
		62,828	£ 392,882,115.86	£ 6,253.30

Annex B: Self-assessment quality checklist

Q001.	Total costs: The reference costs quantum has been fully reconciled to the signed annual accounts through completion of the reconciliation statement workbook in line with guidance	
	Fully reconciled to within +/- 1% of the signed annual accounts	236
	Fully reconciled to within +/- 1% of the draft annual accounts [state reason]	1
		237
Q002.	Total activity: The activity information used in the reference costs submission to report admitted patient care, outpatient attendances and A&E attendances has been fully reconciled to provisional Hospital Episode Statistics and documented	
	Fully reconciled and documented	104
	Partly reconciled	40
	n/a - reconciliation completed but to another source [state reason]	76
	Not reconciled	17
	237	
Q003.	Sense check: All relevant unit costs under £5 have been reviewed and are justifiable	
	All relevant unit costs under £5 reviewed and justified [state reason]	75
	n/a - no relevant unit costs under £5 within the submission	162
		237
Q004.	Sense check: All relevant unit costs over £50,000 have been reviewed and are justified	
	All relevant unit costs over £50 000 reviewed and justified [state reason]	105
	n/a - no relevant unit costs under £50 000 within the submission	132
		237
Q005.	Sense check: All unit cost outliers (defined as unit costs less than one-tenth or more than ten times the previous year's national mean average unit cost) have been reviewed and are justifiable	
	All unit cost outliers reviewed and justified [state reason]	155
	n/a - no unit cost outliers within the submission	82
		237
Q006.	Benchmarking: Data has been benchmarked where possible against national data for individual unit costs and for activity volumes (the previous year's information is available in the National Benchmark)	
	All cost and activity data within the submission has been benchmarked using the National Benchmark prior to submission	60
	All cost and activity data within the submission has been benchmarked using another benchmarking process [state]	77
	Some but not all cost and activity data within the submission has been benchmarked using the National Benchmark prior to submission	57
	Some but not all cost an activity data within the submission has been benchmarked using another benchmarking process [state]	31
	No benchmarking performed on the cost data prior to submission	12
	237	
Q007.	Data quality: Assurance is obtained over the quality of data for 2015-16	
	An external audit has been performed on data quality	26
	An internal audit has been performed on data quality	15
	Internal management checks have provided assurance over data quality	172
	Assurance has been obtained over data quality but not for 2015-16	20
	No assurance has been obtained over data quality	4
	237	

Q008.	Data quality: Assurance is obtained over the reliability of costing and information systems for 2015-16	
	An external audit has been performed on costing and information system reliability	30
	An internal audit has been performed on costing and information system reliability	10
	Internal management checks have provided assurance over costing and information system reliability	163
	Assurance has been obtained over costing and information system reliability but not for 2015-16	29
	No assurance has been obtained over costing and information system reliability	5
		237

Q009.	Data quality: Where issues have been identified in the work performed on the 2015-16 data and systems, these issues have been resolved to mitigate the risk of inaccuracy in the 2015-16 reference costs submission	
	All exceptions have been resolved and the risk of inaccuracy in the 2015-16 reference costs submission fully mitigated	83
	Some exceptions have been resolved but not all	104
	Exceptions have yet to be resolved	3
	n/a - no exceptions noted	47
		237

Q010.	Data quality: All other non-mandatory validations as specified in the guidance and workbooks have been considered and any necessary revisions made	
	All non-mandatory validations have been considered and necessary revisions made	148
	All non-mandatory validations have been considered and some but not all necessary revisions have been made [specify and state reason]	34
	Some non-mandatory validations have been considered and necessary revisions made [specify and state reason]	19
	No non-mandatory validations have been investigated [state reason]	2
	n/a - no non-mandatory validations have occurred	34
		237

Annex C: Reference costs 2015-16: A Guide to using the data

Introduction

1. This document supplements the publication of the 2015-16 Reference Costs by providing technical guidance to anyone wishing to conduct analysis using the reference cost data
2. We have provided the source data submitted by trusts in a series of comma separate variable (CSV) files. These can be found online alongside this publication. Chapter 3 of this annex describes these files and their contents.
3. We have also published the source data submitted by trusts in the reconciliation statement return on the Unify2³⁵ forum. This return provides assurance that trusts have correctly included all costs, identified services excluded from reference costs, and netted off allowable income from their reference costs quantum. It also provides information on the costs of certain high cost drugs and devices included in reference cost returns, and other memorandum information. We are releasing this information on Unify2 to enable trusts to benchmark their data.

Chapter 1: Analysing the costs of NHS Services

4. Below are four examples to illustrate how the data can be used to analyse and investigate costs across the NHS.

Example 1: Calculating average costs - normal delivery in an inpatient setting

5. 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 1).

Table 10: Normal delivery HRGs

HRG	Description
NZ30A	Normal Delivery with CC Score 2+
NZ30B	Normal Delivery with CC Score 1
NZ30C	Normal Delivery with CC Score 0
NZ31A	Normal Delivery, with Epidural or Induction, with CC Score 2+
NZ31B	Normal Delivery, with Epidural or Induction, with CC Score 1
NZ31C	Normal Delivery, with Epidural or Induction, with CC Score 0
NZ32A	Normal Delivery, with Epidural and Induction, or with Post-Partum Surgical Intervention, with CC Score 2+
NZ32B	Normal Delivery, with Epidural and Induction, or with Post-Partum Surgical Intervention, with CC Score 1
NZ32C	Normal Delivery, with Epidural and Induction, or with Post-Partum Surgical Intervention, with CC Score 0
NZ33A	Normal Delivery, with Epidural or Induction, and with Post-Partum Surgical Intervention, with CC Score 2+
NZ33B	Normal Delivery, with Epidural or Induction, and with Post-Partum Surgical Intervention, with CC Score 1

³⁵ Unify2 is the corporate collection system used by the Department to collect reference costs.

NZ33C	Normal Delivery, with Epidural or Induction, and with Post-Partum Surgical Intervention, with CC Score 0
NZ34A	Normal Delivery, with Epidural, Induction and Post-Partum Surgical Intervention, with CC Score 2+
NZ34B	Normal Delivery, with Epidural, Induction and Post-Partum Surgical Intervention, with CC Score 1
NZ34C	Normal Delivery, with Epidural, Induction and Post-Partum Surgical Intervention, with CC Score 0

6. The second step is to identify a weighted average cost from the total activity and costs across the required settings (Table 2). 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 are summed but the excess bed day activity, which is already included in the inlier activity, is ignored.

Table 2: Calculating the average cost of a normal delivery

Setting	A Activity	B FCEs	C National Average Unit Cost (£)	D= A*C Activity x unit cost (£)
Day case	36	36	1,286	46,280
Elective Inpatient	1,401	1,401	2,367	3,316,408
Elective Inpatient Excess Bed Days	144	-	405	58,338
Non-Elective Inpatient- Long Stay	153,795	153,795	2,921	449,258,131
Non-Elective Inpatient-Long Stay Excess Bed Days	50,186	-	456	22,871,049
Non-Elective Inpatient- Short Stay	223,283	223,283	1,495	325,856,196
Total	-	378,515	2,117	801,406,402

7. The national average unit cost of an inpatient normal delivery is £2,117. Note that these costs relate to the delivery episode itself, and no additional costs are incurred 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 figures also do not represent all the costs to the NHS of a birth, which will also include the costs of home births and other events such as GP consultations, and antenatal and postnatal outpatient attendances.

Example 2: Using the code to group - coeliac disease

8. Hospital episode statistics (HES)³⁶ are collected by individual diagnoses or procedures. Reference costs are not.
9. However, it is possible to use the Code to Group workbook³⁷, 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 comorbidities) present in the episode of care, and the resulting costs would be affected by other diagnoses and procedures in the HRG.

³⁶ <http://www.hscic.gov.uk/hes>

³⁷ <http://www.hscic.gov.uk/casemix/costing>

10. For example, the costs associated with coeliac disease (ICD-10 code K900) are included in one of the HRGs for non-malignant gastrointestinal tract disorders with an HRG root code of FZ91, and splits dependent on length of stay and complications or comorbidities. 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 3: Comparing costs over time - cholecystectomy

11. To examine the difference between the day case and elective inpatient costs of performing a cholecystectomy (gall bladder removal) between 2005-06 and 2014-15, 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. The tables below illustrate the changes for cholecystectomy.

Table 3: Cholecystectomy HRGs under HRGv3.5 in 2005-06 reference costs

HRG	Description
G13	Cholecystectomy >69 or with CC
G14	Cholecystectomy <70 without CC

Table 4: Cholecystectomy HRGs under HRG4 in 2006-07 to 2008-09 reference costs

HRG	Description
GA10A	Cholecystectomy with CC
GA10B	Cholecystectomy without CC

Table 5: Cholecystectomy HRGs under HRG4 in 2009-10 to 2011-12 reference costs

HRG	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

Table 6: Cholecystectomy HRGs under HRG4+ in 2012-13 to 2015-16 reference costs

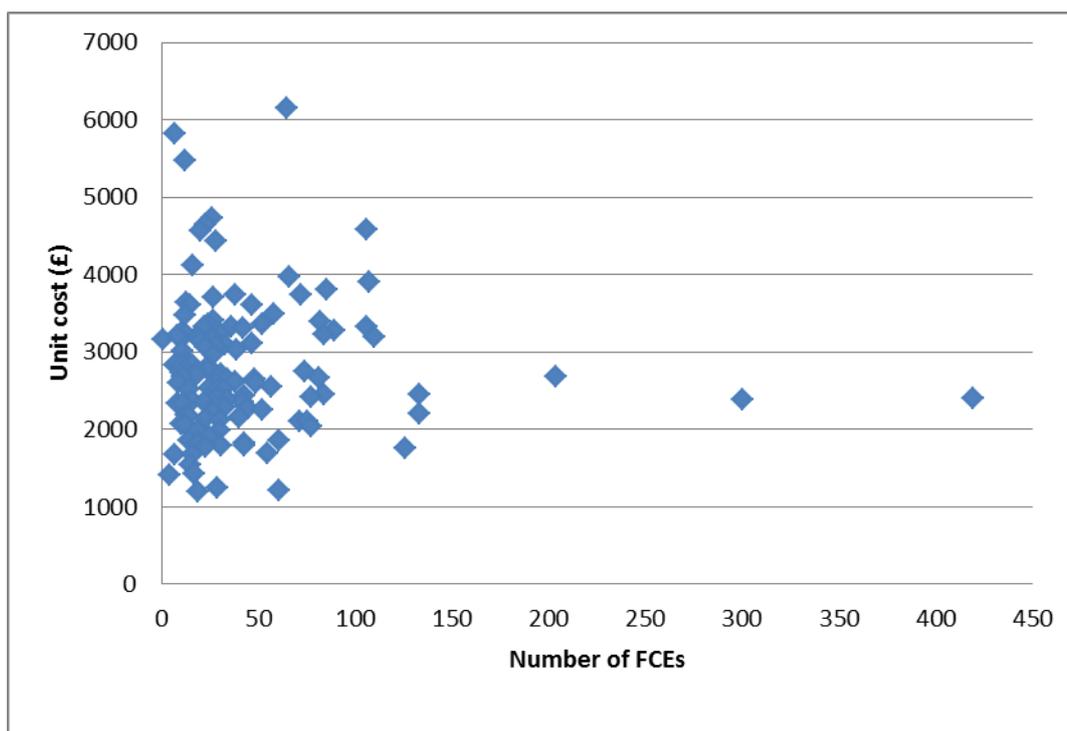
HRG	Description
GA10G	Open or Laparoscopic, Cholecystectomy, 18 years and under
GA10H	Laparoscopic Cholecystectomy, 19 years and over, with CC Score 4+
GA10J	Laparoscopic Cholecystectomy, 19 years and over, with CC Score 1-3
GA10K	Laparoscopic Cholecystectomy, 19 years and over, with CC Score 0
GA10L	Open Cholecystectomy, 19 years and over, with CC Score 3+
GA10M	Open Cholecystectomy, 19 years and over, with CC Score 1-2
GA10N	Open Cholecystectomy, 19 years and over, with CC Score 0

12. Once the required HRGs for each year have been identified, the method described in Example 1 can be followed to obtain the required average cost.

Example 4: Comparing costs between trusts - normal delivery

13. Table 1 showed the national average unit cost for the normal delivery HRGs across all trusts. It is possible to undertake a more detailed organisation level analysis using the source data provided on our website.
14. Figure 1 shows the trust level data for a normal delivery with complications and comorbidities score 2+ (NZ30A) in obstetrics (TFC 501) in a non-elective inpatient (long stay) setting. Even though the national average unit cost is £2,793, the data shows a range of different costs across trusts.

Figure 1: Inlier unit costs for Normal Delivery with CC Score 2+, TFC 501, non-elective inpatient (long stay), 2015-16



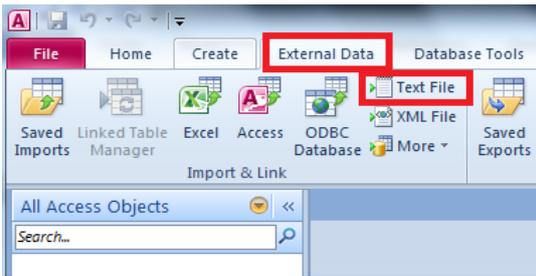
Chapter 2: Analysis by trust, setting, service and currency.

1. This chapter outlines standard queries to support analysis of the data. Users should first import the CSV files described in Annex A into Microsoft Access. The notes that follow are based on Microsoft Access 2010. The process for other versions may differ slightly. Only the files “1a Data.csv” and “1b Data MFF Adjusted.csv” are required for running these queries. The MFF adjusted data are used for RCI related queries, while the unadjusted data are used for the remaining queries.

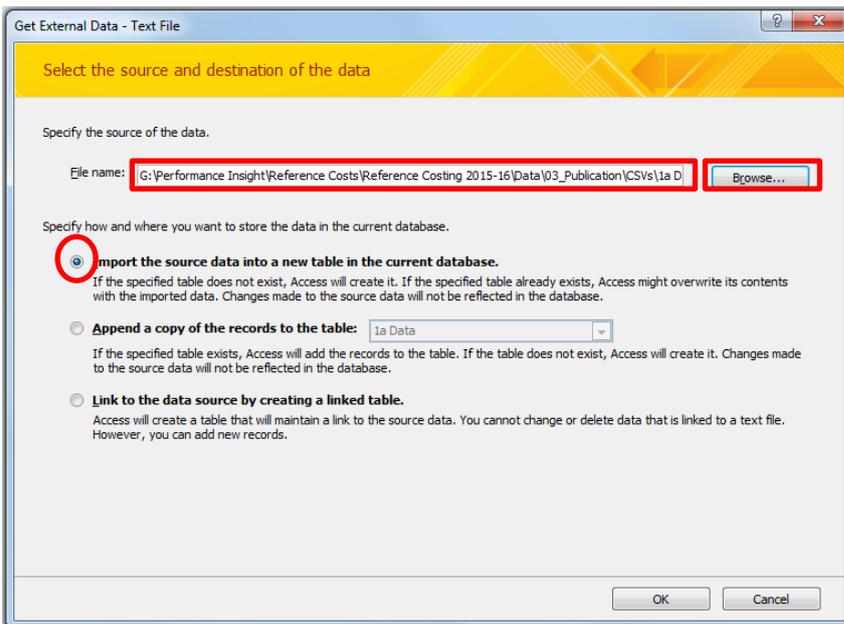
Importing the data

2. The following process will need to be completed twice to ensure that both the “1a Data.csv” and “1b Data MFF Adjusted.csv” files are imported.

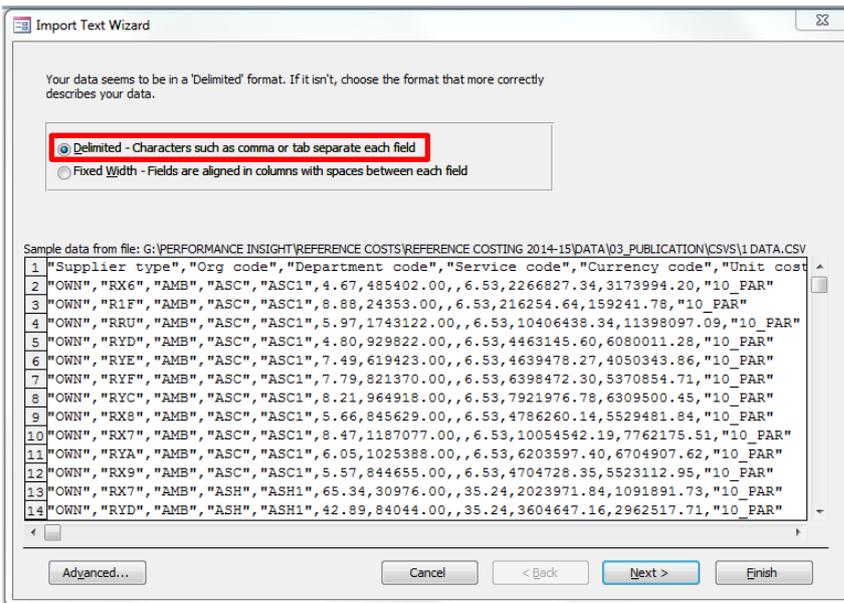
3. To import the data into Microsoft Access, first navigate to the 'Import & Link' section of the 'External Data' tab and click on 'text'.



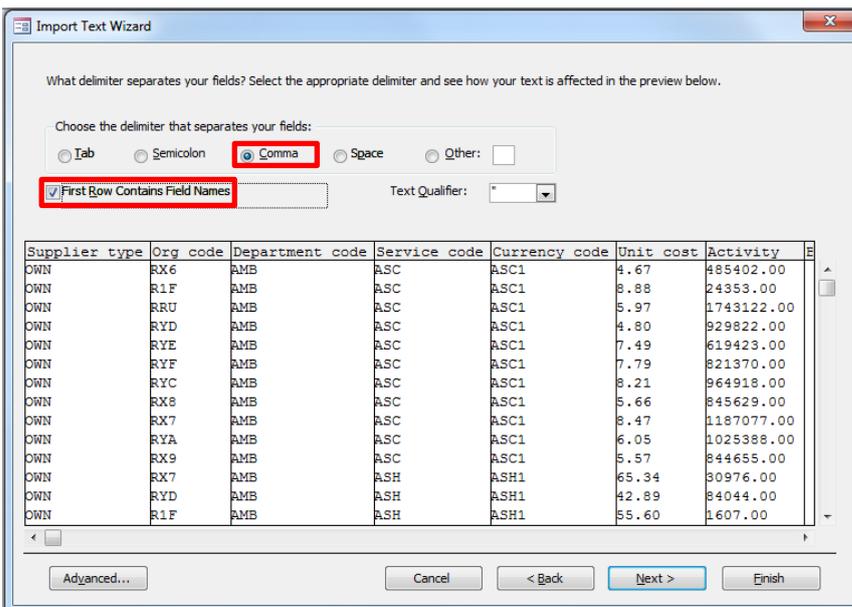
4. A dialogue box will appear. Click on browse and navigate to where you have saved the .CSV files and select the one you wish to use. Ensure that the option 'Import the source data into a new table in the current database' is selected. Then click OK.



5. The 'Import Text Wizard' will then open. Ensure that the option 'Delimited- Characters such as comma or tab separate each field' is selected.



6. At the next window, ensure that the 'Comma' option is selected and tick the 'First Row Contains Field Names' box.



7. At the following window, it is important to ensure that MS Access recognises the 'Service Code' field as text. To do this select the 'Service Code' field by clicking on the field name and then select 'Text' in the 'Data Type' box. You will also need to ensure that the 'Bed Day's' field is set as 'Double'.

Import Text Wizard

You can specify information about each of the fields you are importing. Select fields in the area below. You can then modify field information in the 'Field Options' area.

Field Options

Field Name: Service code Data Type: **Text**

Indexed: Yes (Duplicates OK) Do not import field (Skip)

Supplier type	Org code	Department code	Service code	Currency code	Unit cost	Activity
OWN	RX6	AMB	ASC	ASC1	4.67	485402.00
OWN	R1F	AMB	ASC	ASC1	8.88	24353.00
OWN	RRU	AMB	ASC	ASC1	5.97	1743122.00
OWN	RYD	AMB	ASC	ASC1	4.80	929822.00
OWN	RYE	AMB	ASC	ASC1	7.49	619423.00
OWN	RYF	AMB	ASC	ASC1	7.79	821370.00
OWN	RYC	AMB	ASC	ASC1	8.21	964918.00
OWN	RX8	AMB	ASC	ASC1	5.66	845629.00
OWN	RX7	AMB	ASC	ASC1	8.47	1187077.00
OWN	RYA	AMB	ASC	ASC1	6.05	1025388.00
OWN	RX9	AMB	ASC	ASC1	5.57	844655.00
OWN	RX7	AMB	ASH	ASH1	65.34	30976.00
OWN	RYD	AMB	ASH	ASH1	42.89	84044.00
OWN	R1F	AMB	ASH	ASH1	55.60	1607.00

Advanced... Cancel < Back Next > Finish

8. At the next window, click next. The following window will ask whether you wish to select a primary key. Select the option 'No primary key' and click next.

Import Text Wizard

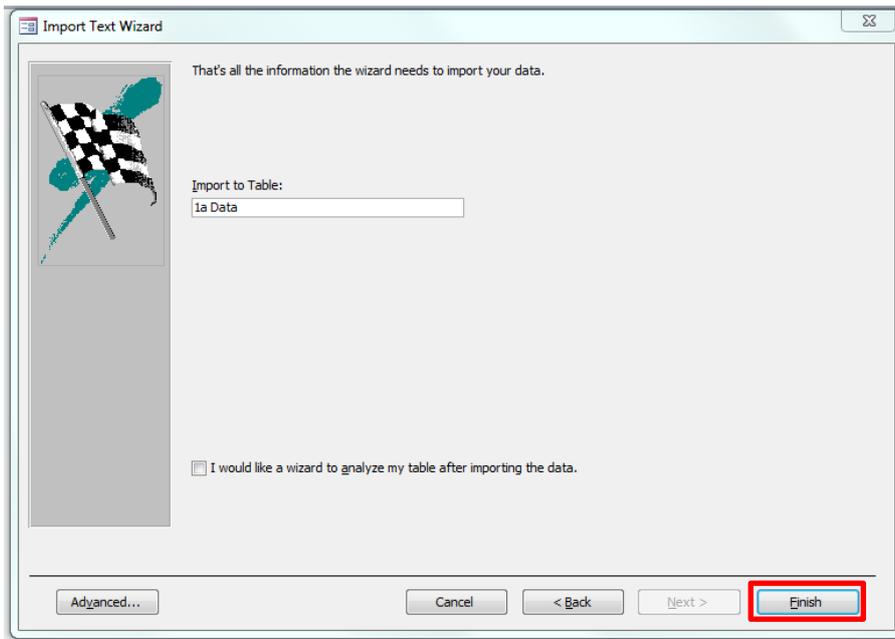
Microsoft Access recommends that you define a primary key for your new table. A primary key is used to uniquely identify each record in your table. It allows you to retrieve data more quickly.

Let Access add primary key.
 Choose my own primary key.
 No primary key.

Supplier type	Org code	Department code	Service code	Currency code	Unit cost	Activity
OWN	RX6	AMB	ASC	ASC1	4.67	485402.00
OWN	R1F	AMB	ASC	ASC1	8.88	24353.00
OWN	RRU	AMB	ASC	ASC1	5.97	1743122.00
OWN	RYD	AMB	ASC	ASC1	4.80	929822.00
OWN	RYE	AMB	ASC	ASC1	7.49	619423.00
OWN	RYF	AMB	ASC	ASC1	7.79	821370.00
OWN	RYC	AMB	ASC	ASC1	8.21	964918.00
OWN	RX8	AMB	ASC	ASC1	5.66	845629.00
OWN	RX7	AMB	ASC	ASC1	8.47	1187077.00
OWN	RYA	AMB	ASC	ASC1	6.05	1025388.00
OWN	RX9	AMB	ASC	ASC1	5.57	844655.00
OWN	RX7	AMB	ASH	ASH1	65.34	30976.00
OWN	RYD	AMB	ASH	ASH1	42.89	84044.00
OWN	R1F	AMB	ASH	ASH1	55.60	1607.00

Advanced... Cancel < Back Next > Finish

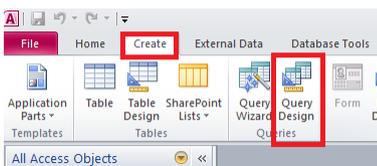
9. The final window of the Import Text Wizard will then appear. Click finish, making sure not to change the name of the table the data will be imported too.



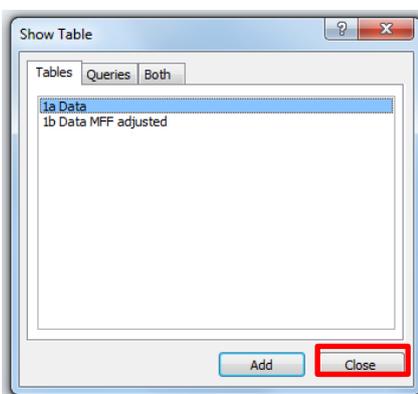
10. The first set of data are now imported. Return to paragraph two and repeat the process to ensure that both the “1a Data.csv” and “1b Data MFF Adjusted.csv” files are imported.

Creating standard queries

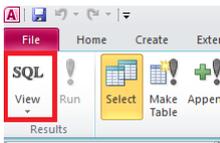
11. This process will create standard queries that will allow organisations to compare their data against the national averages and calculate the RCIs. Users are able to create other queries, as required.
12. Having imported the CSV files into a Microsoft Access database, click on ‘Create’ and then on ‘Query Design’.



13. A Show Table window will pop up. Click ‘Close’.



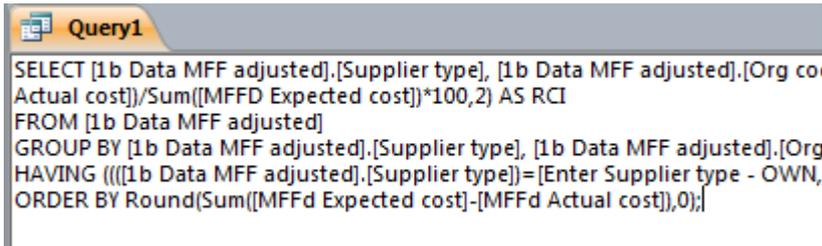
14. Click on ‘SQL’ in the top left hand corner.



15. A new window will appear.

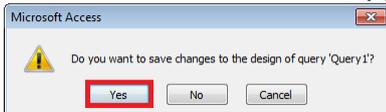


16. Paste the SQL text for query '01 By Org and RCI pot' in the first row of the table below into the window.

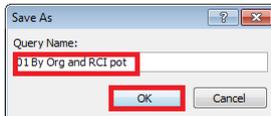


17. Close the window.

18. A new window will appear. Click 'Yes'.



19. A new window will appear. Type in the name from the table above in step 14, then click 'OK'.



20. Repeat this process for the remaining queries listed in the Table 6 below.

Table 11: SQL Queries

Query name	SQL text – RCI related queries
01 By Org and RCI pot	<pre>SELECT [1b Data MFF adjusted].[Supplier type], [1b Data MFF adjusted].[Org code], [1b Data MFF adjusted].[Mapping pot], Sum(Round([MFFd Actual Cost],0)) AS [Actual cost], Sum(Round([MFFd Expected cost],0)) AS [Expected cost], Round(Sum([MFFd Expected cost]-[MFFd Actual cost]),0) AS [Cost variance], Round(Sum([MFFd Actual cost])/Sum([MFFD Expected cost])*100,2) AS RCI FROM [1b Data MFF adjusted] GROUP BY [1b Data MFF adjusted].[Supplier type], [1b Data MFF adjusted].[Org code], [1b Data MFF adjusted].[Mapping pot] HAVING ((([1b Data MFF adjusted].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND ((([1b Data MFF adjusted].[Org code])=[Enter Org code]))) ORDER BY Round(Sum([MFFd Expected cost]-[MFFd Actual cost]),0);</pre>

<p>02 By Org, RCI pot, Dept</p>	<pre>SELECT [1b Data MFF adjusted].[Supplier type], [1b Data MFF adjusted].[Org code], [1b Data MFF adjusted].[Mapping pot], [1b Data MFF adjusted].[Department code], Sum(Round([MFFd Actual Cost],0)) AS [Actual cost], Sum(Round([MFFd Expected cost],0)) AS [Expected cost], Round(Sum([MFFd Expected cost]-[MFFd Actual cost]),0) AS [Cost variance], Round(Sum([MFFd Actual cost])/Sum([MFFd Expected cost])*100,2) AS RCI FROM [1b Data MFF adjusted] GROUP BY [1b Data MFF adjusted].[Supplier type], [1b Data MFF adjusted].[Org code], [1b Data MFF adjusted].[Mapping pot], [1b Data MFF adjusted].[Department code] HAVING ((([1b Data MFF adjusted].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND ((([1b Data MFF adjusted].[Org code])=[Enter Org code]) AND ((([1b Data MFF adjusted].[Mapping pot])=[Enter Mapping pot - 01_EI, 02_NEI, 03_XS, 04_CCS, 05_OP, 06_OAS, 07_Com, 08_MH, 09_Trans, 10_PAR, 11_A&E, 12_UB, 13_Excl]))) ORDER BY Round(Sum([MFFd Expected cost]-[MFFd Actual cost]),0);</pre>
<p>03 By Org, RCI pot, Dept and Service</p>	<pre>SELECT [1b Data MFF adjusted].[Supplier type], [1b Data MFF adjusted].[Org code], [1b Data MFF adjusted].[Mapping pot], [1b Data MFF adjusted].[Department code], [1b Data MFF adjusted].[Service code], Sum(Round([MFFd Actual Cost],0)) AS [Actual cost], Sum(Round([MFFd Expected cost],0)) AS [Expected cost], Round(Sum([MFFd Expected cost]-[MFFd Actual cost]),0) AS [Cost variance], Round(Sum([MFFd Actual cost])/Sum([MFFd Expected cost])*100,2) AS RCI FROM [1b Data MFF adjusted] GROUP BY [1b Data MFF adjusted].[Supplier type], [1b Data MFF adjusted].[Org code], [1b Data MFF adjusted].[Mapping pot], [1b Data MFF adjusted].[Department code], [1b Data MFF adjusted].[Service code] HAVING ((([1b Data MFF adjusted].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND ((([1b Data MFF adjusted].[Org code])=[Enter Org code]) AND ((([1b Data MFF adjusted].[Department code])=[Enter Department code]) AND ((([1b Data MFF adjusted].[Mapping pot])=[Enter Mapping pot - 01_EI, 02_NEI, 03_XS, 04_CCS, 05_OP, 06_OAS, 07_Com, 08_MH, 09_Trans, 10_PAR, 11_A&E, 12_UB, 13_Excl]))) ORDER BY Round(Sum([MFFd Expected cost]-[MFFd Actual cost]),0);</pre>
<p>04 By Org, RCI pot, Dept, Service and Currency</p>	<pre>SELECT [1b Data MFF adjusted].[Supplier type], [1b Data MFF adjusted].[Org code], [1b Data MFF adjusted].[Mapping pot], [1b Data MFF adjusted].[Department code], [1b Data MFF adjusted].[Service code], [1b Data MFF adjusted].[Currency code], Sum(Round([MFFd Actual Cost],0)) AS [Actual cost], Sum(Round([MFFd Expected cost],0)) AS [Expected cost], Round(Sum([MFFd Expected cost]-[MFFd Actual cost]),0) AS [Cost variance], Round(Sum([MFFd Actual cost])/Sum([MFFd Expected cost])*100,2) AS RCI FROM [1b Data MFF adjusted] GROUP BY [1b Data MFF adjusted].[Supplier type], [1b Data MFF adjusted].[Org code], [1b Data MFF adjusted].[Mapping pot], [1b Data MFF adjusted].[Department code], [1b Data MFF adjusted].[Service code], [1b Data MFF adjusted].[Currency code] HAVING ((([1b Data MFF adjusted].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND ((([1b Data MFF adjusted].[Org code])=[Enter Org code]) AND ((([1b Data MFF adjusted].[Department code])=[Enter Department code]) AND ((([1b Data MFF adjusted].[Service code])=[Enter service code]) AND ((([1b Data MFF adjusted].[Mapping pot])=[Enter Mapping pot - 01_EI, 02_NEI, 03_XS, 04_CCS, 05_OP, 06_OAS, 07_Com, 08_MH, 09_Trans, 10_PAR, 11_A&E, 12_UB, 13_Excl]))) ORDER BY Round(Sum([MFFd Expected cost]-[MFFd Actual cost]),0);</pre>
<p>Query name</p>	<p>SQL text – unit cost related queries</p>

05 Unit Cost by Organisation, Department and Currency	<pre> SELECT [1a Data].[Supplier type], [1a Data].[Org code], [1a Data].[Department code], [1a Data].[Currency code], Sum([1a Data].[Actual cost]) AS [SumOfActual cost], Sum([1a Data].Activity) AS SumOfActivity, Sum([Actual Cost])/Sum([Activity]) AS [Unit Cost] FROM [1a Data] GROUP BY [1a Data].[Supplier type], [1a Data].[Org code], [1a Data].[Department code], [1a Data].[Currency code], [Enter Supplier type - OWN, OUT], [Enter Org code, Leave blank to show all], [Enter Department code, Leave blank to show all], [Enter Currency code, Leave blank to show all] HAVING ((([1a Data].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND ((([Enter Supplier type - OWN, OUT]) Is Not Null) AND ((([Enter Org code, Leave blank to show all]) Is Null) AND ((([Enter Department code, Leave blank to show all]) Is Null) AND ((([Enter Currency code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND ((([1a Data].[Org code])=[Enter Org code, Leave blank to show all]) AND ((([Enter Supplier type - OWN, OUT]) Is Not Null) AND ((([Enter Org code, Leave blank to show all]) Is Not Null) AND ((([Enter Department code, Leave blank to show all]) Is Null) AND ((([Enter Currency code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND ((([1a Data].[Department code])=[Enter Department code, Leave blank to show all]) AND ((([Enter Supplier type - OWN, OUT]) Is Not Null) AND ((([Enter Org code, Leave blank to show all]) Is Null) AND ((([Enter Department code, Leave blank to show all]) Is Not Null) AND ((([Enter Currency code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND ((([1a Data].[Org code])=[Enter Org code, Leave blank to show all]) AND ((([1a Data].[Department code])=[Enter Department code, Leave blank to show all]) AND ((([Enter Supplier type - OWN, OUT]) Is Not Null) AND ((([Enter Org code, Leave blank to show all]) Is Not Null) AND ((([Enter Department code, Leave blank to show all]) Is Null) AND ((([Enter Currency code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND ((([1a Data].[Org code])=[Enter Org code, Leave blank to show all]) AND ((([1a Data].[Department code])=[Enter Department code, Leave blank to show all]) AND ((([1a Data].[Currency code])=[Enter Currency Code, Leave blank to show all]) AND ((([Enter Supplier type - OWN, OUT]) Is Not Null) AND ((([Enter Org code, Leave blank to show all]) Is Not Null) AND ((([Enter Department code, Leave blank to show all]) Is Null) AND ((([Enter Currency code, Leave blank to show all]) Is Not Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND ((([1a Data].[Org code])=[Enter Org code, Leave blank to show all]) AND ((([1a Data].[Department code])=[Enter Department code, Leave blank to show all]) AND ((([1a Data].[Currency code])=[Enter Currency Code, Leave blank to show all]) AND ((([Enter Supplier type - OWN, OUT]) Is Not Null) AND ((([Enter Org code, Leave blank to show all]) Is Not Null) AND ((([Enter Department code, Leave blank to show all]) Is Not Null) AND ((([Enter Currency code, Leave blank to show all]) Is Not Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND ((([1a Data].[Department code])=[Enter Department code, Leave blank to show all]) AND ((([1a Data].[Currency code])=[Enter Currency Code, Leave blank to show all]) AND ((([Enter Supplier type - OWN, OUT]) Is Not Null) AND ((([Enter Org code, Leave blank to show all]) Is Null) AND ((([Enter Department code, Leave blank to show all]) Is Not Null) AND ((([Enter Currency code, Leave blank to show all]) Is Not Null)); </pre>
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06 Unit Cost by Organisation and Department	<pre> SELECT [1a Data].[Supplier type], [1a Data].[Org code], [1a Data].[Department code], Sum([1a Data].[Actual cost]) AS [SumOfActual cost], Sum([1a Data].Activity) AS SumOfActivity, Sum([Actual Cost])/Sum([Activity]) AS [Unit cost] FROM [1a Data] GROUP BY [1a Data].[Supplier type], [1a Data].[Org code], [1a Data].[Department code], [Enter Supplier type - OWN, OUT], [Enter Org code, Leave blank to show all], [Enter Department code, Leave blank to show all] HAVING ((([1a Data].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND (([Enter Supplier type - OWN, OUT]) Is Not Null) AND (([Enter Org code, Leave blank to show all]) Is Null) AND (([Enter Department code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND (([1a Data].[Org code])=[Enter Org code, Leave blank to show all]) AND (([Enter Supplier type - OWN, OUT]) Is Not Null) AND (([Enter Org code, Leave blank to show all]) Is Not Null) AND (([Enter Department code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND (([1a Data].[Department code])=[Enter Department code, Leave blank to show all]) AND (([Enter Supplier type - OWN, OUT]) Is Not Null) AND (([Enter Org code, Leave blank to show all]) Is Null) AND (([Enter Department code, Leave blank to show all]) Is Not Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier type - OWN, OUT]) AND (([1a Data].[Org code])=[Enter Org code, Leave blank to show all]) AND (([1a Data].[Department code])=[Enter Department code, Leave blank to show all]) AND (([Enter Supplier type - OWN, OUT]) Is Not Null) AND (([Enter Org code, Leave blank to show all]) Is Not Null) AND (([Enter Department code, Leave blank to show all]) Is Not Null)); </pre>
07 Unit Cost by Organisation and Currency	<pre> SELECT [1a Data].[Supplier type], [1a Data].[Org code], [1a Data].[Currency code], Sum([1a Data].[Actual cost]) AS [SumOfActual cost], Sum([1a Data].Activity) AS SumOfActivity, Sum([Actual Cost])/Sum([Activity]) AS [Unit cost] FROM [1a Data] GROUP BY [1a Data].[Supplier type], [1a Data].[Org code], [1a Data].[Currency code], [Enter Supplier Type - OWN, OUT], [Enter Org code, Leave blank to show all], [Enter Currency code, Leave blank to show all] HAVING ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Org code, Leave blank to show all]) Is Null) AND (([Enter Currency code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([1a Data].[Org code])=[Enter Org code, Leave blank to show all]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Org code, Leave blank to show all]) Is Not Null) AND (([Enter Currency code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([1a Data].[Currency code])=[Enter Currency code, Leave blank to show all]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Org code, Leave blank to show all]) Is Null) AND (([Enter Currency code, Leave blank to show all]) Is Not Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([1a Data].[Org code])=[Enter Org code, Leave blank to show all]) AND (([1a Data].[Currency code])=[Enter Currency code, Leave blank to show all]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Org code, Leave blank to show all]) Is Not Null) AND (([Enter Currency code, Leave blank to show all]) Is Not Null)); </pre>

08 Unit Cost by Department and Currency	<pre> SELECT [1a Data].[Supplier type], [1a Data].[Department code], [1a Data].[Currency code], Sum([1a Data].[Actual cost]) AS [SumOfActual cost], Sum([1a Data].Activity) AS SumOfActivity, Sum([Actual Cost])/Sum([Activity]) AS [Unit cost] FROM [1a Data] GROUP BY [1a Data].[Supplier type], [1a Data].[Department code], [1a Data].[Currency code], [Enter Supplier Type - OWN, OUT], [Enter Department code, Leave blank to show all], [Enter Currency code, Leave blank to show all] HAVING ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Department code, Leave blank to show all]) Is Null) AND (([Enter Currency code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([1a Data].[Department code])=[Enter Department code, Leave blank to show all]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Department code, Leave blank to show all]) Is Not Null) AND (([Enter Currency code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([1a Data].[Currency code])=[Enter Currency code, Leave blank to show all]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Department code, Leave blank to show all]) Is Null) AND (([Enter Currency code, Leave blank to show all]) Is Not Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([1a Data].[Department code])=[Enter Department code, Leave blank to show all]) AND (([1a Data].[Currency code])=[Enter Currency code, Leave blank to show all]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Department code, Leave blank to show all]) Is Not Null) AND (([Enter Currency code, Leave blank to show all]) Is Not Null)); </pre>
09 Unit Cost by Organisation	<pre> SELECT [1a Data].[Supplier type], [1a Data].[Org Code], Sum([1a Data].[Actual cost]) AS [SumOfActual cost], Sum([1a Data].Activity) AS SumOfActivity, Sum([Actual Cost])/Sum([Activity]) AS [Unit cost] FROM [1a Data] GROUP BY [1a Data].[Supplier type], [1a Data].[Org Code], [Enter Supplier Type - OWN, OUT], [Enter Org Code, Leave blank to show all] HAVING ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Org Code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([1a Data].[Org Code])=[Enter Org Code, Leave blank to show all]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Org Code, Leave blank to show all]) Is Not Null)); </pre>
10 Unit Cost by Department	<pre> SELECT [1a Data].[Supplier type], [1a Data].[Department code], Sum([1a Data].[Actual cost]) AS [SumOfActual cost], Sum([1a Data].Activity) AS SumOfActivity, Sum([Actual Cost])/Sum([Activity]) AS [Unit cost] FROM [1a Data] GROUP BY [1a Data].[Supplier type], [1a Data].[Department code], [Enter Supplier Type - OWN, OUT], [Enter Department code, Leave blank to show all] HAVING ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([Enter Supplier Type - OWN, OUT])=[Enter Supplier Type - OWN, OUT]) AND (([Enter Department code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([1a Data].[Department code])=[Enter Department code, Leave blank to show all]) AND (([Enter Supplier Type - OWN, OUT])=[Enter Supplier Type - OWN, OUT]) AND (([Enter Department code, Leave blank to show all]) Is Not Null)); </pre>
11 Unit Cost by Currency	<pre> SELECT [1a Data].[Supplier type], [1a Data].[Currency code], Sum([1a Data].[Actual cost]) AS [SumOfActual cost], Sum([1a Data].Activity) AS SumOfActivity, Sum([Actual Cost])/Sum([Activity]) AS [Unit cost] FROM [1a Data] GROUP BY [1a Data].[Supplier type], [1a Data].[Currency code], [Enter Supplier Type - OWN, OUT], [Enter Currency code, Leave blank to show all] HAVING ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Currency code, Leave blank to show all]) Is Null)) OR ((([1a Data].[Supplier type])=[Enter Supplier Type - OWN, OUT]) AND (([1a Data].[Currency code])=[Enter Currency code, Leave blank to show all]) AND (([Enter Supplier Type - OWN, OUT]) Is Not Null) AND (([Enter Currency code, Leave blank to show all]) Is Not Null)); </pre>

Using the standard queries

RCI queries

21. The standard queries are designed to allow organisations to drill into their data. Organisations may want to use this to highlight areas in which they have substantial activity and where their costs are much higher or lower than the national average.
22. The RCI standard queries all show actual cost, expected cost, cost variance (expected cost – actual cost) and RCI. The cost variance is similar to the RCI; however, it takes activity into account. The queries are sorted by cost variance – ascending.
23. The amount of detail shown increases with each standard query. The table below shows how the detail builds up.

Query	Org code	RCI pot	Dept	Service	Currency
1 By Org and RCI pot	✓	✓			
2 By Org, RCI pot and Dept	✓	✓	✓		
3 By Org, RCI pot, Dept and Service	✓	✓	✓	✓	
4 By Org, RCI pot, Dept, Service and Currency	✓	✓	✓	✓	✓

24. With the re-introduction of sub-contracted out data in reference costs each of the queries require either 'OWN' or 'OUT' to be selected.
25. The standard queries require some of the variables to be selected after running the query, e.g. the "1 By Org and RCI pot" query requires org code to be selected. These pre-selected fields are shaded in the table.
26. Once the query has been set up, it can be run by double clicking it. A new window(s) will appear. Enter the information required and click on OK.

Unit cost queries

27. The unit cost standard queries are designed to allow organisations to compare unit cost for activity defined by organisation code, department code and currency code, or any combination of these fields.
28. Unlike the RCI standard queries, these queries do not require the input of an organisation code. However, the queries give the option to select a specific organisation, department or currency, or a combination of these three. If you do not wish to make a selection, then the 'Enter Parameter Value' window can be left blank.

29. The exception to paragraph 28 is in 'Supplier Type', here you must enter 'OWN' to see data for services carried out in the trusts, or 'OUT' to see data that was sub-contracted by the trusts to the independent sector.

Chapter 3: Source data

We have provided the source data in CSV files alongside this publication. These should be downloaded and saved locally.

CSV file name	Contents
1a Data/ 1b Data MFF Adjusted	Organisation level data
2 Organisation description	Data provider code and name 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	Activity unit for all department/service/currency combinations
7 Mapping pots	For calculating service level RCIs
8 Mapping pots description	Mapping pot name
9 Memorandum data	Organisation level memorandum data
10 Memorandum units	Activity unit for memorandum data
11 Mental health memorandum data	Memorandum information collected for mental health care clusters
12 Mental health IAPT memorandum data	
13a Spells data/ 13b Spells data MFF adjusted	Organisation level spell data
14 Reference Costs UZ01Z data	FCE Data Collected which is invalid for grouping
15 Spells UZ01Z data	Spells Data Collected which is invalid for grouping
16 Survey	Responses to the reference costs survey

The following tables describe the contents of each CSV file:

1a Data/1b Data MFF adjusted (Field names will be preceded by MFF Data names)

Field name	Description
Supplier type	Supplier type (e.g. OWN or OUT)
Org code	Organisation code
Department code	Department code (e.g. EL)
Service code	Service code (e.g. 100)
Currency code ³⁸	Currency code (e.g. AA02A)
Unit cost (MFFd Unit Cost)	Average cost to the organisation of providing the activity
Activity	See Table 6 "Units" for details
Bed days	Number of inlier bed days
Mean(MFFd Mean)	National mean average unit cost
Actual cost(MFFd Actual cost)	Organisation's activity multiplied by organisation's unit cost

³⁸ HRG UZ01Z is not included in this data set but available in the 14 Reference costs UZ01Z data csv file.

Expected cost(MFFd Expected cost)	Organisation's activity multiplied by national mean unit cost
Mapping pot ³⁹	Maps all activity to one of 13 groups for the purpose of calculating service level RCIs

2 Organisation description

Field name	Description
Org code	Organisation code
Organisation name	Organisation name
Org type	Trust type: acute, ambulance, mental health or community
Underlying MFF	Market forces factor for the organisation, used for calculating RCIs
Rebased MFF OWN	Underlying MFF for own data, scaled to ensure that adjustment is cost neutral (nationally) when applied to the data. This is the MFF used to adjust and produce RCIs.
Rebased MFF OUT	Underlying MFF for subcontracted out data, scaled to ensure that adjustment is cost neutral (nationally) when applied to the data.

3 Department description

Field name	Description
Department code	Department code (e.g. EL)
Department name	Department name (e.g. Elective inpatient)

4 Service description

Field name	Description
Service code	Service code (e.g. 100)
Service name	Service name (e.g. general surgery)

5 Currency description

Field name	Description
Currency code	Currency code (e.g. AA22C)
Currency name	Currency name (e.g. Cerebrovascular Accident, Nervous System Infections or Encephalopathy, with CC Score 14+)

6 Units

Field name	Description
Dept code	Department code (e.g. EL)
Service code ⁴⁰	Service code (e.g. 100)
Currency code ⁴¹	Currency code (e.g. AA22C)
Units	E.g. FCE

7 Mapping pots

Field name	Description
Department code	Department code (e.g. EL)
Service code	Service code (e.g. 100)

³⁹ Cystic fibrosis data are not included in the published RCI calculation. They are allocated to the 13_Excl pot.

⁴⁰ Where the fields are blank, this indicates that the units of measurement are the same regardless of the service code

⁴¹ Where the fields are blank, this indicates that the units of measurement are the same regardless of the currency code

Mapping pot	Mapping pot (e.g. 01_EI)
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8 Mapping pots description

Field name	Description
Mapping pot	Mapping pot (e.g. 01_EI)
Mapping pot name	Mapping pot description (e.g. Elective inpatient and Day case)

9 Memorandum data

Field name	Description
Org code	Organisation code
Supplier type	Supplier type
Department code	Department code
Service code	Service code
Currency code	Currency code
Memo	See Table "10 Memorandum units" for details

10 Memorandum units

Field name	Description
Department code	Department code
Units	<p>Depending on the department code, the unit is either</p> <ul style="list-style-type: none"> - (CC) the number of critical care periods, collected in addition to the number of critical care bed days for adult critical care - (DA) the number of requests, collected in addition to the number of tests for directly accessed pathology services - (RENALCKD) the average number of sessions per week per patient of home haemodialysis, collected in addition to the number of sessions for haemodialysis

11 Mental health memorandum data

Field name
Org code
Department code
Service code
Currency code
Unit cost per occupied bed day
Cluster days in admitted patient care
Unit cost per non-admitted patient cluster day
Cluster days in non-admitted patient care
Average review period (days)
Total number of completed cluster review periods

12 Mental Health IAPT memorandum data

Field Name	Description
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Org code	Organisation code
Department code	Department code (e.g. EL)
Service code	Service code (e.g. 100)
Currency code	Currency code (e.g. AA22C)
Number of high intensity contacts	Number of high intensity contacts
Number of low intensity contacts	Number of low intensity contacts
Total number of cluster days	Total number of cluster days

13a Spells data⁴²/13b MFF adjusted Spells data (Field names will be preceded by MFF Data names)

Field name	Description
Organisation	Organisation code
Department	Department code (e.g. EL)
Currency	Currency code (e.g. AA22C)
Unit cost (MFFd Unit Cost)	Average cost to the organisation of providing the activity
Activity	Number of spells
Inlier bed days	Number of inlier spell bed days
Excess bed days	Number of excess spell bed days
Mean (MFFd Mean)	National mean average unit cost
Actual_cost (MFFd Actual_cost)	Organisation's activity multiplied by organisation's unit cost
Expected_cost (MFFd Expected_cost)	Organisation's activity multiplied by national mean unit cost
Mapping_pot	For calculating service level RCIs

14 Reference costs UZ01Z data

Field name	Description
Supplier Type	Supplier type
Org code	Organisation code
Department Code	Department code (e.g. EL)
Service code	Service code (e.g. 100)
HRG code	Currency code (UZ01Z)
Unit cost	Average cost of data invalid for grouping
Activity	Data invalid for grouping
Inlier bed days	Inlier bed days

15 Spells UZ01Z data

Field name	Description
Org code	Organisation code
Department code	Department code (e.g. EL)
HRG code	Currency code (UZ01Z)
Unit cost	Average cost of data invalid for grouping
Activity	Data invalid for grouping
Inlier bed days	Number of inlier spell bed days
Excess bed days	Number of excess spell bed days

⁴² We have provided two versions of the Data file. One containing the costs submitted by trusts, and a second where we have adjusted the costs for each trust's MFF. The latter file should be used for calculating RCIs. Otherwise we recommend using the first file.

16 Survey

	All trusts
Q001	How engaged are you with Monitor's Costing Transformation Programme?
Q002	What level of value does your organisation see in moving to a standardised, sector wide view of costs at the patient level (i.e. in the delivery of cost savings and/or improving efficiency)
Q003	The sector is moving towards a deeper understanding of Patient Level Costs, what is the status of patient level information and costing systems (PLICS) in your organisation?
Q004A	If implemented, when was it implemented?
Q004B	If implemented, who is your Supplier?
Q005A	If in implementation phase, when is it planned to be fully implemented?
Q005B	If in implementation phase, who is your supplier?
Q006	If you are not planning to implement PLICS, what are the main reasons why?
Q007	How many dedicated Cost Practitioners do you have working within your organisation? (i.e. these individuals only do cost related activities) Number of cost practitioners
Q008A	Reference Costs: Finance
Q008B	Reference Costs: IT
Q008C	Reference Costs: Other
Q008D	Education & Training: Finance
Q008E	Education & Training: IT
Q008F	Education & Training: Other
Q008G	Monitor's PLICS collection: Finance
Q008H	Monitor's PLICS collection: IT
Q008I	Monitor's PLICS collection: Other
Q009	What is the level of clinical and financial engagement in your organisation?
Q010	Is there a formal Governance committee or body within the Trust that compares clinical outcomes and procedure costs?
Q011	How often are you producing SLR?
Q012	What is your SLR based on?
Q013A	What is the total number of specialities/departments at your trust? Please Specify
Q013B	Number of specialities/departments that costing team engage with? Please Specify
Q013C	Number of specialities/departments that used costing information for analysis and decision making. (for e.g. drafting business cases, cost improvement plans and other saving plans etc). Number of specialities
Q013D	Number of specialities/departments that have been involved in development/review of cost allocation basis and resultant costs are validated and signed-off by clinicians. Number of specialities
Q013E	Number of specialities/departments whose clinicians validate cost data being produced by the costing system. Number of specialities
Q013F	Are costing outputs refined with clinical input to catered outputs for different clinical groups?
Q014	Have you used the materiality and quality score (MAQS) as detailed in the HFMA clinical costing standards?
Q016	Do you benchmark your cost and activity data?
Q017A	If you answered yes to Q16, what benchmarking tool(s) do you use? (Name)
Q017B	If you answered yes to Q16, do you carry out internal benchmarking?

Q017C	If you answered yes to Q16, do you carry out external benchmarking (i.e. against other organisations)?
Q018A	Supporting Cost Improvement Programme (CIPs)
Q018B	Reviewing performance of a speciality or service
Q018C	Reviewing performance of care providers (for e.g. consultants)
Q018D	Reviewing contract with commissioners
Q019	To what degree did you use the HFMA clinical costing standards while setting up the costing process and systems at your trust?
Q020A	Classification of direct, indirect and overhead costs
Q020B	Creation of cost pool groups and cost pools
Q020C	Allocation of costs
Q020D	Allocating ward costs
Q020E	Allocating theatre (or operating room) costs
Q020F	Allocating medical staffing costs
Q020G	Allocating emergency department costs
Q020H	Classification of costs into fixed, semi-fixed and variable categories
Q020I	Work in progress
Q020J	Treatment of income
Q020K	Treatment of non-patient care activities
Q020L	Information
Q020M	Data matching
Q020N	Quality assessment and measurement
Q020O	Review and audit of cost information
Q020P	Allocating community team costs
Q020Q	Treatment of non-service user care activities
Q021	How often are you producing and reporting patient level cost information?
Q022	Did you use PLICS to support your reference costs return?
Q023A	Admitted patient care
Q023B	Outpatient services
Q023C	Emergency medicine
Q023D	Chemotherapy and radiotherapy
Q023E	Critical care
Q023F	Diagnostic imaging
Q023G	High cost drugs
Q023H	Rehabilitation
Q023I	Specialist palliative care
Q023J	Renal dialysis
Q023K	Direct access services
Q023L	Mental health services
Q023M	Community services
Q023N	Cystic fibrosis
Q023O	Cancer multi-disciplinary teams
Q023P	Ambulance services
Q024	Do you have any other comments?