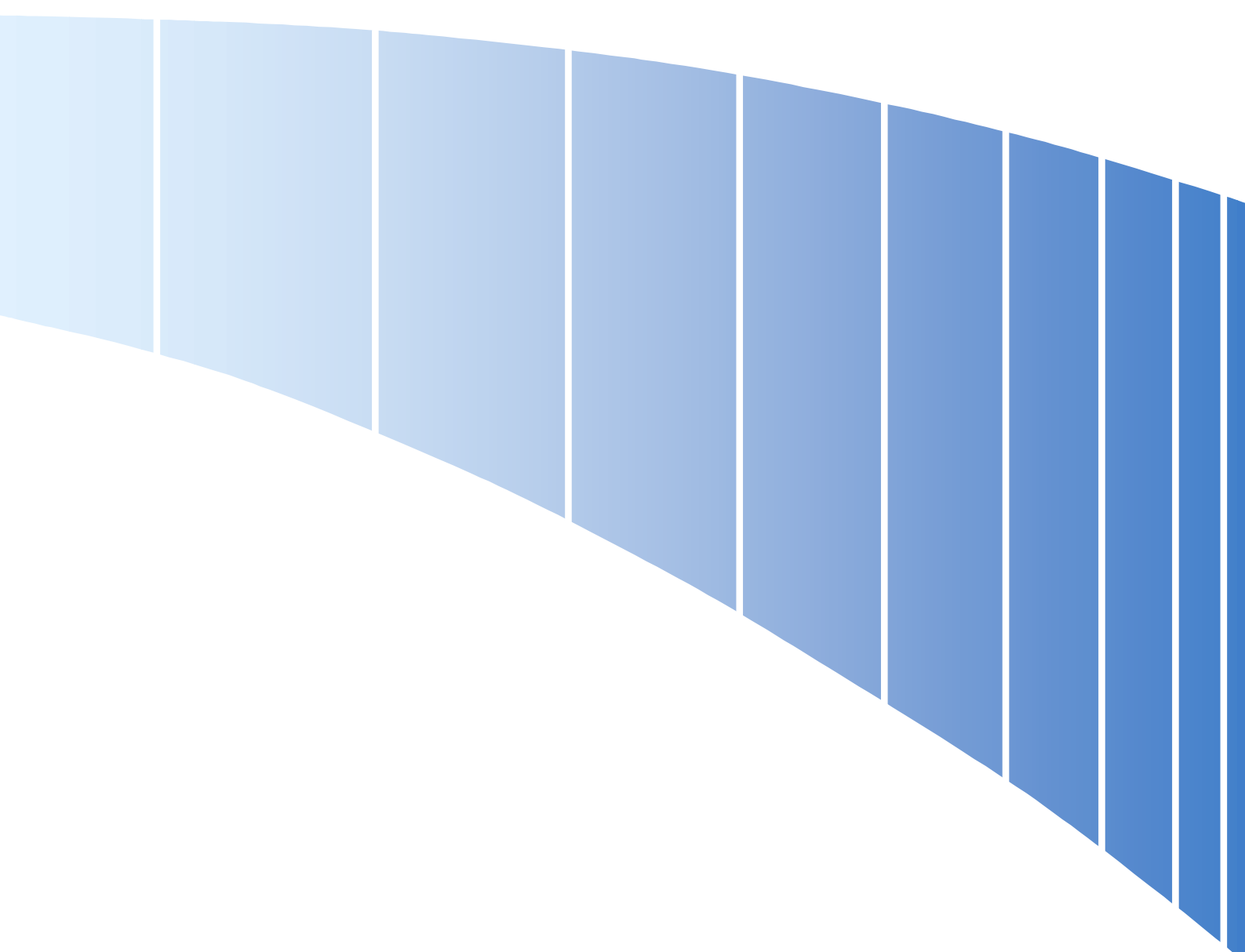


A simple guide to Payment by Results



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Introduction

1. Payment by Results (PbR) is the tariff based hospital payment system that has transformed the way funding flows around the NHS in England.
2. The aim of this guide is to provide a simple introduction for newcomers to PbR, from NHS health professionals, managers and administrators, to people engaged in academic study and interested members of the public both in the UK and abroad. Detailed technical guidance on the operation of PbR each year, and a wide range of other information, is available at www.dh.gov.uk/pbr.
3. The guide is organised as follows:

Basics

Chapter 1 From patient notes to pound notes

PbR begins when a patient is treated in hospital and ends when the hospital is paid for that treatment. Here we give an overview of the whole process.

Chapter 2 Building blocks

PbR is a data driven process that has its foundations in patient level data. We explore in depth the three building blocks of classification, currency and costing.

Chapter 3 Producing the tariff

We describe the production of the tariff and explore some of the key themes that determine the tariff structure and prices.

Chapter 4 Expanding the scope of PbR

This guide concentrates on PbR for acute services, but the intention has always been that it will expand into other areas. Here we take stock of progress.

Chapter 5 History of PbR

Tells the story of PbR, summarises some of the research papers on PbR, and looks at the international experience of similar systems.

Glossary of terms and abbreviations

Annex A The NHS in England

PbR requires a basic understanding of the structure and funding of the NHS.

Annex B Scope of Payment by Results 2003-04 to 2010-11

Annex C Structure of Payment by Results 2003-04 to 2010-11

4. Each chapter ends with a **find out more section** which lists references and sources of further information.
5. The Department of Health PbR team have produced this guide. It covers PbR up to the publication of the white paper *Equity and excellence: Liberating the NHS* (hereafter referred to as *Liberating the NHS*) in July 2010. This announced important changes to PbR and its delivery, which will affect some of the arrangements described in this guide. In the meantime, we hope that it provides a useful introduction. We would welcome feedback on whether it has achieved its aim and suggestions as to how it might be improved. Please send your feedback to PbRComms@dh.gsi.gov.uk.
6. All figures are in 2010-11 prices unless otherwise stated.

Basics

1. Payment by Results (PbR) is the hospital payment system in England. Under PbR, commissioners pay providers (NHS trusts, NHS foundation trusts (FTs) and the independent sector) a national tariff or price for the number and complexity of patients treated or seen.
2. PbR currently covers acute health care. There are national tariffs for admitted patient care (medical and surgical), outpatient attendances and some outpatient procedures, and A&E. For example, £59 for a minor A&E attendance, £138 for an outpatient attendance in obstetrics, £5,640 for a hip operation, or £8,226 for a coronary artery bypass graft.
3. The currency, or unit of payment, for the admitted patient care tariff is the Healthcare Resource Group (HRG). HRGs are clinically meaningful groups of diagnoses and interventions that consume similar levels of NHS resources. With some 28,000 codes to describe specific diagnoses and interventions, grouping these into HRGs allows tariffs to be set at a sensible and workable level. Under the latest version, HRG4, there are over 1,000 tariffs. Each covers a spell of care, from admission to discharge.
4. When a patient is discharged, a clinical coder translates their care into codes using two classification systems, ICD-10 for diagnoses and OPCS-4 for interventions. This information, together with other information about the patient such as age and length of stay, is transmitted from the hospital's computer system to a national database called the Secondary Uses Service (SUS). Reports from SUS allow commissioners and providers to make adjustments to monthly contract values agreed in the NHS standard contract.
5. Tariff prices have traditionally been based on the average cost of services reported by NHS providers in the mandatory reference costs collection. In practice, various adjustments are made to the average of reference costs, so that final tariff prices may not reflect published national averages. Because the reference costs from which the tariff is produced are three years in arrears, an uplift is applied which reflects pay and price pressures in the NHS, and includes an efficiency requirement.
6. The introduction of best practice tariffs for cataracts, cholecystectomy (gall bladder removal) fragility hip fracture and stroke in 2010-11, and a commitment to expand these in future years, will see tariffs increasingly determined by best clinical practice rather than average cost.
7. The tariff received by the provider is multiplied by a nationally determined market forces factor (MFF) unique to each provider to reflect the fact that it is more expensive to provide services in some parts of the country than in others. There may also be other adjustments to the tariff

for long or short stays, for specialised services, or to support particular policy goals.

8. Before PbR, commissioners tended to have block contracts with hospitals where the amount of money was fixed irrespective of the number of patients treated. PbR was introduced to:
 - (a) support patient choice by allowing the money to follow the patient to different types of provider
 - (b) reward efficiency and quality by allowing providers to retain the difference if they could provide the required standard of care at a lower cost than the national price
 - (c) reduce waiting times by paying providers for the volume of work done
 - (d) refocus discussions between commissioner and provider away from price and towards quality and innovation.
9. PbR facilitates other strategic objectives, and as these change over time, so will PbR. The tariff is now seen as an increasingly vital means of supporting quality outcomes for patients and delivering additional efficiency in the NHS.
10. PbR began in a limited way, with national tariffs for 15 HRGs in 2003-04 and 48 HRGs in 2004-05. FTs moved to the full system in 2005-06 and NHS trusts in 2006-07. By then, PbR represented over 50% of acute provider income and about one-third of PCT budgets.
11. From the outset, there were plans to extend PbR from acute care to other services. An expansion of the tariff into mental health, community and other services, starting with national currencies in 2011-12, is a priority.
12. PbR is not unique to England. Many other countries in Europe, North America and Australasia operate similar casemix funding or prospective payment systems.

Chapter 1 From patient notes to pound notes

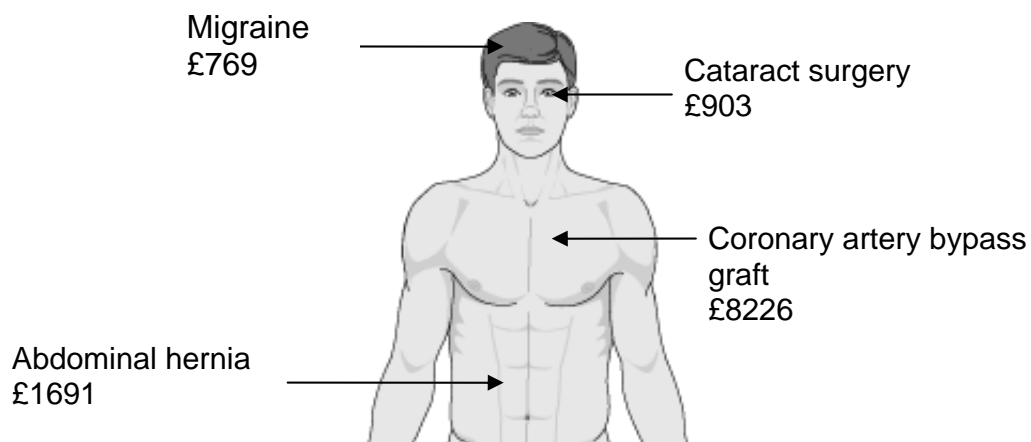
Summary

- Payment by Results (PbR) is the hospital payment system in England in which commissioners pay providers a national tariff or price for the number and complexity of patients treated or seen
- There are national tariffs for admitted patient care, outpatients and A&E
- The currency, or unit of payment, for the admitted patient care tariff is Healthcare Resource Group 4 (HRG4), covering a spell of care from admission to discharge
- When a patient is discharged, clinical coders translate their care into codes using two classification systems, ICD-10 and OPCS-4
- Patient data is submitted to a national database called the Secondary Uses Service (SUS), which groups clinical codes into HRGs and calculates a payment
- Commissioners agree monthly contract payments to providers in the NHS standard contract, which are then adjusted for the actual value of activity in the monthly SUS report

Introduction

1. In the NHS in England the commissioning and providing of healthcare for local populations are separate functions carried out by different types of organisation ([Annex A](#) provides more background on the structure and funding of the NHS). PbR is the payment system that governs transactions between commissioners and acute hospital providers. It is not their only source of income, but represents over 50% of income for the average acute hospital. Under PbR, commissioners pay providers a national tariff or price for each patient treated or seen¹. The price varies according to the complexity of the treatment or condition, as illustrated in Figure 1.

Figure 1: National tariffs for different treatments and conditions



¹ Payment is to the organisation as a whole. PbR is not intended to provide an identifiable revenue stream to individual departments within a hospital.

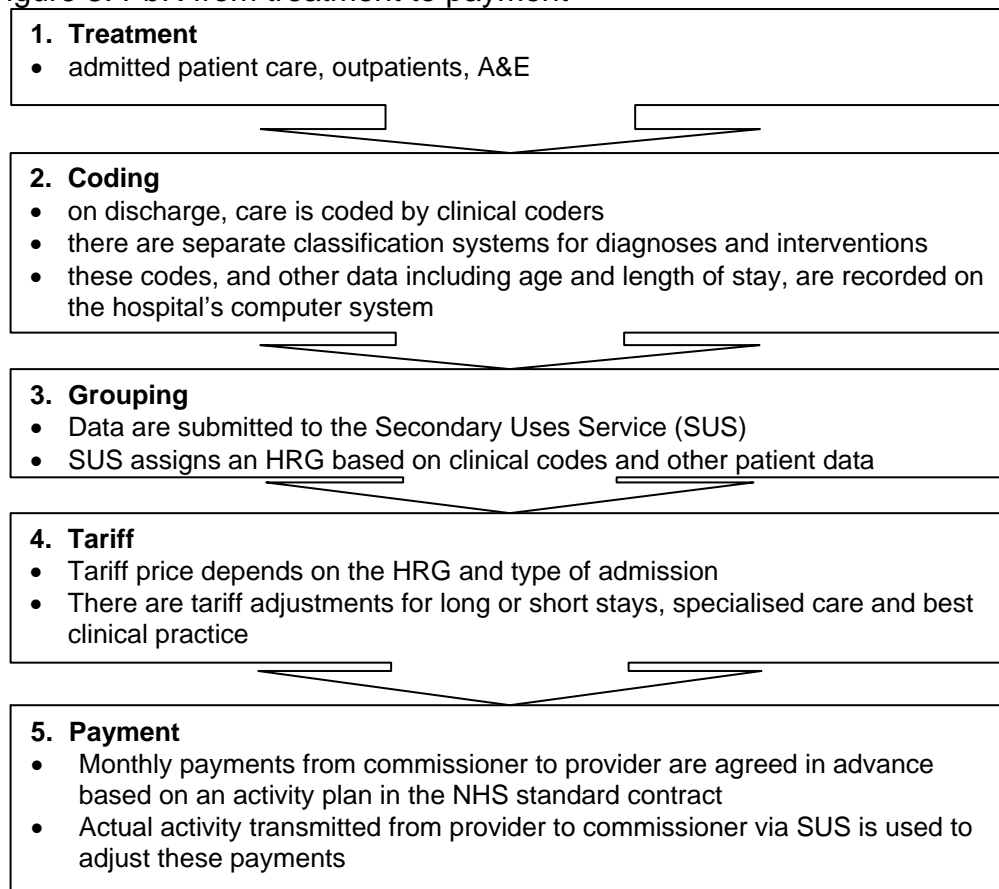
- The Department of Health (DH) publishes the national tariff every year. Figure 2 is an extract from the 2010-11 national tariff. It shows that there are different prices for different treatments or conditions and for different types of admission. The currency, or unit of healthcare for which payments are made, is called a Healthcare Resource Group (HRG). We will look at HRGs in more detail in [Chapter 2](#).

Figure 2: Some tariff prices in 2010-11

HRG code	HRG name	Combined day case and elective tariff (£)	Non-elective spell tariff (£)
AA31Z	Headache or migraine	769	769
BZ01Z	Enhanced cataract surgery	903	1,666
EA14Z	Coronary artery bypass graft	8,226	9,666
FZ17C	Abdominal hernia procedures 19 years and over without complications and comorbidities	1,691	2,365

- The PbR lifecycle begins with a clinician making notes on the patient record and ends with the commissioner making a payment to the patient's provider. Figure 3 summarises the process.

Figure 3: PbR from treatment to payment



Treatment

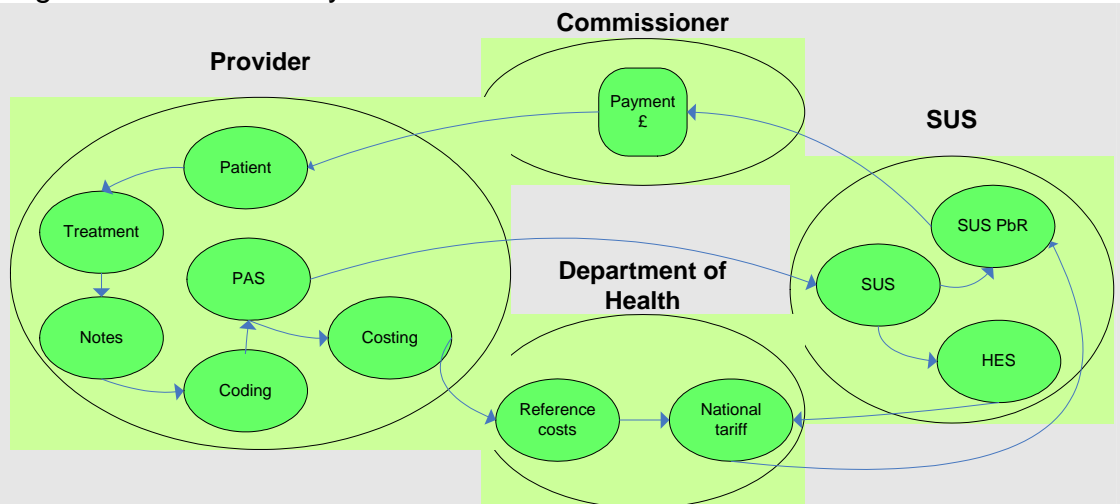
4. PbR covers the majority of acute services provided in hospitals, with tariffs covering admitted patient care, attendances and some procedures in outpatients, and A&E attendances. The tariff for admitted patient care is set at spell level. A spell is the period from admission to discharge within a single provider for a single patient. An admission is when a consultant, nurse or midwife assumes responsibility for care of a patient following a decision to admit. A discharge is when a patient's stay in a provider is complete.
5. Whilst admitted, a patient may see more than one consultant during a spell of care. These are called finished consultant episodes (FCEs). The vast majority of patient spells have only one FCE in them, some have two and there are a small number with three or more. This distinction between spell and FCE is important in PbR and we shall return to it later.
6. Admitted patient care includes different kinds of admissions:
 - (a) day cases, where the patient's admission is elective (planned) and the patient is planned to be, and is, discharged on the same day
 - (b) ordinary elective, where the patient's admission is again planned but the intention is to keep the patient in hospital over night
 - (c) non-elective, where the patient's admission is not planned, including emergency admissions and admissions for maternity, births, and non-emergency patient transfers.
7. Some admitted patient care does not have a tariff. For example, regular day or night admissions, or critical care during a spell. The pricing of this activity is for local agreement between commissioners and providers.
8. The admitted patient care tariff does not cover services before admission or after discharge. For example, an A&E attendance before admission or a series of outpatient attendances following surgery are reimbursed with separate tariffs.

Coding

9. When a patient is discharged from hospital, a clinical coder translates the patient's notes into codes which describe information about the patient's diagnoses and care in a standard format. These codes use two classification systems: ICD-10 for diagnoses and OPCS-4 for interventions.
10. The coder records the diagnoses and intervention codes on the hospital's local system, usually a Patient Administration System (PAS), together with other information about the patient such as age and dates of admission and discharge.

- Providers submit an extract from their PAS, in a standard format called Commissioning Datasets (CDS), to the Secondary Uses Service (SUS). SUS is essentially a large national database of activity. Figure 4 provides more detail on the information systems which support PbR.

Figure 4: Information systems and PbR



Patient administration systems

Patient administration systems (PAS) are hospital computer systems that record information about patients. The type of system used varies from hospital to hospital.

Commissioning Datasets

Commissioning Datasets (CDS) contain data on hospital activity that support PbR payments and are managed by the National Datasets Service. Changes to the CDS have a wide impact. They need to be assured by the Information Standards Board (ISB) for Health and Social Care and mandated via the issuing of an Information Standards Notice (ISN).

NHS Data Model and Dictionary

CDS are supported by the NHS Data Model and Dictionary, which gives common definitions and guidance to support the sharing, exchange and comparison of information across the NHS. The NHS Data Model and Dictionary defines some of the fundamental terms used in PbR. For example, to find a definition for a day case, go to <http://www.datadictionary.nhs.uk/>. Click on All Items Index (A-Z). Click on P and then Patient Classification (Attribute). This defines a day case admission as:

“A PATIENT admitted electively during the course of a day with the intention of receiving care who does not require the use of a Hospital Bed overnight and who returns home as scheduled. If this original intention is not fulfilled and the PATIENT stays overnight, such a PATIENT should be counted as an ordinary admission.”

Secondary Uses Service

Patient information in PAS supports direct clinical care. This information has other uses and is collected via the CDS and held in the Secondary Uses Service (SUS). SUS is the single source of comprehensive data to enable a range of reporting and analysis. SUS provides extracts to support reconciliation of actual activity against planned activity in contracts, and an online service for commissioners and providers.

Hospital Episode Statistics

Hospital Episode Statistics (HES) is a data warehouse containing details of all admissions to NHS hospitals in England. HES comprises record-level patient data collected by SUS. It contains admitted patient care data from 1989 onwards, with more than 12 million new records added each year, and outpatient attendance data from 2003 onwards, with more than 40 million new records added each year. HES data are used in tariff development, in particular to convert FCEs to spells, which we discuss in [Chapter 3](#).

Grouping

12. With some 28,000 codes used to describe interventions and diagnoses, paying at this level would clearly be unworkable. So a currency is needed to collate these interventions and diagnoses into common groupings to enable tariffs to be set at a sensible and workable level. The currency for admitted patient care is HRGs, the latest version of which is HRG4. HRGs are clinically meaningful groups of diagnoses and interventions that consume similar levels of NHS resources.
13. HRGs are maintained by the Casemix Service at the NHS Information Centre, which also produces grouper software to enable ICD-10 and OPCS-4 codes to be assigned to HRGs. The same grouping logic is included in SUS.

Assigning a tariff

14. In 2010-11 there are tariffs for over 1,000 HRGs. Tariff prices have traditionally been based on the average cost of services reported by NHS providers in the annual reference costs collection. The introduction of best practice tariffs in 2010-11, and a commitment to expand them in future years, will see tariffs increasingly determined by best clinical practice rather than average cost.
15. HRGs provide a currency for payment for the average patient. Some patient's care will vary a great deal from the average, for example because of an unusually short or long stay in hospital, or because of the need for specialised and therefore more expensive care. Therefore, adjustments are sometimes applied to the tariffs, including short stay emergency adjustments, long stay payments, and specialised service top-ups. Some best practice tariffs also offer additional payments.
16. The tariff, together with any adjustments, received by the provider is multiplied by a nationally determined market forces factor (MFF) unique to each organisation to reflect the fact that it is more expensive to provide services in some parts of the country than in others.
17. Provider income under PbR can thus be represented as follows:

$$\text{Provider income} = \text{activity} \times \text{price} \times \text{MFF}$$

Payment

18. NHS standard contracts for acute, community, mental health and other services are mandated legal documents published by DH that commissioners must use when contracting for healthcare services. Included within the contract are activity plans that set down the amount of work to be done, based on HRGs, and the price to be paid, based on the national tariff (Figure 5). Commissioners and providers agree an annual contract value, paid in equal twelfths each month.

Figure 5: Extract from activity plan²

Year	2010/11	Provider name		PCT name	
Type of activity	Elective PbR spells	Provider code		PCT code	

Code	Specialty / Treatment Function / HRG / HRG chapter / other unit of activity / Currency	Apr-10	Total	PBR/Local Tariff	Revenue, April 2010	Revenue, total 2010/11
	[locally-specified line, e.g. HRG or TFC]		0		£0	£0
	[locally-specified line, e.g. HRG or TFC]		0		£0	£0
	[locally-specified line, e.g. HRG or TFC]		0		£0	£0
	[locally-specified line, e.g. HRG or TFC]		0		£0	£0



19. SUS, having grouped the patient data to an HRG based on clinical codes, assigns the relevant tariff and applies any pricing adjustments. Commissioners and providers receive reports from SUS, which they use to compare and financially adjust for the difference between the actual value of activity and the planned contract value. This could be an additional payment from the commissioner to the provider if actual is greater than plan, or a refund from the provider to the commissioner if it is less.

Case studies

20. We conclude this chapter with two case studies using two fictitious patients, whom we shall call Mrs Smith and Mr Jones, to follow how their hospitals are paid for their care (Figure 6). For simplicity, we concentrate on care whilst admitted to hospital and ignore care received in other settings like outpatients or A&E.
21. Mrs Smith is 30 years old and pregnant with twins. Lambeth PCT is the responsible commissioner for Mrs Smith's care, because she is registered with a GP practice there. Mrs Smith is booked into Guy's and St Thomas' NHS Foundation Trust for an elective caesarean in April 2010 due to complications during pregnancy
22. Mr Jones is 80 years old and fractures his left hip after a fall at home. He is taken to Leeds Teaching Hospitals NHS Trust, where he is admitted to hospital via A&E. His responsible commissioner is Leeds PCT.

² The plan profiles the whole financial year.

Figure 6: PbR case studies

	Mrs Smith	Mr Jones
The patients³		
Treatment	Elective caesarean during a 10 day spell in April 2010	Emergency admission for fragility hip fracture in April 2010
Code	<p>ICD-10 codes are twin pregnancy (O300) and Z37.2 (twin both live born)</p> <p>OPCS-4 code is elective lower uterine segment caesarean delivery (R17.2)</p> <p>Submitted to SUS in May 2010</p>	<p>ICD-10 code is fractured neck of femur (S7200) and W19.0 (unspecified fall at home)</p> <p>OPCS-4 code is primary total prosthetic replacement of hip joint using cement (W37.1) and Z94.3 (left sided operation)</p> <p>Submitted to SUS in May 2010</p>
Group	HRG payment currency is caesarean section with complications (NZ03C)	HRG payment currency is major hip procedures category 1 for trauma without complications and comorbidities (HA12C)
Tariff	Elective spell tariff is £3,311	Base tariff is £7,918
Tariff adjustments	The expected length of stay (trim point) for NZ03C is 8 days. A long stay payment of	There is a best practice tariff for fragility hip fracture which applies to HA12C and some other

³ Images from the NHS Photo Library. The models (not their real names) have consented to make their images available for DH and NHS publications.

	£385 is payable for each day over the trim point, in this case 2 days.	HRGs. An additional best practice payment of £445 is payable where care complies with clinical characteristics of best practice. In this case, surgery within 36 hours of arrival in A&E, under expert care of a consultant geriatrician.
MFF	Guy's and St Thomas' has an MFF payment index of 1.24058	Leeds Teaching's MFF is 1.0541
Reimbursement	Total payment is: (£3,311 + 2 x £385) x 1.24058 = £5,063 SUS extract in July 2010 informs monthly reconciliation between Lambeth PCT and Guy's and St Thomas'	Total payment is: (£7,918 + £445) x 1.0541 = £8,815 SUS extract in July 2010 informs monthly reconciliation between Leeds PCT and Leeds Teaching

Find out more

PbR in 2010-11

<http://www.dh.gov.uk/pbr>

Commissioning datasets

<http://www.ic.nhs.uk/services/datasets/dataset-list/cds>

NHS Data Model and Dictionary

<http://www.datadictionary.nhs.uk>

Secondary Uses Service

<http://www.connectingforhealth.nhs.uk/systemsandservices/sus>

Hospital Episode Statistics

<http://www.hesonline.org.uk>

NHS standard contracts

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_111203

Chapter 2 Building blocks

Summary

- The three building blocks of PbR are classification, currency and costing
- Classification systems - OPCS-4 for interventions and ICD-10 for diagnoses - capture information from patient records
- A currency is the unit of healthcare for which a payment is made
- HRGs are the currency for admitted patient care and are groupings of clinically similar treatments which use common levels of healthcare resource
- HRG4 has about 1,400 groupings
- Grouping software assigns OPCS-4 and ICD-10 codes in the patient record to an HRG
- Tariffs are calculated for HRGs based on the average costs of services submitted by NHS organisations in annual NHS reference costs
- The reference cost index (RCI) is a measure of the relative efficiency of NHS providers
- Patient level information and costing systems (PLICS) can identify and record the costs of individual patients

Introduction

23. PbR is a data-driven system that has its foundation in patient-level data. To operate effectively, PbR needs three building blocks (Figure 7):
- (a) a classification system – to capture information about patient diagnoses and healthcare interventions in a standard format
 - (b) a currency – the codes in the primary classification systems above are too numerous to form a practical basis for payment. They are therefore grouped into currencies, the unit of healthcare for which payment is made
 - (c) costing information – once we have a currency, we then need to attach costs to that currency and assign a price. Where the price is set nationally, it is called the tariff.

Figure 7: Building blocks of PbR



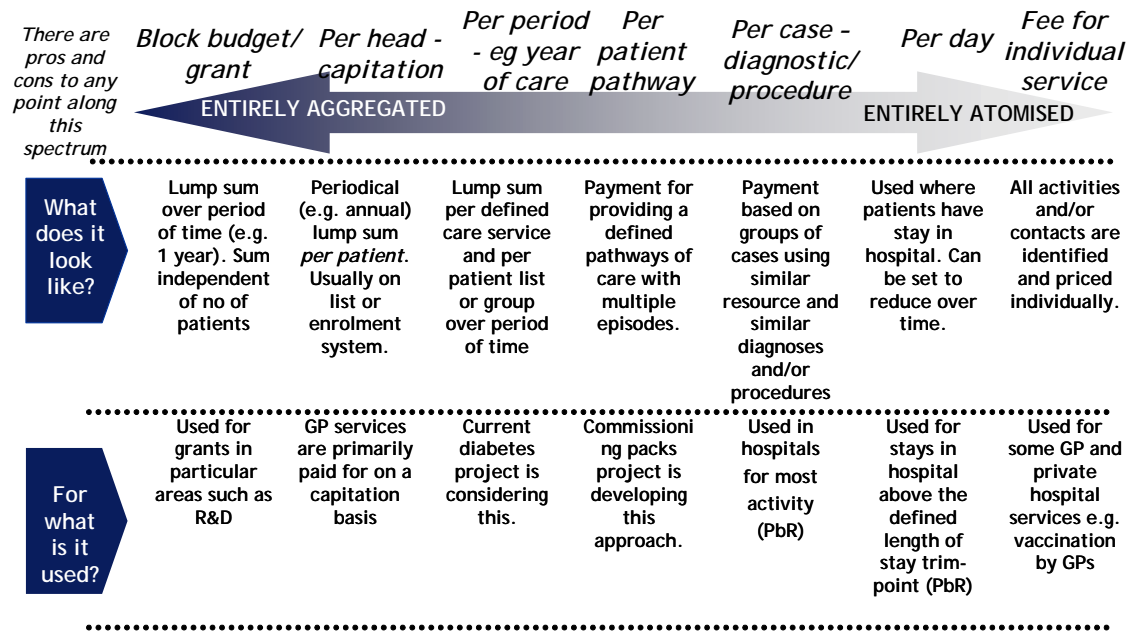
Classification

24. Clinical classification systems are used to describe information from patient records using standardised definitions and nomenclature. This is necessary for creating clinical data in a format suitable for statistical and other analytical purposes such as epidemiology, benchmarking and costing. PbR relies on two standard classifications in order to process clinical data on acute care: OPCS-4 and ICD-10.
25. OPCS-4, which is an abbreviation of the Office of Population, Censuses and Surveys Classification of Surgical Operations and Interventions (4th revision), translates operations, interventions and interventions carried out on a patient during a spell of care into alphanumeric code. Previously produced by the Office of Population Censuses and Surveys, ownership and responsibility for maintaining OPCS-4 now lies with NHS Connecting for Health. The current version, OPCS-4.5, was released in April 2009 and contains about 9,000 codes. We saw some examples earlier:
 - (a) R17.2 - elective lower uterine segment caesarean delivery
 - (b) W37.1 - primary total prosthetic replacement of hip joint using cement.
26. The International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) is a coding of diseases and signs, symptoms, abnormal findings, complaints, social circumstances and external causes of injury or diseases, as classified by the World Health Organization (WHO). The version used in England contains about 19,000 codes; we saw some examples earlier:
 - (a) O300 - twin pregnancy
 - (b) Z37.2 - twins, both live born
 - (c) S7200 - fractured neck of femur
 - (d) W19.0 – unspecified fall at home
27. Clinical coders translate patient notes into OPCS-4 and ICD-10 codes. They are health care professionals who require a knowledge of medical science and terminology, and the ability to make decisions about the appropriate codes to assign based on the clinical documentation. NHS Connecting for Health organises their specialist training.

Currency

28. The term currency refers to the units of healthcare for which a payment is made and can take a variety of forms (Figure 8).

Figure 8: Currency options



29. This chapter focuses on HRGs, which are the currency for admitted patient care, outpatient procedures and A&E attendances. We will encounter other currencies in [Chapter 4](#).

Healthcare resource groups

30. HRGs are the chosen currency for acute healthcare in England. As we noted earlier, with some 28,000 codes used to describe interventions and diagnoses, paying at this level would be unworkable. So a currency is needed to collate these interventions and diagnoses into common groupings to enable tariffs to be set at a sensible and workable level. Such a currency also needs to be clinically meaningful. It is clinicians after all who dictate patient pathways and take the decisions that actually consume resources. HRGs are therefore standard groupings of clinically similar treatments which use similar levels of healthcare resource. The term casemix is also often applied to HRGs, to reflect a system whereby the complexity (mix) of the care provided to a patient (cases) is reflected in an aggregate secondary healthcare classification.
31. HRGs were introduced by the then National Casemix Office (NCMO)⁴ in 1991 as the NHS equivalent of the Diagnosis Related Groups (DRGs) pioneered in the USA, and adapted to reflect UK medical practice. They were first used for benchmarking, and have provided the currency for reference costs since 1997 and for the national tariff since 2003 (Figure 9).

⁴ the NCMO was absorbed into the NHS Information Authority in 1999 which in turn was absorbed into the NHS Information Centre in 2005.

Figure 9: History of HRGs

Year	Version	Purpose
1991	HRG v1	English DRGs
1994	HRG v2	Benchmarking
1997	HRG v3	1997-98 reference costs
2003	HRG v3.5	2003-04 national tariff
2008	HRG4	2009-10 national tariff

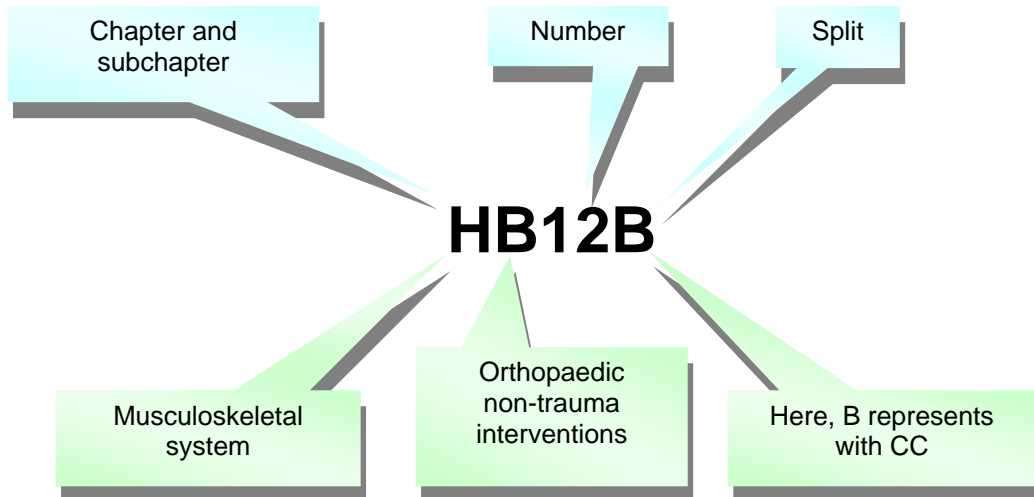
32. In 2006, the NHS Information Centre introduced HRG4, which we have used to collect reference costs since 2006-07 and to inform tariff payments since 2009-10. HRG4 has been developed with significant clinical input. 33 Expert Working Groups and four Expert Reference Panels, involving approximately 280 clinicians representing over 40 Royal Colleges or societies, in addition to managers and other healthcare professionals, were involved in developing HRG4. HRG design remains under constant review for changes in clinical practice.
33. HRG4 is a major revision of its predecessor, HRG v3.5, and the first version of the currency to be developed in the knowledge that it would be used to support payment. It extends the number of groupings from 650 to over 1,400, arranged in 21 chapters each covering a body system (Figure 10).

Figure 10: HRG chapters

HRG Chapter	HRG Chapter Description
A	Nervous System
B	Eyes and Periorbita
C	Mouth Head Neck and Ears
D	Respiratory System
E	Cardiac Surgery and Primary Cardiac Conditions
F	Digestive System
G	Hepatobiliary and Pancreatic System
H	Musculoskeletal System
J	Skin, Breast and Burns
K	Endocrine and Metabolic System
L	Urinary Tract and Male Reproductive System
M	Female Reproductive System and Assisted Reproduction
N	Obstetrics
P	Diseases of Childhood and Neonates
Q	Vascular System
R	Diagnostic Imaging and Interventional Radiology
S	Haematology, Chemotherapy, Radiotherapy and Specialist Palliative Care
U	Undefined Groups
V	Multiple Trauma, Emergency Medicine and Rehabilitation
W	Immunology, Infectious Diseases and other contacts with Health Services
X	Critical Care and High Cost Drugs
Z	Unbundled

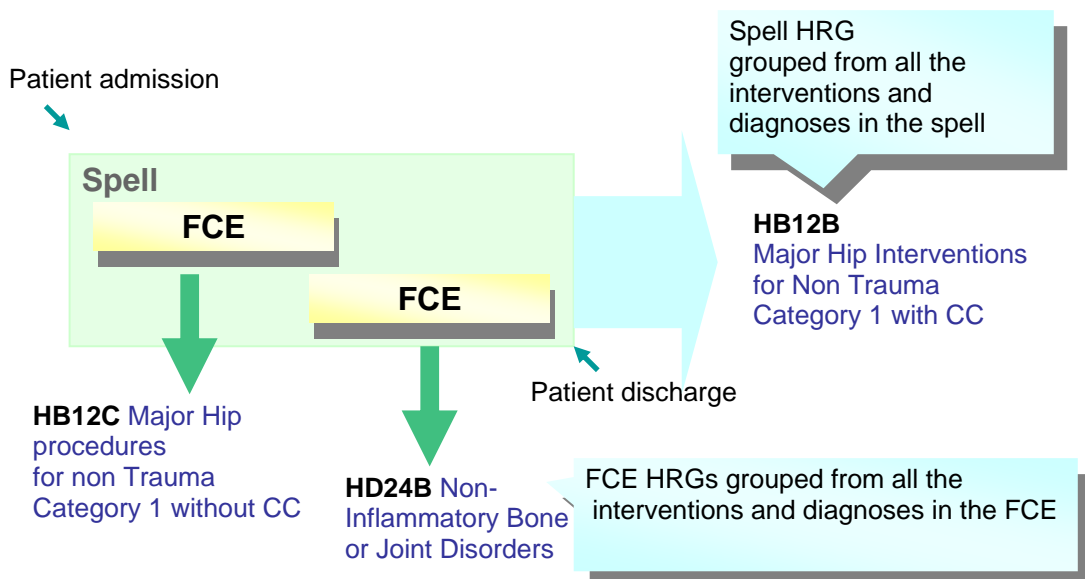
34. Figure 11 illustrates the format of the 5 character HRG4 code where character:
- (a) 1 represents the chapter
 - (b) 2 represents the subchapter
 - (c) 3 and 4 represent the intervention or diagnosis
 - (d) 5 represents the split for age, complications and comorbidities (CC) or length of stay (Z is used where there is no split).

Figure 11: An HRG code



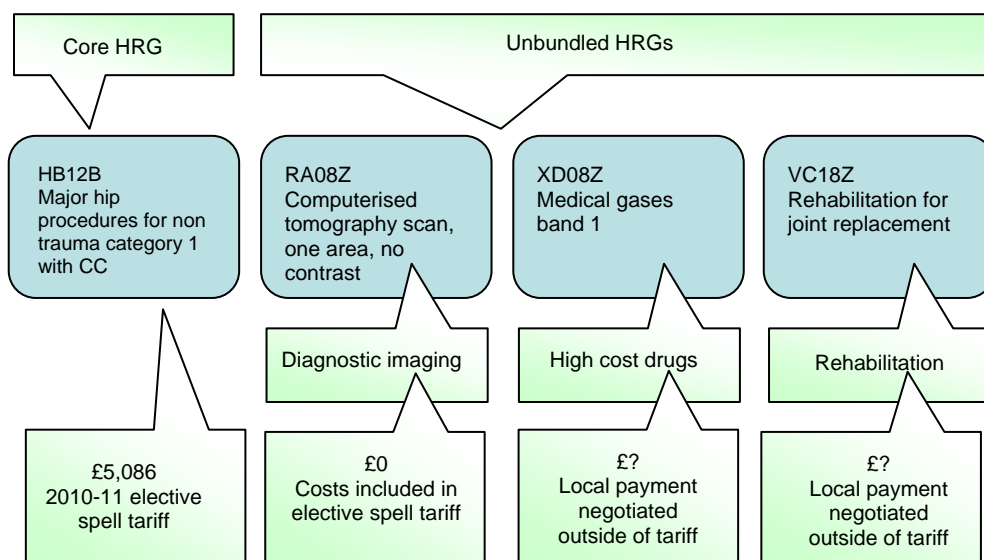
35. HRG4 is spell based, unlike its predecessors which were FCE based. It is possible to group each individual FCE to a HRG but a feature of HRG4 is that the overall spell groups to a HRG based on the coding in all the FCEs within the spell (Figure 12).

Figure 12: Spell and FCE HRGs



36. A spell is a more robust activity measure than a FCE. FCEs can be influenced (e.g. by transferring patients between consultants) in ways that spells cannot.
37. HRG4 is more detailed than its predecessor, and therefore better able to differentiate between routine and complex treatments, with more splits recognising:
 - (a) comorbidities – additional conditions that the patient might come into hospital with that increase the complexity of the primary intervention
 - (b) complications – events during treatment that again increase complexity
 - (c) age – which can have a major impact on length of stay and the costs of an intervention. Many splits in HRG4 are child related (18 or under), recognising that treating children is often more resource intensive than the same procedure carried out on an adult
 - (d) length of stay.
38. Previous versions of HRGs were designed to reflect admitted patient care. HRG4 is designed to support the delivery of services in other settings, for example outpatients. In other words, it is setting independent.
39. HRG4 introduces unbundled HRGs, making it possible to separately report, cost and remunerate the different components within a care pathway. This provides a mechanism for moving parts of a care pathway – diagnostic imaging or rehabilitation for instance – away from the traditional hospital setting.
40. There are unbundled HRGs for:
 - (a) chemotherapy
 - (b) critical care
 - (c) diagnostic imaging
 - (d) high cost drugs
 - (e) radiotherapy
 - (f) rehabilitation
 - (g) renal dialysis
 - (h) specialist palliative care
41. Unbundled HRGs, in addition to a core HRG, may be generated for the same spell of care (Figure 13).

Figure 13: Core HRG and unbundled HRGs



42. There is an important distinction between currency structure and funding policy, which means that unbundled HRGs will not necessarily attract a tariff. For example, in 2010-11 the costs of diagnostic imaging HRGs are included, or rebundled, into core HRGs for admitted patient care and outpatient attendances. The unbundled HRGs act as a marker that the activity has taken place, but do not receive a separate tariff. Whereas unbundled HRGs such as critical care are excluded from the scope of the tariff and are therefore subject to local pricing.

Grouping

43. Grouping describes the process by which OPCS-4 and ICD-10 codes are assigned to an HRG using software called a grouper.
44. The NHS Information Centre release two groupers each year to the NHS for general use: the Local Payment Grouper and the Reference Cost Grouper. Providers use the Local Payment Grouper to plan, benchmark and send results to commissioners as part of their request for payment, and the Reference Cost Grouper to group their activity for submitting costs annually. Commissioners can also use the grouper if they have access to the raw data.
45. The grouper employs grouping logic to assign data to an HRG. It identifies the FCE HRGs, but then goes back to the original classification codes to determine the spell HRG. For the purposes of grouping, interventions and diagnoses have a hierarchy. If any significant interventions take place, as determined by the hierarchy, the HRG generated will be based on intervention. However, if no significant interventions take place, for example for a medical admission, the HRG will be based on diagnosis.

46. Some HRG4 chapters have different logic to other chapters. In the musculoskeletal chapter, if an intervention is performed in conjunction with another intervention, from a specified list, the HRG that is generated will be a higher HRG in resource terms than would have been generated for the first intervention alone. For example, a minor knee procedure with a minor foot procedure would generate an intermediate knee procedure HRG.
47. The NHS Information Centre produce a Microsoft Excel workbook called the Code to Group, which enables users of the HRG4 groupers to understand the logic used. [Annex D](#) gives a worked example.
48. They also produce other useful documentation including HRG chapter summaries, HRG chapter listings, and the table of coding equivalence (TOCE). The TOCE details the mapping used within the grouper to map new OPCS codes to older OPCS codes. In time, the OPCS codes within the TOCE are removed, as the newer OPCS codes are incorporated into the grouper design.
49. The final Local Payment Grouper design is incorporated into SUS. SUS also applies the tariff and tariff adjustments, which the Local Payment Grouper does not.

Costing

50. The development and implementation of a national tariff requires robust, reliable costing information. To date, we have based the national tariff on the average cost of services submitted by NHS organisations in the annual NHS reference costs collection.

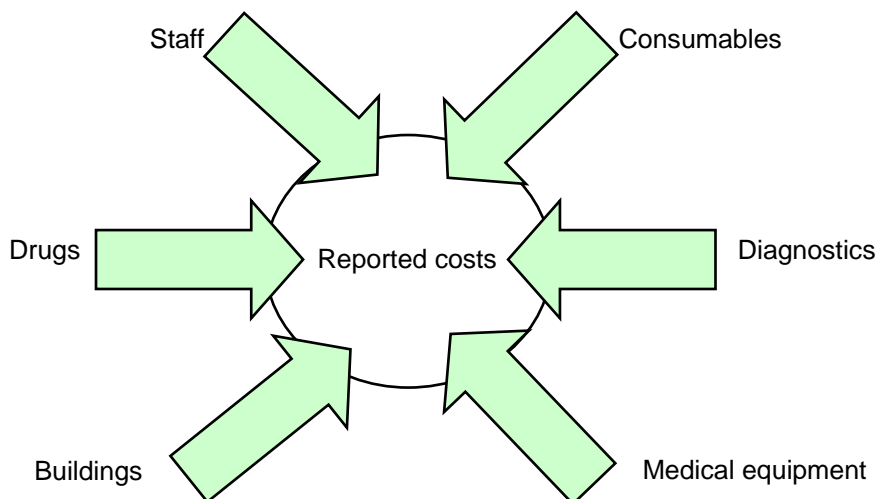
Reference costs

51. Reference costs are the average unit cost to the NHS of providing a defined service in a given financial year. We have collected them every year since 1997-98 from all NHS providers of health services to NHS patients in England. FCE and bed day activity levels are also included in the collection, as is activity commissioned from or sub-contracted to independent sector providers.
52. Alongside the reference cost guidance, we publish the NHS Costing Manual. This sets out the principles and practice of costing and is designed to ensure consistency across all NHS organisations. The Costing Manual states that costs and income have to be:
 - (a) calculated on a full absorption basis (Figure 14). This means that the full cost of each activity is identified and all costs are allocated somewhere⁵

⁵ Income streams, e.g. teaching, which are not related to PCT payments for clinical activity are netted off.

- (b) charged directly to the relevant activity where possible. Costing involves a distinction between direct costs (e.g. doctors, nurses, drugs) that can be easily identified with an activity, and indirect costs (e.g. bed linen) and overheads (e.g. heating, finance, human resources) that still contribute to the cost of an activity but in a less clear cut way. A consultant obstetrician's costs will be charged to obstetrics. Where direct charging is not possible the manual sets out minimum standard methods of allocation. Generally, allocations tend to be used when dealing with indirect costs that relate to a range of activities, e.g. ward costs spread across a range of specialties in proportion to the bed days used by each. Allocations are used most commonly for overheads that relate to the overall running of the organisation. These costs must still be absorbed by activities but are charged out on a more general basis
- (c) matched with the services that generate them to avoid cross subsidisation.

Figure 14: Full absorption costing



53. HRG costing uses a mixture of:

- (a) top down costing – where cost pools (used to collect indirect and overhead costs) are allocated to HRGs using the total cost of that cost pool weighted for each HRG based upon the best available data
- (b) bottom up costing – which builds up the costs of an HRG from the bottom up where the actual costs are known, e.g. prosthetics in hip replacement HRGs.

54. Reference costs are collected at FCE level. This means we have to convert them to spell level when we calculate the national tariff. In addition to underpinning the calculation of the national tariff, reference costs are used to:

- (a) inform local prices for activity outside the scope of PbR
- (b) measure the cost of providing treatment across a range of services

- (c) determine NHS providers' relative efficiency through the calculation of a reference cost index
 - (d) support programme budgeting, which is the analysis of expenditure in healthcare programmes, such as cancer, mental health and cardiovascular diseases
 - (e) support academic research
 - (f) help calculate public service output, undertaken by the Office for National Statistics (ONS).
55. In August 2010, the DH in partnership with the Audit Commission, published the results of a review into the quality and uses of reference costs. This included an action plan aimed at improving the quality of reference cost returns in the future.

National schedule of reference costs

56. Reference costs are the richest source of financial data available about the NHS, enabling detailed comparisons between NHS organisations about the cost of treating patients. 2008-09 reference costs were collected from over 400 NHS organisations in England and covered £48 billion of NHS expenditure. They are broader in scope and cover more services than the national tariff, which covered about £25 billion in 2008-09.
57. We publish this information in the national schedule of reference costs (NSRC). There are five schedules:
- (a) NSRC1 – NHS trusts and FTs
 - (b) NSRC2 – PCTs
 - (c) NSRC3 – primary medical services plus (PMS+) providers
 - (d) NSRC4 – NHS Trusts, FTs and PCTs combined
 - (e) NSRC5 – NHS activity contracted out to or commissioned from independent sector providers.
58. Organisation level data can also be downloaded for 2008-09 reference costs.
59. The NSRC can be used by organisations for comparative purposes. We would also encourage readers who are interested in the cost to the NHS of individual treatments to use the NSRC.

Patient-level information and costing systems

60. Some NHS providers have systems that can identify and record the costs of individual patients. These are called patient level information and costing systems (PLICS), and are becoming increasingly common in the NHS. Once costs have been identified at individual patient level, they can still be aggregated to HRG level.

Data assurance framework

61. The PbR data assurance framework supports the improvement of data quality in the NHS and is managed by the Audit Commission. Its main feature is a clinical coding audit of admitted patient care and outpatient data.
62. In 2008-09, the Audit Commission audited approximately 49,000 episodes in all acute NHS trusts in England, equating to about £66 million expenditure under PbR. The gross financial error (from treating the monetary value of all errors as a positive value and adding them together) was £2.6 million (3.9% of the sample). In most cases the net financial impact of the errors was close to zero, suggesting there is little evidence of systematic or deliberate upcoding. The most common factor found to contribute to errors was the quality of the source documentation from which the coding data were extracted.
63. The Audit Commission has also developed an online tool called the National Benchmarker which compares acute hospital activity data, clinical coding and PbR related data with other organisations to flag up issues on matters such as healthcare management, payments or data collection.

Find out more

OPSC-4

<http://www.connectingforhealth.nhs.uk/systemsandservices/data/clinicalcoding/codingstandards/opcs4>

ICD-10

<http://www.who.int/classifications/icd/en/index.html>

HRG4

<http://www.ic.nhs.uk/services/the-casemix-service>

Grouping, including the latest Local Payment Groupers and Reference Cost Groupers, Code to Group workbooks, HRG chapter summaries and HRG chapter listings

<http://www.ic.nhs.uk/services/the-casemix-service/using-this-service/reference/downloads>

Costing, including NHS reference costs, the NHS costing manual, PLICS, national schedules of reference costs, RCIs and the review of reference costs:

<http://www.dh.gov.uk/nhscosting>

PbR data assurance framework

<http://www.audit-commission.gov.uk/health/audit/paymentbyresults/assuranceframework>

National Benchmarker

<http://www.audit-commission.gov.uk/health/audit/paymentbyresults/benchmarkandportal>

Chapter 3: Producing the tariff

Summary

- Producing the tariff requires decisions about its scope (the range of services covered) and structure (the design that will create the right incentives and support particular policy goals)
- We take account of views from the NHS and other partners on scope and structure, and test the tariff before publication
- The tariff has traditionally been calculated on the mean unit cost (or simple average) of reference costs, but there is an increasing emphasis on best practice tariffs that have been structured and priced to encourage high quality care
- The first best practice tariffs were released in 2010-11 for cataracts, cholecystectomy, fragility hip fracture and stroke
- Tariff adjustments are used for long or short stays of care and for specialised services
- The market forces factor is an index which recognises unavoidable cost differences faced by each organisation in providing health care
- A tariff uplift recognises the financial pressures in the NHS and includes an efficiency requirement

Introduction

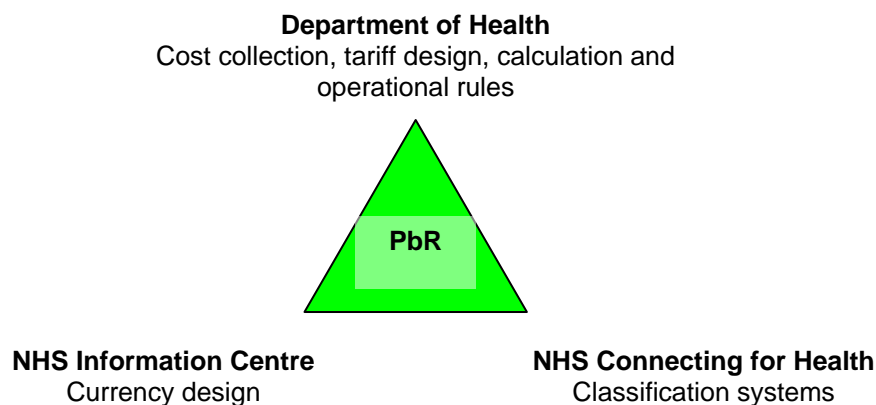
64. Producing the tariff is quite a long and complex process. Before it can begin, all the building blocks described in [Chapter 2](#) need to be in place: classifications and currencies developed, and costs collected. Then advice needs to be sought from governance and advisory groups, draft prices calculated and quality assured, and guidance written to support the implementation of final prices. Two words are used often in the context of the tariff: scope and structure.
65. By scope we mean the range of services covered, currently confined to acute care in hospitals, and so here we focus on production of the mandatory tariffs for admitted patient care, outpatients and A&E. In [Chapter 4](#) we describe progress on expanding PbR currencies and tariffs into new services.
66. By structure we mean the design of the tariff to create the right incentives and achieve particular policy goals, and we devote much of this Chapter to exploring some of the key themes that have informed the tariff structure in recent years. Since its introduction in 2003-04, the tariff has been calculated on the mean unit costs (or simple average) of NHS providers collected annually in reference costs. The logic is that organisations with costs above the average will make efficiency savings to reduce their costs in line with the tariff, which in turn will drive down the tariff in future years. We describe the tariff calculation later, but turning retrospective costs into prospective prices is far more than an exercise in number crunching. The tariff also has to recognise care that

is significantly different from the average of reference costs, create the right incentives to treat patients in the most efficient setting and to provide the highest quality care, and support particular policy goals or business rules (e.g. a reduction in avoidable emergency admissions). Increasingly, tariffs are being informed by clinical best practice rather than average cost. The tariff is accompanied by detailed operational guidance that is as important as the prices themselves.

Governance

67. We manage the development and implementation of PbR policy through a number of governance and advisory groups. The four main groups are the:
- (a) PbR Programme Board - monitors progress against plans to ensure DH, the NHS Information Centre and NHS Connecting for Health deliver the elements of the PbR programme for which they are responsible (Figure 15)
 - (b) External Advisory Group (EAG) - gives policy advice, with members drawn from NHS providers, commissioners, Monitor, Care Quality Commission, Audit Commission, staff groups, the independent sector and academics
 - (c) Clinical Advisory Panel (CAP) - gives clinical advice, with members from the medical, nursing and allied health professions
 - (d) Technical Working Group (TWG) - gives technical advice on the feasibility of implementation. Its membership includes NHS people with expertise in data and information systems.

Figure 15: PbR is a joint endeavour



68. There are also a number of other PbR groups covering mental health, children's issues and other areas.
69. The NHS Information Centre also have several groups to support the creation and ongoing development of HRG4, including:

- (a) Expert Working Groups (EWGs) - HRG chapter specific, NHS membership, and clinical leads and chairs
- (b) Expert Reference Panels (ERPs) – look at the design of HRGs across chapters from the perspective of specific patient groups. Four ERPs were convened during the development of HRG4 to cover children and paediatrics, chronic illness, specialised services and cancer
- (c) Steering Groups - advise on which high cost drugs and devices should be excluded from the tariff.

Scope

70. The mandatory national tariff is payable by PCTs for day cases, ordinary elective and non-elective admitted patient care, outpatient attendances and some procedures, and A&E attendances carried out by NHS trusts, NHS foundation trusts or independent sector providers.

Exclusions

71. Some activity is excluded from PbR and remains subject to local payment rather than mandatory tariff. There are various reasons for this:
- (a) services outside the scope of reference costs are, by default outside the scope of PbR
 - (b) some services either have not yet had currencies developed for them, or do have currencies but the costs associated with them are not considered robust
 - (c) some drugs are typically specialist, and their use concentrated in a relatively small number of centres rather than evenly spread across all providers that carry out activity in the relevant HRGs. They would not be fairly reimbursed if funded through the tariff
 - (d) some medical devices represent a high and disproportionate cost relative to the cost covered under the relevant HRG.
72. Each year, alongside the tariff, we publish an exclusions list which covers activity, drugs and devices.

Non-mandatory currencies and prices

73. In addition to mandatory tariffs which must be used by all commissioners when commissioning services, we also publish non-mandatory currencies and prices. Examples from 2010-11 include for non face to face outpatient contacts and hearing aid fitting and maintenance. Non-mandatory currencies can be used as a contracting unit and the prices can be used as a guide or starting point for local negotiation. We sometimes use non-mandatory prices to send a signal to the service that we anticipate being able to bring the service within the mandatory list in

due course. Non-mandatory prices were referred to as indicative tariffs before 2009-10.

Flexibilities

74. PbR is meant to be a tool, not a straitjacket. It should never be seen as a barrier to providing the best care for patients. Flexibilities allow for deviation from tariff rules where the patient and the NHS benefits. For example, innovation payments give commissioners the flexibility to make an additional payment for a new device, drug or technology that gives better care than is provided for in the tariff. The operational guidance published alongside the tariff each year lists the range of flexibilities which are available and the principles that govern their use.

Structure

Paying for elective care

75. Over a period of many years, and in most comparative health care systems, one of the main ways to increase the efficiency of the acute sector and the quality of the patient experience has been to drive down length of stay. This has been made possible through changes in clinical practice (e.g. developments in anaesthetics and less invasive treatments) as well as changing models of care and design of services (e.g. admitting patients on the day of surgery and developing day case suites). In the past, much of the focus has been on increasing the use of day case surgery and rates have increased over the years. More recently, the focus has been on the development of ambulatory care and moving care and treatments to other settings where possible, such as outpatient clinics.
76. The tariff for elective care, when first established in PbR, sought to support the desire to move activity into day case settings where appropriate by setting a price that was based on the average of ordinary elective and day case costs, weighted according to the proportion of activity in each (Figure 16). This meant that the price would reward providers that were achieving higher than average levels of day cases and under reward those providers whose day case rate were lower than the average.

Figure 16: Setting a combined day case and elective tariff

	Activity	Cost	
Day case	4,000	£	500
Ordinary elective	1,000	£	1,000
Combined tariff		£	600

77. HRG4 allows the capture of procedures in outpatients, which raises the possibility of setting tariffs to move care to this more cost efficient setting, where clinically appropriate.

Paying for non-elective care

78. Non-elective care is by its nature unplanned and, on average, more costly than elective care. Most, but not all non-elective care is a result of emergency admissions, though it also includes maternity admissions and hospital transfers. Although we have in the past consulted on a combined tariff for elective and non-elective admissions, using the same method as for the combined ordinary elective and day case tariff, the preference has always been for separate tariffs.
79. The trend has been for non-elective admissions to increase, and one way of managing this is through the tariff. For example, in 2010-11 we have a marginal rate emergency tariff set at 30% for increases, but not decreases, in emergency activity. The intention is to encourage closer working between providers and commissioners to support the shift of care out of hospital settings and keep the number of emergency admissions to a minimum.

Long stays

80. HRGs can only adjust for the casemix complexity of the average patient. Typically, any particular patient will cost slightly more or slightly less than the average, although overall the impact of most patients will average out. Some patients vary from the average by a large amount. This may be related to length of stay – which could be much longer or shorter than average – or it could be related to the provision of more complex care.
81. For patients who for clinical reasons remain in hospital beyond an expected length of stay, we allow an additional reimbursement to the tariff called a long stay payment (also sometimes referred to as an excess bed day payment). The long stay payment applies at a daily rate to all HRGs where the length of stay of the spell exceeds a trim point specific to the HRG⁶.
82. There are separate trim points for elective and non-elective admissions, although the price per day is the same. Usually, the elective trim point is shorter than the non-elective trim point.

Short stays

83. There is a reduced tariff for short stay emergency spells (less than two days) to prevent full payment for a short stay admission in an HRG where a longer length of stay would generally be expected. The reduced rate is related to the average length of stay for the HRG: the higher the average length of stay, the lower the short stay emergency tariff.

⁶ Technically, the trim point is defined as the upper quartile length of stay for the HRG plus 1.5 times the inter-quartile range of length of stay.

Specialised services

84. Some specialised services are not well catered for within the design of HRGs because they are low in volume or not well specified in terms of the underlying coding. This would not present a problem if all providers were delivering these services. However, where a provider undertakes an unusual balance of cases, that is to say the casemix is not within the average range, then reimbursement at national average levels may leave that provider with a surplus or a deficit. Specialist hospitals, which may not provide a full range of services can be vulnerable to this aspect of funding based on average pricing. International evidence from other countries operating casemix funding suggests that other commissioning or funding arrangements outside the tariff structure are necessary to ensure specialised services are fairly rewarded. Since 2005-06, we have used specialised service top-up payments.
85. The specialised services subject to a top-up are reviewed regularly and in 2010-11, children's and orthopaedics services receive top-ups. These are triggered when an ICD-10 or OPCS-4 code, from a list based on the latest editions of the Specialised Services National Definition Sets (SSNDS) produced by the National Commissioning Group (NCG), is present in the spell. The payments are based on a percentage of the tariff price, currently 78% for children's services and 30% for orthopaedic services.
86. For example, if Mr Jones from our [case studies](#) in Chapter 1 had received attention to total prosthetic replacement of hip joint (OPCS-4 code W39.4) following his fall, then because this code is present in the trigger list and ignoring for the purpose of this example that the spell would be grouped to a more resource intensive HRG, the base tariff price of £7,918 would be subject to a top-up of 30%, i.e. $£7,918 \times 1.3 = £10,293$.

Outpatients

87. We use treatment function codes (TFCs) in PbR to describe types of outpatient attendances. TFC is based on the main specialty code which is the speciality within which the consultant is recognised or contracted to the organisation. TFC records the service within which the patient is treated. TFCs are in effect sub-specialisations. In 2010-11 there are 49 TFCs which have a mandatory outpatient attendance tariff, representing the vast majority of outpatient activity. Figure 17 gives some examples.

Figure 17: Examples of TFCs

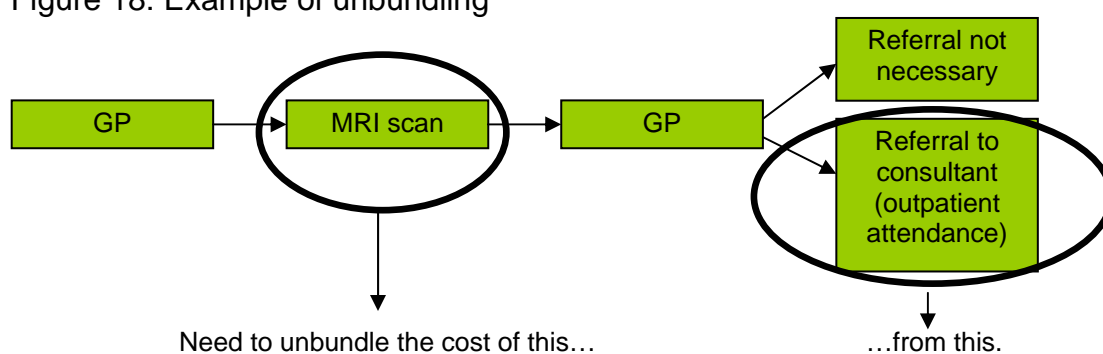
TFC	TFC label
110	Trauma and orthopaedics
501	Obstetrics
560	Midwife episodes

88. An outpatient attendance tariff is payable for a pre-booked appointment at a consultant-led clinic (the consultant may not be physically present but they remain clinically responsible)⁷. As with the admitted patient care tariff, we have aimed to provide the right incentives by publishing separate tariffs for:
- (a) first attendances that include some of the costs of follow up attendances to disincentivise unnecessary follow ups
 - (b) single-professional and multi-professional or multi-disciplinary attendances that recognise the benefit to the patient in seeing two or more healthcare professionals at the same time.
89. In a move towards tariffs that are setting independent, we have published mandatory tariffs for a limited number of outpatient procedure HRGs in recent years.

Unbundling

90. A typical care pathway consists of individual service elements such as diagnostic imaging, high cost drugs and rehabilitation. This raises the question of whether to separate these elements, so that they can be commissioned, priced and paid for separately. We call this unbundling.
91. Unbundling is useful where it supports changes to care pathways. PbR has sought to include prices for unbundled services from early on, although most have been non-mandatory, and HRG4 incorporates a number of unbundled service areas in its design. For example, Figure 18 illustrates the need to recognise in the tariff that diagnostic imaging is sometimes accessed directly from primary care to avoid the need for an outpatient attendance.

Figure 18: Example of unbundling



92. Excessive unbundling carries risks, such as inadvertently creating a fee-for-service system where every service is commissioned and billed for separately.

⁷ The exception is maternity services, where we have set the same price for consultant and midwife led activity.

Best practice tariffs

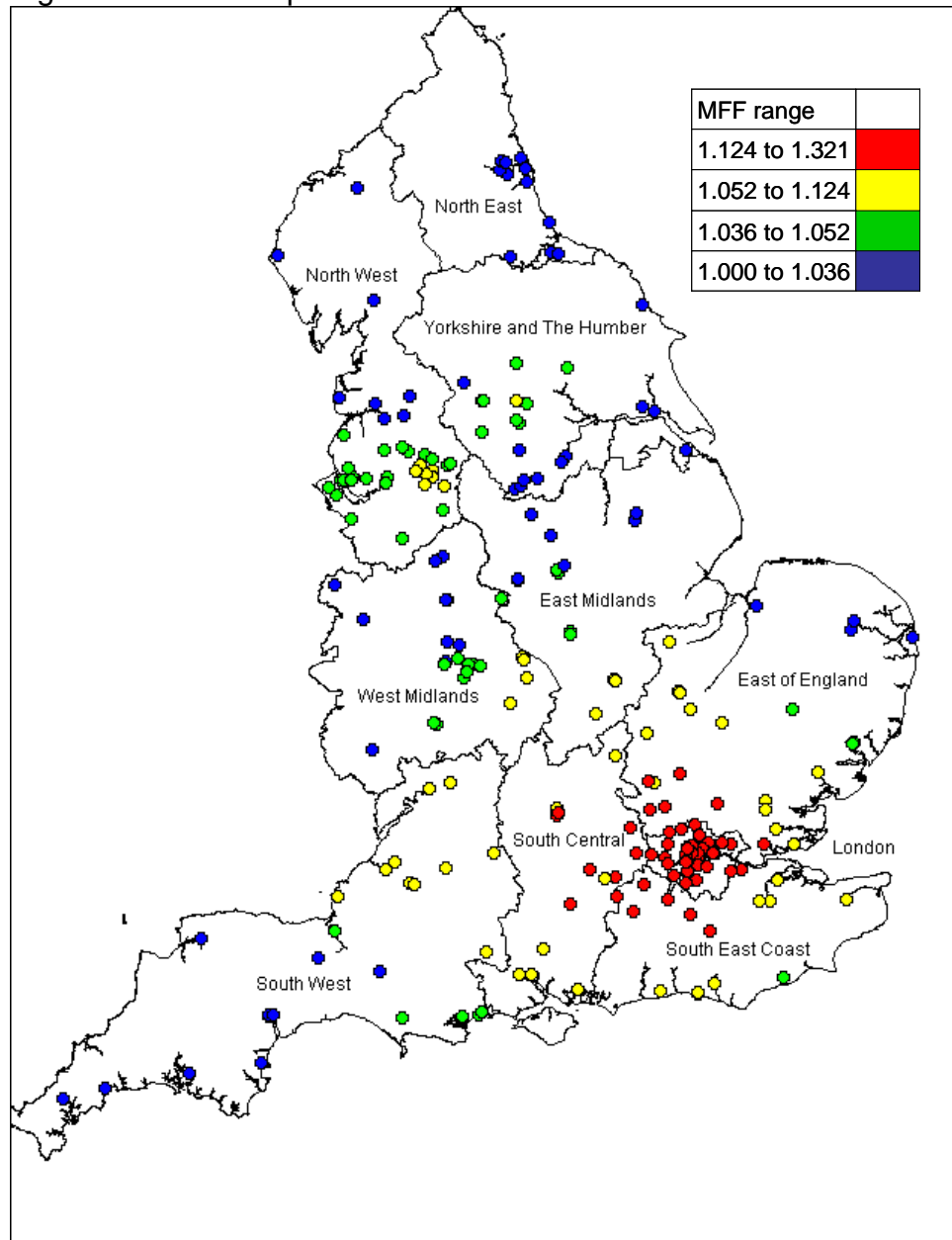
93. Best practice tariffs were a commitment in *High Quality Care For All*, the final report of Lord Darzi's NHS Next Stage Review. They are tariffs that have been structured and priced to encourage high quality care, and mark a significant departure from pricing tariffs on the national average of reference costs.
94. The first best practice tariffs were released in 2010-11 for four high volume service areas, all characterised by significant unexplained variation in practice and clear consensus of what clinical best practice constitutes:
 - (a) cataracts – aims to reduce the number of times patients are assessed before and after surgery by setting a price for the whole pathway rather than pricing each spell of activity
 - (b) cholecystectomy (gall bladder removal) – aims to encourage keyhole surgery in a day case setting where clinically appropriate
 - (c) fragility hip fracture – makes an additional payment for providing rapid surgery and orthogeriatric care
 - (d) stroke – makes additional payments for urgent brain imaging and care in an acute stroke unit.
95. It is expected that the number of best practice tariffs will expand significantly in future years.

Market forces factor

96. Organisations in some parts of the country have higher costs because labour, land and buildings cost more in these areas. The purpose of the MFF is to compensate for the unavoidable cost differences of providing healthcare in different parts of the country.
97. The MFF originated in the weighted capitation formula used to allocate funding to PCTs. Prior to PbR, the assumption was that the local prices paid by commissioners to providers would reflect cost differences. With the introduction of PbR, there was a need to include a pricing adjustment to the tariff.
98. The MFF is in the form of an index which allows for a comparison of each organisation's unavoidable costs relative to every other organisation. There are two versions of the MFF index:
 - (a) the underlying index used in the weighted capitation formula
 - (b) the payment index used in PbR.

99. In 2010-11 the payment index has a lowest value of 1.00 (Cornwall Partnership NHS Trust) and a highest value of 1.32 (University College London Hospitals NHS Foundation Trust). To use the MFF, the tariff price (and any adjustments such as for long or short stay, or specialised services) is multiplied by the payment index for each unit of activity. For example, Provider A has an MFF of 1.20 and undertakes 100 units of activity with a tariff price of £500 per unit. Provider A receives a total PbR income of £60,000, £10,000 of which is for MFF payments. Figure 19 shows the MFF payment index for all providers. It illustrates that London and the south east of England are the highest cost areas. On average, the MFF adds about 8% to the value of the tariff.

Figure 19: MFFs of providers in 2010-11



100. The MFF consists of several components that capture the different dimensions of unavoidable costs, each with their own index which is

combined into an overall index using relative expenditure on each component (Figure 20Figure 1).

Figure 20: Components of the MFF

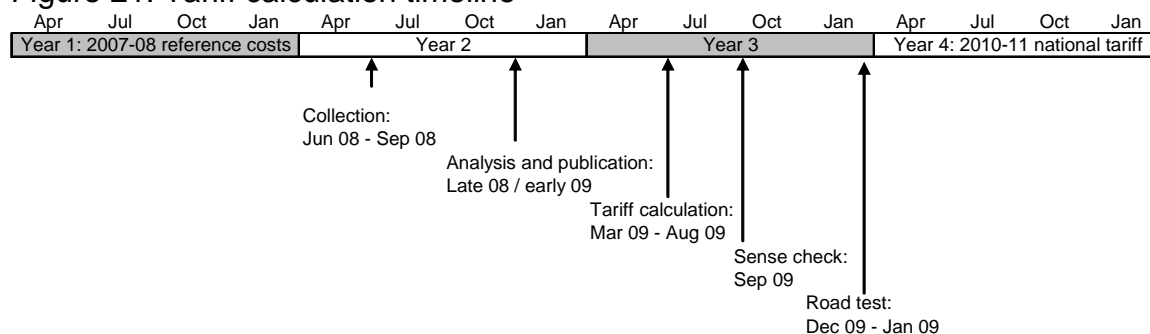
Staff 56%	Applies to all non-medical staff. National NHS pay scales do not fully reflect the variation in employment costs in the broader labour market. If wages do not reflect the going rate for an area then this can lead to indirect costs such as greater use of agency staff and higher vacancy and turnover rates. Uses data from the Annual Survey of Hours and Earnings (ASHE) produced by the ONS.
Medical and dental 14%	Medical staff costs do not vary in the same way as other staff groups, but they are significantly higher in London. This index therefore applies only to London providers. Compares the average paybill for hospital doctors in London to the national average.
Buildings 3%	NHS providers in areas where building costs are higher will pay more in capital charges. Uses data from the Building Cost Information Service (BCIS).
Land 1%	NHS providers in areas where land is more expensive to acquire will pay higher capital charges. Uses NHS estate valuations by the Valuation Office Agency (VOA).
Other 26%	Organisations receive an index of 1.00 for costs (e.g. equipment, consumables and drugs) that do not vary by location.

101. The MFF is periodically reviewed by the independent Advisory Committee on Resource Allocation (ACRA). The most recent review resulted in changes from 2009-10 which were significant for some providers. To manage these changes in PbR, a capping policy ensured that no provider's overall income changed by more than 2% each year.
102. The MFF has not always been paid locally by the PCT. Between 2005-06 and 2008-09, the MFF element of the tariff payments was handled centrally, with DH making non-recurrent adjustments each year to PCT allocations equivalent to the cost of the MFF (£2.8 billion in 2008-09), and reimbursing providers through a central payment mechanism. This supported and protected choice by enabling PCTs to commission services from NHS providers at a standard price under the PbR tariff regardless of where the activity was delivered, whilst continuing to compensate providers for unavoidable cost differences in delivering services. Since 2009-10, in light of the full roll out of Patient Choice and improvements to the MFF, commissioners have retained the responsibility and the funding to enable them to pay the relevant MFF directly to providers. This is more transparent and administratively less burdensome than central payments.

Calculating the tariff

103. As we have noted, the tariff remains largely calculated on the mean unit cost (or simple average) of reference costs collected annually from NHS providers. There is currently a three year lag with, for example, the 2010-11 tariff being calculated on 2007-08 reference costs. Cost and activity data from year 1 are collected in year 2, analysed in year 3, and used for prospective payments in year 4. Figure 21 illustrates the timeline.

Figure 21: Tariff calculation timeline



104. The first step is to filter reference costs to remove services outside the scope of the national tariff, and to clean them by removing costs that vary significantly from the average (the general rule is less than one twentieth of, or greater than twenty times, the national average).

105. Each organisation's reference costs are divided by the organisation's MFF index to remove differences in unavoidable costs and create an appropriate national average for the national tariff.

106. Reference costs are collected for FCEs, but the admitted patient tariff is paid on a spell basis. Costs are converted to spell level by applying FCE costs to HES data grouped to both FCE and spell.

107. Various adjustments are then made to ensure the reference costs reflect the desired scope and structure of the tariff. For example, day cases and ordinary electives are collected separately in reference costs and generally combined in the tariff, and diagnostic imaging costs are also collected separately and rebundled into outpatient attendances. Some costs, notably those arising from National Institute for Health and Clinical Excellence (NICE) recommendations on the use of new medicines and treatments, have come into effect after the reference cost period and need to be added. In making adjustments, we ensure that the total value of the tariff (assuming activity remains constant) is neither increased nor decreased, e.g. the 2010-11 tariff is inflated or deflated until 2010-11 tariff (in 2009-10 prices) x 2007-08 activity = 2009-10 tariff x 2007-08 activity.

108. The underlying costs are then inflated to tariff year prices (next section). Finally, we may further adjust prices in response to feedback during testing of the tariff.

Tariff uplift

109. The tariff uplift – a percentage adjustment to tariff prices - reflects the balance of financial pressure in the NHS. Figure 22 shows tariff uplifts from 2005-06 to 2010-11. The gross tariff uplift takes account of:

- (a) pay settlements for different NHS staff groups
- (b) non-pay inflation and pressures, including the cost of drugs and NICE recommendations.

Figure 22: Tariff uplifts

Tariff year	Gross uplift (%)	Less efficiency requirement (%)	Net uplift (%)
2005-06	7.0	-1.7	5.3
2006-07	6.5	-2.5	4.0
2007-08	5.0	-2.5	2.5
2008-09	5.3	-3.0	2.3
2009-10	4.7	-3.0	1.7
2010-11	3.5	-3.5	0.0

110. This gross uplift is offset by a deflating efficiency requirement. The net uplift is used to inflate historic costs into prospective prices. The arrears between reference costs and national tariff is three years, and therefore three years of uplifts are applied to reference costs to convert them to tariff prices. For example, the 2008-09, 2009-10 and 2010-11 uplifts equate to a total cumulative uplift of 4% applied to 2007-08 reference costs for the 2010-11 tariff.

111. In recent years, we have also targeted particular inflationary increases at specific tariff prices, for example to take account of cost pressures arising from NHS contributions to the Clinical Negligence Scheme for Trusts (CNST).

Testing the tariff

112. Before publishing the final tariff, we share the draft tariff prices and guidance with the NHS for comment. This has two stages: sense check and road test.

113. The sense check involves some of our advisory groups (EAG and CAP), a network of clinicians who are expert in the development of PbR currencies (the EWGs), all single specialty hospitals and a small group of NHS providers and commissioners. The aims of the sense check are to scrutinise the draft prices to ensure that there are no hidden incentives to perverse clinical practice and to double check, using up-to-

date data available to providers and commissioners, the impact of what we are proposing. As the sense check is necessarily limited to a small number of organisations we also write to the wider service at this point, letting them know as much as we can about the proposed structure of the tariff for the following year.

114. The road test, which generally happens in December, allows all organisations to familiarise themselves with the detail of the tariff and its accompanying guidance. The expectation is that the tariff will not change between road test and the final published tariff, although we will update the guidance to reflect feedback.

Find out more

PbR guidance for 2010-11

PbR governance

PbR and the market forces factor (MFF) in 2010-11

Best practice tariffs

Step-by-step guide: calculating the 2010-11 national tariff

<http://www.dh.gov.uk/pbr>

TFCs

http://www.datadictionary.nhs.uk/web_site_content/supporting_information/ma_in_specialty_and_treatment_function_codes.asp?shownav=1

EWGs and ERPs

<http://www.ic.nhs.uk/services/the-casemix-service/getting-involved/groups-panels-and-meetings>

Chapter 4 Expanding the scope of PbR

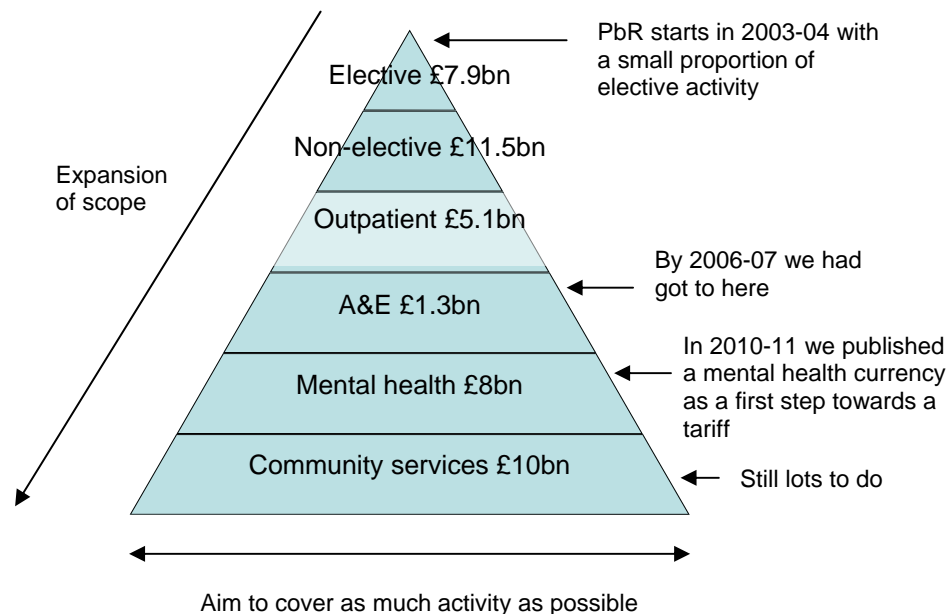
Summary

- PbR began in a small way in 2003-04, but from the outset there were plans for it to cover as much activity as possible
- Mental health and community services are priorities for the expansion of PbR

Introduction

115. PbR began in a small way in 2003-04, covering about £100 million of activity, but from the outset there were ambitious plans for it to ultimately cover as much activity as possible (Figure 23).

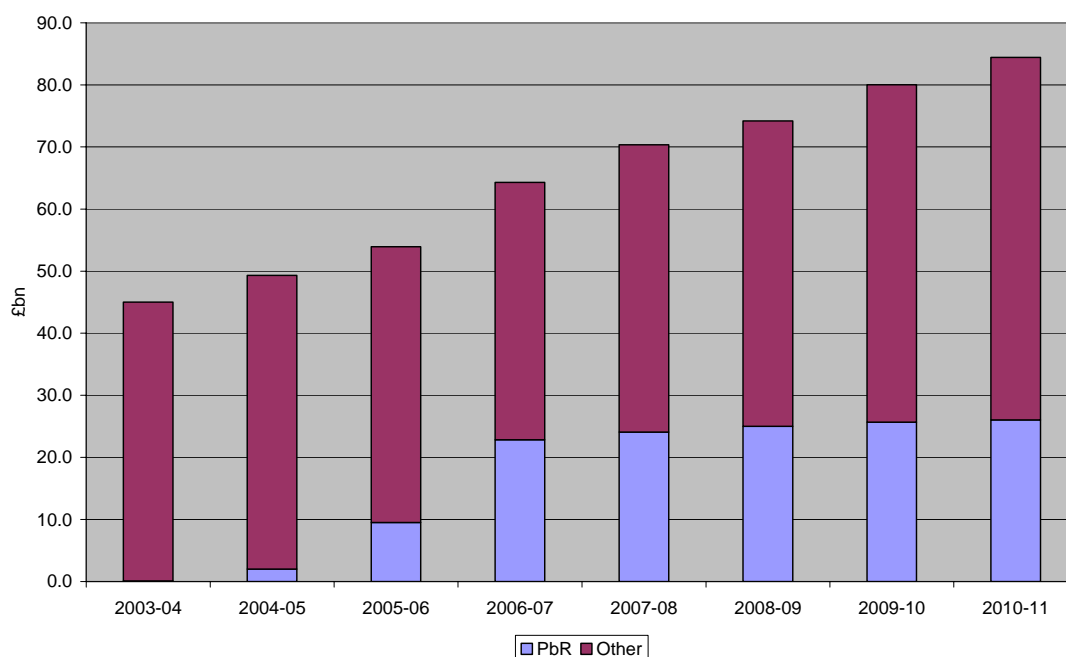
Figure 23: Expanding the scope of PbR



Figures are 2010-11 estimates

116. By 2006-07, PbR covered most acute activity, initially applying only to the NHS but extended to the independent sector in 2008-09. Figure 24 shows the approximate expenditure covered by the tariff in PCT budgets since 2003-04.

Figure 24: PbR and PCT budgets 2003-04 to 2010-11



117. As new services are brought into scope of PbR in future, they will not automatically have both a national currency and a national tariff. Many (e.g. mental health) will be introduced initially as a national currency with local prices. This helps create a common contracting unit for benchmarking and comparison, whilst providing the flexibility to fit with the financial situation of local health economies. Such an approach may be part of a phased transition with a national tariff introduced in subsequent years.

Mental health

118. Mental health emerged as the number one priority for any expansion of the scope of PbR in the consultation *Options for the Future of PbR: 2008-09 to 2010-11*, and *High Quality Care for All* committed DH to make national mental health currencies available for use in 2010-11.

119. In 2010-11, we published a national mental health currency – the care cluster. Developed by the NHS in Yorkshire and Humber and the North East, the clusters identify patient need over a given period of time, and apply to both admitted patient and community care. They therefore balance the risk between commissioners and providers. Commissioners do not have to pay extra for each contact and intervention. Providers know they will be get paid for each patient they care for and they also have an incentive to innovate and support the patient in the most cost effective setting.

120. Mental health providers will allocate their patients to the care clusters by the end of 2011. In 2012-13 the clusters will be used as the contract currency, with local prices agreed.

121. *Liberating the NHS* announced that currencies would also be developed for child and adolescent mental health services (CAMHS).

Community services

122. *Liberating the NHS* also announced plans to accelerate the development of currencies and tariffs for community services. Community services (such as health visiting and district nursing) have lacked some of the building blocks such as national data flows that allow the consistent capture of a classification or currency, and this has impeded the move away from block contracts.

123. *Transforming community services: currency and pricing options for community services* recognises the challenges in progressing this work nationally and helps the NHS to create new local currencies and better pricing. National work has led to the publication of a draft currency for the healthy child programme (health services for the 0-5 year old age group).

Other services

124. PbR development proceeds across a wide range of services and we cannot cover all in depth in this guide. Figure 25 highlights areas where work is ongoing.

Figure 25: Services where PbR is under development

- Ambulance services
- Community services
- Integrated sexual health services and HIV outpatients
- Mental health
- Palliative and end of life care
- Rehabilitation (admitted patient and community)
- Services covered by unbundled HRGs (e.g. critical care and chemotherapy)
- Specialised services (e.g. cystic fibrosis and spinal injuries)

PbR development sites

125. The PbR development sites programme enables staff in the NHS to lead PbR development in their area of expertise. Development sites are a mechanism for developing local currencies and funding models for services currently outside the scope of PbR, or as an alternative to national currencies for services already within the scope of tariff.

126. The first phase of development sites was launched following *Options for the Future of PbR*. Over 40 sites progressed sufficiently to be evaluated in the summer of 2009. The work of the most successful sites has been

adopted nationally and will be the basis for future national currencies and tariffs e.g. for cystic fibrosis and HIV outpatients.

127. Building on the success and learning from the first phase, we plan to recruit a second cohort of development sites during 2010.

Find out more

Developing PbR for mental health

PbR development sites

<http://www.dh.gov.uk/pbr>

Transforming community services

<http://www.dh.gov.uk/tcs>

Chapter 5 History of PbR

Summary

- Before PbR, many hospitals were paid according to block contracts – a fixed sum based largely on historic funding patterns and locally negotiated annual increases
- PbR began with national tariffs for 15 HRGs in 2003-04 and 48 HRGs in 2004-05
- NHS foundation trusts were early implementers of PbR, moving to the full system in 2005-06
- A transition period between 2005-06 and 2007-08 smoothed the impact of PbR on providers and PCTs
- The consultation paper *Options for the Future of Payment by Results: 2008-09 to 2010-11* set out proposals to strengthen the building blocks of PbR and extend its scope
- With the introduction of HRG in 2009-10 the number of tariffs increased to over 1,000
- In 2010-11 the first best practice tariffs were introduced, and a mental health currency for local use
- The white paper *Liberating the NHS* was published in July 2010 and set out the new Government's plans to reform PbR

Introduction

128. This section outlines the history of PbR from its origins in the *NHS Plan* to the reforms set out in *Liberating the NHS*. It includes a summary of the major research papers into PbR, and a brief survey of prospective payment systems in other countries. Supporting tables in [Annex B](#) and [Annex C](#) provide key facts about the scope and structure of the national tariff from 2003-04 to 2010-11.

Reforming financial flows: 2003-04

129. Before PbR, many hospitals were paid according to block contracts - a fixed sum of money for a broadly specified service based largely on historic funding patterns and locally negotiated annual increases. There was no incentive for providers to increase activity to reduce waiting times, since they got no additional funding. If providers failed to deliver planned activity, there was no agreed basis for commissioners to withdraw funding, in order to commission care elsewhere. Some areas of the NHS, however, were using more sophisticated cost and volume agreements as the basis for their contracts, and were using HRGs to adjust their agreements for casemix.

130. PbR has its origins in the *NHS Plan* (July 2000) and the 2002 Budget, although the phrase first appears in *Delivering the NHS Plan* (April 2002): "in order to get the best from the extra resources we plan major changes to the way money flows around the NHS...Instead of block

contracts for hospitals they will be paid for the elective activity they undertake. This is a system of payment by results”⁸.

131. The early aims of PbR were to pay different types of providers fairly and transparently to support patient choice, reward efficiency and encourage activity to reduce waiting times. The objectives were later formalised within the *PbR Code of Conduct*. The purpose of the *Code* is to establish the principles that should govern organisational behaviour under PbR and set expectations as to how the system should operate.
132. The consultation document *Reforming NHS Financial Flows: Introducing payment by results* (October 2002) set out plans to move to a national tariff over five years. DH had examined the use of casemix payment systems internationally in countries such as Australia, Norway and Sweden. DRGs had been pioneered in the USA and adopted for the publicly financed Medicare programme in the 1980s.
133. PbR began in a small way in 2003-04. Cost and volume agreements were introduced for six surgical specialities but with prices determined locally rather than by the national tariff. Some interventions (e.g. cataracts and hip replacements) were considered so important to the delivery of national targets to reduce waiting times that a national tariff was introduced for 15 HRGs, but only for extra activity above 2002-03 planned activity.

Transition: 2004-05 to 2007-08

134. *Payment by Results Consultation: Preparing for 2005* (August 2003) again sought views from the NHS on the rollout of PbR, including a transition period from 2005-06 to 2007-08.
135. If introduced overnight, PbR would have had a significant impact on the income of some NHS providers and the purchasing power of the PCTs that commissioned services from them. The transition period was designed to ensure that the move to the tariff was manageable and the financial impact did not destabilise NHS organisations. Transitional adjustments for providers compared income at local prices against income at national tariff. Gains and losses from this comparison were limited to 25% in 2005-06, 50% in 2006-07 and 75% in 2007-08. PCTs were also protected from the impact of the move to the national tariff of their providers, to prevent PCTs dealing mainly with high cost providers gaining and PCTs dealing with low cost providers losing. Purchaser parity adjustments to PCT allocations were funded at 100% in 2005-06, 50% in 2006-07 and 25% in 2007-08. Figure 26 summarises the transition process.

⁸ Delivering the NHS Plan, p20

Figure 26: Implementation of PbR

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Quantum		£2bn	£9.5bn	£23bn	£24bn	£25bn	£26bn
No. of HRGs	15	48	550	548	548	546	1,072
Application of national tariff	All acute trusts: growth over plan	Wave 1 FTs and Early Implementers: elective, non-elective and outpatients	Wave 1 FTs and Early Implementers: elective, non-elective, A&E and outpatients	All acute trusts: elective, non-elective, A&E and outpatients			
		All other acute trusts: growth over plan	All other acute trusts: elective activity only	Differential tariff for emergency activity introduced		Differential tariff for emergency activity phased out	
Trust transitional path		Percentage difference received between national and local prices:				Transition complete for acute trusts. All trusts paid at national price	
		Wave 1 FTs and Early Implementers: 25% loss or gain	Wave 1 FTs and Early Implementers: 50%	Wave 1 FTs and Early Implementers: 75% of income gained under PbR	Wave 1 FTs and Early Implementers: 100% of income gained under PbR		
			All other acute trusts: 25%	All other acute trusts: 50%	All other acute trusts: 75%		
PCT transitional path		100% of purchasing parity funded		50% of purchasing parity funded	25% of purchasing parity funded	Transition complete for PCTs.	

136. In 2004-05, the principle of paying at national tariff for activity above a baseline was maintained, but the coverage was extended to 48 HRGs. FTs were early implementers of PbR, by moving to the full system one year ahead of the rest of the NHS.

137. The original intention had been to extend the scope of PbR in 2005-06 to cover all elective and non-elective admitted patient care, outpatients and A&E. This was considered too ambitious for NHS trusts for which PbR covered only elective care with the other areas deferred until 2006-07. The number of HRGs with national tariffs increased from 48 to 550.

138. An independent review into the setting of the 2006-07 tariff was published in 2006, following its withdrawal and reissue after errors were found. The Lawlor review⁹ made a number of recommendations, including the strengthening of governance arrangements and more engagement with stakeholders. DH responded by introducing the current governance structure, and arrangements for sense checking and road testing the tariff with the NHS. Following Lawlor, minimal changes were made to the national tariff in 2007-08 apart from a price uplift.

Options for the future: 2008-09 to 2010-11

139. In 2007 DH embarked on a third consultation, *Options for the Future of Payment by Results: 2008-09 to 2010-11*. This wide-ranging consultation set out, amongst other things, proposals to strengthen the building blocks of PbR and to extend its scope. The building blocks of

⁹ named after its author John Lawlor, then Chief Executive of Harrogate and District NHS Foundation Trust.

PbR are the classification systems that describe patient diagnoses and interventions, the currency for payments, and the costing information which informs pricing decisions. Most notably, HRGv3.5, the national tariff currency to this point, had originally been designed for financial benchmarking and not for payment. *Options* considered international alternatives for replacing HRGv3.5, such as the Australian DRGs, but rejected them in favour of HRG4 that was being developed by the NHS Information Centre. *Options* proposed three incremental models for the expansion of PbR: local currency and price, national currency and local price, national currency and price. Mental health emerged as a clear priority for future development of national currencies.

140. In 2008-09 the national tariff was extended to all independent sector organisations providing services under Free Choice, fulfilling the original vision that it should support patient choice and plurality of provider. Indicative, or non-mandatory, tariffs had been published since 2005-06 and in 2008-09 were provided to support the unbundling of services such as diagnostic imaging and rehabilitation. Care pathways were changing, and there was a desire to develop currencies and tariffs to encourage appropriate alternatives to traditional hospital bundles of care.
141. *High Quality Care For All* (June 2008), the final report of Lord Darzi's NHS Next Stage Review, made several commitments on PbR: projections for tariff uplifts and efficiency gains on a multi-year basis, aligning with future Spending Reviews and PCT allocations; a best practice tariff programme that would pay for best practice rather than average cost; and the development of mental health currencies for use by 2010-11.
142. 2009-10 saw the introduction of HRG4, the first version designed for payment. It increased the number of HRGs from 650 to over 1,400, and improved the way they work. A tariff was not calculated for all the new HRGs, although the number of tariffs nearly doubled from around 550 to over 1,000. HRG4 included new unbundled HRGs for areas such as critical care, chemotherapy, radiotherapy and specialist palliative care, but the underlying data were not considered robust enough to introduce national tariffs for these areas. Nevertheless, the potential remained to introduce tariffs for new services once data quality and design issues were addressed.
143. At the same time, a new MFF payment index was introduced. The MFF is shared with the weighted capitation formula for PCT allocations, and the review was undertaken by ACRA. This was not the first time the MFF had been reviewed, but the latest review used innovative techniques to deal with the cliff edge problem, where neighbouring providers operating in the same labour market have noticeably different MFFs. The impact of the MFF on provider income under PbR is substantial and, in order to help organisations adjust to the new index, a cap of 2% change to each provider's overall PbR income was imposed.

144. Finally, 2009-10 also saw the introduction of a planned same day (PSD) tariff for day cases and outpatient procedures. Like the combined elective and day case tariff, it was designed to incentive a further shift in care towards more cost effective settings. Concerns about patchy collection and coding meant that the PSD tariff was non-mandatory for outpatient procedures, and feedback from the NHS during 2009 was that negotiating prices had been difficult. The 2010-11 tariff structure reverted to the combined elective and day case approach, with a limited number of mandatory outpatient procedure tariffs, but collecting and coding outpatient procedures is still important to enable PbR to support the development of ambulatory care in the future.

A changing landscape: 2010-11 onwards

145. The 2010-11 national tariff met the commitments in *High Quality Care For All* on best practice tariffs and mental health. The first best practice tariffs were in four high volume areas where there was significant unexplained variation in clinical practice: cataracts, cholecystectomy, fragility hip fracture and stroke. The introduction of mental health currencies for local use was the first step towards a tariff for mental health services in future years.

146. The 2010-11 tariff began the process of a change in direction brought about by the tougher economic climate. The tariff uplift was 0%, including a 3.5% efficiency requirement that offset the 3.5% inflation in pay and prices. A marginal rate of payment of 30% of the published tariff price applied to increases in emergency admissions to encourage providers to work with commissioners to manage this activity.

147. PbR is sometimes described as a lever or enabler. In other words, PbR supports other national and local strategic objectives, and as these objectives change over time, so will PbR. *Liberating the NHS*, the White Paper published in July 2010 set out the new Government's objectives:

- (a) money will follow the patient through transparent, comprehensive and stable payment systems across the NHS to promote high quality care, drive efficiency, and support choice
- (b) providers will be paid according to their performance. Payment should reflect outcomes, not just activity, and provide an incentive for better quality.

148. *Liberating the NHS* announced an expansion of PbR currencies and tariffs into new areas such as mental health (including CAMHS) and community services; a review of payments systems to support end of life care; and pathway tariffs for use by commissioners. There will be incentives to reduce avoidable readmissions. The number of best practice tariffs will increase, and the scope for developing a benchmarking approach to setting prices will be explored.

149. *Liberating the NHS* also has implications for the delivery of PbR. In the future, the NHS Commissioning Board will be responsible for the structure of the tariff and Monitor will set prices.

Research and evaluation

150. PbR is the subject of rigorous research and evaluation. Several studies have been published:

- *Payment by Results and Demand Management: learning from the South Yorkshire laboratory* (December 2005), Centre for Health Economics (CHE) at the University of York, explores demand management in South Yorkshire PCTs in response to the introduction of PbR, Patient Choice and other reforms
- *The administrative costs of Payment by Results* (July 2006), CHE, found that administrative costs associated with the introduction of PbR had increased by £100,000 to £180,000 in hospitals and £90,000 to £190,000 in PCTs. These costs represent about 0.2% of the total cost of activity covered by PbR
- *Reimbursing highly specialised hospital services: the experience of activity-based funding in eight countries* (December 2006), International Healthcare Comparisons Facility of the London School of Hygiene and Tropical Medicine, showed that other countries also find that highly specialised care requires special funding arrangements and that this is done through augmented prices rather than funding aimed at particular types of organisation
- *National Evaluation of Payment by Results* (November 2007), Health Economics Research Unit (HERU) at the University of Aberdeen, found evidence of reductions in units of cost and increases in the volume of spells associated with the introduction of PbR, and no evidence of negative impact on care. This study has been extended to cover the years 2004-05 to 2007-08 and further results will be published in due course.

151. The Audit Commission produced a series of largely favourable reports on PbR, most recently *The right result? Payment by Results 2003-2007* (February 2008).

International comparisons

152. PbR is not unique to England. Over the past two decades a growing number of countries have decided to use measures of hospital casemix – often called DRGs – to pay for health care. These are known variously as casemix funding, patient classification or prospective payment systems. The common element to all is the use of a fixed level of reimbursement that is determined in advance of the care being

delivered. In some countries the entire reimbursement is paid on a prospective basis but in other systems there is a mix of prospective and other methods such as block funding.

153. DRGs were developed by researchers at Yale University and adopted for the publicly financed Medicare programme in the USA in 1983. For the first time, a payer had a way of comparing the outputs of one hospital with those of another and a basis of paying hospitals in a standardised fashion for the products they produced. Prospective payment replaced retrospective and open ended fee-for-service payment.
154. Many other countries in Europe and elsewhere have developed their own DRG systems and used them for payment including Australia, Canada, France, Germany and Sweden. Some countries have extended the casemix approach to ambulatory care, rehabilitation and a range of community health services. Figure 27 compares some of these systems.
155. *Assessment of systems for classification of clinical diagnoses, interventions and casemix* (March 2009), a study by the firm CHKS, compared the classification and casemix systems used in England with comparators in Australia, Canada and Germany, and concluded that HRG4 performs as well as any of the other classification systems.

Figure 27: Casemix funding in other countries

	Australia	Canada	France	Germany	Sweden	USA
Funding basis	Social insurance	Government health insurance	Social insurance	Social insurance	Decentralised NHS model	Mixed: employment and government insurance
Year adopted casemix funding	1993	1983	1998	2005	1991	1983
Origin of system	Based on US model and adapted to Australian clinical practice data	Adjustment of US DRG system	Adjustment of US DRG system	Australian DRG system: Australian procedure code mapped to German code	NORD DRG (Swedish version)	Yale University research project
Goals and purpose	Allocation of public hospital budgets; cost efficiency	Utilisation management and financial and length of stay comparisons; comparability of hospitals	Financing hospitals	Increase hospital efficiency; contain health spending; reduce length of stay	Increase hospital productivity; support policy goal of patient free choice; funds follow the patient	Forecast hospital costs; Government health care budget control tool
Extent of use	Inpatient hospital care, outpatient and emergency care	Inpatient, day surgery, emergency, ambulatory care, home care, psychiatric care, functional abilities	Acute hospital care (medical, surgical and obstetrics)	All hospital activity	Acute inpatient hospital care, excluding psychiatry; 2005 version adds mental health and day surgery services	Inpatient care for Medicare beneficiaries; in 1997 extended to outpatient, skilled nursing, long-term care, home care and rehabilitation
% share of hospital income from casemix funding	70%	-	-	100%	70%	-

Source: The Globalization of Managerial Innovation in Health Care (Kimberley, de Povourville and D'Aunno 2008) pp348 to 352. This book examines casemix funding systems in 15 different countries throughout the world.

Find out more

Reforming NHS Financial Flows: Introducing payment by results
Payment by Results Consultation: Preparing for 2005
Options for the Future of Payment by Results: 2008-09 to 2010-11
PbR Code of Conduct
Research and evaluation
<http://www.dh.gov.uk/pbr>

NHS Plan
http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4002960

Delivering the NHS Plan
http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4005818

High Quality Care For All
http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_085825

The operating framework for the NHS in England 2010-11
http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_110107

Equity and excellence: Liberating the NHS
<http://www.dh.gov.uk/en/Healthcare/LiberatingtheNHS/index.htm>

Glossary of terms and abbreviations

ACRA

Advisory Committee on Resource Allocation. Independent body which leads on reviewing the MFF for both PCT allocations and PbR.

A&E

Accident and emergency; also known as urgent and emergency care or emergency medicine.

ASHE

Annual Survey of Hours and Earnings. An ONS led survey used in the staff MFF index which provides information about the levels, distribution and make-up of earnings and hours paid for employees within industries, occupations and regions.

BCIS

Building Cost Information Service. An analysis of tender prices for public and private building contracts used in the buildings MFF index.

Block contract

The old method of funding acute hospitals before PbR – a fixed sum based largely on historic funding patterns and locally negotiated annual increases.

CAMHS

Child and adolescent mental health services.

CAP

Clinical Advisory Panel. A PbR advisory group that provides clinical advice.

Care pathway

This refers to the sequence of steps or encounters a patient has with the health service for a given condition. The components making up a complete pathway may include primary prevention, advice and reassurance, diagnosis, treatment, rehabilitation, continuing care, secondary prevention, and palliative care. It may also involve co-ordination with social services as well as family and community support. Streamlining the patient care pathway, and increasing co-ordination, communication along the pathway are critical elements of improving patient experience, as well as improving efficiency and outcomes.

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.

CC

Complications and comorbidities. Comorbidities tend to be part of the initial patient presentation, whilst complications arise during a period of health care delivery, and are recorded in patient records using ICD-10. Many HRGs differentiate between care provided to a patient without any CCs, and those where CCs are present, in order to reflect the higher expected resource use of treating the latter. CCs may be deemed to be major, intermediate or insignificant in terms of requiring additional resource use to treat.

CDDA

Casemix Design and Delivery Authority. Part of the casemix governance structure within the NHS Information Centre responsible for HRG development.

CDS

Commissioning dataset.

CE

Consultant episode. Defined in the NHS Data Model and Dictionary as “the time a PATIENT spends in the continuous care of one CONSULTANT using Hospital Site or Care Home bed(s) of one Health Care Provider or, in the case of shared care, in the care of two or more CONSULTANTS.”

Capital charges

Capital charges were introduced in the NHS to promote awareness of the true cost of capital. The building and land components of the MFF recognise that the capital charges paid by NHS organisations vary around the country.

CHE

Centre for Health Economics at the University of York. Has produced a number of studies on PbR.

Cliff edge

In the context of the MFF, the cliff edge problem refers to large differences in MFF values between neighbouring hospitals.

CNST

Clinical Negligence Scheme for Trusts. Handles clinical negligence claims against NHS member bodies. The costs are met by membership contributions. In the tariff calculation, price increases are targeted at some HRGs (e.g. maternity) to take account of cost pressures arising from these contributions.

Commissioning

Commissioning ensures that the health and care services provided effectively meet the needs of the population. It is a complex process with responsibilities ranging from assessing population needs, prioritising health outcomes, procuring products and services to managing service providers. Currently undertaken by 152 PCTs in England, but *Liberating the NHS* announced plans to abolish PCTs and replace them with GP commissioning consortia.

Core HRG

The main HRG for a patient care event. Unbundled HRGs may also be produced for the same patient care event.

Cost

The expenditure of funds or use of property to acquire or produce a product or service. The opposite of revenue.

Currency

A unit of healthcare activity such as spell, episode or attendance. Under PbR, currency is the unit of measurement by which the national tariff is paid, e.g. admitted patient care HRGs.

DH

Department of Health

DRG

Diagnosis Related Groups. The first casemix system developed by Yale University, adopted for the Medicare programme in the USA in 1983 and by other countries since.

EAG

External Advisory Group. A PbR advisory group that provides strategic policy advice.

ERP

Expert Reference Panel. Part of the Casemix governance structure within the NHS Information Centre. They have a wider remit than single HRG chapters, NHS and DH members, and clinical leads and chairs.

EWG

Expert Working Group. Part of Casemix governance within the NHS Information Centre. They are HRG sub-chapter specific, with NHS staff and clinical leads and chairs.

FCE

A Consultant Episode that has finished. See also CE.

FT

Foundation Trust.

HERU

Health Economics Research Unit at the University of Aberdeen

HES

Hospital episode statistics. A national source of patient non-identifiable data

HRG

Healthcare Resource Groups. The currency for the admitted patient care tariff based on standard groupings of clinically similar treatments which use similar levels of healthcare resource.

HRG root

This represents a stage in the grouping process whereby activity is mapped to a partially defined 4-character HRG prior to applying any split logic.

ICD-10

International Classification of Disease and Related Health Problems. An internationally defined classification of disease, managed by the World Health Organisation (WHO) – currently in its 10th Revision.

ISB

Information Standards Board.

ISN

Information Standards Notice.

MFF

Market forces factor. An index used in PbR and PCT allocations to estimate the unavoidable cost differences of providing healthcare.

Monitor

The independent regulator of NHS foundation trusts.

MSC

Main speciality code.

NCS

NHS Classifications Service. The definitive source of clinical coding guidance sets the national standards used by the NHS in coding clinical data.

NICE

National Institute for Health and Clinical Excellence.

NSRC

National schedule of reference costs.

ONS

Office for National Statistics

OPCS-4

The standard classification system used to record healthcare interventions and interventions in England. Originally named after the Office of Population Censuses and Surveys, now ONS.

PAS

Patient administration system. Used in hospitals to record information about patients.

PCT

Primary care trust.

PLICS

Patient level information and costing systems.

PSD

Planned same day. A type of tariff introduced in 2009-10, calculated from the weighted average of day case and outpatient procedure costs, designed to incentivise the delivery of care in the most efficient settings. The PSD tariff was mandatory for day cases and non-mandatory for outpatient interventions. It was withdrawn in 2010-11.

Purchaser parity adjustment.

Annual non-recurrent adjustments to PCT allocations between 2005-08 and 2007-08 to protect them from the impact of their providers moving from local prices to national tariff.

Reference costs

The national average unit cost of an HRG or similar unit of healthcare activity, as reported as part of the reference costs annual mandatory collection from all NHS organisations in England, and published in the NSRC by admission type and service since 1998.

RCI

Reference cost index. A measure of the relative efficiency of NHS organisations.

Responsible commissioner

Commissioners enter into contracts with providers for the population for which they are responsible. *Who pays? Establishing the responsible commissioner* states that in general, the responsible commissioner will be determined on the basis of registration with a GP practice or, where a patient is not registered, their place of residence.

Resource

The total means available to an organisation for increasing activity or improving production, for instance, staff, theatre time, consumables, etc.

SHA

Strategic health authority

Spell

The period from patient admission to discharge within a single healthcare provider. A spell may comprise of more than one FCE.

SSNDS

Specialised service national definition set. A list of OPCS-4 and ICD-10 codes that determine specialised services and used in PbR for top-up payments for these services.

SUS

Secondary Uses Service. A national data warehouse managed by NHS Connecting for Health. It provides anonymous patient based data for purposes other than direct clinical care.

Tariff

The prices for a unit of healthcare activity published by DH.

TFC

Treatment function code.

TOCE

Table of coding equivalence.

TWG

Technical Working Group. A PbR advisory group that provides technical advice.

Unbundling

The process of breaking down currencies or tariffs so that they reflect different part of a patients' pathway of care.

VOA

Valuation Office Agency. Their valuation of the NHS estate has, historically, been used for the land MFF index.

WHO

World Health Organisation.

Annex A The NHS in England

156. PbR is a system for transactions, or payments, between two types of organisation – commissioners and providers – that requires an understanding of the NHS, its structure and funding. This Annex provides a brief overview.

NHS structure

157. The NHS is financed mainly by general taxation, and is free to users at the point of delivery. NHS services are managed separately in England, Scotland, Wales and Northern Ireland. The services remain similar in most respects, but differences have emerged in some areas, including PbR, which only operates in England.

158. In 1991 the then Government introduced an internal market in the NHS in England, the key feature of which was the separation of hospital services from the commissioning or purchasing function – the so-called purchaser/provider split.

159. Currently, commissioning is primarily undertaken by 152 primary care trusts (PCTs) which contract for services from independent primary care practitioners such as GPs, dentists and pharmacists, and commission secondary care from hospital providers in the NHS and independent sector. *Liberating the NHS* announced plans for GP commissioning consortia – groups of GP practices working with other health and care professionals in partnership with local communities and local authorities – to commission the majority of NHS services for their patients. PCTs will be abolished by April 2013.

160. There are several types of organisation providing services to NHS patients. NHS trusts were created in 1991 to manage hospitals and were quite distinct from health authorities. FTs are a newer type of NHS trust that offer greater autonomy and freedom set against a national framework of standards and inspection. The independent sector also provides services which are funded through the NHS and are free to patients. PCTs agree delivery of NHS funded services with providers using NHS standard contracts.

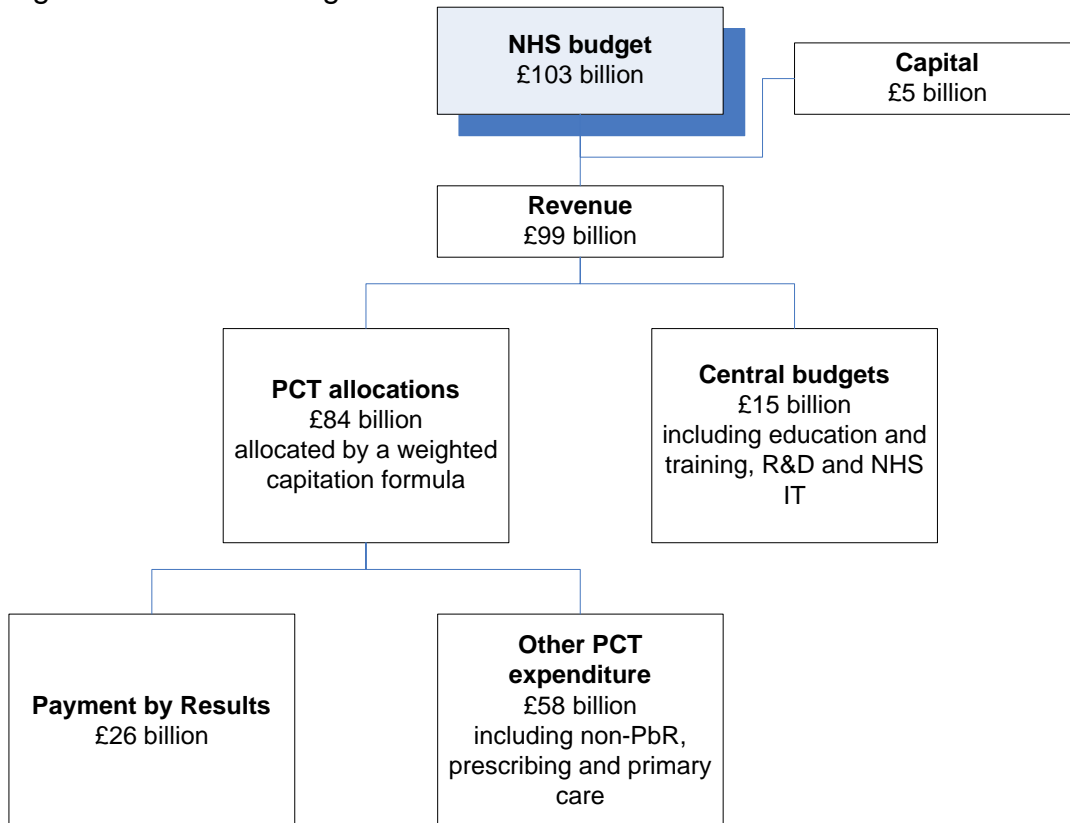
Financial framework

161. Total NHS funding is agreed in Spending Reviews between Her Majesty's Treasury and government departments. The most recent review – the 2007 Comprehensive Spending Review – set spending plans for 2008-09, 2009-10 and 2010-11.

162. Over time, DH has allocated an increasing share of the revenue budget to PCTs, so that by 2010-11 PCTs controlled £84 billion, representing about 80% of the NHS budget. DH allocates funding to PCTs based on

the relative needs of their populations. A weighted capitation formula is used to determine PCTs' target shares of available resource to enable them to commission similar levels of healthcare for populations with similar healthcare needs. This formula based approach to funding means that PCTs are able to meet the healthcare needs of their population, whether they are in primary care or in secondary care under PbR. PCTs had a statutory duty to live within their cash limits. Figure 28 illustrates how the NHS budget is allocated.

Figure 28: NHS funding flows in 2010-11



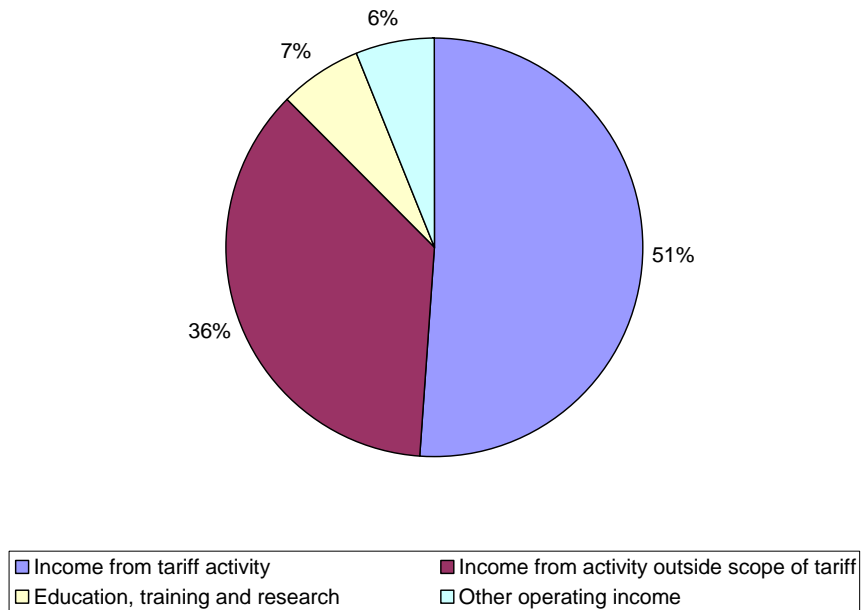
Figures may not sum due to rounding.

163. Under changes outlined in *Liberating the NHS*, the NHS Commissioning Board will allocate revenue resources to GP consortia on the basis of seeking to secure equivalent access to NHS services relative to the burden of disease and disability.

PbR and acute trust income

164. In 2010-11 PbR covers about £26 billion of services, representing over 50% of acute trust income. In addition to tariff income, providers also receive income from locally agreed payments for services which are outside the scope of PbR. Teaching hospitals will also receive funding for education and training, and some will receive funding for research and development (R&D). Figure 29 illustrates this.

Figure 29: Acute trust income in 2008-09



Find out more

The NHS in England

<http://www.nhs.uk/NHSEngland/thenhs/Pages/thenhshome.aspx>

PCT allocations

<http://ww.dh.gov.uk/allocations>

Resource allocation: weighted capitation formula (sixth edition)

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_091849

Annex B Scope of Payment by Results 2003-04 to 2010-11

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Financial coverage (1)								
PCT announced allocation £bn	45.0	49.3	53.9	64.3	70.4	74.2	80.0	84.4
Reference cost quantum	33.0	36.4	39.2	41.3	43.9	47.6	-	-
Estimated value of PbR activity £bn (2, 3, 4, 5, 6, 7, 8, 9, 10, 11)	0.1	2.0	9.5	22.8	24.0	25.0	25.7	26.0
PbR as % of PCT announced allocation (10)	0.2%	4.1%	17.6%	35.5%	34.2%	33.7%	32.1%	30.8%
Tariff uplift								
Tariff uplift	3.3%	7.7%	5.3%	4.0%	2.5%	2.3%	1.7%	0.0%
Efficiency included in tariff uplift	-	-	1.7%	2.5%	2.5%	3.0%	3.0%	3.5%
Number of mandatory tariffs								
Admitted patient care	15	48	550	548	548	546	1072	1074
Outpatient procedure	0	0	0	9	9	8	0	49
Outpatient attendance	0	0	39	39	39	38	38	48
A&E	0	0	0	3	3	3	3	3

(1) Sources: Departmental Report, PCT summarisation schedules, NHS trust summarisation schedules, Hospital episode statistics, national tariff, Payment by Results MFF adjustment exercise

(2) All figures include market forces factor (MFF)

(3) Figures not directly comparable because of different scope of PbR in different years. In 2004-05, only early implementers of PbR were operating at full scope (elective, non-elective, outpatients and A&E). In 2005-06, non-early implementers operated at national tariff for elective activity only, moving to full scope in 2006-07. No significant scope changes since 2006-07.

(4) 2003-04 figure is estimated from Reforming NHS Financial Flows: Introducing payment by results (October 2002)

(5) 2004-05, 2005-06, 2009-10 and 2010-11 are DH estimates

(6) 2005-06 estimated figure from DH impact modelling of 2005-06 tariff

(7) 2006-07 figure from MFF adjustment actual outturn exercise (Stage 4)

(8) 2007-08 figure from MFF adjustment actual outturn exercise (Stage 4)

(9) 2008-09 figure from MFF adjustment actual outturn exercise (Stage 4)

(10) Departmental Report 2009, p220, figure A.6

Annex C Structure of Payment by Results 2003-04 to 2010-11

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Currency and classification								
HRG currency	HRGv3.5 FCE	HRGv3.5 spell	HRGv3.5 spell (3.2 A&E)	HRGv3.5 spell (3.2 A&E)	HRGv3.5 spell (3.2 A&E)	HRGv3.5 spell (3.2 A&E)	HRG4 spell (3.2 A&E)	HRG4 spell (3.2 A&E)
OPCS classification	4.2	4.2	4.2	4.3	4.4	4.4	4.5	4.5
Structural adjustments								
Short stay emergency adjustment	x	x	x	✓	✓	✓	✓	✓
Short stay elective adjustment	x	x	x	x	x	x	✓	x
Long stay payment	x	x	✓	✓	✓	✓	✓	✓
Specialised service top-up payment	x	x	✓	✓	✓	✓	✓	✓
Eligibility required?	x	x	x	x	x	6 of 9	Childrens	Childrens
Marginal rate emergency tariff	x	x	x	x	x	x	x	30% above
Differential tariff for emergency admissions	x	x	x	50% above/ below	50% above/ below	50% above/ below	x	x
A&E 80/20 funding rule	x	x	✓	✓	✓	✓	x	x
Short stay emergency adjustment percentages								
0-1 days	-	-	-	100%	100%	100%	100%	100%
2 days	-	-	-	50%	50%	50%	75%	70%
3-4 days	-	-	-	35%	35%	35%	55%	45%
5 or more days	-	-	40%	20%	20%	20%	35%	25%
Specialised service top-up payment percentages								
Cancer	-	-	4%	-	-	-	-	-
Cardiology	-	-	19%	16%	16%	18%	-	-
Children non-specialised	-	-	18%	11%	11%	12%	-	-
Children specialised	-	-	53%	69%	69%	90%	78%	78%
Colorectal	-	-	54%	35%	35%	39%	-	-

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Hepatology	-	-	7%	9%	9%	10%	-	-
Infectious disease	-	-	11%	-	-	-	-	-
Neurosurgery	-	-	12%	24%	24%	27%	-	-
Orthopaedics	-	-	156%	70%	70%	79%	14%	30%
Respiratory	-	-	6%	17%	17%	19%	-	-
Spinal	-	-	12%	24%	24%	27%	-	-
MARKET FORCES FACTOR (MFF)								
Payment mechanism	Local	Local	Central	Central	Central	Central	Local	Local
MFF used (1)	2002 Warwick	2002 Warwick	2004 Warwick	2004 Warwick	2004 Warwick	2004 Warwick	2008 HERU	2008 HERU
Capping policy	-	-	+/-2%	+/-2%	+/-2%	+/-2%	+/-2%	+/-2%
Maximum	1.345600	1.283700	1.446064	1.446064	1.446064	1.420888	1.347691	1.320737
Minimum	0.881500	0.885000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
CALCULATION								
Reference cost data	2001-02	2002-03	2003-04	2004-05	2004-05	2005-06	2006-07	2007-08
Activity (HES) data	-	2002-03	2003-04	2004-05	2004-05	2005-06	2006-07	2007-08

(1) The staff component of the MFF is the product of independent academic research from the University of Warwick (2002 and 2004) and the Health Economics Research Unit (HERU), University of Aberdeen (2008).

Annex D Code to Group

The Code to Group is a Microsoft Excel workbook that enables manual mapping of underlying OPCS-4 and ICD-10 codes to HRGs. It was updated for the 2010-11 Local Payment Grouper, and the following instructions are based on this design.

The workbook has different worksheets, summarised in the table.

Home	Summary of the workbook, includes a link to the full user guide
Quick Start	A quick start guide to using the Code to Group
HRG4 Chapter	A list of HRG4 chapters used within the grouper software (and Code to Group)
HRG4 Sub-Chapter	A list of HRG4 sub-chapters used within the grouper software (and Code to Group)
HRG4 Labels	A list of HRG4 HRGs used within the grouper software (and Code to Group)
OPCS-4	A list of OPCS codes used within the grouper software (and Code to Group)
ICD-10	A list of ICD-10 codes used within the grouper software (and Code to Group)
Code To Group	The main sheet showing the mapping of codes to the root (4 digit) HRG
Group To Split	Maps from the root (4 digit) HRG to final (5 digit) HRG
Documentation Flag	A list of all the logic flags and their purpose
Hierarchy Lists	A list of the hierarchies for OPCS and ICD codes (the logic that determines which procedure or ICD code is used for grouping where there are multiple codes)
Other Lists	Other lists used for qualifying logic (for example site logic in the orthopaedic chapter and age splits)
CC Lists	The complications and co-morbidities lists
Global Lists	Lists that are not specific and can be used across different chapters (for example dagger and asterisk lists)

Previously we introduced Mrs Smith who was pregnant and gave birth to twins by elective caesarean. This was recorded with an ICD-10 code of O300 and

an OPCS-4 code of R178. We will now map this to an HRG using the Code to Group

Step 1: Download the Code to Group

Download the Code to Group from <http://www.ic.nhs.uk/services/the-casemix-service/using-this-service/reference/downloads/payment/hrg4-2010-11-local-payment-grouper-documentation>.

Step 2: Check the hierarchy value of the procedure

As the patient has had a procedure, the procedure code will be used to generate the grouping. If we look on the Hierarchy Lists sheet we can see that OPCS-4 code R178 has a hierarchy of 4. Values between 3 and 15 can be used to drive grouping.

List ID	Code Type	Code	Code Description	Code Value in List	
4	Prochier	OPCS	R178	Other specified elective caesarean delivery	4

Step 3: Look up procedure code in Code to Group table

Now if we look on the Code To Group sheet for R178 we can see that it only maps to the root HRG NZ03, with a flag of a.

AX	AY	AZ	BA	BB	BC
Code Type	Code	Code Description	HRG 1	Flag 1	HRG 2
OPCS	R178	Other specified elective caesarean delivery	NZ03	a	

Step 4: Documentation flags

If we look on the Documentation Flags sheet and filter the chapter to N and the subchapter to NZ we can see that the flag a has a description of Base HRG. This means that there is no additional logic to determine and the procedure maps to HRG root NZ03.

A	B	C	
HRG Chapter	HRG SubCha	Documentation on Flag ID	Doc Flag description
N	NZ	a	Base HRG
N	NZ	b	Length of stay less than 1 day
N	NZ	c	Requires diagnosis from list NC
N	NZ	cc	With CC
N	NZ	p	Age 18 years and under
N	NZ	pcc	Age 18 years and under with CC

Step 5: Group to split

Now that the HRG Root has been established, the next step is to find the split which will determine the HRG. Select the Group To Split sheet. If we filter column A to the root HRG all ready identified, NZ03, we can see the different HRGs that the root HRG maps to and the flags required to map to each HRG. As the logic works from right to left, the first logic to be tried is the flag of c.

HRG Root	HRG Root Descriptio	HRG 1	Flag 1	HRG 2	Flag 2	HRG 3	Flag 3
NZ03	Caesarean Section	NZ03A	a	NZ03B	p	NZ03C	c

If we look on the Documentation Flags sheet and filter the chapter to N and the subchapter to NZ we can see that the flag c has a description of “Requires diagnosis from list NC”.

A	B	C	
HRG Chapter	HRG SubCha	Documentati on Flag ID	Doc Flag description
N	NZ	a	Base HRG
N	NZ	b	Length of stay less than 1 day
N	NZ	c	Requires diagnosis from list NC
N	NZ	cc	With CC
N	NZ	p	Age 18 years and under
N	NZ	pcc	Age 18 years and under with CC

If we now look at the Other Lists sheet and filter in column a to the List ID NC we can see that there are seven potential ICD-10 codes for the list, and that one of these codes is O300, which was Mrs Smith’s diagnosis.

List ID	Code Type	Code	Code Description
NC	ICD	O300	Twin pregnancy
NC	ICD	O301	Triplet pregnancy
NC	ICD	O302	Quadruplet pregnancy
NC	ICD	O308	Other multiple gestation
NC	ICD	O309	Multiple gestation, unspecified
NC	ICD	O710	Rupture of uterus before onset of labour
NC	ICD	O711	Rupture of uterus during labour

By combining these steps we can now see that Mrs Smith will map to root HRG NZ03 with a final 5th digit of C to make a final HRG of NZ03C.

Step 6: Look up HRG label

Select the HRG4 Labels Sheet and custom filter or search to find that NZ03C is a caesarean section with complications.

A	B	C
HRG	HRG Label - Including Split	HRG Core (C) and Unbundled (U)
NZ03C	Caesarean Section with complications	C