HRG4+ Companion
The Health and Social Care Information Centre is England’s central, authoritative source of health and social care information.

The National Casemix Office designs and refines classifications that are used by the NHS in England to describe healthcare activity.

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National Casemix Office
www.ic.nhs.uk/casemix

Glossary of Terms
www.ic.nhs.uk/jargon-buster

Department of Health - Payment by Results
www.dh.gov.uk/pbr
1 Introduction

This document is intended to provide a starting point and general reference for the Casemix Classification system that is widely used by the NHS in England, providing an introduction to:

- Casemix
- Healthcare Resource Groups (HRGs)
- HRG design concepts
- Groupers and grouping logic

At the end of the document (Section 8), you will also find useful links to further information about our external partner organisations.

This document can be broken down into a number of layers that build upon each other.

- The first layer, Section 4 HRG Design Concepts, explains the underlying design concepts of the classification that have been in use for a number of years
- The second layer, Section 5 Introduction to HRG4+, explains the developments that have been made recently to these design concepts
- The third layer, Section 6 HRG4+ Grouping Logic, explains how the design concepts and recent developments (layers one and two) are built into the software. This section also explains the different stages of grouping patient data
2 What is Casemix

Casemix is a method of classifying patient care based on expected resource use in the provision of care. HRGs are the main casemix classification within the NHS in England and are developed and maintained by the National Casemix Office (NCO) at the Health and Social Care Information Centre (HSCIC).

The NCO is an impartial, independent body accountable to the NHS, the NHS Commissioning Board (NHSCB), Monitor and the Department of Health. Our remit is to develop and enforce national standards underpinning the monitoring, measurement and improvement of healthcare performance at a local, regional and national level. A rigorous and effective casemix currency can make a real difference to the health service and can be used to provide the basis for delivering local improvements in patient care.

We actively involve the broadest range of stakeholders possible; the NHSCB, Monitor, and the Department of Health Payment by Results (DH PbR) as well as NHS senior clinicians, finance and information colleagues.

The Casemix design relies on the availability of national data flows, data definitions and data standards. The NCO manages a complex interface between each of these in order to develop and improve the service and maintain our status in the national and international arena.
3 Healthcare Resource Groups

HRGs are clinically meaningful groupings of patient activity derived primarily from procedure (OPCS-4) and diagnosis (ICD-10) codes within patient records. They are used, amongst other things, as a means of determining fair and equitable reimbursement for healthcare services, by providing consistent ‘units of currency’ to support standardised commissioning across the NHS.

For further information regarding both OPCS-4 procedure codes and ICD-10 diagnosis codes, please see Section 8 of this document.

HRGs can also help organisations to better understand their activity, the different types of patients they care for, and the treatments they deliver. They also enable activity comparison within and between organisations, provide an opportunity to benchmark treatments and services and support trend analysis over time, to underpin local decision-making.

The NHS has used HRG4 to cost clinical activity since the 2006/07 financial year and has been reimbursed via the HRG4 classification from April 2009.
4 HRG Design Concepts

4.1 Casemix Design Framework

Casemix classification design is governed by the Casemix Design Framework which provides comprehensive guidance for stakeholders involved in the design process regarding scope, format, data and HRG performance requirements.

Stakeholders are comprised of representatives from Royal Colleges, clinical professions, Department of Health Policy and Operations teams, NHS Chief Executives and professional bodies within the independent sector. In brief, the design rules stipulate that:

- Data used to define HRGs should be routinely available
- There should be a manageable number of HRG groupings to cover all patients
- HRGs must be clinically meaningful and contain activity with similar resource intensity

4.2 HRG Code Structure

HRGs are identified by a five character code structure.

<table>
<thead>
<tr>
<th>Chapter/Subchapter</th>
<th>HRG Number</th>
<th>Split</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>NN</td>
<td>A</td>
</tr>
</tbody>
</table>

- The first character represents the **HRG Chapter (A)**
- The first two characters together represent the **HRG Subchapter (AA)**
- The next two numeric characters represent the **HRG Number** within the chapter (NN)
- The final character signifies the **Split** applicable to the episode (A)

General principles for the HRG design are that:

- HRGs are divided into clinically meaningful sections (chapters and subchapters)
- The lower the HRG Number, the higher the expected resource use of that HRG in relation to other HRGs within the subchapter
- The final character split within the HRG code structure is a single character code which further describes activity, such as Age, Length of Stay or Complications/Comorbidities. Other than the value of 'Z', indicating that no split is present, split characters are not standardised across the HRG design.

For example, HRG **GA10G Open or Laparoscopic Cholecystectomy, 18 years and under** can be broken down into the following component parts:

- Chapter G - Hepatobiliary and Pancreatic System
- Subchapter GA - Hepatobiliary and Pancreatic System Surgery
- HRG Number 10 - Open or Laparoscopic Cholecystectomy
- Split G - 18 years and under.

4.3 Setting-independence

Setting-independence means that, if a procedure can be performed across different care settings, the same HRG can be derived regardless of setting. For example, an endoscopy would generate the same HRG regardless of whether it was performed as an outpatient, daycase or inpatient procedure. It is important to understand that Setting-independence applies to procedure-driven HRGs only. It does not apply to diagnosis-driven HRGs.
4.4 Non-Admitted Consultations

Non-Admitted Consultation HRGs require that a procedure is recorded (where relevant) but do not use diagnosis data, even if recorded. HRG derivation cannot be dependent on diagnosis as these data are not mandated as part of the Outpatient Commissioning Data Set.

In certain settings, for example Outpatient Clinics, the underlying procedure required for HRG derivation may not always be recorded; it is also possible that a procedure is not carried out.

In these situations, where minimum mandatory information is recorded, one of the global Non-Admitted HRGs within Subchapter WF, Non-Admitted Consultations will be assigned. For further information, please refer to the Chapter Summary for Subchapter WF, Non-Admitted Consultations. Chapter summaries are available for every HRG4+ subchapter and provide details of changes made from previous grouper releases, amendments to and descriptions of logics employed in HRG generation, worked examples of HRG derivation within the subchapter and details of high cost device inclusions at the HRG design level.

4.5 Procedure Hierarchies

Where a patient has more than one procedure recorded during a Finished Consultant Episode (FCE) or Spell, the dominant (highest expected resource use) procedure will be used to derive the HRG. Each procedure is assigned a hierarchical value associated with its expected resource consequences. These hierarchical rankings are intended to reflect the relative costs of procedures.

When a number of procedures are recorded, the Procedure Hierarchy list is used to determine which procedure is dominant and so which one should be used to derive the HRG.

In the event of two procedures being recorded within a single patient record with the same hierarchy, the former of the two will drive HRG grouping.

4.6 Diagnosis Hierarchies

Each FCE will have a primary diagnosis assigned to it. Where a patient has more than one primary diagnosis in a spell because that patient spell contains more than a single FCE, and the primary diagnoses of the FCEs within that spell differ, it is necessary to determine the primary diagnosis of the spell, before the spell activity can derive an HRG.

Each diagnosis that is valid in the primary position of the patient record is assigned a hierarchical level associated with its expected resource consequences. These hierarchical rankings reflect the expected relative cost of each primary diagnosis.

When a number of primary diagnoses are recorded in a spell, the primary diagnosis hierarchy list is used to decide which primary diagnosis is dominant and so which one should be used to derive the HRG for the spell.

In the event of two primary diagnoses being recorded within a single patient spell record with the same hierarchy, the former of the two will drive HRG grouping.

4.7 Complication and comorbidity splits

Complication and comorbidity (CC) splits are a way of incorporating varying severity and complexity levels within the design of the HRGs. Some HRGs are split by complication and comorbidity by use of a CC list.
The purpose of each CC list is to identify diagnoses that result in additional resources being used by patients, and also as a way of incorporating severity and complexity within the design of the HRGs. It is important to attempt to describe severity and complexity as concepts where severity describes the extent of a particular condition and complexity describes the multiple natures of problems and conditions that a patient has. Dual-coded diagnoses often provide a way of describing the severity of a condition and are a principle used in disease staging. The coding of multiple morbidities and complications describes the complexity of the patient. The ICD-10 coding also includes a number of social factors and proxies that may describe the disability of a patient.

It is important to note that a particular diagnosis may be a major complication for some procedures whilst not being a relevant complication for others. The relevance and ranking of complications and comorbidities has therefore been assessed at subchapter level by individual Expert Working Groups (EWGs) to ensure that CCs are appropriately allocated and ranked.

CC splits are used in particular in the diagnosis-driven HRGs as a way of indicating varying illness severity for patients with the same primary diagnosis.

4.8 Multiple Trauma

This grouping mechanism has been defined to identify high resource, complex treatments associated with admissions for multiple trauma cases, i.e. simultaneous traumatic injuries involving more than one body site.

Nine body system tables have been defined, each containing a table of non-superficial trauma procedures relating to a specific body site. The body sites are:

- Abdominal
- Chest
- Head
- Kidney
- Lower Limb
- Upper Limb
- Pelvis or Spine
- Urinary
- Other

If a patient is recorded as requiring treatment for two or more body sites, this will generate a multiple trauma HRG for that episode of care.

Multiple trauma is differentiated from Major Trauma within the HRG design, as Major Trauma may be specific to a single body site, rather than the minimum of two body sites required for Multiple Trauma HRG derivation.

4.9 Unbundling

To improve the performance of HRGs, so they can better represent activity and costs, some significant elements of cost and activity are identified separately, or “unbundled” from the core HRGs that reflect the primary reason for a patient admission or treatment.

In previous versions of HRGs (i.e. up to HRG v3.5), each episode of care would derive a single HRG. In HRG4, some significant elements of cost and activity have been “unbundled” from core HRGs.

The impact of this is that an FCE will be assigned more than one HRG if it includes any “unbundled” elements. The “unbundled component” becomes an HRG in its own right as an addition to a core HRG for the episode of care.
Unbundled HRGs may be event-based, and thus derived from the presence of a specific OPCS code in the patient record, or duration-based, the latter being generated on a per diem basis.

Unbundled HRGs have been developed for:

- Chemotherapy – Regimen Procurement and Delivery
- Radiotherapy – Planning and Treatment
- Diagnostic Imaging (e.g. MRIs/ CT)
- Rehabilitation
- Renal Dialysis for Acute Kidney Injury
- Critical Care – Adult, Paediatric and Neonatal
- Specialist Palliative Care
- High Cost Drugs.
5 Introduction to HRG4+

The latest iteration of the HRG classification, HRG4+, has approved by NHS Commissioning Board, Monitor and the Department of Health to form the basis of the National Reference Costs Collection for the 2012/13 financial year.

It has been developed to support the Department of Health Payment by Results (PbR) national policy, by providing a classification that remains representative of current clinical practice. It supports service planning, costing and commissioning by providing reliable and consistent activity data to support patient choice and service planning analysis.

HRG4+ supports requirements outlined within the Health and Social Care Act 2012, by allowing for specialised services, provided in tertiary centres and NHS Centres of Excellence, to be distinctly identified and appropriately costed and funded. This will also enable more effective planning and service redesign within local health economies.

HRG4+ is a significant enhancement to HRG4, and employs a number of new and enhanced mechanisms to enable the differentiation between levels of care complexity.

The enhancements offered as part of the HRG4+ Casemix classification have been developed in partnership with the clinical community, as represented and endorsed by the Royal Colleges, Associations and Professional Bodies.

The key developments and enhancements introduced into the HRG4+ design are:

5.1 Increase in Number of HRGs

There is an increase in the number of HRGs from 1,657 in the HRG4 2011/12 Reference Costs Grouper to 2,100 in the HRG4+ 2012/13 Reference Costs Grouper, in order to offer greater granularity in the classification and support the improved identification of specialist services which are often high cost in nature.

5.2 Interactive Complication and Comorbidity (CC) splits

Standard complication and comorbidity splits have been replaced with new Interactive complication and comorbidity splits in the majority of HRG4+ subchapters. Interactive CCs are based on summed scores and more appropriately reflect expected additional resource use when treating patients with multiple comorbidities. The HRG is determined by the summed ‘score’ of all secondary diagnoses which appear on the CC list. Major CCs have a value of two and all other CCs have a value of one. Further information on Interactive CCs can be found in Chapter Summaries.

5.3 Procedure Hierarchy Changes

Procedure hierarchy (PH) scores have been expanded and reassigned to OPCS-4 codes to more appropriately reflect the expected resource use of procedures across all subchapters, particularly when differentiating between low-cost high-volume procedures. A new logarithmic hierarchy range has been introduced which runs from 3 to 40, with a lower resource difference expected between the bands at the lower end than those at the higher.

Procedure hierarchies have also been amended to eliminate overlap between HRG ‘categories’. Where multiple procedures are recorded, the procedure with the highest hierarchy value will drive the grouping to the appropriate highest expected resource HRG.
5.4 Diagnosis Hierarchy Changes

Diagnosis hierarchy (DH) scores have been expanded and reassigned to ICD-10 codes to better reflect the expected resource use of diagnoses across all subchapters. Diagnosis hierarchies are used to determine the primary diagnosis of a multi-episode spell with multiple primary diagnoses across the episodes. The new logarithmic DH range runs from 5 to 26, with a lower resource difference expected between the bands at the lower end than those at the higher. This review also provides improved foundations on which to implement Interactive CC logics.

5.5 Changes made to accommodate ICD-10 4th Edition

Changes to the primary diagnosis classification ICD-10, implemented from 1st April 2012, are incorporated within the HRG4+ design. Where a new code has been added, Expert Working Group advice has been sought to determine the most appropriate HRG(s) to map to, and to confirm whether new codes should be a member of specific lists, such as CC lists.

With regard to ICD-10 code deletions from the ICD-10 4th Edition, the grouper implements the ICD-10 classifications as detailed by NHS Connecting for Health. Therefore, ICD-10 codes that are not present in ICD-10 4th Edition are not valid. If used, these will cause the episode (and spell) to generate HRG **UZ01Z Data Invalid for Grouping**.

5.6 Intervention splits have been added to HRGs

Intervention splits have been created for a number of subchapters. This reflects where, within a diagnosis-driven HRG, there are ‘minor interventions’ performed which not only means that they include the cost/resources associated with these procedures, but may indicate that the patient’s condition was more severe thus resulting in more resource-intensive treatment.

This includes “with Multiple Interventions” and “with Single Intervention” splits to more appropriately capture the additional resource usage of patients who have multiple minor interventions during their episode or spell.

5.7 Multiple Matrix Grid Logic

Multiple Matrix Grid Logic takes into account multiple procedures as well as multiple diagnoses, and works in a similar fashion to the Multiple Trauma design introduced in HRG4. This approach is intended to more appropriately reflect the complexity involved in treatment for specific specialised, discrete, service areas, and to reflect the expected resource use of patient care. Each procedure and diagnosis is allocated an individual score which are then totalled and the HRG is defined based on the scores. Full details are available in the Chapter Summaries for Subchapter EC, Congenital Cardiac Surgery, and Subchapter HR, Orthopaedic Reconstruction Procedures.

5.8 Inclusion of Specialised Activity

HRG4+ includes the creation of HRGs specific to Specialised Activity, such as those for Congenital Cardiac Surgery. HRG4+ also sees the extension of age splits within the child population to reflect the significant resource differentiation that can occur when treating infants rather than children, for example.

5.9 Data Quality

Quality improvement changes in HRG4+ include cross-chapter “Interventions” list updates and the alignment of HRGs to updated coding rules and guidance. For example, subchapter JC, Skin Surgery has been redesigned to align more closely with clinical practice and resource usage, and
to include more appropriate paediatric age splits. Other codes have been remapped and logic amended to more appropriately reflect expected resource usage within several subchapters. Full details, including worked examples, are provided in the Chapter Summaries that for part of the standard documentation suite that accompanies each Grouper release.

Checks for maximum length of stay have been added to several minor procedure HRGs in specific subchapters – see HC, Spinal Surgery and Disorders, JC, Skin Surgery, and QZ, Vascular Procedures and Disorders - such that where length of stay is longer than the set maximum, diagnosis will be used to derive the HRG. This approach is intended to ensure that HRG grouping accurately reflects the primary reason for the patients’ admission, and reduces the likelihood that procedure-driven HRGs will be derived for patients with long lengths of stay undergoing a relatively minor procedure during that admission, when the length of stay is indicative of treatment for their diagnostic condition.
6 HRG4+ Grouping Logic

6.1 Groupers

A ‘Grouper’ is a software application that performs validation checks against data input and uses a complex algorithm to determine HRGs for patient records. Grouper output files contain the original input data with derived HRGs. Grouper output also includes quality files that contain details of any errors or conflicts during the grouping process. For more information about using the grouper application for local grouping, please refer to the Grouper Reference Manual.

6.2 Procedure Hierarchies

Procedure Hierarchies provide a comparison mechanism which reflects relative complexity of procedures across HRG chapters (see section 4.5 for further information).

Each procedure has an associated value reflecting relative resource use. Values 0 - 4 identify procedures which cannot be used for grouping. Values 5 - 40 provide a scale of expected relative resource use, where 5 represents the least and 40 represents the most resource intensive procedures.

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>OPCS codes not valid for grouping (such as approach codes and site of operation codes in the primary position)</td>
</tr>
<tr>
<td>1</td>
<td>Non-operative procedures with minimal resource (such as fitting a sling or administering an injection)</td>
</tr>
<tr>
<td>2</td>
<td>Procedures that will generate unbundled HRG(s) Procedure hierarchies are not used to determine unbundled HRGs so every instance of a procedure generates an unbundled HRG. This hierarchy value used only for completeness</td>
</tr>
<tr>
<td>3,4</td>
<td>Procedures relating to subchapter WF, Non-admitted Consultations</td>
</tr>
<tr>
<td>5-40</td>
<td>Scale of relative resource use. 5 represents least and 40 represents most resource intensive procedures</td>
</tr>
</tbody>
</table>

If a single procedure is recorded for a patient and its hierarchy value is equal to or greater than 3 (5 for admitted patient care), it will be used for grouping. If multiple procedures are recorded, the dominant procedure is identified based on hierarchy value. In principle, Unbundled HRGs have a hierarchy value of 2, and are output based on each instance of an OPCS code being recorded.

Where hierarchy values are equal, the earliest recorded of the highest ranking procedures is used to drive grouping. In the absence of any procedures with hierarchy value between 5 and 40, the grouper will switch to using diagnosis to drive HRG grouping.

6.3 Diagnosis Hierarchies

Primary Diagnosis is used to drive grouping when there are no significant procedures in the patient record suitable to drive grouping. Every episode requires a primary diagnosis. Each diagnosis code (that is valid in the primary position) has an associated hierarchy value based on relative resource use (see section 4.6 for further information).

If a multi-episode spell contains multiple primary diagnoses, the primary diagnosis with the highest ranking hierarchy value becomes the Spell primary diagnosis and is used to drive grouping. Where hierarchy values are equal, the earliest recorded of the highest ranking diagnoses is used to drive grouping.

There are five bands which run from 5 to 26 where 5 represents the lowest and 26 represents the most resource intensive diagnoses.
<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>ICD-10 code not valid for grouping</td>
</tr>
<tr>
<td>5-26</td>
<td>Scale of relative resource use in which 5 represents the lowest and 26 represents the most resource intensive diagnoses</td>
</tr>
</tbody>
</table>

### 6.4 Complication and Comorbidity (CC) Splits

Complication and comorbidity splits are derived from all secondary diagnoses within an episode or spell and provide a method of incorporating and recognising varying levels of severity and complexity within HRG design (see section 4.7 for further information).

### 6.5 CC splits and Non-Admitted Consultation treatments

Diagnosis is not a mandatory item in the Outpatient Commissioning Data Set. The grouping process does not, therefore, use diagnosis for Non-Admitted Consultation treatments even where present in the outpatient record, hence will not apply CC splits.

### 6.6 Multi-Episode Spells

In a multi-episode spell, all diagnoses are evaluated as potential complications and comorbidities, with the exception of the primary diagnosis for the episode containing the dominant procedure. Any diagnosis within a spell, other than the spell primary diagnosis, is regarded as a secondary diagnosis for the purposes of CCs, with the exception of duplicate diagnoses within a spell and four-digit ICD-10 codes that end in .9 where the same three-digit ICD-10 code has been determined as the primary diagnosis of the spell.

### 6.7 Accommodating Multiple Procedures

In the majority of cases the dominant procedure, as determined by the procedure hierarchy, is used to derive the HRG. However certain subchapters contain specific multiple procedure logic, designed to determine the derived HRG using more than one procedure.

Where there are a relatively small number of procedures that can be performed in combination with one another, flags may be used to derive the HRG, dependent on what other procedures are recorded with the dominant procedure. For example:

If **P23.2 Anterior colporrhaphy NEC** is recorded with no other procedures present, and no secondary diagnoses are recorded, then HRG **MA04D Intermediate Open Lower Genital Tract Procedures with CC Score 0-2** will be generated.

If **M53.3 Introduction of tension-free vaginal tape** is recorded with no other procedures present and no secondary diagnoses are recorded, then HRG **LB51B Vaginal Tape Operations for Urinary Incontinence, with CC Score 0-1** will be generated.

However, if these procedures are both performed and recorded and either is the dominant procedure, with no secondary diagnoses then the HRG generated will be **MA03D Major Open Lower Genital Tract Procedures with CC Score 0-2**.

Both procedures have an associated flag attached which requires the grouper to reference a list containing the other procedure. Where both procedures are identified within the record an HRG is generated which considers both significant procedures, in order to appropriately reflect the additional resource use of undertaking both procedures at the same time.
6.8 Escalator Logic

Escalator logic can drive grouping to a higher HRG to reflect additional complexity. If a procedure is performed in conjunction with another procedure from a specified list, an HRG will be derived representing higher resource use than for either procedure on its own. For example:

If **W47.1, Primary prosthetic replacement of head of femur not using cement** is recorded as the dominant procedure with no other procedures present, then HRG **HB12C Major Hip Procedures for Non-Trauma, Category 1, without CC** will be assigned.

However, if a procedure from any other HA or HB 'Intermediate' Category HRG is also recorded such as **W04.2, Triple fusion of joints of hindfoot** (which as a dominant procedure would map to either **HB32A Intermediate Foot Procedures for Non –Trauma, Category 2, 19 years and over** or **HB32B Intermediate Foot Procedures for non –Trauma, Category, 2 18 years and under**) then this is escalated to the ‘Major’ category HRG, in this case **HB11C Major Hip Procedures for Non-Trauma, Category 2, without CC**.

6.9 Summation Logic

In Subchapter BZ, secondary procedures have a modifying effect on HRG assignment. All Vitreous Retina (VR) procedures have been assigned to a VR band from 1 to 5 depending on their relative complexity. The higher the VR band the higher the complexity.

For further details and worked examples of specific multiple procedure logic, please refer to the appropriate Chapter Summary.

6.10 Unbundling

Unbundling is the first step in the grouping process, following data validation. Unbundled procedures are processed separately to derive unbundled HRGs. The grouper then ignores these unbundled components when deriving the core HRG for an episode or spell.

When all significant procedures in an admitted patient care episode or spell are unbundled, diagnosis is used to derive a core HRG for the episode. For non-admitted care, if all procedures are unbundled the attendance is allocated one of the eight relevant non-admitted care attendance HRGs as a core HRG (see section 4.9 for further information).
7 Stakeholder Engagement

Casemix classification design is underpinned by a wealth of clinical input and development. The National Casemix Office is committed to an iterative process of stakeholder consultation. Each subchapter has at least one Expert Working Group (EWG) who advise on current and developmental HRG definitions. Expert Reference Panels and Steering Groups provide a cross-chapter interface in areas such as Rehabilitation and High Cost Drugs. These groups provide invaluable medical, financial and allied health professional guidance, all of which are essential in ensuring continued classification transparency, accuracy and credibility.

Casemix classifications are updated annually to ensure clinical relevance and design accuracy. The key role played by EWGs and other advisory bodies continues through on-going maintenance and development by reviewing and where necessary revising design parameters and assessing HRG performance. The National Casemix Office gratefully acknowledges the support of the following organisations whose representation through EWGs is central to ensuring clinical accuracy and reflection of current working practice.

- Association of British Neurologists
- Society of British Neurological Surgeons
- Royal College of Anaesthetists
- British Pain Society
- Royal College of Ophthalmologists
- British Association of Otorhinolaryngologists, Head and Neck Surgeons
- Faculty of Dental Surgery
- British Thoracic Society
- Society of Cardiothoracic Surgeons
- British Cardiac Society
- Royal College of Surgeons
- British Society of Gastroenterology
- British Association of Rheumatology
- British Geriatrics Society
- British Orthopaedic Association
- British Association of Surgical Oncologists
- British Burns Association
- British Association of Plastic Surgeons
- British Association of Dermatologists
- Association of Genito-urinary Medicine
- British Diabetic Association
- British Association of Urological Surgeons
- Renal Association
- Royal College of Obstetricians and Gynaecologists
- Royal College of Paediatrics and Child Health
- British Association of Perinatal Medicine
- Vascular Society
- Royal College of Radiologists
- British Nuclear Medicine Society
- British Society of Haematologists
- Faculty of Clinical Oncology
- Joint Collegiate Committee of Oncology
8 Further Information

Health and Social Care Information Centre  www.ic.nhs.uk/casemix
Helpdesk: 0845 300 6016
Email: enquiries@ic.nhs.uk

The HSCIC is England’s central, authoritative source of health and social care information for frontline decision makers.

OPCS:  www.cfh.nhs.uk/opcs
The clinical classification OPCS-4 is mandatory for Admitted Patient Care Commissioning Data Sets (CDS) and wherever there is a national requirement to support secondary uses. The classification may also be used locally for operational uses.

World Health Organisation  www.who.int/en/
WHO is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.

ICD-10  www.who.int/classifications/icd
The International Classification of Diseases (ICD) is the standard diagnostic tool for epidemiology, health management and clinical purposes, including analysis of the general health of population groups and monitoring diseases and other health problems.

Department of Health (Payment by Results)  www.dh.gov.uk/pbr
PbR is the transparent rules-based payment system in England under which commissioners pay healthcare providers for each patient seen or treated, taking into account the complexity of the patient’s healthcare needs. PbR promotes efficiency, supports patient choice and increasingly incentivises best practice models of care.

Casemix Design Framework
The Casemix Design Framework is maintained by the National Casemix Office, who provide a strategic steer for all stakeholder groups with regard to maintaining consistency of design intent and methodology across HRG chapters.
9 The HRG4+ Documentation Suite

The HRG4+ Documentation Suite is a comprehensive resource of supporting materials, designed to assist users in understanding the design concepts, logic and practical use of the HRG4+ Grouper. Below is a list of the various HRG4+ documents which are available to download from the National Casemix Office website www.ic.nhs.uk/casemix

**HRG4+ Companion** is a starting point and general reference for new and existing users, providing an introduction to HRGs, groupers, HRG4+ design concepts and grouping logic and useful links to further information.

**Casemix Design Framework** defines the rules and criteria followed when designing Casemix classification systems.

**HRG4+ Grouper Reference Manual** provides full instructions on how to prepare and group data using the HRG4+ Grouper software application.

**HRG4+ Summary of Changes** provides an overview of the main changes between the current HRG4+ grouper design and its predecessor.

**HRG4+ Roots workbook** identifies new HRGs, deleted HRGs and changes to existing HRG Labels between designs using colour-coding.

**HRG4+ Chapter Summaries** provide an overview of the scope, composition and grouping logic of individual subchapters along with illustrative worked examples. They also include updates on the changes within subchapters.

**HRG4+ Code to Group workbook** provides details on all mappings between primary classification codes and HRGs. Also detailed within the workbook are the logic conditions required to generate the HRGs.

**HRG4+ Code to Group User Manual** serves as an introduction to using the Code to Group workbook to perform manual grouping. It also details some basic design concepts and provides worked examples of a variety of different grouping scenarios.