



Health & Social Care
Information Centre

Casemix Companion

National Casemix Office

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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 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 clinical resource use in the provision of that 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, NHS England, 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 significant 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; NHS England, Monitor, and the Department of Health as well as NHS senior clinicians, finance and information colleagues, who make up our Expert Working Groups (EWGs).

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

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, at a local, regional and national level.

For further information regarding both OPCS-4 procedure codes and ICD-10 diagnosis codes, please see **Section 9** of this document.

The HRGs are reviewed and enhanced on an annual basis to ensure that the classification is up-to-date with NHS clinical advancements, with the current version named HRG4+ (used for the mandated Reference Costs collection for the 2012/13 financial year onwards).

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

The NHS used HRG4 to cost clinical activity from the 2006/07 financial year to that for 2011/12, and has been reimbursed via the HRG4 classification since 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, Monitor, NHS England, NHS Chief Executives and professional bodies within the independent sector. In brief, the design rules stipulate that:

- HRGs must be clinically meaningful and contain activity with similar resource intensity. This not only ensures that HRGs provide a valuable dialogue mechanism between clinical and finance professionals, but that average costs or national tariffs at the HRG level do not systematically underrepresent the resource use of the care provided when treating particular groups of patients
- Data used to define HRGs should be routinely available, to minimise the burden of data collection on the NHS and ensure intra- and inter-provider comparison
- There should be a manageable number of HRGs to cover all patients, ensuring that the administrative burden of processing and evaluating HRG level data in terms of costing and reimbursement is curtailed

4.2 HRG Code Structure

HRGs are identified by a five character code structure:

Chapter/Subchapter	HRG Number	Split
AA	NN	A

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

The first four character codes, when combined, are classed as the HRG root.

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, the HRG4+ HRG **GA04C Complex Open, Hepatobiliary or Pancreatic Procedures, with CC Score 3+** can be broken down into the following component parts:

- Chapter **G** - Hepatobiliary and Pancreatic System
- Subchapter **GA** - Hepatobiliary and Pancreatic System Surgery
- HRG Number **04** - Complex Open, Hepatobiliary or Pancreatic Procedures
- Split **C** - with CC Score 3+

The Code to Group spreadsheet (released with each Grouper product) lists the chapters and subchapters relevant to an individual grouper product. As the HRG design necessarily changes over time, you should always make sure that the Code to Group file used relates to the same Grouper software in both purpose (Costing / Payment) and financial year required.

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, day case 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, nor HRGs that are derived from data items other than the procedure (OPCS-4) or diagnosis (ICD-10) primary classifications.

4.4 Non-Admitted Consultations

Non-admitted consultation HRGs are derived where no (relevant) procedure code is recorded. HRG derivation, for outpatient data, is not 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. Chapter summaries are available for every HRG subchapter and provide an overview of the HRGs, details of changes made from previous grouper releases and reference to the design concepts utilised in the development of the HRGs in the subchapter.

4.5 Procedure Hierarchies

Where a patient has more than one procedure recorded in an episode, spell or attendance, 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 (see **section 6.2** for further information). These hierarchical rankings are intended to reflect the expected relative costs of individual procedures.

In the event of two (or more) procedures being recorded within a single patient record with the same hierarchy, the first in the patient record will drive HRG grouping.

In certain circumstances, particularly where it is common clinical practice to undertake two or more procedures within the same hospital admission, escalator logic is used within the HRG design to generate an HRG that reflects the fact that more than one procedure has been undertaken. The surgical HRGs that are designed to identify episodes of care where more than one procedure has taken place are intended to reflect the higher expected resource use of patient care.

4.6 Diagnosis Hierarchies

Each Finished Consultant Episode (FCE) will have a primary diagnosis recorded for 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 a spell-level 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 (see **section 6.3** for further information). 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 is used to determine which primary diagnosis is dominant for the spell, hence which one should be used to derive the spell-level HRG.

In the event of two (or more) primary diagnoses being recorded within a single patient spell with the same hierarchy, the first in the patient record 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 secondary 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 help to describe the wider health needs of a patient.

It is important to note that a particular secondary diagnosis may be a major complication for some procedures whilst not being a relevant complication for others. The relevance and ranking of CCs has therefore been assessed at subchapter level by individual Expert Working Groups (EWGs) to ensure that CCs are appropriately allocated. For CCs to be recognised in HRG derivation terms, therefore, they must be both unique, and clinically relevant.

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. Body sites 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 different 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 different body sites required for Multiple Trauma HRG derivation.

Once a patient is determined as being a Multiple Trauma patient in HRG design terms, the concepts of primary diagnosis and dominant procedure are no longer relevant. The HRG

design effectively acknowledges all diagnoses and all procedures as being relevant to the resource impact of the healthcare provided, and HRGs are assigned via a matrix scoring system that reflects the breadth of what is clinically wrong with the patient, and the range of procedures undertaken on that patient.

4.9 Unbundling

To improve the performance of HRGs and 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. These unbundled HRGs therefore better describe the elements of care that comprise the patient pathway within a hospital admission or outpatient attendance.

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 a single patient record will generate 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-4 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. MRI/CT)
- Rehabilitation
- Nuclear Medicine
- 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+, was approved by NHS England, Monitor and the Department of Health to form the basis of the National Reference Costs Collection from the 2012/13 financial year onwards.

It has been developed to support NHS England and Monitor's national tariff policy, by providing a classification that remains representative of current clinical practice. It supports service planning, costing and national and local 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 patient 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 Increased Specificity and Granularity in HRGs

There is an increase in the number of HRGs from 2,289 in the HRG4+ 2013/14 Reference Costs Grouper to 2,782 in the HRG4+ 2015/16 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 all of the HRG4+ subchapters where clinically relevant to do so. Interactive CCs are based on summed scores and more appropriately reflect the expected additional resource use of treating patients with multiple comorbidities. The HRG is determined by the summed 'score' of all unique secondary diagnoses which appear on the subchapter-specific CC list. As per Design Framework requirements, major CCs have a nominal value of two and all other CCs have a nominal value of one.

5.3 Procedure Hierarchy Changes

Procedure hierarchy (PH) scores were expanded in 2012/13 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 logarithmic hierarchy range was also introduced in 2012/13 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 were also 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, unless the HRG design accommodates multiple procedure activity.

5.4 Diagnosis Hierarchy Changes

Diagnosis hierarchy (DH) scores were expanded in 2012/13 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 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 OPCS-4.7

Changes to the primary procedure classification OPCS-4, implemented from 1st April 2014, are incorporated within the HRG4+ design. Where a new code was added, Expert Working Group advice was sought to determine the most appropriate HRG(s) to map to. This also required the creation of new HRGs to more appropriately reflect the clinical care involved.

5.6 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 the National Classifications Service within the HSCIC. Therefore, ICD-10 codes that are not present in ICD-10 4th Edition are not valid for use, from April 2012 onwards. If used, these will cause the episode (and spell) to generate HRG **UZ01Z Data Invalid for Grouping**.

5.7 Intervention splits have been added to HRGs

Intervention splits have been created for a number of diagnosis-driven HRGs in various subchapters. This split acknowledges that 'minor interventions' have been undertaken. The benefit of this approach is two-fold; these HRGs will not only include the additional cost/resources associated with performing these minor procedures, but may also provide an indication that the patient's condition was more severe, often 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.

5.8 Inclusion of Specialised Activity

HRG4+ includes the creation of HRGs specific to Specialised Activity, such as those for Fetal Medicine. 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. A significant number of HRGs also have a Paediatric (18 years and under)/Adult (19 years and over) age split to recognise the significant resource difference than can occur when treating children rather than adults.

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, chapter H, Musculoskeletal System has been redesigned to align more closely with clinical practice and resource usage, and take advantage of the full range of applicable HRG4+ design concepts. Other codes have been remapped and logic amended to more appropriately reflect expected resource usage within several subchapters. Full details are provided in the Chapter Summaries that form part of the standard documentation suite that accompanies each Grouper release.

Checks for maximum length of stay were extended in 2012/13 to several minor procedure HRGs in specific subchapters – see HC, Spinal Surgery and Disorders, JC, Skin Surgery and Chapter Y, Vascular Procedures and Disorders and Imaging Interventions - 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 more clinically reflective of the treatment for their diagnostic condition.

6 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 plus 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 User Manual.

As mentioned previously in this document, HRG4 has been used for Payment by Results (PbR) funding since April 2009 (for financial year 2009/10 onwards). The tariff for 2009/10 was calculated using the data gathered from the Reference Costs 2006/2007 exercise. Historically there has been a three year time lag between collecting costs and publishing a tariff in order to adequately test the impact of changes to the funding structure. However, for 2015/16 the tariff has been based on the 2011/12 Reference Cost exercise.

This means that the Payment Grouper (e.g. HRG4 Payment 2015/16) will not, in the main, include the latest classification developments based on HRG4+ that are incorporated into the latest Costing Grouper (e.g. HRG4+ Reference Costs 2015/16). This section, therefore, identifies how the two types of Grouper (**Payment** and **Costing**) work and the different approaches included, where applicable.

6.2 Procedure Hierarchies

Procedure Hierarchies provide a comparison mechanism which reflects the relative complexity of procedures across HRG chapters (see **section 4.5** for further information). 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-4 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, or where the only procedure(s) has a hierarchy value of 0, 1 or 2, the grouper will switch to using primary diagnosis to determine the HRG.

How Procedure Hierarchies work in the HRG4 Payment 2015/16 Grouper

Each procedure has been assigned a value which reflects its relative resource use:

Value	Description
0	OPCS codes not valid for grouping (such as approach codes and site of operation codes in the primary position)
1	Non-operative procedures with minimal resource (such as fitting a sling or administering an injection)

2	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 is thus used only for completeness
3,4	Procedures relating to subchapter WF, Non-admitted Consultations (uni-professional/disciplinary and multi-professional/disciplinary)
5-15	Scale of relative resource use. 5 represents the least and 15 represents the most resource intensive procedures

How Procedure Hierarchies work in the HRG4+ Reference Costs 2015/16 Grouper

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

Value	Description
0	OPCS codes not valid for grouping (such as approach codes and site of operation codes in the primary position)
1	Non-operative procedures with minimal resource (such as fitting a sling or administering an injection)
2	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 is thus used only for completeness
3,4	Procedures relating to subchapter WF, Non-admitted Consultations (uni-professional/disciplinary and multi-professional/disciplinary)
5-40	Scale of relative resource use. 5 represents the least and 40 represents the most resource intensive procedures

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 FCE requires a primary diagnosis. Each diagnosis code that is valid in the primary position has a hierarchical value associated with its resource impact, based on length of stay analysis (see **section 4.6** for further information). Once the primary diagnosis of the spell has been established, it can be used to determine the spell HRG.

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 spell-level grouping. Where hierarchy values are equal, the earliest recorded of the highest ranking diagnoses is used to drive grouping.

How Diagnosis Hierarchies work in the HRG4 Payment 2015/16 Grouper

There are five bands which run from 3 to 7 where 3 represents the lowest and 7 represents the most resource intensive primary diagnoses:

Value	Description
0	ICD-10 code not valid for grouping
3-7	Scale of relative resource use in which 3 represents the lowest and 7 represents the most resource intensive primary diagnoses

How Diagnosis Hierarchies work in the HRG4+ Reference Costs 2015/16 Grouper

There are 22 bands which run from 5 to 26 where 5 represents the lowest and 26 represents the most resource intensive primary diagnoses:

Value	Description
0	ICD-10 code not valid for grouping
5-26	Scale of relative resource use in which 5 represents the lowest and 26 represents the most resource intensive primary diagnoses

6.4 Table of Coding Equivalence (TOCE)

Upon introduction of a new primary classification, such as a new version of OPCS-4 or an ICD-10 update, the HRG design must accommodate new codes within a payment grouper that did not exist in the costing grouper on which that payment grouper is based. Following the TOCE preparation methodology, the new codes are accommodated within the HRG design.

TOCE Preparation Methodology

- The Clinical Classification Service provides TOCE mappings used, if appropriate, as a proposed base
- The National Casemix Office then seeks clinical input for the suitability of a proposed HRG mapping for the new primary classification codes
- If the Clinical Classification Service mapping was considered unsuitable for HRG grouping purposes, or the new codes map to multiple codes, a 'best fit' HRG root is identified

- Appropriate flags and logic will be checked in the Grouper to ensure correct derivation of the HRG. This may include adding new codes onto CC lists, intervention lists, etc.
- Finally, coding guidance is evaluated against the created mappings to ensure compliance with nationally published clinical coding guidance.

6.5 Complication and Comorbidity (CC) Splits

Complication and comorbidity splits are derived from all diagnoses within an episode or spell and provide a method of incorporating and recognising **secondary** varying levels of severity and complexity within HRG design (see **section 4.7** and **section 5.2** for further information). It is important to remember that 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 CC splits are not currently applicable to outpatient-based care.

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 (unspecified) where the same three-digit ICD-10 code has been determined as the primary diagnosis of the spell. This avoids effective double-counting of the impact of CCs on expected resource use at the HRG level.

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 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, in the HRG4+ design:

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.

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 expected 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 **HN12F Very Major Hip Procedures for Non-Trauma with CC Score 0-1** will be assigned.

However, if a procedure from any other HN or HT 'Very Major' Category HRG is also recorded such as **W42.1 Primary total prosthetic replacement of knee joint NEC** (which as a dominant procedure would map to either **HN22E Very Major Knee Procedures for Non-Trauma with CC Score 0-1** or **HT22C Very Major Knee Procedures for Trauma with CC Score 0-1**) then this is escalated to the 'Very Major' category HRG, in this case **HN81E Complex, Hip or Knee Procedures for Non-Trauma, with CC Score 0-1**.

6.8 Subsidiary Procedure-qualified HRGs

Some of the procedure-based HRGs require a subsidiary code qualifier. This means that the OPCS-4 code detailed in the patient record requires an additional OPCS-4 subsidiary code denoting the method of operation. The list of OPCS-4 subsidiary codes are designed to enhance codes from the individual body system procedure codes in the main OPCS-4 classification and includes (but are not limited to) approach codes, staged and minimal access procedures.

6.9 Diagnosis-qualified HRGs

Some of the procedure-based HRGs have an ICD-10 diagnosis qualifier. This means that the ICD-10 code reported against the record will influence the procedure-based HRG that is derived. This concept ensures that the HRG captures the additional expected resource associated with the patient's diagnosis, where it is deemed to be a clinically important resource factor.

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 (usually) ignores these unbundled components when deriving the core HRG for an episode or spell.

When all significant procedures in an admitted patient care record are unbundled, the primary 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 Design Concepts – Worked Examples

This section includes worked examples for all of the design concepts mentioned throughout the document. The examples relate to the HRG4+ design specific to the 2015/16 Reference Cost grouper.

7.1 Interactive Complications/Comorbidities

Cases A to D illustrate how CC summation works within the non-malignant disorder HRG roots to map to four different levels of CC split based on the summed value of all the CCs recorded.

Case	Age	Length of Stay (days)	Primary Diagnosis (ICD-10)	Secondary Diagnoses (ICD-10)	HRG4+
A	45	2	B17.1 Acute hepatitis C	R18.X Ascites (<i>CC value = 1</i>)	GC17K Non-Malignant, Hepatobiliary or Pancreatic Disorders, without Interventions, with CC Score 0-1 (<i>Summed CC value = 1</i>)
B	45	5	B17.1 Acute hepatitis C	R18.X Ascites (<i>CC value = 1</i>) A41.9 Septicaemia, unspecified (<i>CC value = 2</i>)	GC15J Non-Malignant, Hepatobiliary or Pancreatic Disorders, without Interventions, with CC Score 2-4 (<i>Summed CC value = 3</i>)
C	45	8	B17.1 Acute hepatitis C	R18.X Ascites (<i>CC value = 1</i>) A41.9 Septicaemia, unspecified (<i>CC value = 2</i>) F03.X Unspecified dementia (<i>CC value = 1</i>) E40.X Kwashiorkor (<i>CC value = 2</i>)	GC15H Non-Malignant, Hepatobiliary or Pancreatic Disorders, without Interventions, with CC Score 5-7 (<i>Summed CC value = 6</i>)
D	45	15	B17.1 Acute hepatitis C	R18.X Ascites (<i>CC value = 1</i>) A41.9 Septicaemia, unspecified (<i>CC value = 2</i>) F03.X Unspecified dementia (<i>CC value = 1</i>) E40.X Kwashiorkor (<i>CC value = 2</i>) J18.9 Pneumonia, unspecified (<i>CC value = 2</i>)	GC15G Non-Malignant, Hepatobiliary or Pancreatic Disorders, without Interventions, with CC Score 8+ (<i>Summed CC value = 8</i>)

7.2 Multiple Procedure Logic

Cases A to D illustrate how the multiple procedure logic works within a subchapter, mapping activity to different HRGs depending on the secondary procedures recorded in addition to the dominant procedure.

Case E illustrates the effect of a subsidiary code indicating the procedure was bilateral.

Case	Age	Length of Stay (days)	Primary Diagnosis (ICD-10)	Dominant Procedure (OPCS-4)	Secondary Procedures (OPCS-4)	HRG4+
A	45	5	N20.0 Calculus of kidney	M10.2 Endoscopic pyeloplasty		LB65E Major Endoscopic, Kidney or Ureter Procedures, 19 years and over, with CC Score 0-2
B	45	5	N20.0 Calculus of kidney	M10.2 Endoscopic pyeloplasty	M28.1 Endoscopic laser fragmentation of calculus of ureter NEC (from list LB_Major_End)	LB64E Complex Endoscopic, Kidney or Ureter Procedures, 19 years and over, with CC Score 0-1
C	45	5	N20.0 Calculus of kidney	M10.2 Endoscopic pyeloplasty	M13.2 Percutaneous drainage of kidney (from list LB_Int_Open)	LB64E Complex Endoscopic, Kidney or Ureter Procedures, 19 years and over, with CC Score 0-1
D	45	5	N20.0 Calculus of kidney	M10.2 Endoscopic pyeloplasty	M29.4 Endoscopic dilation of ureter + M67.3 Endoscopic drainage of prostate (both from list LB_Int_End)	LB64E Complex Endoscopic, Kidney or Ureter Procedures, 19 years and over, with CC Score 0-1
E	45	5	N20.0 Calculus of kidney	M10.2 Endoscopic pyeloplasty	Z94.1 Bilateral operation	LB64E Complex Endoscopic, Kidney or Ureter Procedures, 19 years and over, with CC Score 0-1

7.3 Intervention Splits

Cases A and B illustrate how minor “interventions” are taken into account within the HRG root **GC01 Liver Failure Disorders**:

Case	Age	Length of Stay (days)	Primary Diagnosis (ICD-10)	Procedure (OPCS-4)	HRG4+
A	45	3	K70.4 Alcoholic hepatic failure		GC01F Liver Failure Disorders without Interventions, with CC Score 0-4
B	45	5	K70.4 Alcoholic hepatic failure	L91.2 Insertion of central venous catheter NEC	GC01D Liver Failure Disorders with Single Intervention

7.4 Age Splits

Cases A and B highlight the different HRGs generated for patients with the same primary diagnosis **I06.0 Rheumatic aortic stenosis**, but for patients of different ages:

Case	Age	Length of Stay (days)	Primary Diagnosis (ICD-10)	Secondary Diagnoses (ICD-10)	HRG4+
A	25	4	I06.0 Rheumatic aortic stenosis		EB06D Cardiac Valve Disorders with CC Score 0-4
B	14	10	I06.0 Rheumatic aortic stenosis		PE23F Paediatric Cardiac Conditions with CC Score 0

7.5 Length of Stay Splits

Cases A and **B** illustrate the effect of length of stay on HRG derivation, in this example for Respite Care:

Case	Age	Length of Stay (days)	Primary Diagnosis (ICD-10)	Secondary Diagnoses (ICD-10)	Dominant Procedure (OPCS-4)	HRG4+
A	62	3	Z75.5 Holiday relief care			WH20C Respite Care with length of stay 4 days or less
B	62	9	Z75.5 Holiday relief care			WH20A Respite Care with length of stay 9 days or more

7.6 Diagnosis Qualified

Cases A and **B** highlight the different HRGs generated for patients with the same dominant procedure, but different primary diagnoses:

Case	Age	Length of Stay (days)	Primary Diagnosis (ICD-10)	Dominant Procedure (OPCS-4)	HRG4+
A	32	15	K59.0 Subarachnoid haemorrhage from carotid siphon and bifurcation	A48.3 Insertion of neurostimulator adjacent to spinal cord	FZ96Z Insertion of Neurostimulator for Treatment of Faecal Incontinence
B	45	10	R33X Retention of urine	A48.3 Insertion of neurostimulator adjacent to spinal cord	LB79Z Insertion of Neurostimulator for Treatment of Urinary Incontinence

7.7 Subsidiary Procedure Qualified

Cases A and **B** highlight the value of recording a secondary or subsequent procedure code, where appropriate:

Case	Age	Length of Stay (days)	Primary Diagnosis (ICD-10)	Secondary Diagnosis (ICD-10)	Dominant Procedure (OPCS-4)	Secondary Procedures (OPCS-4)	HRG4+
A	45	5	I71.1 Thoracic aortic aneurysm, ruptured	I47.1 Supra ventricular tachycardia	L20.1 Emergency bypass of segment of ascending aorta by anastomosis of aorta to aorta NEC	K10.1 Repair of defect of interatrial septum using prosthetic patch	ED14B Complex Repair of Ascending Thoracic Aorta with CC Score 0-6
B	45	5	I71.1 Thoracic aortic aneurysm, ruptured	I47.1 Supra ventricular tachycardia	L20.1 Emergency bypass of segment of ascending aorta by anastomosis of aorta to aorta NEC		ED15B Standard Repair of Ascending Thoracic Aorta with CC Score 0-6

8 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 advises on current and developmental classifications. Expert Reference Groups, Panels and Steering Groups provide a cross-chapter interface in areas such as community, cancer, 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
- Royal College of Surgeons of England - Faculty of Dental Surgery
- British Thoracic Society
- Society of Cardiothoracic Surgeons
- British Cardiovascular Society
- Royal College of Surgeons
- British Society of Gastroenterology
- British Association of Rheumatology
- British Geriatrics Society
- British Orthopaedic Association
- Association of Breast Surgery
- British Association of Surgical Oncologists
- British Burns Association
- British Association of Plastic Surgeons
- British Association of Dermatologists
- British Society of Allergy and Clinical Immunology
- Association of Genito-urinary Medicine
- Diabetes UK
- British Diabetic Association
- British Association of Urological Surgeons
- Renal Association
- Royal College of Obstetricians and Gynaecologists
- Royal College of Paediatrics and Child Health
- The Clinical Genetics Society
- British Association for Emergency Medicine
- British Society for Rehabilitation Medicine
- British Association for Sexual Health and HIV

- 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

9 Further Information

Health and Social Care Information Centre hscic.gov.uk/casemix

Helpdesk: [0845 300 6016](tel:08453006016)

Email: enquiries@hscic.gov.uk

The HSCIC is England's central, trusted source of authoritative data and information relating to health and care for frontline decision makers.

OPCS: systems.hscic.gov.uk/data/clinicalcoding/codingstandards/opcs4

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 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 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.

Monitor monitor-nhsft.gov.uk/

NHS England england.nhs.uk/

Monitor and NHS England are working together to design a comprehensive NHS payment system that will deliver better quality services for patients at a cost that is sustainable

10 Analysis of NHS activity by Subchapters, comparing Financial Year 2011/12 to 2012/13

The table below gives an idea of the volumes of Finished Consultant Episodes that are generated for each HRG subchapter over a two year period, with the increase/ (decrease) from one year to the next.

Note that the subchapters below do not reflect the latest 2014/15 Reference Costs build as Hospital Episodes Statistics (HES) data for 2014/15 are not available at the time of publication.

The admitted patient care data (FCEs 12/13) are grouped using the HRG4+ 2012/13 Reference Cost grouper and the admitted patient care data (FCEs 11/12) are grouped using the HRG4 2011/12 Reference Costs grouper.

Sub-chapter	Subchapter Description	FCEs 2012/13	FCEs 2011/12	Increase/ Decrease %	Subchapter as a percentage of total activity (2012/13)	Subchapter as a percentage of total activity (2011/12)
AA	Nervous System Procedures and Disorders	682,811	674,392	1%	3.57%	3.57%
AB	Pain Management	195,545	196,298	0%	1.02%	1.04%
BZ	Eyes and Periorbital Procedures and Disorders	638,548	625,765	2%	3.34%	3.31%
CZ	Mouth Head Neck and Ears Procedures and Disorders	741,441	744,675	0%	3.88%	3.94%
DZ	Thoracic Procedures and Disorders	1,221,063	1,102,252	11%	6.39%	5.84%
EA	Cardiac Procedures	362,705	369,345	-2%	1.90%	1.96%
EB	Cardiac Disorders	986,232	993,195	-1%	5.16%	5.26%
EC	Congenital Cardiac Surgery (introduced in Reference Costs 2012/13)	10,298	0	100%	0.05%	0.00%
FZ	Digestive System Procedures and Disorders	2,642,097	2,550,689	4%	13.82%	13.50%
GA	Hepatobiliary and Pancreatic System Surgery	79,167	78,146	1%	0.41%	0.41%
GB	Hepatobiliary and Pancreatic System Endoscopic and Percutaneous Procedures	71,032	69,764	2%	0.37%	0.37%
GC	Hepatobiliary and Pancreatic System Disorders	200,873	193,672	4%	1.05%	1.03%

Sub-chapter	Subchapter description	FCEs 2012/13	FCEs 2011/12	Increase/Decrease %	Subchapter as a percentage of total activity (2012/13)	Subchapter as a percentage of total activity (2011/12)
HA	Orthopaedic Trauma Procedures	429,950	440,639	-2%	2.25%	2.33%
HB	Orthopaedic Non-Trauma Procedures	717,136	733,490	-2%	3.75%	3.88%
HC	Spinal Surgery and Disorders	228,438	206,064	11%	1.20%	1.09%
HD	Musculoskeletal Disorders	320,936	305,948	5%	1.68%	1.62%
HR	Orthopaedic Reconstruction Procedures	35,664	36,942	-3%	0.19%	0.20%
JA	Breast Procedures and Disorders	138,239	138,824	0%	0.72%	0.73%
JB	Burns Procedures and Disorders	16,531	12,783	29%	0.09%	0.07%
JC	Skin Surgery	333,578	374,929	-11%	1.75%	1.98%
JD	Skin Disorders	180,257	167,920	7%	0.94%	0.89%
KA	Endocrine System Disorders	40,374	38,609	5%	0.21%	0.20%
KB	Diabetic Medicine	69,062	67,709	2%	0.36%	0.36%
KC	Metabolic Disorders	127,387	118,097	8%	0.67%	0.63%
LA	Renal Procedures and Disorders	1,209,901	1,298,205	-7%	6.33%	6.87%
LB	Urological and Male Reproductive System Procedures and Disorders	852,385	922,955	-8%	4.46%	4.89%
MA	Female Reproductive System Procedures	424,409	440,826	-4%	2.22%	2.33%
MB	Female Reproductive System Disorders	122,311	133,282	-8%	0.64%	0.71%
MC	Assisted Reproduction Medicine	13,258	12,322	8%	0.07%	0.07%
NZ	Obstetric Medicine	1,331,118	1,359,314	-2%	6.96%	7.20%
PA	Paediatric Medicine	1,007,650	971,520	4%	5.27%	5.14%
PB	Neonatal Disorders	733,679	735,891	0%	3.84%	3.90%
QZ	Vascular Procedures and Disorders	273,362	263,668	4%	1.43%	1.40%
RC	Interventional Radiology	55,918	51,414	9%	0.29%	0.27%
SA	Haematological Procedures and Disorders	558,601	535,862	4%	2.92%	2.84%
SB	Chemotherapy	671,246	614,943	9%	3.51%	3.26%
SC	Radiotherapy	76,146	61,941	23%	0.40%	0.33%
UZ	Undefined Groups	212,518	183,336	16%	1.11%	0.97%
VA	Multiple Trauma	63,091	62,589	1%	0.33%	0.33%

Sub-chapter	Subchapter description	FCEs 2012/13	FCEs 2011/12	Increase/ Decrease %	Subchapter as a percentage of total activity (2012/13)	Subchapter as a percentage of total activity (2011/12)
WA	Immunology, Infectious Diseases, Poisoning, Shock, Special Examinations, Screening and Other Healthcare Contacts	794,621	767,513	4%	4.16%	4.06%
WD	Treatment of Mental Health Patients by Non-Mental Health Service Providers	242,501	233,508	4%	1.27%	1.24%
WF	Non-admitted Consultations	108	93	16%	0.00%	0.00%
TOTAL ACTIVITY		19,112,187	18,889,329	1%		

11 The Design Matrix for Reference Costs 2015/16

The Design Matrix shows the type of HRG splits and the number of HRGs in each subchapter. Please note, "Total HRGs" includes those HRGs not driven by Diagnosis or Procedure codes

Subchapter	Split									Counts			
	Age	CC	Interactive CC	Other Diagnosis	Length of Stay	Discharge	Procedure	None	Other	Total HRGs	Procedure Only Driven	Diagnosis Only Driven	Procedure or Diagnosis-Driven
AA	X		X							98	49	49	0
AB								X		13	13	0	0
BZ	X		X				X			94	90	4	0
CA	X		X							120	120	0	0
CB			X				X			12	0	12	0
CD	X									23	23	0	0
DZ	X		X		X	X	X			176	46	130	0
EB			X							48	0	48	0
EC			X							21	21	0	0
ED	X		X							46	46	0	0
EY			X							65	65	0	0
FZ	X		X	X			X			202	148	54	0
GA	X		X						Approach	26	26	0	0
GB			X							14	14	0	0
GC			X				X			24	0	24	0
HC	X		X				X			74	39	35	0
HD			X							35	0	35	0
HE			X				X			84	0	84	0
HN	X		X							110	110	0	0
HT	X		X							87	87	0	0
JA			X				X			35	24	11	0
JB							X			12	0	11	1
JC	X									12	12	0	0
JD			X				X			10	0	10	0
KA			X							18	7	11	0

Subchapter	Split									Counts			
	Age	CC	Interactive CC	Other Diagnosis	Length of Stay	Discharge	Procedure	None	Other	Total HRGs	Procedure Only Driven	Diagnosis Only Driven	Procedure or Diagnosis Driven
KB			X							12	1	11	0
KC			X				X			9	0	9	0
LA	X		X				X			48	14	34	0
LB	X		X				X			149	93	56	0
LD	X									26	0	0	0
LE	X									4	4	0	0
MA			X						Approach	48	46	0	2
MB			X				X			17	0	17	0
MC								X		10	10	0	0
NZ			X							56	44	12	0
PB			X				X			20	0	20	0
PC			X							4	0	4	0
PD			X							24	0	24	0
PE			X							12	0	12	0
PF			X							17	0	17	0
PG			X							3	0	3	0
PH			X							4	0	4	0
PJ			X							7	0	7	0
PK			X							11	0	11	0
PL			X							10	0	10	0
PM			X	X						14	0	14	0
PN			X							9	0	7	2
PP			X							2	0	2	0
PQ			X							2	0	2	0
PR			X							22	0	22	0
PT			X							4	0	4	0
PV			X							7	0	7	0
PW			X							15	0	15	0

Subchapter	Split									Counts			
	Age	CC	Interactive CC	Other Diagnosis	Length of Stay	Discharge	Procedure	None	Other	Total HRGs	Procedure Only Driven	Diagnosis Only Driven	Procedure or Diagnosis Driven
PX			X							46	0	46	0
RD	X									46	46	0	0
RN	X									68	68	0	0
SA	X		X							99	27	71	1
SB								X		18	18	0	0
SC								X		30	30	0	0
SD	X									10	0	0	0
UZ								X		1	0	0	1
VA				X						24	20	4	0
VB								X		12	0	0	0
VC								X		23	23	0	0
WD								X		3	0	3	0
WF									FirstAtt	8	8	0	0
WH			X		X		X			64	2	62	0
WJ			X				X			40	0	40	0
XA								X		6	0	0	0
XB								X		9	0	0	0
XC								X		7	0	0	0
XD								X		58	58	0	0
YA			X							10	10	0	0
YD								X		5	5	0	0
YF	X		X							8	8	0	0
YG	X		X							16	16	0	0
YH								X		8	8	0	0
YJ								X		12	12	0	0
YL	X									8	8	0	0
YQ			X							60	49	11	0
YR	X		X							58	58	0	0

12 The Documentation Suite

Below is a list of the various documents which are available to download from the National Casemix Office website <http://www.hscic.gov.uk/casemix/downloads>.

This documentation suite provides a comprehensive resource to enable users to understand design concepts and logic, as well as practical use of the Grouper.

- The **Casemix Companion** is a starting point and general reference guide for anyone interested in learning about the casemix classification system used by the NHS in England. The document provides an introduction to HRGs, groupers, HRG4+ design concepts and grouping logic, and it contains links to additional resources.
- The **Grouper User Manual** provides instructions on how to prepare and group data using the Grouper software application. Sample data with expected results is provided. This document is updated with every grouper release.
- The **Summary of Changes** document provides an overview of the main differences between the current grouper design and its relevant predecessor.
- The **Chapter Summaries** document provides an overview of the scope, composition and relevant grouping logic of individual HRG subchapters, and it highlights significant changes to the latest HRG design.
- The **Worked Examples** document contains illustrations of the various concepts and grouping logic used within the current HRG design.
- The **Code to Group Workbook** is a spreadsheet that embodies the casemix design. It provides details of the constituent elements that contribute to HRG grouping, and it contains reference data such as the ICD-10 and OPCS-4 codes utilised in the design, the procedure and diagnosis hierarchies pertinent to a specific design, and the Complication and Comorbidities lists for HRG subchapters. The spreadsheet also includes information on Programme Budgeting Category (PBC) mapping, as well as a comprehensive list of HRG codes and labels.
- The **Code to Group User Manual** explains how to make best use of the information found in the Code to Group Workbook. Specifically, the manual clarifies the grouping logic found in the workbook's Code to Group tab.
- The **Specialised Service Identification Code Sets** is a spreadsheet containing detailed information about the flags and trigger codes found in the HRG4+ Reference Costs Grouper. These codes help organisations identify specialised service activity.
- The **Roots Workbook** identifies new HRGs, deleted HRGs and changes to existing HRG labels between designs.
- The **Trimpoints Workbook** identifies the Episode and Spell-level Trimpoints used to collect reference costs for each HRG in a given year. This is published alongside the Methodology Document.

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This publication may be requested in large print or other formats.

For further information

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