

Code to Group User Manual

HRG4+ 2018/19 Local Payment Grouper

HRG4+ 2017/18 Local Payment Grouper

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Introduction

This user guide is designed help provide users with an understanding of the logic to how HRG are derived using clinical code. It is based on the logic that the HRG Grouper uses.

Getting Started

The HRG4+ Code to Group User Manual supports the use of the HRG4+ Code to Group workbook. It describes the essential components used in standard grouping logic of Healthcare Resource Groups (HRGs) and enables organisations to start manually grouping from their own patient record information. Understanding how to group HRGs manually can also help organisations to develop a clearer understanding of the design logic employed in the grouper application.

Colour-Coded Worksheets

Worksheets are colour-coded to make the **Code to Group workbook** easier to navigate:

**Dark
Blue**

Lookup Tables

Contain codes and descriptions

Chapter
Subchapter
HRG
OPCS
ICD-10
PBC Labels

**Light
Blue**

Design Tables

Contain logic information used for grouping

Code to Group
Group to Split
Combination Code

Grey

Reference Lists

Contain descriptive information of flags and lists.

Documentation Flags
Hierarchy Lists
Other Lists
CC Lists
Global Lists
Combination Lists
PBC Mappings
Simple Flags

Microsoft Excel Filters

Excel filters are used to limit data to that which users wish to inspect. Clicking the filter button next to a field title displays a menu which allows values to be either selected or inputted manually.

The Process

The Code to Group workbook guides users through the design rules in a way that allows users to process their data manually and derive an HRG. This document illustrates high level diagrams to show how the logic can be applied to the workbook to generate an HRG within an Admitted Patient Care setting (APC).

For APC there are three main types of **Core** HRG grouping methodology. These are referred to as Core logic:

- Core 1 – The HRG is derived from either the Dominant Procedure or the Primary Diagnosis.
- Core 4 – This is how Multiple Trauma HRGs are derived
- Core 5 – Captures all global exceptions

There is also an unbundled grouping methodology that applies to all procedures.

The logical process for deriving the HRG is to attempt to group every record using four grouping pathways:

- Multiple Trauma
- Global Exceptions
- Procedure
- Diagnosis

If after grouping on all four methods there has been more than one HRG generated then the correct HRG and grouping method output is based on the below order of precedence:

1. “U” Codes – Any method causing an unclassified code will force the whole record to be “U” grouped. This includes unbundled processing which will force the core HRG to be unclassified.
2. Multi-Trauma
3. Procedure driven
4. Global Exception
5. Diagnosis driven

Precedence

If more than one core HRG is derived from this logic then the value in the precedence list is used to determine the core HRG.

This list can be seen at HRG level in the worksheet **Other Lists** - filter 'List Id' to "HRG*"

This will filter to four "List_ID"s with identical HRGs and a value (lower value being the more significant):

HRG_M_Prec - MultipleTrauma

HRG_P_Prec - Procedure Driven

HRG_G_Prec - Global Exception*

HRG_D_Prec - Diagnosis Driven

Filtering using the List ID (representing the grouping method) and the HRG will bring back a value. This check is made for all derived HRGs from the record. The HRG with the lowest value determines which the core HRG is and thus which grouping method was used.

*Note that Burns chapter (JB) within Global Exceptions processing is contradictory to this list. These are ranked higher in the precedence list than procedure driven HRGs.

There are some exceptions to this process which are outside the scope of this document. If you require further information on these exceptions please contact the National Casemix Office via the helpdesk at enquiries@nhsdigital.nhs.uk

Worked examples showing the different kinds of grouping logic can be found at the end of this document. The diagrams do not, at this stage, account for the following types of logic or conditions:

- HRGs for datasets other than Admitted Patient Care.
- Cases where all flag conditions are not met when determining OPCS-4 based HRGs (thereby implying a switch to primary diagnosis in Admitted Patient Care)
- Neonatal Critical Care, Paediatric Critical Care, Adult Critical Care and National Renal Dataset. Grouping in these subchapters relies largely on the algorithm encoded within the grouper application and cannot be fully represented easily here. Please consult the relevant **Chapter Summary** for more information.

Flow Diagrams

The flow diagram shows the logical process that the Grouper takes. With experience and understanding it should be easier to eliminate some of these grouping pathways. For example, if the record only has diagnosis codes you can then eliminate the procedure driven logic.

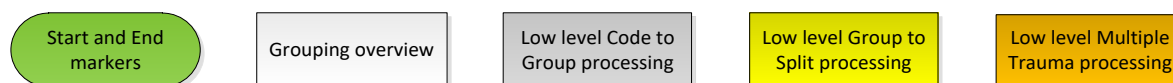
When following the diagram many of the pathways can be eliminated at an early stage if a lookup is not found. When this happens ignore these pathways and move onto the next.

Process diagram description

The process flow diagram illustrates five grouping method pathways that need to be processed. If a process pathway results in a lookup failure then this pathway is finished and the user should move to the next.

This logic only works if the record has passed the pre-processing validation step.

Diagram elements are colour-coded to indicate that more detail is available if required.



Code to Group diagram description

This diagram focuses on the Code to Group (C2G) process in more detail. The main aspect of this is to find out which flag is triggered first by satisfying conditions within the flags list. There are two ways in which you can determine which lists need to be checked:

- Using the **Simple Flags** worksheet descriptions. This directs the user to explicit lists and conditions. This method is highlighted in the flow diagrams.
- Using the **Documentation Flags** worksheet description. This is a more descriptive and friendly method of reading what is required.

Both methods will bring you to the same requirement lists and the choice is a matter of personal preference. Using both description requirements will provide further assurance.

The worked examples use the Documentation Flags method to determine the criteria but either way will result in the same criteria list being checked.

If a procedure driven logic is being applied and none of the flags criteria are met then this disqualifies the HRG as being procedure driven.

Group to Split diagram description

This is a more detailed logic diagram for the Group to Split (G2S) process. Again the flag criteria can be determined by either using **Simple Flags** or **Documentation Flags** or using both. By default '**Flag 1**' will always be true if none of the other flag's criteria are met.

Multiple Trauma diagram description

This diagram illustrates the process for Multiple Trauma grouping. There are two steps to this process:

- 1. Determine whether the data should be grouped using Multiple Trauma logic:**
To group using Multiple Trauma logic, the record must have a primary diagnosis from the Multiple Trauma list (MT_ICD_Value) and a secondary diagnosis code that is present in this list but relates to a different part of the body to the primary diagnosis. This is determined by the set of "Comp_VA_*" lists that represent complimentary lists. These provide all combinations of codes that are classed as relating to a different body area to the primary diagnosis.
- 2. Determine whether Multiple Trauma grouping should be procedure or diagnosis driven:**
Having satisfied the criteria in (1), if a procedure code is present that is in the Multiple Trauma list (MT_OPCS_Value), then the grouping method will be procedure led. In these cases flags in both **Code to Group** and **Group to Split** will need to be processed. If there is no procedure on the MT_OPCS_Value list, then grouping will be diagnosis-driven and the HRG will have a root HRG of "VA10". The Group to Split logic will determine the full HRG.

Spell Grouping overview description

Spell Grouping works in the same way as the single episode grouping and basically treats the spell as one record. There are conditions that govern what the spell dominant procedure and the spell primary diagnosis are:

Dominant procedure:

- Dominant Procedure is the first procedure found with the highest hierarchy value.

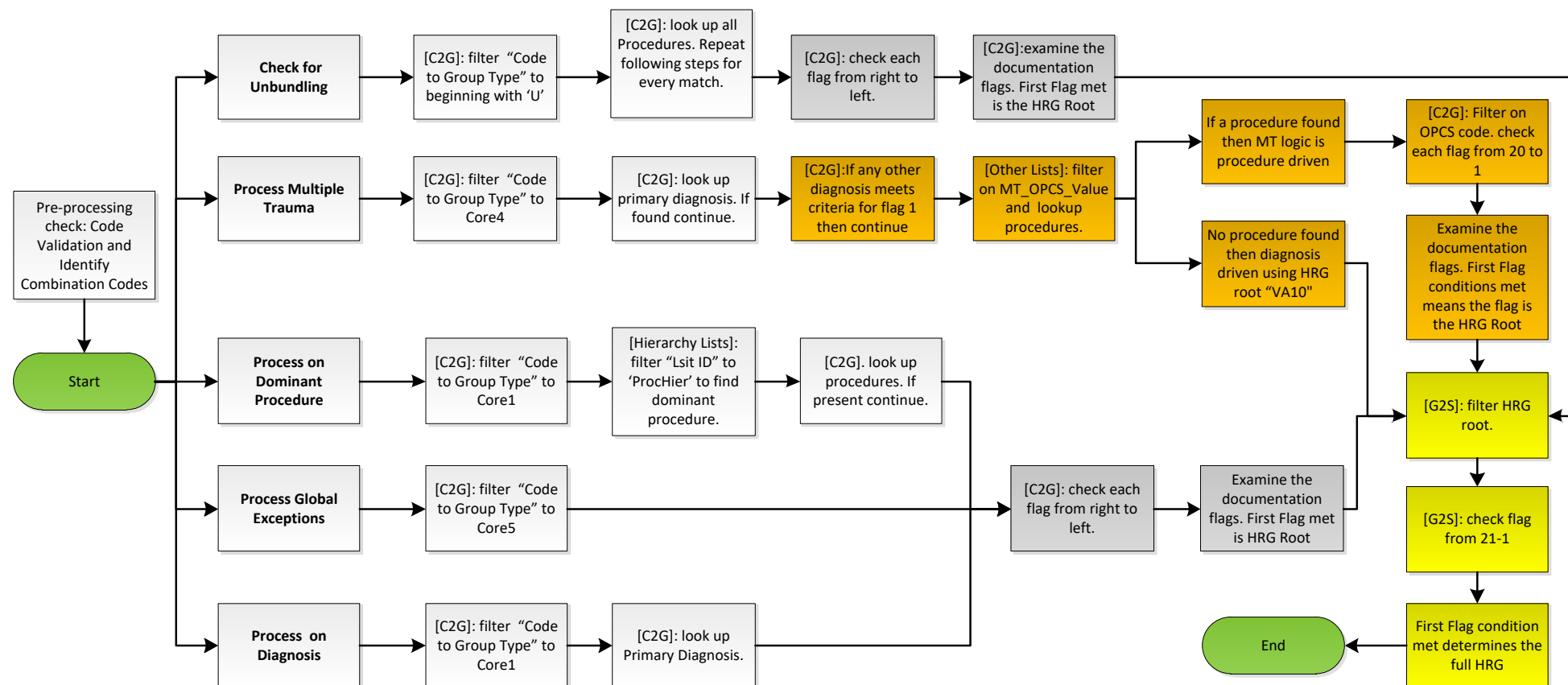
Primary diagnosis:

- If the first episode was Multiple Trauma (MT) then the spell primary diagnosis is the same as that of first episode.
- If the first episode is not MT and the highest (any episode) dominant procedure hierarchy is higher than 2, then the spell primary diagnosis will be the same as that of the episode containing the dominant procedure.
- If none of the above are met then the spell primary diagnosis will be derived by the highest hierarchy.

The Spell Report Flag is assigned to the episode that has the primary diagnosis associated to it.

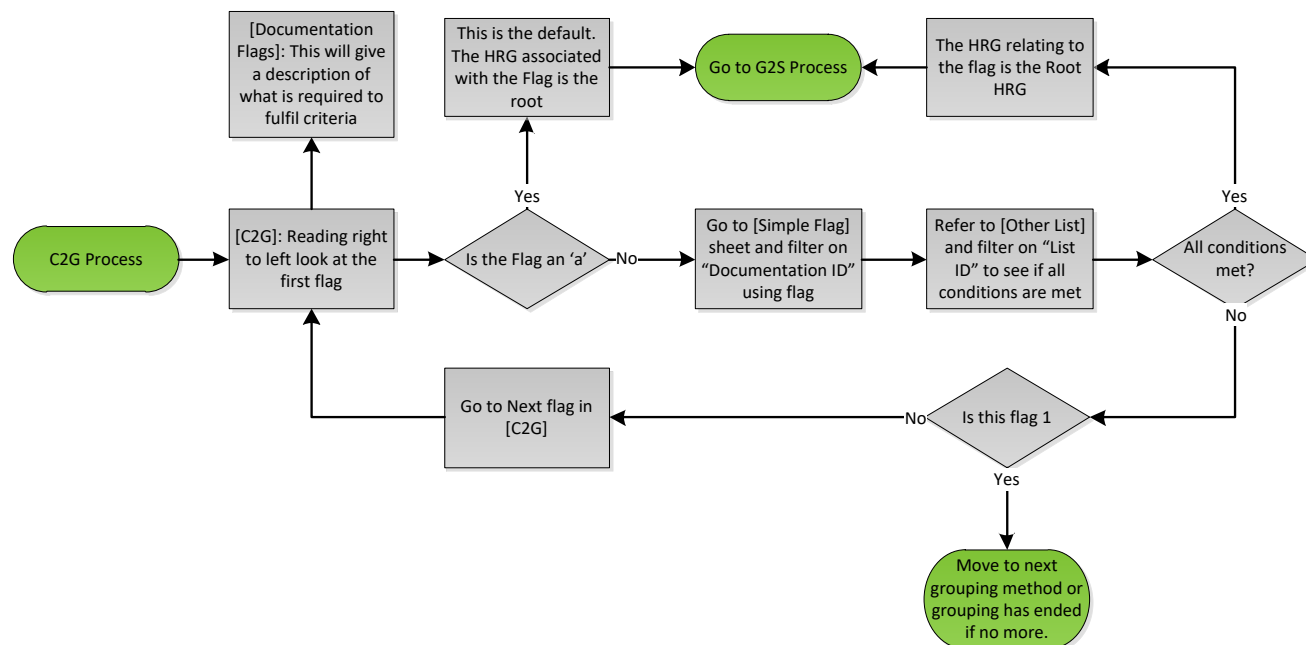
The mandatory fields - **SEX**, **CLASSPAT**, **ADMISOR** and **ADMIMETH** should be populated to ensure they match the first episode. For multi-episode spells there are several cross episode validations rules that are applied to insure integrity and consistency, e.g. Age changes must be consistent to episode duration as well as the above mentioned mandatory fields being consistent.

APC Process Flow

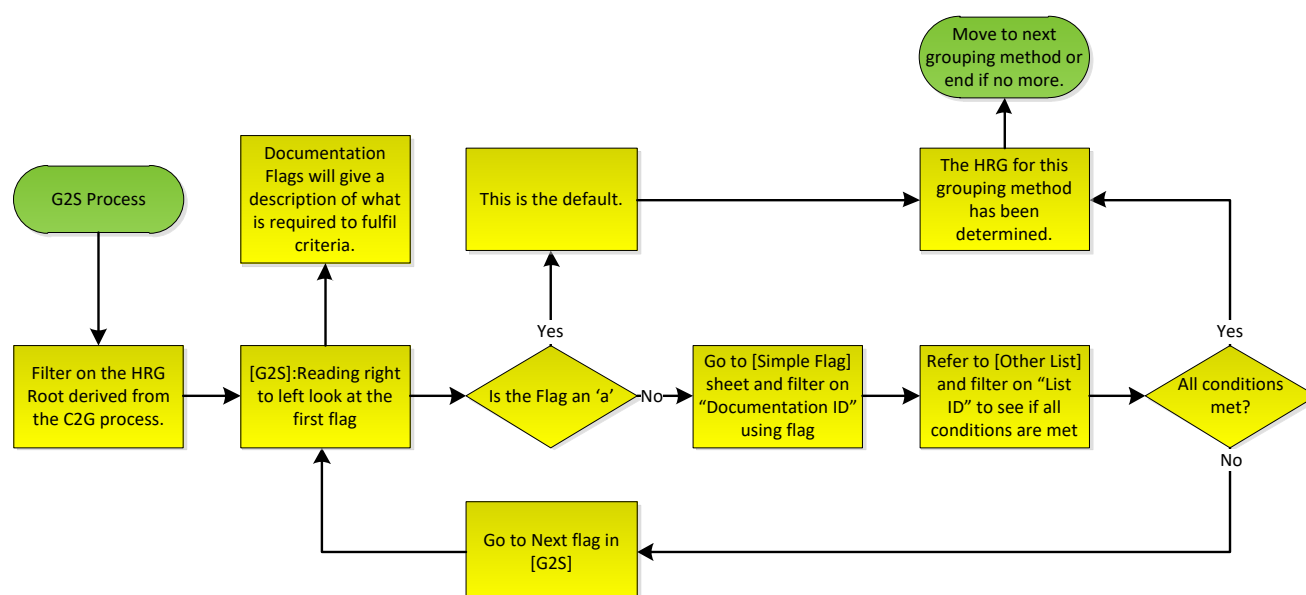


All processing pathways should be followed starting with unbundling. If a lookup fails in a pathway then move onto the next processing method. Note. Record must have passed pre-processing validation rules.

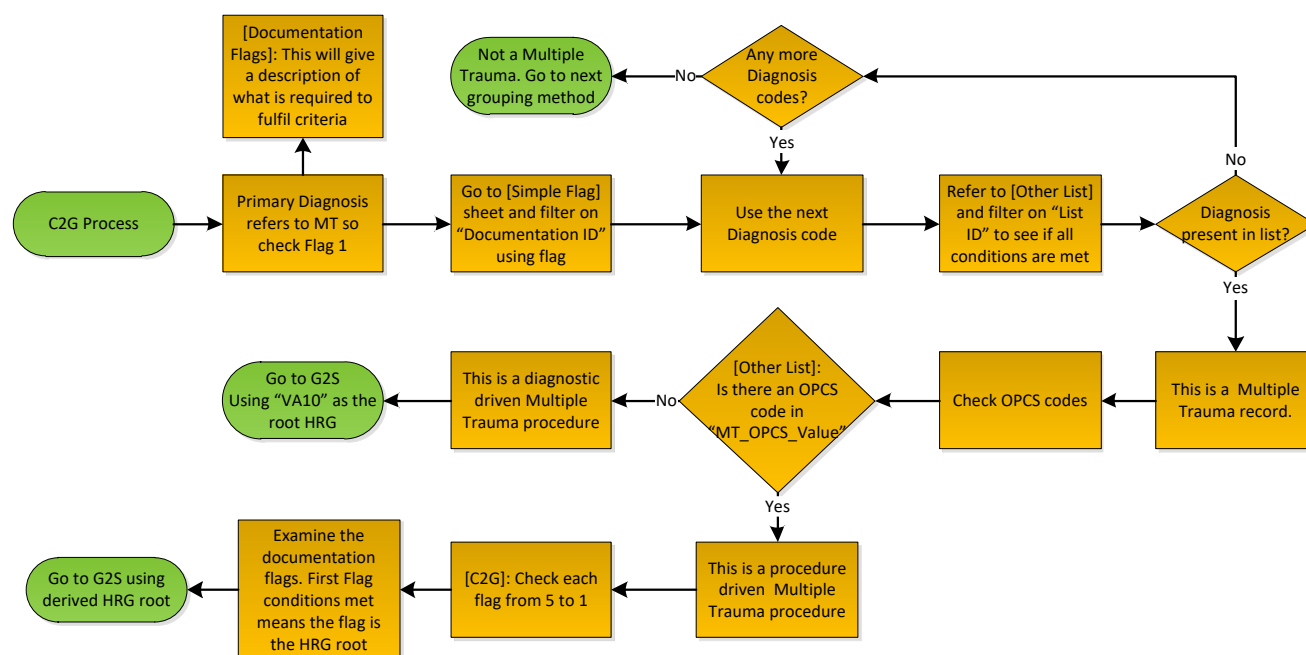
Code to Group flow



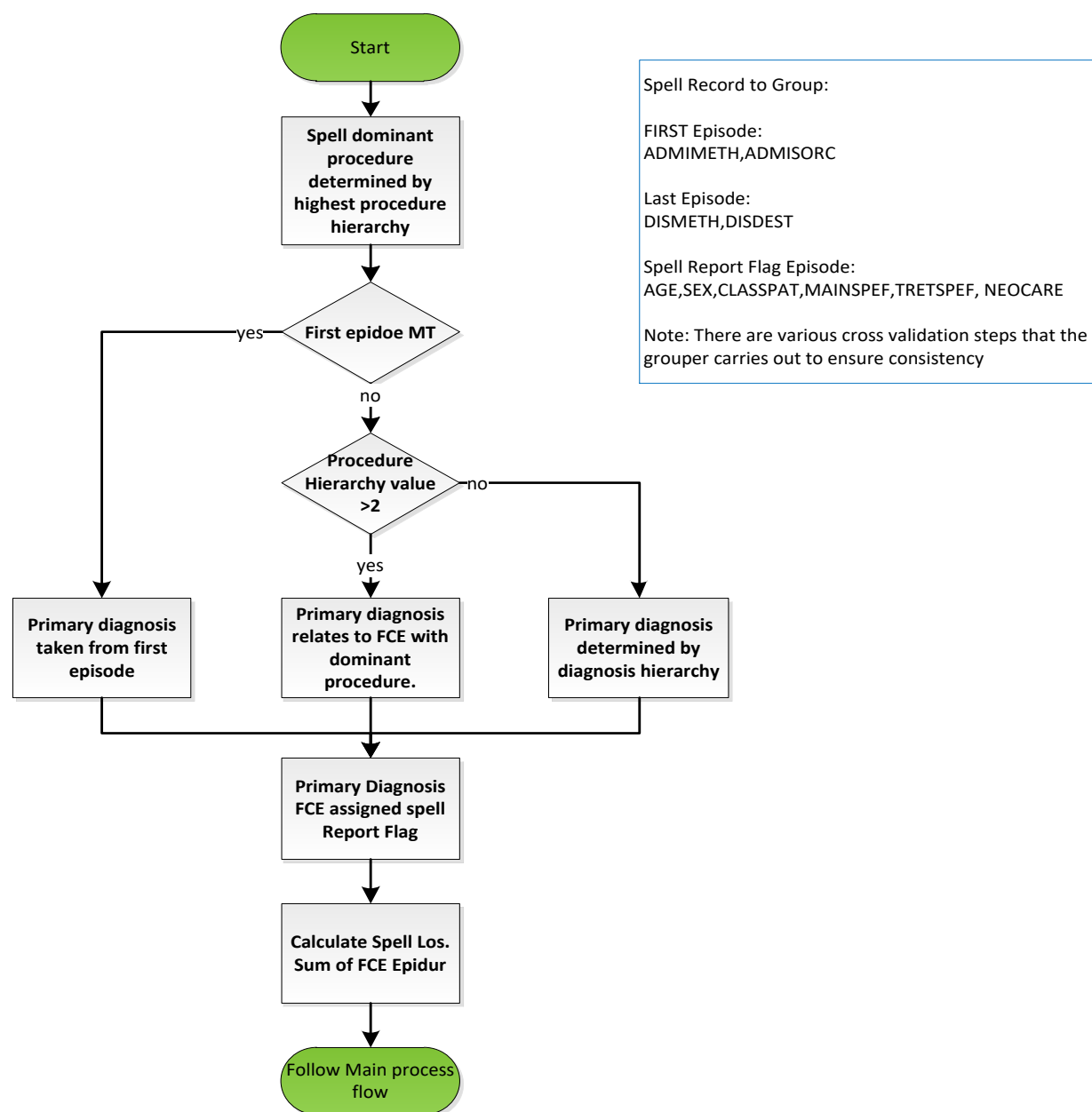
Group to Split flow



Multiple Trauma flow



Spell Grouping overview



Pre-validation for Admitted Patient Care

HRGs are derived by applying the design rules to valid data. To make sure that all mandatory fields in the record are meaningful, they need to be compliant with the following validation rules:

Any data item that does not pass validation will invalidate the whole record and it will be allocated a 'U' group.

Admitted Patient Care

Value	Description	Validation
OPCS	Procedure Codes	In OPCS version 4.7
ICD	Diagnosis Codes	In ICD10 5 th Edition
ADMIMETH	Admission Method	Data Dictionary Definition
PATCLASS	Patient Class	Data Dictionary Definition
ADMISORC	Source of Admission	Data Dictionary Definition
AGE	Age at Episode Start	Number between 0-130
DISMETH	Discharge Method	Data Dictionary Definition
SEX	Sex	Data Dictionary Definition
DISDEST	Discharge Destination	Data Dictionary Definition
EPIDUR	Episode Duration	Number between 0-99999
MAINSPEF	Main Specialty Function	Data Dictionary Definition
TRETSPEF	Treatment Function Code	Data Dictionary Definition
NEOCARE	Neonatal Level of Care	Data Dictionary Definition

Nulls are accepted in NEOCARE, Secondary Diagnosis fields and any Procedure field.

All these definitions can be found in the NHS Data Dictionary:

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

Coding classifications list can be downloaded from Technology Reference data Update Distribution site:

<https://isd.hscic.gov.uk/trud3/user/guest/group/0/home>

Combination Codes

This is a pre-processing step that will help with the flow of determining the HRG. Certain subchapters contain specific multiple procedure logic, designed to determine the HRG using more than one procedure. The **Combination Code Tab** contains a driving code and qualifying code(s) needed to derive a combinations code.

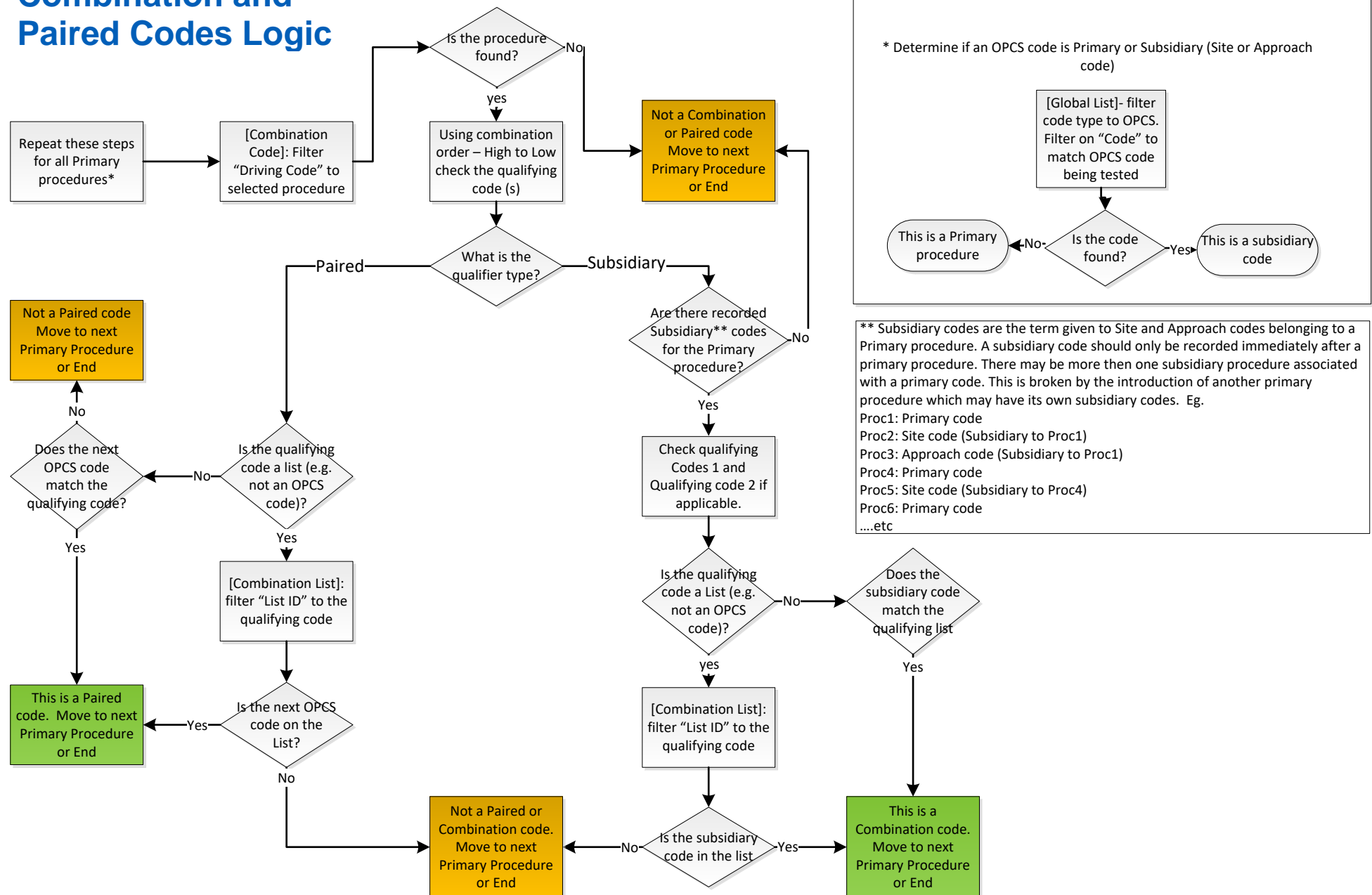
Combination Code	Combination Code Description	Driving Code	Driving Code Description	Qualifier Type 1	Qualifying Code 1	Qualifying Code Description 1
A544+Y032	Renewal of intrathecal drug delivery device adjacent to spinal cord	A544	Attention to intrathecal drug delivery device adjacent to spinal cord	Subsidiary	Y032	Renewal of prosthesis in organ NOC
A544+Y033	Correction of displacement of intrathecal drug delivery device adjacent to spinal cord	A544	Attention to intrathecal drug delivery device adjacent to spinal cord	Subsidiary	Y033	Correction of displacement of prosthesis NOC
A544+Y034	Other resetting of intrathecal drug delivery device adjacent to spinal cord	A544	Attention to intrathecal drug delivery device adjacent to spinal cord	Subsidiary	Y034	Other resetting of prosthesis in organ NOC
A591+ELBOW	Total sacrifice of peripheral nerve of elbow	A591	Total sacrifice of peripheral nerve	Subsidiary	CL_Elbow	Elbow site codes
A591+FOOT	Total sacrifice of peripheral nerve of foot	A591	Total sacrifice of peripheral nerve	Subsidiary	CL_Foot	Foot site codes
A591+HAND	Total sacrifice of peripheral nerve of hand	A591	Total sacrifice of peripheral nerve	Subsidiary	CL_Hand	Hand site codes
A591+HIP	Total sacrifice of peripheral nerve of hip	A591	Total sacrifice of peripheral nerve	Subsidiary	CL_Hip	Hip site codes
A591+KNEE	Total sacrifice of peripheral nerve of knee	A591	Total sacrifice of peripheral nerve	Subsidiary	CL_Knee	Knee site codes
A591+SHOULDER	Total sacrifice of peripheral nerve of shoulder	A591	Total sacrifice of peripheral nerve	Subsidiary	CL_Shoulder	Shoulder site codes
A592+ELBOW	Partial sacrifice of peripheral nerve of elbow	A592	Partial sacrifice of peripheral nerve	Subsidiary	CL_Elbow	Elbow site codes
A592+FOOT	Partial sacrifice of peripheral nerve of foot	A592	Partial sacrifice of peripheral nerve	Subsidiary	CL_Foot	Foot site codes
A592+HAND	Partial sacrifice of peripheral nerve of hand	A592	Partial sacrifice of peripheral nerve	Subsidiary	CL_Hand	Hand site codes
A592+HIP	Partial sacrifice of peripheral nerve of hip	A592	Partial sacrifice of peripheral nerve	Subsidiary	CL_Hip	Hip site codes
A592+KNEE	Partial sacrifice of peripheral nerve of knee	A592	Partial sacrifice of peripheral nerve	Subsidiary	CL_Knee	Knee site codes
A592+SHOULDER	Partial sacrifice of peripheral nerve of shoulder	A592	Partial sacrifice of peripheral nerve	Subsidiary	CL_Shoulder	Shoulder site codes
A598+ELBOW	Other specified excision of peripheral nerve of elbow	A598	Other specified excision of peripheral nerve	Subsidiary	CL_Elbow	Elbow site codes
A598+FOOT	Other specified excision of peripheral nerve of foot	A598	Other specified excision of peripheral nerve	Subsidiary	CL_Foot	Foot site codes
A598+HAND	Other specified excision of peripheral nerve of hand	A598	Other specified excision of peripheral nerve	Subsidiary	CL_Hand	Hand site codes

Qualifying codes have a reference to a list containing procedures which can be found in the **Combination List Tab**.

List ID	Code Type	Code	Code Description
CL Elbow	OPCS	Z093	Radial nerve
CL Elbow	OPCS	Z094	Ulna nerve
CL Elbow	OPCS	Z095	Posterior interosseous nerve
CL Elbow	OPCS	Z096	Anterior interosseous nerve
CL Elbow	OPCS	Z501	Skin of arm
CL Elbow	OPCS	Z551	Flexor muscle of forearm
CL Elbow	OPCS	Z552	Extensor muscle of forearm
CL Elbow	OPCS	Z553	Supinator muscle of forearm
CL Elbow	OPCS	Z554	Pronator muscle of forearm
CL Elbow	OPCS	Z555	Palmaris longus
CL Elbow	OPCS	Z558	Specified muscle of forearm NEC
CL Elbow	OPCS	Z559	Muscle of forearm NEC
CL Elbow	OPCS	Z695	Lateral condyle of humerus
CL Elbow	OPCS	Z696	Medial epicondyle of humerus
CL Elbow	OPCS	Z697	Lower end of humerus NEC

If a combination code has been derived it is treated a single entity and maybe used as the **Code** in the **Code to Group Tab** if it has the highest procedure hierarchy.

Combination and Paired Codes Logic



Unbundling

This logic is applied to all procedure codes regardless of hierarchy and can be present in any of the main core grouping methods. The HRG related to this is called an unbundled HRG and is not a core HRG.

An OPCS code with an unbundled “C2G type” mapping to a ‘U’ code will ‘U’ group the unbundled HRG and the Core HRG regardless of any other coding. This is because unbundled HRGs are processed first and with a different logic.

Many unbundled OPCS codes will not drive the Core HRG so if there are no other significant procedure codes and the diagnosis is not of sufficient resource value to drive a core HRG then the core HRG will be a ‘U’ group but still output an unbundled HRG.

Hierarchy Lists

Procedure Hierarchies

Procedure Hierarchies provide a comparison mechanism which reflects the expected relative complexity of procedures across HRG chapters. Each procedure has an associated value reflecting the expected relative resource use. Values 0 - 4 identify procedures which should not be used for APC core grouping, other than in specific circumstances

Value	Description
0	OPCS-4 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 not drive the core HRG but can produce an unbundled HRG.
3,4	Procedures relating to subchapter WF, Non-admitted Consultations
5-40	Scale of relative resource use. 5 represents least and 40 represents most resource-intensive procedures

If a single procedure is recorded for a patient and its hierarchy value is equal to or greater than **5**, it will be used for grouping in the majority of circumstances

If multiple procedures are recorded the **dominant procedure** is identified based upon **hierarchy value**. 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 a **hierarchy value** between **5** and **40** the grouper will switch to using **primary diagnosis** to drive grouping.

Diagnosis Hierarchies

Primary Diagnosis is used to drive grouping when there are no procedures in the patient record suitable to drive grouping. Every admitted care finished consultant episode (FCE) records a **primary diagnosis**. Each diagnosis code (that is valid in the primary position) has an associated hierarchy value based on expected relative resource use.

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 ranked primary diagnoses is used to drive grouping

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 diagnoses

Documentation Flags

The **Documentation Flags** worksheet contains descriptions of all the **Flags** that appear in the **Code to Group** worksheet. **Documentation Flags** define criteria that must apply to a patient record for an HRG to be derived. This can be based on procedure or diagnoses and other information within the record such as age or length of stay.

Cross-chapter Flags

Flags **a** and **p** are standard across chapters.

- **a** flags identify base HRGs and this is used as the default destination of any code
- **p** flags identify paediatric activity (usually age 18 years and under)
- Splits may apply in assigning the final HRG

HRG Chapter	HRG Sub Chapter	Documentation Flag ID	Doc Flag description
C	CD	a	Base HRG
C	CD	LoS_0	Length of stay of 0 days
C	CD	LoS_0to1	Length of stay of 1 day or less
C	CD	LoS_0to2	Length of stay of 2 days or less
C	CD	p	Age 18 years and under
n	D7	a	Base HRG

The Documentation Flags worksheet can be filtered so that only the flags relevant to the required chapter or subchapter are displayed.

Group to Split worksheet

The **Group to Split** worksheet contains the design logic required to assign a **split** to an **HRG Root** and determine the **HRG** for the patient record. This is done by examining **candidate HRG** flags and determining whether their criteria are met by information contained within a patient record.

Working from **RIGHT to LEFT**, each flag must be examined to decide if the patient record meets its criteria. When all flag criteria are met the **HRG** has been determined.

In most cases the leftmost **candidate HRG** (Column **HRG1**) corresponds to an **a** flag which represents the **base HRG** or **default**.

HRG Root	HRG Root Description	HRG 1	Flag 1	HRG 2	Flag 2	HRG 3	Flag 3	HRG 4	Flag 4	HRG 5	Flag 5	HRG 6	Flag 6
CA62	Adenoidectomy	CA62Z	a										
CA63	Tracheostomy	CA63Z	a										
CA64	Uvulopalatoplasty or Uvulopalatopharyngoplasty	CA64Z	a										
CA65	Frenotomy or Frenectomy	CA65Z	a										
CA66	Excision or Biopsy, of Lesion of Mouth	CA66A	a	CA66B	p								
CA67	Complex Therapeutic Endoscopic, Larynx or Pharynx Procedures	CA67B	a	CA67A	CA_CC_2								
CA68	Therapeutic Endoscopic, Larynx or Pharynx Procedures	CA68A	a	CA68B	p								
CA69	Diagnostic, Laryngoscopy or Pharyngoscopy	CA69A	a	CA69B	p	CA69C	Age_0to1						
CA70	Diagnostic Examination of Upper Respiratory Tract and Upper Gastrointestinal Tract	CA70Z	a										
CA71	Diagnostic Massopharyngoscopy	CA71A	a	CA71B	p								
CA80	Very Complex, Mouth or Throat Procedures	CA80C	a	CA80B	CA_CC_2	CA80A	CA_CC_5						
CA81	Complex, Mouth or Throat Procedures	CA81B	a	CA81A	CA_CC_2	CA81C	p	CA81D	Age_0to1				
CA82	Very Major, Mouth or Throat Procedures	CA82B	a	CA82A	CA_CC_2	CA82C	p	CA82D	Age_0to1				
CA83	Major, Mouth or Throat Procedures	CA83B	a	CA83A	CA_CC_2	CA83C	p						
CA84	Intermediate, Mouth or Throat Procedures	CA84B	a	CA84A	CA_CC_2	CA84C	p						
CA85	Minor, Mouth or Throat Procedures	CA85A	a	CA85B	p	CA85C	Age_0to1						
CA86	Minimal, Mouth or Throat Procedures	CA86A	a	CA86B	p	CA86C	Age_0to1						
CA90	Very Complex Maxillofacial Procedures	CA90Z	a										
CA91	Complex Maxillofacial Procedures	CA91B	a	CA91A	CA_CC_1								
CA92	Very Major Maxillofacial Procedures	CA92B	a	CA92A	CA_CC_1								
CA93	Major Maxillofacial Procedures	CA93B	a	CA93A	CA_CC_1	CA93C	p						
CA94	Intermediate Maxillofacial Procedures	CA94Z	a										
CA95	Minor Maxillofacial Procedures	CA95Z	a										
CA96	Reduction or Fixation, of Jaw	CA96Z	a										
CA97	Reduction or Fixation, of Cheekbone	CA97Z	a										
CA98	Reduction or Fracture, of Nasal Bone	CA98Z	a										
CB01	Malignant, Ear, Nose, Mouth, Throat or Neck Disorders	CB01F	a	CB01E	CB_CC_5	CB01D	CB_CC_9	CB01C	CB_Interv	CB01B	CB_CC_5_Interv	CB01A	CB_CC_9_Interv

CC Lists

Complication and Comorbidity (CC) lists identify secondary diagnoses with additional resource impact that can influence or qualify HRG derivation.

Certain HRGs have been given a score value or range from the applicable CC list to denote complexity e.g. with CC score 15+ or with CC Score 9-11

The introduction of HRG4+ means that subchapters have a single _CC list, with diagnoses values ranging from 2 to 1 to differentiate between those CCs deemed clinically as Major, and those that are clinically deemed to be Intermediate.

CC lists are suffixed by “_CC”.

Global Lists

Global Lists are lists that can be used anywhere within the design, and are usually used at a high level by the grouper algorithm to apply pre-processing logic such as:

Approach and **Site**: Procedure codes describing the approach and site for another closely associated code. Often these are OPCS-4 Chapter Y Subsidiary Classification of Methods of Operation and Chapter Z Subsidiary Classification of Sites of Operation procedure codes, but they may also come from other OPCS-4 chapters.

Other Lists

Other Lists contain qualifying logic that supports the design. This is usually referred to from the **Simple Flag** or the **Documentations Flag** sheets and uses the “List ID” field. The different types of list are identified by **Code Type** such as:

- **ICD**: Examines ICD-10 codes in primary or secondary position (different to CC Lists).
- **OPCS**: Lists that apply to procedures other than the dominant procedure if present.
- **Age**: For use in determining age splits.
- **Epidur**: Length of stay check.

Simple Flags

The simple flag worksheet describes the specific conditions that must be met for each of the documentation flags.

For example:

	A	B	C	D	E	F	G	H	I	J
1	HRG Chapter	HRG Subchapter	Documentation Flag ID	Flag Order	Function ID	Dataltem ID	Dataltem Order M	Dataltem Order M	List ID	Code Value Sum M
96	F	FZ	FZ_LGI	1	DataltemInList	EpiDur	1	1	LoS_0to1	
97	F	FZ	FZ_LGI	2	DataltemInList	Procedure	1	100000	FZ_LGI	

For documentation flag FZ_LGI the episode (or spell) must have a length of stay (Epidur) of 1 day or less and have a procedure from list FZ_LGI found in any of the procedure fields within the record.

Documentation Flags

The **Documentation Flags** worksheet contains descriptions of all the **Flags** that appear in the **Code to Group** worksheet. **Documentation Flags** define criteria that must apply to a patient record for an HRG to be derived. This can be based on procedure or diagnoses and other information within the record such as age or length of stay.

Cross-chapter Flags

Flags **a** and **p** are standard across chapters.

- **a** flags identify base HRGs and this is used as the default destination of any code
- **p** flags identify paediatric activity (usually age 18 years and under)
- Splits may apply in assigning the final HRG

HRG Chapter	HRG Sub Chapter	Documentation Flag ID	Doc Flag description
C	CD	a	Base HRG
C	CD	LoS_0	Length of stay of 0 days
C	CD	LoS_0to1	Length of stay of 1 day or less
C	CD	LoS_0to2	Length of stay of 2 days or less
C	CD	p	Age 18 years and under
D	DZ	a	Base HRG

The Documentation Flags worksheet can be filtered so that only the flags relevant to the required chapter or subchapter are displayed.

Programme Budgeting Category (PBC) Mapping

The NHS England Programme Budgeting project provides both a retrospective and real-time appraisal of NHS resources by condition-specific programme, in order to influence and track expenditure and achieve the greatest health improvement per pound spent in the NHS.

The Grouper maps the Primary Diagnosis of a patient record to a Programme Budgeting Category (PBC). (Note: Where an ICD-10 external cause code denoting violence is present a violence PBC code would be assigned.)

There is no direct mapping of HRGs to PBCs.

'U' Groups

If data fails the grouper validation rules, a 'U Group' (Undefined Group) HRG is assigned. This could arise due to entry of an invalid primary diagnosis or procedure code, amongst other things. The grouper will then produce an error HRG, **UZ01Z, Data invalid for grouping**.

There are multiple error categories. These categories are shown in the Quality File output by the grouper. Please refer to the **HRG4 Grouper User Manual** for more information.

Any error found will result in the assignment of error HRG **UZ01Z** at patient record level. Errors found at **episode** level will also result in an error HRG being assigned to the **spell**.

Walkthrough Examples

The following worked examples demonstrate how the **Code to Group workbook** can be used to manually determine HRGs based on different types of patient record. These examples are for illustrative purposes and elements within examples may be subject to change between grouper releases.

Please note for ease of use these examples directly take you to the correct grouping method. With practice and experience it will be easier to decide the correct grouping method without going through all processes.

For more complex grouping it is noted that the single spell grouper functionality within the grouper offers a less time-consuming approach to identifying the HRG.

A) Age Qualified

Example	Age	Sex	Length of Stay	PDIAG	DIAG2	PROC1	PROC2
A	15	1	1	H919	-	D084	-

1: Examine Procedure Hierarchy Value(s)

- a) Select **Hierarchy Lists** and filter **Code Type** to **OPCS** (procedures) and **Code** to **D084**.

The **Hierarchy Value** is between **5** and **40** and can therefore be used for grouping.

2: Determine HRG Root using Code to Group

- a) Select **Code To Group** and filter **Code Type** to **OPCS** and **Code** to **D084**.

The results show a single possible **HRG Root CA55** with flag **LoS_0to1**.

3: Examine Documentation Flags

- a) Select **Documentation Flags** and filter **HRG Subchapter** to **CA** and **Documentation Flag ID** to **'LoS_0to1'**.

The **Doc Flag Description** is **Length of stay of 1 day or less**. The length of stay is 1 day so the criterion is met.

The **HRG Root** has been determined as **CA55**

4: Determine HRG using Group to Split

- a) Select **Group To Split** and filter **HRG Root** to **CA55**

The results return **2** potential split destinations identified by multiple flags.

- b) Working from **RIGHT** to **LEFT**, examine each flag until arriving at the first whose criteria is met by the patient record information.

5: Examine Documentation Flags

- a) Select **Documentation Flags** and filter **HRG Subchapter** to **CA** and **Documentation Flag ID** to **'p'**.

The **Doc Flag Description** is **Age 18 years and under**. The patient age is **15** so the criterion is met.

The **HRG** has been determined as **CA55B**.

6: Lookup HRG Label

a) Select **HRG** and filter **HRG** to **CA55B**.

The HRG is **CA55B Minimal Ear Procedures, 18 years and under**

B) Interactive Complications and Comorbidities

Example	Age	Sex	LoS	PDIAG	DIAG2	DIAG3	DIAG4	DIAG5	PROC1
B	25	1	1	E059	A040	C901	E162	E86X	B081

1: Examine Procedure Hierarchy Value(s)

- a) Select **Hierarchy Lists** and filter **Code Type** to **OPCS** (procedures) and **Code** to **B081**.

The **Hierarchy Value** is between **5** and **40** and can therefore be used for grouping.

2: Determine HRG Root using Code to Group

- a) Select **Code To Group** and filter **Code Type** to **OPCS** and **Code** to **B081**.

The results show a single possible **HRG Root** with flag **a**.

The **HRG Root** has been determined as **KA09**

3: Determine HRG using Group to Split

- a) Select **Group To Split** and filter **HRG Root** to **KA09**

The results return **3** potential split destinations identified by multiple flags.

Working from **RIGHT** to **LEFT**, examine each flag until arriving at the first whose criteria is met by the patient record information.

4: Examine Documentation Flags

- a) Select **Documentation Flags** and filter **HRG Subchapter** to **KA** and **Documentation Flag ID** to **KA_CC_4**.

The **Doc Flag Description** is **With a CC score of at least 4**.

The **CC List** for **Subchapter KA** must be inspected to determine if the **secondary** diagnoses refers to a complication or comorbidity.

- b) Select **CC Lists** and filter **List ID** to **'KA_CC'**, **Code Type** to **ICD** and **Code** to **A040**

Select **CC Lists** and filter **List ID** to **KA_CC'**, **Code Type** to **ICD** and **Code** to **C901**

Select **CC Lists** and filter **List ID** to **KA_CC'**, **Code Type** to **ICD** and **Code** to **E162**

Select **CC Lists** and filter **List ID** to **KA_CC'**, **Code Type** to **ICD** and **Code** to **E86X**

The results show that **these are** on the list each with a value of **1**

As the combined value is **4** the documentation flag has been met therefore the **HRG** has been determined as **KA09C**

5: Lookup HRG Label

- a) Select **HRG** and filter **HRG** to **KA09C**

The HRG is **KA09C Thyroid Procedures with CC Score 4+**

C) Diagnosis Qualified

Example	Age	Sex	Length of Stay	PDIAG	DIAG2	PROC1	PROC2
C	18	2	0	R521	-	A483	-

1: Examine Procedure Hierarchy Value(s)

- a) Select **Hierarchy Lists** and filter **Code Type** to **OPCS** (procedures) and **Code** to **A483**.

The **Hierarchy Value** is between **5** and **40** and can therefore be used for grouping.

2: Determine HRG Root using Code to Group

- a) Select **Code To Group** and filter **Code Type** to **OPCS**, **Code to Group Type** to **Core1**, and **Code** to code **A483**.

The results return multiple possible **HRG Roots** flags.

- b) Working from **RIGHT** to **LEFT**, examine each flag until arriving at the first whose criteria is met by the patient record information.

3: Examine Documentation Flag(s)

- a) Select **Documentation Flags** and filter **Documentation Flag ID** to **FZ_Incontinence**.

Flag **FZ_Incontinence** refers to **Requires a primary diagnosis code, indicating faecal incontinence or constipation, from list FZ_Incontinence**. The list **FZ_Incontinence** must therefore be examined to see if **R521** appears on it.

4: Examine Other Lists

- a) Select **Other Lists** and filter **List ID** to **FZ_Incontinence**.

R521 is not displayed in the results so this criterion has not been met.

Repeat reading the next flag **RIGHT** to **LEFT** from the **Code To Group** until a flag's criterion has been met.

In this example **Flag 3 - AB_Paindiag (Requires a primary diagnosis code, indicating pain, from list AB_Paindiag)** shows that the **List ID** in **Other Lists** contains the diagnosis code **R521**.

The criterion for this flag has been met so the **HRG Root** is **AB12**

5: Determine HRG using Group to Split

- a) Select **Group To Split** and filter **HRG Root** to **AB12**.

As the first flag is an **a** (the default flag) the criterion has been matched.

The **HRG** has been determined as **AB12Z**

6: Lookup HRG Label

- a) Select **HRG** and filter **HRG** to **AB12Z**.

The HRG is **AB12Z: Insertion of Neurostimulator for Pain Management**.

D) Length of Stay Qualified

Example	Age	Sex	Length of Stay	PDIAG	DIAG2	PROC1	PROC2
D	35	1	15	L400	-	S121	-

1: Examine Procedure Hierarchy Value(s)

- a) Select **Hierarchy Lists** and filter **Code Type** to **OPCS** (procedures) and **Code** to **S121**.

The **Hierarchy Value** is between **5** and **40** and can therefore be used for grouping.

2: Determine HRG Root using Code to Group (Procedure)

- a) Select **Code To Group** and filter columns **Code Type** to **OPCS** and **Code** to **S121**.

The results show a single possible **HRG Root JC47** with flag **LoS_0**.

3: Examine Documentation Flag(s)

- a) Select **Documentation Flags** and filter **HRG Subchapter** to **JC** and **Documentation Flag ID** to **LoS_0**.

The results show **LoS_0** is a length of stay check of zero days. The **Length of Stay** in the patient record is **15** days so the criterion is not met. Where there is a length of stay check in the **Flag 1** position that is not met, the grouper will switch to use **diagnosis** for grouping.

4: Determine HRG Root using Code to Group (Diagnosis)

- a) Select **Code To Group** and filter **Code Type** to **ICD** (diagnosis) and **Code** to **L400**

Working from **RIGHT** to **LEFT**, examine each flag until arriving at the first whose criteria is met by the patient record information. The first flag is **p** which corresponds to HRG Root **PJ35**.

- b) Select **Documentation Flags** and filter **HRG Subchapter** to **PJ** and **Documentation Flag ID** to **p**

Flag **p** specifies **Age 18 years and under**. The patient is **35** so this criterion has not been met.

The next flag is **a** which is a **Base HRG** (default) flag and corresponds to HRG Root **JD07**.

The **HRG Root** has been determined as **JD07**.

5: Determine HRG using Group to Split

- a) Select **Group To Split** and filter **HRG Root** to **JD07**

Multiple potential **Splits** have been returned. Working from **RIGHT** to **LEFT**, examine each flag until arriving at the first whose criteria is met by the patient record information.

- b) Select **Documentation Flags** and filter **HRG Subchapter** to **JD** and **Documentation Flag ID** to **JD_CC_12_Interv**.

The **Doc Flag Description** for **JD_CC_12_Interv** requires **Complications and Comorbidities to be present**. There are no **secondary diagnoses** in the patient record so there cannot be any **complications** or **comorbidities** so the criterion is not met. The next flag must therefore be examined.

- c) Select **Documentation Flags** and filter **HRG Subchapter** to **JD** and **Documentation Flag ID** to **JD_CC_8_Interv**.

The **Doc Flag Description** for **JD_CC_8_Interv** requires **Complications and Comorbidities to be present**. There are no **secondary diagnoses** in the patient record so there cannot be any

complications or **comorbidities** so the criterion is not met. The next flag must therefore be examined.

- d) Select **Documentation Flags** and filter **HRG Subchapter** to **JD** and **Documentation Flag ID** to **JD_CC_4_Interv**.

The **Doc Flag Description** for **JD_CC_4_Interv** requires **Complications and Comorbidities to be present**. There are no **secondary diagnoses** in the patient record so there cannot be any **complications** or **comorbidities** so the criterion is not met. The next flag must therefore be examined.

- e) Select **Documentation Flags** and filter **HRG Subchapter** to **JD** and **Documentation Flag ID** to **JD_Interv**.

The **Doc Flag Description** for **JD_Interv** a procedure code in any position, indicating minor procedure or intervention, from list Interventions.

Select **Other Lists** and filter **List ID** to **Interventions**.

S121 is displayed in the results so this criterion has been met

The **HRG** has been determined as **JD07D**

6: Lookup HRG Label

- a) Select **HRG** and filter HRG to JD07D.

The HRG is **JD07D Skin Disorders with Interventions, with CC Score 0-3**

E) Combination Codes

Example	Age	Sex	Length of Stay	PDIAG	DIAG2	PROC1	PROC2
E	40	1	2	C253	-	J422	Y143

1: Examine Procedure Hierarchy Value(s)

The patient record contains multiple procedures so the **dominant procedure** (procedure with highest hierarchy value) must be first determined (See [Hierarchy Lists](#)).

- a) Select [Hierarchy Lists](#) and filter **Code Type** to **OPCS** (procedures) to determine that **J422** has greater hierarchy value and this will be used as the code to be used to drive grouping.

2: Determine if possible Combination HRG using Code to Group

- a) Select [Code To Group](#) and filter **Code** to **J422**. The results show two **Code Types** – **Combination** and **OPCS**

3: Check Combination Code

- a) Select [Combination Code](#) and filter **Driving Code** to **J422** and check any **Qualifying Codes**. In this case **CL_Metal_Stent** is the only qualifying code. This refers to a **List ID**.

4: Examine Combination Lists

- a) Select [Combination Lists](#) and filter **List ID** to **CL_Metal_Stent**. This shows that **Y143** is an available **Code**.

As all **Qualifying Codes** in the [Combination Code](#) have been met the **Combination Code** of **J444+MET** is applicable.

5: Determine HRG Root

- a) Select [Code To Group](#) and filter **Code** to **J444+MET**

The results shows that the first **HRG flag** is 1 and so the HRG Root is **GB09**

6: Determine HRG using Group to Split

- a) Select [Group To Split](#) and filter **HRG Root** to **GB09**

The results return 3 potential split destinations identified by multiple flags.

Working from **RIGHT** to **LEFT**, examine each flag until arriving at the first whose criteria is met by the patient record information.

7: Examine Documentation Flags

- b) Select [Documentation Flags](#) and filter **Documentation Flag ID** to **GB_CC_5**.

The **Doc Flag Description** is **With a CC score of at least 5**.

The **CC List** for **Subchapter GB** must be inspected to determine if the **secondary** diagnoses refers to a complication or comorbidity. As there are no secondary diagnosis this flags criteria cannot be met.

The next Flag (**Right to Left**) in the [Group To Split](#) refers to **GB_CC_2**

The **Doc Flag Description** is **With a CC score of at least 2**.

The **CC List** for **Subchapter GB** must be inspected to determine if the **secondary** diagnoses refers to a complication or comorbidity. As there are no secondary diagnosis this flags criteria cannot be met.

The final Flag in the **Group To Split** refers to **a** which is the default destination.

The **HRG** has been determined as **GB09F**

8: Lookup HRG Label

a) Select **HRG** and filter **HRG** to **GB09F**

The HRG is **GB09F Complex Therapeutic Endoscopic Retrograde Cholangiopancreatography with CC Score 0-1**

F) Unbundled HRG

Example	Age	Sex	Length of Stay	PDIAG	DIAG2	PROC1	PROC2
F	18	1	9	B160		X863	

1: Examine Procedure Hierarchy Value(s)

- a) Select **Hierarchy Lists** and filter **Code Type** to **OPCS** (procedures) and **Code** to **X863**

The value is **2** and therefore cannot be used to drive grouping but this does indicate that an **Unbundled HRG** will be generated (See page 17: Hierarchy Lists). The grouper will therefore switch to using diagnosis to drive grouping.

2: Examine Diagnosis Hierarchy Value(s)

- a) Select **Hierarchy Lists** and filter **Code Type** to **ICD** (diagnoses) and **Code** to **B160**

- b) The **Hierarchy Value** is between **5** and **26** and can therefore be used for grouping.

3: Determine HRG Root using Code to Group

- a) Select **Code To Group** and filter **Code Type** to **ICD** (diagnoses) and **Code** to **B160**.

Examine each flag (from **RIGHT** to **LEFT**) until arriving at the first whose criterion is met.

4: Examine Documentation Flag(s)

- a) Select **Documentation Flags** and filter **HRG Subchapter** to **PG** and **Documentation Flag ID** to 'p'

Flag 'p' specifies **Age 18 years and under**. The patient is **18** so this criterion has been met and the **HRG Root** has been determined as **PG71**.

5: Determine HRG using Group to Split

- a) Select **Group To Split** and filter **HRG Root** to **PG71**

Multiple potential **Splits** have been returned. Working from **RIGHT** to **LEFT**, examine each flag until arriving at the first whose criteria is met by the patient record information.

- b) Select **Documentation Flags** and filter **HRG Subchapter** to **PG** and **Documentation Flag ID** to **PG_CC_2**.

The **Doc Flag Description** for **PG_CC_2** is **With a CC score of at least 2**. There are no **secondary diagnoses** in the patient record so there cannot be any **complications** or **comorbidities** so the criterion is not met. The next flag must therefore be examined.

The **Doc Flag Description** for **PG_CC_1** is **With a CC score of at least 1**. There are no **secondary diagnoses** in the patient record so there cannot be any **complications** or **comorbidities** so the criterion is not met. The next flag must therefore be examined.

The next flag is **a**, which is a **Base HRG** flag (default destination) for **PG71C**.

The **HRG** has been determined as **PG71C**

6: Unbundled HRG

As identified in Step 1, this patient record contains an **UNBUNDLED HRG**.

- a) Select **Code To Group** and filter **Code Type** to **OPCS** (procedures) and **Code** to **X863**

The results show a single **a** flag which corresponds to **HRG Root XD13**.

- b) Select **Group To Split** and filter **HRG Root** to **XD13**

The results show a single **a** flag which corresponds to **HRG XD13Z**. The **UNBUNDLED HRG** has been determined as **XD13Z**

7: Lookup HRG Label

- a) Select **HRG** and filter **HRG** to **PG71C** and then **XD13Z**.

The HRG and Unbundled HRG are:

PG71C Paediatric, Hepatobiliary or Pancreatic Disorders, with CC Score 0

+

XD13Z Hepatitis B Treatment Drugs, Band 1

G) Global Exception Logic

Example	Age	Sex	Length of Stay	PDIAG	DIAG2	PROC1	PROC2
G	18	2	1	T314	X100	S352	Y552

1: Determine Core 5 using Code to Group

- a) Select **Code To Group** and filter **Code to Group Type** to **Core5**.

2: Examine Documentation Flags

- a) Select **Documentation Flags** and search **Documentation Flag ID** on 'JB_gte60'.

The **Doc Flag Description** requires a **diagnosis code in any position, indicating Total Body Surface Area (TBSA) greater than or equal to 60% burn diagnoses, from list JB_gte60**.

Procedure code **T314** is **Burns involving 40-49% of body surface** so the criterion is not met. The next flag must therefore be examined.

- b) Select **Documentation Flags** and search **Documentation Flag ID** on 'JB_20to59'.

The **Doc Flag Description** requires a **diagnosis code in any position, indicating Total Body Surface Area (TBSA) between 20% and 59% burn diagnoses, from list JB_20to59**.

Procedure code **T314** is within the scope of Documentation Flag **JB_20to59** so the **HRG Root JB31** has been determined.

3: Determine HRG using Group to Split

- a) Select **Group To Split** and filter **HRG Root** to **JB31**

Multiple potential **Splits** have been returned. Working from **RIGHT** to **LEFT**, examine each flag until arriving at the first whose criteria is met by the patient record information.

- b) Select **Documentation Flags** and filter **HRG Subchapter** to **JB** and **Documentation Flag ID** to **JB_Graft**.

The **Doc Flag Description** for **JB_Graft** requires a **procedure code in any position, indicating skin graft, from list JB_Graft**.

- c) Go to **Other Lists** and filter **List_ID** on **JB_Graft**. Procedure code **S352** is present in the list so the flag criteria has been met.

HRG JB31A Core5 Global Exception Logic has been determined.

4: Lookup HRG Label

- a) Select **HRG** and filter **HRG** to **JB31A**

The HRG is **JB31A Intermediate Burn (TBSA of 20-59%) with Skin Graft**

H) Multiple Trauma (Procedure based)

Example	Age	Sex	Length of Stay	PDIAG	DIAG2	PROC1	PROC2	PROC3	PROC4	PROC5
H	50	2	8	S441	S827	X509	L182	A161	L232	S401

1: Determine Core4 using Code to Group

- a) Select **Code To Group** and filter **Code to Group Type** to **Core4**.

2: Check if Multiple Trauma

- a) Select **Code To Group** and filter **Code Type** to **ICD** (diagnoses) and **Code** to **S441** (**S441** is in the list so a multiple trauma code maybe derived).

3: Determine Procedure Grouping

- a) Select **Other Lists** and filter on **MT_OPCS_Value** and code **X509**. **X509** is not present so filter on the next Procedure code **L182** (**L182** is present).
- b) Select **Code To Group** and remain filtered on **Core4**, filter **Code Type** to **OPCS** (Procedures) and **Code** to **L182**.

4: Examine Documentation Flags

- a) Select **Documentation Flags** and search **Documentation Flag ID** on '**VA_pgt44**'.

The **Doc Flag Description** requires a total summed value, of all procedure codes, from list **MT_OPCS_Value**, of at least 45.

The procedure values in **MT_OPCS_Value** are:

Code	Value
L182	15
A161	14
L232	15
S401	5

Making a total of 49 so the activity qualifies for the flag and the HRG root is **VA15**.

5: Determine HRG using Group to Split

- a) Select **Group To Split** and filter **HRG Root** to **VA15**

Multiple potential **Splits** have been returned. Working from **RIGHT** to **LEFT**, examine each flag until arriving at the first whose criteria is met by the patient record information.

The diagnosis values in **MT_ICD_Values** are:

Code	Value
S411	5
S827	7

Making a total value of 12.

6: Determine HRG using Documentation Flags

- a) Select **Documentation Flags** and search **Documentation Flag ID** on 'VA_dgt50'. The **Doc Flag Description** requires a total summed value, of all distinct diagnosis codes, from list **MT_ICD_Value**, of at least 51. The value is 12 so the flag criteria is not met. The next flag must therefore be examined.
- b) Select **Documentation Flags** and search **Documentation Flag ID** on 'VA_d33_50'
The **Doc Flag Description** requires a total summed value, of all distinct diagnosis codes, from list **MT_ICD_Value**, of at least 33. The value is 12 so the flag criteria is not met. The next flag must therefore be examined.
- c) Select **Documentation Flags** and search **Documentation Flag ID** on 'VA_d24_32'
The **Doc Flag Description** requires a total summed value, of all distinct diagnosis codes, from list **MT_ICD_Value**, of at least 24. The value is 12 so the flag criteria is not met. The next flag must therefore be examined.
- d) The next flag is **a** which is the **Base HRG** (default destination) **VA15A**.
The **HRG** has been determined as **VA15A**

7: Lookup HRG Label

- a) Select **HRG** and filter **HRG** to **VA15A**
The HRG is **Multiple Trauma with Diagnosis Score <=23, with Intervention Score >=45**

I) Multiple Trauma (Diagnosis based)

Example	Age	Sex	Length of Stay	PDIAG	DIAG2	PROC1	PROC2
I	18	2	1	S441	S827	X509	X375

1: Determine Core4 using Code to Group

- a) Select **Code To Group** and filter **Code to Group Type** to **Core4**.

2: Check if Multiple Trauma

- a) Select **Code To Group** and filter **Code Type** to **ICD** (diagnoses) and **Code** to **S441** (**S441** is in the list so a multiple trauma code maybe derived).

3: Determine Procedure Grouping

- a) Select **Other Lists** and filter on **MT_OPCS_Value** and code **X509**. **X509** is not present so filter on the next Procedure code **X375**. **X375** is also not present, no procedures in the activity are in the **MT_OPCS_Value** list so refer to diagnosis based multiple trauma grouping.

4: Return to Primary Diagnosis HRG Root

- a) Select **Code To Group** and remain filtered on **Core4**, and filter **Code Type** to **ICD** (diagnoses) and **Code** to **S441**.

5: Examine Documentation Flags

- a) Select **Documentation Flags** and search **Documentation Flag ID** on **VA_cmpt_Upper**.

The **Doc Flag Description** requires a **secondary diagnosis code**, in any MT diagnosis set except upper (**VA_Upper**), from list **Comp_VA_Upper**

- b) Select **Other Lists** and filter on code **S827**. Review the **List IDs** ensuring the code is present in **VA_cmpt_Upper**. **The criterion has been met.**
 c) The Root HRG **VA10** is derived.

6: Determine HRG using Group to Split

- a) Select **Group To Split** and filter **HRG Root** to **VA10**

Multiple potential **Splits** have been returned. Working from **RIGHT** to **LEFT**, examine each flag until arriving at the first whose criteria is met by the patient record information.

The diagnosis values in **MT_ICD_Values** are:

Code	Value
S411	5
S827	7

Making a total of 12.

7: Determine HRG using Group to Split

- a) Select **Documentation Flags** and search **Documentation Flag ID** on 'VA_dgt50'.

The **Doc Flag Description** requires a total summed value, of all distinct diagnosis codes, from list MT_ICD_Value, of at least 51. The value is 12 so the flag criteria is not met. The next flag must therefore be examined.

- b) Select **Documentation Flags** and search **Documentation Flag ID** on 'VA_d33_50'

The **Doc Flag Description** requires a total summed value, of all distinct diagnosis codes, from list MT_ICD_Value, of at least 33. The value is 12 so the flag criteria is not met. The next flag must therefore be examined.

- c) Select **Documentation Flags** and search **Documentation Flag ID** on 'VA_d24_32'

The **Doc Flag Description** requires a total summed value, of all distinct diagnosis codes, from list MT_ICD_Value, of at least 24. The value is 12 so the flag criteria is not met. The next flag must therefore be examined.

- d) The next flag is a which is the **Base HRG** (default destination) **VA10A**.

The **HRG** has been determined as **VA10A**

8: Lookup HRG Label

- a) Select **HRG** and filter **HRG** to **VA10A**

The HRG is **Multiple Trauma with Diagnosis Score <=23, with No Interventions**

12 The Documentation Suite - Payment

Below is a list of the various documents which are available to download from the National Casemix Office website <https://digital.nhs.uk/services/national-casemix-office/downloads-groupers-and-tools>.

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 **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 that contains details about how the grouper allocates specific identification flags relating to specialised services that previously attracted a tariff top-up. It is included for reference since the Grouper still outputs SSC codes for benchmarking purposes. Please note that PSS identification flags are now the basis for attracting a tariff top-up.
- The **Best Practice Guide** is a spreadsheet that contains details about how the grouper allocates specific identification flags relating to best practice. Best Practice Flags usually result in an adjustment to the tariff. The spreadsheet also provides details of these specific tariff adjustments.
- The **OPCS-4.8 Update** outlines the changes to the HRG4+ 2017/18 Payment Grouper made as a result of the version 4.8 update to the OPCS-4 Classification of Interventions and Procedures, which is effective from 1 April 2017.