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Contents

Subchapter AA – Nervous System Procedures and Disorders

Subchapter **AA Nervous System Procedures and Disorders** covers all-age procedures and adult diagnoses relating to the nervous system.

It includes activity undertaken in inpatient, day case and non-admitted care settings.

It does not include percutaneous procedures on the nervous system; these now map to **YA Neurological Imaging Interventions**.

The procedure-driven HRGs within the subchapter have been completely redesigned. The new neurosurgery HRGs in this subchapter are split into a maximum of seven levels of complexity (minimal, minor, intermediate, major, very major, complex and very complex).

In addition, there are newly created HRGs for specific high-cost specialised activity, such as the insertion of neurostimulators and intrathecal drug delivery pumps, and stereotactic radiosurgery.

Composition and Concepts	
Total HRGs	**98**
Total HRG Roots	**27**
Procedure-driven HRGs	49
Diagnosis-driven HRGs	49
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

Multiple procedure logic is employed within the procedure-driven HRGs in this subchapter, as are age splits: there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under). Escalation to an HRG with a higher expected resource use also occurs wherever there is advanced monitoring – e.g. EPR during surgery, or where a procedure is revisional.

The neurophysiology HRGs are split into neuropsychology, EEG, EMG and nerve conduction studies and sleep studies. These HRGs, along with the minimal procedure-driven HRGs, employ maximum length of stay logic to ensure that minor procedures, such as EEGs, are not used to determine the HRG for a long-stay medical patient, e.g. an elderly person who has had a stroke.

The adult diagnosis-driven HRGs are differentiated by disorder type.

Interactive CC splits are employed within the majority of both diagnosis-driven and procedure-driven HRGs within this subchapter – up to a maximum of six levels – to more appropriately differentiate resource usage between routine and complex patients.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter AB – Pain Management

Subchapter **AB Pain Management** relates to services for pain management and covers activity for patients of all ages.

It includes activity undertaken in inpatient, day case and non-admitted care settings.

The HRGs within this subchapter have been completely redesigned for HRG4+. The new HRGs are separated into specific types of procedures rather than by complexity level.

Therefore, there are HRGs specific to high-volume pain management procedures, for example joint injections or acupuncture.

There are also HRGs for specific high-cost specialised activity, such as the insertion of neurostimulators, the insertion of intrathecal drug delivery pumps, and radiofrequency ablation or cryoablation, for pain management.

Composition and Concepts	
Total HRGs	**13**
Total HRG Roots	**13**
Procedure-driven HRGs	13
Diagnosis-driven HRGs	0
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	Yes

Eleven of the HRGs within this subchapter can only be derived with a primary diagnosis indicating pain management. This is to distinguish them from activity where the same procedures are undertaken for the treatment of other conditions.

The majority of the HRGs within this subchapter have maximum length of stay logic to ensure that minor procedures, such as injection into joint, are not used to determine the HRG for a long stay medical patient, for example, a person who has suffered a stroke.

Subchapter BZ – Eyes and Periorbita Procedures and Disorders

Composition and Concepts	
Total HRGs	**94**
Total HRG Roots	**48**
Procedure-driven HRGs	90
Diagnosis-driven HRGs	4
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

Subchapter **BZ Eyes and Periorbita Procedures and Disorders** covers procedures for patients of all ages and diagnoses for adults relating to the eyes and periorbita, delivered in admitted or non-admitted care settings.

The procedure-driven HRGs within this subchapter have been completely redesigned since the previous local payment design. The separation of HRG roots based on the type of eye surgery – e.g. cataract or lens, ocular motility etc. – has been retained, but related HRG roots are now split into up to six levels of complexity (minor, intermediate, major, very major, complex and very complex).

Multiple procedure logic is employed within the procedure-driven HRG roots within this subchapter, as are age splits: there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under) within many of the BZ HRG roots. There are also age-specific HRG roots that separate adult and paediatric activity at the root level. In addition, some HRG roots in Subchapter BZ now employ paediatric age splits, which enable HRGs specific to the treatment of young children (0 to 3 years of age). Escalation to an HRG root with a higher expected resource use also occurs in this subchapter, where appropriate, when procedures are undertaken under general anaesthetic, are performed bilaterally or are revisional.

A number of the HRG roots within this subchapter have been created for specific high-volume procedures, such as phacoemulsification cataract extraction and lens implantation, and retinal tomography.

The majority of minor procedure HRG roots within this subchapter employ maximum length of stay logic to ensure that minor procedures, such as irrigation of tear duct, are not used to determine the HRG for a long-stay medical patient, e.g. a person who has suffered a stroke.

Interactive CC splits are employed within some of the redesigned procedure-driven HRG roots – up to a maximum of three levels – to more appropriately differentiate expected resource usage between routine and complex patients.

The one diagnosis-driven HRG root in this subchapter, **BZ24 Non-Surgical Ophthalmology**, which is exlusively for adult activity, has both intervention and interactive CC splits.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter CA – Ear, Nose, Mouth, Throat and Neck Procedures

Subchapter **CA Ear, Nose, Mouth, Throat and Neck Procedures** covers ear, nose, mouth, throat and neck procedures for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

Composition and Concepts	
Total HRGs	**120**
Total HRG Roots	**70**
Procedure-driven HRGs	120
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

The HRG roots within this subchapter are generally divided based on the site of surgery – e.g. neck, ear, nose etc. – but there are also HRG roots specific to maxillofacial and audiology procedures.

Related HRG roots are divided into a maximum of seven levels of complexity (minimal, minor, intermediate, major, very major, complex and very complex), although HRG roots at the high end of the complexity range are not employed for some sites or types of procedures.

There are also procedure-specific HRG roots for high-volume procedures, e.g. tonsillectomy, nasal polypectomy and reduction of fracture of nasal bone, and for specialised procedures, such as cochlear implants.

Multiple procedure logic is employed throughout the HRG roots within this subchapter, as are age splits: there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under). There are now also HRGs specific to the treatment of infants (0 to 1 year of age) as well as those for older children (2 to 18 years). For some of the audiology activity, there are HRGs specific to preschool-aged children (4 years and under) and school-aged children (5 to 18 years). Escalation to an HRG root with a higher expected resource use also occurs in this subchapter, where appropriate, when procedures are performed bilaterally or where the patient is being treated for vascular nasal tumours.

Most of the minor and minimal procedure HRG roots within this subchapter have maximum length of stay logic to ensure that minor procedures, such as drainage of ear wax, are not used to determine the HRG for a long-stay medical patient, e.g. a person who has suffered a stroke.

Interactive CC splits are employed within many of the more complex HRG roots within this subchapter – up to a maximum of three levels – to more appropriately differentiate expected resource usage between routine and complex patients.

Subchapter CB – Ear, Nose, Mouth, Throat and Neck Disorders

Subchapter **CB Ear, Nose, Mouth, Throat and Neck Disorders** includes all ear, nose, mouth, throat and neck disorders for adults only. It includes activity undertaken in inpatient and day case settings.

The HRGs within this subchapter are separated into two HRG roots, malignant and non-malignant ear, nose, mouth, throat and neck disorders.

Interactive CC splits are employed within both of the HRG roots within this subchapter – up to a maximum of three levels – to more appropriately differentiate expected resource usage between routine and complex patients. Intervention splits are also employed within both HRG roots.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Composition and Concepts	
Total HRGs	**12**
Total HRG Roots	**2**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	12
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter CD – Dental and Orthodontic Procedures

Subchapter **CD Dental and Orthodontic Procedures** covers dental and orthodontic procedures for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

Composition and Concepts	
Total HRGs	**23**
Total HRG Roots	**12**
Procedure-driven HRGs	23
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	Yes

The HRG roots within this subchapter are divided based on the type of procedure – e.g. tooth extractions, orthodontic appliance procedures. Related HRG roots are further divided based on up to three levels of complexity (minor, intermediate and major).

Most HRG roots within this subchapter employ age splits: there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under).

All the HRG roots within this subchapter have maximum length of stay logic to ensure that minor procedures, such as tooth extraction, are not used to determine the HRG for a long-stay medical patient, e.g. a person who has suffered a stroke.

Other mouth and throat procedures are covered alongside head, neck and ear procedures within Subchapter **CA Ear, Nose, Mouth, Throat and Neck Procedures**.

Dental disorders are covered in Subchapter **CB Ear, Nose, Mouth, Throat and Neck Disorders**.

Subchapter DZ – Respiratory System Procedures and Disorders

Composition and Concepts	
Total HRGs	**176**
Total HRG Roots	**52**
Procedure-driven HRGs	46
Diagnosis-driven HRGs	130
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

Subchapter **DZ Respiratory System Procedures and Disorders** covers both adult respiratory diagnoses, and thoracic and respiratory procedures for patients of all ages. The subchapter includes activity undertaken in inpatient, day case and non-admitted care settings.

It does not include percutaneous procedures on the respiratory system; these map to Subchapter **YD Thoracic Imaging Interventions**.

The surgical HRGs within this subchapter are split into five levels of complexity (minor, intermediate, major, complex and very complex). There is also an HRG specific to lung transplantation.

Multiple procedure logic is employed throughout the surgical HRGs within this subchapter, as are age splits: there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under). There are also HRGs specific to the treatment of infants (0 to 1 year of age) and those for older children (2 to 18 years). Escalation to an HRG with a higher expected resource use also occurs when procedures are performed bilaterally.

With the creation of a new Subchapter **YD Thoracic Imaging Interventions**, the percutaneous thoracic imaging intervention activity that previously mapped to the HRGs within Subchapter **DZ Respiratory System Procedures and Disorders** have been moved to new HRGs within this new subchapter. This has led to the creation of new, procedure-specific HRGs, e.g. **DZ70Z Endobronchial Ultrasound Examination of Mediastinum**.

There are HRGs specific to bronchoscopic procedures that are split into three levels of complexity for therapeutic procedures, and there are specific HRGs for diagnostic procedures. The latter are split into adult (19 years and over) and paediatric (18 years and under) HRGs.

There are also HRGs specific to respiratory physiology procedures, several of which are split into adult- and paediatric-specific HRGs.

All the minor procedure HRGs, including the respiratory physiology procedure HRGs and the majority of bronchoscopic HRGs within this subchapter have maximum length of stay logic, to ensure that minor procedures, such as oxygen assessment, are not used to determine the HRG for a long-stay medical patient, e.g. a person who has lung cancer.

The adult diagnosis-driven HRGs for respiratory system disorders are disease-specific.

Interactive CC splits are employed within the majority of HRG roots within this subchapter – up to a maximum of five levels – to more appropriately differentiate resource usage between routine and complex patients.

In addition, intervention splits, including those for multiple interventions, are also employed within the majority of the diagnosis-driven HRG roots.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter EB – Cardiac Disorders

Subchapter **EB Cardiac Disorder** covers all diagnoses for adults within the Cardiac specialty. It includes activity undertaken in inpatient and day case settings.

The HRGs within this subchapter are split based on disorder type.

Interactive CC splits are employed within the majority of HRGs within this subchapter – up to a maximum of three levels – to more appropriately differentiate expected resource usage between routine and complex patients.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Composition and Concepts	
Total HRGs	**48**
Total HRG Roots	**13**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	48
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter EC – Open and Interventional Procedures for Congenital Heart Disease

Subchapter **EC Open and Interventional Procedures for Congenital Heart Disease** covers procedures within Cardiac Surgery that are either carried out on patients 18 years or under, or are carried out as a result of patients having congenital heart disease.

All other cardiac procedures are covered within Subchapters **ED Open Cardiac Procedures for Acquired Conditions** or **EY Interventional Cardiology for Acquired Conditions**, which have replaced Subchapter **EA Cardiac Procedures**.

Subchapter EC includes activity undertaken in inpatient, day case and non-admitted care settings, for all ages of patient.

The HRGs within this subchapter have been completely redesigned. The therapeutic congenital cardiac procedure HRGs are now split into six levels of complexity (minor, intermediate, major, very major, complex, and very complex).

Composition and Concepts	
Total HRGs	**21**
Total HRG Roots	**9**
Procedure-driven HRGs	21
Diagnosis-driven HRGs	0
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

Multiple procedure logic is employed within the majority of HRGs within this subchapter. In addition, escalation to a higher expected resource HRG also occurs where there is active cooling during surgery, when percutaneous procedures are undertaken under general anaesthetic or if a procedure is revisional.

New HRGs have also been created specific to diagnostic congenital cardiac procedures and tests.

All paediatric procedure-driven cardiac activity, with the exception of transplant surgery, now maps to the HRGs within Subchapter **EC Open and Interventional Procedures for Congenital Heart Disease**.

The congenital cardiac physiology HRGs have maximum length of stay logic to ensure that minor procedures such as ECGs are not used to determine the HRG for a long stay medical patient, e.g. a person who has suffered a heart attack.

Interactive CC splits are also employed within the majority of the HRGs within this subchapter – up to a maximum of three levels – to more appropriately differentiate expected resource usage between routine and complex patients.

Subchapter ED – Open Cardiac Procedures for Acquired Conditions

Subchapter **ED Open Cardiac Procedures for Acquired Conditions** covers open cardiac procedures for acquired heart disease for adult patients. It includes activity undertaken in inpatient, day case and non-admitted care settings.

Percutaneous cardiac procedures now map to Subchapter **EY Interventional Cardiology for Acquired Heart Disease**.

Together, these two subchapters replace Subchapter **EA Cardiac Procedures**.

Procedures that are either carried out on children (patients 18 years or under) or are carried out as a result of patients having congenital heart disease are covered within Subchapter **EC Open and Interventional Procedures for Congenital Heart Disease**.

Composition and Concepts	
Total HRGs	**46**
Total HRG Roots	**20**
Procedure-driven HRGs	46
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	No

The new Subchapter **ED Open Cardiac Procedures for Acquired Conditions** consists of HRGs specific to transplant surgery, thoracic aortic surgery, coronary artery bypass and valve replacement / repair procedures and other open procedures on the heart or pericardium.

Varying levels of complexity of surgery are reflected in these HRGs, often through the creation of standard and complex equivalent HRGs.

Multiple procedure logic is employed within the majority of HRGs within this subchapter. In addition, for complex open surgery, escalation to a higher expected resource HRG also occurs where there is active cooling during surgery, if a procedure is revisional or if the primary diagnosis is a heart infection or constricted pericarditis.

Several of the HRGs within this subchapter have been created specific to high-cost, specialised activity, such as complex aortic aneurysm surgery.

Interactive CC splits are employed within the majority of the HRGs within this subchapter – up to a maximum of three levels – to more appropriately differentiate resource usage between routine and complex patients.

Subchapter EY – Interventional Cardiology for Acquired Conditions

Subchapter **EY Interventional Cardiology for Acquired Conditions** covers interventional cardiology procedures for acquired conditions for adult patients. It includes activity undertaken in inpatient, day case and non-admitted care settings.

Open procedures for acquired heart disease now map to Subchapter **ED Open Cardiac Procedures for Acquired Heart Disease**. Together, these two subchapters replace Subchapter **EA Cardiac Procedures**.

Procedures that are either carried out on patients 18 years or under or are carried out as a result of patients having congenital heart disease are covered within Subchapter **EC Open and Interventional Procedures for Congenital Heart Disease**.

Composition and Concepts	
Total HRGs	**65**
Total HRG Roots	**26**
Procedure-driven HRGs	65
Diagnosis-driven HRGs	0
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

This subchapter consists of HRGs specific to pacemaker and defibrillator procedures, transcatheter aortic valve implantation (TAVI), complex percutaneous repairs, cardiac ablation, electrophysiology studies, coronary angioplasty, cardiac catheterisation and cardiac physiological tests.

Varying levels of complexity of surgery are reflected in these HRGs, often through the creation of standard and complex equivalent HRGs.

Multiple procedure logic is employed within the majority of HRGs within this subchapter. In addition, escalation to a higher expected resource HRG also occurs if specified imaging or other assistance procedures are used to support the undertaking of the procedure, e.g. intravascular ultrasound (IVUS) or fractional flow reserve (FFR).

Several of the HRGs within this new subchapter have been created specifically to identify high-cost, specialised activity, such the insertion of implantable cardiac defibrillators and TAVI.

The cardiac physiology HRGs have maximum length of stay logic to ensure that minor procedures such as ECGs are not used to determine the HRG for a long stay medical patient, e.g. a person who has suffered a heart attack.

Interactive CC splits are employed within the majority of the HRGs within this subchapter – up to a maximum of six levels – to more appropriately differentiate expected resource usage between routine and complex patients.

Subchapter FZ – Digestive System Procedures and Disorders

Subchapter **FZ Digestive System Procedures and Disorders** covers both endoscopic and open surgical digestive system procedures for patients of all ages, and gastroenterology medicine for adults, delivered in admitted or non-admitted care settings.

It does not include interventions for the treatment of hepatobiliary or pancreatic system disorders, which are covered by Chapter **G Hepatobiliary and Pancreatic System** and Subchapter **YG Hepatobiliary and Pancreatic Imaging Interventions**.

The surgical HRG roots within this subchapter are divided based on the site of surgery – e.g. oesophagus and stomach, small intestine, large intestine, etc. – with related HRGs separated by level of complexity (minor, intermediate, major, very major, complex, and very complex). Not all complexity levels are relevant to each site, with a maximum of five levels of complexity applicable to any single site.

Composition and Concepts	
Total HRGs	**202**
Total HRG Roots	**63**
Procedure-driven HRGs	148
Diagnosis-driven HRGs	54
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

With the creation of the new Subchapter **YF Gastrointestinal Imaging Interventions**, the percutaneous gastrointestinal imaging intervention activity that previously mapped to the HRGs within Subchapter FZ has been moved to new HRGs within this new subchapter. This remapping out of subchapter has led to the creation of new procedure-specific HRG roots for activity that has remained within the subchapter, e.g. **FZ95 Endoscopic, Sclerotherapy or Rubber Band Ligation, of Lesion of Upper Gastrointestinal Tract**.

The endoscopic procedure HRG roots within Subchapter FZ are differentiated based on the type of scope used and on whether the intervention is diagnostic, diagnostic with biopsy, or therapeutic. The therapeutic HRG roots are further differentiated based on complexity.

There are also procedure-specific HRG roots for high-volume procedures such as hernia repair or appendicectomy, and for specialised procedures such as bariatric surgery, or insertion of a neurostimulator for the treatment of incontinence.

Multiple procedure logic is employed within the procedure-driven HRG roots within this subchapter, as are age splits: there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under) within many of the FZ HRG roots. There are also age-specific HRG roots that separate adult and paediatric activity at the root level. In addition, some HRG roots in Subchapter FZ now employ paediatric age splits, which enable HRGs specific to the treatment of young infants (0 to 1 years of age). Escalation to an HRG root with a higher expected resource use also occurs in this subchapter, where appropriate, when certain procedures, e.g. hernia repair, are performed bilaterally or are revisional.

The less-resource intensive procedure-driven HRG roots within this subchapter, including the majority of endoscopic HRG roots, have maximum length of stay logic to ensure that

minor procedures, such as diagnostic colonoscopy, are not used to determine the HRG for a long-stay medical patient, e.g. a person who has a gastrointestinal tract bleed.

There are several disease-specific HRG roots within Subchapter FZ, but the majority of digestive system disorders are mapped to either the Malignant Gastrointestinal Tract Disorders HRG root or the Non-Malignant Gastrointestinal Tract Disorders HRG root

Interactive CC splits are employed within the majority of HRG roots within this subchapter – up to a maximum of five levels – to more appropriately differentiate expected resource usage between routine and complex patients.

In addition, intervention splits, including where the presence of multiple interventions influences grouping, are employed within all of the diagnosis-driven HRG roots in this subchapter.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter GA – Hepatobiliary and Pancreatic System Open Procedures

Subchapter **GA Hepatobiliary and Pancreatic System Open Procedures** includes hepatobiliary and pancreatic system surgery for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

It does not include endoscopic or percutaneous procedures on the hepatobiliary and pancreatic system as these map to Subchapters **GB Hepatobiliary and Pancreatic System Endoscopic and Percutaneous Procedures** and **YG Hepatobiliary and Pancreatic Imaging Interventions**, respectively.

The more general Hepatobiliary and Pancreatic HRG roots within this subchapter are divided into six levels of complexity: minor, intermediate, major, very major, complex and very complex.

Composition and Concepts	
Total HRGs	**26**
Total HRG Roots	**10**
Procedure-driven HRGs	26
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	No

There are also procedure-specific HRG roots for high-volume procedures such as cholecystectomy, or specialised procedures such as hepatobiliary transplants or pancreatic necrosectomy.

Multiple procedure logic is employed throughout the HRG roots within this subchapter. Escalation to an HRG root with a higher expected resource use also occurs in this subchapter, where appropriate, for patients with acute pancreatitis.

The cholecystectomy HRG root is split based on whether the surgery was open or laparoscopic and has age splits: there are several HRGs specifically for adult activity (19 years and over) and one HRG specifically for paediatric activity (18 years and under). The transplant HRG root has a paediatric age split in addition to a standard age split: there is a specific HRG for adult activity (18 years and over) and HRGs specific to the treatment of infants (0 to 1 year of age) and older children (2 to 17 years), respectively.

Interactive CC splits are employed within the majority of HRG roots within this subchapter – up to a maximum of three levels – to more appropriately differentiate expected resource usage between routine and complex patients.

Subchapter GB – Hepatobiliary and Pancreatic System Endoscopic Procedures

Subchapter **GB Hepatobiliary and Pancreatic System Endoscopic Procedures** covers hepatobiliary and pancreatic system endoscopic procedures. It includes activity undertaken in inpatient, day case and non-admitted care settings for patients of all ages.

It does not include open surgical procedures, which map to Subchapter **GA Hepatobiliary and Pancreatic Surgery**, or percutaneous procedures, which map to Subchapter **YG Hepatobiliary and Pancreatic Imaging Interventions**.

Composition and Concepts	
Total HRGs	**14**
Total HRG Roots	**7**
Procedure-driven HRGs	14
Diagnosis-driven HRGs	0
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	Yes

The HRG roots within this subchapter are split into endoscopic retrograde cholangiopancreatography (ERCP) procedures and endoscopic ultrasound procedures.

There are three therapeutic ERCP HRG roots (intermediate, major and complex) and two diagnostic ERCP HRG roots (with biopsy or cytology and without biopsy or cytology).

With the creation of the new Subchapter **YG Hepatobiliary and Pancreatic Imaging Interventions**, the percutaneous hepatobiliary and pancreatic imaging intervention activity that previously mapped to the HRGs within Subchapter **GB Hepatobiliary and Pancreatic System Endoscopic Procedures** has been moved to new HRGs within the new subchapter. This change has necessitated a redesign of the endoscopic non-ERCP HRGs within this subchapter, which has led to the creation of new procedure-specific HRG roots for endoscopic ultrasound procedures.

Multiple procedure logic is employed throughout the HRG roots within this subchapter. Escalation to an HRG root with a higher expected resource use also occurs in this subchapter, where appropriate, for patients with acute pancreatitis.

Interactive CC splits are employed within many of the more complex HRG roots within this subchapter – up to a maximum of four levels – to more appropriately differentiate expected resource usage between routine and complex patients.

The less-resource intensive HRG roots within this subchapter have maximum length of stay logic to ensure that minor procedures, such as diagnostic ERCP, are not used to determine the HRG for a long-stay medical patient, e.g. a person who has liver failure.

Subchapter GC – Hepatobiliary and Pancreatic System Disorders

Subchapter **GC Hepatobiliary and Pancreatic System Disorders** covers all adult liver, biliary and pancreatic system disorders. It includes activity undertaken in inpatient and day case settings.

The HRGs within this subchapter are spread across four HRG roots, two of which are disease-specific – for liver failure and non-obstructive jaundice – and two of which contain all other hepatobiliary and pancreatic system disorders – one for malignant disorders and one for non-malignant disorders.

Interactive CC splits are employed within all of the HRG roots within this subchapter – up to a maximum of four levels – to more appropriately differentiate expected resource usage between routine and complex patients.

Composition and Concepts	
Total HRGs	**24**
Total HRG Roots	**4**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	24
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

In addition, intervention splits, including where the presence of multiple interventions influences grouping, are employed within three of the four HRG roots in this subchapter.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter HC – Spinal Procedures and Disorders

Subchapter **HC Spinal Procedures and Disorders** includes spinal surgery for patients of all ages and treatment for adult spinal disorders, undertaken as inpatient, day case or outpatient activity.

It does not include percutaneous spinal procedures; these map to Subchapter **YH Musculoskeletal Imaging Interventions**.

The procedure-driven HRGs within this subchapter have been completely redesigned with new HRGs specific to spinal reconstruction, including instrumented correction of spinal deformity.

There are also new extradural spinal surgery HRGs split into six levels of complexity (minor, intermediate, major, very major, complex and very complex), new HRGs specific to intradural spinal surgery split into two levels of complexity (major and complex), and HRGs specific to diagnostic spinal puncture.

Composition and Concepts	
Total HRGs	**74**
Total HRG Roots	**23**
Procedure-driven HRGs	39
Diagnosis-driven HRGs	35
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

Multiple procedure logic is employed throughout the majority of these new procedure-driven HRGs, as are age splits: there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under). For the diagnostic spinal puncture HRGs, paediatric activity is further disaggregated into splits for young children (0 to 5 years of age) and older children (6 to 18 years of age).

Escalation to an HRG with a higher expected resource use also occurs, where appropriate, when procedures are performed bilaterally where the patient is being treated for a spinal tumour or infection or wherever there is advanced monitoring – e.g. EPR during surgery.

HRG roots **HC65 Minor Extradural Spinal Procedures** and **HC72 Diagnostic Spinal Puncture** employ maximum length of stay logic to ensure that minor procedures, such as diagnostic lumbar puncture, are not used to determine the HRG for a long-stay medical patient, e.g. a child who has meningitis.

The adult diagnosis-driven HRGs have also been redesigned. The HRG roots have been retained, still being differentiated by disorder type. However, in addition to interactive CCs, intervention splits are now employed within the majority of these HRG roots.

Interactive CC splits are employed within the majority of both diagnosis-driven and procedure-driven HRGs within this subchapter – up to a maximum of four levels – to more appropriately differentiate expected resource usage between routine and complex patients.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter HD – Musculoskeletal and Rheumatological Disorders

Subchapter **HD Musculoskeletal and Rheumatological Disorders** covers musculoskeletal and rheumatological disorders for adult patients. It includes activity undertaken in an inpatient and day case setting.

The HRGs within this subchapter are differentiated by disorder type.

Interactive CC splits are employed within all of the HRGs within this subchapter – up to a maximum of six levels – to more appropriately differentiate expected resource usage between routine and complex patients.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Composition and Concepts	
Total HRGs	**35**
Total HRG Roots	**7**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	35
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter HE – Orthopaedic Disorders

Subchapter **HE Orthopaedic Disorders** covers trauma and non-trauma orthopaedic diagnoses for adults only. It includes activity undertaken in inpatient and day case settings.

Adult spinal disorder HRGs can be found in Subchapter **HC Spinal Procedures and Disorders**.

Adult rheumatological and other musculoskeletal disorders can be found in Subchapter **HD Musculoskeletal and Rheumatological Disorders**.

The HRGs within this subchapter have been created predominantly from the diagnosis-driven activity that previously mapped to Subchapters **HA Orthopaedic Trauma Procedures** and **HB Orthopaedic Non-Trauma Procedures**.

Composition and Concepts	
Total HRGs	**84**
Total HRG Roots	**15**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	84
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

There are new HRGs for injuries, based on the site of the injury, which are split into fractures and other injuries. There are also HRGs specific to complications of trauma and orthopaedic treatment.

Interactive CC splits are employed within all of the HRG roots within this subchapter – up to a maximum of five levels – to more appropriately differentiate expected resource usage between routine and complex patients.

In addition, intervention splits, including multiple interventions, are also employed within the majority of HRG roots.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter HN – Orthopaedic Non-Trauma Procedures

Subchapter **HN Orthopaedic Non-Trauma Procedures** covers non-trauma orthopaedic procedures for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

Trauma procedure activity can be found in Subchapter **HT Orthopaedic Trauma Procedures**.

Spinal activity can be found in Subchapter **HC Spinal Procedures and Disorders**.

Adult orthopaedic disorders can be found in Subchapter **HE Orthopaedic Disorders**.

Adult musculoskeletal and rheumatological disorders can be found in Subchapter **HD Musculoskeletal and Rheumatological Disorders**.

Subchapter HN does not include percutaneous spinal procedures; these map to Subchapter **YH Musculoskeletal Imaging Interventions**.

Composition and Concepts	
Total HRGs	**110**
Total HRG Roots	**35**
Procedure-driven HRGs	110
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

The HRGs within this subchapter were predominantly created from activity that previously mapped to Subchapter **HB Orthopaedic Non-Trauma Procedures**. However, activity relating to the treatment of bone malignancy has also been remapped from Subchapter **HA Orthopaedic Trauma Procedures** into this new subchapter.

The orthopaedic procedures for non-trauma HRGs have retained the separation of HRGs based on the site of surgery – e.g. hip, knee, hand etc. – but the HRGs are now split into seven levels of complexity (minimal, minor, intermediate, major, very major, complex and very complex), with some sites combined at the higher complexity level.

Following updated coding guidance, and unlike the previous orthopaedic HRG designs, differentiation between procedures for non-trauma resulting in a mapping to HRGs within subchapter **HN Orthopaedic Non-Trauma Procedures** no longer uses primary diagnosis to inform the surgical anatomical region. Instead, the HRG4+ design uses only subsidiary procedure site codes to identify the site of the procedure. To reflect this change, new combination codes have been created to identify the anatomical region of each procedure, for example **A591+ELBOW - Total sacrifice of peripheral nerve of elbow**, to allow for direct mapping to the appropriate HRG.

Multiple site codes

Where multiple site codes are recorded relating to the same dominant procedure, the sequencing of sites per the following site hierarchy is applied when grouping activity;

Spine > Hip > Knee > Shoulder > Elbow > Hand > Foot.

Therefore if **A59.2 Total sacrifice of peripheral nerve NEC** had subsequent site codes of **Z095 Posterior interosseous nerve (ELBOW)** and **Z09.2 Median nerve (HAND)**, the combination code **A59.2+ELBOW** would be derived and drive the grouping.

Harvest OPCS-4 codes

There is specific coding guidance regarding the coding of harvest OPCS-4 codes (Y54-Y69), in particular in relation to orthopaedic operations - see PGCS11, which states that coding should reflect the following; procedure, procedure site, procedure laterality, harvest, harvest site, harvest laterality.

In certain circumstances, where there are harvest OPCS-4 codes in the activity, the Grouper logic will look at all of the site and approach codes following the dominant procedure code.This means that where there is a hierarchy of site i.e. hip > knee > shoulder > elbow > hand > foot, the site of harvest may determine the HRG. For example, if an arthroplasty of the hand with a harvest of tendon from the hip is undertaken, this will map to a hip HRG in the current HRG design.

In subchapter **HB Orthopaedic Non-Trauma Procedures**, procedure escalation was dealt with as a separate process ("Core3"). This has now been removed as, with the removal of primary diagnosis to check for anatomical site logic, it is no longer required, and 'escalation' to a higher expected resource HRG can be achieved through typical multiple procedure logic, using the new combination codes.

In addition to logic that 'escalates' activity to higher expected resource HRGs, if the procedure is performed bilaterally, logic has been added to 'escalate' procedures that have been performed on multiple digits e.g. fingers of the hand, to reflect the additional resource usage of performing multiple operations in a single theatre instance. With regard to the general HRG **HB99Z Other Procedures for Non-Trauma**, which contained activity that failed to specify an anatomical region or had a different anatomical region, this HRG has been removed and replaced, in part, with **HN93Z Other Muscle, Tendon, Fascia or Ligament Procedures**.

Previously, where there was a primary diagnosis indicating malignancy or trauma, the activity mapped into subchapter **HA Orthopaedic Trauma Procedures**. This has been changed such that malignancy activity will map to the HRGs within this subchapter, and 'escalate' to a higher expected resource HRG to reflect the additional complexity associated with cancer surgery. To reflect the clinical care and high costs associated with the treatment of infected internal orthopaedic prosthetics, new HRG roots **HN80 Very Complex, Hip or Knee Procedures for Non-Trauma** and **HN85 Very Complex, Foot, Hand, Shoulder or Elbow Procedures for Non-Trauma** have been created. These HRGs can only be derived for specific revisional and end-stage limb salvage procedures, where there is a diagnosis code indicating infected internal orthopaedic prosthetics.

Multiple procedure logic is employed throughout the HRGs within this subchapter, as are age splits: there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under). There are now also HRGs specific to the treatment of young children (0 to 5 years of age) and those for older children (6 to 18 years). Escalation to an HRG with a higher expected resource use also occurs, where appropriate, when procedures are performed bilaterally (or on multiple digits of hands or feet), or where the patient is being treated for bone malignancy or an infected orthopaedic prosthesis.

All the minor and minimal procedure HRGs within this subchapter have maximum length of stay logic to ensure that minor procedures, such as joint injections, are not used to determine the HRG for a long-stay medical patient, e.g. a person who has bone cancer.

Interactive CC splits are employed within the majority of HRG roots within this subchapter – up to a maximum of six levels – to more appropriately differentiate expected resource usage between routine and complex patients.

Subchapter HT – Orthopaedic Trauma Procedures

Subchapter **HT Orthopaedic Trauma Procedures** covers trauma orthopaedic procedures for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

Non-trauma procedure activity can be found in Subchapter **HN Orthopaedic Non-Trauma Procedures**.

Spinal activity can be found in Subchapter **HC Spinal Procedures and Disorders**.

Adult orthopaedic disorders can be found in Subchapter **HE Orthopaedic Disorders**.

Adult musculoskeletal and rheumatological disorders can be found in Subchapter **HD Musculoskeletal and Rheumatological Disorders**.

Subchapter HT does not include percutaneous spinal procedures; these map to Subchapter **YH Musculoskeletal Imaging Interventions**.

Composition and Concepts	
Total HRGs	**87**
Total HRG Roots	**26**
Procedure-driven HRGs	87
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

The HRGs within this subchapter have been predominantly created from activity that previously mapped to Subchapter **HA Orthopaedic Trauma Procedures**. However, activity relating to the treatment of bone malignancy now maps to Subchapter **HN Orthopaedic Non-Trauma Procedures** rather than to this new subchapter.

The orthopaedic procedures for trauma HRGs have retained the separation of HRGs based on the site of surgery – e.g. hip, knee, hand etc. – but the HRGs are now split into five levels of complexity (minor, intermediate, major, very major and complex), with some sites combined at the higher complexity level.

Following updated coding guidance, and unlike the previous orthopaedic HRG designs, differentiation between procedures for trauma resulting in a mapping to HRGs within subchapter **HT Orthopaedic Trauma Procedures** no longer uses primary diagnosis to inform the surgical anatomical region. Instead, the HRG4+ design uses only subsidiary procedure site codes to identify the site of the procedure. To reflect this change, new combination codes have been created to identify the anatomical region of each procedure, for example **A591+ELBOW - Total sacrifice of peripheral nerve of elbow**, to allow for direct mapping to the appropriate HRG.

Multiple site codes

Where multiple site codes are recorded relating to the same dominant procedure, the sequencing of sites per the following site hierarchy is applied when grouping activity;

Spine > Hip > Knee > Shoulder > Elbow > Hand > Foot.

Therefore if **A592 Total sacrifice of peripheral nerve NEC** had subsequent site codes of **Z095 Posterior interosseous nerve (ELBOW)** and **Z092 Median nerve (HAND)**, the combination code **A592+ELBOW** would be derived and drive the grouping.

Harvest OPCS-4 codes

There is specific coding guidance regarding the coding of harvest OPCS-4 codes (Y54-Y69), in particular in relation to orthopaedic operations - see PGCS11, which states that coding should reflect the following; procedure, procedure site, procedure laterality, harvest, harvest site, harvest laterality.

In certain circumstances, where there are harvest OPCS-4 codes in the activity, the Grouper logic will look at all of the site and approach codes following the dominant procedure code.

This means that where there is a hierarchy of site i.e. hip > knee > shoulder > elbow > hand > foot, the site of harvest may determine the HRG. For example, if an arthroplasty of the hand with a harvest of tendon from the hip is undertaken, this will map to a hip HRG in the current HRG design.

In subchapter **HA Orthopaedic Trauma Procedures**, procedure escalation was dealt with as a separate process ("Core3"). This has now been removed as, with the removal of primary diagnosis to check for anatomical site logic, it is no longer required. 'Escalation' to higher expected resource HRGs is achieved through typical multiple procedure logic, using the new combination codes.

In addition to logic that 'escalates' activity to higher expected resource HRGs, if the procedure is performed bilaterally, logic has been added to 'escalate' procedures that have been performed on multiple digits e.g. fingers of the hand, to reflect the additional resource usage of performing multiple operations.

The general HRG, **HA99Z Other Procedures for Trauma**, which contained activity that didn't specify an anatomical region, or had a different anatomical region, has been removed in the new design and replaced, in part, with **HN93Z Other Muscle, Tendon, Fascia or Ligament Procedures**.

Previously, where there was a primary diagnosis indicating malignancy or trauma, the activity mapped into subchapter **HA Orthopaedic Trauma Procedures**. This has been changed in the new design and instead the bone malignancy activity maps to the HRGs within subchapter **HN Orthopaedic Non-Trauma Procedures**, 'escalating' to a higher expected resource HRG to reflect the additional complexity associated with undertaking procedures for bone cancer.

Multiple procedure logic is employed throughout the HRGs within this subchapter, as are age splits: there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under). There are now also HRGs specific to the treatment of young children (0 to 5 years of age) and those for older children (6 to 18 years). Escalation to an HRG with a higher expected resource use also occurs in this subchapter, where appropriate, when procedures are performed bilaterally (or on multiple digits of hands or feet), or where the patient is being treated for bone malignancy.

All the minor procedure HRGs within this subchapter have maximum length of stay logic to ensure that minor procedures, such as the application of traction, are not used to determine the HRG for a long-stay medical patient, e.g. a person who has suffered a fractured hip.

Interactive CC splits are employed within the majority of HRG roots within this subchapter – up to a maximum of five levels – to more appropriately differentiate expected resource usage between routine and complex patients.

Subchapter JA – Breast Procedures and Disorders

Subchapter **JA Breast Procedures and Disorders** covers breast procedures for patients of all ages and adult breast disorders. It includes activity undertaken in inpatient, day case and non-admitted care settings.

It does not include percutaneous breast imaging intervention procedures; these map to Subchapter **YJ Breast Imaging Interventions**.

The breast procedure HRGs within this subchapter are split based on three levels of complexity (minor, intermediate and major). In addition, there are HRGs specific to breast surgery with lymph node clearance and therapeutic mammoplasty.

There are also HRGs specific to reconstructive surgery that are split based on the type of reconstruction employed, and whether the surgery is performed immediately or at a later date.

Composition and Concepts	
Total HRGs	**35**
Total HRG Roots	**20**
Procedure-driven HRGs	24
Diagnosis-driven HRGs	11
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

All the procedure-driven HRGs are also split into unilateral and bilateral HRGs – the latter can include either the identical procedure performed on both breasts i.e. bilateral reduction mammoplasty or procedures of the equivalent resource usage being performed on both breasts i.e. lumpectomy of left breast with oncoplasty of right breast.

Multiple procedure logic is employed throughout the majority of HRGs within this subchapter.

All the minor procedure HRGs within this subchapter have maximum length of stay logic to ensure that minor procedures, such as injection into breast, are not used to determine the HRG for a long-stay medical patient, e.g. a person who has breast cancer.

The diagnosis-driven HRGs for adult breast disorders are split based on whether the disorder is malignant or non-malignant.

Interactive CC splits, up to a maximum of five levels, are employed within the majority of both diagnosis-driven and procedure-driven HRGs to more appropriately differentiate expected resource usage between routine and complex patients. Intervention splits are also employed in both of the diagnosis-driven HRG roots.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter JB – Burns Procedures and Disorders

Subchapter **JB Burns Procedures and Disorders** covers all aspects of burns care for both adults and children. It includes activity undertaken in inpatient, day case and non-admitted care settings.

The HRGs within this subchapter are differentiated by the severity of the burn, based on the total body surface area (TBSA) affected. The HRGs are split into four categories – Major (TBSA ≥60%), Intermediate (TBSA 20-59%), Minor (TBSA <20%) and Other (where TBSA is not applicable or has not been recorded).

The HRGs are further differentiated by type of procedure undertaken; with skin graft, with other skin procedure. or without skin procedures.

Composition and Concepts	
Total HRGs	**12**
Total HRG Roots	**4**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	12
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	No

An HRG from Subchapter **JB Burns Procedures and Disorders** will be generated if there is a a burn or corrosion (ICD-10 rubrics **T20-T32**) diagnosis code recorded in any position, meaning that burns diagnoses take precedence over the grouping of all other diagnoses and procedures, with the exception of multiple trauma.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) for burns care groups to an HRG within Subchapter **JB Burns Procedures and Disorders**, rather than an HRG in **Chapter P Diseases of Childhood and Neonates**. This is an exception to the requirements of the Casemix Design Framework, on clinical advisement.

Certain OPCS-4 codes that specify a skin procedure for burns, e.g. **S54.1 Debridement of burnt skin of head or neck**, now map directly to **JB33B Other Burn with Other Skin Procedure**.

Subchapter JC – Skin Procedures

Subchapter **JC Skin Procedures** covers all skin procedures for patients of all ages, delivered in admitted or non-admitted care settings.

The skin procedure HRGs within this subchapter are split based on the complexity of surgery, with multiple procedure logic employed within the major procedure HRGs.

Age splits are employed in the majority of HRGs within this subchapter: There are HRG splits for post-adolescent patients (13 years and over) and others for pre-adolescent patients (12 years and under).

There are also HRGs specific to high volume procedures, e.g. patch testing, split by complex and standard, photodynamic therapy, phototherapy and photochemotherapy.

Composition and Concepts	
Total HRGs	**12**
Total HRG Roots	**8**
Procedure-driven HRGs	12
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

All the minor and intermediate procedure HRGs within this subchapter have maximum length of stay logic to ensure that minor procedures, such as dressing of bed sore, are not used to determine the HRG for a long-stay medical patient, e.g. a person who has suffered a stroke.

Subchapter JD – Skin Disorders

Subchapter **JD Skin Disorders** covers all skin disorders in adults. It includes activity undertaken in an inpatient and day case setting.

The adult diagnosis-driven HRGs within this subchapter are all within a single HRG root, **JD07 Skin Disorders**, and have both interactive CC splits – up to a maximum of six levels – and intervention splits, to more appropriately differentiate expected resource usage between routine and complex patients.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Composition and Concepts	
Total HRGs	**10**
Total HRG Roots	**1**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	10
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter KA – Endocrine System Disorders

Subchapter **KA Endocrine System Disorders** covers endocrine system disorders for adults, and endocrine procedures for patients of all ages, with the exception of diabetes, which is covered in Subchapter **KB Diabetic Medicine**.

It includes activity undertaken in an inpatient, day case and non-admitted care setting.

The procedure-driven HRG roots within this subchapter are divided based on the site of surgery; thus there are HRGs for thyroid, parathyroid and adrenal procedures, respectively.

The adult diagnosis-driven HRG roots within this subchapter are divided based on disorder type.

Interactive CC splits are employed within all of the HRG roots within this subchapter – up to a maximum of three levels – to more appropriately differentiate resource usage between routine and complex patients.

Composition and Concepts	
Total HRGs	**18**
Total HRG Roots	**7**
Procedure-driven HRGs	7
Diagnosis-driven HRGs	11
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter KB – Diabetic Medicine

Subchapter **KB Diabetic Medicine** covers all diabetic disorders in adult patients and one diabetes-related procedure for patients of all ages. It includes activity undertaken in an inpatient, day case and non-admitted care setting. .

Composition and Concepts	
Total HRGs	**12**
Total HRG Roots	**4**
Procedure-driven HRGs	1
Diagnosis-driven HRGs	11
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

The adult diagnosis-driven HRG roots within the subchapter are divided based on the type of diabetic complication, i.e. hypoglycaemia, hyperglycaemia and lower limb complications.

Interactive CC splits are employed within all of the diagnosis-driven HRG roots within this subchapter – up to a maximum of four levels – to more appropriately differentiate expected resource usage between routine and complex patients.

There is a single procedure-driven HRG root within this subchapter, **KB04 Continuous Subcutaneous Insulin Infusion**. This HRG root, which has just one HRG, has been designed specifically to accommodate the insertion of insulin pumps for patients of all ages.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter KC – Metabolic Disorders

Subchapter **KC Metabolic Disorders** covers all metabolic disorders in adults aged 19 years and over. It includes activity undertaken in an inpatient and day case setting.

There are two HRG roots within this subchapter; one for inborn errors of metabolism and one for fluid or electrolyte disorders.

Interactive CC splits are employed within both of the HRG roots within this subchapter – up to a maximum of five levels – to more appropriately differentiate resource usage between routine and complex patients.

In addition, intervention splits are employed within the HRG root **KC05 Fluid or Electrolyte Disorders**.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Composition and Concepts	
Total HRGs	**9**
Total HRG Roots	**2**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	9
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter LA – Renal Procedures and Disorders

Subchapter **LA Renal Procedures and Disorders** includes specific renal procedures for patients of all ages and all adult non-malignant renal disorders. It includes activity undertaken in an inpatient, day case and non-admitted care setting.

The HRGs for dialysis for chronic kidney disease are generated from the National Renal Data Set (NRD) and sit in Subchapter **LD Renal Dialysis for Chronic Kidney Disease**.

HRGs for renal dialysis for acute kidney injury are unbundled, and sit in Subchapter **LE Renal Dialysis for Acute Kidney Injury**.

Within this subchapter there are procedure-specific HRGs for renal transplants and related care that are split based on age: there are HRGs for adult (19 years and over) activity and others for paediatric (18 years and under) activity.

Composition and Concepts	
Total HRGs	**48**
Total HRG Roots	**14**
Procedure-driven HRGs	14
Diagnosis-driven HRGs	34
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	Yes

There is also an HRG specific to peritoneal dialysis associated procedures.

All of the minor procedure HRGs within this subchapter have maximum length of stay logic to ensure that minor procedures, such as the insertion of a peritoneal dialysis catheter, are not used to determine the HRG for a long stay medical patient, e.g. a person with an acute kidney injury.

The adult renal disorder HRGs are split by disorder type. Interactive CC splits, up to a maximum of five levels, are employed within all of the adult diagnosis-driven HRGs to more appropriately differentiate expected resource usage between routine and complex patients.

Intervention splits are also employed in all of the adult diagnosis-driven HRG roots.

HRGs covering non-transplant kidney procedures and the treatment of renal neoplasms sit within Subchapter **LB Urological and Male Reproductive System Procedures and Disorders** and Subchapter **YL Urological Imaging Interventions**.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

The specific logic required to derive the HRG root **LA97 Same Day Dialysis Admission or Attendance** requires a length of stay of 0 days and either a procedure or diagnosis code indicating that a patient of any age has been specifically admitted for dialysis for the treatment of chronic kidney disease or acute kidney injury. However, it should be noted that as patients receiving treatment of chronic kidney disease should be reported via the NRD it would not be expected for this HRG to be generate often,

Subchapter LB – Urological and Male Reproductive System Procedures and Disorders

Composition and Concepts	
Total HRGs	**149**
Total HRG Roots	**62**
Procedure-driven HRGs	93
Diagnosis-driven HRGs	56
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

Subchapter **LB Urological and Male Reproductive System Procedures and Disorders** covers urological and male reproductive system procedures for patients of all ages and adult disorders, with the exception of renal conditions and procedures relating to renal failure, which are covered in Subchapters **LA Renal Procedures and Disorders**, **LD Renal Dialysis for Chronic Kidney Disease** and **LE Renal Dialysis for Acute Kidney Injury**.

Subchapter LB includes activity undertaken in an inpatient, day case and non-admitted care setting.

It does not include urological interventional radiology procedures, which are included in Subchapter **YL Urological Imaging Interventions**.

The urological procedure HRGs within this subchapter are split based on whether they are open, laparoscopic, or endoscopic; on the organ operated on, e.g. bladder, kidney / ureter, penis; and on the complexity of surgery.

Multiple procedure logic is employed throughout the majority of HRGs within this subchapter, as are age splits; there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under). There are also HRGs specific to the treatment of infants (0 to 1 year of age) and those for older children (2 to 18 years). Escalation to an HRG with a higher expected resource use also occurs, where appropriate, when procedures are performed bilaterally, or where surgery is robotically-assisted.

There are a handful of HRGs specific to high-volume procedures, e.g. diagnostic flexible cystoscopy and prostate biopsies. There are also specific HRGs for procedures that use high-cost devices, including new HRGs specific to the insertion of neurostimulators and neurostimulator electrodes for the treatment of urinary incontinence.

All minor procedure HRGs within this subchapter have maximum length of stay logic to ensure that minor procedures, such as urinary catheterisation, are not used to determine the HRG for a long-stay medical patient, e.g. a person who has suffered a stroke.

The adult diagnosis-driven urological disorder HRGs within this subchapter are disorder-specific.

Interactive CC splits, up to a maximum of five levels, are employed within the majority of both diagnosis-driven and procedure-driven HRGs to more appropriately differentiate expected resource usage between routine and complex patients. Intervention splits are also employed in the majority of adult diagnosis-driven HRG roots.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter LD – Renal Dialysis for Chronic Kidney Disease

The HRGs in Subchapter **LD Renal Dialysis for Chronic Kidney Disease** capture all renal dialysis activity for patients of all ages recorded within the National Renal Data Set (NRD), which is specific to renal dialysis for chronic kidney disease. HRGs specific to dialysis for acute kidney injury can be found in the unbundled subchapter **LE Renal Dialysis for Acute Kidney Injury**. The HRGs within this subchapter are generated using data from the National Renal Dataset.

Composition and Concepts	
Total HRGs	**26**
Total HRG Roots	**13**
Procedure-driven HRGs	N/A
Diagnosis-driven HRGs	N/A
Age Splits	Yes
Complications and Comorbidities Splits	N/A
Intervention Splits	N/A
Multiple Procedures	N/A
Procedure Combination Codes	N/A
Diagnosis-qualified	N/A
Subsidiary Procedure-qualified	N/A
Length of Stay-qualified	N/A

The haemodialysis HRGs are differentiated based on location (e.g. hospital, satellite or home), age (adult or child), vascular access type (e.g. catheter or fistula) and whether the patient has a blood-borne virus (that would require isolation).

The peritoneal dialysis HRGs are split based on whether continuous ambulatory peritoneal dialysis (CAPD) or automated peritoneal dialysis (APD). The HRGs for the latter intervention are further split based on whether or not the intervention is assisted.

The HRGs in Subchapter LD are derived per session from the following data items [item reference in brackets] in the National Renal Data Set (NRD):

Renal Care

[1] Renal Treatment Modality - e.g. Haemodialysis, CAPD

[6] Renal Treatment Supervision Code - e.g. home, hospital

[75] Person Observation (Blood Test HBV Surface Antigen) - e.g. negative, positive

[77] Person Observation (Blood Test HCV) - e.g. negative, positive

[79] Person Observation (Blood Test HIV) - e.g. negative, positive

Dialysis

[182] Dialysis Access Type - e.g. AV fistula, haemodialysis catheter

Patient age (in years derived from date of session – date of birth)

Annex A is a flow diagram that demonstrates how each HRG is derived.

The grouper validates against allowable values only for renal treatment modality and renal treatment supervision code. However, for dialysis access type, blank values are accepted and, if used, will group to the “via haemodialysis catheter” HRG split. The three blood-borne virus fields also allow for blank values and if left blank will group to the “without blood-borne viruses” HRG split.

Annex B demonstrates the acceptable values for each field required for grouping and where validation is applicable.

Subchapter LD :Worked Examples

Cases A to **E** illustrate how HRG assignment will be derived from the data in the NRD for haemodialysis patients of differing ages, with or without the presence of blood-borne viruses, at different sites and using different access types.

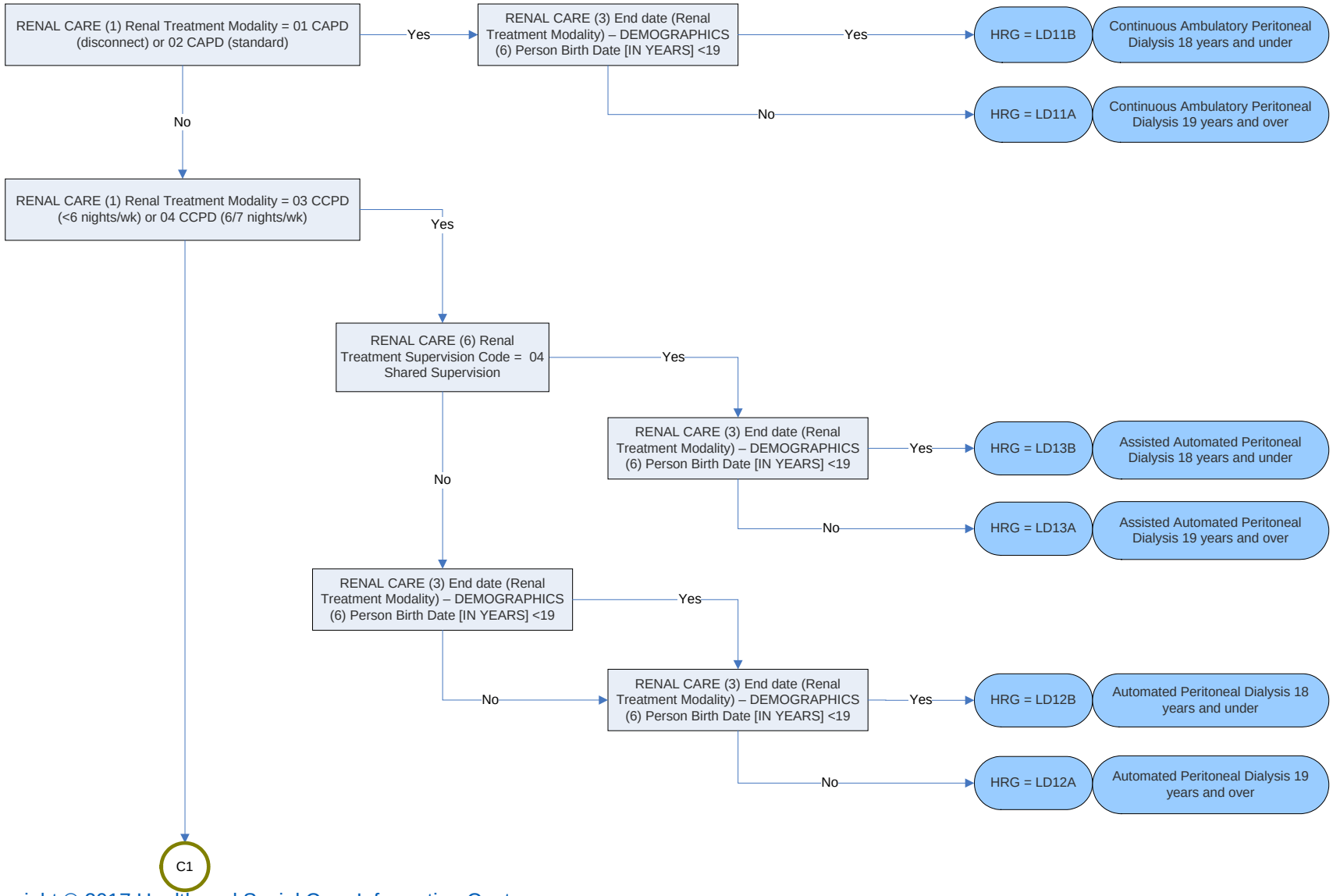
Case	Age	Renal Treatment Modality	Renal Treatment Supervision Code	Blood Tests	Type of Dialysis Access	HRG4+
A	62	05 Haemodialysis	02 Hospital	Blood test HBV surface antigen = NEG Blood test HCV antibody = NEG Blood test HIV = NEG	01 Non-tunnelled catheter	LD01A Hospital Haemodialysis or Filtration, with Access via Haemodialysis Catheter, 19 years and over
B	14	05 Haemodialysis	02 Hospital	Blood test HBV surface antigen = NEG Blood test HCV antibody = NEG Blood test HIV = NEG	01 Non-tunnelled catheter	LD01B Hospital Haemodialysis or Filtration, with Access via Haemodialysis Catheter, 18 years and under
C	25	05 Haemodialysis	02 Hospital	Blood test HBV surface antigen = NEG Blood test HCV antibody = NEG Blood test HIV = NEG	03 Arteriovenous fistula	LD02A Hospital Haemodialysis or Filtration, with Access via Arteriovenous Fistula or Graft, 19 years and over

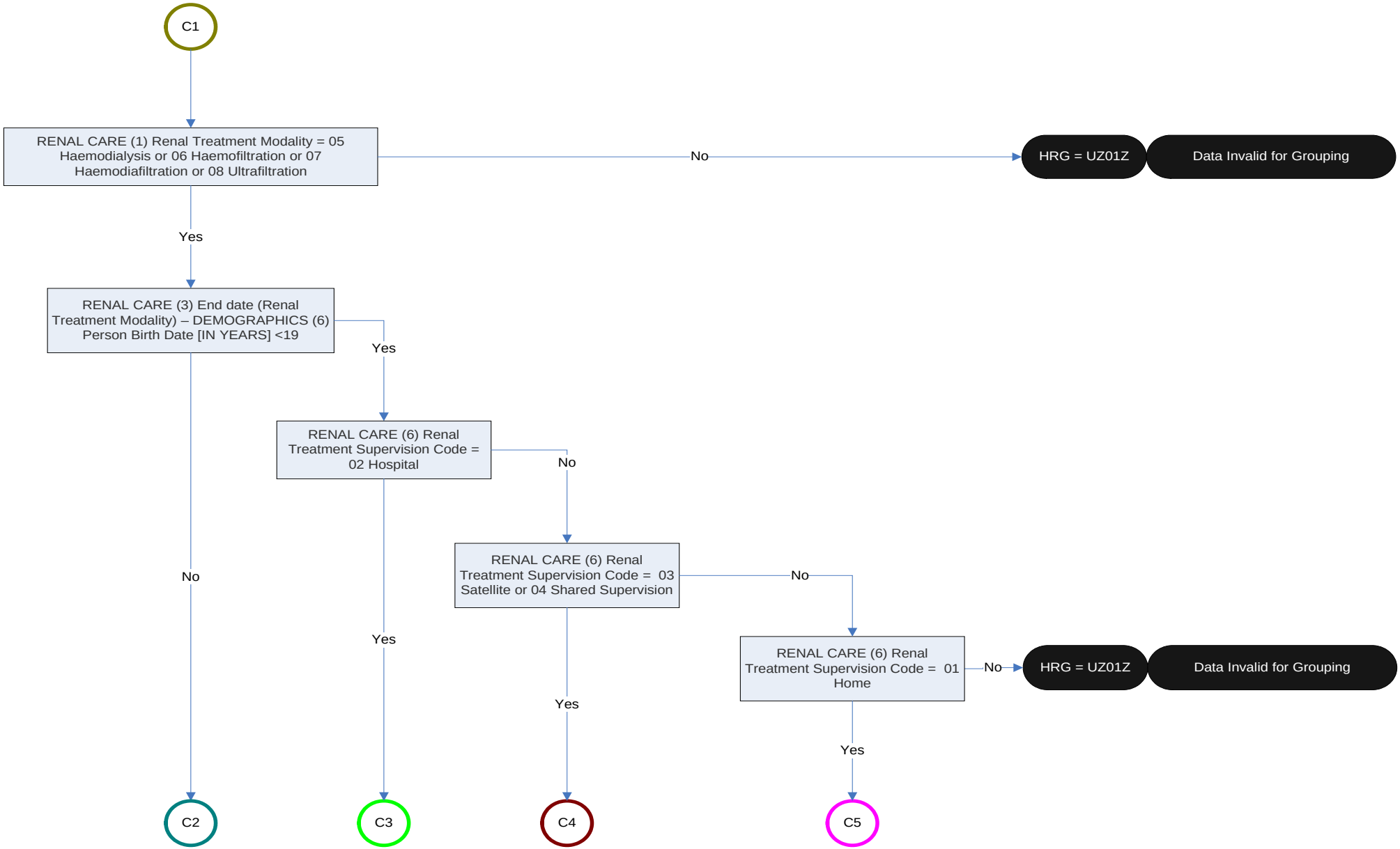
Case	Age	Renal Treatment Modality	Renal Treatment Supervision Code	Blood Tests	Type of Dialysis Access	HRG4+
D	25	05 Haemodialysis	02 Hospital	Blood test HBV surface antigen = NEG Blood test HCV antibody = **POS** Blood test HIV = NEG	03 Arteriovenous fistula	LD04A Hospital Haemodialysis or Filtration, with Access via Arteriovenous Fistula or Graft, with Blood-Borne Virus, 19 years and over
E	25	05 Haemodialysis	01 Home	Blood test HBV surface antigen = NEG Blood test HCV antibody = **POS** Blood test HIV = NEG	03 Arteriovenous fistula	LD10A Home Haemodialysis or Filtration with Access via Arteriovenous Fistula or Graft, 19 years and over

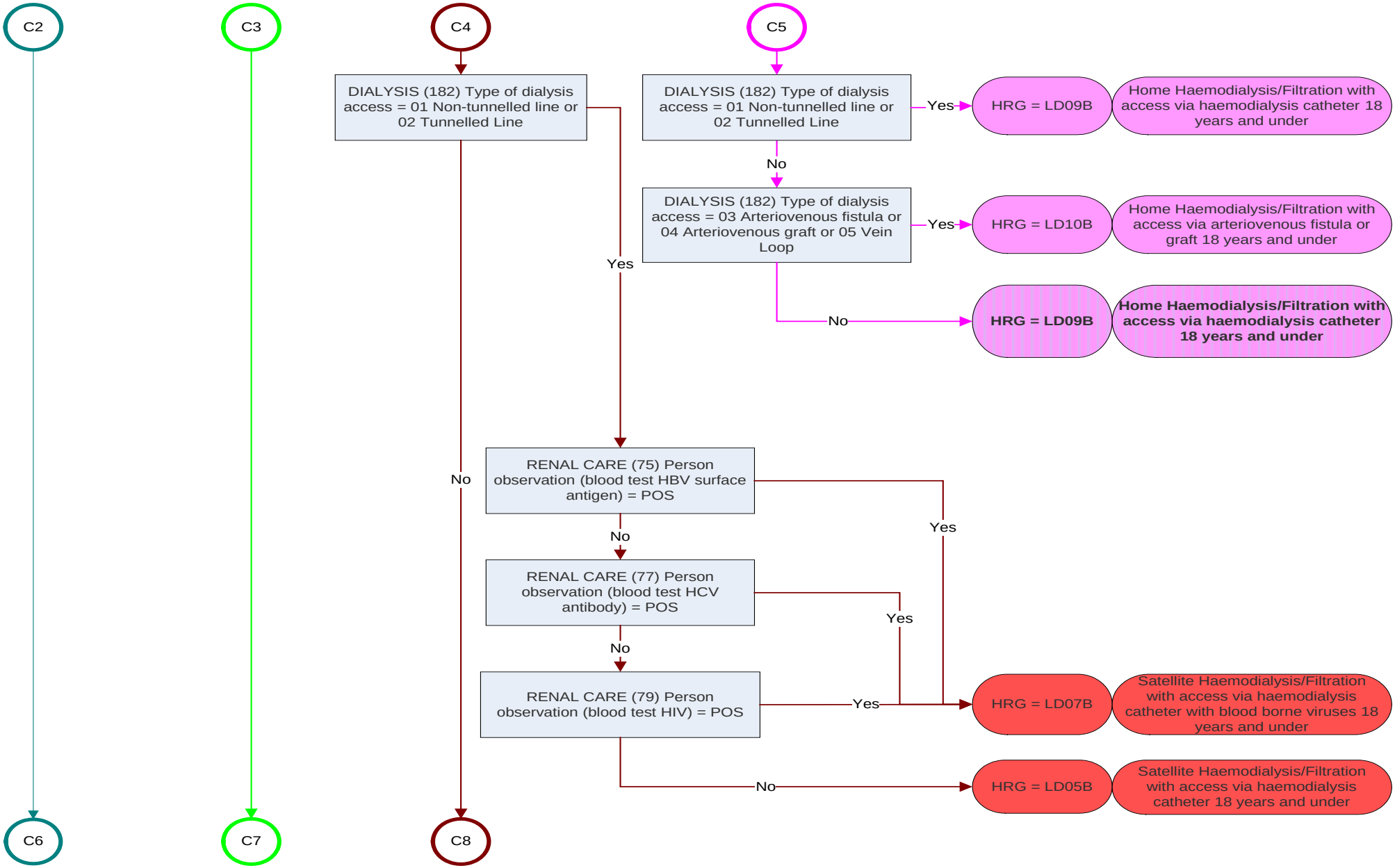
Cases F to **H** illustrate how HRG assignment is derived using the data from the NRD for peritoneal dialysis patients of differing ages, with or without the presence of blood-borne viruses, at different sites and using different access types.

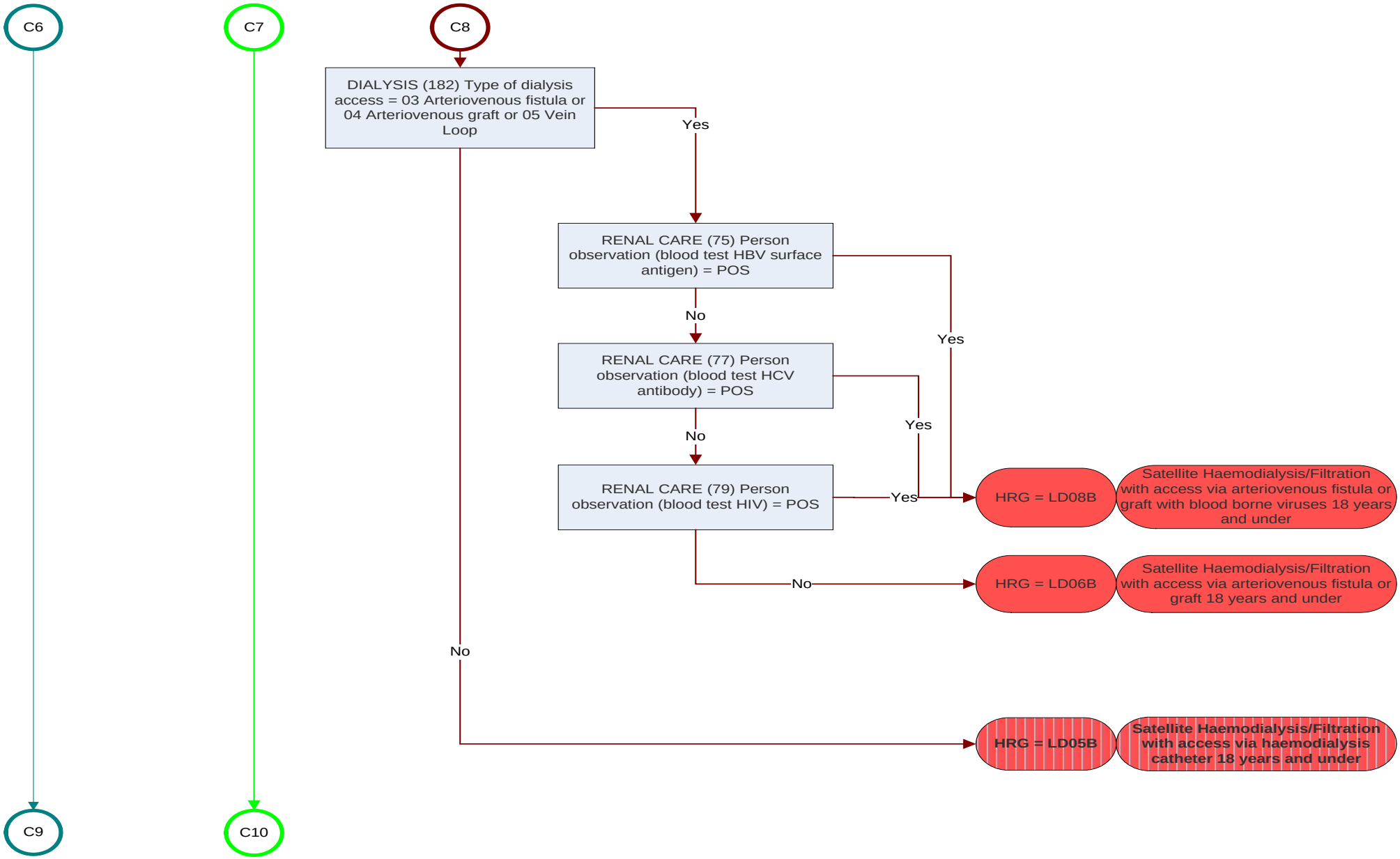
Case	Age	Renal Treatment Modality	Renal Treatment Supervision Code	Blood Tests	Type of Dialysis Access	HRG4+
F	62	02 CAPD (standard)	01 Home	Blood test HBV surface antigen = NEG Blood test HCV antibody = NEG Blood test HIV = NEG	06 PD catheter	LD11A Continuous Ambulatory Peritoneal Dialysis, 19 years and over
G	14	04 CCPD (6/7 nights/wk)	01 Home	Blood test HBV surface antigen = NEG Blood test HCV antibody = NEG Blood test HIV = NEG	06 PD catheter	LD12B Automated Peritoneal Dialysis, 18 years and under
H	62	04 CCPD (6/7 nights/wk)	04 Shared supervision	Blood test HBV surface antigen = NEG Blood test HCV antibody = NEG Blood test HIV = NEG	06 PD catheter	LD13A Assisted Automated Peritoneal Dialysis, 19 years and over

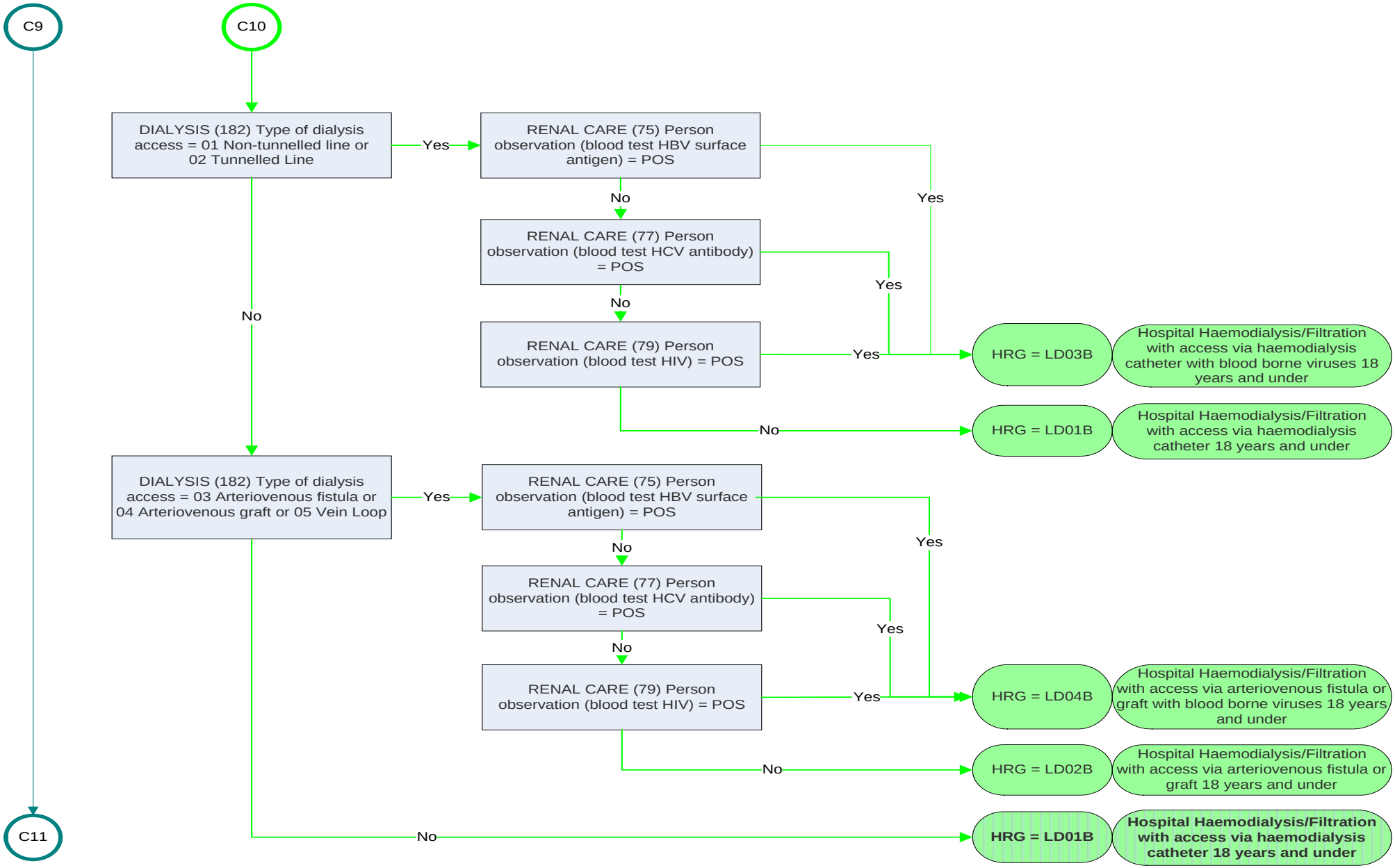
Subchapter LD: Annex A

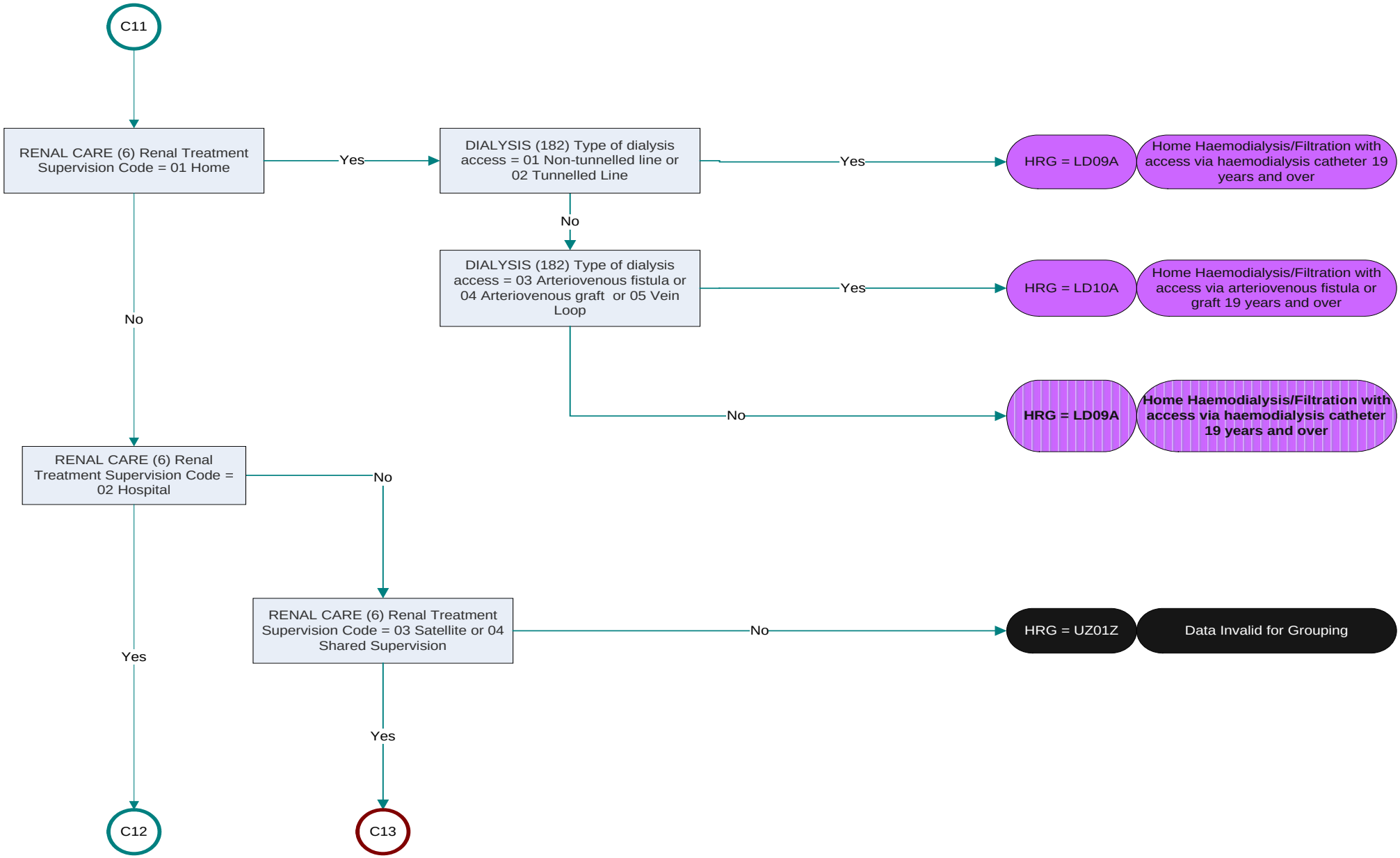


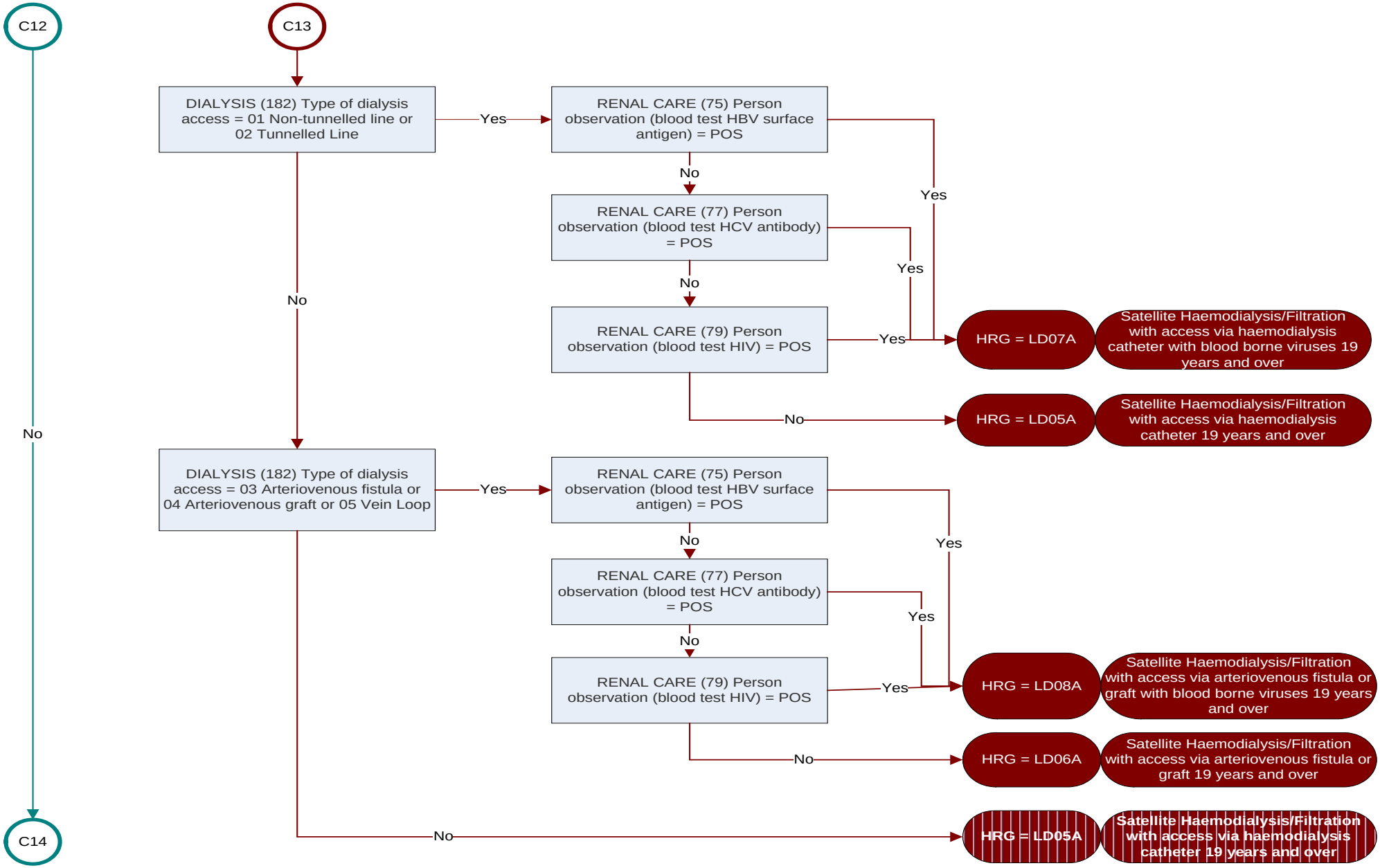


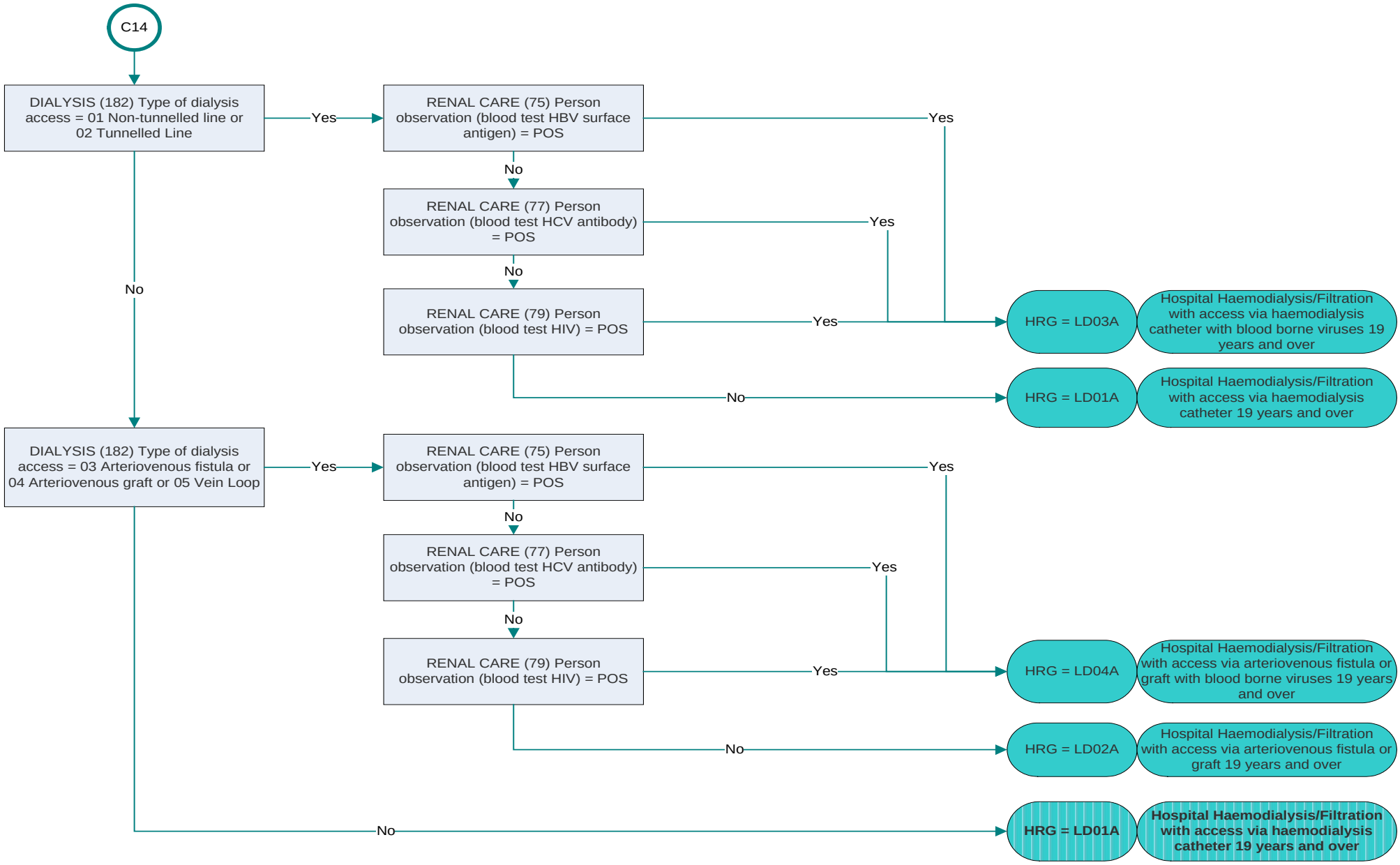












Subchapter LD:
Annex B
List of required NRD fields, acceptable values and validation applicable for the generation of LD Renal Dialysis HRGs

Renal Treatment Modality	Description
01	CAPD (disconnect)
02	CAPD (standard)
03	CCPD (<6 nights/wk)
04	CCPD (6/7 nights/wk)
05	Haemodialysis
06	Haemofiltration
07	Haemodiafiltration
08	Ultrafiltration
09	Transplant (cad - HB)
10	Transplant (cad - NHB)
11	Transplant (LRD)
12	Transplant (LUD)
13	Conservative care
14	Recovery of renal function
15	None
Validation	Only on list. Leading zero must be included for values lower than 10.

* Note 09-15 will map to U group HRG (not dialysis activity)

Treatment Supervision Code	Description
01	Home
02	Hospital
03	Satellite
04	Shared supervision
Validation	Only on list. Leading zero must be included.

Type of dialysis access (Current)	Description
01	Non-tunnelled line
02	Tunnelled line
03	Arteriovenous fistula (AVF)
04	Arteriovenous graft (AVG)
05	Vein loop
06	PD catheter
07	PD catheter temp
Validation	On list plus blank. Leading zero must be included.

Person observation (blood test HBV surface antigen)	Description
POS	Positive
NEG	Negative
UNK	Unknown
Validation	On list plus blank. Must be upper case.

Person observation (blood test HCV)	Description
POS	Positive
NEG	Negative
UNK	Unknown
Validation	On list plus blank. Must be upper case.

Person observation (blood test HIV)	Description
POS	Positive
NEG	Negative
UNK	Unknown
Validation	On list plus blank. Must be upper case.

Age	Description
(number)	(Calculated from session date - date of birth)
Validation	Within range 0 to 130 years

Fields not required for grouping but expected for identification of each session

Unique Patient ID	Description
Free text	An anonymised unique ID for each patient. Not NHS number
Validation	None

Date	Description
Free text	Date in standard format, e.g. 11/11/11 or 11-11-11
Validation	None

Subchapter LE – Renal Dialysis for Acute Kidney Injury

Subchapter **LE Renal Dialysis for Acute Kidney Injury** covers renal dialysis activity specifically for the treatment of acute kidney injury as part of an admitted care episode, for patients of all ages. The HRGs are unbundled in addition to the core HRG, and include activity undertaken in an inpatient and day case setting.

Composition and Concepts	
Total HRGs	**4**
Total HRG Roots	**2**
Procedure-driven HRGs	4
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

The HRGs are generated for renal dialysis for patients with acute kidney injury in the APC setting.

Unlike dialysis for patients with chronic kidney disease, this activity is generated from the Commissioning Data Set (CDS) using OPCS-4 procedure codes.

Dialysis for the treatment of chronic kidney disease is covered within Subchapter **LD Renal Dialysis for Chronic Kidney Disease**.

The HRGs are only generated when a dialysis OPCS-4 code is recorded, in addition to a primary or secondary diagnosis indicating acute kidney injury. These diagnoses are listed below:

D59.3 Haemolytic-uraemic syndrome
N17.0 Acute renal failure with tubular necrosis
N17.1 Acute renal failure with acute cortical necrosis
N17.2 Acute renal failure with medullary necrosis
N17.8 Other acute renal failure
N17.9 Acute renal failure, unspecified
N99.0 Postprocedural renal failure
T79.5 Traumatic anuria

An **LE01* Haemodialysis for Acute Kidney Injury** HRG is generated for each occurrence of the following OPCS-4 codes in the patient record:

X40.1 Renal dialysis
X40.3 Haemodialysis NEC

An **LE02* Peritoneal Dialysis for Acute Kidney Injury** HRG is generated for each occurrence of the following OPCS-4 codes in the patient record:

X40.2 Peritoneal dialysis NEC
X40.5 Automated peritoneal dialysis
X40.6 Continuous ambulatory peritoneal dialysis

Further differentiation is also applied, based on age, in order to take into account the different expected resource usage of treating children versus adults.

Subchapter MA – Female Reproductive System Procedures

Subchapter **MA Female Reproductive System Procedures** includes all female upper and lower genital tract procedures for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

The HRGs within this subchapter are split into open procedures, laparoscopic procedures and procedures specific to the treatment of malignancy and pelvic peritoneum adhesion. Some of the open procedure HRGs are further subdivided into upper and lower genital tract procedures.

There are up to six levels of complexity within the HRGs in this subchapter; minimal, minor, intermediate, major, very major and complex.

There are procedure-specific HRGs for resection and ablation procedures, hysteroscopies, colposcopies, transvaginal ultrasounds and the insertion of an intra-uterine device.

Composition and Concepts	
Total HRGs	**48***
Total HRG Roots	**34**
Procedure-driven HRGs	48
Diagnosis-driven HRGs	2
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

*Includes two hybrid HRGs, which are driven by either procedure or diagnosis

There are also procedure-specific HRGs for the termination of a pregnancy, split by method and gestational age.

Multiple procedure logic is employed throughout the majority of HRGs within this subchapter. Escalation to an HRG with a higher expected resource use also occurs in this subchapter, where appropriate, for patients requiring surgery due to an ectopic pregnancy or for severe endometriosis.

Interactive CC splits are employed within many of the HRG roots within this subchapter – up to a maximum of three levels – to more appropriately differentiate expected resource usage between routine and complex patients.

Subchapter MB – Female Reproductive System Disorders

Subchapter **MB Female Reproductive System Disorders** covers female reproductive system disorders for adults and some child activity. It includes activity undertaken in an inpatient and day case setting.

There are three HRG roots within this subchapter; one for threatened and spontaneous miscarriages and two that contain all other gynaecological disorders, split based on malignant or non-malignant disorders.

Interactive CC splits are employed within the majority of the HRG roots within this subchapter – up to a maximum of five levels – to more appropriately differentiate expected resource use between routine and complex patients.

In addition, intervention splits are also employed within all of the HRG roots.

Composition and Concepts	
Total HRGs	**17**
Total HRG Roots	**3**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	17
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

The majority of diagnosis-driven activity relating to the treatment of children (aged 18 years and under) for female reproductive system disorders groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter MC – Assisted Reproductive Medicine

Subchapter **MC Assisted Reproductive Medicine** includes procedures within assisted reproductive medicine for all ages of patient. It includes activity undertaken in inpatient, day case and non-admitted care settings.

The HRGs within this subchapter are split into collection of sperm for males and into intrauterine insemination (IUI) and in-vitro fertilisation (IVF) procedures for females.

There is one HRG for collection of sperm.

The IUI HRGs are split by with or without superovulation, and with or without donor sperm.

There is one HRG for implantation of embryo, with the other IVF HRGs being split by type of oocyte recovery; whether donor, with intracytoplasmic sperm injection (ICSI) or with pre-implantation genetic diagnosis.

Composition and Concepts	
Total HRGs	**10**
Total HRG Roots	**10**
Procedure-driven HRGs	10
Diagnosis-driven HRGs	0
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

Subchapter NZ – Obstetric Medicine

Subchapter **NZ Obstetric Medicine** covers obstetric procedures and diagnoses for patients of all ages. It also accommodates obstetric aspects of embryology and placental disorders. It includes activity undertaken in inpatient, day case and non-admitted care settings.

Composition and Concepts	
Total HRGs	**56**
Total HRG Roots	**26**
Procedure-driven HRGs	44
Diagnosis-driven HRGs	12
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Nes
Procedure Combination Codes	No
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

The delivery HRGs within this subchapter are split based on the type of delivery; normal, assisted or caesarean section.

The normal and assisted delivery HRGs are further split to take into account delivery interventions. The splits are based on whether a single or combination of, the following interventions are undertaken: induction, epidural or post-partum surgical intervention.

The caesarean section HRGs are split based on whether the surgery was planned or otherwise.

The ante-natal disorder HRGs are split based on obstetric complexity level. There are HRGs specific to standard and specialised ante-natal scans as well as other ante-natal therapeutic procedures.

There are post-natal disorder HRGs and also an HRG specific to post-natal therapeutic procedures.

There are HRGs specific to fetal medicine.

Interactive CC splits, up to a maximum of three levels, are employed within the majority of ante- and post-natal disorder HRGs as well as the delivery HRGs, to more appropriately differentiate expected resource usage between routine and complex patients.

In accordance with national coding standards, unlike all other CC lists, where only secondary diagnoses contribute towards the CC score, for the obstetric delivery HRGs all diagnoses, including the primary diagnosis, can contribute towards to the CC score.

To reiterate, this subchapter **includes** diagnosis-driven activity relating to the treatment of children (aged 18 years and under). This activity is grouped to an HRG in this subchapter instead of to an HRG in Chapter **P Diseases of Childhood and Neonates** to more appropriately reflect the service provision of obstetric medicine.

Subchapter PB – Neonatal Disorders

Subchapter **PB Neonatal Disorders** covers neonatal medicine for patients aged 18 years and under. It includes activity undertaken in inpatient and day case settings.

It does not include critical care services, which are covered in the unbundled subchapter **XA Neonatal Critical Care**.

This subchapter comprises of Neonatal disorders, differentiated by source of admission, and healthy babies

For patients receiving treatment for conditions originating in the perinatal period, the age check logic is now “less than two years of age” to reflect that there may be a minority of patients that continue to be treated for these conditions past their first birthday.

Composition and Concepts	
Total HRGs	**20**
Total HRG Roots	**4**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	20
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

In accordance with national coding rules, conditions within ICD-10 rubrics **P00-P04** require a discharge method of stillbirth in order to generate a valid HRG within this subchapter. This therefore includes ICD-10 codes **P01.3 Fetus and newborn affected by polyhydramnios** and **P01.4 Fetus and newborn affected by ectopic pregnancy,** which have this additional logic to check whether the Discharge method is “stillbirth” in order to ensure the derivation of the most appropriate HRG according to national coding rules.

Subchapter PC – Paediatric Ear Nose and Throat Disorders

Subchapter **PC Paediatric Ear, Nose and Throat Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) ear, nose and throat disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PC does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Ear Nose and Throat Disorders.

Composition and Concepts	
Total HRGs	**4**
Total HRG Roots	**1**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	4
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PD – Paediatric Respiratory Disorders

Subchapter **PD Paediatric Respiratory Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) respiratory disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PD does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Respiratory Disorders.

Composition and Concepts	
Total HRGs	**24**
Total HRG Roots	**6**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	24
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PE – Paediatric Cardiology Disorders

Subchapter **PE Paediatric Cardiology Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) cardiology disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PE does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Cardiology Disorders.

Composition and Concepts	
Total HRGs	**12**
Total HRG Roots	**3**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	12
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PF – Paediatric Gastroenterology Disorders

Subchapter **PF Paediatric Gastroenterology Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) gastroenterology disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PF does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Gastroenterology Disorders.

Composition and Concepts	
Total HRGs	**17**
Total HRG Roots	**5**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	17
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PG – Paediatric Hepatobiliary Disorders

Subchapter **PG Paediatric Hepatobiliary Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) hepatobiliary disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PG does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within the one HRG, to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Hepatobiliary Disorders.

Composition and Concepts	
Total HRGs	**3**
Total HRG Roots	**1**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	3
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PH – Paediatric Rheumatology Disorders

Subchapter **PH Paediatric Rheumatology Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) rheumatology disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PH does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within the one HRG, to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Rheumatology Disorders.

Composition and Concepts	
Total HRGs	**4**
Total HRG Roots	**1**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	4
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PJ – Paediatric Dermatology Disorders

Subchapter **PJ Paediatric Dermatology Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) dermatology disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PJ does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Dermatology Disorders.

Composition and Concepts	
Total HRGs	**7**
Total HRG Roots	**2**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	7
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PK – Paediatric Diabetology, Endocrinology and Metabolic Disorders

Subchapter **PK Paediatric Diabetology, Endocrinology and Metabolic Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) Diabetology, Endocrinology and Metabolic Disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PK does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Diabetology, Endocrinology and Metabolic Disorders.

Composition and Concepts	
Total HRGs	**11**
Total HRG Roots	**4**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	11
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PL – Paediatric Renal Disorders

Subchapter **PL Paediatric Renal Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) Renal Disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PL does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Renal Disorders.

Composition and Concepts	
Total HRGs	**10**
Total HRG Roots	**3**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	10
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PM – Paediatric Haematological-Oncology Disorders

Subchapter **PM Paediatric Haematological-Oncology Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) Haematological-Oncology Disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PM does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within some of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Haematological-Oncology Disorders.

Composition and Concepts	
Total HRGs	**14**
Total HRG Roots	**6**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	14
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	Yes

Logic is applied to determine which activity should map to the **PM45* Febrile Neutropenia** HRG and also to calculate the interactive CC score appropriate to this activity. This requires diagnosis codes from the lists Cancer, PM_Infection and PM_Neutropenia to be present within the episode/spell.

To ensure that diagnosis codes used to reach **PM45* Febrile Neutropenia** are not double counted, and to calculate an associated CC score, this HRG has its own specific CC list, PM45_CC, which is used in conjunction with the list PM45_Canc_Inf_Neut to capture any additional codes recorded that could have been used in mapping the activity to the HRG but were not required to calculate an appropriate CC score.

Subchapter PN – Paediatric Non-Malignant Haematological Disorders

Subchapter **PN Paediatric Non-Malignant Haematological Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) non-malignant Haematological Disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PN does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Non-Malignant Haematological Disorders.

There is one HRG root in this subchapter, **PN46 Paediatric Thalassaemia**, which is influenced or driven by OPCS-4 procedure codes. Additional logic has been added to the HRGs in this root to map paediatric patients to these HRGs when they have a blood transfusion as part of their treatment for thalassaemia.

Composition and Concepts	
Total HRGs	**9***
Total HRG Roots	**4**
Procedure-driven HRGs	2
Diagnosis-driven HRGs	9
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

*The design includes two hybrid HRGs which are driven by either procedure or diagnosis

Subchapter PP – Paediatric Ophthalmic Disorders

Subchapter **PP Paediatric Ophthalmic Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) Ophthalmic Disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PP does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Ophthalmic Disorders.

Composition and Concepts	
Total HRGs	**2**
Total HRG Roots	**1**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	2
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PQ – Paediatric Immune System Disorders

Subchapter **PQ Paediatric Immune System Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) Immune System Disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PQ does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within the one HRG root, to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Immune System Disorders.

Composition and Concepts	
Total HRGs	**2**
Total HRG Roots	**1**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	2
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PR – Paediatric Nervous System Disorders

Subchapter **PR Paediatric Nervous System Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) Nervous System Disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PR does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Nervous System Disorders.

Composition and Concepts	
Total HRGs	**22**
Total HRG Roots	**7**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	22
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PT – Paediatric Mental Health Disorders

Subchapter **PT Paediatric Mental Health Disorders** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) Mental Health Disorders, in line with the requirements of the Casemix Design Framework.

Subchapter PT does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Mental Health Disorders.

Note that some paediatric activity for mental health conditions continues to map to subchapter **WD Treatment of Mental Health Patients by Non-Mental Health Service Providers**.

Composition and Concepts	
Total HRGs	**4**
Total HRG Roots	**2**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	4
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PV – Paediatric Trauma Medicine

Subchapter **PV Paediatric Trauma Medicine** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) Trauma Medicine, in line with the requirements of the Casemix Design Framework.

Subchapter PV does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Trauma Medicine.

Composition and Concepts	
Total HRGs	**7**
Total HRG Roots	**3**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	7
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PW – Paediatric Infectious Diseases

Subchapter **PW Paediatric Infectious Diseases** contains all diagnosis-driven activity relating to the treatment of children's (aged 18 years and under) Infectious Diseases, in line with the requirements of the Casemix Design Framework.

Subchapter PW does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within all of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Infectious Diseases.

Composition and Concepts	
Total HRGs	**15**
Total HRG Roots	**4**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	15
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter PX – Paediatric Medicine

Subchapter **PX Paediatric Medicine** contains all diagnosis-driven activity relating to the treatment of children (aged 18 years and under) that does not otherwise fit within the more specific paediatric disorder subchapters, in line with the requirements of the Casemix Design Framework.

Subchapter PX does not include neonatal critical care or paediatric critical care – these are covered in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**, respectively.

Interactive CC splits are employed within the majority of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients. The CC lists for this subchapter are now specific to Paediatric Medicine.

Composition and Concepts	
Total HRGs	**46**
Total HRG Roots	**19**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	46
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter RD – Diagnostic Imaging Procedures

Subchapter **RD Diagnostic Imaging Procedures** covers diagnostic imaging for patients of all ages, delivered in admitted or non-admitted care settings.

The unbundled HRGs in this subchapter relate to the examination type.

The HRGs have been predominantly created from a 'lift and shift' of activity specific to diagnostic imaging procedures that previously mapped to Subchapter **RA Diagnostic Imaging Procedures**.

The new diagnostic imaging (procedure) HRGs have retained the separation based on the modality of scan (MRI, CT, DEXA, ultrasound, contrast fluoroscopy and simple echo).

The CT and MRI HRGs are split by the number of body areas scanned and if contrast is used.

Composition and Concepts	
Total HRGs	**46**
Total HRG Roots	**36**
Procedure-driven HRGs	46
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	No

The ultrasound and contrast fluoroscopy HRGs are split by the time taken and by whether the scan is mobile/intraoperative. In addition, the ultrasound scans are split based on whether contrast is used.

There are also HRGs specific to more specialised scans such as complex CT, vascular ultrasound and ultrasound elastography.

Age splits are employed in several of the HRG roots specific to MRI, CT and simple echocardiogram; there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under). There are also HRGs specific to the treatment of young children (0 to 5 years of age) and those for older children (6 to 18 years).

Subchapter RN – Nuclear Medicine Procedures

Subchapter **RN Nuclear Medicine Procedures** covers both diagnostic and therapeutic nuclear medicine procedures for patients of all ages, delivered in admitted or non-admitted care settings.

The unbundled HRGs in this subchapter relate to the type of test.

The HRGs have been predominantly created from the nuclear medicine activity that previously mapped to Subchapter **RA Diagnostic Imaging Procedures**.

The diagnostic imaging procedures are split based on the modality or type of scan, e.g. PET-CT, SPECT-CT, PET, SPECT, nuclear bone scan etc.

The PET-CT and SPECT-CT HRGs are split by the number of body areas scanned.

Composition and Concepts	
Total HRGs	**68**
Total HRG Roots	**37**
Procedure-driven HRGs	68
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	No

There are also HRGs specific to molecular radiotherapy procedures.

Age splits are employed in the majority of these nuclear medicine HRGs; there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under). There are also HRGs specific to the treatment of young children (0 to 5 years of age) and those for older children (6 to 18 years).

Due to the limitation of the underlying OPCS-4 codes, for the majority of activity it is not yet possible to differentiate based on the type of radionuclide used.

Subchapter SA – Haematological Procedures and Disorders

Subchapter **SA Haematological Procedures and Disorders** covers procedures for patients of all ages and adult diagnoses relating to haematological conditions. It includes activity undertaken in inpatient, day case and non-admitted care settings.

There are HRG roots specific to blood and bone marrow transplantation, including peripheral blood stem cell transplant HRGs that are now differentiated on donor type to match the equivalent bone marrow transplant HRGs. All of the blood and bone marrow transplantation HRG roots include age splits to separate paediatric activity from adult activity.

There are also HRGs specific to blood transfusion and diagnostic extraction of blood or marrow procedures.

There is one HRG root, **SA11 Thalassaemia**, that can be reached by both procedure and diagnosis codes. When a procedure indicating a blood transfusion has taken place, the primary diagnosis of thalassaemia takes precedence over the transfusion procedure for grouping purposes.

Composition and Concepts	
Total HRGs	**99***
Total HRG Roots	**37**
Procedure-driven HRGs	28
Diagnosis-driven HRGs	72
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

*Includes one hybrid HRG, which is driven by either procedure or diagnosis

HRG roots **SA33 Diagnostic Bone Marrow Extraction** and **SA13 Single Plasma Exchange, Leucophoresis or Red Cell Exchange** employ maximum length of stay logic to ensure that minor procedures, such as a blood transfusion, are not used to determine the HRG for a long-stay medical patient, e.g. a child who has sickle-cell anaemia.

Interactive CC splits are employed within the majority of adult haematological disorder HRG roots within this subchapter – up to a maximum of six levels – to more appropriately differentiate resource usage between routine and complex patients.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter SB – Chemotherapy

Subchapter **SB Chemotherapy** covers both the procurement and delivery of chemotherapy regimens for patients of all ages. All but one of the HRGs in this subchapter are unbundled. This subchapter includes activity undertaken in inpatient, day case and non-admitted care settings.

There are chemotherapy procurement and delivery HRGs within this Subchapter.

The chemotherapy procurement HRGs are categorised by bands for the procurement of drugs, with band 1 having the lowest expected cost (£0 - £200) and band 10 having the highest expected cost (£1,801 upwards).

These bands are derived from a national list owned by NHS England. In addition, there is a catch-all HRG for the procurement of drugs not on said list.

There are HRGs specific to chemotherapy delivery, distinguished by type, e.g. oral, intravenous etc.

Composition and Concepts	
Total HRGs	**18***
Total HRG Roots	**18**
Procedure-driven HRGs	18
Diagnosis-driven HRGs	1
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	Yes

*Includes one core HRG (**SB97Z**) that is driven by both diagnosis and procedure logic for admitted patient care and by procedure only for non-admitted patients

There is one HRG, **SB97Z Same Day Chemotherapy Admission or Attendance**, that has been created as an ‘empty core’ HRG, as it would be expected that all the resources associated with these patients would be included within the unbundled chemotherapy HRGs.

The specific logic required to derive the HRG root **SB97 Same Day Chemotherapy Admission or Attendance** requires a delivery or procurement of chemotherapy procedure code, a length of stay of 0 days, and a lack of any other significant procedure code.

The chemotherapy HRGs are generated per cycle and the delivery HRGs per session, based on the OPCS-4 codes recorded.

Subchapter SB: Worked Examples : Regimens and Treatments

In Subchapter SB, HRGs are derived using the relevant Chemotherapy Procurement procedure codes and, where appropriate, Chemotherapy Delivery procedure codes.

Case 1: Inpatient Treatment

A soft tissue sarcoma patient receives Doxorubicin and Ifosfamide chemotherapy as an inpatient. This consists of doxorubicin treatment on day one, followed by 24 hours of Ifosfamide and Mesna continuous infusion. This is repeated every 21 days.

Coding

Primary Diagnosis: C49.9 Malignant neoplasm of connective and soft tissue, unspecified

X70.4 Procurement of drugs for chemotherapy for neoplasm for regimens in Band 4

HRG Output

Core HRG: HD40* Malignancy, of Bone or Connective Tissue

Unbundled HRG(s): SB04Z Procure Chemotherapy drugs for regimens in Band 4

Case 2: Daycase

A lymphoma patient is receiving ABVD chemotherapy. This consists of four drugs and is given every 14 days.

Coding

Primary Diagnosis: C81.9 Hodgkin's disease, Hodgkin's disease, unspecified

Cycle 1:

X70.2 Procurement of drugs for chemotherapy for neoplasm for regimens in Band 2

X72.2 Delivery of complex parenteral chemotherapy for neoplasm at first attendance

Repeat for attendance of each new cycle every 14 days

HRG Output

Core HRG: SB97Z Same day Chemotherapy admission or attendance

Unbundled HRG(s): SB02Z Procure Chemotherapy drugs for regimens in Band 2

SB13Z Deliver more Complex Parenteral Chemotherapy at First Attendance

Case 3: Ambulatory Patient

A breast cancer patient is receiving Trastuzumab 7 loading dose followed by Trastuzumab 7 maintenance dose on a weekly basis. This is repeated every seven days.

Coding

Cycle 1: Trastuzumab 7 loading dose (1st attendance)

X70.5 Procurement of drugs for chemotherapy for neoplasm for regimens in Band 5

X72.3 Delivery of simple parenteral chemotherapy for neoplasm at first attendance

Cycle 2: Trastuzumab 7 maintenance dose (1st attendance)

X70.3 Procurement of drugs for chemotherapy for neoplasm for regimens in Band 3.

X72.3 Delivery of simple parenteral chemotherapy for neoplasm at first attendance

Do not use X72.4 Delivery of subsequent element of cycle of chemotherapy for neoplasm because the cycle length is seven days. These are classed as different cycles because they are different regimens.

HRG Output

HRG output is based on different cycles. For the 1st attendance of cycle 1, the grouper will output a procurement HRG and a delivery HRG. For the 1st attendance of cycle two, the grouper will again output both a procurement HRG and a delivery HRG.

1st attendance of cycle 1:

Core HRG: SB97Z Same day Chemotherapy admission or attendance

Unbundled HRG(s): SB05Z Procure Chemotherapy drugs for regimens in Band 5

SB12Z Deliver Simple Parenteral Chemotherapy at First Attendance

1st attendance of cycle 2:

Core HRG: SB97Z Same day Chemotherapy admission/attendance

Unbundled HRG(s): SB03Z Procure Chemotherapy drugs for regimens in Band 3

SB12Z Deliver Simple Parenteral Chemotherapy at First Attendance

Case 4: A regimen with inpatient and outpatient components

An inpatient receives BEP 5 day chemotherapy for a testicular solid tumour. The chemotherapy consists of three different drugs given over three inpatient days and the two consecutive outpatient treatments at seven day intervals. The whole cycle is repeated every 21 days.

Coding

Primary Diagnosis: C62.9 Malignant neoplasm of testis, unspecified

Cycle 1: Day 1 (Inpatient episode)

X70.3 Procurement of drugs for chemotherapy for neoplasm for regimens Band 3

HRG Output

Core HRG: LB35* Scrotum, Testis or Vas Deferens Disorders

Unbundled HRG: SB03Z Procure Chemotherapy drugs for regimens in Band 3

Day 8 (1st outpatient attendance)

X72.4 Delivery of subsequent element of cycle of chemotherapy for neoplasm.

HRG Output

Core HRG: SB97Z Same day Chemotherapy admission or attendance

Unbundled HRG: SB15Z Deliver subsequent elements of a Chemotherapy cycle

Day 15 (2nd outpatient attendance)

X72.4 Delivery of subsequent element of cycle of chemotherapy for neoplasm

HRG Output

Core HRG: SB97Z Same day Chemotherapy admission or attendance

Unbundled HRG: SB15Z Deliver subsequent elements of a Chemotherapy cycle

Cycle 2

Day 21 (Inpatient episode)

X70.3 Procurement of drugs for chemotherapy for neoplasm for regimens Band 3

HRG Output

Core HRG: LB35* Scrotum, Testis or Vas Deferens Disorders

Unbundled HRG: SB03Z Procure Chemotherapy drugs for regimens in Band 3

Case 5: Outpatient treatment with a subsequent element

A lung cancer patient is receiving Carboplatin + Vinorelbine chemotherapy as an outpatient. This consists of one day of treatment with Vinorelbine and carboplatin both IV. This is followed seven days later by Vinorelbine therapy oral. The cycle is repeated every 21 days.

Coding

Day 1 (1st outpatient attendance)

X70.3 Procurement of drugs for chemotherapy for neoplasms for regimens in Band 3

X72.3 Delivery of simple parenteral chemotherapy for neoplasm at first attendance

HRG Output

Core HRG: SB97Z Same day Chemotherapy admission or attendance

Unbundled HRGs: SB03Z Procure Chemotherapy drugs for regimens in Band 4

SB12Z Deliver Simple Parenteral Chemotherapy at First Attendance

Day 8 (2nd outpatient attendance)

X72.4 Delivery of subsequent element of cycle of chemotherapy for neoplasm

HRG Output

Core HRG: SB97Z Same day Chemotherapy admission or attendance

Unbundled HRG: SB15Z Deliver subsequent elements of a Chemotherapy cycle

Subchapter SC – Radiotherapy

Subchapter **SC Radiotherapy** covers both the preparation and delivery of radiotherapy for patients of all ages.

All but one of the HRGs in this subchapter are unbundled. This subchapter includes activity undertaken in inpatient, day case and non-admitted care settings.

HRGs for Radiotherapy include one set for pre-treatment (planning) processes and one set for treatment delivered, with a separate HRG being allocated for each fraction delivered.

The planning HRGs are intended to cover all attendances required for completion of the planning process. It is not intended that individual attendances for parts of this process will be recorded separately.

The planning HRGs do not include the consultation at which the patient consents to radiotherapy, nor do they cover any outpatient attendance for medical review required by any change in status of the patient.

Composition and Concepts	
Total HRGs	**30***
Total HRG Roots	**30**
Procedure-driven HRGs	30
Diagnosis-driven HRGs	1
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	Yes

*Includes one core HRG (**SC97Z**) that is driven by both diagnosis and procedure logic for admitted patient care and by procedure only for non-admitted patients.

Radiotherapy HRGs are driven by OPCS-4 codes and the majority have a direct mapping. The logic relies on the coding of a secondary procedure to indicate delivery of a fraction using a megavoltage or orthovoltage machine and whether technical support was required

To reflect activity for patients that are admitted solely for the delivery of External Beam Radiotherapy as a Day Case episode or Outpatient attendance, an ‘empty core’ HRG of **SC97Z Same Day External Beam Radiotherapy Admission or Attendance** is output as well as the unbundled External Beam radiotherapy HRGs.

The specific logic required to derive the HRG **SC97Z Same Day Radiotherapy Admission or Attendance (excluding Brachytherapy)** requires a procedure code for the delivery of external beam radiotherapy or nuclear medicine therapy, a length of stay of 0 days and a lack of any other significant procedure code.

Subchapter SC: Outpatient Example

Cases A to **E** illustrate the five fraction course of Total body irradiation (TBI) of a patient diagnosed as having Hodgkin's lymphoma prior to a bone marrow transplant. The TBI is planned and the first treatment is given immediately afterwards (same attendance):

Case	Attendance	Dominant Procedure (OPCS-4)	Other Procedures (OPCS-4)	HRG4+
A	1st attendance	X67.2 Preparation for total body irradiation	X65.1 Delivery of a fraction of total body irradiation (TBI)	*SC97Z Same Day External Beam Radiotherapy Admission or Attendance* + SC42Z Preparation for Total Body Irradiation + SC25Z Deliver a fraction of Total Body irradiation
B	2nd attendance	X65.1 Delivery of a fraction of total body irradiation (TBI)		*SC97Z Same Day External Beam Radiotherapy Admission or Attendance* + SC25Z Deliver a fraction of Total Body irradiation
C	3rd attendance	X65.1 Delivery of a fraction of total body irradiation (TBI)		*SC97Z Same Day External Beam Radiotherapy Admission or Attendance* + SC25Z Deliver a fraction of Total Body irradiation
D	4th attendance	X65.1 Delivery of a fraction of total body irradiation (TBI)		*SC97Z Same Day External Beam Radiotherapy Admission or Attendance* + SC25Z Deliver a fraction of Total Body irradiation
E	5th attendance	X65.1 Delivery of a fraction of total body irradiation (TBI)		*SC97Z Same Day External Beam Radiotherapy Admission or Attendance* + SC25Z Deliver a fraction of Total Body irradiation

Subchapter SC: Inpatient Example

Case F highlights a patient who is diagnosed with malignant neoplasm of breast and undergoes total mastectomy, followed by radiotherapy treatment delivered as part of the inpatient episode:

Case	Age	Length of Stay (days)	Primary Diagnosis (ICD-10)	Dominant Procedure (OPCS-4)	Other Procedures (OPCS-4)	HRG4+
F	32	2	C50.9 Malignant neoplasm of breast, unspecified	B27.4 Total mastectomy	X67.4 Volume definition for simple radiotherapy with imaging and dosimetry + X65.8 Other specified radiotherapy delivery + Y91.2 Delivery of a fraction of simple radiotherapy on a megavoltage machine	*JA20F* *Unilateral Major Breast Procedures with CC Score 0-2* + SC45Z Preparation for simple radiotherapy with imaging and dosimetry + SC22Z Deliver a fraction of treatment on a megavoltage machine

Subchapter SD – Specialist Palliative Care

Subchapter **SD Specialist Palliative Care** relates to care in which the clinical intent or treatment goal is primarily to improve the quality of life of a patient with an active, progressive disease with little or no prospect of cure. This subchapter covers both adult and paediatric activity.

Specialist palliative care (SPC) is usually evidenced by an interdisciplinary assessment and/or management of the physical, psychological, emotional and spiritual needs of the patient, and a grief and bereavement support service for the patient and their carers/family.

SPC includes care provided under the principal clinical management of a SPC medicine consultant, either in a Palliative Care unit or in a designated Palliative Care programme. It can be delivered by NHS, voluntary sector and other accredited providers.

Subchapter SD comprises:

- Specialist support services delivered to inpatients
- Outpatients, day therapy assessments and interventions for inpatients and day cases

The services provided by palliative care specialists include the following:

- Clinical consultancy/care
- Personal care
- Spiritual/emotional support/counselling
- Home care/support
- Education
- Case management/care coordination

If an inpatient is not admitted under the care of a specialist palliative medicine consultant but is receiving support from a member of a SPC Team, this is classed as SPC Support.

Composition and Concepts	
Total HRGs	**10**
Total HRG Roots	**5**
Procedure-driven HRGs	N/A
Diagnosis-driven HRGs	N/A
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

In the table above, it can be seen that diagnoses do not drive these HRGs. The main driver for these HRGs is a combination of Treatment Function Codes and the Main Specialty Codes.

However, it should be noted that diagnoses are used in the subchapter-specific grouping logic, in conjunction with length of stay and age, when determining the HRG.

For further information of how this logic works, please refer to the subchapter-specific grouping logic section of this document. For information on data input and processing, please refer to the Grouper User Manual.

The following specialist palliative care is not covered in HRG4+:

- General palliative care
- Community specialist palliative care
- Bereavement care as a separate HRG. However, some bereavement care costs are expected to be included within the costs covered by other HRGs. Bereavement costs that are to be included in HRG costs are detailed in the Service Level Agreements, drafted by the National Partnership Group for Palliative Care
- Patients admitted for holiday relief/respite

SPC HRGs are classed as unbundled activity. Unbundled HRG grouping is the second stage of the grouping process, occurring immediately after the data have been validated. After the relevant activity has been unbundled from the data, multiple trauma, burns and core HRGs are produced.

For inpatient specialist palliative care (not day cases), SPC HRGs are generated on a per diem basis for the entire SPC consultant episode. The grouper generates these in addition to the core HRG, based on the number of SPC days recorded in the CDS.

For day case specialist palliative care, a single SPC HRG is generated, plus a core HRG.

For non-admitted care, HRGs have been defined for both medical and non-medical specialist palliative care attendances. For non-admitted attendances, the grouper allocates an appropriate SPC HRG, plus a core HRG, which may be a default core HRG from Subchapter **WF Non-Admitted Care Consultations** if no significant procedure has been recorded.

It should be noted that root HRG SD03 (Hospital Specialist Palliative Care Support) is NOT generated per diem.

Subchapter SD : Specialised Palliative Care HRGs Explained by Setting

Inpatient SPC HRGs:

HRG	Label	Definition	Notes
SD01A	Inpatient Specialist Palliative Care, 19 years and over	Age = 19 years and over **AND** Main Specialty Code = 315 (Palliative Medicine) **AND** Treatment Function Code = 315 (Palliative Medicine) **AND** Length of Stay > 0 **OR** Discharge Method = 4 (Patient Died) **AND** Secondary Diagnosis (ICD-10)= Z51.5 (Palliative Care) **AND NOT** Primary Diagnosis (ICD-10) = Z75.5 (Holiday Relief Care)	Adult inpatients under the care of a specialist palliative medicine consultant, excluding patients discharged on the day of admission (unless they die on the day of admission), excluding patients admitted for respite care [Note: Requires SPC days CDS field to be populated]
SD01B	Inpatient Specialist Palliative Care, 18 years and under	As above with: Age = 18 years and under	Paediatric inpatients under the care of a specialist palliative medicine consultant , excluding patients discharged on the day of admission (unless they die on the day of admission), excluding patients admitted for respite care [Note: Requires SPC days CDS field to be populated]
SD02A	Inpatient Specialist Palliative Care, Same Day, 19 years and over	Age = 19 years and over **AND** Main Specialty Code = 315 (Palliative Medicine) **AND** Treatment Function Code = 315 (Palliative Medicine) **AND** Length of Stay = 0 **AND** Discharge Method ≠ 4 (Patient did not die) **AND** Secondary Diagnosis (ICD-10)= Z51.5 Palliative care **AND NOT** Primary Diagnosis (ICD-10) = Z75.5 Holiday relief care	Note: a maximum of 1 SPC unbundled HRG will be generated, in addition to the core HRG, irrespective of SPC days recorded in the CDS
SD02B	Inpatient Specialist Palliative Care, Same Day, 18 years and under	As above with: Age = 18 years and under	Note: a maximum of 1 SPC unbundled HRG will be generated, in addition to the core HRG, irrespective of SPC days recorded in the CDS
SD03A	Hospital Specialist Palliative Care Support, 19 years and over	Age = 19 years and over **AND** Secondary Diagnosis (ICD-10)= Z51.5 Palliative care **AND NOT** Main Specialty Code = 315 (Palliative Medicine)	Adult inpatients not under the care of a specialist palliative medicine consultant but receiving input from a specialist palliative care specialist support service

HRG	Label	Definition	Notes
SD03B	Hospital Specialist Palliative Care Support, 18 years and under	As above with: Age = 18 years and under	Paediatric inpatients not under the care of a specialist palliative medicine consultant but receiving input from a specialist palliative care specialist support service [Note: SPC days recorded in the CDS will not generate multiple instances of this HRG]

Outpatient, Day Therapy Assessment and Intervention HRGs

HRG	Label	Definition
SD04A	Medical Specialist Palliative Care Attendance, 19 years and over	Age = 19 years and over **AND** Main Specialty Code = 315 (Palliative Medicine) **AND** Treatment Function Code = 315 (Palliative Medicine)
SD04B	Medical Specialist Palliative Care Attendance, 18 years and under	As above with: Age = 18 years and under
SD05A	Non-Medical Specialist Palliative Care Attendance, 19 years and over	Age = 19 years and over **AND** Main Specialty Code = 950 (Nursing Episode) **OR** 960 (Allied Health Profession Episode) **AND** Treatment Function Code = 315 (Palliative Medicine)
SD05B	Non-Medical Specialist Palliative Care Attendance, 18 years and under	As above with: Age = 18 years and under

The Outpatient Attendance Commissioning data set (CDS) can record contacts by medical, nursing and allied health professionals (AHPs), including physiotherapists, speech and language therapists, occupational therapists, podiatrists, dieticians and clinical psychologists. Chaplains and Social Workers may also record contacts as AHPs.

Subchapter UZ – Undefined Groups

Subchapter **UZ Undefined Groups** will be generated where a patient record is not valid for grouping to one of the other subchapters.

There is only one HRG in this subchapter, **UZ01Z Data Invalid for Grouping**.

Composition and Concepts	
Total HRGs	**1**
Procedure-driven HRGs	N/A
Diagnosis-driven HRGs	N/A

This subchapter is intended to help an organisation identify invalid data and take action, for example, to understand whether clinical coding errors are due to lack of information specificity or unavailability of information at the time of the coding.

Subchapter UZ is comprised of 10 underlying U categories that lead to the assignment of HRG **UZ01Z**.

These are as follows:

- **UZ01 Invalid Primary Diagnosis:**
  - The primary diagnosis is blank
  - The primary diagnosis ICD-10 code cannot be used in the primary position
- **UZ02 Poorly Coded Primary Diagnosis:**
  - The diagnosis ICD-10 code exists and is valid in the primary position, but it is so unspecific that the resource use cannot be defined
- **UZ03 Age Conflicting with Diagnosis**
- **UZ04 Diagnosis conflicting with anatomical sites:**
  - The ICD-10 anatomical site code, specified at the 5th digit level, conflicts with the diagnosis in the record
- **UZ05 Invalid procedure for Casemix grouping purposes**
- **UZ06 Poorly coded procedure for Casemix grouping purposes**
- **UZ11 Neonatal Critical Care Error**
- **UZ13 Adult Critical Care Error**
- **UZ14 Renal (NRD) Error**
- **UZ21 CCAC Inappropriate for NCC**

The grouping software ensures that the data are complete, valid and within expected value ranges. The software applies the following three stages of validation to the data during a processing run:

- Field content within record
- Cross validation of episodes within spell
- Grouping logic (assignment of flag values)

Where the HRG4+ Grouper cannot assign a valid HRG, **UZ01Z Data invalid for grouping** is returned in the output record, signifying that the record is unclassified.

If there are errors in the input data, these will be reported in the **data quality report**, as part of the Grouper output files, but processing will not be halted. There can be more than one reason for non-assignment of an HRG, so there may be more than one data quality message for each data row, all of which need to be reviewed to identify the underlying problems.

UZ01 Invalid Primary Diagnosis
This error indicates that there is an error with the diagnosis code.

UZ02 Poorly Coded Primary Diagnosis

This error is generated where a diagnosis code exists and is valid as a primary diagnosis but is too vague to determine resource use.

UZ03 Diagnosis Conflicts with Age
This error indicates that a paediatric diagnosis has been recorded for an adult patient (age 19 years and over).

UZ04 Diagnosis Conflicts with Anatomical Site
This error indicates that an invalid combination of diagnosis and anatomical site has been input. This only applies to specific musculoskeletal codes entered at ICD-10 5th digit level.

UZ05 Invalid procedure for Casemix grouping purposes
This error is reported if the OPCS-4 code with the highest procedure hierarchy in the record is a valid OPCS-4 code but is not valid for grouping, for example, if the code represents an anatomical site rather than a procedure.

UZ06 Poorly coded procedure for Casemix grouping purposes
This error indicates that a procedure code is valid as a dominant procedure but is insufficiently specific to determine the resource use from an HRG design perspective.

UZ11 Neonatal Critical Care Error
This is a general error for neonatal critical care and is generated when conditions in the grouping algorithm have not been met.

UZ13 ACC Grouping Error
This is a general error for adult critical care and is generated when conditions in the grouping algorithm have not been met.

UZ14 Renal (NRD) Error
This is a general error for grouping renal activity using the national renal data set and is generated when conditions in the grouping algorithm have not been met.

UZ21 CCAC Inappropriate in NCC
Certain critical care activity codes (CCAC) are not valid for neonatal critical care (NCC) grouping or are valid only when used in combination with other codes. UZ21 is generated when the CCAC or combination of codes in the input record is not appropriate for the derivation of a NCC HRG.

Further information regarding the underlying U categories can be found in the “**Group to Split**” tab within the **Code to Group** spreadsheet

Field Validation Errors

All clinical codes are validated against the Grouper's internal database of codes. Clinical codes in the patient record that are not on this list will result in the generation of a UZ01Z HRG.

- Diagnosis (ICD-10) codes that are not on the list are classified as invalid but will not result in a specific error message, but will be output in the Data Quality report as follows;

  ICD|XXXX|Diagnosis Code is invalid in DIAG_XX

- Procedure (OPCS-4) codes that are not on the list are similarly classified as invalid. However, these will not result in a specific error message, but will be output in the Data Quality report as follows;

  OPCS|XXXX|Procedure code is invalid in OPER_XX

Subchapter VA – Multiple Trauma

Subchapter **VA Multiple Trauma** covers high resource, complex diagnoses and treatments associated with multiple trauma cases for patients of all ages. In the HRG4+ design, multiple trauma is determined by the presence of significant simultaneous traumatic injuries involving more than one body area.

Traumatic single injuries are addressed elsewhere within the relevant body system subchapters.

This subchapter includes activity undertaken in inpatient and day case settings.

Composition and Concepts	
Total HRGs	**24**
Total HRG Roots	**6**
Procedure-driven HRGs	20
Diagnosis-driven HRGs	4
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Following validation and unbundling, multiple trauma grouping takes precedence over any other grouping logic that might otherwise be applied across the episode or spell. The multiple trauma logic is made up of the following elements:

- For single episode spells, where the episode HRG is multiple trauma, the HRG of the spell will be the same multiple trauma HRG
- A multiple trauma spell HRG will be generated where the HRG of the first episode of a multi-episode spell is multiple trauma. The multiple trauma HRG of the first episode, that of any later episode(s) and that of the spell may be different because of the additive nature of the logic employed
- For multi-episode spells where the first episode is not multiple trauma but a later episode is multiple trauma, the spell HRG will not be multiple trauma.

All multiple trauma HRGs require at least two diagnosis codes (one primary) relating to more than one body site. The trauma diagnoses are listed under nine body sites:

- Abdominal trauma diagnoses
- Chest trauma diagnoses
- Head trauma diagnoses
- Kidney trauma diagnoses
- Lower limb trauma diagnoses
- Other trauma diagnoses
- Pelvis or spine trauma diagnoses
- Upper limb trauma diagnoses
- Urinary trauma diagnoses

If a patient has trauma diagnoses for two or more body sites within an episode, this will generate a multiple trauma HRG for that episode.

This subchapter employs grid logic, which is able to take into account multiple procedures as well as multiple diagnoses. This accurately reflects the complexity involved in treating

patients that have multiple traumatic injuries. Each relevant procedure and diagnosis has been assigned a score ranging from 3 to 15. To determine which multiple trauma HRG is derived, the score of all relevant procedure and all relevant diagnosis codes recorded in the patient record are totalled, respectively, to determine a procedure score and a diagnosis score. This pair of scores determines which HRG is derived.

The following grid provides the scoring logic used and shows which HRG would be produced from a given pair of scores.

HRG Derivation Grid:

Procedure score => Diagnosis score	0	1 - 8	9 - 18	19 - 29	30 - 44	>=45
<=23	VA10A	VA11A	VA12A	VA13A	VA14A	VA15A
24 – 32	VA10B	VA11B	VA12B	VA13B	VA14B	VA15B
33 – 50	VA10C	VA11C	VA12C	VA13C	VA14C	VA15C
>=51	VA10D	VA11D	VA12D	VA13D	VA14D	VA15D

Subchapter VB – Emergency Medicine

Subchapter **VB Emergency Medicine** covers activity for patients of all ages treated within the following types of emergency departments:

Composition and Concepts	
Total HRGs	**12**
Total HRG Roots	**12**
Procedure-driven HRGs	N/A
Diagnosis-driven HRGs	N/A
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Type 01

Emergency Departments: Consultant-led 24 hour service with full resuscitation facilities and designated accommodation for the reception of accident and emergency patients

Type 02

Consultant-led mono-specialty accident and emergency service (e.g. ophthalmology, dental) with designated accommodation for the reception of patients, with the exception of gynaecology casualty departments

Type 03

Other types of units with designated accommodation for the reception of minor accident and emergency patients, including other open access treatment services offering at least minor injury/illness services, whether located alongside a main A&E department or at another location

Type 04

NHS walk-in centres

The HRGs are split into ten levels of complexity based on a combination of investigation and treatment categories. There are also HRGs specific to emergency dental care and to patients that are dead on arrival. The Emergency Medicine HRGs do not cover activity within clinical decision units and observation type wards/units.

Emergency Medicine HRGs with labels

HRG	HRG Label
VB01Z	Emergency Medicine, Any Investigation with Category 5 Treatment
VB02Z	Emergency Medicine, Category 3 Investigation with Category 4 Treatment
VB03Z	Emergency Medicine, Category 3 Investigation with Category 1-3 Treatment
VB04Z	Emergency Medicine, Category 2 Investigation with Category 4 Treatment
VB05Z	Emergency Medicine, Category 2 Investigation with Category 3 Treatment
VB06Z	Emergency Medicine, Category 1 Investigation with Category 3-4 Treatment
VB07Z	Emergency Medicine, Category 2 Investigation with Category 2 Treatment
VB08Z	Emergency Medicine, Category 2 Investigation with Category 1 Treatment
VB09Z	Emergency Medicine, Category 1 Investigation with Category 1-2 Treatment
VB10Z	Emergency Medicine, Dental Care
VB11Z	Emergency Medicine, No Investigation with No Significant Treatment
VB99Z	Emergency Medicine, Patient Dead On Arrival

In Subchapter VB, the HRG assigned depends on the investigations and treatments recorded within the A&E Commissioning Data Set. The HRG assigned to each attendance

depends on the dominant investigation and dominant treatment and their respective categories of care.

Grouping for each attendance works as follows:

1. Each **treatment** and **investigation** on the attendance record has an associated hierarchy (See Appendix A for investigations and Appendix B for treatments).
2. This hierarchy information determines the dominant treatment and dominant investigation for the record, and thereby the categories of both.
3. Combining the Investigation and Treatment categories of care will result in the most resource-intensive HRG being generated, subject to the Grouping Exceptions identified below.

Records with neither an Investigation nor Treatment Code recorded will generate the UZ01Z HRG. Where there is no Investigation Code recorded, the patient record will group based upon the appropriate Treatment code.

The hierarchies presented in Appendices A and B are fundamental to which investigations and treatments are considered dominant and used for HRG derivation.

Grouping Exceptions

When determining the HRG assigned to each investigation and treatment, there are certain exceptions where the category is one of two possible values.

* If the dominant investigation is “None” (Investigation code 24) or blank and the dominant treatment is from the following list, the HRG assigned will be **VB11Z**. Otherwise these treatments will be considered as category 1 and the HRG derived will be dependent on the category value of the dominant investigation code.

Treatment Code	Treatment Code Label	Treatment Category (5=highest; 1=lowest)
12	Intravenous cannula	1 or 0 *
221	Guidance/advice only – written	1 or 0 *
222	Guidance/advice only – verbal	1 or 0 *
241	Tetanus – immune	1 or 0 *
99	None (consider guidance/advice option)	1 or 0 *

* For treatments shown below, the following HRG rules apply depending on the dominant investigation

Dominant Treatment	Category of Dominant Investigation	HRG
031 Primary sutures (Cat. 3 or 4) 032 Secondary/complex suture (Cat. 3 or 4) 17 Urinary catheter/suprapubic (Cat. 3 or 4) 235 Anaesthesia–sedation (Cat. 3 or 4) 512 Medication administered - intra-muscular (Cat. 3 or 4) 515 Medication administered–sublingual (Cat. 3 or 4)	Category 1 or blank	VB06Z (Emergency Medicine, Category 1 Investigation with Category 3-4 Treatment)
	Category 2	VB05Z (Emergency Medicine, Category 2 Investigation with Category 3 Treatment)
	Category 3	VB02Z (Emergency Medicine, Category 3 Investigation with Category 4 Treatment)

Patient Dead on Arrival HRG

HRG **VB99Z Emergency Medicine, Patient Dead On Arrival** has been created within this Subchapter for patients that are dead on arrival (DOA). This HRG is derived from a value of 70 (brought in dead) in the data item *A&E Patient Group*. This HRG will be derived in preference to any other HRGs within this subchapter, where the relevant value is present.

The table below shows all valid codes for A&E Patient Group:

Code	Treatment
10	Road Traffic Accident
20	Assault
30	Deliberate Self-Harm
40	Sports Injury
50	Fireworks Injury
60	Other Accident
70	Brought In Dead
80	Other Than Above

Where no Investigation or Treatment code is recorded, patient records with a value of 70 brought in dead in the data item A&E Patient Group will generate a UZ01Z HRG.

Dental Care HRG

HRG **VB10Z Emergency Medicine, Dental Care** has been created within this subchapter to identify a specific cohort of patients that seek emergency care for dental treatment only. The table below identifies the combination of Investigations and Treaments that will map to HRG **VB10Z**, based around the Investigation code “22” (Dental Investigation) and/or Treatment code “56” (Dental Treatment):

Inv. Code	Investigation Description	Treat. Code	Treatment Description
01	X-ray plain film	56	Dental Treatment
22	Dental investigation	56	Dental Treatment
24	None	56	Dental Treatment
99	Other	56	Dental Treatment
22	Dental investigation	57	Prescription\medicines prepared to take away
22	Dental investigation	99	None (consider guidance/advice option)

Please note, HRG VB10Z will be derived in preference to any other HRGs within this subchapter, if the above combinations only are recorded in the patient record.

Subchapter VB : Appendix A – List of Investigations (with category and hierarchy value) used in the A&E CDS and required for HRG4+ derivation

Investigation Code	Investigation Code Label	Category - (3=highest; 1= lowest)	Hierarchy (7=highest; 1=lowest)
01	X-ray plain film	2	6
02	Electrocardiogram	1	3
03	Haematology	2	6
04	Cross match blood/group and save serum for later cross match	2	6
05	Biochemistry	1	5
06	Urinalysis	1	3
07	Bacteriology	2	6
08	Histology	2	6
10	Ultrasound	3	7
11	Magnetic Resonance Imaging	3	7
12	Computerised Tomography (excludes genito urinary contrast examination/tomography)	3	7
13	Genito urinary contrast examination/tomography	3	7
14	Clotting studies	2	6
15	Immunology	2	6
16	Cardiac enzymes	2	6
17	Arterial/capillary blood gas	1	4
18	Toxicology	2	6
19	Blood culture	2	6
20	Serology	2	6
21	Pregnancy test	1	3
22	Dental investigation	2	2
23	Refraction, orthoptic tests and computerised visual fields	2	6
24	None	1 or 0 *	1
99	Other	1	3

The hierarchies presented in Appendix A above are fundamental to working out which investigation is considered dominant and used for HRG derivation.

Subchapter VB : Appendix B – List of Treatments (with category and hierarchy value) used in the A&E CDS and required for HRG4+ derivation

Treatment Code	Treatment Code Label	Category (5=highest; 1=lowest)	Hierarchy (8=highest; 1=lowest)
011	Dressing minor wound/burn/eye	2	4
012	Dressing major wound/burn/eye	3	5
02	Bandage/support	1	3
031	Primary sutures	3 or 4 *	6
032	Secondary/complex suture	3 or 4 *	6
033	Removal of sutures/clips	1	3
041	Wound closure – steristrips	2	4
042	Wound closure - wound glue	2	4
043	Wound closure - other (e.g. clips)	2	4
051	Application Plaster of Paris	2	4
052	Removal Plaster of Paris	1	3
06	Splint	2	4
08	Removal foreign body	3	5
091	Physiotherapy - strapping, ultra sound treatment, short wave diathermy, manipulation	2	4
092	Physiotherapy - gait re-education, falls prevention	2	4
101	Manipulation of upper limb fracture	4	7
102	Manipulation of lower limb fracture	4	7
103	Manipulation of dislocation	4	7
11	Incision & drainage	3	5
12	Intravenous cannula	1 or 0 *	2
13	Central line	3	5
14	Lavage/emesis/charcoal/eye irrigation	2	4
15	Intubation & Endotracheal tubes/laryngeal mask airways/rapid sequence induction	4	7
16	Chest drain	4	7
17	Urinary catheter/suprapubic	3 or 4 *	6
181	Defibrillation	4	7
182	External pacing	4	7
19	Resuscitation/cardiopulmonary resuscitation	5	8
20	Minor surgery	3	5
21	Observation/electrocardiogram, pulse oximetry/head injury/trends	1	3
221	Guidance/advice only – written	1 or 0 *	2
222	Guidance/advice only – verbal	1 or 0 *	2
231	Anaesthesia - general anaesthetic	4	7
232	Anaesthesia - local anaesthetic	2	4
233	Anaesthesia - regional block	2	4
234	Anaesthesia – entonox	2	4
235	Anaesthesia – sedation	3 or 4 *	6
236	Anaesthesia – other	2	4
241	Tetanus – immune	1 or 0 *	2
242	Tetanus - tetanus toxoid course	2	4
243	Tetanus - tetanus toxoid booster	2	4
244	Tetanus - human immunoglobulin	2	4
245	Tetanus - combined tetanus/diphtheria course	2	4
246	Tetanus - combined tetanus/diphtheria booster	2	4

Treatment Code	Treatment Code Label	Category (5=highest; 1=lowest)	Hierarchy (8=highest; 1=lowest)
25	Nebuliser/spacer	3	5
27	Other (consider alternatives)	1	3
281	Parenteral thrombolysis - streptokinase parenteral thrombolysis	4	7
282	Parenteral thrombolysis - recombinant - plasminogen activator	5	8
291	Other Parenteral drugs - intravenous drug, e.g. stat/bolus	4	7
292	Other Parenteral drugs - intravenous infusion	4	7
30	Recording vital signs	1	3
31	Burns review	1	3
32	Recall/x-ray review	1	3
33	Fracture review	1	3
34	Wound cleaning	1	3
35	Dressing/wound review	1	3
36	Sling/collar cuff/broad arm sling	1	3
37	Epistaxis control	2	4
38	Nasal airway	2	4
39	Oral airway	2	4
40	Supplemental oxygen	3	5
41	Continuous positive airways pressure/nasal intermittent positive pressure ventilation/bag valve mask	3	5
42	Arterial line	3	5
43	Infusion fluids	2	4
44	Blood product transfusion	4	7
45	Pericardiocentesis	4	7
46	Lumbar puncture	4	7
47	Joint aspiration	3	5
48	Minor plastic procedure/split skin graft	4	7
49	Active rewarming of the hypothermic patient	3	5
50	Cooling - control body temperature	1	3
511	Medication administered – oral	2	4
512	Medication administered - intra-muscular	3 or 4 *	6
513	Medication administered – subcutaneous	3	5
514	Medication administered - per rectum	2	4
515	Medication administered – sublingual	3 or 4 *	6
516	Medication administered - intra-nasal	2	4
517	Medication administered - eye drops	1	3
518	Medication administered - ear drops	1	3
519	Medication administered - topical skin cream	1	3
521	Occupational Therapy - OT functional assessment	3	5
522	Occupational Therapy - OT activities of daily living equipment provision	1	3
53	Loan of walking aid (crutches)	1	3
54	Social work intervention	3	5
551	Eye - orthoptic exercises	1	3
552	Eye - laser of retina/iris or posterior capsule	5	8
553	Eye - retrobulbar injection	3	5
554	Eye - epilation of lashes	3	5
555	Eye - subconjunctival injection	4	7
56	Dental treatment	2	2
57	Prescription\medicines prepared to take away	1	3

Treatment Code	Treatment Code Label	Category (5=highest; 1=lowest)	Hierarchy (8=highest; 1=lowest)
99	None (consider guidance/advice option)	1 or 0 *	1

Also note, the hierarchies presented in Appendix B are fundamental to working out which treatment is considered dominant and used for HRG derivation.

Worked Examples

The examples below show how the different Investigation codes and treatment codes are grouped in HRG4+

Case	Invest.1	Invest. 2	Treat. 1	Treat. 2	Dominant investigation	Dominant treatment	HRG
A	01-X-Ray (category 2)	02–Electro-cardiogram (category 1)	11-Incision & drainage (category 3)	511-Medication administered-oral (category 2)	01-X-ray (as category 2>1)	11-Incision & drainage (as category 3>2)	VB05Z Category 2 Investigation with Category 3 Treatment
B	01-X-Ray (category 2)	02–Electro-cardiogram (category 1)	282-Parenteral thrombolysis - recombinant - plasminogen activator (category 5)	99-None (consider guidance/advice option) (category 0 or 1)	01-X-ray (as category 2>1)	282-Parenteral thrombolysis - recombinant - plasminogen activator (as category 5>1 and 0)	VB01Z Any Investigation with Category 5 Treatment
C	22-Dental investigation	24–None	56-Dental treatment	99-None (consider guidance/advice option)	22-Dental investigation	56-Dental treatment	VB10Z Dental Care
D	24–None		56-Dental treatment	99-None (consider guidance/advice option)	24–None	56-Dental treatment	VB10Z Dental Care
E	22-Dental investigation	24–None	222-Guidance/advice only - verbal	99-None (consider guidance/advice option)	22-Dental investigation	222-Guidance/advice only – verbal	VB08Z Emergency Medicine, Category 2 Investigation with Category 1 Treatment
F	13-Genito urinary contrast examination/ tomography (category 3)	03–Haematology (category 2)	031-** Primary sutures (category 3 or 4)	511-Medication administered – oral (category 2)	13-Genito urinary contrast examination/ tomography (category 3)	031-Primary sutures	VB02Z Category 3 Investigation with Category 4 Treatment
G	05-Biochemistry (category 1)	24–None	17-Urinary catheter/suprapubic (category 3 or 4)	12-Intravenous cannula (category 0 or 1)	05-Biochemistry (category 1)	17-Urinary catheter/suprapubic	VB06Z Category 1 Investigation with Category 3-4 Treatment

** “Primary sutures” is considered category 4 in this example, as it is recorded with a category 3 dominant investigation, see page above for further detail

Subchapter VC – Rehabilitation

Composition and Concepts	
Total HRGs	**23**
Total HRG Roots	**23**
Procedure-driven HRGs	23
Diagnosis-driven HRGs	0
Age Splits	No
Complications and Comorbidities Splits	N/A
Intervention Splits	N/A
Multiple Procedures	N/A
Procedure Combination Codes	N/A
Diagnosis-qualified	N/A
Subsidiary Procedure-qualified	N/A
Length of Stay-qualified	N/A

Subchapter **VC Rehabilitation** covers all activities relating to the assessment for, and the delivery of, rehabilitation for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

Subchapter VC comprises:

- Assessment for rehabilitation
- Specific rehabilitation services for both inpatient and outpatients
- Rehabilitation services delivered to adults, children and older people
- Rehabilitation services delivered by the NHS and, potentially, other accredited providers

The Rehabilitation HRGs do not cover the following:

- Rehabilitation within an acute care treatment episode
- The identification of highly complex specialist rehabilitation

Rehabilitation HRGs are unbundled on a per diem basis and are only generated where care is identified as taking place under a specialist rehabilitation consultant or within a discrete rehabilitation unit. They require the use of OPCS-4 codes **U50.- – U54.-** to generate a rehabilitation HRG, plus an appropriate duration of rehabilitative care to ensure that the HRGs are rightly generated on a per diem basis.

Rehabilitation assessment is identified by OPCS-4 code **X60.-**. A rehabilitation diagnosis code is not required to generate any of the three rehabilitation assessment HRGs.

Subchapter WD – Treatment of Mental Health Patients by Non-Mental Health Service Providers

Composition and Concepts	
Total HRGs	**3**
Total HRG Roots	**3**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	3
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter **WD Treatment of Mental Health Patients by Non-Mental Health Service Providers** covers the treatment of mental health patients by NHS organisations that do not provide specialist mental health services but do provide treatment to patients of all ages with a mental health primary diagnosis prior to discharge or transfer to a specialist mental health provider.

Given the fact that mental health services provided by specialist providers are captured using the mental health clustering classification, the HRGs within Subchapter WD effectively form the residue of treatment of mental health patients by non-specialist mental health service providers.

The HRGs in this subchapter are therefore not measures of Casemix and are not intended to be iso-resource. They merely complete the classification whilst further development work is undertaken to develop mental health currencies. They include activity undertaken in inpatient and day case settings.

Subchapter WD is comprised of the following HRGs:

- **WD11Z All patients 70 years and older with a Mental Health Primary Diagnosis, treated by a Non-Specialist Mental Health Service Provider**
- **WD22Z All patients between 19 and 69 years with a Mental Health Primary Diagnosis, treated by a Non-Specialist Mental Health Service Provider**
- **WD33Z All patients 18 years and younger with a Mental Health Primary Diagnosis, treated by a Non-Specialist Mental Health Service Provider**

Note that some treatments of patients younger than 19 years old with a primary mental health diagnosis are grouped to HRGs in Subchapter **PT Paediatric Mental Health Disorders**.

Subchapter WF – Non-Admitted Consultations

Subchapter **WF Non-Admitted Consultations** covers non-admitted consultations, including outpatients and ward attenders, for patients of all ages.

Subchapter WF comprises:

- Unidisciplinary face-to-face first and follow-up attendances
- Multiprofessional face-to-face first and follow-up attendances
- Unidisciplinary non face-to-face first and follow-up attendances
- Multiprofessional non face-to-face first and follow-up attendances

Where significant procedures are coded in outpatient attendances, the appropriate procedure-driven HRG will be generated.

Composition and Concepts	
Total HRGs	**8**
Total HRG Roots	**2**
Procedure-driven HRGs	8
Diagnosis-driven HRGs	0
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

For outpatients or ward attenders, a significant procedure may not always be recorded. In these cases, activity is grouped to Subchapter WF, with the HRG derived based on the type of attendance (using the FIRST ATTENDANCE data item in the NHS Data Model and Dictionary), modified by the presence of the following OPCS-4 codes:

- **X62.2 Assessment by multi-professional team NEC**
- **X62.3 Assessment by multi-disciplinary team NEC**

The matrix below shows how the type of attendance and the presence of OPCS-4 codes for uni-professional or multi-professional assessments drive the derivation of the HRGs in this subchapter:

		Attendance Type*			
		1 First Attendance Face-to-face	2 Follow-up Attendance Face-to-face	3 First Telephone or Telemedicine Consultation	4 Follow-up Telephone or Telemedicine Consultation
OPCS-4 Code	None or X62.1 Assessment by uni-professional team NEC	WF01B	WF01A	WF01D	WF01C
	X62.2 Assessment by multi-professional team NEC or X62.3 Assessment by multi-disciplinary team NEC	WF02B	WF02A	WF02D	WF02C

*Attendance Type refers to the NHS Data Dictionary item FIRST ATTENDANCE.

Subchapter WH – Poisoning, Toxic Effects, Special Examinations, Screening and Other Healthcare Contacts

Subchapter **WH Poisoning, Toxic Effects, Special Examinations, Screening and Other Healthcare Contacts** is made up of a range of disparate healthcare activity including poisoning, toxic effects, special examinations and screening.

The subchapter includes a single procedure-driven HRG root, for lymphatic system procedures for patients of all ages.

The majority of diagnosis-driven HRG roots within this subchapter are for adult care activities only; however, the HRG roots for procedures not carried out, certain diagnoses related to donation and certain diagnoses related to procreative management are for patients of all ages.

Subchapter WH includes activity undertaken in inpatient, day case and non-admitted care settings.

Composition and Concepts	
Total HRGs	**64**
Total HRG Roots	**25**
Procedure-driven HRGs	2
Diagnosis-driven HRGs	62
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

There are specific HRG roots for acute disorders including transplant rejection, other post-procedure complications and follow-up care, as well as HRG roots specific to poisonings, allergies and effects of environment. The remaining HRG roots cover various signs and symptoms and healthcare contacts, e.g. abdominal pain, senility, abnormal findings and respite care.

There are two HRG roots specific to planned procedures not carried out – split by ‘patient reason’ and ‘other / unspecified’ reason. HRG root **WH50 Procedure Not Carried Out** employs global logic and is generated when no significant procedure is recorded with any primary diagnosis and a secondary diagnosis from ICD-10 rubric **Z53.- Persons encountering health services for specific procedures, not carried out**.

Interactive CC splits are employed within the majority of HRG roots within this subchapter – up to a maximum of four levels – to more appropriately differentiate resource expected usage between routine and complex patients.

In addition, intervention splits, including where the presence of multiple interventions affects grouping, are employed within the majority of HRG roots in this subchapter.

All diagnosis-driven activity (with the exception of some donation and procreative management diagnoses) relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter WJ – Infectious Diseases and Immune System Disorders

Subchapter **WJ Infectious Diseases and Immune System Disorders** covers multi-systemic infectious diseases and immune system disorders.

This subchapter is for adult activity only, with the exception of several genitourinary infection HRG roots that are intended to cover patients of all ages.

It includes activity undertaken in inpatient and day case settings.

There are disease-specific HRGs for infections such as sepsis, septic shock, unknown fever, HIV and genitourinary medicine (GUM) disorders. There is one HRG root specific to all other immune system disorders.

The remainder of multi-systemic infectious diseases are split across three HRG roots based on the complexity of the disorder – standard, major and complex.

Composition and Concepts	
Total HRGs	**40**
Total HRG Roots	**9**
Procedure-driven HRGs	0
Diagnosis-driven HRGs	40
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	Yes
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Interactive CC splits are employed within the majority of HRG roots within this subchapter – up to a maximum of four levels – to more appropriately differentiate expected resource usage between routine and complex patients.

In addition, intervention splits, including where the presence of multiple interventions affects grouping, are employed within the majority of the HRG roots in this subchapter.

All diagnosis-driven activity (with the exception of some genitourinary infections) relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter XA – Neonatal Critical Care

Subchapter **XA Neonatal Critical Care** includes unbundled HRGs and covers neonatal critical care, including transportation (retrieval).

Other critical care services are addressed in Subchapters **XC Adult Critical Care** and **XB Paediatric Critical Care**.

The HRGs within this Subchapter are split into five levels of complexity: there is one HRG specific to neonatal intensive care activity (NICU) – **XA01Z Neonatal Critical Care, Intensive Care** – and one HRG specific to neonatal high dependency care (NHDU) – **XA02Z Neonatal Critical Care, High Dependency**, and there are three HRGs specific to neonatal special care baby unit (SCBU) or transitional care activity – **XA03Z Neonatal Critical Care, Special Care, without External Carer**, **XA04Z Neonatal Critical Care, Special Care, with External Carer** and **XA05Z Neonatal Critical Care, Normal Care**.

Composition and Concepts	
Total HRGs	**6**
Total HRG Roots	**6**
Procedure-driven HRGs	N/A
Diagnosis-driven HRGs	N/A
Age Splits	N/A
Complications and Comorbidities Splits	N/A
Intervention Splits	N/A
Multiple Procedures	N/A
Procedure Combination Codes	N/A
Diagnosis-qualified	N/A
Subsidiary Procedure-qualified	N/A
Length of Stay-qualified	N/A

There is also an HRG specific to neonatal transportation – **XA06Z Neonatal Critical Care, Transportation.**

For this subchapter, grouping is based primarily on data items from the Neonatal Critical Care Minimum Data Set (Version 1.0, 2007), but additional data items are required from the Admitted Patient Care data set (Discharge Date and Discharge Method). The main driver for grouping is the Critical Care Activity Code.

One neonatal critical care HRG is generated for each day the baby receives critical care. The HRGs are unbundled, being generated in addition to the HRGs for the associated admitted patient care episode and spell.

Please see the grouping algorithm flowchart below for further information.

Note that Critical Care Activity Codes specific to Version 2.0 (2016) of the Neonatal Critical Care Minimum Data Set cannot be used in the HRG4+ 2017/18 Local Payment Grouper. Instances of these codes must be removed from the data prior to grouping using the Local Payment Grouper; see Information Standard SCCI0075 for further information. Data submitted for grouping in SUS must not violate the SUS XML Scheme Constraint rules for Critical Care Activity Code.

XA06Z Neonatal Critical Care, Transportation is derived from the Admitted Patient Care data set as the Neonatal Critical Care data set does not incorporate data items that can be used to identify transportation. This represents the transfer from one provider trust to another, of a baby in neonatal critical care.

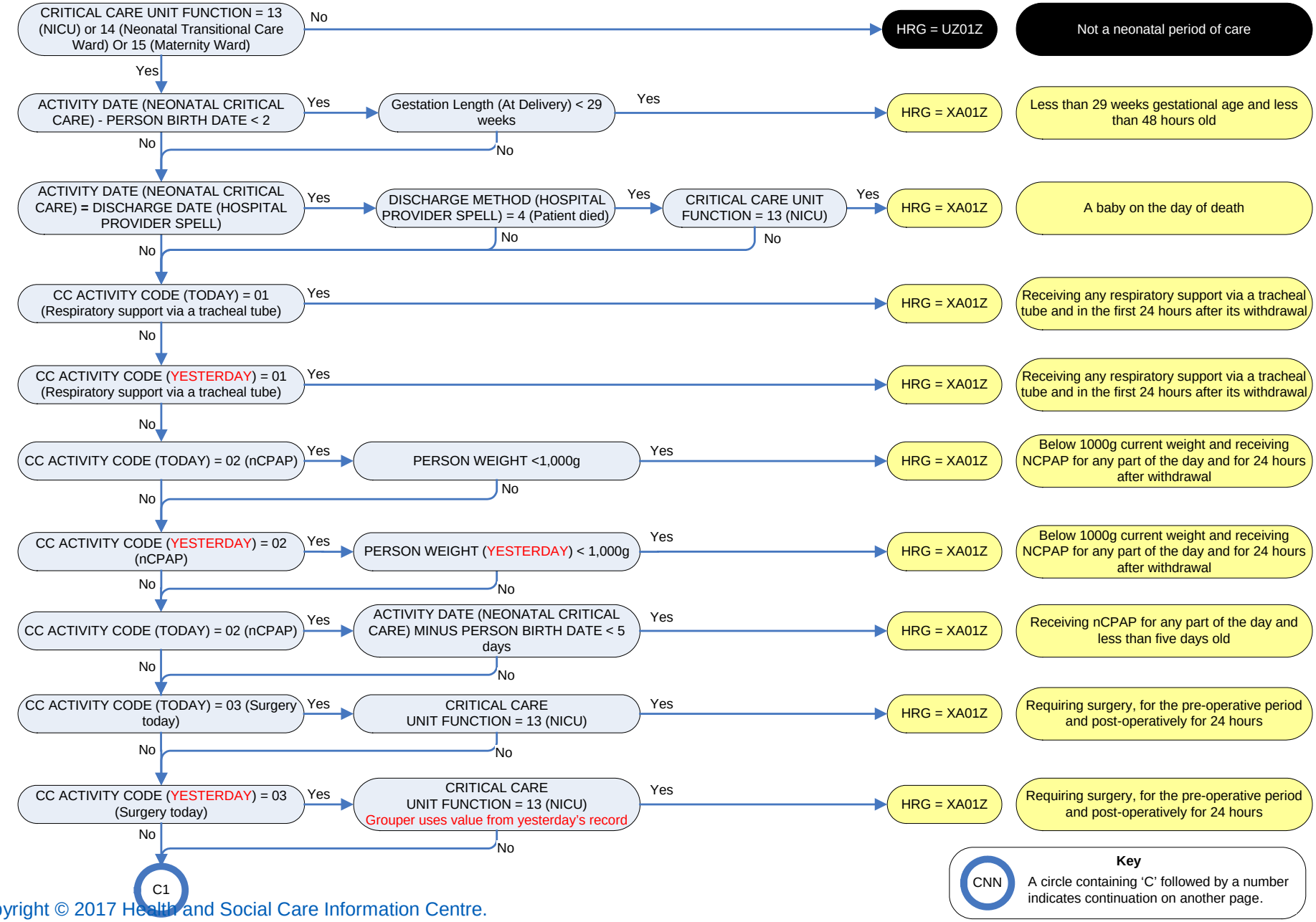
Grouping is driven by the following parameters:

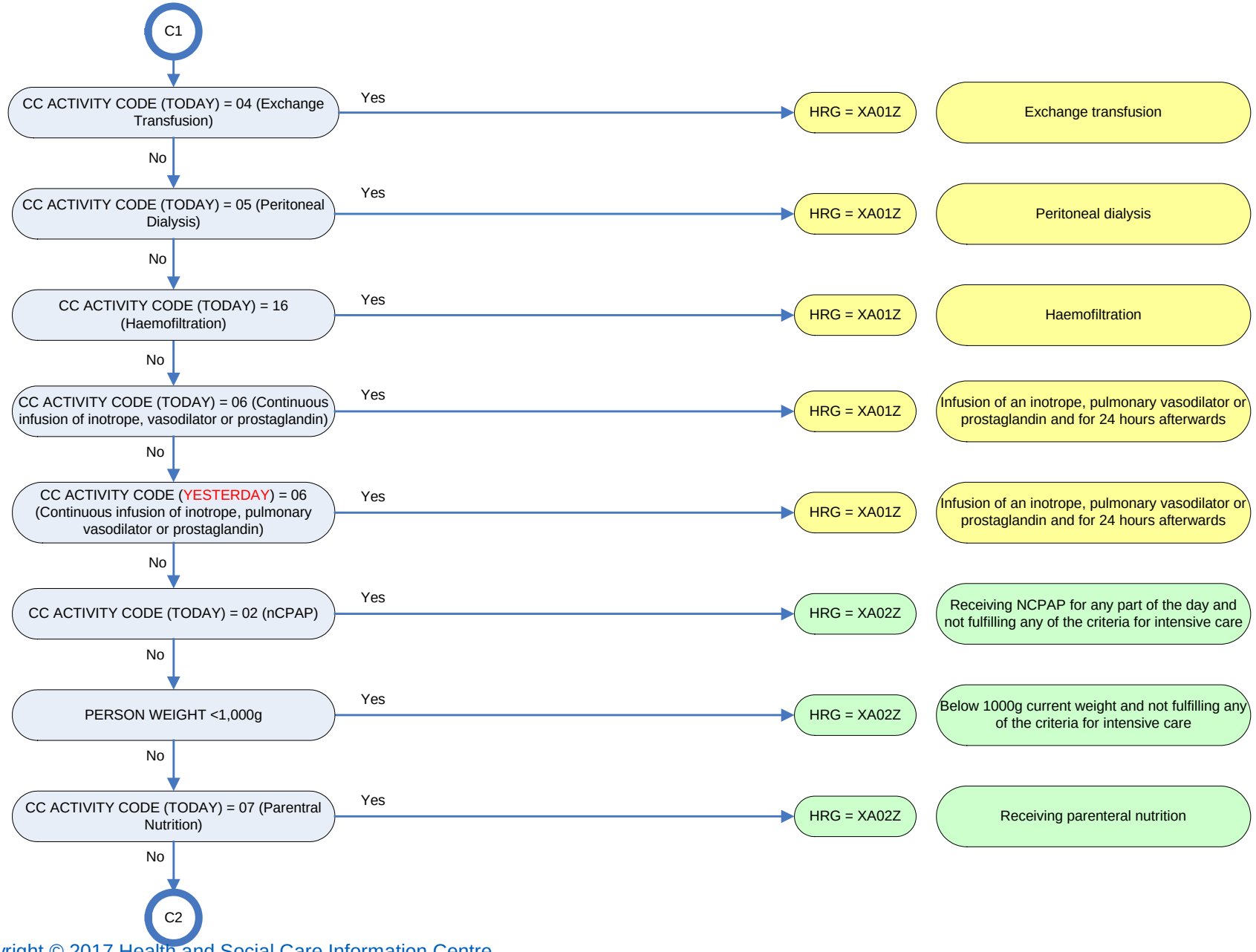
- Admission method
- Source of admission
- Treatment function code
- Neonatal level of care

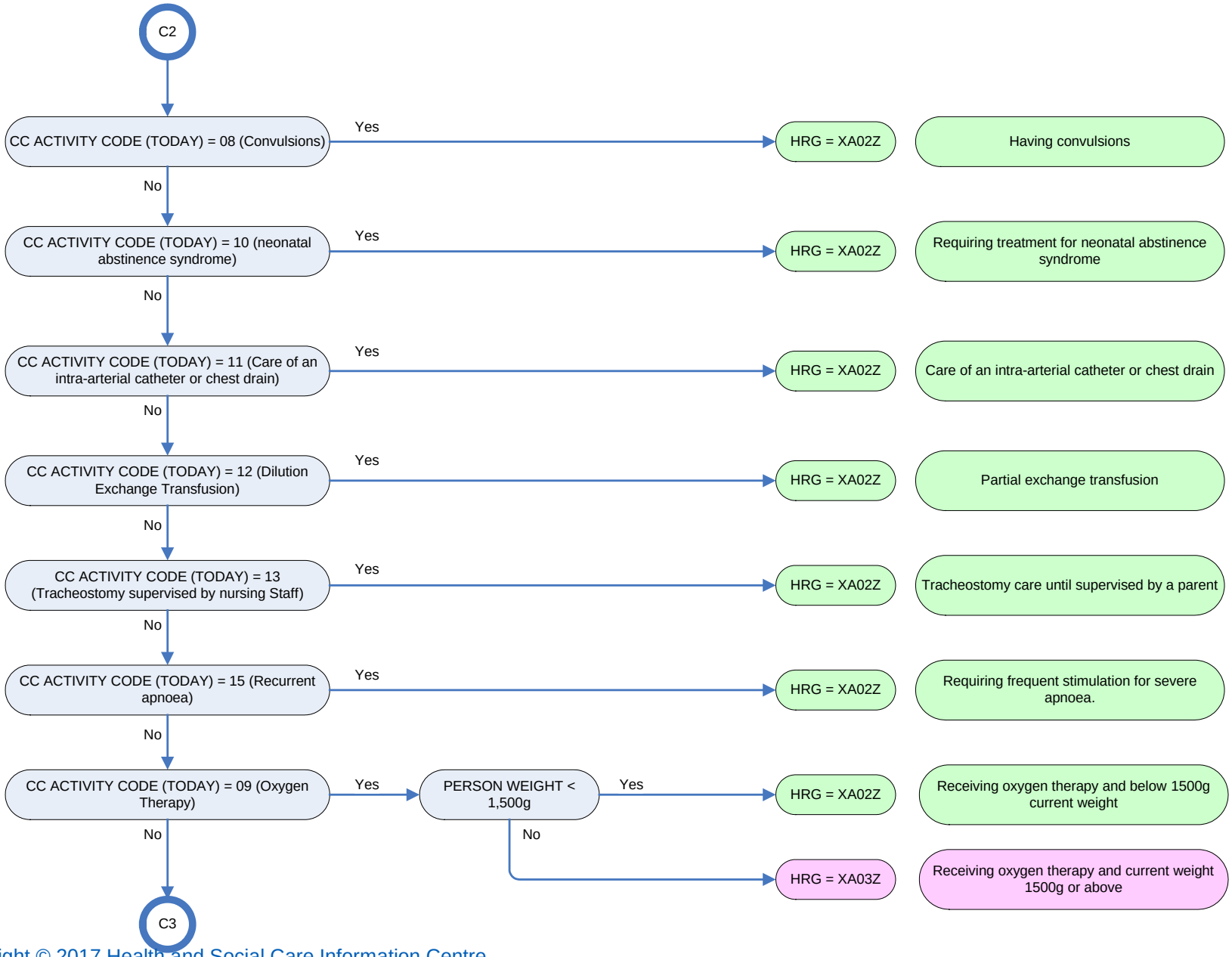
All of the following criteria must be met in order to derive the transportation HRG:

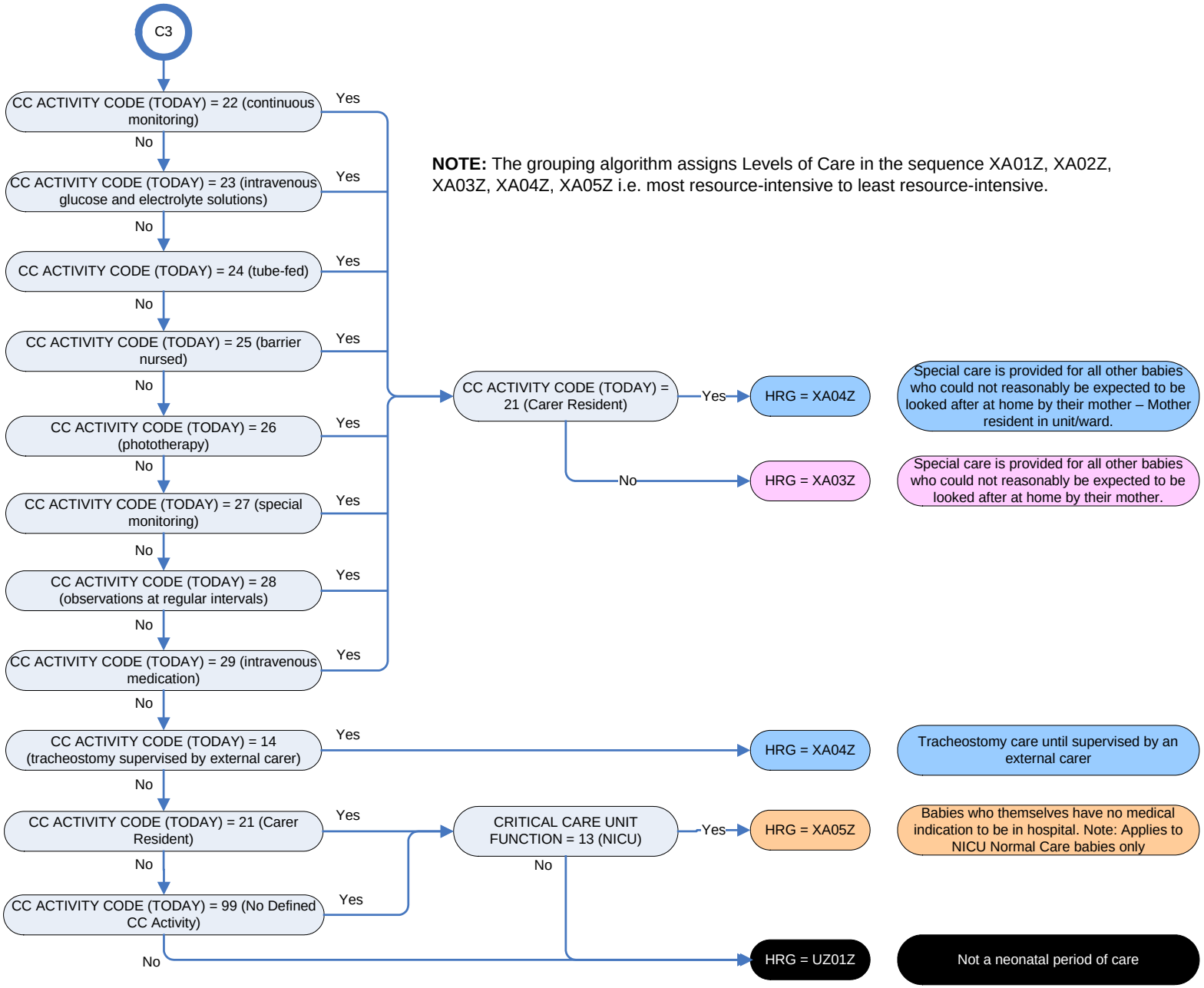
Data Item	Value	Notes
Admission Method	81: Transfer of any admitted patient from other hospital provider other than in an emergency (Data submitted using CDS 6.1 or 6.2) or 28: Other Means (includes transfer of an admitted patient from another hospital provider in an emergency) (Data submitted using CDS 6.1 only) or 2B: Transfer of an admitted PATIENT from another Hospital Provider in an emergency (Data submitted using CDS 6.2 only)	Hospital transfer
Source of Admission	52: NHS other hospital provider - ward for maternity patients or neonates or 87: Non NHS run hospital	Confirms the transfer is from another hospital (Admission Method 28 includes other locations)
Treatment Function Code	422: Neonatology - Special Care, High Dependency and Intensive Care	
Neonatal Level of Care	3: Level 1 Intensive Care (Maximal Intensive Care) or 2: Level 2 Intensive Care (High Dependency Intensive Care)	

Neonatal Critical Care HRG Derivation









NOTE: The grouping algorithm assigns Levels of Care in the sequence XA01Z, XA02Z, XA03Z, XA04Z, XA05Z i.e. most resource-intensive to least resource-intensive.

Subchapter XB – Paediatric Critical Care

Subchapter **XB Paediatric Critical Care** includes unbundled HRGs and covers paediatric critical care, including transportation (retrieval). Other critical care services are addressed in Subchapters **XC Adult Critical Care** and **XA Neonatal Critical Care**.

The HRGs within this Subchapter are split into eight levels of complexity; there are five HRGs specific to paediatric intensive care activity, which would be undertaken in a paediatric intensive care unit (PICU) and three HRGs specific to paediatric high dependency care activity, which may take place in a PICU or paediatric high dependency ward.

The HRGs are generated from information within the paediatric critical care minimum dataset on a per diem basis, based on the critical care unit function and critical care activity codes recorded.

Composition and Concepts	
Total HRGs	**9**
Total HRG Roots	**9**
Procedure-driven HRGs	N/A
Diagnosis-driven HRGs	N/A
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Grouping is based primarily on data items from the Paediatric Critical Care Minimum Data Set (Version 1.0, 2007), but additional data items are required from the Admitted Patient Care data set (including Discharge Date, Discharge Method and Diagnosis).

One paediatric critical care HRG is generated for each day the child receives critical care. The HRGs are unbundled, being generated in addition to the HRGs for the associated admitted patient care episode and spell.

Please see the grouping algorithm flowchart below for further information.

Note that Critical Care Activity Codes specific to Version 2.0 (2016) of the Paediatric Critical Care Minimum Data Set cannot be used in the HRG4+ 2017/18 Local Payment Grouper. Instances of these codes must be removed from the data prior to grouping using the Local Payment Grouper; see Information Standard SCCI0076 for further information. Data submitted for grouping in SUS must not violate the SUS XML Scheme Constraint rules for Critical Care Activity Code.

There is also an HRG specific to paediatric transportation – **XB08Z Paediatric Critical Care, Transportation**. The paediatric critical care transportation HRG is derived from the Admitted Patient Care data set.

All of the following criteria must be met in order to derive the transportation HRG:

Data Item	Value	Notes
Admission Method	81: Transfer of any admitted patient from other hospital provider other than in an emergency (Data submitted using CDS 6.1 or 6.2) or 28: Other Means (includes transfer of an admitted patient from another hospital provider in an emergency) (Data submitted using CDS 6.1 only) or 2B: Transfer of an admitted PATIENT from another Hospital Provider in an emergency (Data submitted using CDS 6.2 only)	Hospital transfer
Source of Admission	51: NHS other hospital provider - ward for general patients or the younger physically disabled or A&E department or 87: Non NHS run hospital	Confirms the transfer is from another hospital (Admission Method 28 includes other locations)
Treatment Function Code of the first episode in the spell	242: Paediatric Intensive Care - Only to be used by designated Paediatric Intensive Care Units	

Subchapter XB : Worked Examples

Case A: A patient is being treated in the paediatric critical care unit and has apnoea requiring intervention.

Case	Critical Care Unit Function Code	Patient Age (Days)	Discharge Method (Hospital Provider Spell)	Main Critical Care Activity Code	Other Critical Care Activity Codes	ICD-10 Diagnosis Code		HRG4+	
A	04 (Paediatric Intensive Care Unit)	10	1(Patient discharged on clinical advice or with clinical consent)	58 Apnoea requiring intervention				XB06Z	Paediatric Critical Care, Intermediate Critical Care

Case B: A patient is being treated on a ward for children and young people and has central venous pressure monitoring.

B	16 (Ward for children and young people)	10	1(Patient discharged on clinical advice or with clinical consent)	62 Central venous pressure monitoring				XB07Z	Paediatric Critical Care, Basic Critical Care

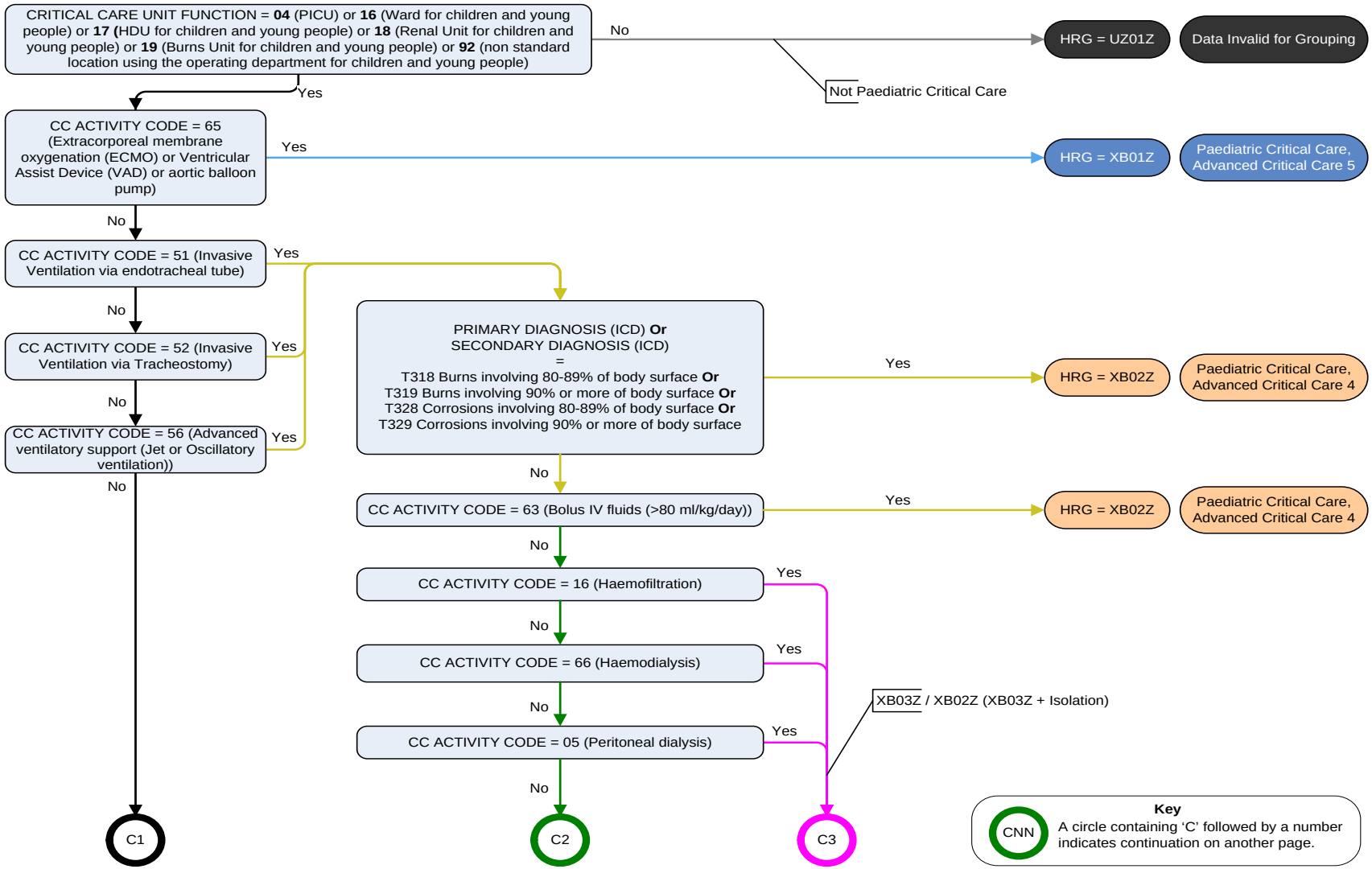
Case C: A patient is being treated in the paediatric critical care unit and has invasive ventilation after being severely burned. This illustrates how the diagnosis is used in deriving the HRG.

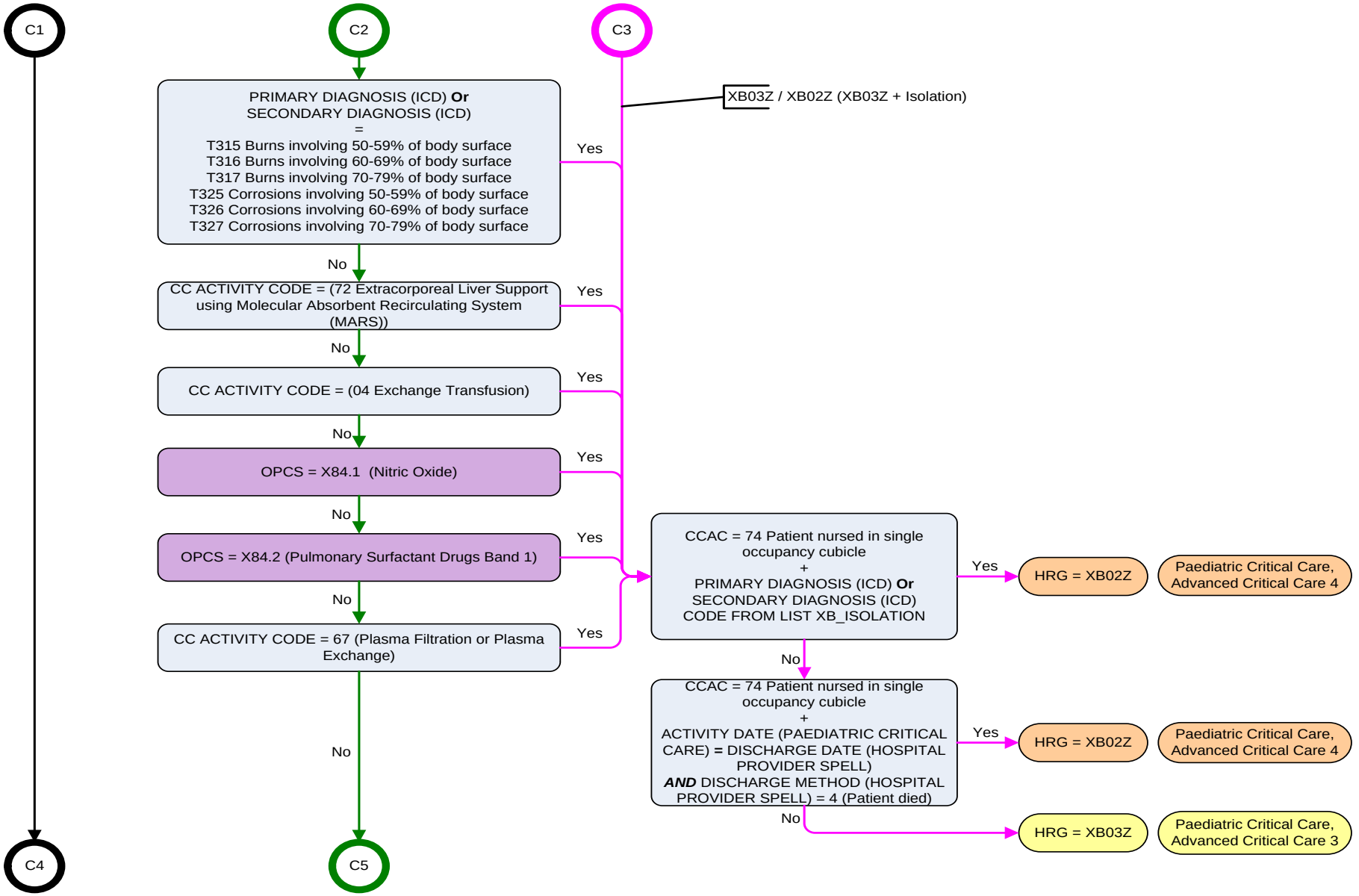
C	04 (Paediatric Intensive Care Unit)	10	1(Patient discharged on clinical advice or with clinical consent)	51 Invasive ventilation via endotrachial tube		T31.5	Burns involving 50-59% of body surface	XB03Z	Paediatric Critical Care, Advanced Critical Care 3

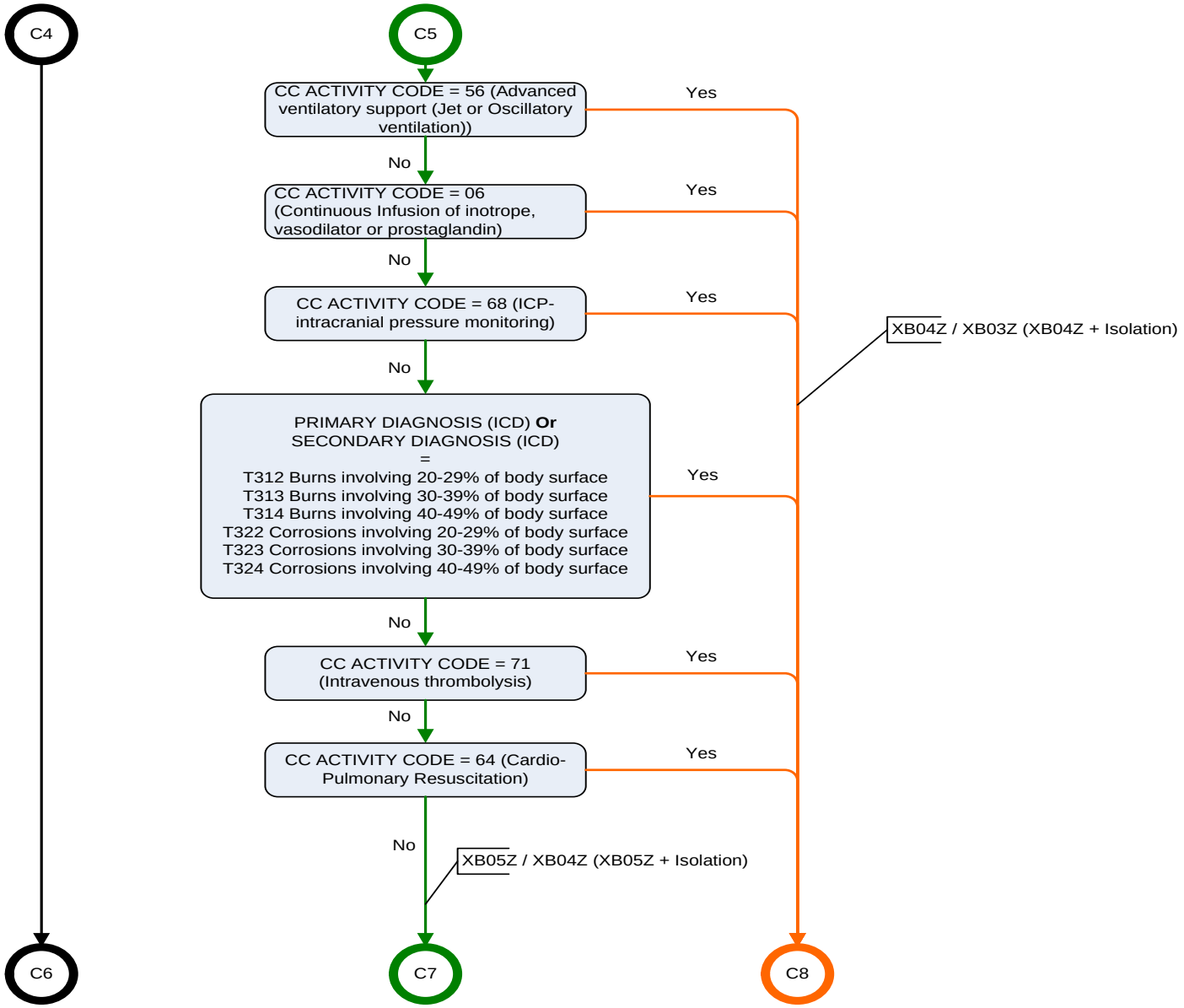
Case D: A patient with renal hypoplasia who develops adenoviral pneumonia is admitted to a single occupancy cubicle in the paediatric critical care unit. This illustrates how both the diagnosis and CCAC affect the HRG derived.

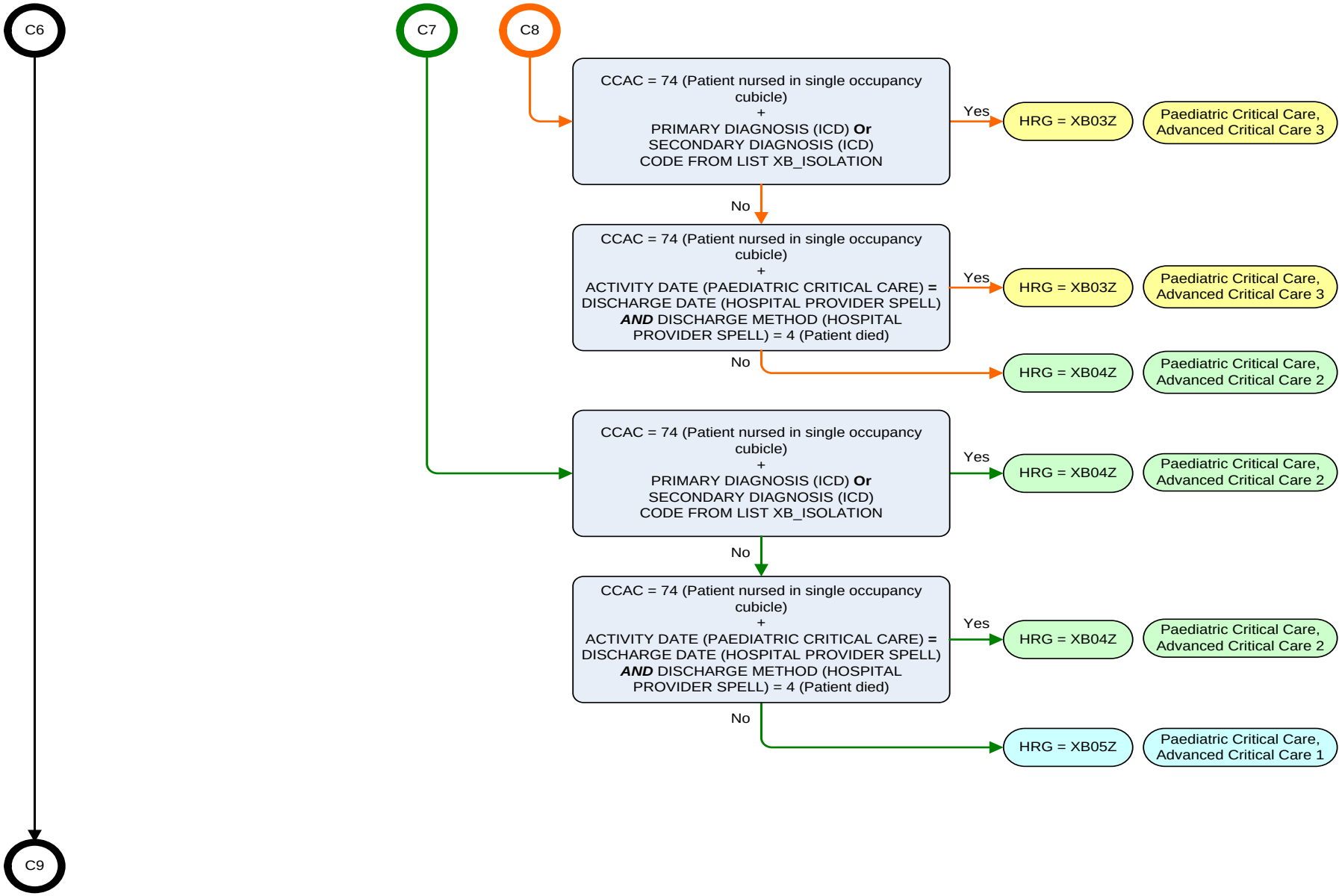
D	04 (Paediatric Intensive Care Unit)	10	1(Patient discharged on clinical advice or with clinical consent)	51 Invasive ventilation via endotrachial tube	05 Peritoneal dialysis + + 74 Patient nursed on single occupancy cubicle	Q60.5 +_ J12.0	Renal hypoplasia, unspecified + Adenovial pneumonia	XB02Z	Paediatric Critical Care, Advanced Critical Care 4

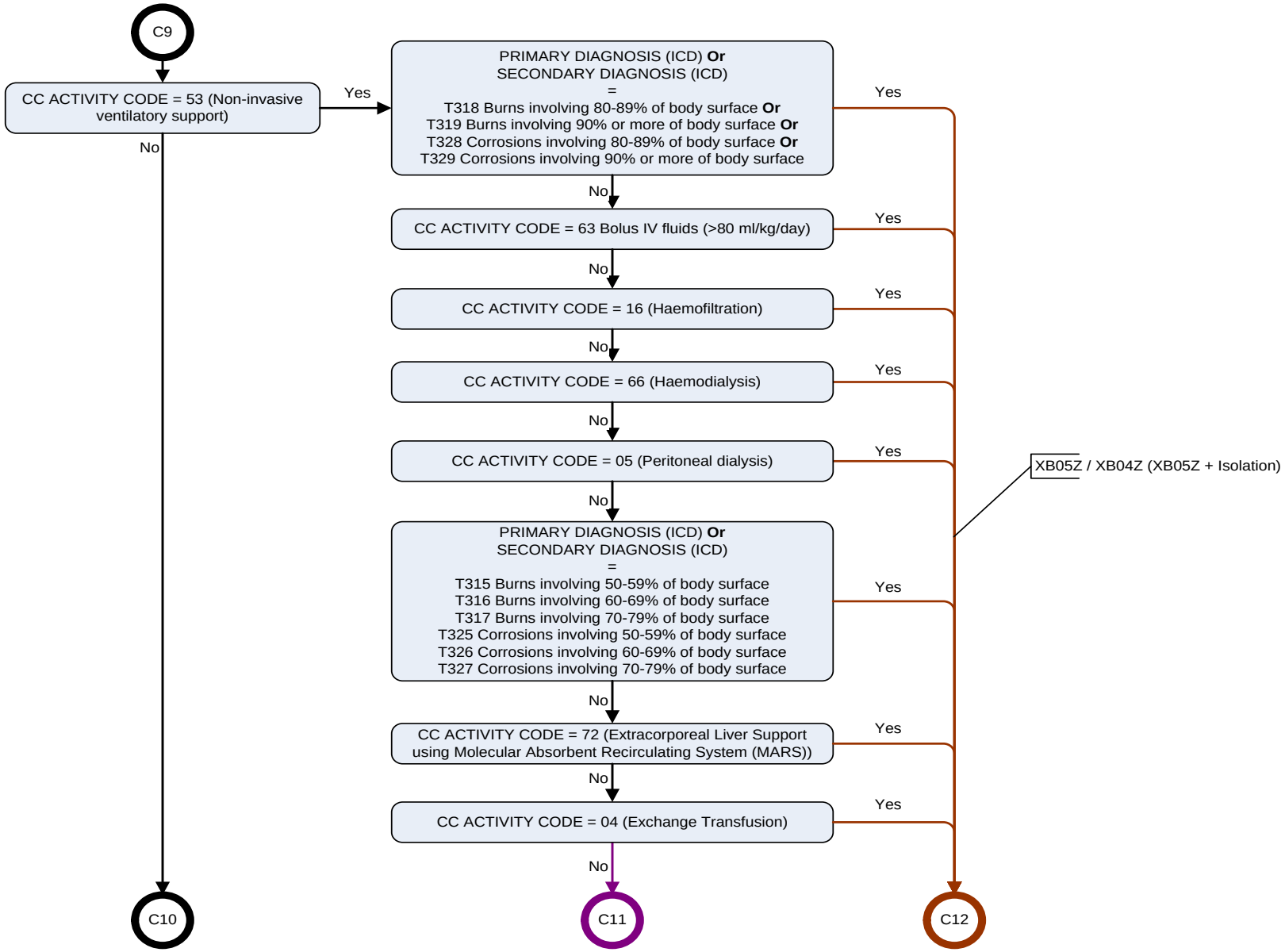
Paediatric Critical Care HRG Derivation

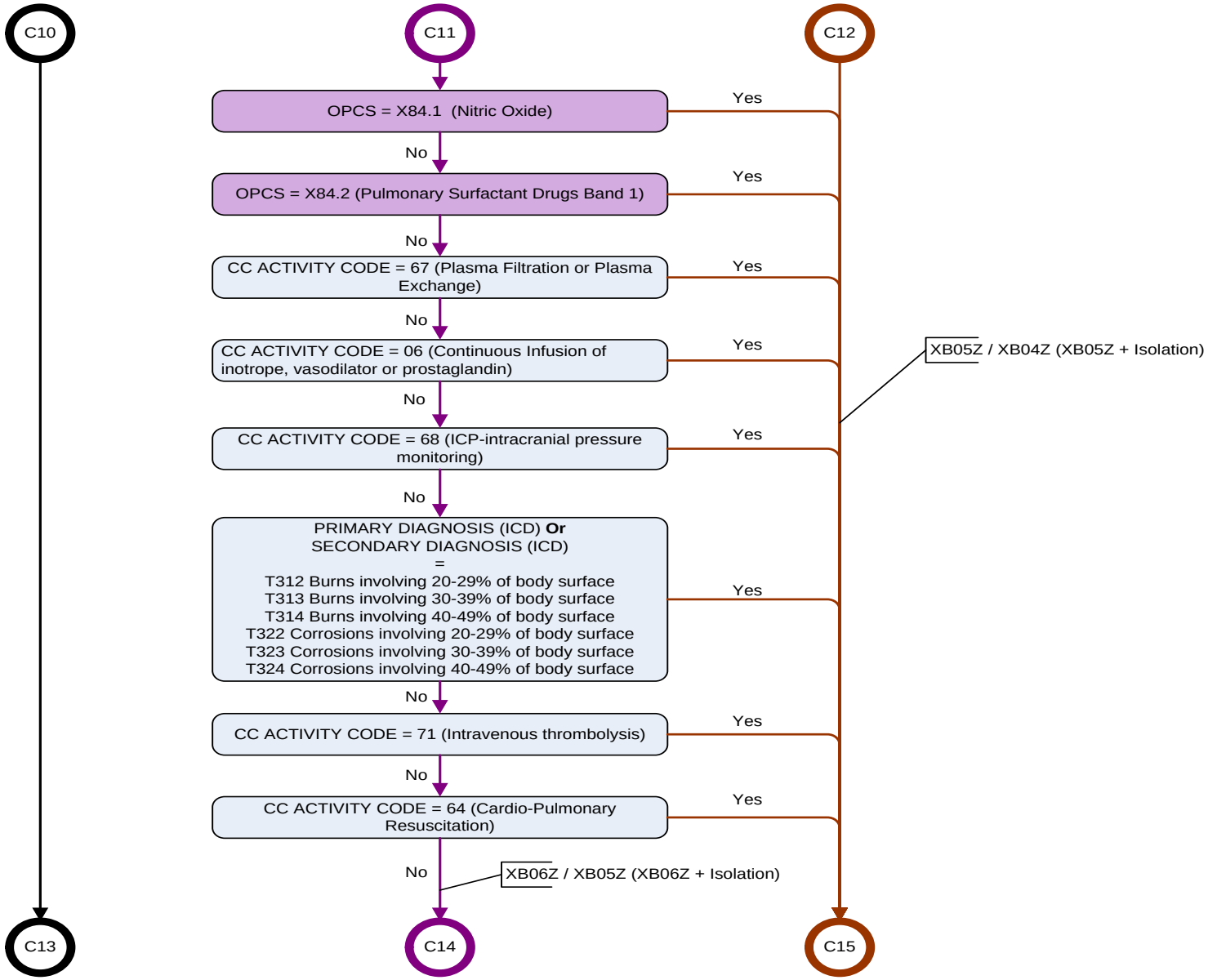


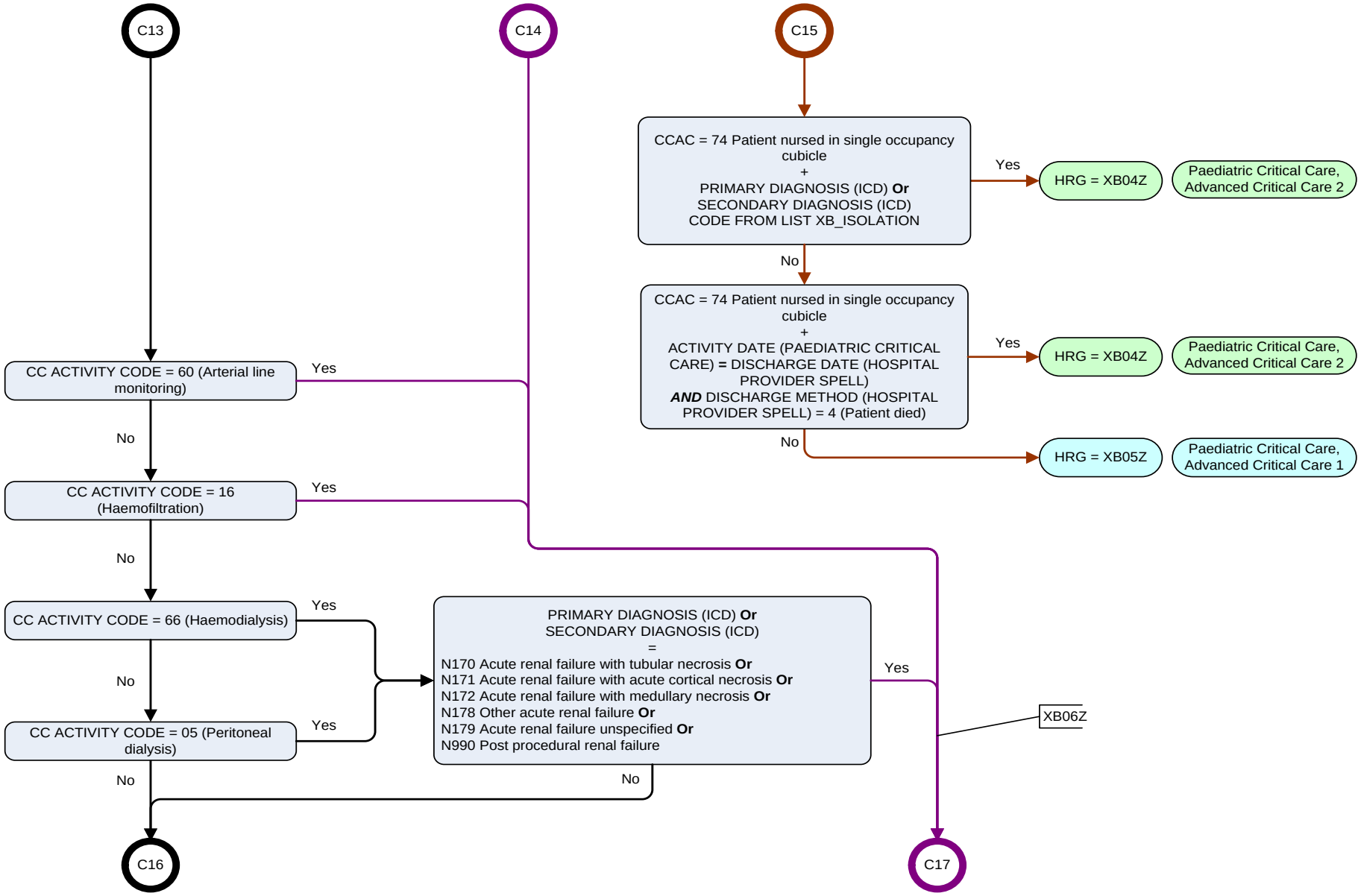


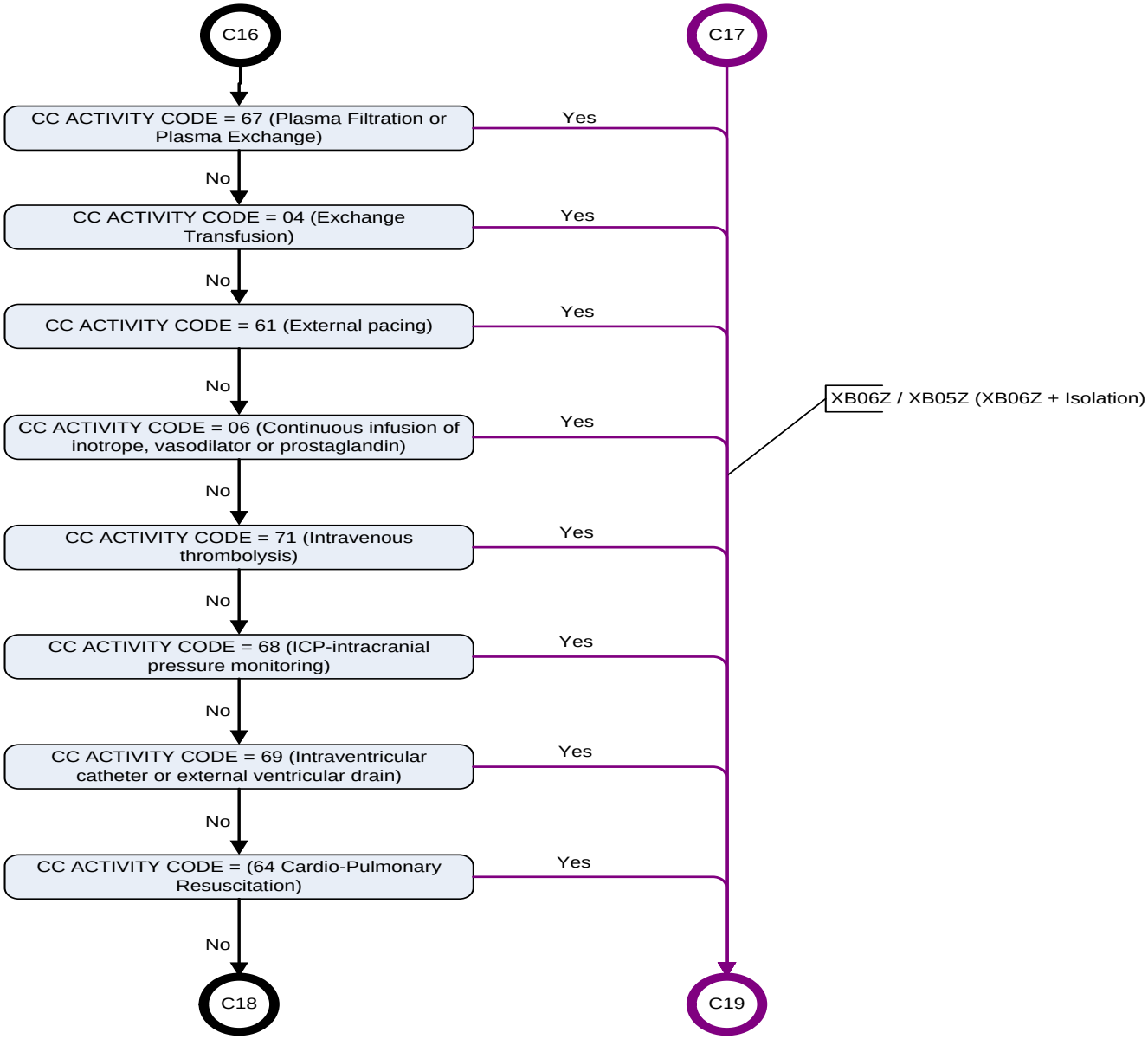


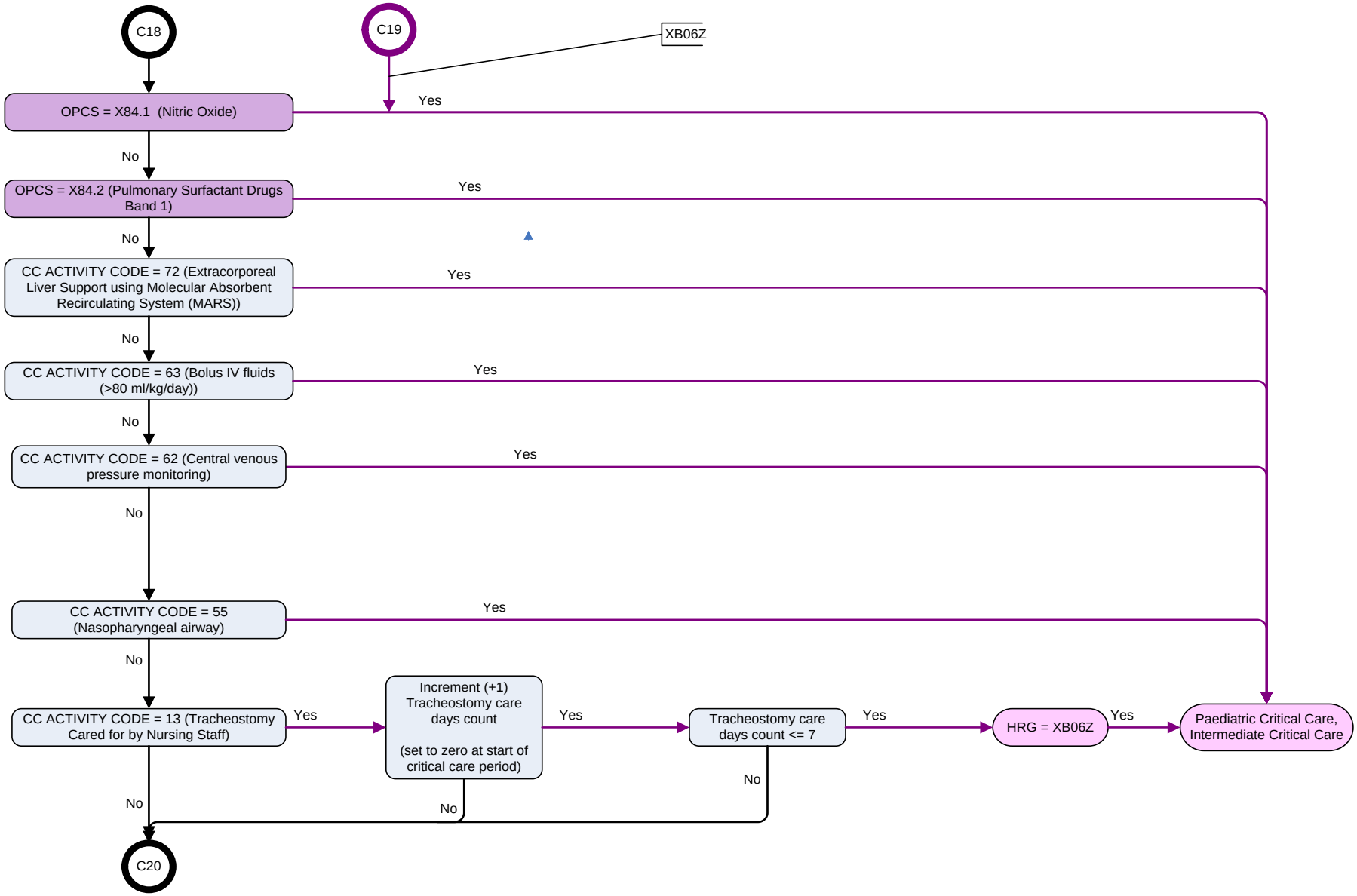


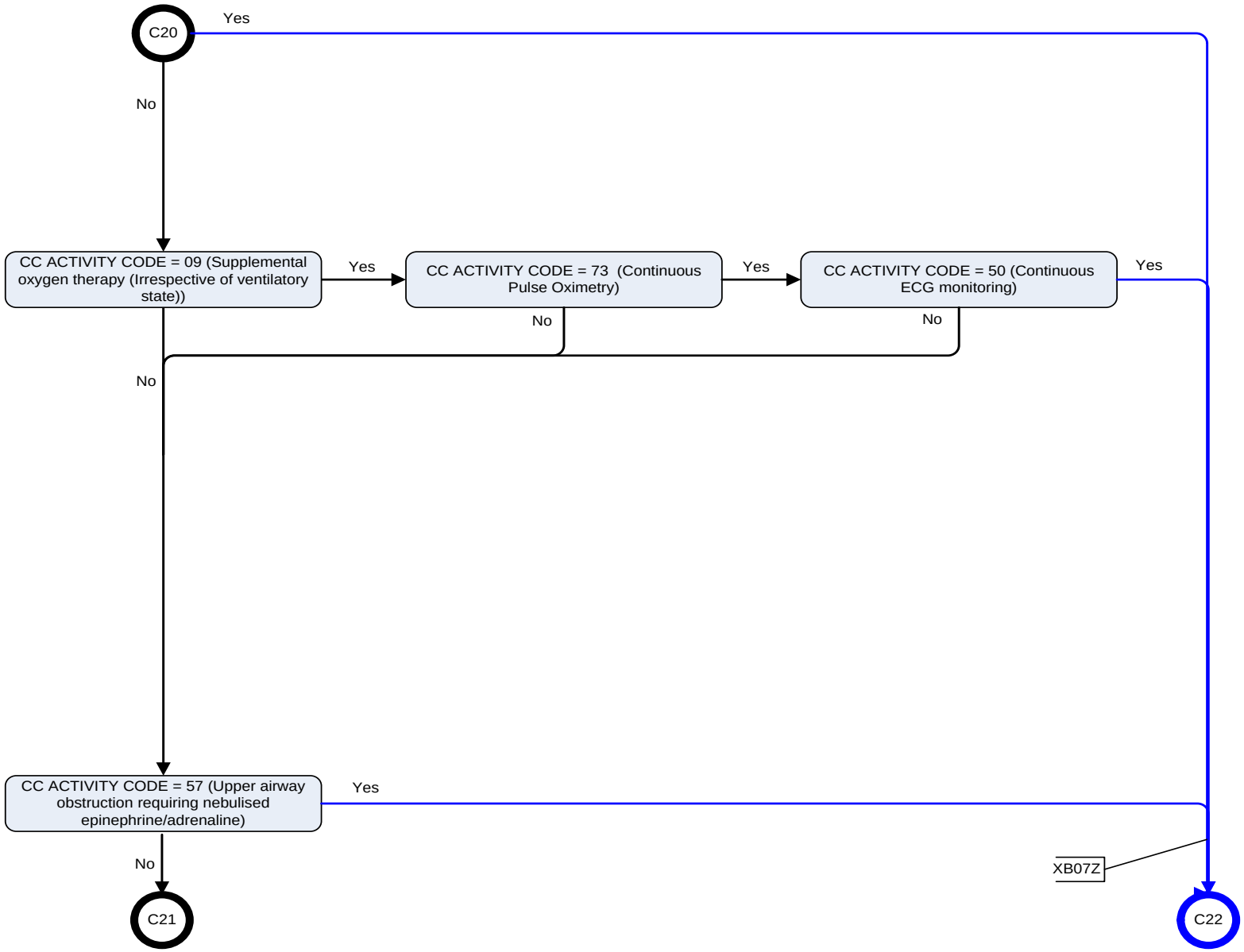


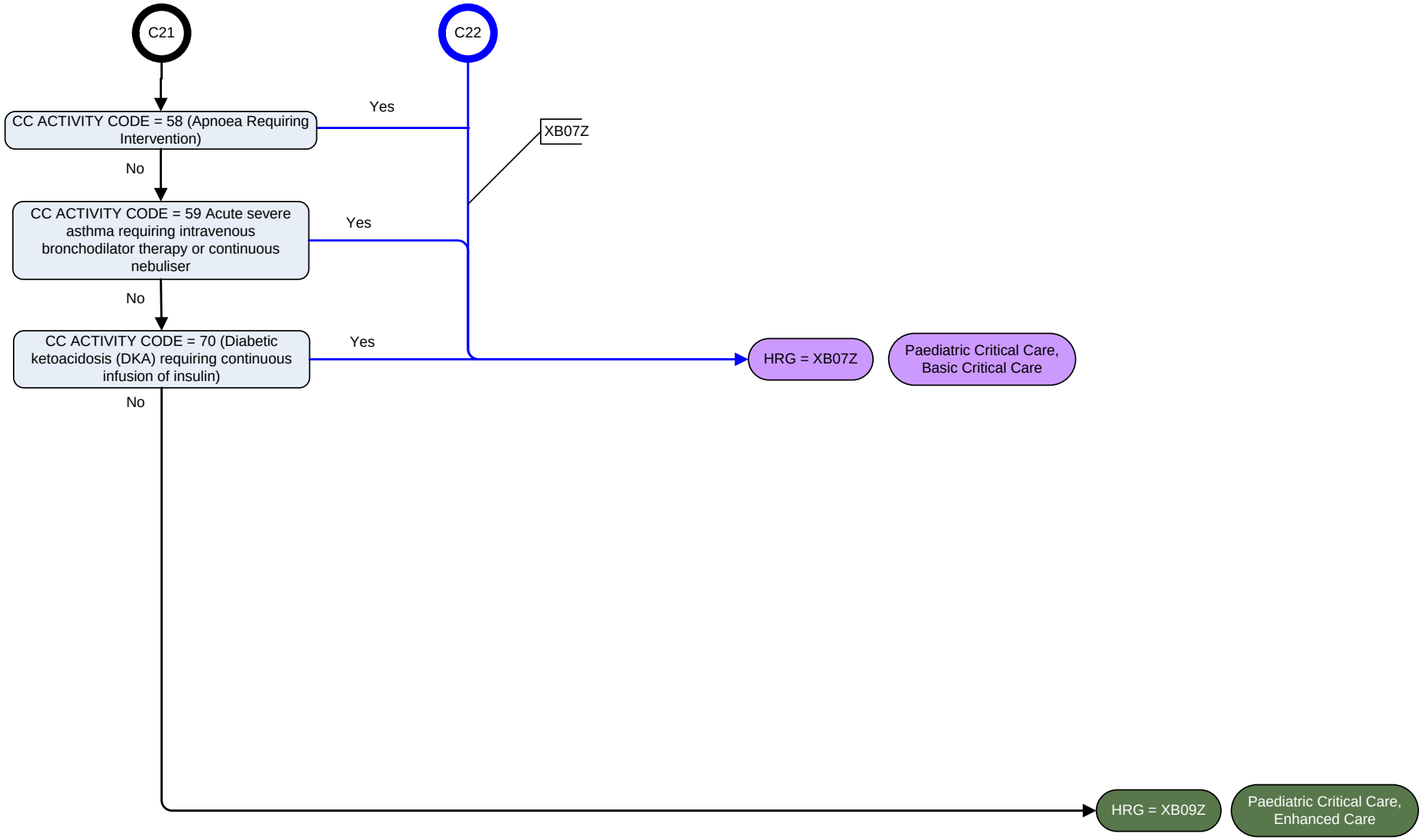












Subchapter XB : Appendix E : List XB_ISOLATION

ICD-10 Code	Label
A020	Salmonella enteritis
A021	Salmonella sepsis
A022	Localized salmonella infections
A030	Shigellosis due to Shigella dysenteriae
A031	Shigellosis due to Shigella flexneri
A032	Shigellosis due to Shigella boydii
A033	Shigellosis due to Shigella sonnei
A038	Other shigellosis
A039	Shigellosis, unspecified
A045	Campylobacter enteritis
A047	Enterocolitis due to Clostridium difficile
A080	Rotaviral enteritis
A082	Adenoviral enteritis
A090	Other and unspecified gastroenteritis and colitis of infectious origin
A099	Gastroenteritis and colitis of unspecified origin
A150	Tuberculosis of lung, confirmed by sputum microscopy with or without culture
A151	Tuberculosis of lung, confirmed by culture only
A152	Tuberculosis of lung, confirmed histologically
A153	Tuberculosis of lung, confirmed by unspecified means
A154	Tuberculosis of intrathoracic lymph nodes, confirmed bacteriologically and histologically
A155	Tuberculosis of larynx, trachea and bronchus, confirmed bacteriologically and histologically
A156	Tuberculous pleurisy, confirmed bacteriologically and histologically
A157	Primary respiratory tuberculosis, confirmed bacteriologically and histologically
A158	Other respiratory tuberculosis, confirmed bacteriologically and histologically
A159	Respiratory tuberculosis unspecified, confirmed bacteriologically and histologically
A370	Whooping cough due to Bordetella pertussis
A390	Meningococcal meningitis

ICD-10 Code	Label
A392	Acute meningococcaemia
A394	Meningococcaemia, unspecified
A400 with *M726-	Sepsis due to streptococcus, group A & Necrotizing fasciitis
B010	Varicella meningitis
B011	Varicella encephalitis
B012	Varicella pneumonia
B018	Varicella with other complications
B019	Varicella without complication
B020	Zoster encephalitis
B021	Zoster meningitis
B022	Zoster with other nervous system involvement
B023	Zoster ocular disease
B027	Disseminated zoster
B028	Zoster with other complications
B029	Zoster without complication
B050	Measles complicated by encephalitis
B051	Measles complicated by meningitis
B052	Measles complicated by pneumonia
B053	Measles complicated by otitis media
B054	Measles with intestinal complications
B058	Measles with other complications
B059	Measles without complication
B200	HIV disease resulting in mycobacterial infection
B201	HIV disease resulting in other bacterial infections
B202	HIV disease resulting in cytomegaloviral disease
B203	HIV disease resulting in other viral infections
B204	HIV disease resulting in candidiasis
B205	HIV disease resulting in other mycoses
B206	HIV disease resulting in Pneumocystis jirovecii pneumonia
B207	HIV disease resulting in multiple infections
B208	HIV disease resulting in other infectious and parasitic diseases
B209	HIV disease resulting in unspecified infectious or parasitic disease

ICD-10 Code	Label
B230	Acute HIV infection syndrome
B24X	Unspecified human immunodeficiency virus [HIV] disease
B300	Keratoconjunctivitis due to adenovirus
B301	Conjunctivitis due to adenovirus
B970	Adenovirus as the cause of diseases classified to other chapters
B974	Respiratory syncytial virus as the cause of diseases classified to other chapters
D70X	Agranulocytosis
D810	Severe combined immunodeficiency [SCID] with reticular dysgenesis
D811	Severe combined immunodeficiency [SCID] with low T- and B-cell numbers
D812	Severe combined immunodeficiency [SCID] with low or normal B-cell numbers
D848	Other specified immunodeficiencies
J100	Influenza with pneumonia, other influenza virus identified
J101	Influenza with other respiratory manifestations, other influenza virus identified
J120	Adenoviral pneumonia
J121	Respiratory syncytial virus pneumonia
J122	Parainfluenza virus pneumonia
J152	Pneumonia due to staphylococcus
J158	Other bacterial pneumonia
J204	Acute bronchitis due to parainfluenza virus
J205	Acute bronchitis due to respiratory syncytial virus
J210	Acute bronchiolitis due to respiratory syncytial virus
J218	Acute bronchiolitis due to other specified organisms
J219	Acute bronchiolitis, unspecified
L123	Acquired epidermolysis bullosa
T312	Burns involving 20-29% of body surface
T313	Burns involving 30-39% of body surface
T314	Burns involving 40-49% of body surface
T315	Burns involving 50-59% of body surface
T316	Burns involving 60-69% of body surface
T317	Burns involving 70-79% of body surface

ICD-10 Code	Label
T318	Burns involving 80-89% of body surface
T319	Burns involving 90% or more of body surface
T322	Corrosions involving 20-29% of body surface
T323	Corrosions involving 30-39% of body surface
T324	Corrosions involving 40-49% of body surface
T325	Corrosions involving 50-59% of body surface
T326	Corrosions involving 60-69% of body surface
T327	Corrosions involving 70-79% of body surface
T328	Corrosions involving 80-89% of body surface
T329	Corrosions involving 90% or more of body surface
T860	Bone-marrow transplant rejection
U049	Severe acute respiratory syndrome [SARS], unspecified
U821	Resistance to methicillin
U830	Resistance to vancomycin
Z943	Heart and lungs transplant status
Z944 with Z940	Liver transplant status & Kidney transplant status
Z944 with Z948	Liver transplant status & Other transplanted organ and tissue status

“*” Following current coding rules, an additional fifth character code is recorded with this code to identify the infectious agents. This will be recognised within the grouper design when determining the isolation criteria.

Subchapter XC – Adult Critical Care

Subchapter XC includes unbundled HRGs and covers adult critical care services. Other critical care services are addressed in Subchapters **XA Neonatal Critical Care** and **XB Paediatric Critical Care**.

Composition and Concepts	
Total HRGs	**7**
Total HRG Roots	**7**
Procedure-driven HRGs	N/A
Diagnosis-driven HRGs	N/A
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	No
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	No

Subchapter XC comprises HRGs specific to the numbers of organs the patient needs supported – from 0 to 6+ and the HRGs are generated from information within the Critical Care Minimum Data Set.

The adult critical care HRGs are unbundled from the rest of the patient episode. The HRGs are based on the data in the Critical Care Minimum Data Set and differentiate on the level of support required by the patient, which is determined by the number of organ systems supported.

Adult critical care HRGs are generated per Critical Care Period, i.e., one HRG is generated for each Critical Care Period and not on a per-diem basis, although Grouper output will also identify the numbers of days of each critical care period.

In addition to the Critical Care Unit Function Field, the following additional fields from the Critical Care MDS are used in the derivation of these HRGs. These fields are related to the organ support groups.

- Advanced Respiratory Support Days
- Basic Respiratory Support Days
- Advanced Cardiovascular Support Days
- Basic Cardiovascular Support Days
- Renal Support Days
- Neurological Support Days
- Dermatological Support Days
- Liver Support Days

Gastrointestinal support days do not contribute to the derivation of critical care HRGs, on clinical advice. The expected cost of providing this support is subsumed within other organ support groups.

Note that the field “Organ Support Maximum” is not used in grouping; the number of organ systems supported is calculated based on the existence of support days for each of the organ systems.

In addition to the fields listed above, the grouper requires Critical Care Start Date and Critical Care Discharge Date in the input data. These are used to calculate critical care days in the grouper output file. They are not used in HRG derivation.

Please see the grouping algorithm flowchart below for further information.

Subchapter XC : Worked Examples

Case A illustrates a patient having basic and advanced respiratory support.

Advanced Respiratory Support days	Basic Respiratory Support days	Advanced Cardiovascular support days	Basic Cardiovascular support days	Renal Support days	Neurological Support days	Dermatological Support days	Liver Support days	L2 Days	L3 Days	CC Start date	CC Discharge Date	Unit Function	Length of Stay	HRG4+	Comment
1	1	0	0	0	0	0	0	1	1	01 Jan 16	02 Jan 16	1	2	XC05Z	Two organ systems supported

Case B illustrates a patient having basic and advanced respiratory support plus basic and advanced cardiovascular support.

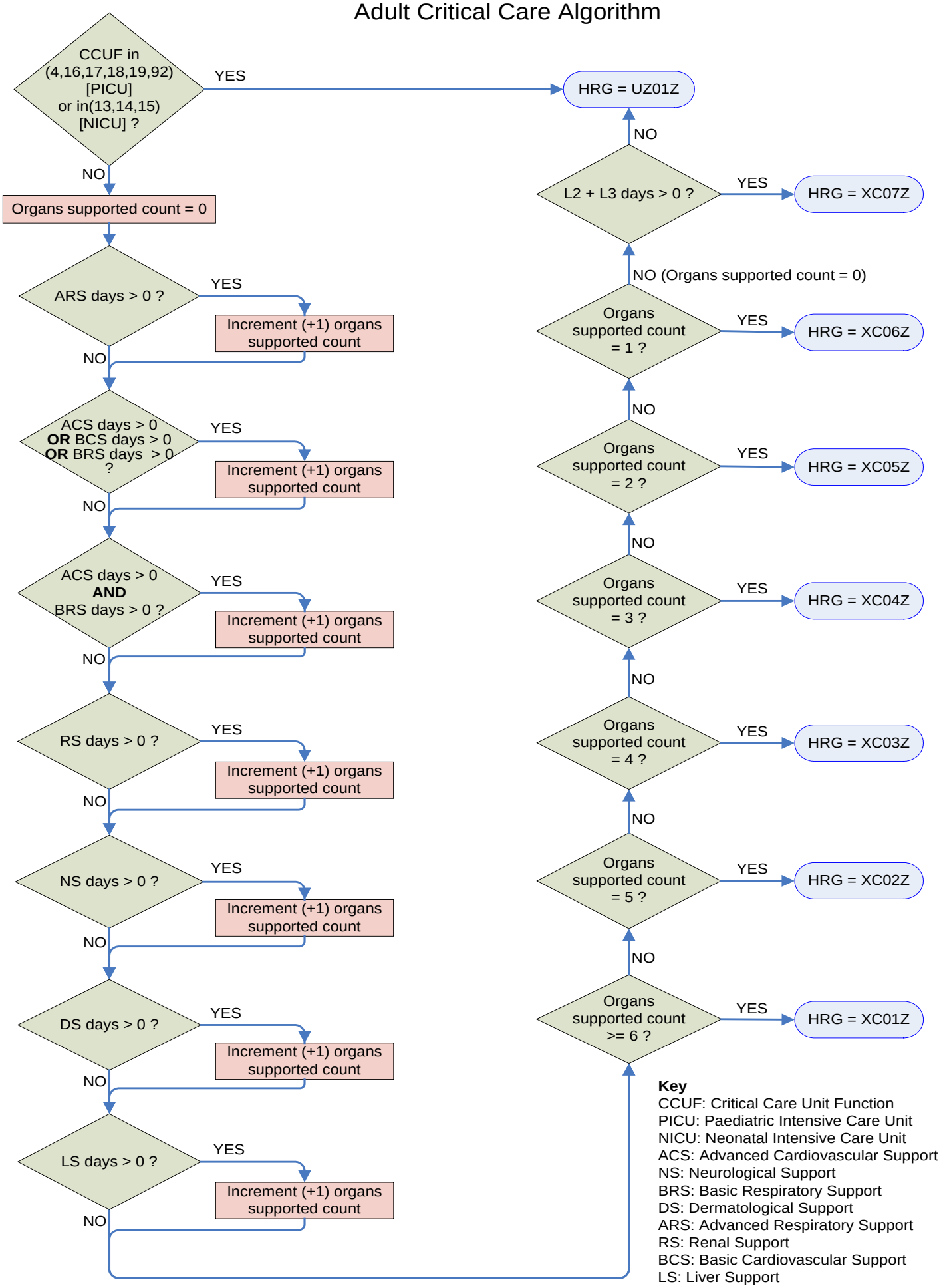
5	10	4	4	0	0	0	0	10	5	01 Jan 16	15 Jan 16	2	15	XC04Z	Three organ systems supported

Case C illustrates a patient having basic and advanced respiratory support plus liver support.

2	1	0	0	0	0	0	1	0	3	01 Jan 16	03 Jan 16	2	3	XC04Z	Three organ systems supported

Advanced Respiratory Support days	Basic Respiratory Support days	Advanced Cardiovascular support days	Basic Cardiovascular support days	Renal Support days	Neurological Support days	Dermatological Support days	Liver Support days	L2 Days	L3 Days	CC Start date	CC Discharge Date	Unit Function	Length of Stay	HRG4+	Comment
Case D illustrates a patient having basic and advanced cardiovascular support.															
0	0	5	5	0	0	0	0	10	0	01 Jan 16	10 Jan 16	1	10	XC06Z	One organ system supported
Case E illustrates a patient with no organ systems supported and neither Level 2 nor Level 3 care.															
0	0	0	0	0	0	0	0	0	0	01 Jan 16	05 Jan 16	1	5	UZ01Z	Data Invalid for Grouping
Case F illustrates a patient with no organ systems support days and Level 2 care.															
0	0	0	0	0	0	0	0	1	0	01 Jan 16	05 Jan 16	5	5	XC07Z	No organ systems supported

Adult Critical Care Algorithm



Subchapter XD – High Cost Drugs

Subchapter **XD High Cost Drugs** includes unbundled HRGs and covers a selected number of high cost drugs across all body systems, for patients of all ages.

The list of named high cost drugs was created by the Payment by Results team within the Department of Health (now NHS England and NHS Improvement pricing teams) in conjunction with advice from the High Cost Drugs Steering Group.

In Subchapter XD, there is a one-to-one mapping of high cost drug OPCS-4 codes to a high cost drug HRG.

Where multiple high cost drugs are recorded, multiple high cost drug HRGs will be generated, as one unbundled HRG is generated for each high cost drug code recorded in the patient record.

Composition and Concepts	
Total HRGs	**58**
Total HRG Roots	**58**
Procedure-driven HRGs	58
Diagnosis-driven HRGs	0
Age Splits	N/A
Complications and Comorbidities Splits	N/A
Intervention Splits	N/A
Multiple Procedures	N/A
Procedure Combination Codes	N/A
Diagnosis-qualified	N/A
Subsidiary Procedure-qualified	N/A
Length of Stay-qualified	N/A

Multiple doses of the same drug will only generate one unbundled high cost drug HRG because the current HRG4+ design cannot consider dosage, due to a lack of such information in the underlying OPCS-4 codes or other data fields within the Commissioning Data Sets.

Subchapter YA – Neurological Imaging Interventions

Subchapter **YA Neurological Imaging Interventions** covers neurological imaging interventions for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

This activity is now separate from the neurosurgery procedures mapped to Subchapter **AA Nervous System Procedures and Disorders** and the other non-vascular imaging interventions found in the other subchapters within Chapter **Y Vascular Procedures and Disorders and Imaging Interventions**.

The HRGs are specific to the type of intracranial and extracranial imaging intervention performed.

They also differentiate between categories of embolisation based on size and complexity, and take into account where multiple procedures have been performed.

Composition and Concepts	
Total HRGs	**10**
Total HRG Roots	**7**
Procedure-driven HRGs	10
Diagnosis-driven HRGs	0
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	No
Length of Stay-qualified	Yes

YA11Z Percutaneous Transluminal Arteriography, of Intracranial or Extracranial Blood Vessel employs maximum length of stay logic to ensure that relatively minor procedures such as cerebral angiography are not used to determine the HRG for a long stay medical patient, e.g. a person who has suffered a stroke.

Interactive CC splits are employed within many of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients.

Subchapter YD – Thoracic Imaging Interventions

Subchapter **YD Thoracic Imaging Interventions** covers thoracic imaging interventions for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

This activity is now separate from the open and endoscopic thoracic procedures mapped to Subchapter **DZ Respiratory System Procedures and Disorders**, and the other non-vascular imaging interventions found in other subchapters within Chapter **Y Vascular Procedures and Disorders and Imaging Interventions**.

The HRGs are specific to the type of thoracic imaging intervention performed and consist of HRGs specific to thoracic ablative procedures, biopsy, drainage and aspiration interventions.

Composition and Concepts	
Total HRGs	**5**
Total HRG Roots	**5**
Procedure-driven HRGs	5
Diagnosis-driven HRGs	0
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	Yes

With the exception of **YD01Z Percutaneous Ablation of Lesion of Respiratory Tract**, all of the HRGs within this subchapter employ maximum length of stay logic to ensure that relatively minor procedures such as thoracentesis are not used to determine the HRG for a long stay medical patient, e.g. a person who has tuberculosis.

Subchapter YF – Gastrointestinal Imaging Interventions

Subchapter **YF Gastrointestinal Imaging Interventions** covers gastrointestinal imaging interventions for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

This activity is now separate from the open and endoscopic digestive system procedures mapped to Subchapter **FZ Digestive System Procedures and Disorders**, and the other non-vascular imaging interventions found in the other subchapters within Chapter **Y Vascular Procedures and Disorders and Imaging Interventions**.

The HRGs are specific to the type of gastrointestinal imaging intervention performed, and consist of HRGs specific to the insertion of gastrostomy and jejunostomy tubes and the drainage of abdominal abscesses.

Composition and Concepts	
Total HRGs	**8**
Total HRG Roots	**4**
Procedure-driven HRGs	8
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

The drainage of abdominal abscess HRGs employ multiple procedure logic to take account of the additional expected resource usage of patients that undergo multiple drainage interventions.

The insertion of gastrostomy and jejunostomy HRGs within this subchapter employ maximum length of stay logic to ensure that relatively minor procedures such as these are not used to determine the HRG for a long stay medical patient, e.g. a person who has Crohn’s disease.

Interactive CC splits are employed within the majority of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients.

Subchapter YG – Hepatobiliary and Pancreatic Imaging Interventions

Subchapter **YG Hepatobiliary and Pancreatic Imaging Interventions** covers hepatobiliary and pancreatic imaging interventions for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

This activity is now separate from the open and endoscopic hepatobiliary and pancreatic procedures mapped to Subchapters **GA Hepatobiliary and Pancreatic System Open Procedures** and **GB Hepatobiliary and Pancreatic System Endoscopic Procedures**, respectively, and the other non-vascular imaging interventions found in the other subchapters within Chapter **Y Vascular Procedures and Disorders and Imaging Interventions**.

Composition and Concepts	
Total HRGs	**16**
Total HRG Roots	**10**
Procedure-driven HRGs	16
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

The HRGs are specific to the type of hepatobiliary and pancreatic imaging interventions performed, and include HRGs specific to ablative procedures, the insertion of stents, drainage and biopsies.

The insertion of stents and drainage HRGs employ multiple procedure logic to take account of the additional resource usage of patients that have multiple stents inserted or undergo stent insertion with drainage. The stent HRGs also differentiate on type of stent i.e. standard or metal

Several HRGs within this subchapter employ maximum length of stay logic to ensure that relatively minor procedures such as biopsies are not used to determine the HRG for a long stay medical patient, e.g. a person with liver failure.

Interactive CC splits are employed within many of the HRGs to more appropriately differentiate expected resource usage between routine and complex patients.

Subchapter YH – Musculoskeletal Imaging Interventions

Subchapter **YH Musculoskeletal Imaging Interventions** covers musculoskeletal imaging interventions for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings. However, it does not include any activity included in a Pain Management Programme found within Subchapter **AB Pain Management**.

Composition and Concepts	
Total HRGs	**8**
Total HRG Roots	**8**
Procedure-driven HRGs	8
Diagnosis-driven HRGs	0
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	No
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	No
Length of Stay-qualified	Yes

The activity mapped to this subchapter is now separate from the spinal and orthopaedic procedures mapped to Chapter **H Musculoskeletal System**, and the other non-vascular imaging interventions found in the other subchapters within Chapter **Y Vascular Procedures and Disorders and Imaging Interventions**.

The HRGs are specific to the type of musculoskeletal imaging intervention performed, and include HRGs specific to ablative procedures, vertebroplasty, aspiration and biopsies.

The vetebroplasty HRGs are differentiated based on levels of spine – one; two or three or more levels.

With the exception of the vertebroplasty and ablative procedure HRGs, all HRGs within this subchapter employ maximum length of stay logic to ensure that relatively minor procedures such as biopsies are not used to determine the HRG for a long stay medical patient, e.g. a person who has metastatic bone cancer.

Subchapter YJ – Breast Imaging Interventions

Subchapter **YJ Breast Imaging Interventions** covers breast imaging interventions for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

This activity is now separate from the open breast procedures mapped to Subchapter **JA Breast Procedures and Disorders**, and the other non-vascular imaging interventions found in the other subchapters within Chapter **Y Vascular Procedures and Disorders and Imaging Interventions**.

The HRGs are specific to the type of breast imaging intervention performed, and include HRGs specific to various types of biopsies and aspirations.

Composition and Concepts	
Total HRGs	**12**
Total HRG Roots	**12**
Procedure-driven HRGs	12
Diagnosis-driven HRGs	0
Age Splits	No
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

All of the HRGs in this subchapter employ multiple procedure logic to take account of the additional resource usage of patients that undergo multiple biopsies or aspirations, e.g. bilateral interventions.

All HRGs within this subchapter have maximum length of stay logic to ensure that relatively minor procedures such as biopsies are not used to determine the HRG for a long stay medical patient, e.g. a person who has metastatic breast cancer.

Subchapter YL – Urological Imaging Interventions

Subchapter **YL Urological Imaging Interventions** covers urological interventions for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

This activity is now separate from the open urological procedures mapped to Subchapter **LB Urological and Male Reproductive System Procedures and Disorders**, and the other non-vascular imaging interventions found in the other subchapters within Chapter **Y Vascular Procedures and Disorders and Imaging Interventions**.

These new HRGs are specific to the type of urological imaging intervention performed, and include HRGs specific to biopsies and ablative, insertion of stent and nephrostomy procedures.

Composition and Concepts	
Total HRGs	**8**
Total HRG Roots	**7**
Procedure-driven HRGs	8
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	No
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	No
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

The insertion of stent and nephrostomy HRGs employ multiple procedure logic to take account of the additional resource usage of patients that have multiple stents inserted or undergo multiple drainage interventions, including bilateral procedures.

With the exception of the ablative procedure HRGs, all HRGs within this subchapter employ maximum length of stay logic to ensure that relatively minor procedures such as insertion of nephrostomy are not used to determine the HRG for a long stay medical patient, e.g. a person who has chronic kidney disease.

Subchapter YQ – Vascular Open Procedures and Disorders

Composition and Concepts	
Total HRGs	**60**
Total HRG Roots	**27**
Procedure-driven HRGs	49
Diagnosis-driven HRGs	11
Age Splits	No
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

Subchapter **YQ Vascular Open Procedures and Disorders** covers vascular open procedures for patients of all ages and adult disorders. It includes activity undertaken in inpatient, day case and non-admitted care settings.

This activity is now separate from the interventions that map to **YR Vascular Imaging Interventions**.

The HRGs within this Subchapter are split based on the site of the blood vessel, e.g. abdominal, lower limb, upper limb; however, there are also procedure-specific HRGs, e.g. for amputation procedures and varicose vein surgery.

Multiple procedure logic is employed within the majority of HRGs within this subchapter.

In addition, escalation to an HRG with a higher expected resource usage also occurs, where appropriate, if a procedure is revisional or undertaken bilaterally.

The minor procedure HRGs, e.g. varicose vein surgery and vascular access procedures, have maximum length of stay logic to ensure that minor procedures such as arteriovenous (AV) fistula insertion are not used to determine the HRG for a long stay medical patient, e.g. a person who has chronic kidney disease.

There are two adult diagnosis-driven HRG roots within this subchapter; one specific to deep vein thrombosis (DVT) and another that covers all other peripheral vascular disease.

Interactive CC splits are employed within the majority of the HRGs within this subchapter – up to a maximum of six levels – to more appropriately differentiate expected resource usage between routine and complex patients.

All diagnosis-driven activity relating to the treatment of children (aged 18 years and under) groups to an HRG in **Chapter P Diseases of Childhood and Neonates**, in line with the requirements of the Casemix Design Framework.

Subchapter YR – Vascular Imaging Interventions

Subchapter **YR Vascular Imaging Interventions** covers vascular imaging interventions for patients of all ages. It includes activity undertaken in inpatient, day case and non-admitted care settings.

This activity is now separate from the open vascular procedures and non-vascular imaging interventions found in the other subchapters within Chapter **Y Vascular Procedures and Disorders and Imaging Interventions**.

This subchapter consists of HRGs specific to endovascular aortic aneurysm repair (EVAR), angioplasty and stenting, embolisation, varicose vein interventions, vascular access procedures and other percutaneous diagnostic or therapeutic vascular interventions.

Composition and Concepts	
Total HRGs	**58**
Total HRG Roots	**37**
Procedure-driven HRGs	58
Diagnosis-driven HRGs	0
Age Splits	Yes
Complications and Comorbidities Splits	Yes
Intervention Splits	No
Multiple Procedures	Yes
Procedure Combination Codes	Yes
Diagnosis-qualified	Yes
Subsidiary Procedure-qualified	Yes
Length of Stay-qualified	Yes

Multiple procedure logic is employed within the majority of therapeutic HRGs within this subchapter. In addition, escalation to a higher expected resource HRG also occurs where there are certain types of stents or stent grafts used, depending on type of aneurysm, and where appropriate if a procedure is undertaken bilaterally.

Age splits are employed in several of the vascular access HRGs: there are specific HRGs for adult activity (19 years and over) and others for paediatric activity (18 years and under).

The minor procedure HRGs, e.g. varicose vein interventions, vascular access procedures and diagnostic imaging interventions, have maximum length of stay logic to ensure that minor procedures such as CV catheter insertion are not used to determine the HRG for a long stay medical patient, e.g. a person who is receiving treatment for cancer.

Interactive CC splits are employed within several of the therapeutic vascular imaging intervention HRGs within this subchapter – up to a maximum of four levels – to more appropriately differentiate expected resource usage between routine and complex patients.

The Documentation Suite - Payment

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 **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