Philippine Diagnosis-Related Groups Implementation Manual

Details of the DRG Grouper

Version 1

Prepared by The Philippine Institute for Development Studies - Health Economics and Finance Program
for the Philippine Health Insurance Corporation
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Glossary

ACR	All Case Rates
BR	Base rate
CC	Complication and comorbidity
CF	Claims form
DC	Disease cluster
DRG	Diagnosis-related group
GB	Global budget
HF	Health facility
ICD	International classification of diseases
LOS	Length of stay
MDC	Major diagnostic category
PCCL	Patient clinical complexity level
PDC	Procedure or diagnosis cluster
PDx	Primary diagnosis
PPM	Provider payment mechanism
RVS	Relative value scale
RW	Relative weight
SDx	Secondary diagnosis
TDRG	Thailand Diagnosis-Related Group

1. Introduction: Diagnosis-Related Groups

1.1. Background

A **provider payment mechanism (PPM)** is the means by which healthcare purchasers pay healthcare providers for rendering healthcare services.[1] PPMs are powerful health financing tools that can incentivize efficient, equitable, and transparent resource and service allocation in a country's healthcare system.

Diagnosis-related groups (DRGs) is one type of case-based provider payment system that pays health providers based on the number and types of patients they serve. DRGs are defined by two components: (1) a **scheme that classifies patients with similar clinical characteristics and resource use into a *diagnosis-related group*** and (2) a **payment amount associated with each DRG** that compensates providers based on the average amount per case in the DRG.

Each hospital admission for a patient represents one case. A case is assigned to a mutually exclusive category called a **"group,"** such that patients in a group have **"clinical homogeneity" or similar clinical presentations** such as diagnoses and complications **and "economic homogeneity" or similar hospital resource usage** for case treatment or management. For instance, two patients admitted for coronary artery bypass surgery may be assigned to the same group, as they are likely to use the same amount of hospital resources.[2] However, if one of the patients has more comorbidities, they may be assigned to a different group, **as a more complicated case requires more resources to manage**.

Each group has a corresponding fixed payment coefficient, called a **"relative weight**" **(RW)** reflecting the group's intensity of resource use relative to that of all cases. Groups must have a **sufficient number of cases (i.e., statistically representative)** to compute payment rates for a DRG that accurately reflect average resource use. This may also be referred to as "cost weight."

To determine how much hospitals are paid for a case, the RW for the DRG is multiplied by an amount representing the average cost per inpatient case, or **"base rate" (BR).**[3] Cases that fall into high-intensity groups (RW >1) are paid above the BR while low-intensity groups (RW <1) are reimbursed below the BR. The fee can also be adjusted according to an **adjustment factor** based on additional patient or provider characteristics to account for variations in costs of hospital inputs (**Figure 1**).

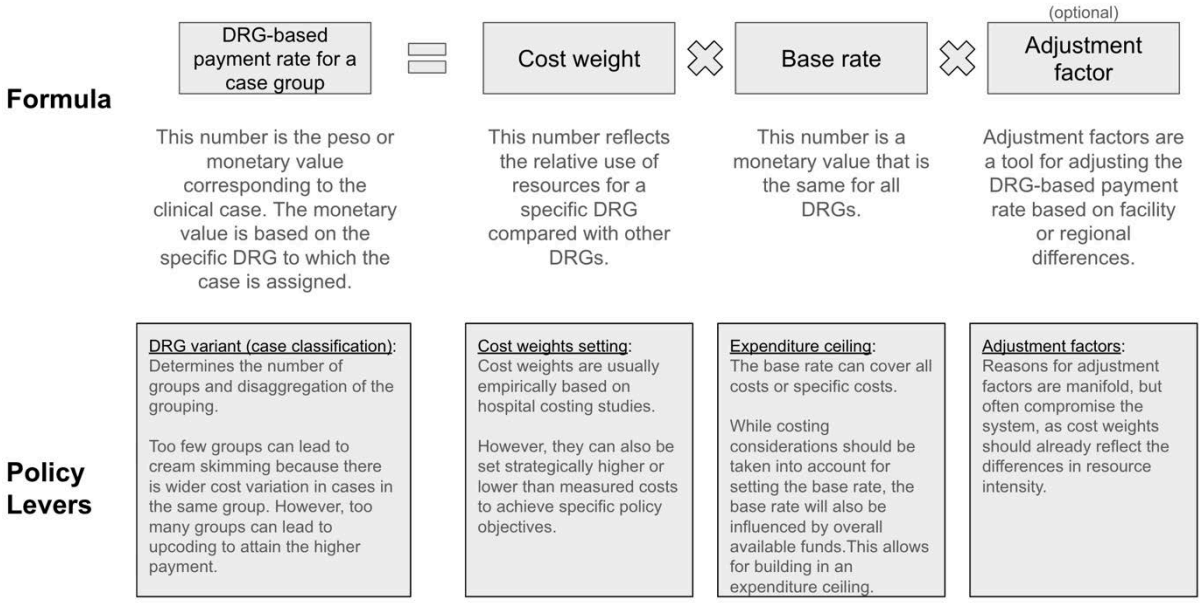


Figure 1. Core Design Elements of DRGs

Adapted from Mathauer I, Wittenbecher F. Hospital payment systems based on diagnosis-related groups: experiences in low- and middle-income countries. Bull World Health Organ. 2013;91(10):746-756A. doi:10.2471/BLT.12.115931

The complexity of factors considered when classifying admissions into DRGs necessitates a **grouping algorithm,** or set of rules and steps, to ensure the grouping method is the same across all cases. Countries can have different grouping logics to reflect differences in the health system, services covered, treatment guidelines, and clinical coding practices. Consequently, DRGs require developed health information systems that routinely collect patient data following **standard coding conventions**. **Grouping software** is developed to group cases and calculate payments to providers **by implementing the rules of the algorithm**.

In the Philippines, the Philippine Health Insurance Corporation (PhilHealth), is the national social health insurer and the **national strategic purchaser of individual-based health services** under Section 18 of Republic Act (RA) 11223 or the Universal Health Care (UHC) Law of 2019.[4] Mandated by the UHC law, PhilHealth must shift to a DRG-based global budget (DRG-GB) payment system. In DRG-GB, DRGs are paired with another PPM, the prospective **Global Budget (GB)**. Briefly, GB is a spending limit or target for provided hospital services set at the beginning of the fiscal period.[5] **One main basis for the budget would be the total DRG-computed payments for the period**. The country's shift to DRG-GB is also part of PhilHealth's broader agenda for PPM reform (**Figure 2**).[6]

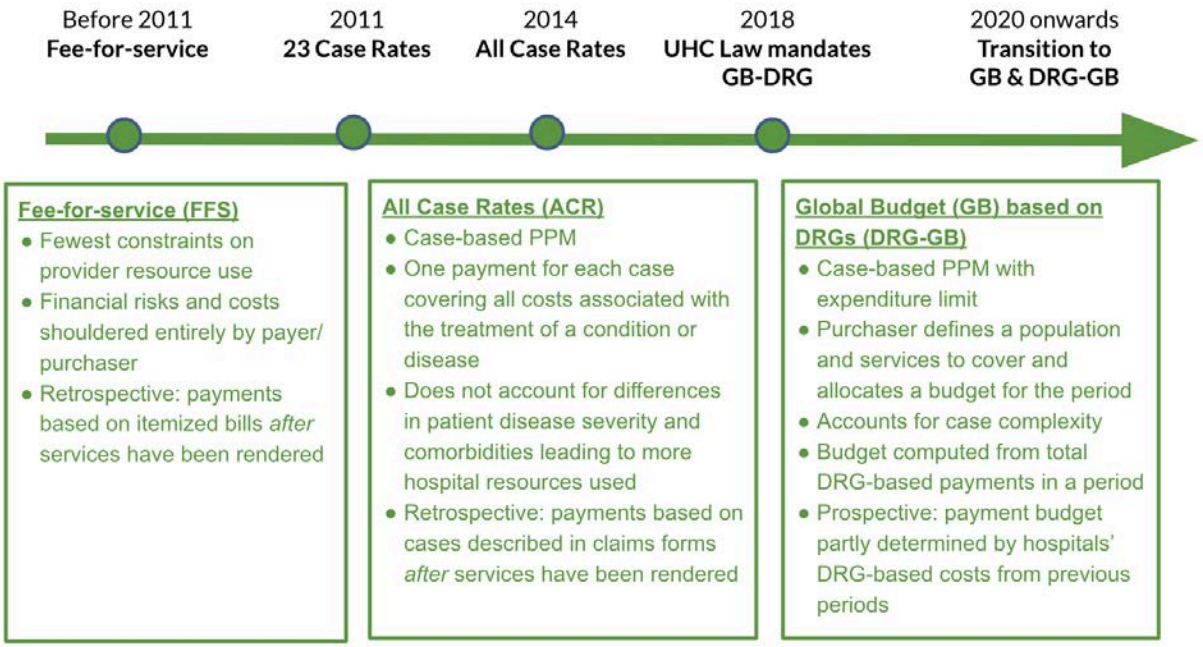


Figure 2. Transitions in PhilHealth PPMs

When PhilHealth was established in 1995, it reimbursed providers using a fee-for-service (FFS) scheme.[6] In 2011, PhilHealth developed their **All-Case Rates (ACR)** payment system to address the issues of over-provision of health services encouraged by the FFS model common in many low-and-middle income countries.[7] By bundling the costs of care for one diagnosis or procedure into a single rate, ACR was envisioned to lower costs and expand coverage to more enrollees.

However, ACR does not account for comorbidities and relies on PhilHealth to manually adjust payment rates to respond to the changing healthcare landscape (**Table 1, next page**).[6] Rates have not been systematically adjusted since 2014. This has led to inadequate financial protection concurrent with ballooning costs, as patients with more severe illness and comorbidities receive only 30% to 60% of the intended financial support and pay the rest out-of-pocket.[6]

PhilHealth's first step of comprehensive provider-payment reform is the development of the PhilHealth DRG system. PhilHealth has adapted the grouping logic of the Thailand DRG (TDRG) version 5 (v5) with technical support from the Thailand CaseMix Centre (TCMC).[8–11] The TDRGs cover a wide and complex case mix, from multiple treatment procedures for a case to subacute care and psychiatric care. **In the future, after a mature DRG system is established, PhilHealth will use it to inform their provider payments, budget-setting, and ensuring quality, efficiency, and equity improvements.**

Table 1. Rationale for Shifting from ACR to DRG-GB Payment Mechanisms

UHC Goals	All-Case Rates	DRG-GB
Expand Financial Coverage among Filipinos *Payment rates are appropriate to the health services being provided*	**Characteristics:** Does not account for complications and comorbidities **Effects:** Providers are paid the same regardless of resources needed to treat more complicated cases; Patients with more severe cases are disadvantaged with lower financial protection because they pay higher out-of-pocket amounts	**Characteristics:** Accounts for complications, comorbidities, and cost differences due to hospital and regional characteristics **Effects:** Payment rates closely reflect actual costs of treatment; Patients with severe cases have increased financial protection
Respond to Changing Healthcare Needs *Payment rates are adjusted over time, based on changing health system factors and new data*	**Characteristics:** Payment rates were based on a limited data sample and have not been adjusted since 2014, even for inflation **Effects:** Payment rates are outdated and do not reflect current costs of treatment	**Characteristics:** Payment rates and grouping algorithm updated regularly, based on actual data of hospital case-mix and activity **Effects:** Payment rates are responsive to trends and needs of Filipinos within an ever-evolving healthcare system
Incentivize Quality and Efficiency in Service Delivery *Motivate providers to provide quality care with fewer resources*	**Characteristics:** Low reimbursement rates with no co-payment limit or out-of-pocket limit **Effects:** Providers may overcharge patients, with no incentives to improve quality	**Characteristics:** Prospective budget based on resource use with better rates and co-payment policy, making out-of-pocket predictable. Can be paired with measures that incentivize quality of care. **Effects:** Fair reimbursements based on actual activities; Providers tasked to make the most of their resources

1.2. Objectives of DRG-GB PPM Reform

The design components of the DRG-GB system have made it favored among countries seeking to promote UHC through **(a) hospital efficiency, (b) equitable resource allocation, and (c) fair and transparent reimbursements**.[6,12] PhilHealth's PPM reforms have these same objectives (**Table *2***) as it moves to overcome the weaknesses of the current retrospective ACR system and work for the attainment of UHC goals.[13–15]

Table 2. Objectives of PPM Reform in the Philippines

Health Financing Arrangements	UHC Intermediate Objectives	UHC Goals
Revenue Collection: how funds for healthcare are collected	**Efficient resource use:** Maximizing resources to achieve higher level results for the same inputs. Not simple cost-containment or accumulating more savings from the global budget.	**Universal Financial Protection:** Filipinos are able to access necessary healthcare services without financial hardship
Resource Pooling: how funds for healthcare are accumulated	**Transparency and Accountability:** The population are empowered to demand services that have been promised. Providers and purchasers are held accountable by presenting how the global budget is spent.	**Equitable Resource Distribution:** Filipinos are able to access appropriate health care services according to their needs
Services Purchasing: how funds for healthcare are allocated ***(where PPM reform is situated)***	**Equitable Resource Distribution:** The allocation of budgets to healthcare providers are based on validated costing methodologies. The PPM should not replicate historical inequities that disadvantage providers of low-income areas or indigent populations.	**Quality Care:** Filipinos are able to receive at least an acceptable minimum standard of care in a health system that strives to improve upon current health outcomes

1.3. Features and Scope of PhilHealth DRGs

Under the UHC Law, all Filipinos are automatically enrolled into PhilHealth. PhilHealth pays a portion of their healthcare expenditures, while the remaining charges are paid by the individual as a co-payment. With the PPM reform, PhilHealth envisions a national healthcare provider payment system that is informed by **validated costing frameworks and methodologies**. PhilHealth seeks to limit out-of-pocket expenditures through **fixed co-payments**, and fund healthcare through a prospective **global budget** that is responsive to the changing healthcare needs of the population and incentivizes the efficient use of limited resources to produce better quality care.[16] **DRGs are at the core of PhilHealth's provider payment system (Figure 3).**

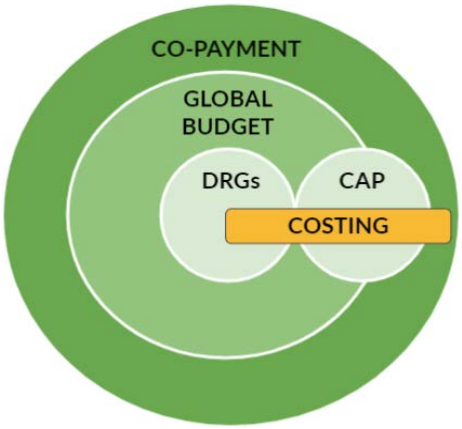


Figure 3. PhilHealth provider-payment reforms for Universal Health Care

The DRG payment system is for **inpatient care** in PhilHealth-accredited hospitals. Currently, **inpatient services** refer to diagnoses and procedures when beneficiaries are admitted to a hospital for at least 24 hours.[8] Hospital "day cases" or short-stay hospitalizations are under considerations by PhilHealth and may be incorporated into DRGs in the Philippines as in other countries like Thailand.[17]

DRGs will **not** be used in calculating payments for **outpatient services,** "health services that do not require the admission and confinement of patients in a health facility for case management."[18] The global budget for outpatient services is based on **capitation**, a different PPM where providers are prospectively paid a fixed amount to cover a defined set of services for each enrolled "head" within a fixed period of time, regardless of the actual goods and services provided.[18] Outpatient services include those from PhilHealth's Comprehensive Outpatient Benefit Package (Konsulta+). Outpatient services not included in Konsulta+ are covered by prospectively determined Standalone Outpatient Packages.[18]

In 2024, PhilHealth initiated **Shadow Billing** to prepare for the integration of DRGs in the national PPM**.**[19] Under Shadow Billing, **PhilHealth will continue to reimburse healthcare facilities using the ACR** while using submitted claims data to validate the DRG grouper and calculate theoretical DRG payment rates. These processes will occur only in the background and will not affect benefit payments for 2024.

1.4. Overview of the DRG Claims Process

Figure 4 illustrates how hospital claims will be processed under a **fully functioning DRG-GB system**. A detailed description of the payment process under the DRG-GB system will be covered in a separate forthcoming document.

Patient Admission. When a patient is admitted, physicians record patient information in their electronic medical record (EMR). Information includes patient age, sex, relevant medical history (i.e., comorbidities), clinical presentation, primary and applicable secondary diagnoses, procedures, and admission details such as date and time of admission and discharge.

Clinical Coding. Clinical coders translate the EMR data using standard coding guidelines to fill out PhilHealth's Claims Form 5 and submit it electronically. Coding rules are based on the International Classification of Diseases (ICD) and national clinical coding guidelines developed with medical societies.

DRG Classification. Each case is assigned to a DRG following the grouping logic of the Philippine DRG grouper software. Each DRG has a corresponding relative weight representing the costs of treatment relative to the costs for other DRGs.

Payment Amount Calculation. The monetary value for each case is determined by multiplying the relative weight of its DRG with the base rate of admissions, and adjusting for other patient or provider characteristics (adjustment factors).

Payment. The DRG claims submissions inform part of PhilHealth's annual GB for each hospital for the coming fiscal year in conjunction with other policies and financial targets.

Hospitals are paid their share of the GB at the beginning of the fiscal year as frontloaded funds to act as seed money to cover initial costs needed for service delivery. The amount accounts for their case-mix index, patient volume, and patient and provider characteristics. Approved claims are debited from the facility's GB. Costs not covered by DRGs, including amenities/fringe benefits (e.g., refrigerators, televisions, etc.) are covered by fixed co-payments charged to patients.

Figure 4. Overview of the DRG-GB Payment Process

1.5. Purpose and Scope of this DRG Implementation Manual

This manual is meant to guide internal PhilHealth stakeholders and inform health providers, medical and surgical specialty societies, clinical coders, public health researchers, and interested members of the general public about the procedures and processes of the new **DRGs payment system** in the Philippines.

It is a primer on the Philippine DRGs that aims to explain the following:

- DRG-based payment systems,
- Relevant PhilHealth circulars and policies surrounding the shift to DRGs in the Philippines, and
- The grouping process for how patient claims are assigned to a DRG

This manual is a living document that will be revised iteratively as PhilHealth and its technical partners for provider-payment continuously improve the grouping algorithm and rate-setting process. This manual will be updated regularly with the updating of the DRG payment rates, which are done in the same cycle.

This manual is organized as follows vis-a-vis the general steps of DRG implementation:

- **Chapter 1** gives a background of the shift to DRGs, a broad explanation of what DRGs are, and provides an overview of the claims process under the DRG system.
- **Chapter 2** covers information about why we are adapting the TDRG v5 and the new PhilHealth claim form and the e-claims platform, which collect data for the DRG grouper.
- **Chapter 3** explains the TDRG v5 grouping algorithm (logic). It provides a step-by-step explanation of how the DRG grouper assigns cases to groups, and presents detailed examples to illustrate.
- Lastly, the **Annexes** compile supplementary material on the following material:
    - **Annex A.** Related PhilHealth Circulars and Policies
    - **Annex B.** DRG Grouper Technical Notes and Grouping Algorithms
    - **Annex C.** Directory of Appendices for DRG Grouping Implementation

GB will not be discussed in any further detail in this document, but in a forthcoming document after PhilHealth policy on the GB is finalized and released.

2. Essential Data Requirements and eClaims Platform

This section describes the data necessary for DRG grouping and how they will be collected through PhilHealth's eClaims Platform.

2.1. Note on Adapting Thailand DRG version 5

The Philippine DRG Grouper is adapted from the **Thailand DRG version 5 (TDRG v5)**. The TDRG v5 intellectual property (IP) belongs to the Thailand National Health Security Office (NHSO). PhilHealth acquired permission to use TDRG v5 IP from the NHSO for Philippine DRG development. Most countries adopt and adapt technical design elements from only a handful of countries that developed their own DRG payment systems, because the process of development is costly and time-intensive.[20,21] The Thai grouper was initially adapted from the United States (US) Medicare system's National DRG Program, but starting in Version 3 Thailand adapted the complexity splitting of the Australian DRG. Version 5 has been further refined into Version 6 and work is ongoing to develop Version 7. TDRG v5 has also been adapted in Vietnam and Indonesia.[11]

TDRG v5 has 2,450 groups. Codes for diseases are assigned based on the **Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10)** developed by the World Health Organization (WHO) and the Thai modification (ICD-10-TM) from 2010. Codes for procedures are assigned based on the **Ninth Revision of the ICD (ICD-9-CM)** developed by the US Centers for Medicaid and Medicare Services (CMS). TDRGs cover a wide and complex case mix, from multiple treatment procedures for a disease to subacute care and psychiatric care.[10] Payment parameters are calculated using hospital charge data.

Similarities between the Philippine and Thai health systems make TDRGs appropriate for the Philippines. Both have decentralized governments and healthcare functions are devolved to local governments.[22,23] Thailand adopted DRG payment the US DRGs for cost-containment as part of UHC reforms in the early 2000s, transitioning away from a FFS payment model.[24,25] As such, the TDRGs are designed to serve as part of the basis of the Thai GB. Because of differences between Thailand and Australia, the Thai grouper was refined to account for differences in each country's primary coding systems, morbidity patterns, surgical capabilities, and available insurance coverage.

In the third quarter of 2022, PhilHealth engaged the TCMC to develop the Philippine DRGs based on TDRG v5.[9] TCMC provided knowledge and technical support through expert consultations.[11] The TDRG grouper software, documentation, and libraries were shared to develop a PhilHealth DRG grouper for the Philippines.

2.2. PhilHealth eClaims Platform and Revised Claims Form

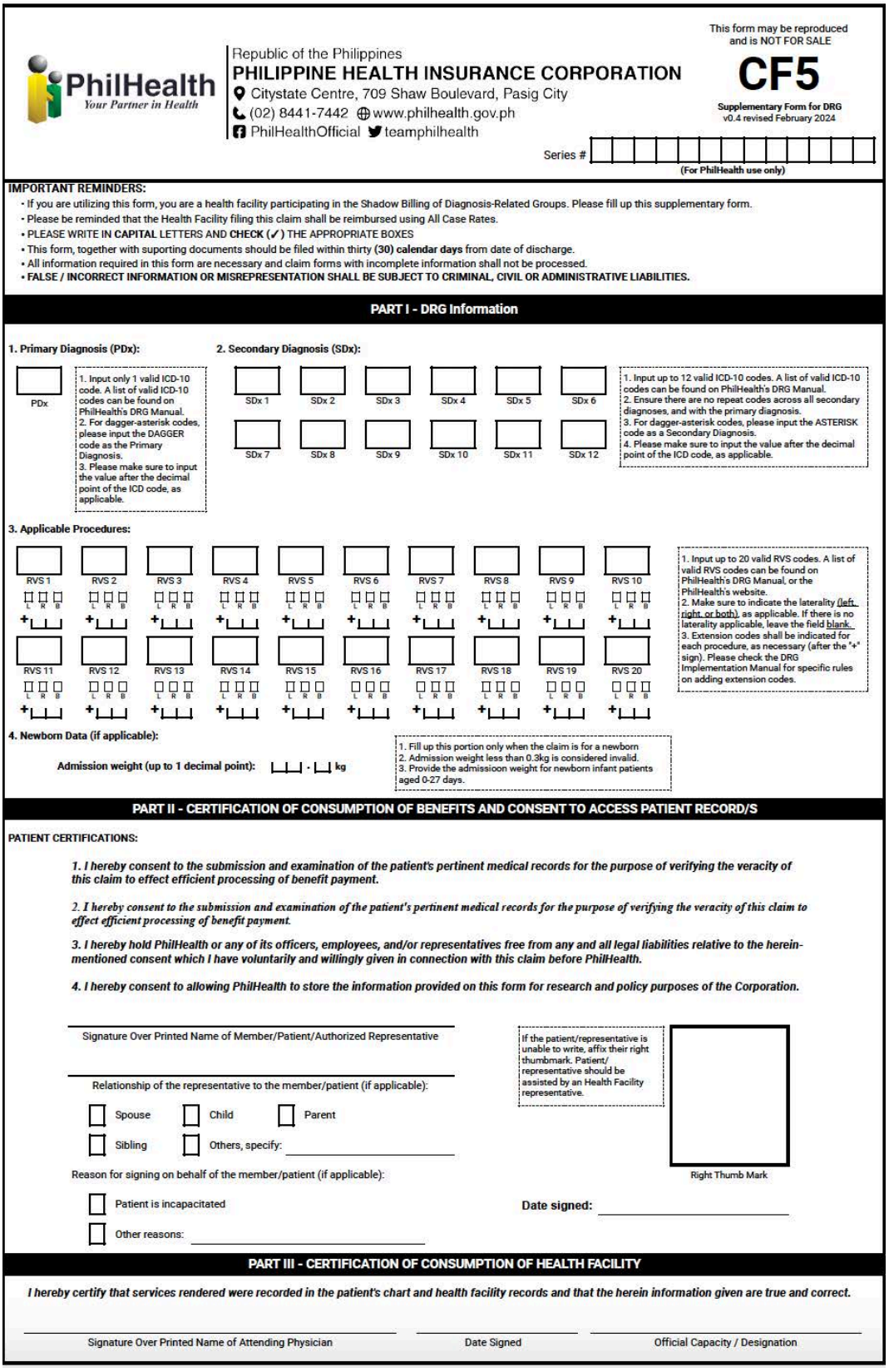
To collect the data necessary for patient grouping to DRGs, all health facilities must submit the Claim Form (CF) 5 (**Figure 5)** as an attachment with all claims submissions. All submissions will be done electronically through PhilHealth's eClaims platform. Data inputs on the form must reflect the applicable diagnoses and procedures indicated by the attending physicians on each patient chart.

2.2.1. Claim Form 5 and the DRG Claim Form

PhilHealth has historically utilized several CF such as CF1, CF2, CF3, CF4 and the Claim Signature Form, to capture data for ACR. However, PhilHealth identified that some important data required by the DRG grouper are not collected by the existing CFs. These include the **Primary Diagnosis, Secondary Diagnoses, Procedure Codes, and additional Newborn Data**. Aligned with the transition to DRGs, PhilHealth developed an interim form to collect the new data necessary for DRG grouping called **CF5**. This form is envisioned to gather data for the Shadow Billing of DRGs **without interrupting claims filing and reimbursement under the existing ACR system**. A sample of CF5 is presented below (**Figure 5**) together with instructions for filling out CF5.

Aside from data obtained through CF5, data from **other CF** submitted by providers for health services rendered will also be collected. Data on patient age, sex, admission, and discharge are also needed to assign a case into a DRG.

In the future, when PhilHealth completely shifts to DRG as the PPM for inpatient health services, the Corporation will rationalize claims data submissions through a single electronic form called the **DRG Claim Form**. In the DRG Claim Form, all pertinent data needed by the DRG grouper are consolidated from the existing claim forms.



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CF5

Supplementary Form for DRG
v0.4 revised February 2024

Series # _____
(For PhilHealth use only)

IMPORTANT REMINDERS:

- If you are utilizing this form, you are a health facility participating in the Shadow Billing of Diagnosis-Related Groups. Please fill up this supplementary form.
- Please be reminded that the Health Facility filing this claim shall be reimbursed using All Case Rates.
- PLEASE WRITE IN **CAPITAL** LETTERS AND **CHECK (✓)** THE APPROPRIATE BOXES
- This form, together with suporting documents should be filed within thirty **(30) calendar days** from date of discharge.
- All information required in this form are necessary and claim forms with incomplete information shall not be processed.
- **FALSE / INCORRECT INFORMATION OR MISREPRESENTATION SHALL BE SUBJECT TO CRIMINAL, CIVIL OR ADMINISTRATIVE LIABILITIES.**

PART I - DRG Information

1. Primary Diagnosis (PDx):

PDx

1. Input only 1 valid ICD-10 code. A list of valid ICD-10 codes can be found on PhilHealth's DRG Manual.
2. For dagger-asterisk codes, please input the DAGGER code as the Primary Diagnosis.
3. Please make sure to input the value after the decimal point of the ICD code, as applicable.

2. Secondary Diagnosis (SDx):

SDx 1 | SDx 2 | SDx 3 | SDx 4 | SDx 5 | SDx 6
SDx 7 | SDx 8 | SDx 9 | SDx 10 | SDx 11 | SDx 12

1. Input up to 12 valid ICD-10 codes. A list of valid ICD-10 codes can be found on PhilHealth's DRG Manual.
2. Ensure there are no repeat codes across all secondary diagnoses, and with the primary diagnosis.
3. For dagger-asterisk codes, please input the ASTERISK code as a Secondary Diagnosis.
4. Please make sure to input the value after the decimal point of the ICD code, as applicable.

3. Applicable Procedures:

RVS 1 | RVS 2 | RVS 3 | RVS 4 | RVS 5 | RVS 6 | RVS 7 | RVS 8 | RVS 9 | RVS 10
RVS 11 | RVS 12 | RVS 13 | RVS 14 | RVS 15 | RVS 16 | RVS 17 | RVS 18 | RVS 19 | RVS 20

(L R B) + ___

1. Input up to 20 valid RVS codes. A list of valid RVS codes can be found on PhilHealth's DRG Manual, or the PhilHealth's website.
2. Make sure to indicate the laterality (left, right, or both), as applicable. If there is no laterality applicable, leave the field blank.
3. Extension codes shall be indicated for each procedure, as necessary (after the "+" sign). Please check the DRG Implementation Manual for specific rules on adding extension codes.

4. Newborn Data (if applicable):

Admission weight (up to 1 decimal point): ___ . ___ kg

1. Fill up this portion only when the claim is for a newborn
2. Admission weight less than 0.3kg is considered invalid.
3. Provide the admissioon weight for newborn infant patients aged 0-27 days.

PART II - CERTIFICATION OF CONSUMPTION OF BENEFITS AND CONSENT TO ACCESS PATIENT RECORD/S

PATIENT CERTIFICATIONS:

1. I hereby consent to the submission and examination of the patient's pertinent medical records for the purpose of verifying the veracity of this claim to effect efficient processing of benefit payment.

2. I hereby consent to the submission and examination of the patient's pertinent medical records for the purpose of verifying the veracity of this claim to effect efficient processing of benefit payment.

3. I hereby hold PhilHealth or any of its officers, employees, and/or representatives free from any and all legal liabilities relative to the herein-mentioned consent which I have voluntarily and willingly given in connection with this claim before PhilHealth.

4. I hereby consent to allowing PhilHealth to store the information provided on this form for research and policy purposes of the Corporation.

_____
Signature Over Printed Name of Member/Patient/Authorized Representative

_____
Relationship of the representative to the member/patient (if applicable):

☐ Spouse ☐ Child ☐ Parent
☐ Sibling ☐ Others, specify: _____

Reason for signing on behalf of the member/patient (if applicable):

☐ Patient is incapacitated
☐ Other reasons: _____

If the patient/representative is unable to write, affix their right thumbmark. Patient/ representative should be assisted by an Health Facility representative.

Right Thumb Mark

Date signed: _____

PART III - CERTIFICATION OF CONSUMPTION OF HEALTH FACILITY

I hereby certify that services rendered were recorded in the patient's chart and health facility records and that the herein information given are true and correct.

_____ _____ _____
Signature Over Printed Name of Attending Physician | Date Signed | Official Capacity / Designation

Figure 5. Sample CF5

2.1.2. Patient Clinical Information for Grouping

The DRG grouping algorithm uses patient clinical information to assign each case to a DRG (**Figure 6**).[17]

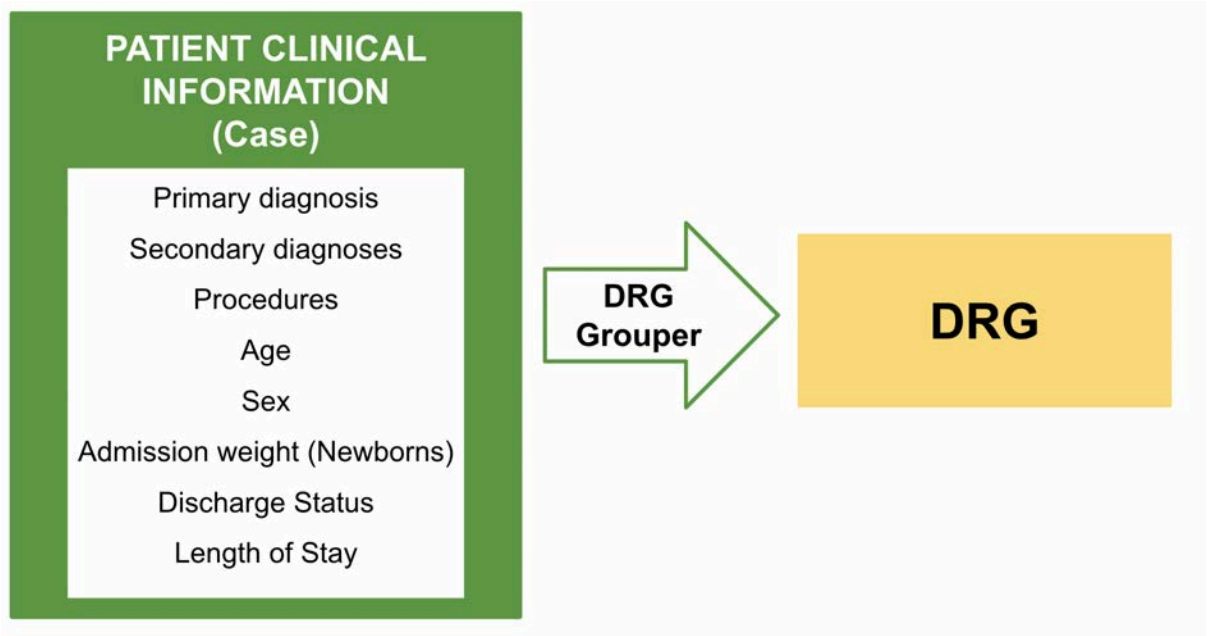


Figure 6. Minimal Essential Data Needed by the DRG Grouping Process

Each element of clinical information is further described in **Table 3**.

Table 3. Patient Clinical Information Required for the DRG Grouping Process

Clinical Info	Description	Conditions	Acceptable Codes
Primary Diagnosis (PDx)	ICD-10 code representing the disease or condition that was the **main cause** of the patient admission Generally determined by the attending physician	**Only ONE ICD-10 code can represent the patient's PDx for each inpatient admission** Though PDx may be difficult to determine in some cases, the grouper can only classify cases if there is a single PDx. **PDx does NOT include external causes of morbidity** (ICD codes beginning with V, W, X, Y are invalid.)	ICD-10 codes found in **Appendix A1 where Acceptable PDx is indicated as "Yes"*** PDx codes must be **complete and precise** Always choose the more specific code if one exists (i.e., there is a subcode) and encode the decimal point and all digits after the decimal point *Example: A00 for Cholera will be read as invalid. Acceptable PDx are A00.0, A00.1, A00.9*

Clinical Info	Description	Conditions	Acceptable Codes
Secondary Diagnosis (SDx)	ICD-10 code representing other diseases, complications, or comorbidities **that were treated during a single admission**	**SDx does NOT include:** (1) conditions that were treated in previous admissions, (2) conditions that were not examined during the current admission, or (3) conditions that were not treated during the current admission	ICD-10 codes found in **Appendix A1*** **A minimum of no SDx and a maximum of 12 SDx codes** may be listed for each inpatient case.
Procedure (Proc)	RVS codes representing the operations and procedures that were performed on a patient during admission	There are **2 types** of procedures: (1) **Operating Room Procedure (OR Proc)**, which is more resource intensive, and (2) **Non-Operating Room Procedure (Non-OR Proc)**, which are less resource intensive procedures that **do not need** to be performed in an OR (though may take place in an OR in actual situations) Extension codes (aligned with ICD-9-CM rules) and laterality may be encoded. More detailed instructions can be found below	RVS codes*** found in **Appendix A2** RVS to ICD9-CM crosswalk. ICD9-CM Codes found in **Appendix A2**,** including a list of procedures that may be performed more than once in a single admission **A minimum of no Proc and a maximum of 20 Proc codes** may be listed for each inpatient case
Patient Age (Age)	A whole number representing the patient's age in years	Calculated as **the difference between the date of admission (DateAdm) and patient's date of birth (DOB)**, **rounded down to the nearest whole number** (i.e., Age is the number of *completed* years from DOB to admission date.)	A whole number between 0 and 124 DateAdm and DOB must be in mm-dd-yyyy format
Patient Sex (Sex)	A letter code representing the patient's sex	Only one code for Sex must be entered for each case	M for Male F for Female
Discharge Type (Discht)	A letter code representing the patient's disposition upon discharge	Only one code for Discht must be entered for each case	Improved/Recovered Home against medical advice (HAMA) Transferred/Referred Absconded Expired/Deceased
Length of Stay (LOS)	Number of days the patient was admitted in a single case In TDRG v5, one inpatient	Calculated as the difference between the date of discharge (DateDsc) and DateAdm **If the time of discharge**	LOS below 6 hours is considered invalid DateDsc and DateAdm must be in mm-dd-yyyy

Clinical Info	Description	Conditions	Acceptable Codes
	day is considered at **least 6 hours of stay**, at most 24 hours of stay	**(TimeDsc) is later than the time of admission (TimeAdm),** the remaining hours of stay are calculated as the difference between TimeDsc and TimeAdm **If this number is greater than 6 hours, then an additional day is added to the LOS**	format TimeDsc and TimeAdm must be in HH:MM format The first two digits indicate hours from 00 to 23, the last two digits indicate minutes from 00 to 59 *Example: 2400 is invalid. The correct entry is 0000*
Age in Days** (AgeDay)**	A number representing the patient's age in days	Only required in cases when Age equals to 0 (f**or infants less than a year old**) The patient's age in days (AgeDay) will be used to classify the case in lieu of Age AgeDay is the difference between DOB and time of birth (TOB), and DateAdm and TimeAdm	A whole number between 0 and 364 (or 365 on leap years) TOB must be in HH:MM format reflecting the infant's TOB as reported in the birth certificate
Admission Weight** (AdmWt)**	A number representing body weight in kilograms at the time of admission	Only required in cases when AgeDay is between 0 and 27 or PDx falls under diagnoses for newborns and neonates (MDC 15 in Appendix A1) AdmWt is the infant's birth weight in kilograms (kg) rounded to 1 decimal point	AdmWt must be recorded to at least 1 decimal point AdmWt less than 0.3kg is considered invalid

*Based on the WHO ICD-10 2019 edition [26,27]
**Based on the WHO ICD-9-CM and Philippine RVS Codes 2020[28,29]
***Based on the Philippine RVS Codes of 2009 and recorded updates by PhilHealth for claims billing
****Additional data for infants only less than 28 days of age

More specific instructions for filling out key fields of the CF5 are as follows:

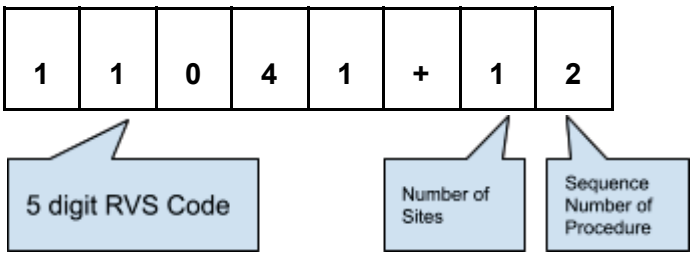
1. **The Primary Diagnosis (PDx)** is a required field which must be filled up based on the final diagnosis of the patient indicated by the attending physician on the patient chart at the end of the episode of care. It must be based on a valid ICD-10 code indicated in this manual (Appendix A1). Only one PDx shall be indicated for each claim. The PDx must contain the main condition treated during the episode of care. Where a definitive final diagnosis cannot be made, the main symptom, abnormal finding, or problem should be sought in Appendix A1 and should be recorded as the PDx.

2. **The Secondary Diagnosis/es (SDx)** is an optional field which is filled up based on the complications and comorbidities of each patient case as indicated on the patient chart. Only valid ICD-10 codes as indicated in this manual are allowed. The eClaims platform accepts up to twelve (12) SDx codes.
3. **Applicable Procedures** is an optional field which is filled in based on the procedures done to the patient during the episode of care as indicated on the patient chart. Only valid Relative Value Scale (RVS) codes indicated in this manual (Appendix A2) shall be allowed, with the exception of select procedures (**Annex C of PhilHealth Circular No. 2024-0006:** Additional Coding Rules for Shadow Billing). Laterality must be indicated as applicable. Extension codes may be indicated as applicable following the instructions below:

    a. Model on Philippine RVS procedure with extension codes

    The rules on RVS extension codes were based on the rules developed by Thailand NHSO Manual on Thai DRG Version 5 Volume 1 published in 2011. In the Philippine setting, procedures are encoded as RVS codes in contrast with the Thai DRGs which use ICD-9 CM codes. It is for this reason RVS codes are used in the examples illustrated below.

    RVS codes are used in the Philhealth All Case Rates (ACR) system and will be retained in the DRG system. RVS codes are typically a 5-digit numeric code. Since the ICD9-CM procedure codes have an extension code system to indicate the number of sites and multiplicity of procedures done (if applicable), implementing this system of extension codes is necessary for RVS codes as well, as this will have implications in cost weights.



    For RVS codes requiring an extension code, the main 5-digit code will be followed by a “+” sign and then two numbers signifying the following:

    i. The first digit after the “+” refers to the number of sites a certain procedure was performed on. For example, debridement of different body sites.
    ii. The second digit after the “+” refers to the sequence number representing the number of instances the given procedure was performed in a single episode of care. For example, if a patient had the same procedure performed twice, the last extension code digit of the first procedure should be “1”, and the last digit of the second instance should be “2”. An example of encoding extension codes in a single episode of care is illustrated below.

Box 1. Extension Code Example

A patient underwent multiple procedures and repeat procedures within a single admission:

Example	RVS Code	Extension Code
Proc #1: Excisional debridement, both hands and scalp *3 sites, 1st instance*	11041	11041+31
Proc #2: Excisional debridement right hand *1 site, 2nd instance*	11041	11041+12
Proc #3: Excisional debridement, scalp *1 site, 3rd instance*	11041	11041+13
Proc #4: Skin graft (full thickness), both hands *2 sites, 1st instance*	15240	15240+21
Proc #5: Skin graft (full thickness), scalp *1 site, 1st instance*	15220	15220+11
Proc #6: Skin graft (full thickness), right hand *1 site, 2nd instance*	15240	15240+12
Proc #7: Skin graft (full thickness), buttock *1 site, 1st instance*	15200	15200+11

In this case, the provider must input the following procedure codes to fully capture the episode of care:

11041+31, 11041+12, 11041+13, 15240+21, 15220+11, 15240+12, 15200+11

b. Other Definitions
    i. The extension code is a method to indicate if there is more than one procedure or more than one site. Writing an RVS procedure without extension code signifies only one procedure or first procedure. Any repetition of coding within the same claim will be considered as only one procedure.

Encoding 11041 means 11041+11
Encoding 11041, 11041 means 11041+11

As in the above example, if a patient had excisional debridement three times within an episode of care, encoding 11041 three times would only count as one procedure. The provider must input extension codes for repeat procedures to be considered as such.

ii. The 2nd digit in the extension code, or the sequence count, must always begin with 1 and any additional instance follows continuously as 1 → 2 → 3 →… For any different procedure, the second digit of the extension code should begin again at 1.

11041+21, 11041+12, 11041+13	**Correct**. The 2nd digit of the extension code follows the instance count.
11041+11, 11041+12, 11041+14	**Incorrect**. The procedures indicated skipped the third instance of the procedure.
11041+12, 11041+13	**Incorrect**. The procedures indicated skipped the first instance of the procedure.

iii. In cases of procedures with more than 9 sites for one procedure, the number "9" is used for the first digit of the extension code after the +

iv. In cases of more than 9 times implementing a single procedure, the number 9 is used for the second digit of the extension code after the +

v. In cases of using an incorrect extension coding, the grouper will be directed to delete the erring extension and default the code to just the 5-digit RVS code.

vi. Some RVS codes already equate to procedures complete with their laterality (RVS codes pertaining to left or right pulmonary arteries e.g., RVS 36014) or site multiplicities (RVS 28011 or Tenotomy Subcutaneous, toe, multiple), these codes will no longer be required to use extension codes and will be accepted as is.

vii. The objective of the extension code use is to retain the most complete data when there is more than one unit of the same procedure code in the same admission.

4. Admission Weight under newborn data shall be filled up for patients with an age of 0-27 days. Weight must be indicated in kilograms (kg) up to one (1) decimal place. The weight must be encoded accurately as this may have implications on which Disease Cluster the patient case falls under.

2.2.2. eClaims Platform

PhilHealth's eClaims platform uses an Application Programming Interface (API) which is connected to the EMR of health facilities. The CF5 shall be submitted through this platform. The diagram below illustrates the flow of claims data for Shadow Billing from the health facility to the grouping of claims data into DRGs (**Figure 7)**.

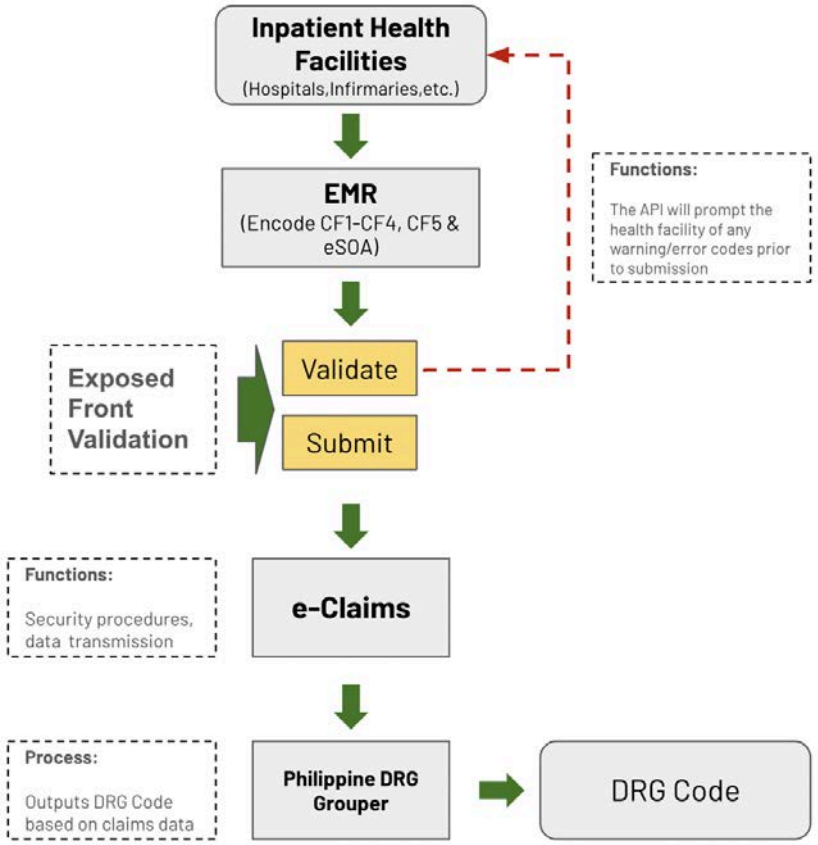


Figure 7. Flow of Claims Data through eClaims Platform to Group Inpatient Cases

Claims data starts from the encoding of inpatient health facilities. The CF5 data are encoded and transmitted to PhilHealth through respective Electronic Medical Record (EMR) as provided by in-house or third-party IT Service Providers.

The CF5 is connected to an API which performs a front-facing data validation, ensuring that data is clean and correct before submission. PhilHealth's eClaims will then verify security procedures, and transmit the claims data to the DRG grouper. The DRG Grouper will then perform the grouping algorithm to generate the DRG Code for each claim. Data shall then proceed to be saved in PhilHealth's DRG Database.

2.3. Refinements to the TDRG Grouper

In this version 0 of the Philippine DRG grouper, there were few deviations from the Thai grouper. Future versions of the Philippine DRGs will further refine the grouper and adapt other elements appropriate to the needs of the Philippine health financing system and clinical practices.

1. Disease coding modifications and procedures coding crosswalk

The TDRG v5 grouper was designed to analyze diseases and procedures coded using the ICD-10 2010 version alongside ICD-10 Thai Modification codes for diseases, and the

ICD-9-CM coding conventions for procedures, which Thailand had adopted as the national coding standard since early versions of the grouper were being developed. In the Philippines, diseases are coded using the **Tenth Revision of the ICD (ICD-10),** and procedures are coded in the **resource-based relative value scale (RVS) format**.[30] The RVS assigns a set of numeric values corresponding to a set of physician services.[31,32] More complex or resource-intensive work is assigned a higher value than those of simpler jobs.

RVS codes cannot be processed by the Thai DRG grouper. To address this issue, PhilHealth developed a **crosswalk** to map each RVS code to a corresponding ICD-9-CM code.[33] However, the two classification systems are not 100% equivalent. RVS codes are based on physician services, while ICD-9-CM codes are based on procedures for treatment of corresponding diseases. As such, the two coding conventions do not have one-to-one correspondence. Mapping problems were resolved through multiple crosswalk validations in consultations with experts. The crosswalk was considered completed when each RVS code was mapped.

The crosswalk is documented in **Appendix A2**, together with explanations for major decision points in resolving differences between the two classification systems. The RVS-ICD-9-CM crosswalk will be regularly refined and revised in terms of the validation of its codes in conjunction with consultations with medical and surgical specialty societies.

The 2010 edition of the ICD-10 system contains outdated codes and disease descriptions. For the Philippine grouper, disease codes were transitioned to the **ICD-10 2019 edition. Appendix A1** reflects the updated disease codes.

2. Grouper software

PhilHealth directly adopted the TDRG grouping logic to develop the Philippine grouper software. However, the source code of the TDRG grouper software was not available to PhilHealth, and PhilHealth was able to use only the data libraries to recreate the grouper software. This led to differences in DRG assignment between the two grouper software. Differences were resolved through grouper validation. The Philippine grouper was deemed complete when it produced the same grouping results as the TDRG grouper when fed the same set of data.

3. Length of an inpatient day and MDC 28

In the Philippines, patients must be admitted for a minimum of 24 hours to be considered an inpatient case.[8] Claims with LOS greater than 6 hours but fewer than 24 hours are grouped into MDC 28 following the TDRG v5 groping logic; however, these are considered **outpatient cases and are not included in the theoretical payments derived from shadow billing**.

4. Special coding rules

The following are additional coding rules for health facilities (*HFs*) participating in DRG Shadow Billing. All of the rules listed below are required when filling out **CF5** for the grouper to accurately group patient cases. The rules are also annexed in PhilHealth's Shadow Billing circular found in **Annex A**.

Note that the decimal point must be included for all ICD-9 codes included in these special coding rules. The listed ICD-9 codes are to be encoded in the RVS procedure code boxes.

1) ***Tracheostomy and Mechanical Ventilation***
   The following is a list of essential procedure codes which the DRG Grouper requires for accurate grouping.

   a) Codes for Continuous Invasive Mechanical Ventilator Usage. Due to the lack of RVS codes for these select procedures, *HFs* must encode the following procedures as ICD9-CM codes:

Description	ICD9- CM Code
Cont mechanical ventilator - unspecified duration	96.70
Cont mechanical ventilator < 96 hrs	96.71
Cont mechanical ventilator 96+ hrs	96.72

   b) Codes for Tracheostomy Procedures (to be encoded as RVS codes):

Description	RVS Code
Tracheostomy, planned	31600
Tracheostomy, planned under two years	31601
Tracheostomy, emergency; transtracheal	31603
Tracheostomy, emergency; cricothyroid membrane	31605
Tracheostomy, Fenestration procedure with skin flap	31610

2) ***Parenteral Chemotherapy and Radiotherapy***
   a) *HFs* shall encode **Z51.1 (ICD 10)** as part of the Secondary Diagnosis (SDx) for patients who underwent chemotherapy.
   b) *HFs* shall encode **Z51.0** (ICD 10) as part of the SDx for patients who underwent radiotherapy.
   c) They shall then encode the appropriate RVS code indicating the specific site of parenteral chemotherapy or site/type of radiotherapy administration.

3) ***Obstetric Cases***
   a) For newborn deliveries, ICD-10 codes **O60 to O84** are to be encoded as a Primary Diagnosis (PDx) or Secondary Diagnosis (SDx). If the patient case is a non-delivery, these codes must not be utilized.
   b) For newborn deliveries with other non-delivery ICD-10 codes (non-delivery diagnoses), the delivery code should **not** be encoded as PDx.

c) Delivery codes shall not be encoded with a PDx of abortion, false labor, antenatal or postpartum care or post abortion care since these diagnoses will not result to a newborn being delivered

d) Delivery Codes used (as PDx or SDx) **must be consistent** with the procedure codes (RVS).

   (1) The procedure code for Vaginal Delivery (59409, 59411) can only be used with the ICD-10 code for vaginal delivery (O80.0-O80.1, O80.8-O81.5, O83.0-O83.2, O84.0-O84.1)

   (2) The procedure code for Cesarean section (59513, 59514, 59525, 59620) can only be used with the ICD-10 code for Cesarean delivery (O82.0-O82.2, O82.8-O82.9, O84.2)

e) For the Maternity Care Package (MCP01) and Normal Spontaneous Delivery package (NSD01), *HFs* shall be required to encode the corresponding Primary Diagnosis, Secondary Diagnosis/es, and procedures in Claim Form 5 based on the rules listed above.

4) Excisional Wound Debridement

HFs shall encode the following RVS codes for excisional wound debridement:

Description	RVS Code
Debridement of extensive eczematous or infected skin	11000
Debridement including removal of foreign material associated w/ open fracture(s) and/or dislocation(s); skin and subcutaneous tissues	11010
Debridement including removal of foreign material associated w/ open fracture(s) and/or dislocation(s); skin, subcutaneous tissue, muscle fascia, and muscle	11011
Debridement including removal of foreign material associated w/ open fracture(s) and/or dislocation(s); skin, subcutaneous tissue, muscle fascia, muscle, and bone	11012
Debridement; skin, partial thickness	11040
Debridement; skin, full thickness	11041
Debridement; skin, and subcutaneous tissue	11042
Debridement; skin, subcutaneous tissue, and muscle	11043
Debridement; skin, subcutaneous tissue, muscle, and bone	11044

5) Blood Transfusion

HFs shall utilize RVS Code **36430** for all inpatient cases with blood transfusion performed during the episode of care.

6) Combination procedure codes

HFs shall apply the following rules in filling up CF5:

a) Implantable Cardiac Devices

i) *HFs* must create a distinction between total system insertion versus replacement of device or revision of electrodes, or removal of device.

ii) Similarly, *HFs* must make sure to code the correct device type, whether its a cardioverter or a pacemaker. If the device is a pacemaker, encoders must distinguish between single or dual chamber devices.

iii) *HFs* shall encode one of the following RVS codes in the CF5, as applicable, to distinguish each device and action:

Description	RVS Code
Cardioverter	
Total system insertion	33240
Replacement of device or revision of electrodes	33245, 33246
Removal of device	33241, 33243, 33244
Pacemaker (Single-chamber)	
Total system insertion	33200, 33201, 33212
Replacement of device or revision of electrodes	33206, 33207
Removal of device	33234
Pacemaker (Dual-chamber)	
Total system insertion	33213
Replacement of device or revision of electrodes	33208
Removal of device	33235

b) Multivessel Percutaneous Transluminal Coronary Angioplasty (PTCA)

i) *HFs* shall use extension codes for PTCA cases **(92982, 92995)** to indicate the number of vessels involved in the procedure through extension codes (please see Annex C of this policy).

c) Multi-Coronary Valve Procedures

i) Hospital encoders shall make sure to distinguish between open and closed valve surgeries. Multi-Coronary Valve Procedures shall only apply to open valve surgeries.

ii) Hospital encoders shall make sure to properly encode multi-coronary valve procedures. The surgery will count as a Multi-Coronary Valve Procedure if **one surgery is performed on different valves during a**

single instance of surgery. Multiple surgeries on the same valve remain as a single coronary valve procedure.

d) Combination Thoracoabdominal Procedure

i) During instances where both a Thoracic and Abdominal vessel resection occurs, *HFs* must encode both their respective RVS codes accordingly. Otherwise, the vessel procedure RVS codes can be encoded on its own.

Thoracic Vessel Procedures	RVS Code
Reconstruction of vena cava, any method	34502
Direct repair of aneurysm, false aneurysm, or excision (partial or total) and graft insertion, w/ or w/o patch graft; for aneurysm and associated occlusive disease, carotid, subclavian artery, by neck incision	35001
Direct repair of aneurysm, false aneurysm, or excision (partial or total) and graft insertion, w/ or w/o patch graft; for ruptured aneurysm, carotid, subclavian artery, by neck incision	35002
Direct repair of aneurysm, false aneurysm, or excision (partial or total) and graft insertion, w/ or w/o patch graft; for aneurysm, false aneurysm, and associated occlusive disease, innominate, subclavian artery, by thoracic incision	35021
Direct repair of aneurysm, false aneurysm, or excision (partial or total) and graft insertion, w/ or w/o patch graft; for ruptured aneurysm, innominate, subclavian artery, by thoracic incision, hypogastric, external)	35022
Repair blood vessel w/ vein graft; intrathoracic, w/ bypass	35241
Repair blood vessel w/ vein graft; intrathoracic, w/o bypass	35246

Abdominal Vessel Procedures	RVS Code
Direct repair of aneurysm, false aneurysm, or excision (partial or total) and graft insertion, w/ or w/o patch graft; for aneurysm, false aneurysm, and associated occlusive disease, abdominal aorta	35081
Direct repair of aneurysm, false aneurysm, or excision (partial or total) and graft insertion, w/ or w/o patch graft; for ruptured aneurysm, abdominal aorta	35082
Direct repair of aneurysm, false aneurysm, or excision (partial or total) and graft insertion, w/ or w/o patch graft;	35091

for aneurysm, false aneurysm, and associated occlusive disease, abdominal aorta involving visceral vessels (mesenteric, celiac, renal)	
Direct repair of aneurysm, false aneurysm, or excision (partial or total) and graft insertion, w/ or w/o patch graft; for ruptured aneurysm, abdominal aorta involving visceral vessels (mesenteric, celiac, renal)	35092
Direct repair of aneurysm, false aneurysm, or excision (partial or total) and graft insertion, w/ or w/o patch graft; for aneurysm, false aneurysm, and associated occlusive disease, abdominal aorta involving iliac vessels (common, hypogastric, external)	35102
Direct repair of aneurysm, false aneurysm, or excision (partial or total) and graft insertion, w/ or w/o patch graft; for ruptured aneurysm, abdominal aorta involving iliac vessels (common, hypogastric, external)	35103

e) Phacoemulsification and Lens insertion
   i) HFs should indicate in the CF5 during instances where two separate eye procedures are performed in the same admission in accordance with the rules and guidelines for PhilHealth Cataract pre-surgery authorization. Coding these cases should follow the rules on extension codes as detailed under Annex C.

7) Resuscitation Package

HFs which claim the resuscitation package (P0000) shall be required to encode ICD-10 code **I46.0** as a secondary diagnosis in CF 5.

8) Coding rules for Z benefit package codes

a) During the implementation of the Shadow Billing of DRGs, *HFs* shall continue to encode the Z benefit package code in the CF 2.
b) *HFs* shall encode the corresponding Primary Diagnosis, Secondary Diagnosis/es, and Procedure/s in CF 5.
c) *HFs* may refer to Annex K of PhilHealth Circular 2021-0022 (Annex A), and its succeeding revisions for filling out CF 5.

9) Coding rules for COVID-19 Packages

a) All *HFs* shall continue to encode all PhilHealth COVID-19 packages based on the package codes indicated in their corresponding circulars in the CF 2.
b) *HFs* filing COVID-19 claims are still highly encouraged to submit the CF 5 indicating applicable diagnoses and procedures. The applicable ICD-10 code for COVID-19 is U072. Data gathered from these submissions may be used to develop a PHL-DRG for COVID-19.

10) Coding rules for pneumonia

a) ACR codes for pneumonia are not recognized by the grouper as valid codes. *HF*s must continue using the ACR codes in the CF 2, but use the appropriate ICD-10 codes in the CF 5:

Disease	Codes to be used in CF 2 - ACR Codes	Codes to be used in CF 5 - Updated ICD codes
Community Acquired Pneumonia, Moderate Risk	J18.02 J18.92	**For primary diagnosis, code any of the ff:** J18.0 – Bronchopneumonia, unspecified J18.1 – Lobar pneumonia, unspecified J18.8 – Other pneumonia, organism unspecified J18.9 – Pneumonia, unspecified Pathogen-specific pneumonia codes, when a causative agent is identified (e.g., J13 - Pneumonia due to Streptococcus pneumoniae) **For secondary diagnoses, code the appropriate decompensated comorbidities**, including but not limited to the ff: **1) Uncontrolled Diabetes Mellitus** E10.0 – Type 1 diabetes mellitus with coma E11.1 – Type 2 diabetes mellitus with ketoacidosis E11.7 – Type 2 diabetes mellitus with multiple complications 2) Active Malignancies C34 – Malignant neoplasm of bronchus and lung C50 – Malignant neoplasm of breast C00-C97 – Malignant neoplasms (any site-specific primary malignancy) **3) Neurologic Disease in Evolution** I60.1 – Subarachnoid haemorrhage from middle cerebral artery I61.4 – Intracerebral haemorrhage in cerebellum I63.0 – Cerebral infarction due to thrombosis of precerebral arteries **4) Congestive Heart Failure Class II-IV** I50.0 – Congestive heart failure I50.1 – Left ventricular failure I11.0 – Hypertensive heart disease with (congestive) heart failure

		5) Unstable Coronary Artery Disease I20.0 – Unstable angina I21.0 – Acute transmural myocardial infarction of anterior wall **6) Renal Failure on Dialysis** N18.5 – Chronic kidney disease, stage 5 **7) Decompensated COPD** J44.0 – Chronic obstructive pulmonary disease with acute lower respiratory infection J44.1 – Chronic obstructive pulmonary disease with acute exacerbation, unspecified **8) Decompensated Liver Disease** K70.3 – Alcoholic cirrhosis of liver K72.0 – Acute and subacute hepatic failure
Community Acquired Pneumonia, High Risk	J18.03 J18.93	**For primary diagnosis, code any of the ff:** J18.0 – Bronchopneumonia, unspecified J18.1 – Lobar pneumonia, unspecified J18.8 – Other pneumonia, organism unspecified J18.9 – Pneumonia, unspecified Pathogen-specific pneumonia codes, when a causative agent is identified (e.g., J13 - Pneumonia due to Streptococcus pneumoniae) **For secondary diagnoses, code the appropriate decompensated comorbidities** (see above list). **Code sepsis or septic shock,** as appropriate, including but not limited to the ff: A40.3 – Sepsis due to Streptococcus pneumoniae A41.4 – Sepsis due to anaerobes R57.2 – Septic shock **For procedures, code mechanical ventilation* if patient was intubated:** 96.70 – Cont mechanical ventilator - unspecified duration 96.71 – Cont mechanical ventilator < 96 hrs 96.72 – Cont mechanical ventilator 96+ hrs
Nosocomial Pneumonia	J18.99+Y95	**For primary diagnosis, code any of the ff:** J18.0 – Bronchopneumonia, unspecified J18.1 – Lobar pneumonia, unspecified

		J18.8 – Other pneumonia, organism unspecified J18.9 – Pneumonia, unspecified Pathogen-specific pneumonia codes, when a causative agent is identified (e.g., J13 - Pneumonia due to Streptococcus pneumoniae) **Add the ff code as secondary diagnosis:** Y95 – Nosocomial Condition

*Refer to page 27 for mechanical ventilation special coding rules

3. Grouping Process: How Claims are Classified into DRGs

This section details the main processes for assigning an inpatient case to a DRG.

3.1. Data Validation

The **first step** before cases are grouped is data validation where the software checks the data for missing or invalid data entries.

This section presents potential error codes and warning codes that may arise when using the DRG grouper. The process of identifying the most appropriate PDx among SDx, dagger-asterisk substitution, is also explained.

3.1.1. Error Codes

An error code indicates that the case cannot be grouped into a DRG with the available data (**Table 4**).[17] To avoid these errors, **data are validated prior to claims submission**.

When filling out the eClaims form, clinical coders are shown an error code corresponding to an incorrect or missing data entry that will lead to a case becoming ungroupable. **Feedback** is provided to the clinical coder for immediate **correction before the eClaims form can be submitted.** Otherwise, the claim cannot be processed and payment cannot be released.

A full list of error codes that can be encountered by the grouper software are found in **Appendix A3**.

Table 4. Summary of Error Codes from the DRG Grouper Software

Error Code	Assigned DRG	Description	Solution
401	26509	**No Primary Diagnosis** PDx field left blank	Enter a valid primary diagnosis listed as acceptable in **Appendix A1** in the appropriate field
402	26509	**No data for Sex** Sex inputted is missing or invalid	Review Sex: ● If Sex field is blank, input patient sex ● Sex must be inputted in correct format: (M = Male; F = Female)
403	26539	**No date of birth**	Review DOB:

Error Code	Assigned DRG	Description	Solution
		Age data could not be calculated from patient DOB	● If DOB is blank, input the patient date of birth in yyyy-mm-dd format ● Age must be between 0 and 124 years
404, 405, 406, 407	26509	**Date and Time of Admission or Discharge Error** LOS could not be computed because data on admission and/or discharge are missing or invalid	Review DateAdm, DateDsc, TimeAdm, TimeDsc: ● If any of these fields are blank, input the appropriate information ● DateAdm and DateDsc must be in yyyy-mm-dd format ● TimeAdm and TimeDsc must be in HH:MM format
408	26509	**No Discharge Code** Discht inputted is missing or invalid	Review Discht: ● If Discht field is blank, select proper patient disposition at discharge
409	26509	**No Admission Weight** AdmWt is blank for **newborn** (<28 days old)	Review AdmWt: ● If AdmWt is blank, input the infant's birth weight in kilograms to at least 1 decimal point
411	26509	**Invalid Primary Diagnosis** PDx inputted is not a valid ICD-10 code	Review PDx: ● PDx should be a valid ICD code listed as acceptable in **Appendix A1**
412	26509	**Primary Diagnosis is for External Causes of Morbidity and Mortality** PDx is an ICD-10 code but an external cause	Review PDx: ● PDx should be a valid ICD code listed as acceptable PDx (indicated as "Yes") in **Appendix A1** ● PDx should not include ICD codes beginning with V, W, X, Y
413	26519	**Inappropriate Primary Diagnosis** PDx inputted is an ICD-10 code but not appropriate for inpatients	Review PDx: ● PDx should only be from valid ICD codes listed as Acceptable PDx in **Appendix A1** (indicated as "Yes") ● PDx should NOT be among ICD codes tagged as unacceptable in **Appendix A1**
414	26509	**Primary Diagnosis has conflict with patient's age** PDx is inconsistent with patient's Age	Review DOB, DateAdm (used to compute Age), and PDx: ● If PDx is among age group-specific diagnoses (**Appendix A1**), then Age should fall within the age group of PDx
415	26509	**Primary Diagnosis has conflict with patient's sex** PDx is inconsistent with patient Sex	Review PDx and Sex: ● If PDx is among female diagnoses (**Appendix A1**), then Sex should be F ● If PDx is among male diagnoses (**Appendix A1**), then Sex should be M
416	26539	**Invalid Age**	Review DOB:

Error Code	Assigned DRG	Description	Solution
		Age is less than 0 or more than 124 years	● If DOB is blank, input the patient date of birth in yyyy-mm-dd format ● Age must be between 0 and 124 years
417	26509	**Length of stay error** LOS is less than 0 days or 0 hours	Review DateAdm, DateDsc, TimeAdm, TimeDsc: ● If any of these fields are blank, input the appropriate information in proper format ● LOS must be greater than 0 days or 0 hours (Discharge cannot occur before admission)
418	26509	**Invalid Admission Weight** AdmWt is less than 0.3kg for **newborn** (<28 days old)	Review AdmWt: ● AdmWt must be 0.3kg or greater

Cases with errors relating to PDx, LOS, and Age (Error Codes 1, 2, 3, 4, 5, 6, 9, and 10) would be **assigned into the ungroupable DRG (DRG 26509)** without going through the classification algorithm.

As such, claims with errors will not be accepted by the eClaims platform. Claims with errors must be corrected prior to submission based on the validation report. If more than one error is found, the lowest error code will be displayed. Cases without errors will continue through the DRG classification process until assigned into a DRG.

3.1.2. Warning Codes

A warning code indicates that the case could be assigned to a DRG but incomplete or incorrect information may affect payment for the case (**Table 5**).[17] Though in some cases patients can still be assigned a DRG even if there is a warning code, the classification may not reflect the full complexity of the case, **leading to underpayment for services.**

To avoid underpayment, it is recommended to review the validation report before and correct the claims form before submitting.

To note, if there is more than one warning code for a case, each warning code will be displayed.

Table 5. Summary of Warning Codes from the DRG Grouper Software

Warning Code	Assigned DRG	Description	Solution
501	SDx entry **will not be considered** in the classification	**Invalid Secondary Diagnosis** SDx inputted is an ICD-10 code but not among the list of	Review SDx: ● SDx should be a valid ICD code listed in **Appendix A1** ● SDx with available subcodes should have the complete subcode

Warning Code	Assigned DRG	Description	Solution
		acceptable diagnoses	
502	SDx entry **will not be considered** in the classification	**Secondary Diagnosis is Duplicate with Primary Diagnosis** SDx inputted is an ICD-10 code but is a repeat of PDx	Review SDx: ● SDx should be a valid ICD code listed in **Appendix A1** ● SDx with available subcodes should have the complete subcode ● SDx cannot be the same as PDx
503	SDx entry **will not be considered** in the classification	**Duplicate Secondary Diagnosis** SDx inputted is an ICD-10 code but is the duplicate of another SDx	Review SDx: ● SDx should be a valid ICD code listed in **Appendix A1** ● SDx with available subcodes should have the complete subcode ● Each SDx should be entered only ONCE
504	SDx entry **will not be considered** in the classification	**Secondary diagnosis is not appropriate for patient age** SDx inputted is inconsistent with patient Age or, SDx inputted applies to specific Age group but no data on Age is found	Review DOB and DateAdm (used to compute Age), and SDx: ● If SDx is among age group-specific diagnoses (**Appendix A1**), then Age should be fall within age group of PDx ● If DateAdm and DOB are blank, input the admission date and patient date of birth ● DateAdm and DOB must be in yyyy-mm-dd format ● Resulting Age must be between 0 and 124
505	SDx entry **will not be considered** in the classification	**Secondary diagnosis is not appropriate for patient sex** SDx inputted is inconsistent with patient with Sex or, SDx inputted applies to specific Sex but no data on Sex is found	Review SDx and Sex: ● If SDx is among female diagnoses (**Appendix A1)**, then Sex should be F ● If SDx is among male diagnoses (**Appendix A1**), then Sex should be M
506	Proc entry **will not be considered** in the classification	**Invalid Procedure** Proc code inputted is not among list of valid procedures	Review Proc: ● Proc should be a valid RVS code listed in **Appendix A2** ● Proc with available Extension Codes should have complete extension
507	Proc entry **will not be considered** in the classification	**Duplicate Procedure** Proc inputted is an RVS code but is a duplicate of another	Review Proc: ● Proc should be a valid RVS code listed in **Appendix A2** ● Proc repeated in an admission should have the appropriate extension codes

Warning Code	Assigned DRG	Description	Solution
		Proc	(see section on extension codes) ● Each Proc should be entered only ONCE except for Proc codes in **Appendix B1** which indicates >1 when Proc may be performed more than once per admission
508	Proc entry **will not be considered** in the classification	**Procedure is not appropriate for patient sex** Proc inputted is an RVS code but inconsistent with patient Sex or, Proc inputted applies to specific Sex but no data on Sex is found	Review Proc and Sex: ● If Proc is among female procedures (**Appendix A2**), then Sex should be F ● If Proc is among male procedures (**Appendix A2**), then Sex should be M

3.1.3. Dagger-Asterisk Substitution

After coding errors are identified, the PDx and SDx are examined to find the most appropriate PDx for the case. In patient cases where two or more conditions present simultaneously, the attending physician must assign one as the PDx (the dagger). The remaining conditions are coded as SDx. However, **one of the SDx may provide more accurate information in assigning the case to a DRG** (the asterisk)**.** In such cases, the SDx with the asterisk code is substituted as the new PDx, and the original dagger code becomes one of the SDx. This process is the dagger-asterisk substitution.

The dagger-asterisk substitution is used in cases with conditions where disease manifestation is a better determinant of resource usage than is disease etiology. Some conditions may be coded according to **either disease etiology (the dagger †) or manifestation (the asterisk ∗)**.[34] Traditional coding convention dictates that disease etiology is the primary code (PDx); hence dagger codes can stand alone and may be supplemented by optional asterisk codes (SDx).[35] On the other hand, asterisk codes cannot stand on their own and must always be combined with a dagger code**.**

The asterisk codes can never be initially coded by hospitals as the PDx. If they are used, they will be assigned the error code for invalid PDx.

Dagger-asterisk substitution is done by the DRG grouper software upon receiving the data. The substitution reflects WHO coding standards. **Appendix A4** lists dagger-asterisk pairs that the DRG grouper will substitute SDx for PDx and PDx for SDx (**Box 2**).

Box 2. Example of Dagger-Asterisk Substitution

The attending physician of an inpatient case reported **leprosy (A30.9) as the PDx** and **polyneuropathy (G63.0) was listed among the SDx**:

Initial codes:
PDx: A30.9
SDx: G63.0,…

In WHO classification "G63.0* Polyneuropathy in infectious and parasitic diseases classified elsewhere" You can see that G63.0 has an asterisk * and therefore cannot be the PDx. In the entry for G63.0*, you will find options for the dagger code, including "Leprosy (**A30.-†**)", which must be coded as the PDx by convention.[26]

This coding decision corresponds to the dagger-asterisk pair **A30.9†G63.0*** in **Appendix A4**, where the A30.9 is dagger code indicated by the "**†**" symbol and G63.0 is the asterisk code indicated by the "**✱**" symbol. In the DRG software, the PDx of leprosy (A30.9) will be substituted with polyneuropathy (G63.0). Leprosy will then be listed among the SDx.

After dagger-asterisk substitution:
PDx: G63.0
SDx: A30.9,...

3.2. Overview of the Case Grouping Process

The process of assigning an inpatient case to a DRG is based on accurately categorizing their clinical characteristics into groups that have similar resource use. This is done in three hierarchical steps (**Figure 8**).

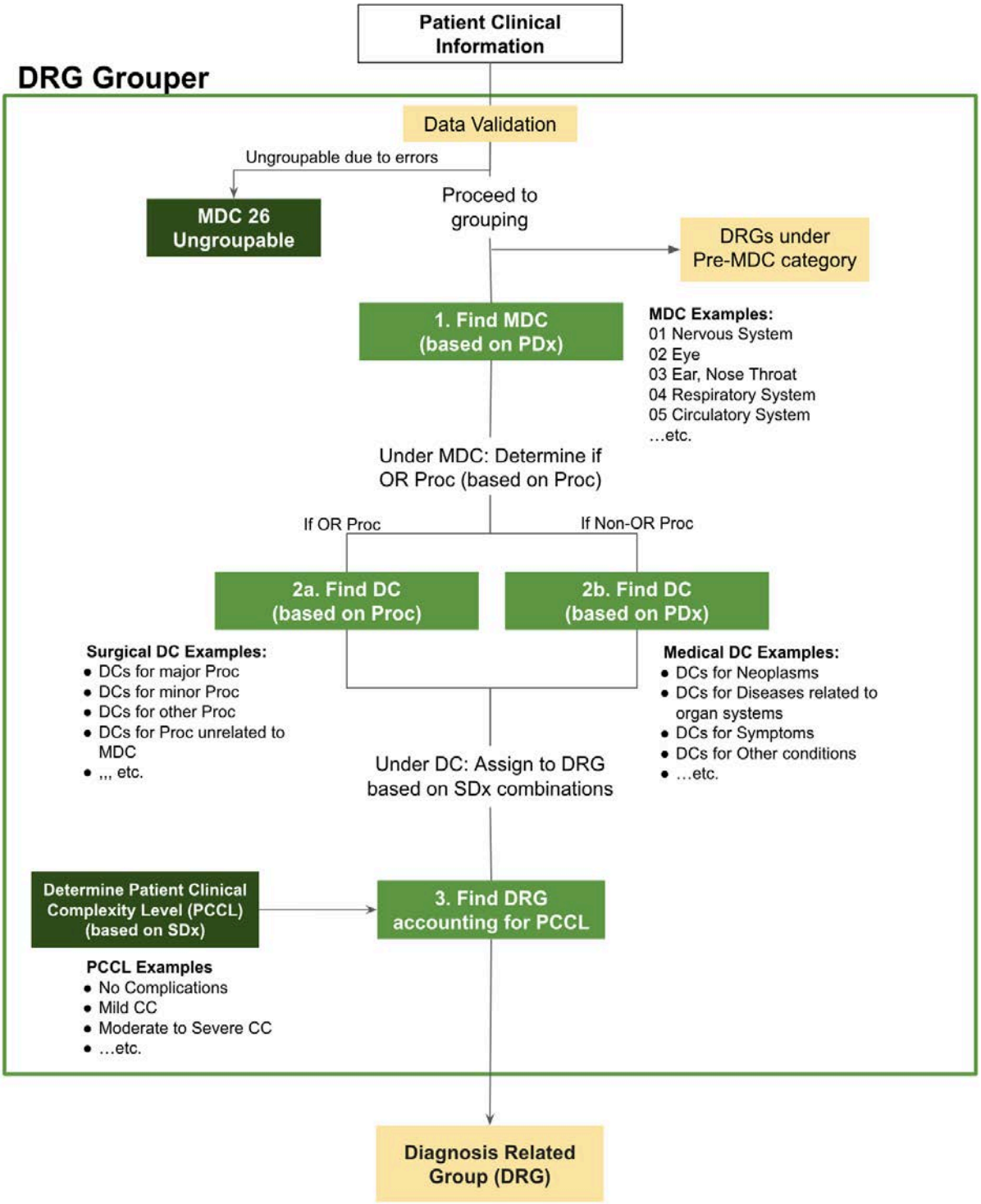


Figure 8. Overview of Case Grouping Process

First, patients are assigned a **Major Diagnostic Category (MDC)** based on their PDx. MDCs correspond to major body systems based on the ICD diagnosis areas (e.g., nervous system, respiratory tract system, etc.), and are the broadest category of classification. Some cases may forgo this step and be assigned directly to a DRG. Cases that fall under this pre-MDC category are discussed further in the succeeding section.

Within the MDC, the case is assigned to a specific **Disease Cluster (DC)**, based on the specific diagnoses or procedures performed on the patient. A defining feature of the DC is the presence of OR Proc. Cases with OR Proc are considered **surgical cases**. DC of surgical cases are differentiated by the resource intensiveness of the OR Proc performed. The most resource-intensive Proc determines the DC. For **medical or non-surgical cases,** the PDx determines the DC.

Each DC has several DRGs corresponding to different levels of **patient clinical complexity level (PCCL)**, based on the patient's **comorbidities or complications (CC)** determined by the patient's SDx.

These three steps are reflected in the five-digit DRG code (**Box 3**).

Box 3. Example of a DRG Code

For a patient who had been admitted for a craniotomy for trauma without any complications:

MDC = 01 (Diseases and Disorders of the Nervous System)
DC = 0101 (MDC 01 + Group 01 "Craniotomy for trauma")
CC = 0 (No complications)

Leading to the DRG in the format of MM-DD-C:

01010

Where the first two digits correspond to the MDC (01), the third and fourth digits correspond to the specific DC (01), and the last digit reflects the patient CC level (0).

The succeeding sections will explain in-depth how the MDC, DC, and CC are determined.

3.3. MDC Determination

After ungroupable cases, or cases with errors are identified in data validation, **the first major step of finding the DRG is determining MDC for the case.**

Multiple conditions are first checked through the **Pre-MDC section of the grouper algorithm illustrated in Figure 9,** to see whether the case falls into special MDCs or is actually an outpatient case. Otherwise, the MDC is determined based on the primary diagnosis (PDx) in the latter half of the flowchart. Each MDC is identified by a two-digit code which corresponds to the first two digits of the DRG code.

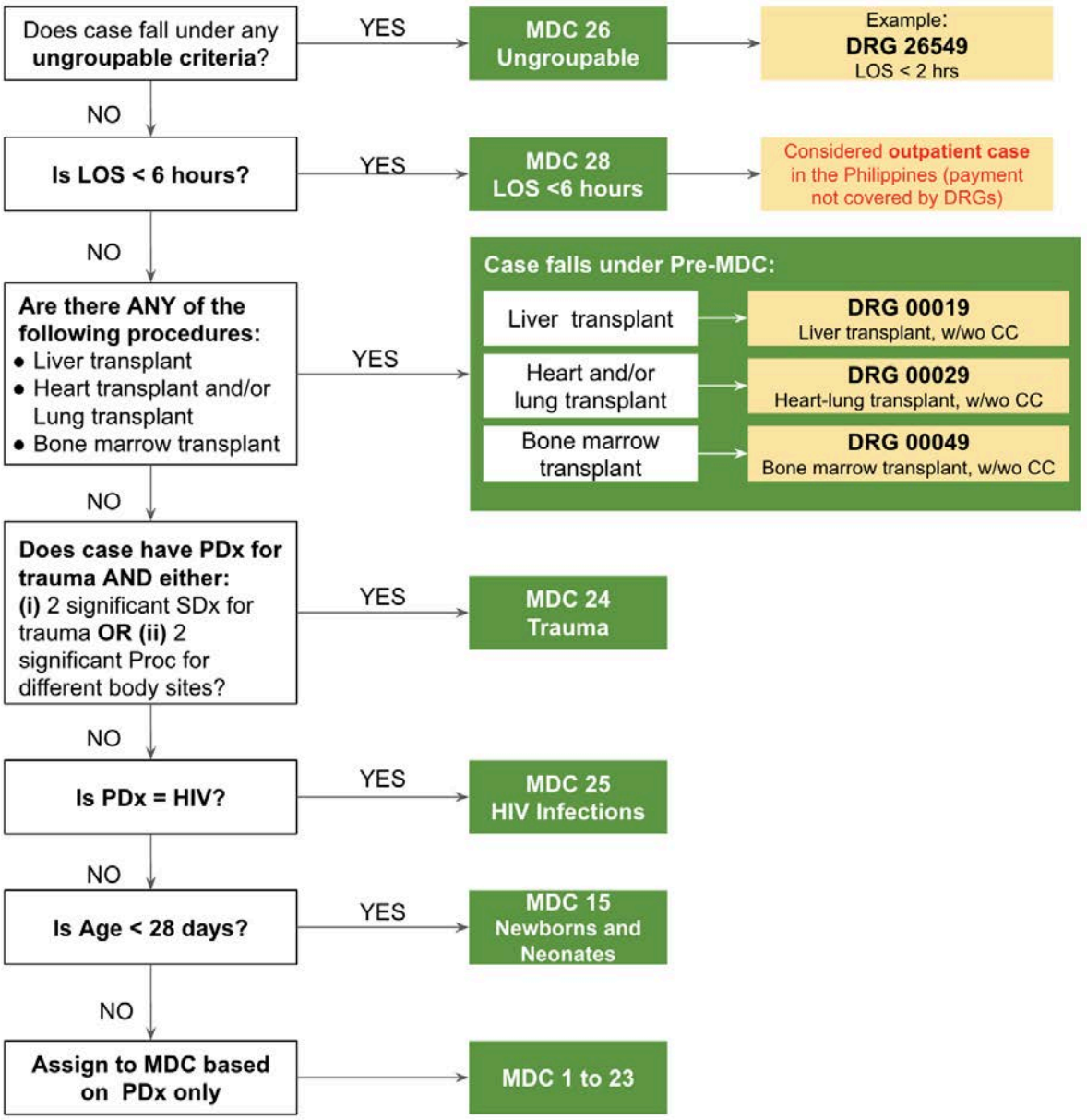


Figure 9. Process of MDC Determination

There are 25 MDCs based on the ICD areas of diagnosis, designated MDC 01 to MDC 25. Three MDCs were created specifically for the DRGs:

(1) MDC code 00 is the category for cases where the DRG is determined by the procedure code combined with the PDx (Pre-MDC). Rather than PDx as the basis for DRG assignment, the high resource intensity associated with these procedures directly assign liver, heart-lung, and bone marrow transplant cases to DRGs 00019, 00029, and 00049, respectively.

(2) MDC 26 is the broader category for ungroupable cases due to missing, invalid, or unrelated data. These are DRG 26509 (No/Invalid PDx), 26519 (Unacceptable PDx), 26529 (Unacceptable Obstetric Code Combination), 26539 (Invalid Age), and 26549 (LOS <2 hours).

A category of exceptional cases, **Unrelated OR Procedures**, where none of a patient's OR procedures fall under those of their MDC, is also covered by MDC 26. Unrelated OR Procedures are discussed in the next section for DC determination.

(3) MDC 28 is the category for cases where the patient's LOS is at least two hours but less than what qualifies as an inpatient case in the Philippines. TDRGs regard LOS greater than 6 hours as an inpatient case. However, in the Philippines, for a case to be considered an inpatient admission, LOS must be at least 24 hours. MDC 28 is retained in the grouper for shadow billing but cases falling under MDC 28 are considered outside the scope of the Philippine DRGs.

Table 6 presents a list of the MDCs. **Appendix A1** presents the full list of MDCs corresponding to each ICD diagnosis code. MDC names are directly lifted from TDRG v5.[17]

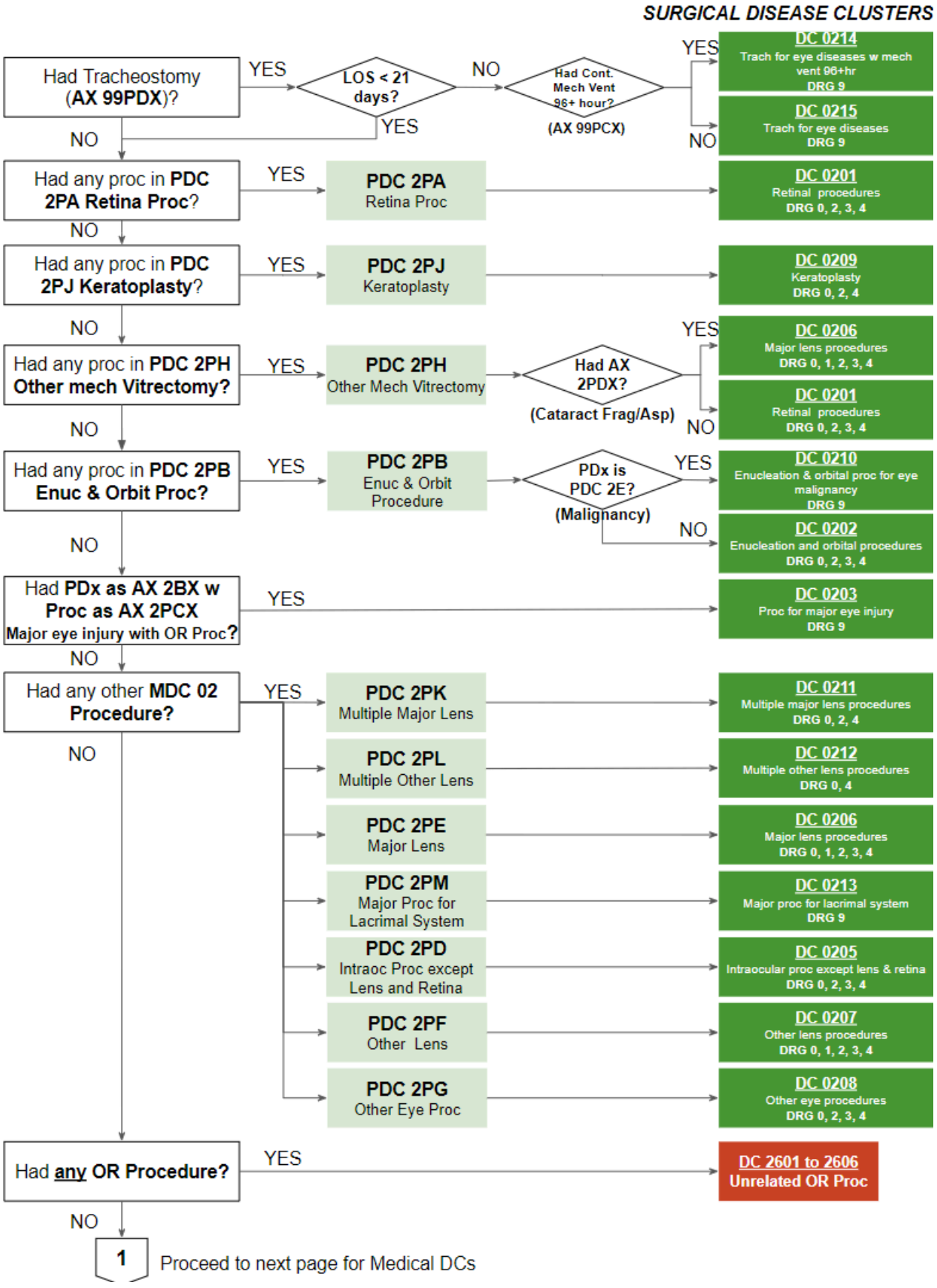
Table 6. MDC Codes

MDC Name	MDC Code	Description
Pre-MDC	00	DRG Predetermined based on high resource intensity of procedure
MDC 01	01	Diseases and Disorders of the Nervous System
MDC 02	02	Diseases and Disorders of the Eye
MDC 03	03	Diseases and Disorders of the Ear, Nose, Mouth, and Throat
MDC 04	04	Diseases and Disorders of the Respiratory System
MDC 05	05	Diseases and Disorders of the Circulatory System
MDC 06	06	Diseases and Disorders of the Digestive System
MDC 07	07	Diseases and Disorders of the Hepatobiliary System and Pancreas
MDC 08	08	Diseases and Disorders of the Musculoskeletal System and Connective Tissue
MDC 09	09	Diseases and Disorders of the Skin, Subcutaneous Tissue, and Breast
MDC 10	10	Endocrine, Nutritional, and Metabolic Diseases and Disorders
MDC 11	11	Diseases and Disorders of the Kidney and Urinary Tract
MDC 12	12	Diseases and Disorders of the Male Reproductive System
MDC 13	13	Diseases and Disorders of the Female Reproductive System
MDC 14	14	Pregnancy, Childbirth, and Puerperium
MDC 15	15	Newborns and Other Neonates with Conditions Originating in the Perinatal Period
MDC 16	16	Diseases and Disorders of the Blood and Blood Forming Organs and Immunological Disorders

MDC Name	MDC Code	Description
MDC 17	17	Myeloproliferative Diseases and Disorders, Poorly Differentiated Neoplasms
MDC 18	18	Infectious and Parasitic Diseases (Systemic or Unspecified Sites)
MDC 19	19	Psychiatric Illnesses and Disorders
MDC 20	20	Alcohol/Drug Use and Alcohol/Drug Induced Organic Mental Disorders
MDC 21	21	Injuries, Poisonings, and Toxic Effects of Drugs
MDC 22	22	Burns
MDC 23	23	Factors Influencing Health Status and Other Contacts with Health Services
MDC 24	24	Multiple Significant Trauma
MDC 25	25	Human Immunodeficiency Virus (HIV) Infections
MDC 26	26	Ungroupable

3.4. DC Determination

The second step in the grouping process is to find the DC of a case. Each MDC has a **logic tree,** a series of questions whose answers lead to different branches. The logic tree assigns cases to a **Procedure or Diagnosis Cluster (PDC)**, a group of diagnoses and procedures which tend to have similar clinical or anatomic characteristics. Under each PDC, classification is further refined into DCs. MDC logic tree can be found in **Annex C** with the respective DCs for each MDC.


SURGICAL DISEASE CLUSTERS
Had Tracheostomy (AX 99PDX)?
YES
LOS < 21 days?
NO
YES
Had Cont. Mech Vent 96+ hour?
(AX 99PCX)
YES
NO
DC 0214
Trach for eye diseases w mech vent 96+hr
DRG 9
DC 0215
Trach for eye diseases
DRG 9
NO
Had any proc in PDC 2PA Retina Proc?
YES
PDC 2PA
Retina Proc
DC 0201
Retinal procedures
DRG 0, 2, 3, 4
NO
Had any proc in PDC 2PJ Keratoplasty?
YES
PDC 2PJ
Keratoplasty
DC 0209
Keratoplasty
DRG 0, 2, 4
NO
Had any proc in PDC 2PH Other mech Vitrectomy?
YES
PDC 2PH
Other Mech Vitrectomy
Had AX 2PDX?
(Cataract Frag/Asp)
YES
NO
DC 0206
Major lens procedures
DRG 0, 1, 2, 3, 4
DC 0201
Retinal procedures
DRG 0, 2, 3, 4
NO
Had any proc in PDC 2PB Enuc & Orbit Proc?
YES
PDC 2PB
Enuc & Orbit Procedure
PDx is PDC 2E?
(Malignancy)
YES
NO
DC 0210
Enucleation & orbital proc for eye malignancy
DRG 9
DC 0202
Enucleation and orbital procedures
DRG 0, 2, 3, 4
NO
Had PDx as AX 2BX w Proc as AX 2PCX Major eye injury with OR Proc?
YES
DC 0203
Proc for major eye injury
DRG 9
NO
Had any other MDC 02 Procedure?
YES
PDC 2PK
Multiple Major Lens
DC 0211
Multiple major lens procedures
DRG 0, 2, 4
PDC 2PL
Multiple Other Lens
DC 0212
Multiple other lens procedures
DRG 0, 4
PDC 2PE
Major Lens
DC 0206
Major lens procedures
DRG 0, 1, 2, 3, 4
PDC 2PM
Major Proc for Lacrimal System
DC 0213
Major proc for lacrimal system
DRG 9
PDC 2PD
Intraoc Proc except Lens and Retina
DC 0205
Intraocular proc except lens & retina
DRG 0, 2, 3, 4
PDC 2PF
Other Lens
DC 0207
Other lens procedures
DRG 0, 1, 2, 3, 4
PDC 2PG
Other Eye Proc
DC 0208
Other eye procedures
DRG 0, 2, 3, 4
NO
Had any OR Procedure?
YES
DC 2601 to 2606
Unrelated OR Proc
NO
1
Proceed to next page for Medical DCs

(continued on next page)

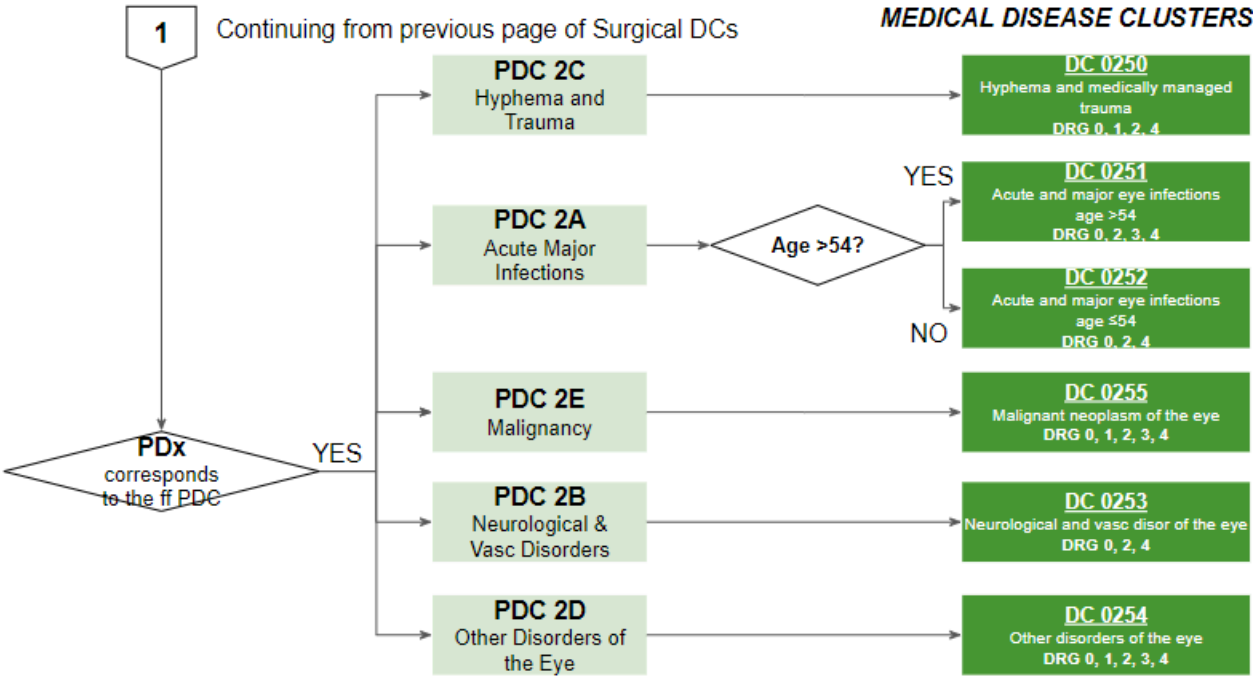


Figure 10. Illustration of DC Determination for MDC 02 Eye

DCs are denoted by a four-digit number. The first two digits are the MDC (MM = 00 to 26, or 28), and the last two digits are divided into group numbers 01 to 49 for Surgical DC (DC with OR Proc) and group numbers 50 to 99 for Medical DC (DC without OR Proc).

The first question of the logic tree asks whether a patient had an **OR Proc related to the MDC,** dividing the tree into **Surgical PDC** and **Medical (non-surgical) PDC**.

PDC of surgical cases classify patients based on the Proc performed. A patient with multiple Proc will be assigned to the PDC associated with the highest resource usage (i.e., comes first in the MDC logic tree). Alternatively, if the Proc is not related to the MDC, the case will be classified as Ungroupable in DC 2601 to 2606 “Unrelated OR Procedures” (see red box in **Figure 10**). The corresponding MDC and PDC associated with each Proc ICD-9 code are listed in **Appendix B1**.

PDC of medical cases usually classify patients based on their PDx. In special cases, PDC may be determined using other data, such as in MDC 14 (Pregnancy), MDC 15 (Newborns), MDC 17 (Myeloproliferative diseases), and MDC 24 (Multiple significant trauma).

Each PDC is denoted by the MDC number and letters.

- PDC for medical cases are represented by the MDC number and a single letter. For example, PDC 1A “Spinal Disorders and Injuries.”

- PDC for surgical cases are represented by the MDC number followed by a “P” or “Q” and then a single letter. For example, PDC 1PK “Multiple Craniotomy” based on the procedure code

Box 4. Example of PDC Determination

A patient diagnosed with cholera (A00.0) and no procedures will be classified into MDC 06 “Diseases and Disorders of the Digestive System and **PDC 6G** “Gastroenteritis.”

A patient with cholera (A000) and a trachea fistula closure (RVS 43312) will be classified into MDC 06 “Diseases and Disorders of the Digestive System and **PDC 6PE “**Stomach, Esophagus & Duodenal procedure.”

Most PDCs map directly to a DC, but other PDC are further subdivided into several DCs based on patient characteristics that may affect resource use such as Age or Discht (see PDC 2A in **Figure 10**).

Another factor that may differentiate DCs in a single PDC are **Auxiliary Clusters (AX),** a combination of ICD diagnosis and/or procedure codes related to the MDC that reflect more complicated cases. The presence of an AX leads to greater resource use that denote the need to differentiate DC (see PDC 2PH in **Figure 10**). The same AX may be present in multiple MDC or PDC, and the same diagnosis or procedure codes may be present in multiple auxiliary clusters. **Appendices B2 and B3** contain the list of Diagnosis AX and Procedure AX, respectively.

AX are denoted by the MDC number and letters, followed by the letter “X.”

- AX corresponding to ICD diagnosis codes are represented by the MDC number, a single letter, and “X.” For example, AX 1BX “Trauma.”
- AX corresponding to ICD procedure codes are represented by the MDC number followed by a “P” or “Q,” a single letter, and “X.” For example, AX 2PDX “Cataract Frag/Asp”

In some cases, the patient has multiple AX found in the logic tree. **If the patient has multiple SDx, these should be arranged alphabetically from Z to A**. The first SDx to appear in the order is the AX that determines the DC. This step is automatically done by the grouper software.

Unrelated OR Procedures are exceptional cases that occur when patients’ have undergone OR Proc(s), **but all procedure codes were unrelated to any PDC in the MDC logic tree**. These cases are grouped in “Unrelated OR Proc” DC, with codes 2601 to 2606 (**Table *7***). The DC is determined by arranging each OR Proc according to its hierarchy score. The highest level OR Proc will be the last digit of the DC. The corresponding hierarchy scores for each OR Proc are found in **Appendix B1**. A hierarchy level of 0 indicates the procedure is a Non-OR Proc.

Table 7. Unrelated OR Proc DCs

DC Number	Highest OR Proc Level	DRGs under DC
DC 2601	OR Proc Level 1 unrelated to PDx	DRG 26010, 26012, 26013, 26014
DC 2602	OR Proc Level 2 unrelated to PDx	DRG 26020, 26022, 26023, 26024
DC 2603	OR Proc Level 3 unrelated to PDx	DRG 26030, 26032, 26033, 26034
DC 2604	OR Proc Level 4 unrelated to PDx	DRG 26040, 26042, 26043, 26044
DC 2605	OR Proc Level 5 unrelated to PDx	DRG 26050, 26053, 26054
DC 2606	OR Proc Level 6 unrelated to PDx	DRG 26060, 26063, 26064

The patient is assigned to the DRG following the same process as in other DCs as described in **Section 3.6**. However, the **payments may not correspond closely to the actual costs of care**, because of the unrelated specified PDx.

3.5. CC Determination and Finding the DRG

The last major step to be able to classify the patient case into the appropriate DRG within the DC is determining the PCCL. The PCCL is an index which stratifies patients according to their CC to reflect greater resource usage for more complex or severe cases (**Table 8)**.

Table 8. Patient Clinical Complexity Level (PCCL) Scale

Severity of CC	Patient Clinical Complexity Level (PCCL)
No CC Effect or Not a CC	0
Minor CC	1
Moderate CC	2
Severe CC	3
Catastrophic CC	4
DC without CC levels	9

The PCCL is calculated for each patient based on the **Complication and Comorbidity Level (CCL)** assigned to each of their CCs. Each DC has a set of SDx that are considered CC, and a CCL score is assigned to each CC. As such, a single SDx may have a different CCL in one DC compared to another. The CCLs of each of the patient's CCs are then taken together to calculate for the PCCL.

Some DCs do not have different levels of complexity. In such cases, there is only one DRG under the DC, and the last digit of the DRG is assigned the placeholder value "9."

The steps to finding the CCL given multiple SDx are as follows:

(1) Assign CCL to each SDx

The process for calculating CCL for each SDx is illustrated in **Figure 11.** The process should be repeated for each SDx until all of them have been assigned a CCL.

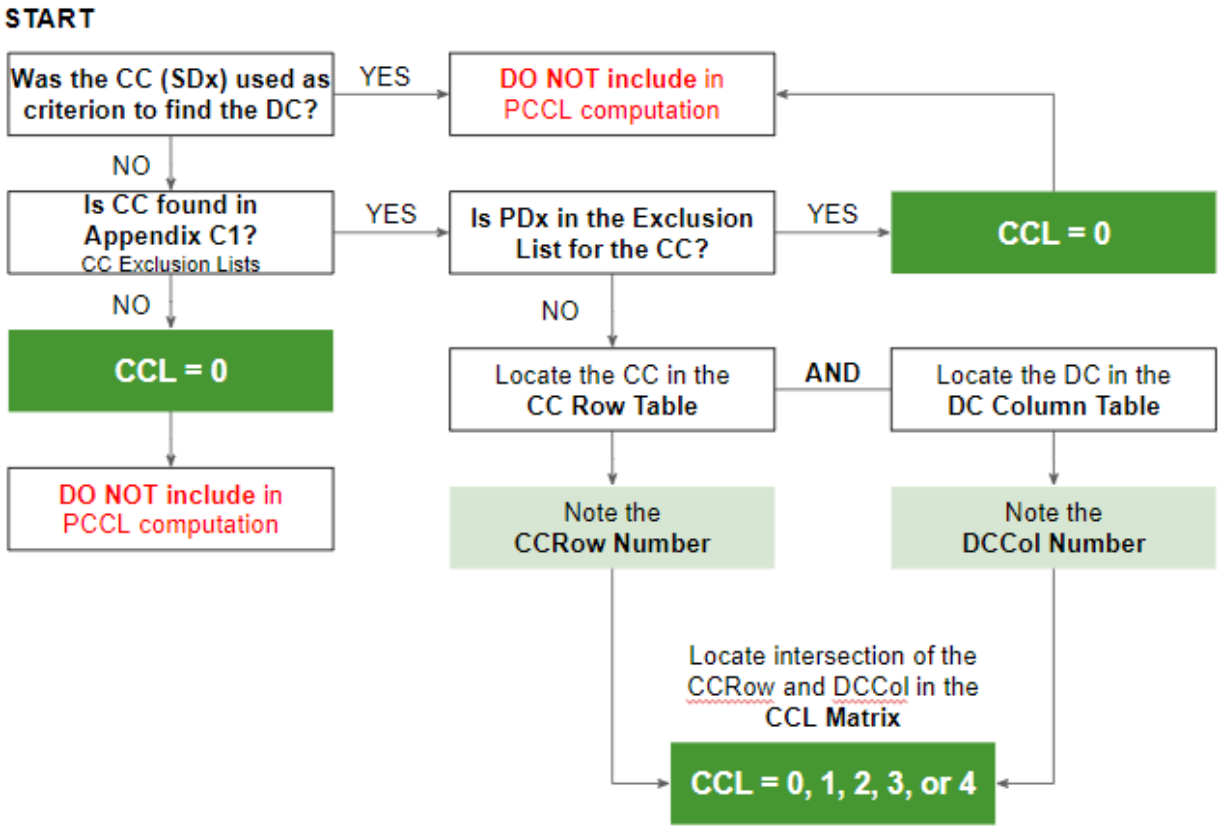


Figure 11. Process of Finding CCL for Each SDx

The **CC Row Table, DC Column Table, and CCL Matrix** are found in **Appendices C2, C3, and C4** respectively.

Based on the CCL value for each SDx, the next step is as follows:

- If all CC have a score of zero, then **the PCCL is zero**.
- If there is only one CC with a score greater than zero, then skip the next step and obtain the PCCL in **Step (3)**.
- If one or more CC have a score greater than zero, proceed to **Step (2)**.

(2) Identify relevant CCs through the Recursive Exclusion Process

Disregard all SDx with CCL of 0. Arrange all remaining SDx from highest to lowest CCL. If multiple CC have the same CCL, arrange them alphabetically from Z to A. If there are codes with the same letter, arrange those codes based on the numerical portion from highest to lowest.

Check **whether the first CC (highest severity) is found in any of the exclusion lists for each of the remaining lower CC** (**Appendix C1**). For each of the lower CC, if the highest CC is found in the exclusion list, then the two codes are closely related and have redundant contribution to case severity. The lower code must be discarded from the PCCL computation.

The process is then repeated with the next highest CC on the list until the list is exhausted (**Figure 12**). The remaining CC will all have CCL greater than zero.

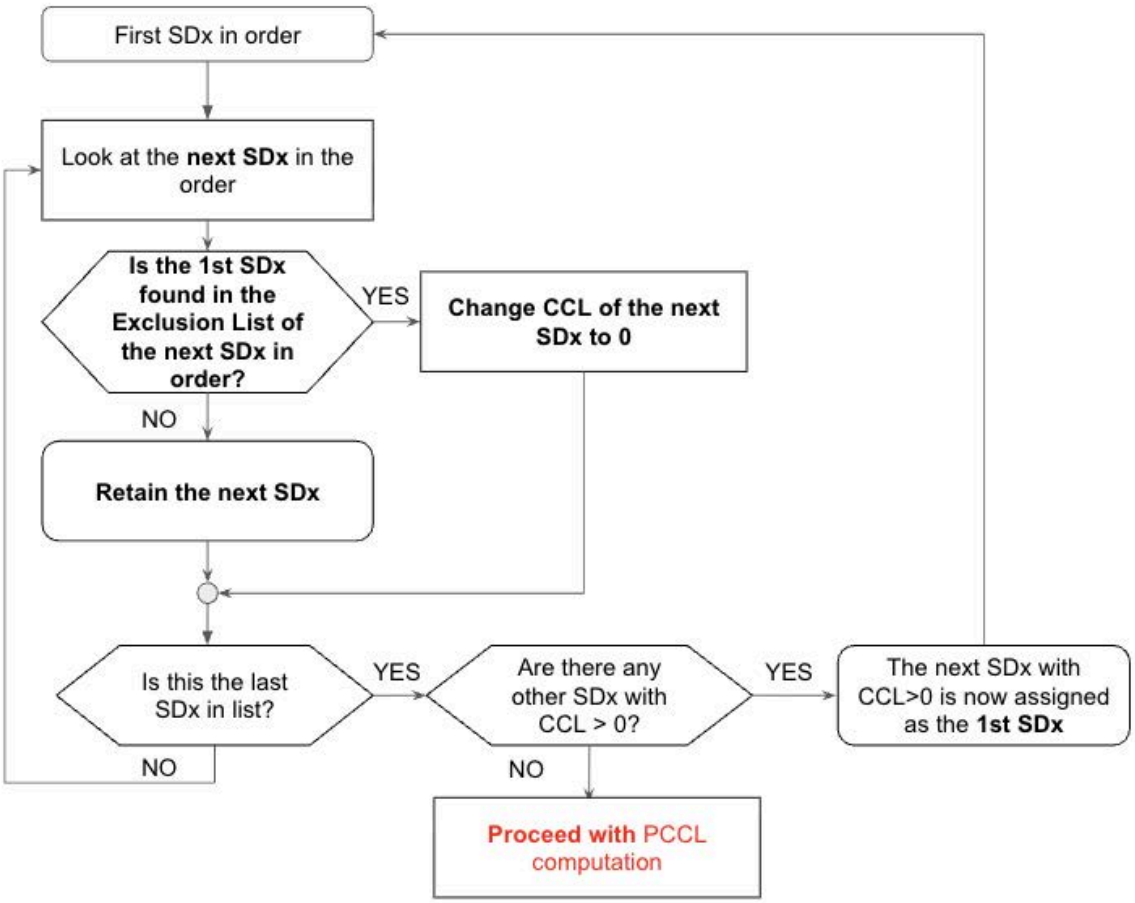


Figure 12. Recursive Exclusion Process

(3) Obtain the PCCL. If there are six or fewer CCs remaining, the PCCL can be obtained using the table in **Appendix C5**. The remaining CCs are arranged from highest CCL to lowest CCL. The combination of CCL values corresponds to a single PCCL value (**Box 5**).

Box 5. Example of Finding PCCL Value using CCL Value

A patient had four CC remaining after the Recursive Exclusion Process. The CC had CCL values of **3, 2, 1,** and **1.**

This combination corresponds to a **PCCL of 4** on the CCL to PCCL values table below:

PCCL	CCL1	CCL2	CCL3	CCL4	CCL5	CCL6
4	4	3				
4	4	2				
4	4	1	1			
3	4	1				
3	4					
4	3	3				
4	3	2	2			
4	3	2	1	1		
3	3	2	1			
3	3	2				
3	3	1	1	1	1	1
3	3					
4	2	2	2	2		
3	2	2	2			
4	2	2	2	1	1	1
3	2	2	2	1	1	
3	2	1				
2	2					
3	1	1	1	1	1	
2	1	1	1	1		
2	1	1				
1	1					

The PCCL can be computed using the formula in **Appendix C6**. The formula can also be used when there are more than six CC remaining and the CCL to PCCL values table is insufficient.

(4) Finding the DRG

The PCCL is used to distinguish between multiple DRGs in the same DC. A single DC can have 1, 2, 3, 4, or 5 DRGs (**Figure 13**). **Appendix D1** contains the full list of DRGs under each DC and the definition of each group.

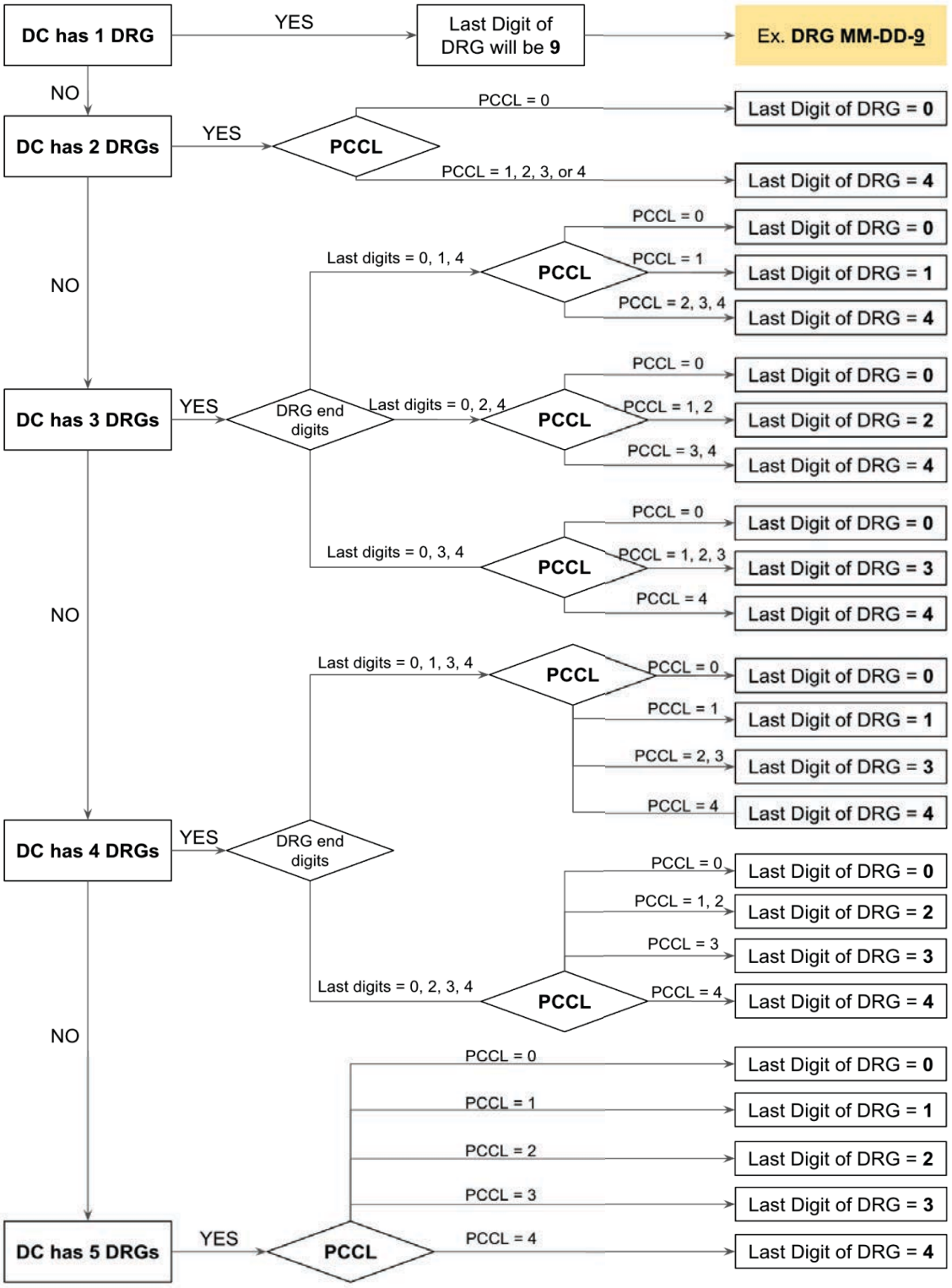


Figure 13. Process of Determining the DRG under a DC

3.6. Examples of DRG Determination from a Patient Case

The following examples make use of the information present in the PhilHealth CF5 to classify patients into DRGs.[36] The examples walk through the three steps to finding the DRG: (1) determining the MDC, (2) determining the DC, and (3) determining the DRG accounting for PCCL.

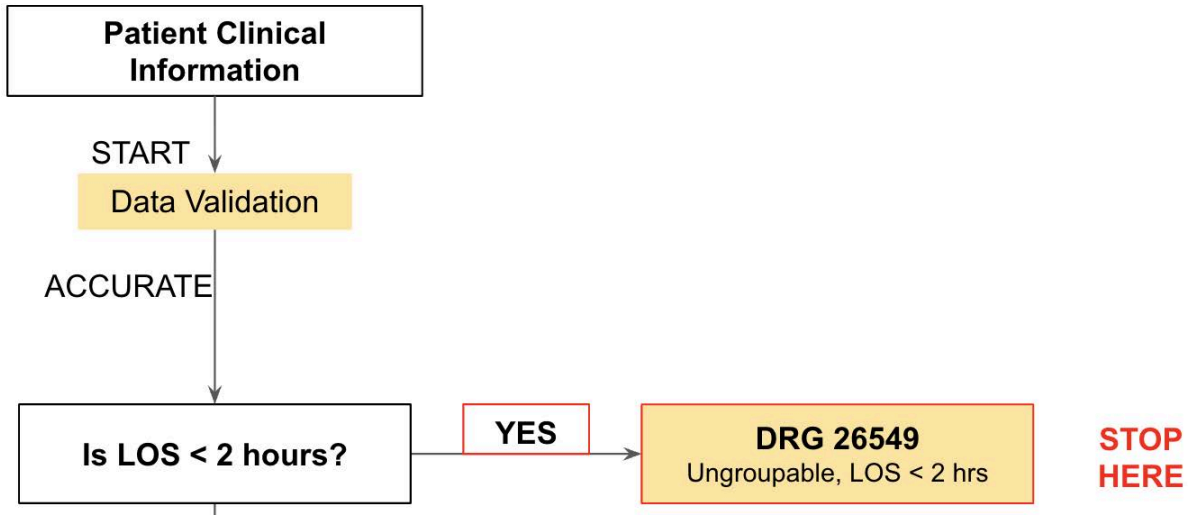
3.6.1. Ungroupable Case

A patient was admitted to the hospital following a vehicular accident. Their CF5 had the following information (assume all the information presented below was encoded correctly and validated by the grouper software):

Name	TBI
Age	35
Sex	M
LOS	1 hour
PDx	**S02.71** Multiple fractures involving skull and facial bones: open
SDx	**S06.11** Traumatic cerebral edema: with open intracranial wound **S22.40** Multiple fractures of ribs: closed
Proc	None

Step 1. *Find the MDC*

From the first question of the logic tree, the DRG can already be determined. The patient falls under **DRG 26549 Ungroupable, LOS less than 2 hours**. Additionally, the case is considered an outpatient case and is not covered by the scope of the Philippine DRGs.



3.6.2. Case with no CC

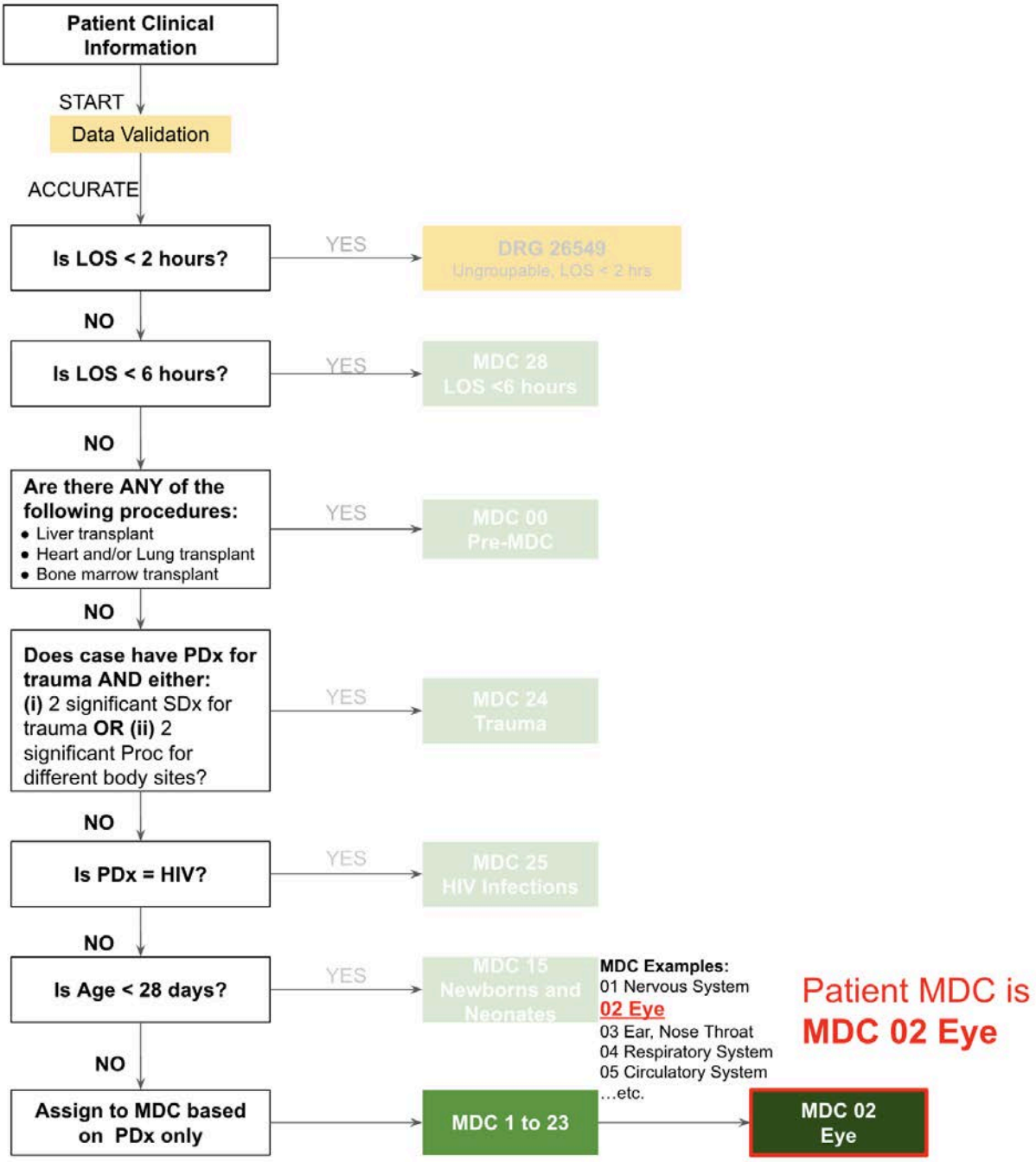
An elderly patient was admitted to the hospital for cataract removal. Their CF5 had the following information (assume all the information presented below was encoded correctly and validated by the grouper software):

Name	CSM
Age	69
Sex	F
LOS	2 days
PDx	**H25.2** Cataract, age related, morgagnian
SDx	**E11.9** Non-insulin dependent Type II diabetes mellitus
Proc	**66987 for OD** Extracapsular cataract removal w/ insertion of intraocular lens prosthesis (one stage procedure), (e.g., phacoemulsification) **66987 for OS** Extracapsular cataract removal w/ insertion of intraocular lens prosthesis (one stage procedure), (e.g., phacoemulsification)

Step 1. *Find the MDC*

The patient MDC is determined based on the MDC logic tree in **Figure 9**. The process is illustrated in the flowchart below. Emphasis is placed on the branches corresponding to the patient data. The remaining branches have been greyed out for contrast.

- The case is an inpatient case that does not fall under any Pre-MDC. This means that the MDC should be decided based on the PDx.
- **Since the PDx is Cataract,** we can disregard the MDC for trauma and HIV.
- Since the patient is elderly (Age 69), we can also disregard the MDC for newborns.
- This leaves us with the last question which is the MDC corresponding to their PDx. Locate **Cataract** among the list of PDx in **Appendix A1** to find the MDC.
- **The MDC falls under MDC 02 Eye**.

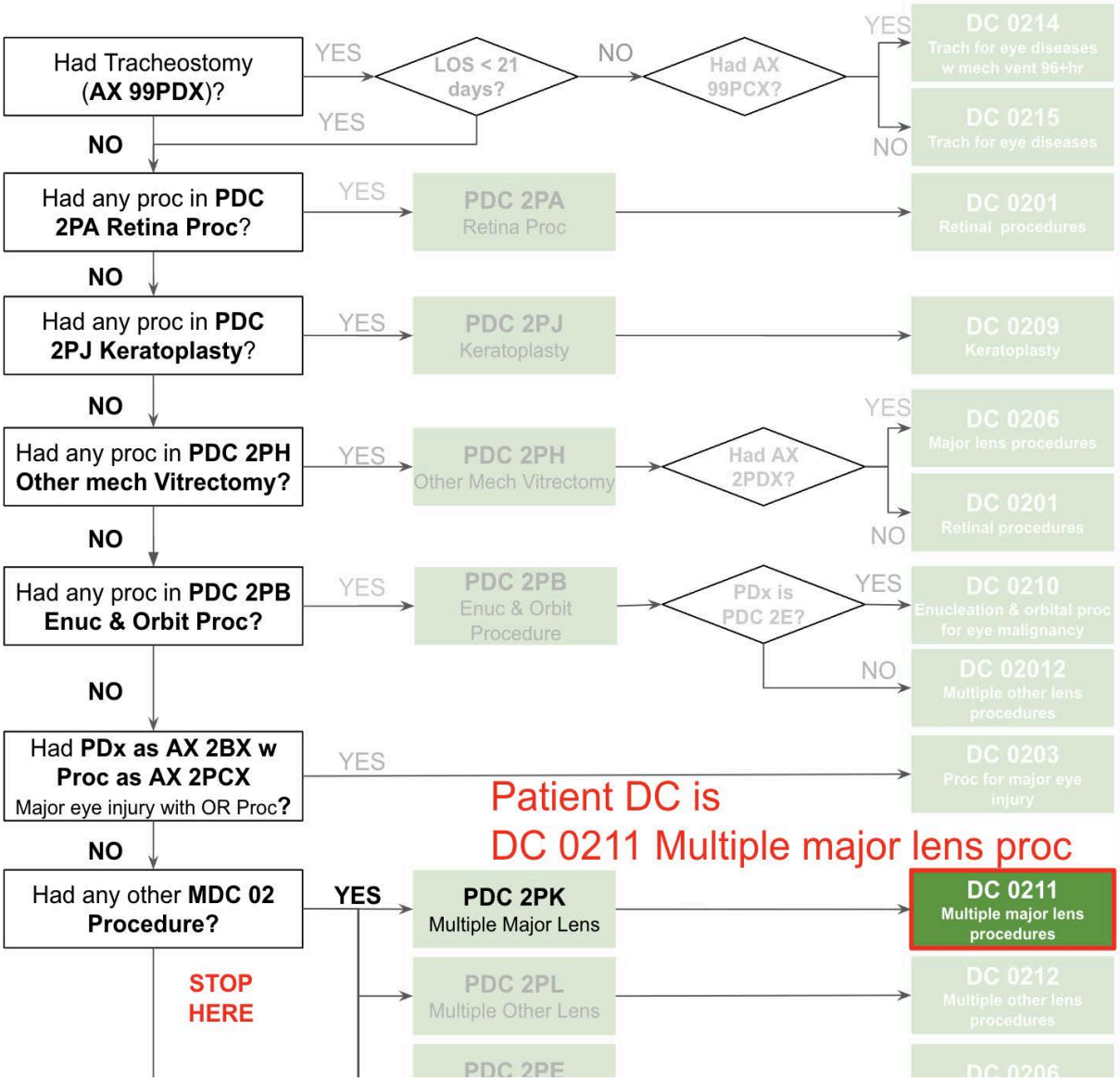


Step 2. *Find the DC*

The **second step** is to determine the DC using the logic tree **specific to MDC 02**. The logic tree for each MDC is found in **Annex C.** For this example, the MDC 02 logic tree is presented below to illustrate the classification process.

- Based on the CF5, the patient did not have a tracheostomy.

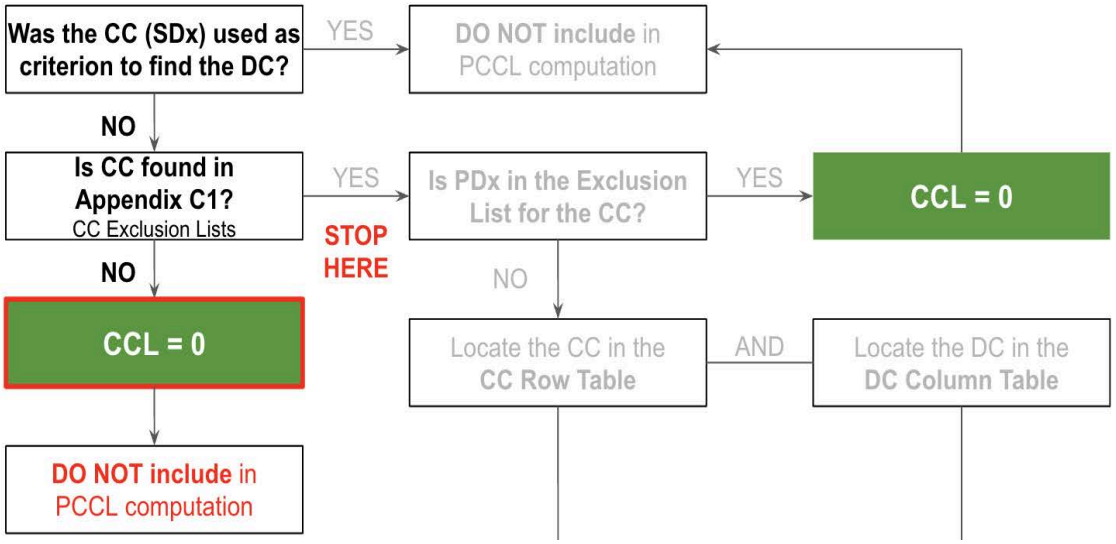
- The next major question is **whether the patient had an OR Proc**. Since Cataract Removal is an OR Proc, we focus on the **Procedure PDC or the Procedure Clusters**.
- To find the PDC, the Proc should first be converted from RVS into ICD format. Locate the RVS code **66987** in **Appendix A2 RVS to ICD-9 Crosswalk**. **Cataract Removal** corresponds to two ICD codes: **1371 and 1341**.
- Then locate the Proc codes in the list of **Proc related to MDC 02 in Appendix B1**. The Proc codes fall under two possible PDC:
    - Proc 1371 falls under **PDC 2PF Insert Lens at Catar Ext** and
    - Proc 1341 falls under **PDC 2PK Multiple Major Lens Proc**.
- **The PDC that appears <u>first</u> in the logic tree should be chosen**. In this case it is **PDC 2PK**.
- PDC 2PK has only one DC. Thus, the patient falls under **DC 0211 Multiple Major Lens Procedures**.



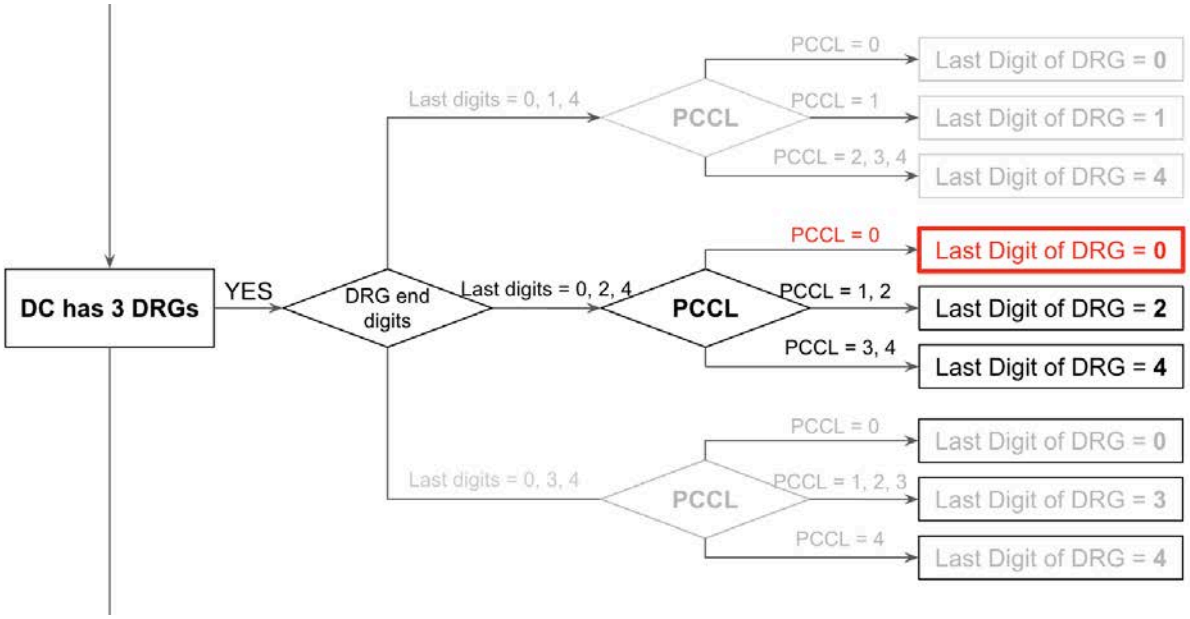
Step 3. *Find the DRG while Accounting for PCCL*

To find the DRG we first check how many groups are in DC 0211. If there are multiple DRGs in the DC, the PCCL should be computed.

- Based on the list of DC in **Appendix D1**, DC 0211 has **three DRGs**: 02110, 02112, and 02114. This means we must find the PCCL.
- Going back to the CF5, the patient has only one SDx **E11.9 Non-insulin dependent DM.** We use the diagram in **Figure 11** to determine the CCL of the SDx.
    - The SDx was not used to find the DC, so we proceed to the **CC and Exclusion List in Appendix C1** to see if the CC E11.9 contributes greatly to the PDx H25.2 Cataract.
    - E119 is not found among the CCs in the CC List. It automatically receives a **CCL score of 0 and is not included in the PCCL computation.**



- Since the patient has no other CC, the **PCCL is zero**.
- To find the DRG, follow the logic tree for DCs with three DRGs.
- Since the DRGs in DC 0211 are 02110, 02112, and 02114, the last digits of the DRGs in DC 0211 are 0, 2, and 4.
- The DRG with PCCL corresponding to 0 is **DRG 02110 Multiple Major Lens Procedures, no CC**.



3.6.3. Case with CC

A patient is admitted to the hospital with primary diagnosis of pneumonia. Their CF5 had the following information (assume all the information presented below was encoded correctly and validated by the grouper software):

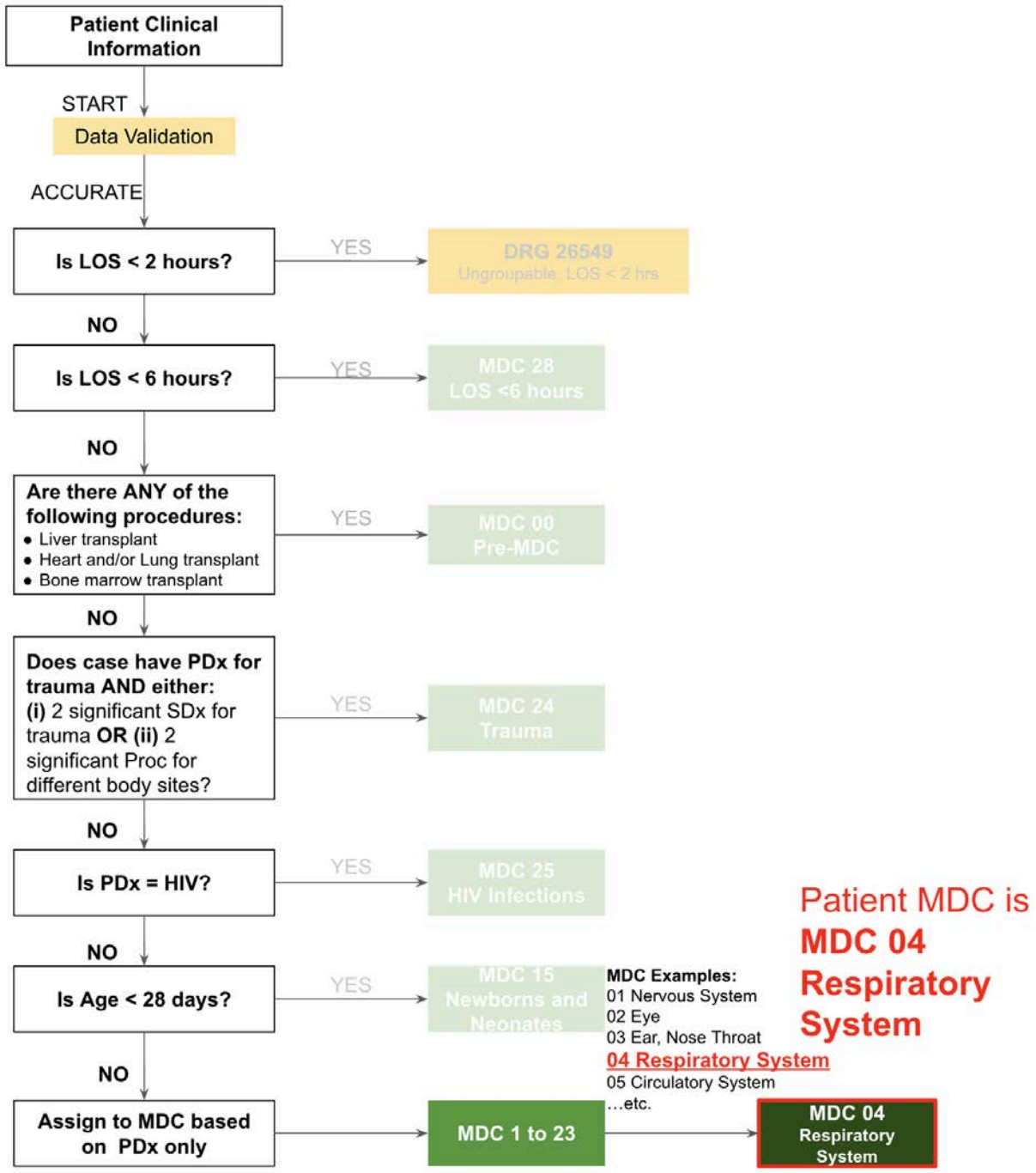
Name	CMR
Age	68
Sex	F
LOS	10 days
PDx	**J18.9** Pneumonia, unspecified
SDx	**I10** Essential hypertension **E11.9** Non-insulin dependent Type II DM **I50.0** Congestive heart failure
Proc	None

Step 1. *Find the MDC*

The patient MDC is determined based on the MDC logic tree in **Figure 9**. The process is illustrated in the flowchart below. Emphasis is placed on the branches corresponding to the patient data. The remaining branches have been greyed out for contrast.

- The case is an inpatient case that does not fall under any Pre-MDC. This means that the MDC should be decided based on the PDx.
- **Since the PDx is Pneumonia,** we can disregard the MDC for trauma and HIV.
- Since the patient is elderly (Age 68), we can also disregard the MDC for newborns.

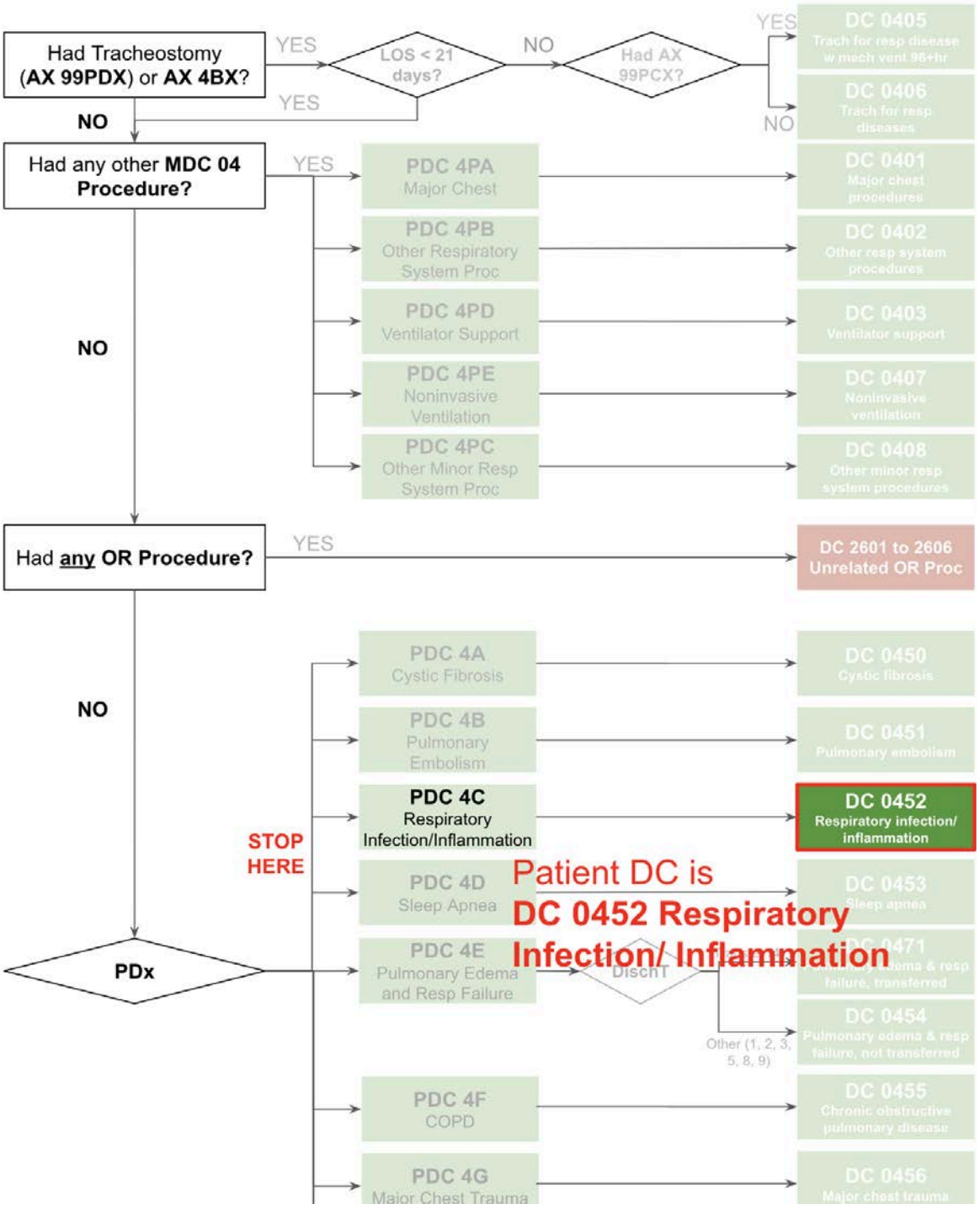
- This leaves us with the last question which is the MDC corresponding to their PDx. Locate **Pneumonia** among the list of PDx in **Appendix A1** to find the MDC.
- **The MDC falls under MDC 04 Respiratory System**.



Step 2. *Find the DC*

The **second step** is to determine the DC using the logic tree **specific to MDC 04**. The logic tree for each MDC is found in **Annex C.** For this example, the MDC 04 logic tree is presented below to illustrate the classification process.

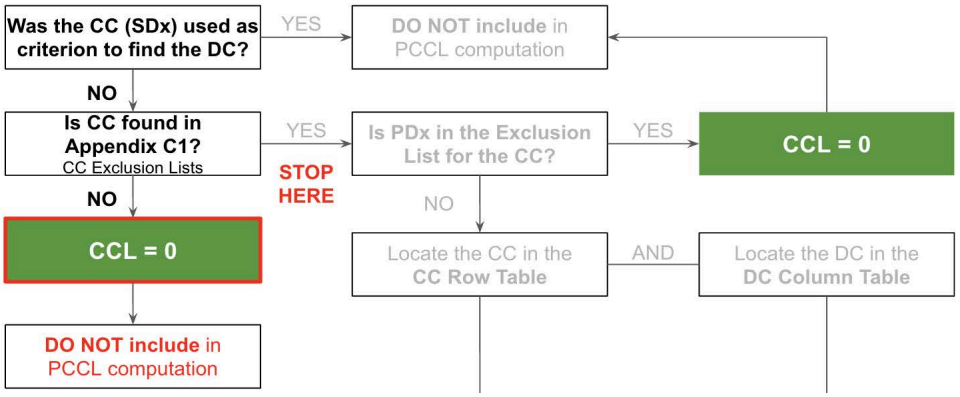
- Based on the CF5, the patient did not have a tracheostomy.
- The next major question is **whether the patient had an OR Proc**. Since there were no Proc, we focus on the **Diagnosis PDC or the Diagnosis Clusters**.
- To find the PDC, locate the PDx in the list of PDx related to the MDC found in **Appendix B1**. The PDC associated with **J18.9 Pneumonia, unspecified** is **PDC 4C Respiratory Infection/Inflammation**.
- PDC 4C has only one DC. Thus the patient falls under **DC 0452 Respiratory Infection/Inflammation.**



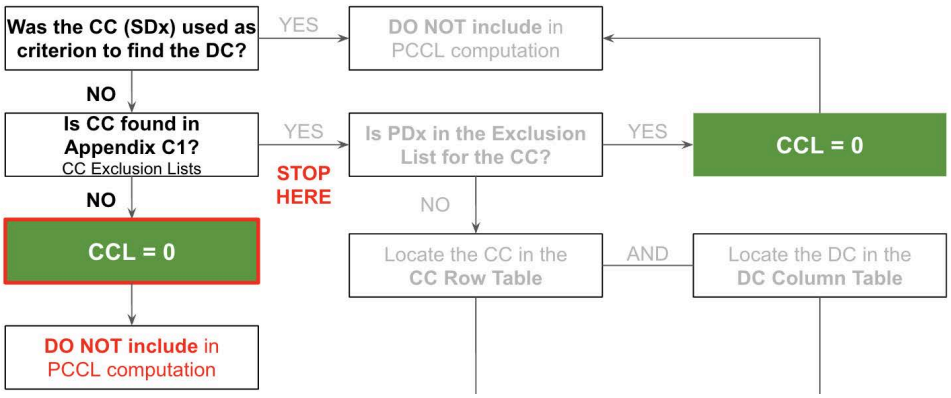
Step 3. *Find the DRG while Accounting for PCCL*

To find the DRG we first check how many groups are in DC 0452. If there are multiple DRGs in the DC, the PCCL should be computed.

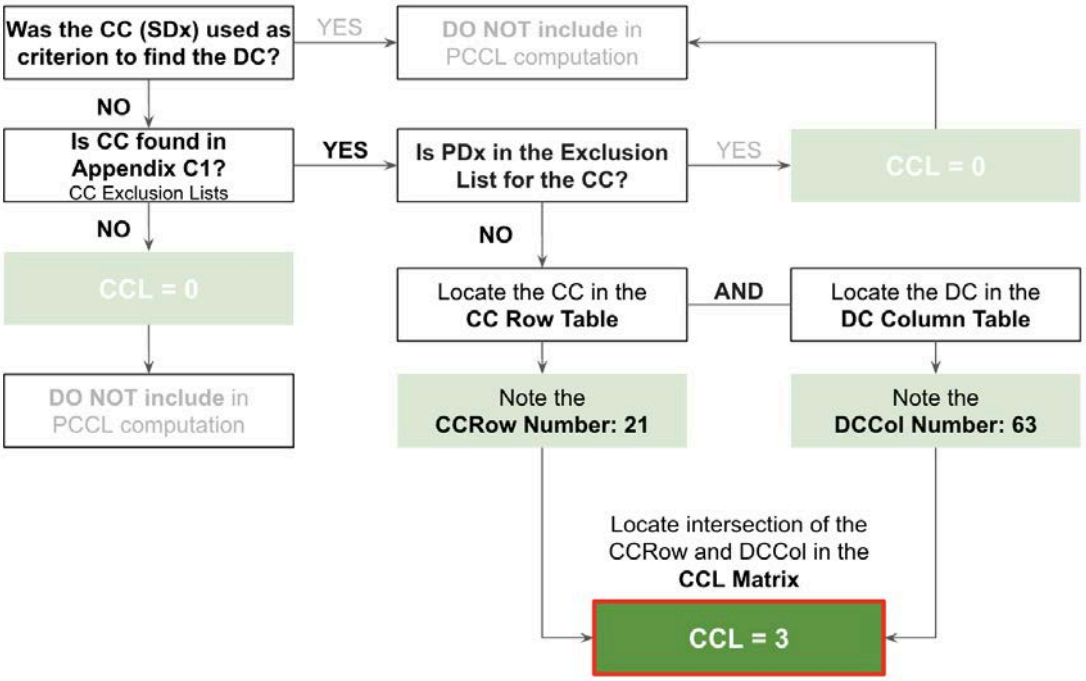
- Based on the list of DC in **Appendix D1**, DC 0452 has **five DRGs**: 04520, 04521, 04522, 04523, and 04524. This means we must find the PCCL.
- Going back to the CF5, the patient has three SDx: **I10** Essential hypertension, **E11.9** Non-insulin dependent Type II DM, and **I50.0** Congestive heart failure.
- We use the diagram in **Figure 11** to determine the CCL of each of the SDx.
    - *For I10 Essential hypertension:*
        - The SDx was not used to find the DC, so we proceed to the **CC and Exclusion List in Appendix C1** to see if the CC I10 contributes greatly to the PDx J189.
        - I10 is not found among the CCs in the CC List. It automatically receives a **CCL score of 0 and is not included in the PCCL computation.**



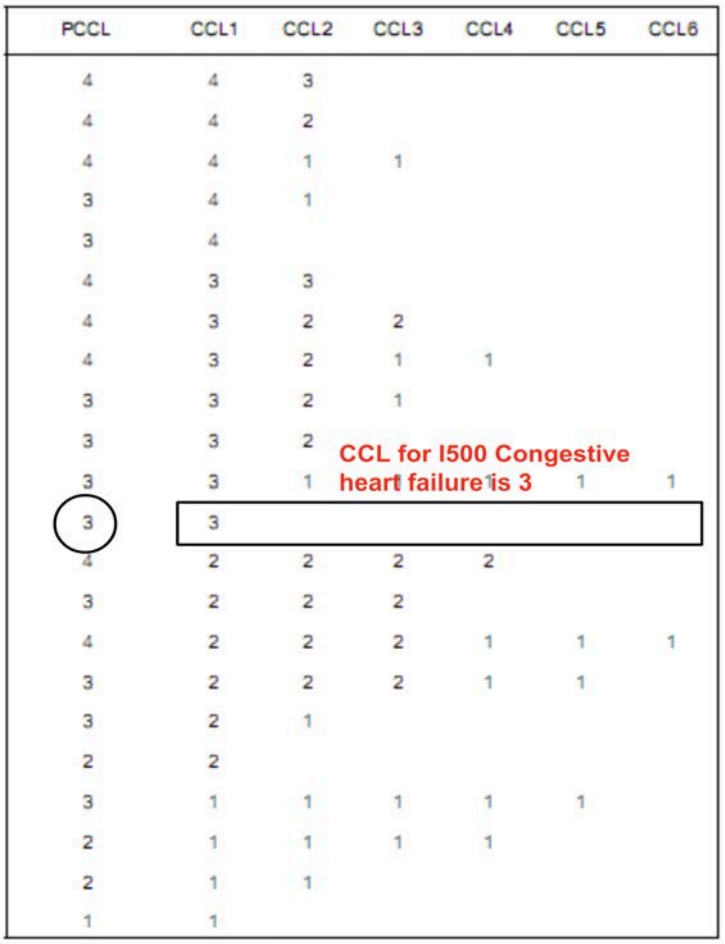
    - *For E119 Non Insulin Dependent Type II DM:*
        - The SDx was not used to find the DC, so we check in Appendix A1 whether the SDx is considered CC and the corresponding reference CC. For I50.0 it is considered a CC, and the reference CC is itself. Proceed to the **CC and Exclusion List in Appendix C1** to see if the CC I50.0 contributes greatly to the PDx J189.
        - E119 is not tagged as a CC and is not found among the CCs in the CC List. It automatically receives a **CCL score of 0 and is not included in the PCCL computation.**



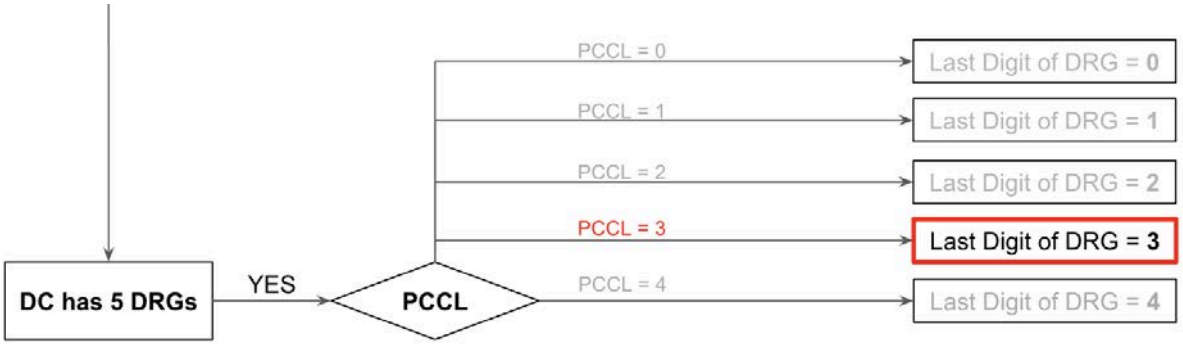
- *For I50.0 Congestive heart failure:*
  - The SDx was not used to find the DC, so we proceed to the **CC and Exclusion List in Appendix C1** to see if the CC I50.0 contributes greatly to the PDx J189.
  - I50.0 is found among the CCs in the CC List. Moreover, the PDx J189 is not in the Exclusion List meaning, it is not among the conditions for exclusion of this CC. Therefore, **I50.0 should be included in the PCCL computation**.
  - The corresponding value for the **CC I50.0 in the CC Row Table in Appendix C2 is 21**. And the corresponding value for the **DC 0452 in the DC Column Table in Appendix C3 is 63**.
  - The value found at the intersection of the 21st row and the 63rd column in the **CCL matrix in Appendix C4** is 3. Thus, **CC I50.0 has a CCL score of 3**.



- Since there is only one CC to consider, there is no need to go through the Recursive Exclusion Process. Instead, we go straight to obtaining the PCCL in the **CCL to PCCL Values Table in Appendix C5**.
- Since there is only one CC with CCL of 3, **the patient has a PCCL of 3**.



- To find the DRG, follow the logic tree for DCs with five DRGs in **Figure 13.**
- The DRG with PCCL corresponding to 3 is **DRG 04523 Respiratory Infection/ Inflammation, severe CC.**



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Annex A: Related PhilHealth Circulars and Policies

Circular Number	Circular Name	Access Link
PC 2021-0022	The Guiding Principles of the Z Benefits (Revision 1)	https://www.philhealth.gov.ph/circulars/2021/circ2021-0022.pdf
PC 2022-0016	Governing Policies On Transitioning The Provider Payment Mechanism From All Case Rates To Diagnosis-Related Groups.	https://www.philhealth.gov.ph/circulars/2022/circ2022-0016.pdf
PC 2023-0014	Implementation of Shadow Billing for the Transition to Diagnosis-Related Groups (DRG)	https://www.philhealth.gov.ph/circulars/2023/PC2023-0014.pdf
PC 2024-0006	Implementation of Shadow Billing for the Transition to Diagnosis-Related Groups (DRG) (Revision 1)	https://www.philhealth.gov.ph/circulars/2024/PC2024-0006.pdf
PC 2026-0012	Implementation of Shadow Billing for the Transition to Diagnosis-Related Groups (DRG) (Revision 2)	https://www.philhealth.gov.ph/circulars/2026/PC-2026-0012.pdf

Annex B: MDC Grouping Algorithms

The Grouping Logic Trees for each MDC, together with a list of diagnoses corresponding to each PDC, are found in the document "**Annex B**."

Annex C Directory: Clinical Code Appendices for DRG Grouping

Annex C Directory lists the different appendices referenced in the DRG Implementation Manual and their descriptions. Each appendix may be individually accessed through the Annex C document.

Annex Number	Appendix Name	Description
A1	List of Acceptable Diagnoses and Unacceptable PDx	ICD-10 codes accepted as diagnoses (PDx, SDx) by the DRG grouper, together with corresponding MDC for the PDx. Includes age- and sex-specific conditions. ICD-10 codes not accepted as PDx by the DRG grouper are tagged as such.
A2	List of Procedures	RVS codes that are acceptable Proc with corresponding ICD-9-CM code and hierarchy scores.
A3	List of Error Codes	Error codes and corresponding error messages and solutions
A4	List of Dagger-Asterisk Substitutions	ICD codes entered as PDx (daggers) with their corresponding asterisk SDx codes that take the place of the PDx.
B1	List of PDC based on Proc Codes	MDC and PDC corresponding to each ICD9 procedure code, together with the hierarchy score for each procedure. Includes list of procedures that can be performed more than once.
B2	List of Diagnosis-related AX	List of ICD10 diagnosis codes and corresponding auxiliary code tags
B3	List of Procedure-related AX	List of ICD9-CM procedure and corresponding auxiliary code tags
C1	CC and Exclusions List	List of CC with corresponding PDx that lead to the CCL for the CC to be zero.
C2	CC Row Table	CC codes and their corresponding row number that will be used in the CCL Matrix
C3	DC Column Table	DC codes and their corresponding column number that will be used in the CCL Matrix
C4	CCL Matrix	Table used to determine CCL for a CC based on its CC Row and DC Column
C5	PCCL Table	Table to determine PCCL for up to six (6) CCs
C6	PCCL Formula	Equation to calculate PCCL for greater than six (6) CCs
D1	List of DRGs	List of DRGs by MDC, Type (Surgical or Medical), and DC