

# Demystifying MS-DRGs

MS-DRGs and how they are assigned

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# Agenda

- In this session, we will learn about Medicare-Severity Diagnosis Related Groups (MS-DRGs). We will walk through the structure of the classification system and then talk about the process of assigning a MS-DRG to an acute care inpatient admission.
- Understanding how MS-DRGs are assigned to acute care inpatient admissions is important for coding professionals, coding managers, and revenue cycle professionals. Being able to explain the logic behind MS-DRG assignments will help you communicate documentation and coding needs to providers and clinicians.

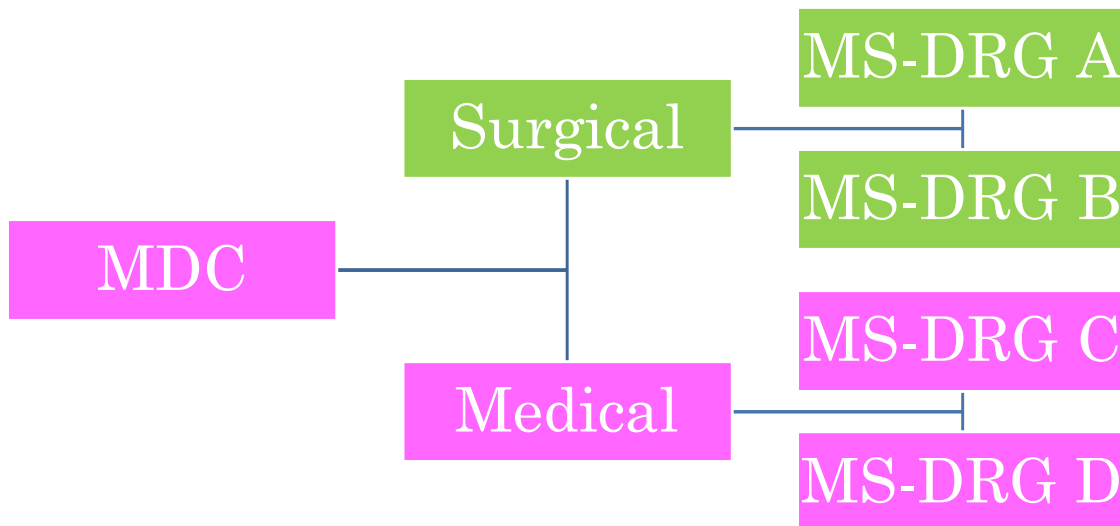


# Classification System

- **M**edicare **S**everity – **D**iagnosis **R**elated **G**roups (MS-DRGs)
  - Classification system that organizes inpatient admissions into large groups for reimbursement purposes.
    - Groups clinical similar admissions with like-resource consumption into a manageable number of groups.
  - Takes into consideration the role that a hospital's composition of patients plays influencing costs.
  - Resource Intensity – measures the resources required to treat a patient.

# MS-DRG Structure

- The structure is Hierarchical in design
  - Highest level is **Major Diagnostic Category (MDC)**, which represents the body systems treated by medicine.
  - The next level is surgical/medical
  - The third and final level is the individual MS-DRGs.



# MS-DRG Assignment Steps

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## 1. Pre-MDC Assignment

Hospitals, payers, researchers – all use the MS-DRG grouper (software) to assign cases to MS-DRGs.

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## 2. MDC Determination

However, it is very important for HIM professionals to understand the grouper algorithms.

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## 3. Medical/Surgical Determination

HIM professionals must be proficient with the steps in order to help others understand why certain admissions are assigned to particular MS-DRGs.

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## 4. Refinement

# Step 1: Pre-MDC Assignments

- Most MS-DRGs assignments begin with assessing the principal diagnosis or a combination of the principal diagnosis and a procedure.
- However, in Step 1 a **specific procedure** is used to determine the MS-DRG assignment rather than the principal diagnosis or principal diagnosis & procedure combination.
- The list of qualifying procedures for Pre-MDC assignment includes those that are very costly AND can be performed for a variety of diagnoses.

# Step 1: Pre-MDC Assignment Example

Let's consider a pancreas transplant. A pancreas transplant can be performed for a variety of clinical conditions.

- Diabetes with renal, ophthalmic, neurological, or peripheral circulatory manifestations
  - MDC 10, Endocrine, Nutritional, and Metabolic Diseases and Disorders
- Hypertensive renal disease
  - MDC 5, Diseases and Disorders of the Circulatory System
- Chronic pancreatitis
  - MDC 6, Diseases and Disorders of the Digestive System
- Chronic renal failure
  - MDC 11, Diseases and Disorders of the Kidney and Urinary Tract
- Complications of transplanted organs
  - MDC 21, Injury, Poisoning, and Toxic Effects of Drugs

MS-DRG 010  
Pancreas  
Transplant

# Step 2: MDC Assignment

The principal diagnosis is used to place the admission into one of the 25 MDCs.

- The principal diagnosis is the reason established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for care.

Appendix B of the MS-DRG Definitions Manual provides the linkage between the diagnosis code and the corresponding MDC.

- [https://www.cms.gov/icd10m/FY2024-version41-fullcode-cms/fullcode\\_cms/P0001.html](https://www.cms.gov/icd10m/FY2024-version41-fullcode-cms/fullcode_cms/P0001.html)



DX	MDC
C4031	08
C4032	08
C4080	08
C4081	08
C4082	08
C4090	08
C4091	08
C4092	08
C410	08
C411	Pre
C411	08
C412	08
C412	08
C413	08
C414	08
C419	08
C430	09
C4310	02
C43111	02
C43112	02
C43121	02
C43122	02
C4320	09
C4321	09
C4322	09

Admissions with C41.3 as the principal diagnosis are assigned to MDC 08.



# Step 3: Medical/Surgical Determination

In step 3, procedures performed during the admission are assessed to determine if an operating room (OR) procedure was performed.

- It is important to note that some of the OR procedures are not performed in the operating room but are still considered “OR procedures” in this classification system.
  - For example, stem cell or bone marrow transplants are considered OR procedures due to their significance in the admission and their associated cost.
  - Remember, this system is based on resource consumption as the driver.



CODE	MDC
0YHB31Z	21
0YHB33Z*	09
0YHB3YZ*	09
0YHB41Z	21
0YHB43Z*	09
0YHB4YZ*	09
0YHC01Z	21
0YHC03Z*	09
0YHC0YZ*	09
0YHC31Z	21
0YHC33Z*	09
0YHC3YZ*	09
0YHC41Z	21
0YHC43Z*	09
0YHC4YZ*	09
0YHD01Z	21
0YHD03Z*	09

Appendix E of the MS-DRG Definitions Manual provides a list of OR procedures.

- 0YHC43Z, Insertion of infusion device into right upper leg, percutaneous endoscopic approach – Non-OR but still drive MS-DRG assignment as “surgical”.

Procedure codes without an \* are considered OR procedures.

Procedures codes with an \* are non-OR procedures BUT in the system still impact MS-DRG assignment. These are the exceptions to the common believe that “only OR procedures impact MS-DRG assignment”.

# Step 3: Medical/Surgical Determination, continued 1

Note 1: Some procedures can group to several MS-DRGs. The determining factor is the principal diagnosis. Remember back to step 2, the principal diagnosis determines the MDC.


CODE	MDC	MS-DRG	SURGICAL CATEGORY
<b>03LG3BZ</b>	01	020-022	Intracranial vascular procedures with principal diagnosis hemorrhage
	01	023-024	Craniotomy with major device implant or acute complex CNS principal diagnosis
	01	025-027	Craniotomy and endovascular intracranial procedures
	05	270-272	Other major cardiovascular procedures
	11	673-675	Other kidney and urinary tract procedures
	21	907-909	Other O.R. procedures for injuries
	24	957-959	Other O.R. procedures for multiple significant trauma

In this example, Occlusion of the intracranial artery with a bioactive intraluminal device using a percutaneous approach, impact the MS-DRG assignment in 5 different MDCs as shown above. All of the MS-DRGs categories listed above are surgical groups.

# Step 3: Medical/Surgical Determination, continued 2

Note 2: The procedure does **NOT** have to be the principal procedure to influence the MS-DRG assignment. The OR procedure can be in any of the ICD-10-PCS code slots on the claim form.

- Hospitals use the CMS 1450 (UB-04) claim form
- Claim form (CF) location 74 is reserved for the principal procedure, followed by a-e for other procedures.
- The electronic version of the claim form includes space for up to 10 procedure codes.



69 ADMIT DX	70 PATIENT REASON DX	a	b	c	71 PPS CODE	72 ECI			
74	PRINCIPAL PROCEDURE CODE	DATE	a.	OTHER PROCEDURE CODE	DATE	b.	OTHER PROCEDURE CODE	DATE	75
c.	OTHER PROCEDURE CODE	DATE	d.	OTHER PROCEDURE CODE	DATE	e.	OTHER PROCEDURE CODE	DATE	
80 REMARKS						81CC			
						a			
						b			

# Step 4: Refinement

MS-DRG	MDC	TYPE	MS-DRG TITLE
037	01	SURG	EXTRACRANIAL PROCEDURES WITH MCC
038	01	SURG	EXTRACRANIAL PROCEDURES WITH CC
039	01	SURG	EXTRACRANIAL PROCEDURES WITHOUT CC/MCC

The last step before final MS-DRG assignment is to answer the refinement questions for the MS-DRG base set.

- The most common refinement questions relate to the presence of CC and MCC secondary diagnoses.
  - The majority of MS-DRG base sets are divided into individual MS-DRGs based on the severity of illness for the admission. The severity of illness level is derived from the presence of a CC and/or MCC secondary diagnosis code.
- The best way to examine MS-DRG refinement questions is to look at some MS-DRG base sets.
  - There are two refinement questions for the example on the left.
    1. Is there an MCC secondary diagnosis?
    2. Is there a CC secondary diagnosis?

# Step 4: Refinement, continued 2

222	05	SURG	CARDIAC DEFIBRILLATOR IMPLANT WITH CARDIAC CATHETERIZATION WITH AMI, HF OR SHOCK WITH MCC
223	05	SURG	CARDIAC DEFIBRILLATOR IMPLANT WITH CARDIAC CATHETERIZATION WITH AMI, HF OR SHOCK WITHOUT MCC
224	05	SURG	CARDIAC DEFIBRILLATOR IMPLANT WITH CARDIAC CATHETERIZATION WITHOUT AMI, HF OR SHOCK WITH MCC
225	05	SURG	CARDIAC DEFIBRILLATOR IMPLANT WITH CARDIAC CATHETERIZATION WITHOUT AMI, HF OR SHOCK WITHOUT MCC
226	05	SURG	CARDIAC DEFIBRILLATOR IMPLANT WITHOUT CARDIAC CATHETERIZATION WITH MCC
227	05	SURG	CARDIAC DEFIBRILLATOR IMPLANT WITHOUT CARDIAC CATHETERIZATION WITHOUT MCC



All these MS-DRGs are in the same MDC and have the same primary procedure – cardiac defibrillator implant



MS-DRGs 222-227 are a MS-DRG Base Set

First refinement question: Was a cardiac catheterization performed? If yes, then possible MS-DRGs include 222-225. If no, then possible MS-DRGs include 226-227.

Second refinement question: Did the patient have an AMI, HF, or Shock? If yes, then possible MS-DRGs include 222-223. If no, then possible MS-DRGs include 224-225.

Third refinement question: Does the patient have a MCC diagnosis as a secondary diagnosis? If yes, then possible MS-DRGs include 222, 224 or 226. If no, then possible MS-DRGs include 223, 225 or 227.

# Step 4: Refinement, continued 3

338	06	SURG	APPENDECTOMY WITH COMPLICATED PRINCIPAL DIAGNOSIS WITH MCC
339	06	SURG	APPENDECTOMY WITH COMPLICATED PRINCIPAL DIAGNOSIS WITH CC
340	06	SURG	APPENDECTOMY WITH COMPLICATED PRINCIPAL DIAGNOSIS WITHOUT CC/MCC
341	06	SURG	APPENDECTOMY WITHOUT COMPLICATED PRINCIPAL DIAGNOSIS WITH MCC
342	06	SURG	APPENDECTOMY WITHOUT COMPLICATED PRINCIPAL DIAGNOSIS WITH CC
343	06	SURG	APPENDECTOMY WITHOUT COMPLICATED PRINCIPAL DIAGNOSIS WITHOUT CC/MCC



MS-DRG Base Set

First question: Is there a complicated principal diagnosis? If yes, then possible MS-DRGs include 338-340. If no, then possible MS-DRGs include 341-343.

*Are you thinking – How do I know what the complicated principal diagnoses are? Answer: MS-DRG Definitions Manual*

#### COMPLICATED PRINCIPAL DIAGNOSES

#### PRINCIPAL DIAGNOSIS

- C181** Malignant neoplasm of appendix
- C7A020** Malignant carcinoid tumor of the appendix
- K3521** Acute appendicitis with generalized peritonitis, with abscess
- K3532** Acute appendicitis with perforation and localized peritonitis, without abscess
- K3533** Acute appendicitis with perforation and localized peritonitis, with abscess

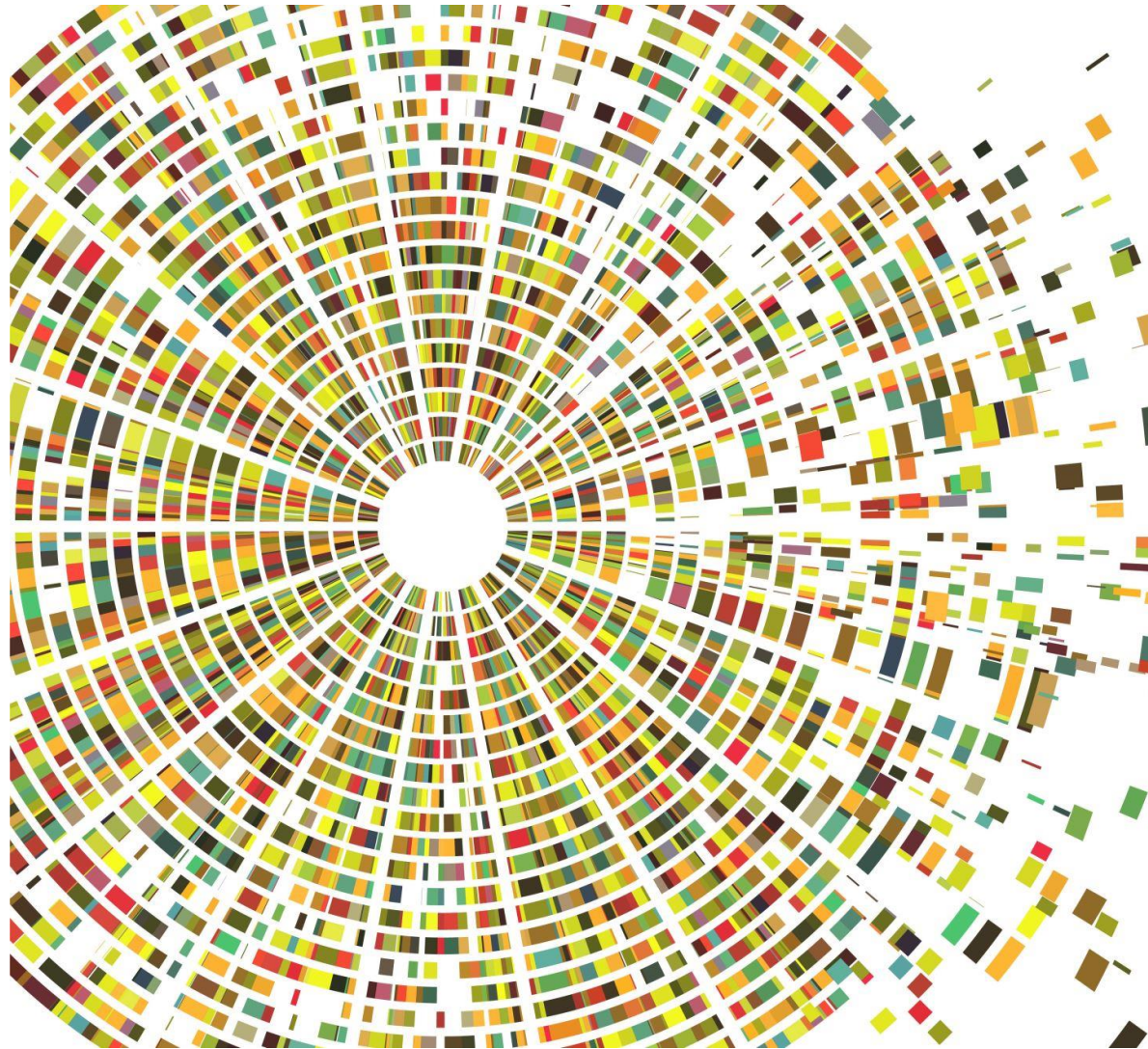
Excerpt from MS-DRG Definitions Manual

Second question: Is there a MCC diagnosis as a secondary diagnosis? If yes, then possible MS-DRGs include 338 or 341.

Third question: Is there a CC diagnosis as a secondary diagnosis? If yes, then possible MS-DRGs include 339 or 342.

# Success! Following these four steps leads to the final MS-DRG assignment.

But wait – there is one caveat!



# CC/MCC Exclusion Lists

At some point a clinician or other health professional may ask you why an admission is not grouping to a with CC/MCC MS-DRG when there is a CC or MCC condition listed as a secondary diagnosis on the claim.

- Most likely the answer relates to the CC/MCC Exclusion lists
- When the CC or MCC diagnosis code is closely related to the principal diagnosis, it is placed on an exclusion list. This takes away the power of the CC or MCC code to allow the admission to group to a higher weighted MS-DRG.
- *How do you know the if the CC/MCC is on an exclusion list? The answer – MS-DRG Definitions Manual (Appendix C ☺)*



# CC/MCC Exclusion Lists, continued.

- Let's consider code M31.11, Hematopoietic stem cell transplantation-associated thrombotic microangiopathy [HSCT-TMA].
  - M31.11 is an MCC
  - For exclusions it is assigned to Principal Diagnosis Collection #4463.
- Examine an admission where the principal diagnosis is E10.52, type 1 diabetes mellitus with diabetic peripheral angiopathy with gangrene, and code M31.11 is a secondary diagnosis code. Since they are in this PDX collection, the power of M31.11 as an MCC is taken away. The case would group to an MS-DRG without MCC.



## *PDX Collection 4463*

<b>E0951</b>	Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy without gangrene
<b>E0952</b>	Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy with gangrene
<b>E1051</b>	Type 1 diabetes mellitus with diabetic peripheral angiopathy without gangrene
<b>E1052</b>	Type 1 diabetes mellitus with diabetic peripheral angiopathy with gangrene
<b>E1151</b>	Type 2 diabetes mellitus with diabetic peripheral angiopathy without gangrene
<b>E1152</b>	Type 2 diabetes mellitus with diabetic peripheral angiopathy with gangrene
<b>E1351</b>	Other specified diabetes mellitus with diabetic peripheral angiopathy without gangrene
<b>E1352</b>	Other specified diabetes mellitus with diabetic peripheral angiopathy with gangrene
<b>I998</b>	Other disorder of circulatory system
<b>I999</b>	Unspecified disorder of circulatory system
<b>M300</b>	Polyarteritis nodosa
<b>M301</b>	Polyarteritis with lung involvement [Churg-Strauss]
<b>M302</b>	Juvenile polyarteritis
<b>M303</b>	Mucocutaneous lymph node syndrome [Kawasaki]
<b>M308</b>	Other conditions related to polyarteritis nodosa
<b>M310</b>	Hypersensitivity angiitis
<b>M3110</b>	Thrombotic microangiopathy, unspecified
<b>M3111</b>	Hematopoietic stem cell transplantation-associated thrombotic microangiopathy [HSCT-TMA]
<b>M3119</b>	Other thrombotic microangiopathy
<b>M315</b>	Giant cell arteritis with polymyalgia rheumatica
<b>M316</b>	Other giant cell arteritis
<b>M317</b>	Microscopic polyangiitis

# Bringing It All Together

## Scenario

Patient is a 67-year-old woman with type 1 diabetes mellitus. She was admitted for treatment of a grade III foot ulcer which involved necrosis of the muscle on the right foot with gangrenous changes resulting from diabetic neuropathy, atherosclerosis, and chronic peripheral vascular insufficiency. Excisional debridement of the ulcer to the muscle is carried out.

## Coding

- PDX – E10.52, DM I with peripheral angiopathy with gangrene
- SDX – I70.261, Atherosclerosis native artery, with gangrene, right leg [CC]
- SDX – E10.621, DM I with foot ulcer [non-CC/MCC]
- SDX – L97.513, Non-pressure chronic ulcer, right foot, with necrosis of muscle [non-CC/MCC]
- SDX – E10.40, DM I with diabetic neuropathy, unspecified [non-CC/MCC]
- PPX – 0KBW0ZZ, excisional debridement

# Bringing It All Together

## Step 1: Pre-MDC assignment

- Excisional debridement is not on the approved list for pre-MDC assignment. Move to step 2.

## Step 2: MDC assignment

- PDX E10.52 – we know it is not Pre-MDC so we use **MDC 5**

E1052	Pre	008
E1052	Pre	010
E1052	Pre	019
E1052	05	299-301

## Step 3: Medical/Surgical assignment

- PPX 0KBWOZZ – this procedure is not in the Appendix E listing of OR procedures. Therefore, this case is labeled as **Medical**.

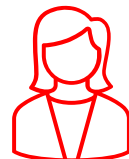
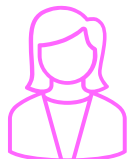
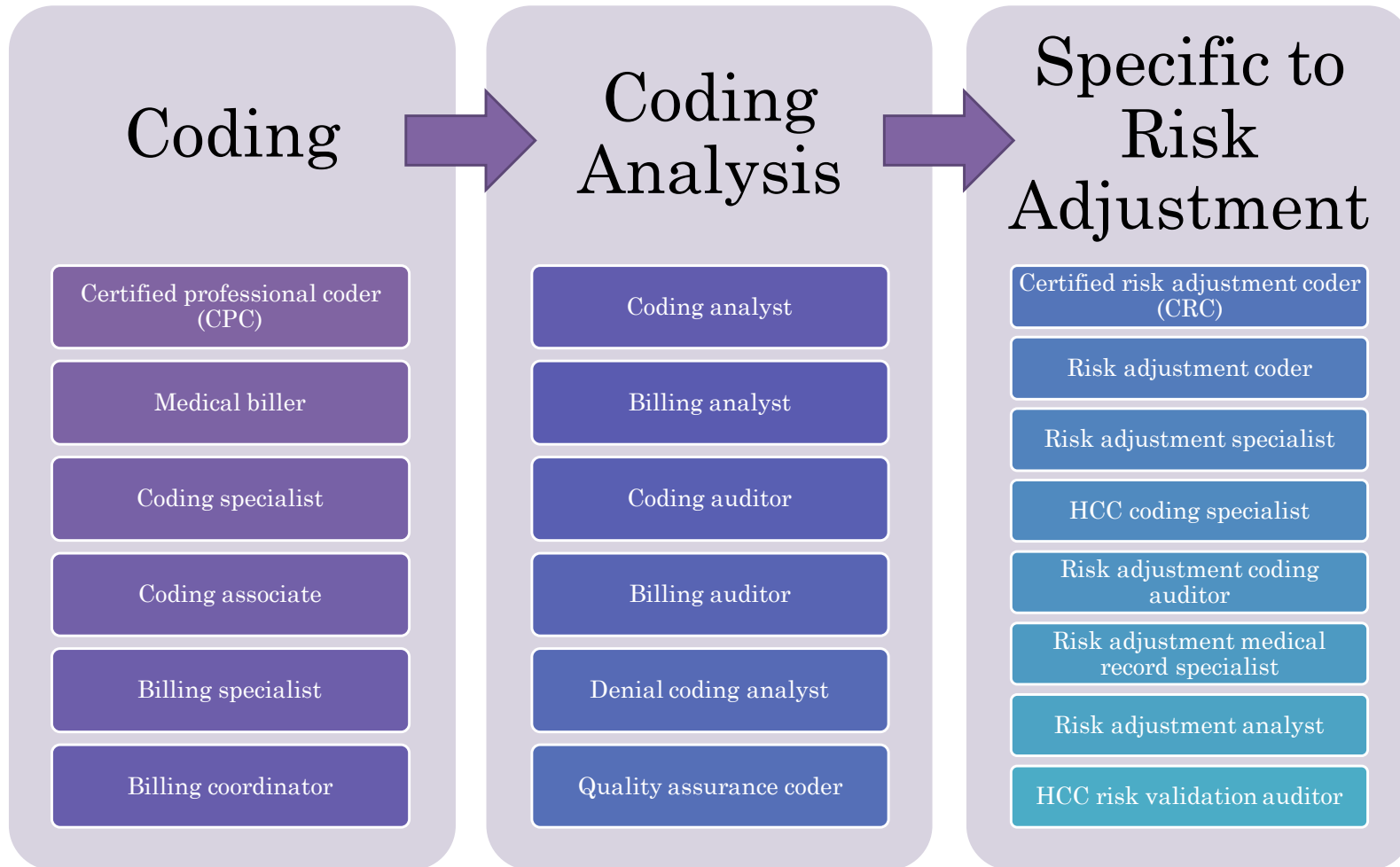
## Step 4: Refinement

- From step 2, we know the MS-DRG set to examine for refinement is MS-DRGs 299-301
  - There are 2 refinement questions.
    - Is there a MCC? – NO
    - Is there a CC? – YES. Let's check the exclusions.**
      - PDX collection 0519 – E10.52 is not included, so exclusion does not apply.

MS-DRG	MDC	TYPE	MS-DRG Title
299	05	MED	PERIPHERAL VASCULAR DISORDERS WITH MCC
300	05	MED	PERIPHERAL VASCULAR DISORDERS WITH CC
301	05	MED	PERIPHERAL VASCULAR DISORDERS WITHOUT CC/MCC

Final MS-DRG assignment is MS-DRG 300, Peripheral vascular disorders with CC

# Careers



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