General Equivalence Mappings
Documentation for Technical Users

Part 1—GEMs Technical FAQs

General Principles

The purpose of the GEMs is to create a useful, practical, *code to code* translation reference dictionary for both code sets, and to offer acceptable translation alternatives *wherever possible*. For each code set, it endeavors to answer this question: Taking the complete meaning of a code (defined as: all correctly coded conditions or procedures that would be classified to a code based on the code title, all associated tabular instructional notes, and all index references that refer to a code) as a single unit, what are the most appropriate translation(s) to the other code set?

1) What is the fundamental inclusion principle at work for each GEM?
The target codes included for a given source code are selected, to the greatest extent possible, according to the same principle as that articulated by the National Library of Medicine (NLM):

Mappings from specific concepts to more general concepts are possible; however, it is not possible to use mappings to add specificity when the original information is general.

> **Example**: ICD-10-CM to ICD-9-CM GEM
> S35.411A Laceration of right renal artery, initial encounter
> To 902.41 Injury to renal artery
>
> S35.412A Laceration of left renal artery, initial encounter
> To 902.41 Injury to renal artery
>
> **Example**: ICD-10-PCS to ICD-9-CM GEM
> 04Q90ZZ Repair Right Renal Artery, Open Approach
> To 39.31 Suture of artery

However, this principle does not override the primary goal of offering an acceptable translation for every source system code in a code set. The purpose of the GEMs is to create a *useful, practical* code to code translation reference dictionary for both code sets, and to offer acceptable translation alternatives *wherever possible*. Therefore, the GEMs *do* include target system alternatives that are more specific than the source system when better alternatives are not available.

2) When the source system is less specific than the target system along an axis of classification, what are the inclusion criteria?

When the source system is less specific than the target system along an axis of classification, the inclusion criteria for a GEM entry follows one of the basic patterns below:

a) When the source system is less specific than the target system along an axis of classification, and the target system classification contains both specific and less specific translation alternatives, only the less specific translation alternative is included as an entry.

Example: ICD-9-CM to ICD-10-CM GEM
ICD-9-CM code 902.41 has the following GEM entry:
Source Target Flags
90241 S35403A 10000

902.41 Injury to renal artery
To S35.403A Unspecified injury of unspecified renal artery, initial encounter

- The source system is less specific than the target system along the *laterality* axis of classification
- The target system classification contains both specific and less specific *laterality* translation alternatives
- Only the less specific *laterality* translation alternative is included as an entry

Not included in ICD-9-CM to ICD-10-CM GEM
S35.401A Unspecified injury of right renal artery, initial encounter
S35.402A Unspecified injury of left renal artery, initial encounter

Example: ICD-9-CM to ICD-10-PCS GEM
ICD-9-CM code 50.24 has the following GEM entry:
Source Target Flags
5024 0F503ZZ 10000

50.24 Percutaneous ablation of liver lesion or tissue
To 0F503ZZ Destruction of Liver, Percutaneous Approach

- The source system is less specific than the target system along the *body part* axis of classification
- The target system classification contains both specific and less specific *body part* translation alternatives
- Only the less specific *body part* translation alternative is included as an entry

Not included in ICD-9-CM to ICD-10-PCS GEM
0F513ZZ Destruction of Right Lobe Liver, Percutaneous Approach
0F523ZZ Destruction of Left Lobe Liver, Percutaneous Approach

b) When the source system is less specific than the target system along an axis of classification, and all of the target system translation alternatives are more specific along that axis *with no basis for choosing a closest match*, all alternatives are given

Example: ICD-9-CM to ICD-10-CM GEM
ICD-9-CM code 942.33 has the following GEM entry:
Source Target Flags
94233 T2132xA 10000
94233 T2172xA 10000

942.33 Full-thickness skin loss [third degree, not otherwise specified] of abdominal wall
To T21.32xA Burn of third degree of abdominal wall, initial encounter
To T21.72xA Corrosion of third degree of abdominal wall, initial encounter

- The source system is less specific than the target system along the *burn type* axis of classification
- All of the target system translation alternatives are more specific along the *burn type* axis *with no basis for choosing a closest match*
- All *burn type* alternatives are given

Example: ICD-9-CM to ICD-10-PCS GEM
ICD-9-CM code 65.31 has the following GEM entry:
Source Target Flags
6531 0UT04ZZ 10000
6531 0UT14ZZ 10000

65.31 Laparoscopic unilateral oophorectomy
To 0UT04ZZ Resection of Right Ovary, Percutaneous Endoscopic Approach
To 0UT14ZZ Resection of Left Ovary, Percutaneous Endoscopic Approach

- The source system is less specific than the target system along the *laterality* axis of classification
- All of the target system translation alternatives are more specific along the *laterality* axis *with no basis for choosing a closest match*
- All *laterality* alternatives are given

c) When the source system is more specific along one axis of classification, and the target system is more specific along a different axis of classification, only the closest matching target system translation is included. The more specific target translation is *not* included as an alternative.

Example: ICD-10-CM to ICD-9-CM GEM
ICD-10-CM code E10.65 has the following GEM entry:
Source Target Flags
E1065 25081 10000

E10.65 Type 1 diabetes mellitus with hyperglycemia
To 250.81 Diabetes with other specified manifestations, type I [juvenile type], not stated as uncontrolled

Not included in ICD-10-CM to ICD-9-CM GEM

250.03 Diabetes mellitus without mention of complication, type I [juvenile type], uncontrolled

- The source system is more specific along the *glycemia level* axis of classification
- The target system is more specific along the *degree of control* axis of classification
- Only the closest matching *glycemia level* translation is included
- The more specific *degree of control* translation is *not* included as an alternative

Example: ICD-10-PCS to ICD-9-CM GEM
ICD-10-PCS code 0UT00ZZ has the following GEM entry:

Source	Target	Flags
0UT00ZZ	6539	10000

0UT00ZZ Resection of Right Ovary, Open Approach
To 65.39 Other unilateral oophorectomy

Not included in ICD-10-PCS to ICD-9-CM GEM
65.52 Other removal of remaining ovary

- The source system is more specific along the *laterality* axis of classification
- The target system is more specific along the *diagnostic information* axis of classification (i.e., the patient has one ovary instead of two)
- Only the closest matching *laterality* translation is included
- The more specific *diagnostic information* translation is *not* included as an alternative

d) When the complete meaning of the source system code includes multiple alternative diagnoses or multiple alternative procedural techniques (not to be confused with combinations of diagnoses and procedures), and those diagnoses or procedures are specified as unique codes in the target system, all target system alternatives are given.

Example: ICD-10-CM to ICD-9-CM GEM
ICD-10-CM code F22 has the following GEM entry:

Source	Target	Flags
F22	2970	10000
F22	2971	10000
F22	2972	10000

F22 Delusional disorders
Includes
involutional paranoid state
paranoia
paranoid state
paraphrenia (late)

To 297.0 Paranoid state, simple
To 297.1 Delusional disorder
To 297.2 Paraphrenia

- The complete meaning of the source system code includes multiple alternative *delusional disorders* diagnoses
- Those diagnoses are specified as unique *delusional disorders* codes in the target system
- All target system alternatives are given

Example: ICD-10-PCS to ICD-9-CM GEM
ICD-10-PCS code 0DJ68ZZ has the following GEM entry:

Source	Target	Flags
0DJ68ZZ	4412	10000
0DJ68ZZ	4413	10000

0DJ68ZZ Inspection of Stomach, Via Natural or Artificial Opening Endoscopic
To 44.12 Gastroscopy through artificial stoma
To 44.13 Other gastroscopy

- The complete meaning of the source system code includes multiple alternative *gastroscopy access* techniques
- Those procedures are specified as unique *gastroscopy* codes in the target system
- All target system alternatives are given

e) When some combination of the above conditions apply, all applicable target system alternatives are given.

Example: ICD-9-CM to ICD-10-CM GEM—conditions b, c, and d apply
ICD-9-CM code 851.42 has the following GEM entry:

Source	Target	Flags
85142	S06371A	10000
85142	S06372A	10000
85142	S06381A	10000
85142	S06382A	10000

851.42 Cerebellar or brain stem contusion without mention of open intracranial wound, with brief [less than one hour] loss of consciousness
To S06.371A Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 30 minutes or less, initial encounter
To S06.372A Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 31 minutes to 59 minutes, initial encounter
To S06.381A Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 30 minutes or less, initial encounter
To S06.382A Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 31 minutes to 59 minutes, initial encounter

Example: ICD-9-CM to ICD-10-PCS GEM—conditions b and d apply
ICD-9-CM code 01.59 has the following GEM entry:

Source	Target	Flags
0159	00500ZZ	10000
0159	00503ZZ	10000
0159	00504ZZ	10000
0159	00B00ZZ	10000
0159	00B03ZZ	10000
0159	00B04ZZ	10000

01.59 Other excision or destruction of lesion or tissue of brain
To 00500ZZ Destruction of Brain, Open Approach
To 00503ZZ Destruction of Brain, Percutaneous Approach
To 00504ZZ Destruction of Brain, Percutaneous Endoscopic Approach
To 00B00ZZ Excision of Brain, Open Approach
To 00B03ZZ Excision of Brain, Percutaneous Approach
To 00B04ZZ Excision of Brain, Percutaneous Endoscopic Approach

The Approximate Flag (1st flag)

3) What does the approximate flag mean?
The approximate flag identifies entries where the complete meaning of the source system code and that of the target system code are not considered equivalent.

4) What does 0 in the approximate flag field mean?
The approximate flag is 0 when the complete meaning of the source and the target are considered equivalent and the source and target translate only to each other in both GEMs files.

Example: ICD-10-CM to ICD-9-CM GEM
ICD-10-CM code K83.1 has the following GEM entry:

Source	Target	Flags
K831	5762	00000

K83.1 Obstruction of bile duct
To 576.2 Obstruction of bile duct

Example: ICD-9-CM to ICD-10-CM GEM
ICD-9-CM code 576.2 has the following GEM entry:

Source	Target	Flags
5762	K831	00000

576.2 Obstruction of bile duct
To K83.1 Obstruction of bile duct

- The source and target *Obstruction of bile duct* translate only to each other in both GEMs files

- The complete meaning of the source and the target *Obstruction of bile duct* are considered equivalent

Example: ICD-10-PCS to ICD-9-CM GEM
ICD-10-PCS code 5A15223 has the following GEM entry:

Source	Target	Flags
5A15223	3965	10000

5A15223 Extracorporeal Membrane Oxygenation, Continuous
To 39.65 Extracorporeal membrane oxygenation [ECMO]

Example: ICD-9-CM to ICD-10-PCS GEM
ICD-9-CM code 39.65 has the following GEM entry:

Source	Target	Flags
3965	5A15223	10000

39.65 Extracorporeal membrane oxygenation [ECMO]
To 5A15223 Extracorporeal Membrane Oxygenation, Continuous

- The source *Extracorporeal Membrane Oxygenation, Continuous* and target *Extracorporeal membrane oxygenation [ECMO]* translate only to each other in both GEMs files
- The complete meaning of the source *Extracorporeal Membrane Oxygenation, Continuous* and the target *Extracorporeal membrane oxygenation [ECMO]* are considered equivalent

5) What does 1 in the approximate flag field mean?
When the approximate flag is 1 the complete meaning of the source and the target are not considered equivalent. The GEM entry follows one of the basic patterns below:

a) The source is more specific than the target along one or more axes of classification, and the GEM entry contains a single less specific target system translation.

Example: ICD-10-CM to ICD-9-CM GEM
ICD-10-CM code S52.521A has the following GEM entry:

Source	Target	Flags
S52521A	81345	10000

S52.521A Torus fracture of lower end of right radius, initial encounter for closed fracture
To 813.45 Torus fracture of radius (alone)

- The source is more specific than the target along the *laterality* and *encounter* axes of classification
- The GEM entry contains a single less specific target system translation

Example: ICD-10-PCS to ICD-9-CM GEM

ICD-10-PCS code 0QS806Z has the following GEM entry:

Source	Target	Flags
0QS806Z	7935	10000

0QS806Z Reposition Right Femoral Shaft with Intramedullary Fixation Device, Open Approach
To 79.35 Open reduction of fracture with internal fixation, femur

- The source is more specific than the target along the *body part* and *device* axes of classification
- The GEM entry contains a single less specific target system translation

b) The source is more specific than the target along *one or more* axes of classification, the target is more specific along a *different* axis of classification, and the GEM entry contains a single target system translation.

Example: ICD-10-CM to ICD-9-CM GEM
ICD-10-CM code Q36.1 has the following GEM entry:

Source	Target	Flags
Q361	74911	10000

Q36.1 Cleft lip, median
To 749.11 Cleft lip, unilateral, complete

- The source is more specific than the target along *the location* axis of classification
- The target is more specific along the *degree of deformity* axis of classification
- The GEM entry contains a single target system translation

Example: ICD-PCS-CM to ICD-9-CM GEM
ICD-10-PCS code 0GB00ZZ has the following GEM entry:

Source	Target	Flags
0GB00ZZ	0763	10000

0GB00ZZ Excision of Pituitary Gland, Open Approach
To 07.63 Partial excision of pituitary gland, unspecified approach

- The source is more specific than the target along the *approach* axis of classification
- The target is more specific along the *access location* axis of classification
- The GEM entry contains a single target system translation

c) The source is more specific than the target along one or more axes of classification, the target is more specific along a different axis of classification, and the GEM entry contains multiple target system translation alternatives.

Example: ICD-10-CM to ICD-9-CM GEM
ICD-10-CM code I97.411 has the following GEM entry:

Source	Target	Flags
I97411	99811	10000
I97411	99812	10000

I97.411 Intraoperative hemorrhage and hematoma of a circulatory system organ or structure complicating a cardiac bypass
To 998.11 Hemorrhage complicating a procedure
To 998.12 Hematoma complicating a procedure

- The source is more specific than the target along *body system* and *procedure type* axes of classification
- The target is more specific along *hemorrhage type* axis of classification
- The GEM entry contains multiple target system translation alternatives

Example: ICD-9-CM to ICD-10-PCS GEM
ICD-9-CM code 52.3 has the following GEM entry:

Source	Target	Flags
523	0F9G0ZZ	10000
523	0F9G3ZZ	10000
523	0F9G4ZZ	10000

52.3 Marsupialization of pancreatic cyst
To 0F9G0ZZ Drainage of Pancreas, Open Approach
To 0F9G3ZZ Drainage of Pancreas, Percutaneous Approach
To 0F9G4ZZ Drainage of Pancreas, Percutaneous Endoscopic Approach

- The source is more specific than the target along the *diagnosis* axis of classification
- The target is more specific along the *approach* axis of classification
- The GEM entry contains multiple target system translation alternatives

d) The source is less specific than the target along one or more axes of classification, and the GEM entry contains a single more specific target system translation.

Example: ICD-10-CM to ICD-9-CM GEM
ICD-10-CM code A17.0 has the following GEM entry:

Source	Target	Flags
A170	01300	10000

A17.0 Tuberculous meningitis
To 013.00 Tuberculous meningitis, unspecified examination

- The source is less specific than the target along the *method of detection* of classification
- The GEM entry contains a single more specific target system translation

Example: ICD-9-CM to ICD-10-PCS GEM
ICD-9-CM code 34.91 has the following GEM entry:

Source	Target	Flags
3491	0W993ZZ	10000
3491	0W9B3ZZ	10000

34.91 Thoracentesis
To 0W993ZZ Drainage of Right Pleural Cavity, Percutaneous Approach
To 0W9B3ZZ Drainage of Left Pleural Cavity, Percutaneous Approach

- The source is less specific than the target along the *laterality* axis of classification
- The GEM entry contains a single more specific target system translation

e) The source is less specific than the target along one or more axes of classification, there is no clear basis for choosing among the target system alternatives, and the GEM entry contains multiple target system translation alternatives.

Example: ICD-10-CM to ICD-9-CM GEM
ICD-10-CM code I09.89 has the following GEM entry:

Source	Target	Flags
I0989	3971	10000
I0989	39899	10000

I09.89 Other specified rheumatic heart diseases
Includes
Rheumatic disease of pulmonary valve

To 397.1 Rheumatic diseases of pulmonary valve
To 398.99 Other rheumatic heart diseases

- The source is less specific than the target along the *anatomic site* axis of classification
- There is no clear basis for choosing among the target system alternatives
- *Rheumatic diseases of pulmonary valve* and *Other specified rheumatic heart diseases* are included in the complete meaning of the source system code
- The GEM entry contains both the *Rheumatic diseases of pulmonary valve* and *Other rheumatic heart diseases* target system translation alternatives

Example: ICD-9-CM to ICD-10-PCS GEM
ICD-9-CM code 03.51 has the following GEM entry:

Source	Target	Flags
0351	005T0ZZ	10000
0351	005T3ZZ	10000
0351	005T4ZZ	10000
0351	00QT0ZZ	10000
0351	00QT3ZZ	10000

0351 00QT4ZZ 10000

03.51 Repair of spinal meningocele
Index entries referring to 03.51
Obliteration > meningocele (sacral)
Repair > meningocele (spinal)

To 005T0ZZ Destruction of Spinal Meninges, Open Approach
To 005T3ZZ Destruction of Spinal Meninges, Percutaneous Approach
To 005T4ZZ Destruction of Spinal Meninges, Percutaneous Endoscopic Approach
To 00QT0ZZ Repair Spinal Meninges, Open Approach
To 00QT3ZZ Repair Spinal Meninges, Percutaneous Approach
To 00QT4ZZ Repair Spinal Meninges, Percutaneous Endoscopic Approach

- The source is less specific than the target along the *root operation* and *approach* axes of classification
- There is no clear basis for choosing among the target system alternatives
- *Obliteration (root operation Destruction)* and *Repair* are included in the complete meaning of the source system code
- The GEM entry contains all *root operation* and *approach* target system translation alternatives

6) What does it mean when the code titles of both codes are identical or nearly identical, and the approximate flag is 1?

The codes titles of both source and target system codes can be identical or nearly identical and the approximate flag may still be 1. This occurs when the complete meaning of the source code (which includes the instructional notes pertaining to the code and the index entries that refer to a code) differs materially from the complete meaning of the target system code.

Example: ICD-10-CM to ICD-9-CM GEM
ICD-10-CM code K31.89 has the following GEM entry:

Source	Target	Flags
K3189	5363	10000
K3189	5375	10000
K3189	53789	10000

K31.89 Other diseases of stomach and duodenum
To 536.3 Gastroparesis
To 537.5 Gastroptosis
To 537.89 Other specified disorders of stomach and duodenum

- The codes titles of both source and target system codes can be identical or nearly identical and the approximate flag is 1
- The complete meaning of the source system code *Other diseases of stomach and duodenum* includes *gastroparesis* and *gastroptosis*
- The complete meaning of the target system code *Other specified disorders of stomach and duodenum* does not include *gastroparesis* and *gastroptosis*

- Therefore the translation of *Other diseases of stomach and duodenum* to *Other specified disorders of stomach and duodenum* is considered approximate

Example: ICD-10-PCS to ICD-9-CM GEM
There are no instances where PCS code titles are nearly identical to ICD-9-CM code titles and the approximate flag is 1.

7) How can I use the approximate flag?
You can use the 0 in the approximate flag field to find all of the GEMs entries where the translations between code sets are considered equivalent. You can also use the 1 in the approximate flag field to divide the remaining entries into two broad categories:

- GEMs entries with only one translation alternative but that are nevertheless considered approximate
- GEMs entries with more than one translation alternative

The No Map Flag (2nd flag)

8) What does the no map flag mean?
The no map flag distinguishes entries where the source system code has at least one translation from entries where the source system code has no target system translation. Every effort is made to find an acceptable translation in the target system for every code in the source system. The no map flag is used only as a last resort, when there are no acceptable target system translation alternatives for the source system code.

9) What does 0 in the no map flag field mean?
The no map flag is 0 when there is a translation in the target system for the source system code.

10) What does 1 in the no map flag field mean?
The no map flag is 1 when there is no acceptable translation in the target system for the source system code. There are no empty fields in a GEM file, so for a GEMs entry where the no map flag is 1, the target code field contains the text string “NoDx” or “NoPCS.”
Note: The ICD-10-PCS to ICD-9-CM GEM does not contain any entries with a 1 in the no map flag field. All ICD-10-PCS procedure codes translate to at least one ICD-9-CM procedure code.

Example: ICD-10-CM to ICD-9-CM GEM
ICD-10-CM code Z67.40 has the following GEM entry:

Source	Target	Flags
Z6740	NoDx	11000

Z67.40 Type O blood, Rh positive
To NoDx

Example: ICD-9-CM to ICD-10-CM GEM
ICD-9-CM code V64.41 has the following GEM entry:
Source Target Flags
V6441 NoDx 11000

V64.41 Laparoscopic surgical procedure converted to open procedure
To NoDx

Example: ICD-9-CM to ICD-10-PCS GEM
ICD-9-CM code 90.51 has the following GEM entry:
Source Target Flags
9051 NoPCS 11000

90.51 Microscopic examination of blood, bacterial smear
To NoPCS

11) How can I use the no map flag?
If you are converting an existing application so that it will process ICD-10-CM/PCS codes directly, *and* your application needs to be able to process *all* ICD-10-CM/PCS codes, you will need to decide how the ICD-10-CM/PCS codes containing the no map flag will be handled by your application.

If you are developing an applied mapping to map each incoming ICD-10-CM/PCS code to an ICD-9-CM code in your legacy application, *and* your application needs to be able to produce a mapped ICD-9-CM code result for *all* ICD-10-CM/PCS codes, you will need to choose the closest related ICD-9-CM code for each ICD-10-CM/PCS code containing the no map flag.

The Combination Flag (3rd flag)

12) What does the combination flag mean?
The combination flag distinguishes entries where the source system code has a *single* (meaning "non-combination") translation alternative(s) from entries where the source system has a *combination* alternative(s).

13) What does 0 in the combination flag field mean?
The combination flag is 0 when the translation alternative in the target system is what is referred to as a *single* entry rather than a *combination* entry. A *single* entry in the context of the GEMs has a specific meaning. It means that the code in the source system linked to one of the translation options in the target system is a considered a complete translation alternative.

14) What does 1 in the combination flag field mean?

The combination flag is 1 when the translation alternative in the target system is a *combination* entry. When the combination flag is 1 for a source system code, it means that a *cluster* of target system codes—consisting of two, three, four, or more codes—taken together provide an adequate translation of the source system code.

15) What does it mean when one GEM entry has translation alternatives with a combination flag of 0 and translation alternatives with a combination flag of 1?
When a GEM entry has a translation alternative(s) with a combination flag of 0 and another translation alternative(s) with a combination flag of 1, it means that the source system code includes variations of a diagnosis or variations of a procedure. At least one of these variations requires a code cluster in the target system to translate the source system code.

Example: ICD-9-CM to ICD-10-PCS GEM
ICD-9-CM code 37.74 has the following GEM entry:

Source	Target	Flags
3774	02HN0MA	10000
3774	02HN0MA	10111
3774	02HN3MA	10000
3774	02HN3MA	10111
3774	02HN4MA	10000
3774	02HN4MA	10111
3774	02HN0MZ	10000
3774	02HN0MZ	10111
3774	02HN3MZ	10000
3774	02HN3MZ	10111
3774	02HN4MZ	10000
3774	02HN4MZ	10111
3774	02PA0MZ	10112
3774	02PA3MZ	10112
3774	02PA4MZ	10112
3774	02PAXMZ	10112

Combination flag 0
37.74 Insertion or replacement of epicardial lead [electrode] into epicardium
To 02HN0MA Insertion of Pacemaker Lead into Pericardium, Open Approach
or 02HN0MZ Insertion of Cardiac Lead into Pericardium, Open Approach
or 02HN3MA Insertion of Pacemaker Lead into Pericardium, Percutaneous Approach
or 02HN3MZ Insertion of Cardiac Lead into Pericardium, Percutaneous Approach
or 02HN4MA Insertion of Pacemaker Lead into Pericardium, Percutaneous Endoscopic Approach
or 02HN4MZ Insertion of Cardiac Lead into Pericardium, Percutaneous Endoscopic Approach

Combination flag 1
37.74 Insertion or replacement of epicardial lead [electrode] into epicardium

To 02HN0MA Insertion of Pacemaker Lead into Pericardium, Open Approach
or 02HN0MZ Insertion of Cardiac Lead into Pericardium, Open Approach
or 02HN3MA Insertion of Pacemaker Lead into Pericardium, Percutaneous Approach
or 02HN3MZ Insertion of Cardiac Lead into Pericardium, Percutaneous Approach
or 02HN4MA Insertion of Pacemaker Lead into Pericardium, Percutaneous Endoscopic Approach
or 02HN4MZ Insertion of Cardiac Lead into Pericardium, Percutaneous Endoscopic Approach
WITH
02PA0MZ Removal of Cardiac Lead from Heart, Open Approach
or 02PA3MZ Removal of Cardiac Lead from Heart, Percutaneous Approach
or 02PA4MZ Removal of Cardiac Lead from Heart, Percutaneous Endoscopic Approach
or 02PAXMZ Removal of Cardiac Lead from Heart, External Approach

16) How can I use the combination flag?
If you are using the ICD-10-CM/PCS GEMs in reverse lookup to convert an existing application so that it will process ICD-10-CM/PCS codes directly, *and* your application needs to be able to process *all* ICD-10-CM/PCS codes, you will need to identify all ICD-10-CM/PCS entries containing the combination flag to evaluate whether your application logic will need to be modified to process clusters.

If you are developing an applied mapping to map each incoming ICD-10-CM/PCS code to an ICD-9-CM code in your legacy application, your mapping application needs to be able to accommodate entries containing codes clusters. This means the mapped output field may be anywhere from 16 to 40 characters long.

17) What does "scenario" mean?
A source system combination code includes diagnostic conditions or procedures that require more than one separate code in the target system to convey the equivalent amount of information. A combination code may also describe multiple variations of the information in either the code title or the complete meaning of the code. Each of these variations has its own number in the scenario field (the 4th flag). If there is only one scenario in a GEMs combination entry, the scenario number is 1 for all rows in the entry. If there is more than one scenario in a GEMs combination entry, each additional variation of a combination diagnosis or procedure has its own scenario number, beginning with 1, 2, 3, and so on.

Example: ICD-10-CM to ICD-9-CM GEM—one scenario
ICD-10-CM code I25.111 has the following GEM entry:

Source	Target	Flags
I25111	41401	10111

I25111 4139 10112

I25.111 Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm
To
414.01 Coronary atherosclerosis of native coronary artery
WITH
413.9 Other and unspecified angina pectoris

Example: ICD-10-CM to ICD-9-CM GEM—two scenarios
ICD-10-CM code T42.2X1A has the following GEM entry:

Source	Target	Flags
T422X1A	9662	10111
T422X1A	E8558	10112
T422X1A	9660	10121
T422X1A	E8558	10122

Scenario 1
T42.2x1A Poisoning by succinimides and oxazolidinediones, accidental (unintentional), initial encounter
To
966.2 Poisoning by succinimides
WITH
E85.58 Accidental poisoning by other specified drugs acting on central and autonomic nervous systems

Scenario 2
T42.2x1A Poisoning by succinimides and oxazolidinediones, accidental (unintentional), initial encounter
To
966.0 Poisoning by oxazolidine derivatives
WITH
E85.58 Accidental poisoning by other specified drugs acting on central and autonomic nervous systems

Example: ICD-9-CM to ICD-10-PCS GEM—one scenario
ICD-9-CM code 33.6 has the following GEM entry:

Source	Target	Flags
336	02YA0Z0	10111
336	02YA0Z1	10111
336	02YA0Z2	10111
336	0BYM0Z0	10112
336	0BYM0Z1	10112
336	0BYM0Z2	10112

33.6 Combined heart-lung transplantation
To
02YA0Z0 Transplantation of Heart, Allogeneic, Open Approach
or 02YA0Z1 Transplantation of Heart, Syngeneic, Open Approach
or 02YA0Z2 Transplantation of Heart, Zooplastic, Open Approach

WITH
0BYM0Z0 Transplantation of Bilateral Lungs, Allogeneic, Open Approach
or 0BYM0Z1 Transplantation of Bilateral Lungs, Syngeneic, Open Approach
or 0BYM0Z2 Transplantation of Bilateral Lungs, Zooplastic, Open Approach

Example: ICD-9-CM to ICD-10-PCS GEM—two scenarios
ICD-9-CM code 52.7 has the following GEM entry:

Source	Target	Flags
527	0D1607A	10125
527	0D160JA	10125
527	0D160KA	10125
527	0D160ZA	10125
527	0DT90ZZ	10112
527	0DT90ZZ	10122
527	0F190Z3	10123
527	0F1G0ZC	10124
527	0FTG0ZZ	10111
527	0FTG0ZZ	10121

52.7 Radical pancreaticoduodenectomy
Includes
One-stage pancreaticoduodenal resection with choledochojejunal anastomosis, pancreaticojejunal anastomosis, and gastrojejunostomy
Two-stage pancreaticoduodenal resection (first stage) (second stage)
Radical resection of the pancreas
Whipple procedure

Scenario 1
52.7 Radical pancreaticoduodenectomy
To
0FTG0ZZ Resection of Pancreas, Open Approach
WITH
0DT90ZZ Resection of Duodenum, Open Approach

Scenario 2
52.7 Radical pancreaticoduodenectomy
To
0FTG0ZZ Resection of Pancreas, Open Approach
WITH
0DT90ZZ Resection of Duodenum, Open Approach
WITH
0F190Z3 Bypass Common Bile Duct to Duodenum, Open Approach
WITH
0F1G0ZC Bypass Pancreas to Large Intestine, Open Approach
WITH
0D1607A Bypass Stomach to Jejunum with Autologous Tissue Substitute, Open Approach
or 0D160JA Bypass Stomach to Jejunum with Synthetic Substitute, Open Approach
or 0D160KA Bypass Stomach to Jejunum with Nonautologous Tissue Substitute, Open Approach
or 0D160ZA Bypass Stomach to Jejunum, Open Approach

18) What does "choice lists" mean?

Choice lists (the 5th flag) are the method of organization for the translation alternatives in a combination entry. Choice lists organize the distinct components of the target system translation in a combination entry into pick lists. If the source system code requires three distinct target system codes to convey the equivalent amount of information, the target system translation will contain three pick lists. If the target system is more specific along one or more axes of classification, there will be multiple translation alternatives for that axis of classification and the pick list will contain multiple choices. One target system code from each of the choice lists in an entry constitute a complete translation of the source system combination code. Each instance of a complete translation is called a *cluster*.

Example: ICD-10-CM to ICD-9-CM GEM—choice lists with one choice per list
ICD-10-CM code E10.341 has the following GEM entry:

Source	Target	Flags
E10341	25051	10111
E10341	36206	10112
E10341	36207	10113

E10.341 Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema

To

250.51 Diabetes with ophthalmic manifestations, type I [juvenile type], not stated as uncontrolled

WITH

362.06 Severe nonproliferative diabetic retinopathy

WITH

362.07 Diabetic macular edema

Example: ICD-9-CM to ICD-10-CM GEM—choice list with multiple choices
ICD-9-CM code 800.22 has the following GEM entry:

Source	Target	Flags
80022	S020xxA	10111
80022	S064x1A	10112
80022	S064x2A	10112
80022	S065x1A	10112
80022	S065x2A	10112
80022	S066x1A	10112
80022	S066x2A	10112

800.22 Closed fracture of vault of skull with subarachnoid, subdural, and extradural hemorrhage, with brief [less than one hour] loss of consciousness

To

S02.0xxA Fracture of vault of skull, initial encounter for closed fracture

WITH

S06.4x1A Epidural hemorrhage with loss of consciousness of 30 minutes or less, initial encounter

or S06.4x2A Epidural hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter
or S06.5x1A Traumatic subdural hemorrhage with loss of consciousness of 30 minutes or less, initial encounter
or S06.5x2A Traumatic subdural hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter
or S06.6x1A Traumatic subarachnoid hemorrhage with loss of consciousness of 30 minutes or less, initial encounter
or S06.6x2A Traumatic subarachnoid hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter

Example: ICD-9-CM to ICD-10-PCS GEM—choice lists with one choice per list
ICD-9-CM code 68.8 has the following GEM entry:

Source	Target	Flags
688	0DTN0ZZ	10127
688	0DTP0ZZ	10128
688	0TTB0ZZ	10115
688	0TTB0ZZ	10125
688	0TTD0ZZ	10116
688	0TTD0ZZ	10126
688	0UT20ZZ	10112
688	0UT20ZZ	10122
688	0UT70ZZ	10113
688	0UT70ZZ	10123
688	0UT90ZZ	10111
688	0UT90ZZ	10121
688	0UTG0ZZ	10114
688	0UTG0ZZ	10124

Scenario 1
68.8 Pelvic evisceration
To
0UT90ZZ Resection of Uterus, Open Approach
WITH
0UT20ZZ Resection of Bilateral Ovaries, Open Approach
WITH
0UT70ZZ Resection of Bilateral Fallopian Tubes, Open Approach
WITH
0UTG0ZZ Resection of Vagina, Open Approach
WITH
0TTB0ZZ Resection of Bladder, Open Approach
WITH
0TTD0ZZ Resection of Urethra, Open Approach

Example: ICD-9-CM to ICD-10-PCS GEM— choice lists with multiple choices
ICD-9-CM code 00.51 has the following GEM entry:

Source	Target	Flags

0051 02HK0ME 10112
0051 02HK3ME 10112
0051 02HK4ME 10112
0051 02HL0ME 10112
0051 02HL3ME 10112
0051 02HL4ME 10112
0051 0JH60P5 10111
0051 0JH63P5 10111
0051 0JH80P5 10111
0051 0JH83P5 10111

00.51 Implantation of cardiac resynchronization defibrillator, total system [CRT-D]
To
0JH60P5 Insertion of Cardiac Resynchronization Defibrillator Pulse Generator into Chest Subcutaneous Tissue and Fascia, Open Approach
or 0JH63P5 Insertion of Cardiac Resynchronization Defibrillator Pulse Generator into Chest Subcutaneous Tissue and Fascia, Percutaneous Approach
or 0JH80P5 Insertion of Cardiac Resynchronization Defibrillator Pulse Generator into Abdomen Subcutaneous Tissue and Fascia, Open Approach
or 0JH83P5 Insertion of Cardiac Resynchronization Defibrillator Pulse Generator into Abdomen Subcutaneous Tissue and Fascia, Percutaneous Approach
WITH
02HK0ME Insertion of Defibrillator Lead into Right Ventricle, Open Approach
or 02HK3ME Insertion of Defibrillator Lead into Right Ventricle, Percutaneous Approach
or 02HK4ME Insertion of Defibrillator Lead into Right Ventricle, Percutaneous Endoscopic Approach
or 02HL0ME Insertion of Defibrillator Lead into Left Ventricle, Open Approach
or 02HL3ME Insertion of Defibrillator Lead into Left Ventricle, Percutaneous Approach
or 02HL4ME Insertion of Defibrillator Lead into Left Ventricle, Percutaneous Endoscopic Approach

19) How can I use the scenario and choice list designations?

If you are using the ICD-10-CM/PCS GEMs in reverse lookup to convert an existing application so that it will process ICD-10-CM/PCS codes directly, it is necessary to use the scenario and choice list designations to organize the translation alternatives into distinct clusters. You may find that different clusters will require separate logic to be handled correctly by your application.

For example, your diagnosis code application logic may process skull fracture diagnosis codes separately from skull fracture with intracranial hemorrhage codes or traumatic intracranial hemorrhage alone. In this case, your application logic for ICD-10-CM will need to be modified to recognize the individual clusters derived from the combination GEMs entry in order to produce the same results as it currently does with ICD-9-CM.

Example: ICD-9-CM to ICD-10-CM GEM—combination entries organized into translation clusters
ICD-9-CM code 800.22 has the following GEM entry:

Source Target Flags
80022 S020xxA 10111
80022 S064x1A 10112
80022 S066x2A 10112
80022 S066x1A 10112
80022 S065x2A 10112
80022 S064x2A 10112
80022 S065x1A 10112

800.22 Closed fracture of vault of skull with subarachnoid, subdural, and extradural hemorrhage, with brief [less than one hour] loss of consciousness
To
Cluster S02.0xxA Fracture of vault of skull, initial encounter for closed fracture
WITH
S06.4x1A Epidural hemorrhage with loss of consciousness of 30 minutes or less, initial encounter

Cluster S02.0xxA Fracture of vault of skull, initial encounter for closed fracture
WITH
S06.4x2A Epidural hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter

Cluster S02.0xxA Fracture of vault of skull, initial encounter for closed fracture
WITH
S06.5x1A Traumatic subdural hemorrhage with loss of consciousness of 30 minutes or less, initial encounter

Cluster S02.0xxA Fracture of vault of skull, initial encounter for closed fracture
WITH
S06.5x2A Traumatic subdural hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter

Cluster S02.0xxA Fracture of vault of skull, initial encounter for closed fracture
WITH
S06.6x1A Traumatic subarachnoid hemorrhage with loss of consciousness of 30 minutes or less, initial encounter

Cluster S02.0xxA Fracture of vault of skull, initial encounter for closed fracture
WITH
S06.6x2A Traumatic subarachnoid hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter

For example, your procedure code application logic may process procedure codes for placement of a CRT-D total system differently from codes for placement of the defibrillator alone or codes for placement of the cardiac leads alone. In this case, your application logic for ICD-10-PCS will need to be modified to recognize the individual clusters derived from the combination GEMs entry in order to produce the same results as the application currently does with ICD-9-CM.

Example: ICD-9-CM to ICD-10-PCS GEM—combination entries organized into clusters
ICD-9-CM code 00.51 has the following GEM entry:

Source	Target	Flags
0051	02HK0ME	10112
0051	02HK3ME	10112
0051	02HK4ME	10112
0051	02HL0ME	10112
0051	02HL3ME	10112
0051	02HL4ME	10112
0051	0JH60P5	10111
0051	0JH63P5	10111
0051	0JH80P5	10111
0051	0JH83P5	10111

00.51 Implantation of cardiac resynchronization defibrillator, total system [CRT-D]
To
0JH60P5 Insertion of Cardiac Resynchronization Defibrillator Pulse Generator into Chest Subcutaneous Tissue and Fascia, Open Approach
or 0JH63P5 Insertion of Cardiac Resynchronization Defibrillator Pulse Generator into Chest Subcutaneous Tissue and Fascia, Percutaneous Approach
or 0JH80P5 Insertion of Cardiac Resynchronization Defibrillator Pulse Generator into Abdomen Subcutaneous Tissue and Fascia, Open Approach
or 0JH83P5 Insertion of Cardiac Resynchronization Defibrillator Pulse Generator into Abdomen Subcutaneous Tissue and Fascia, Percutaneous Approach
WITH
02HK0ME Insertion of Defibrillator Lead into Right Ventricle, Open Approach
or 02HK3ME Insertion of Defibrillator Lead into Right Ventricle, Percutaneous Approach
or 02HK4ME Insertion of Defibrillator Lead into Right Ventricle, Percutaneous Endoscopic Approach
or 02HL0ME Insertion of Defibrillator Lead into Left Ventricle, Open Approach
or 02HL3ME Insertion of Defibrillator Lead into Left Ventricle, Percutaneous Approach
or 02HL4ME Insertion of Defibrillator Lead into Left Ventricle, Percutaneous Endoscopic Approach

If you are developing an applied mapping to map each incoming ICD-10-CM/PCS code to an ICD-9-CM code in your legacy application, it is necessary to use the scenario and choice list designations to organize the translation alternatives into clusters. You will need to choose one cluster for your map.

General Equivalence Mappings
2011 Version Documentation

Part 2—Diagnosis GEM rules for Obstetrics Chapter Codes

The obstetrics diagnosis chapters of ICD-9-CM and ICD-10-CM are similarly organized at the category level, and can be fairly easily correlated, as in the table below.

ICD-9 Obstetrics Category	ICD-10 Obstetrics Category
630-633 Ectopic and Molar Pregnancy 634-639 Other Pregnancy with Abortive Outcome	O00-08 Pregnancy with Abortive Outcome
640-649 Complications Mainly Related to Pregnancy	O09 Supervision of High Risk Pregnancy O20-29 Other maternal disorders predominantly related to pregnancy
650-659 Normal Delivery, and Other Indications for Care in Pregnancy, Labor and Delivery	O10-16 Edema, proteinuria, and hypertensive disorders in pregnancy, childbirth and the puerperium O30-48 Maternal care related to the fetus and amniotic cavity and possible delivery problems O80-82 Encounter for delivery
660-669 Complications Occurring Mainly in the Course of Labor and Delivery	O60-77 Complications of labor and delivery
670-677 Complications of the Puerperium	O85-92 Complications predominantly related to the puerperium
678-679 Other Maternal and Fetal Complications	O94-9A Other obstetric conditions, not elsewhere classified

However, the two code sets diverge significantly at the code level. The ICD-9-CM obstetrics chapter (chapter 11) classifies conditions according to whether the patient delivered during the episode of care. For example, a code indicating the presence of placenta previa is further classified as follows:

641.00 Placenta previa without hemorrhage, unspecified as to episode of care
641.01 Placenta previa without hemorrhage, with delivery
641.03 Placenta previa without hemorrhage, antepartum

The ICD-10-CM obstetrics chapter (chapter 15) intentionally does not employ the episode of care axis of classification, but has been redesigned to further classify conditions based on the trimester of the pregnancy where clinically relevant.

O44.00 Placenta previa specified as without hemorrhage, unspecified trimester
O44.01 Placenta previa specified as without hemorrhage, first trimester
O44.02 Placenta previa specified as without hemorrhage, second trimester
O44.03 Placenta previa specified as without hemorrhage, third trimester

Because there is no correlation between episode of care and trimester, the GEMs could justifiably offer all placenta previa ICD-9-CM codes as translation alternatives for all placenta previa ICD-10-CM codes and vice versa. However, in an effort to curb the

explosion of translation alternatives by allowing *all* episodes of care in I-9 to translate to *all* trimesters in I-10, the diagnosis GEMs has used a rule-based translation of obstetrics codes, as shown in the following table.

ICD-10-CM Source system code	ICD-9-CM Target system translation
Unspecified trimester	Unspecified episode of care
First trimester	Antepartum Delivered
Second trimester	Antepartum Delivered
Third Trimester	Antepartum Delivered
Childbirth	Delivered Delivered with Postpartum complication
Complication of Puerperium	Delivered with Postpartum complication Postpartum complication

ICD-9-CM Source system code	ICD-10-CM Target system translation
Unspecified episode of care	Unspecified trimester
Antepartum	First trimester Second trimester Third Trimester
Delivered	First trimester Second trimester Third Trimester Childbirth
Delivered with Postpartum complication	First trimester (where applicable) Second trimester (where applicable) Third Trimester (where applicable) Childbirth Complication of Puerperium
Postpartum complication	Childbirth Complication of Puerperium

The “unspecified” codes in both sets translate only to each other, even though their meaning is not equivalent. This was done principally to curb the explosion of translation alternatives in the obstetrics chapter codes. The information in the more specified codes is readily available from the medical record, the guidelines for both code sets state they should be rarely used.

The following examples show GEMs entries for eclampsia codes as they are translated in both GEMs using the obstetrics rules listed in the table. For explanation of additional inclusion criteria that may apply to a GEMs entry, please see Appendix B.

ICD-10-CM to ICD-9-CM GEM

O15.00 Eclampsia in pregnancy, unspecified trimester
To 642.60 Eclampsia, unspecified as to episode of care or not applicable

O15.02 Eclampsia in pregnancy, second trimester
To 642.61 Eclampsia, delivered, with or without mention of antepartum condition
To 642.63 Eclampsia, antepartum condition or complication

O15.03 Eclampsia in pregnancy, third trimester
To 642.61 Eclampsia, delivered, with or without mention of antepartum condition
To 642.63 Eclampsia, antepartum condition or complication

O15.1 Eclampsia in labor
To 642.61 Eclampsia, delivered, with or without mention of antepartum condition

O15.2 Eclampsia in the puerperium
To 642.44 Mild or unspecified pre-eclampsia, postpartum condition or complication
To 642.64 Eclampsia, postpartum condition or complication
To 642.72 Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, delivered, with mention of postpartum complication
To 642.74 Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, postpartum condition or complication

ICD-9-CM to ICD-10-CM GEM

642.60 Eclampsia, unspecified as to episode of care or not applicable
To O15.9 Eclampsia, unspecified as to time period

642.61 Eclampsia, delivered, with or without mention of antepartum condition
To O15.02 Eclampsia in pregnancy, second trimester
To O15.03 Eclampsia in pregnancy, third trimester
To O15.1 Eclampsia in labor

642.62 Eclampsia, delivered, with mention of postpartum complication
To O15.2 Eclampsia in the puerperium

642.63 Eclampsia, antepartum condition or complication
To O15.02 Eclampsia in pregnancy, second trimester
To O15.03 Eclampsia in pregnancy, third trimester

642.64 Eclampsia, postpartum condition or complication
To O15.2 Eclampsia in the puerperium

Part 3—ICD-10-PCS to ICD-9-CM GEM rules for Angioplasty Codes

Correct coding of angioplasty procedures in ICD-9-CM dictates that multiple codes are reported in order to completely describe the angioplasty procedure as well as the use of specific types of stents and the number of vessels involved. These additional codes describing the stents and number of vessels have been referred to as adjunct codes. The adjunct codes are recorded in addition to the primary angioplasty procedure code, as shown in the following examples.

Example 1: Angioplasty of bilateral renal arteries and bare metal stent in left renal artery

39.50 Angioplasty or atherectomy of other non-coronary vessel(s)
00.41 Procedure on two vessels
39.90 Insertion of non-drug-eluting peripheral (non-coronary) vessel stent(s)
00.45 Insertion of one vascular stent

Example 2: Percutaneous angioplasty of one intracranial vessel with bare metal stent

00.62 Percutaneous angioplasty or atherectomy of intracranial vessel(s)
00.40 Procedure on single vessel
00.65 Percutaneous insertion of intracranial vascular stent(s)
00.45 Insertion of one vascular stent

Example 3: Percutaneous angioplasty of left anterior descending (LAD) coronary artery and right coronary artery(RCA); two separate sites treated on the LAD, one of them at the artery bifurcation treated with two drug-eluting stents, the other LAD site treated without a stent; the RCA site treated with a non-drug-eluting stent.

00.66 Percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy
00.41 Procedure on two vessels
00.47 Insertion of three vascular stents
36.06 Insertion of non-drug-eluting coronary artery stent(s)
36.07 Insertion of drug-eluting coronary artery stent(s)
00.44 Procedure on vessel bifurcation

As shown in examples 1 and 3, the number of stents placed may differ from the number of vessels treated. In the first example, two vessels are treated and one stent is placed. In the third example, two vessels are treated and three stents are placed.

Coding percutaneous angioplasties in ICD-10-PCS is significantly different along several dimensions. The differences that necessitate rules for the ICD-10-PCS GEMs entries are highlighted below:

- ICD-10-PCS does not contain adjunct codes
    - Each ICD-10-PCS code is a complete procedure code
- A separate ICD-10-PCS code must be recorded for each angioplasty that uses a drug-eluting stent, a non-drug eluting stent or no stent
    - ICD-10-PCS does not allow for mix and match recording of the data
- ICD-10-PCS classifies the coronary artery body part by *number of sites* treated
    - Not by *number of vessels* treated

Example 3 above coded in ICD-10-PCS looks like this:

LAD site at the artery bifurcation treated with drug-eluting stents

0270346 Dilation of Coronary Artery, One Site, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Approach

LAD site treated without a stent

02703ZZ Dilation of Coronary Artery, One Site, Percutaneous Approach

RCA site treated with a non-drug-eluting stent

02703DZ Dilation of Coronary Artery, One Site with Intraluminal Device, Percutaneous Approach

While it is less common to have multiple angioplasties performed on non-coronary vessels at the same episode, the ICD-9-CM adjunct codes for multiple vessels and multiple stents are available for coding as shown in the following table.

ICD-9-CM adjunct codes used for multiple vessel procedures

ICD-9-CM Principal Procedure	Applicable ICD-9-CM Adjunct Codes
Percutaneous coronary angioplasty Open coronary angioplasty	00.40 Procedure on single vessel 00.41 Procedure on two vessels 00.42 Procedure on three vessels 00.43 Procedure on four or more vessels 00.44 Procedure on vessel bifurcation 00.45 Insertion of one vascular stent 00.46 Insertion of two vascular stents 00.47 Insertion of three vascular stents 00.48 Insertion of four or more vascular stents 36.06 Insertion of non-drug-eluting coronary artery stent(s) 36.07 Insertion of drug-eluting coronary artery stent(s)
Percutaneous precerebral angioplasty	00.40 Procedure on single vessel 00.41 Procedure on two vessels 00.42 Procedure on three vessels 00.43 Procedure on four or more vessels 00.44 Procedure on vessel bifurcation 00.45 Insertion of one vascular stent 00.46 Insertion of two vascular stents 00.47 Insertion of three vascular stents 00.48 Insertion of four or more vascular stents 00.63 Percutaneous insertion of carotid artery stent(s) 00.64 Percutaneous insertion of other precerebral (extracranial) artery stent(s)

ICD-9-CM adjunct codes used for multiple vessel procedures, cont.

ICD-9-CM Principal Procedure	Applicable ICD-9-CM Adjunct Codes
Percutaneous cerebral angioplasty	00.40 Procedure on single vessel 00.41 Procedure on two vessels 00.42 Procedure on three vessels 00.43 Procedure on four or more vessels 00.44 Procedure on vessel bifurcation 00.45 Insertion of one vascular stent 00.46 Insertion of two vascular stents 00.47 Insertion of three vascular stents 00.48 Insertion of four or more vascular stents 00.65 Percutaneous insertion of intracranial vascular stent(s)
Other non-coronary vessel angioplasty	00.40 Procedure on single vessel 00.41 Procedure on two vessels 00.42 Procedure on three vessels 00.43 Procedure on four or more vessels 00.44 Procedure on vessel bifurcation 00.45 Insertion of one vascular stent 00.46 Insertion of two vascular stents 00.47 Insertion of three vascular stents 00.48 Insertion of four or more vascular stents 00.55 Insertion of drug-eluting peripheral vessel stent(s) 39.90 Insertion of non-drug-eluting peripheral (non-coronary) vessel stent(s)

If all possible theoretical combinations of ICD-9-CM adjunct codes were given as target system translation alternatives in the ICD-10-PCS to ICD-9-CM GEM, this would create a burdensome number of alternatives. Therefore, the ICD-10-PCS to ICD-9-CM GEM uses a rule-based translation that limits the combinatorial explosion of translation alternatives. The rules are, in brief:

-- For coronary angioplasty procedures, the number of coronary artery sites specified in the ICD-10-PCS source system code is translated as equivalent to the number of vessels in ICD-9-CM
-- For coronary angioplasty procedures for ICD-10-PCS codes specifying an intraluminal device (stent), the number of coronary artery sites is translated as equivalent to the number stents in ICD-9-CM
-- For all other angioplasty procedures, the ICD-10-PCS code translates to the single vessel adjunct code, and where applicable, the single stent adjunct code in ICD-9-CM

The ICD-10-PCS source system code components and their corresponding rule-based target system translation alternatives are given in detail in the following tables.

Translation rules applied to coronary angioplasty procedure codes

ICD-10-PCS Source system code specifies	ICD-9-CM Target system translation alternatives
One coronary artery site	00.40 Procedure on single vessel
One coronary artery site with non-drug-eluting stent	00.40 Procedure on single vessel 00.45 Insertion of one vascular stent 36.06 Insertion of non-drug-eluting coronary artery stent(s)
One coronary artery site with drug-eluting stent	00.41 Procedure on two vessels 00.45 Insertion of one vascular stent 36.07 Insertion of drug-eluting coronary artery stent(s)
Two coronary artery sites	00.41 Procedure on two vessels
Two coronary artery sites with non-drug-eluting stent	00.41 Procedure on two vessels 00.46 Insertion of two vascular stents 36.06 Insertion of non-drug-eluting coronary artery stent(s)
Two coronary artery sites with drug-eluting stent	00.41 Procedure on two vessels 00.46 Insertion of two vascular stents 36.07 Insertion of drug-eluting coronary artery stent(s)
Three coronary artery sites	00.42 Procedure on three vessels
Three coronary artery sites with non-drug-eluting stent	00.42 Procedure on three vessels 00.47 Insertion of three vascular stents 36.06 Insertion of non-drug-eluting coronary artery stent(s)
Three coronary artery sites with drug-eluting stent	00.42 Procedure on three vessels 00.47 Insertion of three vascular stents 36.07 Insertion of drug-eluting coronary artery stent(s)
Four or more coronary artery sites	00.43 Procedure on four or more vessels
Four or more coronary artery sites with non-drug-eluting stent	00.43 Procedure on four or more vessels 00.48 Insertion of four or more vascular stents 36.06 Insertion of non-drug-eluting coronary artery stent(s)
Four or more coronary artery sites with drug-eluting stent	00.43 Procedure on four or more vessels 00.48 Insertion of four or more vascular stents 36.07 Insertion of drug-eluting coronary artery stent(s)

Translation rules applied to all other angioplasty procedure codes

ICD-10-PCS Source system code specifies	ICD-9-CM Target system translation alternatives
Percutaneous precerebral angioplasty of a specified artery	00.40 Procedure on single vessel
Percutaneous precerebral angioplasty of a specified carotid artery with stent	00.40 Procedure on single vessel 00.45 Insertion of one vascular stent 00.63 Percutaneous insertion of carotid artery stent(s)
Percutaneous precerebral angioplasty of a specified precerebral artery with stent	00.40 Procedure on single vessel 00.45 Insertion of one vascular stent 00.64 Percutaneous insertion of other precerebral (extracranial) artery stent(s)
Percutaneous cerebral angioplasty	00.40 Procedure on single vessel 00.45 Insertion of one vascular stent
Percutaneous cerebral angioplasty with stent	00.40 Procedure on single vessel 00.45 Insertion of one vascular stent 00.65 Percutaneous insertion of intracranial vascular stent(s)
Other non-coronary vessel angioplasty	00.40 Procedure on single vessel 00.45 Insertion of one vascular stent 00.55 Insertion of drug-eluting peripheral vessel stent(s) 39.90 Insertion of non-drug-eluting peripheral (non-coronary) vessel stent(s)
Other non-coronary vessel angioplasty with non-drug-eluting stent	00.40 Procedure on single vessel 00.45 Insertion of one vascular stent 39.90 Insertion of non-drug-eluting peripheral (non-coronary) vessel stent(s)
Other non-coronary vessel angioplasty with drug-eluting stent	00.40 Procedure on single vessel 00.45 Insertion of one vascular stent 00.55 Insertion of drug-eluting peripheral vessel stent(s)

The following examples show ICD-10-PCS GEMs entries as they are translated in the ICD-10-PCS to ICD-9-CM GEM using the rules listed in the table. For explanation of additional inclusion criteria that may apply to a GEMs entry, please see Appendix B.

ICD-10-PCS to ICD-9-CM GEM
Example: Percutaneous coronary angioplasty

027234Z Dilation of Coronary Artery, Three Sites with Drug-eluting Intraluminal Device, Percutaneous Approach
To
00.66 Percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy
WITH
00.42 Procedure on three vessels
WITH
00.47 Insertion of three vascular stents
WITH
36.07 Insertion of drug-eluting coronary artery stent(s)

ICD-10-PCS to ICD-9-CM GEM
Example: Percutaneous intracranial angioplasty

037G3ZZ Dilation of Intracranial Artery, Percutaneous Approach
To
00.62 Percutaneous angioplasty or atherectomy of intracranial vessel(s)
WITH
00.40 Procedure on single vessel

ICD-10-PCS to ICD-9-CM GEM
Example: Peripheral angioplasty example

047C3DZ Dilation of Right Common Iliac Artery with Intraluminal Device, Percutaneous Approach
To
39.50 Angioplasty or atherectomy of other non-coronary vessel(s)
WITH
00.40 Procedure on single vessel
WITH
39.90 Insertion of non-drug-eluting peripheral (non-coronary) vessel stent(s)