Crosswalking Between ICD-9 and ICD-10

This is the seventh fact sheet in a series and is focused on crosswalking between the ICD-9 and ICD-10 code sets. Collectively, the fact sheets will provide information, suggestions, guidance, and checklists to assist you with understanding what you need to do to be HIPAA compliant.

A critical issue associated with the transition to ICD-10 involves the matter of crosswalking between the ICD-9 and ICD-10 code sets. The term "crosswalking" is generally defined as the act of mapping or translating a code in one code set to a code or codes in another code set. (The terms "crosswalking" and "mapping" are sometimes used interchangeably.) There has been much discussion about how crosswalks will be used in the industry during the transition from ICD-9 to ICD-10. Understanding crosswalking will be important to physicians during the transition phase when learning which new ICD-10 code to use in place of an ICD-9 code, since there is not always a one to one match.

Uses of Crosswalking

Crosswalking between ICD-10 and ICD-9 should be done primarily to assist with transitioning to ICD-10 and analyze data that spans the conversion time period. To assist with transitioning, crosswalking between the code sets will assist you with identifying the differences between ICD-9 and ICD-10. If you develop your own encounter forms or "superbills", crosswalking will assist you with creating new forms for ICD-10.

Your practice may also create reports based on patient diagnosis to review various data, such as utilization, frequency, and quality. To create these reports, all of the diagnosis codes may need to be either ICD-9 or ICD-10, which will require crosswalking. The direction that you crosswalk the data will depend on how much of the data is in one code set or the other. For example, if you are running a report for calendar year 2013, the majority of the diagnosis codes will have been coded in ICD-9. It will be easier to crosswalk the ICD-10 codes back to ICD-9 in order to compare all of the data together. If you are doing a 12-month review of data in July 2014, it will be easier to crosswalk the ICD-9 codes forward to ICD-10.

Another area that will require crosswalking is with research. If your practice engages in research that is based on or includes diagnosis codes, you will have a greater need to crosswalk between ICD-9 and ICD-10. The length of time that you will need to do crosswalking for the research data will depend on the time period involved in the study.

Understanding GEMs

The National Center for Health Statistics (NCHS) has developed what is known as a "General Equivalence Mappings" (GEMs) for the diagnosis codes. The Centers for Medicare & Medicaid Services (CMS) have developed the GEMs for the procedure codes. The GEMs are considered to be the authoritative source for crosswalking between ICD-10 and ICD-9. The remainder of this fact sheet will focus on crosswalking the diagnosis codes. (CPT® codes remain the codes physicians will use to report services and procedure performed in the office and ambulatory settings).

The GEMs are data files and list the ICD-9 and ICD-10 codes and the attributes of the mapping between the two code sets. There is a file for mapping from ICD-10 to ICD-9 and another for mapping from ICD-9 to ICD-10. Mapping from ICD-9 to ICD-10 is called "forward mapping" and mapping from ICD-10 to ICD-9 is "backward mapping."

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The GEMs files are available for free and can be downloaded from the NCHS website, www.cdc.gov/nchs/icd/icd10cm.htm. The following are the web address and names of the GEMs files. While most physicians will not need to familiarize themselves with the GEM files, understanding the principles behind the GEMs can be helpful.

- GEMs files: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/ICD10CM/2010/
  - 2010_DiagnosisGEMs.zip
    - 2010_I10gem.txt – ICD-10 to ICD-9 GEM
    - 2010_I9gem.txt – ICD-9 to ICD-10 GEM
    - Dxgem_guide_2010.pdf – GEMs user guide
    - I10cm_desc2010.txt – ICD-10 code and descriptor
    - Remaining two files are the addenda for ICD-10

The GEMs "attempt to find corresponding…codes between the two code sets, insofar as this is possible," according to the GEMs Documentation and User's Guide 2009 version. The GEMs are not an exact crosswalk between the code sets. An exact one-to-one matching of the ICD-9 and ICD-10 codes cannot occur due to the changes in structure and concepts in ICD-10.

Crosswalking is not a substitute for learning and fully implementing ICD-10 into your practice. There is information that can be lost or gained when ICD-9 and ICD-10 codes are crosswalked to one another. Just like when translating between English and a foreign language, there are situations where the meaning of words are not exact and convey different ideas. Not using the diagnosis code that most accurately represents the patient's condition will impact the integrity of the data.

The GEMs are intended to serve as tools for activities such as implementing ICD-10 and analyzing data that spans the conversion time period. The GEMs files will not be maintained on an ongoing basis after the ICD-10 compliance date has passed. Additionally, the ICD-9 code set will no longer be updated after October 1, 2012, so it will become obsolete.

Crosswalking Details Using the GEMs

The following table gives the percentages of the different types of matches between ICD-10 and ICD-9.

Table 1 – Percentages of Types of Matches

Mapping Categories	ICD-10 to ICD-9	ICD-9 to ICD-10
No Match	1.2%	3.0%
1-to1 Exact Match	5.0%	24.2%
1-to-1 Approximate Match with 1 Choice	82.6%	49.1%
1-to-1 Approximate Match with Multiple Choices	4.3%	18.7%
1-to-Many Match with 1 Scenario	6.6%	2.1%
1-to-Many Match with Multiple Scenarios	0.2%	2.9%

The above table demonstrates the importance of fully implementing the ICD-10 code set and not relying on crosswalking from ICD-9 to ICD-10. Only 5 percent of ICD-10 codes match exactly to ICD-9 codes and 24 percent of the ICD-9 codes match exactly to an ICD-10 code. When crosswalking from ICD-9 to ICD-10, there are one-to-one approximate matches for 49 percent of the codes. Another nearly 19 percent of the matches are one-to-one with multiple choices, requiring further review to determine the appropriate approximate match. The simpler approach to take is coding directly in ICD-10 instead of putting efforts into further review to determine the proper crosswalked code.

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The following are examples of crosswalking from ICD-9 to ICD-10 codes. Similar examples exist with crosswalking from ICD-10 to ICD-9.

One-to-One Exact Matches between ICD-9 and ICD-10

ICD-9 Diagnosis Code	ICD-10 Diagnosis Code
1570 Malignant neoplasm of head of pancreas	C250 Malignant neoplasm of head of pancreas
4160 Primary pulmonary hypertension	I270 Primary pulmonary hypertension
53501 Acute gastritis, with hemorrhage	K2901 Acute gastritis with bleeding

With one-to-one approximate matches, some have one ICD-9 code that crosswalks to one ICD-10 code. Others have one ICD-9 code that crosswalks to more than one ICD-10 codes and more than one ICD-9 code that crosswalks to one ICD-10 code. The following examples show each of these situations.

One-to-One Approximate Match from ICD-9 to ICD-10 with One Choice

ICD-9 Diagnosis Code	ICD-10 Diagnosis Code
1574 Malignant neoplasm of islets of Langerhans	C254 Malignant neoplasm of endocrine pancreas
42291 Idiopathic myocarditis	I401 Isolated myocarditis
53085 Barrett's esophagus	K2270 Barrett's esophagus without dysplasia

You can see in the above examples that the diagnoses that are crosswalked are not exact matches, which is why they are considered approximate matches.

One-to-One Approximate Matches from ICD-9 to ICD-10 with Multiple Choices – One ICD-9 Code to More than One ICD-10 Codes

ICD-9 Diagnosis Code	ICD-10 Diagnosis Code
1550 Malignant neoplasm of liver, primary	C220 Liver cell carcinoma
1550 Malignant neoplasm of liver, primary	C222 Heptablastoma
1550 Malignant neoplasm of liver, primary	C227 Other specified carcinomas of liver
1550 Malignant neoplasm of liver, primary	C228 Malignant neoplasm of liver, primary, unspecified as to type
4169 Chronic pulmonary heart disease, unspecified	I279 Pulmonary heart disease, unspecified
4169 Chronic pulmonary heart disease, unspecified	I2781 Cor pulmonale (chronic)
53551 Unspecified gastritis and gastroduodenitis, with hemorrhage	K2971 Gastritis, unspecified, with bleeding
53551 Unspecified gastritis and gastroduodenitis, with hemorrhage	K2991 Gastroduodenitis, unspecified, with bleeding

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One-to-One Approximate Matches from ICD-9 to ICD-10 with Multiple Choices – More Than One ICD-9 Code to One ICD-10 Code

ICD-9 Diagnosis Code	ICD-10 Diagnosis Code
1498 Malignant neoplasm of other sites within the lip and oral cavity	C148 Malignant neoplasm of overlapping sites of oral cavity and pharynx
1499 Malignant neoplasm of ill-defined sites within the lip and oral cavity	C148 Malignant neoplasm of overlapping sites of oral cavity and pharynx
4010 Malignant essential hypertension	I10 Essential (primary) hypertension
4011 Benign essential hypertension	I10 Essential (primary) hypertension
4019 Unspecified essential hypertension	I10 Essential (primary) hypertension
5362 Persistent vomiting	K3189 Other diseases of stomach and duodenum
5363 Gastroparesis	K3189 Other diseases of stomach and duodenum
5375 Gastroptosis	K3189 Other diseases of stomach and duodenum
53789 Other specified disorders of stomach and duodenum	K3189 Other diseases of stomach and duodenum
538 Gastrointestinal mucositis (ulcerative)	K3189 Other diseases of stomach and duodenum

A small percentage of the crosswalking involves codes that match to more than one code in the other code set, commonly called "one-to-many". The "many" codes are called the "cluster" of codes that map to the single code. Most clusters have two codes and the maximum number of codes in a cluster is four. In some cases, there is more than one cluster of codes that map to the one code. All of the codes in a cluster are needed to fully represent the one code. Careful review is needed to determine which cluster of codes applies to the situation being crosswalked. The following are examples of codes that crosswalk from one-to-many.

One-to Many Match from ICD-9 to ICD-10

ICD-9 Diagnosis Code	ICD-10 Diagnosis Codes
80010 Closed fracture of vault of skull with cerebral laceration and contusion, with state of consciousness unspecified	S020xxA Fracture of vault of skull, initial encounter for closed fracture
	S06339A Contusion and laceration of cerebrum, unspecified, with loss of consciousness of unspeci duration, initial encounter

One-to-Many Match from ICD-10 to ICD-9

ICD-9 Diagnosis Code	ICD-10 Diagnosis Codes
O641XX0 Obstructed labor due to breech position, not applicable or unspecified	66001 Obstruction caused by malposition of fetus onset of labor, with delivery
	65221 Breech presentation without mention of version, delivered

Conclusion

There will be specific reasons to crosswalk between the ICD-9 and ICD-10 code sets. Crosswalking, however, is not a substitute to implementing ICD-10 and coding directly in ICD-10. Because there are not 100 percent exact matches between ICD-9 and ICD-10, crosswalking is a complex activity that in many cases requires additional review, which emphasizes the reason that coding should be done directly in ICD-10.

Visit the AMA's website for more resources for implementing ICD-10.

www.ama-assn.org/go/ICD-10

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