



# General Equivalence Mappings



ICD-9-CM to and from  
ICD-10-CM and ICD-10-PCS

# Top 10 Questions and Answers

**T**his publication provides information and resources regarding the General Equivalence Mappings (GEM), which were developed as a tool to assist with the conversion of International Classification of Diseases, 9th Edition, Clinical Modification (ICD-9-CM) codes to International Classification of Diseases, 10th Edition (ICD-10) and the conversion of ICD-10 codes back to ICD-9-CM. The GEMs are forward and backward mappings between the ICD-9-CM and ICD-10 coding systems and are also referred to as crosswalks since they provide important information linking codes of one system with codes in the other system. The intended audience for the GEMs includes coding professionals, payers, providers, medical researchers, informatics professionals as well as any other individuals who use coded data. The GEMs can be used in converting payment systems, payment and coverage edits, risk adjustment logic, quality measures, and a variety of research applications involving trend data.



**1** The information in the introductions to the GEMs points out that, in some cases, there is a clear one-to-one match between an ICD-9-CM code and an ICD-10-CM or ICD-10-Procedure Coding System (PCS) code. However, one ICD-9-CM code often translates to several ICD-10-CM or ICD-10-PCS codes because of the nature of going from the more general ICD-9-CM to the more specific ICD-10. Please describe the methodology that was used to create the GEMs.

In order to both create and maintain the GEMs, all reasonable code translation alternatives are included in its respective GEM, based on the complete meaning of the code being looked up. For example, for the ICD-9-CM to ICD-10-CM GEM, we look up an ICD-9-CM code and include all reasonable translation alternatives in that GEM based on the “complete meaning” of the ICD-9-CM code. The “complete meaning” of a code includes tabular instruction, index entries, guidelines, and applicable Coding Clinic advice.

There may be multiple translation alternatives for a source system code (the code being looked up), all of which are equally plausible. This is true of both the ICD-10 to ICD-9-CM GEMs and the ICD-9-CM to ICD-10 GEMs. When there is only one alternative in a GEM, we can say that we have a “one-to-one” translation. This is common in the ICD-10 to ICD-9-CM GEMs and does not necessarily mean the two codes are identical. Additional information about this subject can be found at [http://www.cms.hhs.gov/ICD10/01m\\_2009\\_ICD10PCS.asp](http://www.cms.hhs.gov/ICD10/01m_2009_ICD10PCS.asp) on the Centers for Medicare & Medicaid Services (CMS) website. On this page, select the file labeled “2009 Mapping—ICD-10-PCS to ICD-9-CM and ICD-9-CM to ICD-10-PCS; and User Guide, Reimbursement Guide, Diagnosis, and Procedures” to access the mapping files.

**2** Are there any instances when there is no translation between an ICD-9-CM code and an ICD-10 code? How do the GEMs handle this situation?

Yes, there are instances where there is not a translation between an ICD-9-CM code and an ICD-10 code. When there is no plausible translation from a code in one system to any code in the other system, the “No Map” flag indicates this. For example, the following codes are marked with the “No Map” flag:

- **ICD-10-CM code Y71.3** – *Surgical instruments, materials and cardiovascular devices (including sutures) associated with adverse incidents*, which has no reasonable translation in ICD-9-CM; and
- **ICD-9-CM Procedure Code 89.8** – *Autopsy*, which has no reasonable translation in ICD-10-PCS.

For more information on this subject, see page 16 of the publication titled *Procedure Code Set General Equivalence Mappings ICD-10-PCS to ICD-9-CM and ICD-9-CM to ICD-10-PCS 2009 Version Documentation and User's Guide*, which can be accessed at [http://www.cms.hhs.gov/ICD10/01m\\_2009\\_ICD10PCS.asp](http://www.cms.hhs.gov/ICD10/01m_2009_ICD10PCS.asp) on the CMS website. The User's Guide is posted in the Downloads Section within the file labeled "2009 Mapping—ICD-10-PCS to ICD-9-CM and ICD-9-CM to ICD-10-PCS; and User Guide, Reimbursement Guide, Diagnosis, and Procedures."

### **3 Why do the GEMs go in both directions (from ICD-9-CM to ICD-10 and from ICD-10 back to ICD-9-CM)?**

The GEMs are designed to be used like a bi-directional translation dictionary. They go in both directions so that you can look up a code to find out what it means according to the concepts and structure used by the other coding system, similar to how Spanish-English and English-Spanish dictionaries are designed. Neither the two dictionaries nor the GEMs are a mirror image of each other. Because the translation alternatives are *based on the meaning of the code you are looking up* (which includes index entries, tabular instruction, and applicable Coding Clinic advice), the ICD-10-PCS to ICD-9-CM GEM is not a mirror image of the ICD-9-CM to ICD-10-PCS GEM.

The GEMs were designed to convert current ICD-9-CM codes to applicable ICD-10 codes. A "reverse lookup" of the backward mappings (ICD-10-CM/PCS to ICD-9-CM GEM, looked up by ICD-9-CM code) can be used to convert payment logic or coverage decisions from ICD-9-CM codes to ICD-10 codes. This mapping (ICD-10-CM/PCS to ICD-9-CM GEMs) could also be used in examining trend data over multiple years, spanning the implementation of ICD-10. For example, in 2013 it will be possible to compare how frequencies changed for a specific condition using an ICD-10 code compared to prior years using ICD-9-CM codes. The forward mapping (ICD-9-CM to ICD-10-CM/PCS GEMs) can be used to convert ICD-9-CM-based edits and can also be used for any analysis or conversion project that needs to examine ICD-10 codes and determine the ICD-9-CM code(s) that previously captured this diagnosis or procedure.

### **4 What process was used to develop the GEMs? Did CMS and the Centers for Disease Control and Prevention (CDC) seek input from organizations such as the American Hospital Association (AHA) and the American Health Information Management Association (AHIMA) regarding the development of the GEMs? Did development of the GEMs involve both clinical and coding evaluations?**

The GEMs were developed over a period of three years by CMS and CDC, with input from both AHA and AHIMA. The GEMs development and maintenance team includes clinicians and coding experts, representatives of the Cooperating Parties (CMS, CDC, AHA, and AHIMA), and the team that developed and maintains ICD-10-PCS. The *General Equivalence Mappings User's Guides* were collaboratively written by the Cooperating Parties.

### **5 Were the GEMs designed for use by all providers and payers or was the focus on use with Medicare data?**

The GEMs were designed as a general purpose translation tool for *all* types of providers, payers, and other users of coded data. The translations are based on the meaning of the code as contained in the tabular instruction, index entries, and applicable Coding Clinic advice. They were developed independently without reference to Medicare data. Their applicability extends equally to all types of users—providers, payers, researchers, and application development vendors.

### **6 We were told that validation of the GEMs is occurring as part of the conversion of the current ICD-9-CM-based Medicare Severity Diagnosis Related Groups (MS-DRG) to ICD-10-based MS-DRGs. How does this process identify any potential updates that might be needed to the GEMs? Will the GEMs be updated to correct any inaccuracies discovered in this process?**

Because the process of MS-DRG conversion begins with an initial translation using the ICD-10 to ICD-9-CM GEMs and then uses the ICD-9-CM to ICD-10 GEMs to identify any additional conversion issues, all four GEMs are being tested in the conversion process. Any inaccuracies discovered in the process are immediately noted so that changes can be made to the affected GEMs and included in the next annual update. Currently, the updated GEMs are posted each January to reflect the annual code updates and any corrections or enhancements to the GEMs. We will continue to update the codes and GEMs on an annual basis. As mentioned in Question 1, the updated GEMs for diagnoses can be accessed in the Downloads Section at [http://www.cms.hhs.gov/ICD10/02m\\_2009\\_ICD\\_10\\_CM.asp](http://www.cms.hhs.gov/ICD10/02m_2009_ICD_10_CM.asp), and the updated GEMs for procedures can be found in the Downloads Section at [http://www.cms.hhs.gov/ICD10/01m\\_2009\\_ICD10PCS.asp](http://www.cms.hhs.gov/ICD10/01m_2009_ICD10PCS.asp) on the CMS website.



## 7 What methodology is being used in the MS-DRG ICD-10 conversion?

The goal of MS-DRG ICD-10 conversion is to *replicate the current MS-DRG logic*. A record coded in ICD-10-CM/PCS and processed according to the converted ICD-10-based MS-DRGs will be assigned to the same MS-DRG as the same record coded in ICD-9-CM and processed according to the current MS-DRG logic.

We are accomplishing this goal by translating the lists of ICD-9-CM codes that comprise the MS-DRGs (approximately 500 code lists) to comparable lists of ICD-10-CM/PCS codes *without changing the underlying MS-DRG logic*. This method of replacing lists of ICD-9-CM codes with lists of ICD-10 codes is partially automated using the GEMs.

## 8 When do you anticipate that an ICD-10 version of the MS-DRGs will be completed and posted on the CMS website?

A draft ICD-10 version of the MS-DRGs will be completed in October 2009. We will format this ICD-10 version of the MS-DRGs and post it in January 2010 along with the 2010 updates to ICD-10 and the GEMs in the Downloads Section at [http://www.cms.hhs.gov/ICD10/01m\\_2009\\_ICD10PCS.asp](http://www.cms.hhs.gov/ICD10/01m_2009_ICD10PCS.asp) on the CMS website. We welcome recommendations regarding how this information should be displayed. We believe this exercise will provide useful information to other payers who will be converting their own payment systems. The final ICD-10 version of the MS-DRGs will be subject to formal rulemaking as part of the Inpatient Prospective Payment System.

## 9 How soon after a code has been added or deleted will the GEMs be updated to reflect these changes?

We update ICD-9-CM and ICD-10 codes each year. We post updates to the GEMs each January to reflect these annual updates and will continue to update the codes and GEMs on an annual basis. There will be future discussions at the ICD-9-CM Coordination and Maintenance (C&M) Committee meetings as to whether or not we should freeze updates to ICD-9-CM and/or ICD-10 in order to facilitate planning for ICD-10 implementation. Information about the ICD-9-CM C&M Committee meetings can be found at [http://www.cms.hhs.gov/ICD10/08\\_ICD9CM\\_Coordination\\_and\\_Maintenance\\_Committee\\_Meetings.asp](http://www.cms.hhs.gov/ICD10/08_ICD9CM_Coordination_and_Maintenance_Committee_Meetings.asp) on the CMS website.

## 10 For what period of time following ICD-10 implementation on October 1, 2013 will the GEMs be updated?

As we discussed on pages 3337-3338 of the ICD-10 final rule, the ICD-9-CM C&M Committee will discuss updating the GEMs for a minimum of three years after ICD-10 is implemented on October 1, 2013. We welcome recommendations regarding how long the GEMs should be maintained and updated. The final rule can be found at <http://edocket.access.gpo.gov/2009/pdf/E9-743.pdf> on the Web.

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### ICD-9-CM Notice

The International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) is published by the United States Government. A CD-ROM, which may be purchased through the Government Printing Office, is the only official Federal government version of the ICD-9-CM. ICD-9-CM is an official Health Insurance Portability and Accountability Act standard.

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