DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Medicare & Medicaid Services

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GENERAL EQUIVALENCE MAPPINGS
FREQUENTLY ASKED QUESTIONS

This publication provides the following information on General Equivalence Mappings (GEMs):

- ❖ Background;
- ❖ Frequently Asked Questions; and
- ❖ Resources.

BACKGROUND

The Centers for Medicare & Medicaid Services (CMS) and the Centers for Disease Control and Prevention (CDC) created the GEMs 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, Clinical Modification/Procedure Coding System (ICD-10-CM/PCS);
- ❖ Assist with the conversion of ICD-10-CM/PCS codes back to ICD-9-CM; and
- ❖ Ensure that consistency in national data is maintained.

CMS and CDC made a commitment to update the GEMs annually along with the updates to ICD-10-CM/PCS during the transition period prior to ICD-10 implementation. The GEMs will be maintained for at least 3 years beyond October 1, 2014, which is the compliance date for implementation of ICD-10-CM/PCS for all Health Insurance Portability and Accountability Act (HIPAA)-covered entities.

FREQUENTLY ASKED QUESTIONS

What are the GEMs?

The GEMs are a tool you can use to convert data from ICD-9-CM to ICD-10-CM and ICD-10-PCS and vice versa. The GEMs are also known as crosswalks as they provide important information linking codes of one system with codes in the other system. The GEMs are a comprehensive translation dictionary that can be used to accurately and effectively translate any ICD-9-CM-based data, including data for:

- ❖ Tracking quality;
- ❖ Recording morbidity/mortality;
- ❖ Calculating reimbursement; or
- ❖ Converting any ICD-9-CM-based application to ICD-10-CM/PCS such as:
  - Payment systems;
  - Payment and coverage edits;
  - Risk adjustment logic;
  - Quality measures; and
  - A variety of research applications involving trend data.

Mapping from ICD-10-CM and ICD-10-PCS codes back to ICD-9-CM codes is known as backward mapping. Mapping from ICD-9-CM codes to ICD-10-CM and ICD-10-PCS codes is known as forward mapping. The GEMs are complete in their description of all the mapping possibilities as well as when there are new concepts in ICD-10 that are not found in ICD-9-CM. **All** ICD-9-CM codes and **all** ICD-10-CM/PCS codes are included in the collective GEMs:

- ❖ All ICD-10-CM codes are in the ICD-10-CM to ICD-9-CM GEMs;
- ❖ All ICD-9-CM Diagnosis Codes are in the ICD-9-CM to ICD-10-CM GEMs;
- ❖ All ICD-10-PCS codes are in the ICD-10-PCS to ICD-9-CM GEMs; and
- ❖ All ICD-9-CM Procedure Codes are in the ICD-9-CM to ICD-10-PCS GEMs.

Who can use the GEMs? 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 that can be used by anyone who wants to convert coded data. Possible users of the GEMs include:

- ❖ All payers;
- ❖ All providers;
- ❖ Medical researchers;
- ❖ Informatics professionals;
- ❖ Coding professionals–to convert large data sets;
- ❖ Software vendors–to use within their own products;
- ❖ Organizations–to make mappings that suit their internal purposes or that are based on their own historical data; and
- ❖ Any other individuals who use 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.

What process was used to develop the GEMs? Did CMS and CDC seek input from organizations such as the American Hospital Association (AHA) and the American Health Information Management Association (AHIMA) about the development of the GEMs? Did development of the GEMs involve both clinical and coding evaluations?
The GEMs were developed over a period of 3 years by CMS and CDC, with input from both AHA and AHIMA. The GEMs development and maintenance team includes clinicians, 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 Documentation and User's Guides," which are updated and posted annually along with the other ICD-10-CM and ICD-10-PCS and GEMs files, were collaboratively written by the Cooperating Parties.

Are the GEMs a substitute for learning to use ICD-10-CM and ICD-10-PCS?
The GEMs are not a substitute for learning how to use ICD-10-CM and ICD-10-PCS. Providers' coding staff will assign codes describing the patients' encounters from the ICD-10-CM and ICD-10-PCS code books or encoder systems. In coding individual claims, it will be more efficient and accurate to work from the medical record documentation and then select the appropriate code(s) from the coding book or encoder system. The GEMs are a tool to assist with converting larger ICD-9-CM databases to ICD-10-CM and ICD-10-PCS.

How have the GEMs been used to date?
To date, the GEMs have been used to:

- ❖ Translate ICD-9-CM codes in the "Official ICD-9-CM Coding Guidelines" to aid in producing the "Official ICD-10-CM Coding Guidelines";
- ❖ Convert Medicare Severity-Diagnosis Related Groups (MS-DRGs) from an ICD-9-CM-based application to an ICD-10-CM/PCS-based application;
- ❖ Convert the Medicare Code Editor to a native ICD-10-CM/PCS-based application; and
- ❖ Produce a purpose-built ICD-10-CM/PCS to ICD-9-CM crosswalk for reimbursement called the "ICD-10 Reimbursement Mappings."

What are the "ICD-10 Reimbursement Mappings"?

CMS developed the "ICD-10 Reimbursement Mappings" in response to non-Medicare industry requests for a standard one-to-one reimbursement crosswalk, which is a temporary mechanism for mapping ICD-10-CM/PCS codes submitted on or after October 1, 2014, back to reimbursement equivalent ICD-9-CM codes. To develop the "ICD-10 Reimbursement Mappings," CMS used the GEMs as a starting point by selecting the best ICD-9-CM code that maps to each ICD-10 code based on Medicare data. The "ICD-10 Reimbursement Mappings" identify the best matching ICD-9-CM code that can be used for reimbursement purposes for each ICD-10 code. **All** ICD-10-CM/PCS codes are in the "ICD-10 Reimbursement Mappings"; however, all ICD-9-CM codes are not included. When an ICD-10-CM/PCS code translates to more than one ICD-9-CM code, a single choice is required to create a functioning crosswalk. Inpatient hospital frequency data was used to aid in choosing a final ICD-9-CM translation in the crosswalk. If needed, the "ICD-10 Reimbursement Mappings" may be used to process ICD-10-CM/PCS-based claims received on or after October 1, 2014, with a legacy ICD-9-CM-based system as part of a planned transition period, until systems and processes are developed to process ICD-10-CM/PCS-based claims directly. The "ICD-10 Reimbursement Mappings" consist of two crosswalks:

❖ ICD-10-CM to ICD-9-CM for Diagnosis Codes; and
❖ ICD-10-PCS to ICD-9-CM for Procedure Codes.

CMS is **not** using the "ICD-10 Reimbursement Mappings" for **any** purpose. **We are converting our systems and applications to accept ICD-10-CM/PCS codes directly.**

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-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.

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 GEMs, 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.

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 when there is no translation between an ICD-9-CM code and an ICD-10 code. The "No Map" flag indicates that there is no plausible translation from a code in one system to **any** code in the other system. 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.

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. The bi-directionality is 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 GEMs are not a mirror image of the ICD-9-CM to ICD-10-PCS GEMs.

The GEMs were designed to convert current ICD-9-CM codes to applicable ICD-10 codes. You can use a reverse lookup of the backward mappings (ICD-10-CM/PCS to ICD-9-CM GEMs, looked up by ICD-9-CM code) to convert payment logic or coverage decisions from ICD-9-CM codes to ICD-10 codes. You could also use this mapping (ICD-10-CM/PCS to ICD-9-CM GEMs) to examine trend data over multiple years, spanning the implementation of ICD-10. For example, in 2014, you will be able to compare how frequencies changed for a specific condition using an ICD-10 code compared to prior years using ICD-9-CM codes. You can use the forward mapping (ICD-9-CM to ICD-10-CM/PCS GEMs) to convert ICD-9-CM-based edits. You can also use the forward mapping for any analysis or conversion project that needs to examine ICD-10 codes and to determine the ICD-9-CM code(s) that previously captured this diagnosis or procedure.

We were told that validation of the GEMs is occurring as part of the conversion of the current ICD-9-CM-based MS-DRGs 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 began with an initial translation using the ICD-10 to ICD-9-CM GEMs and then used the ICD-9-CM to ICD-10 GEMs to identify any additional conversion issues, all four GEMs were tested in the initial conversion process. Any inaccuracies discovered in the process were immediately noted so that changes were made to the affected GEMs and included in the next annual update. The updated GEMs are posted annually along with the annual code updates to ICD-10-CM and ICD-10-PCS. The public reviewed the annual GEMs updates and provided comments for additional updates. We will continue to update the codes and GEMs on an annual basis.

What methodology is 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 was partially automated using the GEMs. For more information about the ICD-10 MS-DRG conversions, including the most recent version of the ICD-10 MS-DRGs, visit http://www.cms.gov/Medicare/Coding/ICD10/ICD-10-MS-DRG-Conversion-Project.html on the CMS website.

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 annually to reflect these updates and will continue to update the codes and GEMs on an annual basis for a minimum of 3 years after ICD-10 is implemented on October 1, 2014.

The ICD-9-CM Coordination and Maintenance Committee implemented a partial freeze where only codes capturing new technologies and new diseases would be added to ICD-9-CM and ICD-10. The code freeze resulted in the following updates:

❖ On October 1, 2011, the last regular, annual updates were made to both code sets;

❖ On October 1, 2012, and October 1, 2013, only limited code updates for new technologies and new diseases will be made to both code sets as required by Section 503(a) of Public Law 108-173;

❖ On October 1, 2014, only limited code updates for new technologies and new diseases will be made to the ICD-10 code sets to capture new technologies and diseases. No further updates will be made to ICD-9-CM on or after October 1, 2014, as it will no longer be used for reporting; and

❖ On October 1, 2015, regular updates to ICD-10 will resume.

Why do we need the GEMs?
We need the GEMs because:

❖ ICD-10 is much more specific:
  • For diagnoses, there were 14,567 ICD-9-CM codes and 69,832 ICD-10-CM codes;
  • For procedures, there were 3,878 ICD-9-CM codes and 71,920 ICD-10-PCS codes (in the 2013 versions of ICD-9-CM, ICD-10-CM, and ICD-10-PCS);

❖ One ICD-9-CM Diagnosis Code is represented by multiple ICD-10-CM codes:
  • **82002** Fracture of midcervical section of femur, closed:
    – **From** S72031A Displaced midcervical fracture of right femur, initial encounter for closed fracture; delayed healing;
    – **From** S72032A Displaced midcervical fracture of left femur, initial encounter for closed fracture;
    – And other codes from the GEMs;

❖ One ICD-10-CM Diagnosis Code is represented by multiple ICD-9-CM codes:
  • **E11341** Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema:
  • To ICD-9 cluster:
    – 25050 Diabetes with ophthalmic manifestations, type II or specified type, not stated as uncontrolled;
    – 36206 Severe nonproliferative diabetic retinopathy;
    – 36207 Diabetic macular edema;

❖ A few ICD-10-CM codes have no predecessor ICD-9-CM codes:
  • T500x6A Underdosing of mineralocorticoids and their antagonists, initial encounter;
  • T501x6A Underdosing of loop [high-ceiling] diuretics, initial encounter;
  • T502x6A Underdosing of carbonic-anhydrase inhibitors, benzothiadiazides and other diuretics, initial encounter;
  • T503x6A Underdosing of electrolytic, caloric and water-balance agents, initial encounter;
  • T504x6A Underdosing of drugs affecting uric acid metabolism, initial encounter;
  • And others found in the GEMs; and

- One ICD-9-CM Procedure Code captured by multiple ICD-10-PCS codes:
  - **8659** Suture of Skin and Subcutaneous Tissue of Other Sites:
    - **To** 0JQ10ZZ Repair Face Subcutaneous Tissue and Fascia, Open Approach;
    - **To** 0JQ13ZZ Repair Face Subcutaneous Tissue and Fascia, Percutaneous Approach;
    - **To** 0JQ40ZZ Repair Anterior Neck Subcutaneous Tissue and Fascia, Open Approach;
    - **To** 0JQ43ZZ Repair Anterior Neck Subcutaneous Tissue and Fascia, Percutaneous Approach;
    - And others found in the GEMs.

How are the GEMs files formatted?

Below is an example from the ICD-10-CM diagnosis mapping:

- ICD-10-CM Source system code is on the left side;
- ICD-9-CM Target system code is in the middle; and
- Flags are on the right:

ICD-10-CM Source Code	ICD-9-CM Target Code	Flags
T1500xA	9300	10111
T1500xA	E914	10112
T1500xS	9085	10000

- **T1500xA** Foreign body in cornea, unspecified eye, initial encounter:
  - **To ICD-9 cluster:**
    - 9300 Corneal foreign body;
    - E914 Foreign body accidentally entering eye and adnexa.
- **T1500xS** Foreign body in cornea, unspecified eye, sequela:
  - **To** 9085 Late effect of foreign body in orifice.

The flags are read as:

- 1 = On; and
- 0 = Off.

There are three different flags:

- "Approximate" is Flag 1, which is in column 1 of the flags:
  - 1 means the translation is an Approximate match:
    - The majority of alternatives are considered an Approximate match;
  - 0 means the translation is an Identical match:
    - Rare in the Procedure GEMs;
    - More common in the Diagnosis GEMs;
  - Example of diagnosis Approximate match (1), not Identical match:
    - T1500xA 9300 **1**0111;
    - T1500xA E914 **1**0112;
    - Each of these codes is an Approximate match;

- Example of diagnosis Identical match (0):
  - 41411   I2542   **0**0000;
  - ICD-9-CM code 414.11 is an Identical match to ICD-10-CM code I2542;
- ❖ "No Map" is Flag 2, which is in column 2 of the flags:
  - 1 means there is **no** plausible translation for the source system code;
  - 0 means there is at least one plausible translation for the source system code;
  - Notice the NODX "No Description Found" entry instead of a code number in middle column:

      T500x6A   NODX   1**1**000
      T500x6D   NODX   1**1**000
      T500x6S   NODX   1**1**000

    - **T500x6A**   Underdosing of mineralocorticoids and their antagonists, initial encounter:
    - **To** NODX   No description found.

    - **T500x6D**   Underdosing of mineralocorticoids and their antagonists, subsequent encounter:
    - **To** NODX   No description found.

    - **T500x6S**   Underdosing of mineralocorticoids and their antagonists, sequel:
    - **To** NODX   No description found; and
- ❖ "Combination" – Flag 3, which are the scenario and choice list flags:
  - 1 means code maps to more than one code;
  - 0 means the code maps to a single code;
  - Flags 4 and 5 further clarify combination entries (refer to the "General Equivalence Mappings Documentation and User's Guides" for complete information on these flags):

ICD-10-CM Source Code	ICD-9-CM Target Code	Flags
T1500xA	9300	10**1**11
T1500xA	E914	10**1**12
T1500xS	9085	10**0**00

  - **T1500xA** Foreign body in cornea, unspecified eye, initial encounter:
  - **To ICD-9 cluster** (Flag 3 is 1):
  - 9300 Corneal foreign body;
  - E914 Foreign body accidentally entering eye and adnexa.

  - **T1500xS** Foreign body in cornea, unspecified eye, sequela (Flag 3 is 0):
  - **To** 9085 Late effect of foreign body in orifice.

Is there a one-to-one match between ICD-9-CM and ICD-10?

No, there is not a one-to-one match between ICD-9-CM and ICD-10, and the reasons for such include:

❖ There are new concepts in ICD-10 that are not present in ICD-9-CM;

❖ For a small number of codes, there is no matching code in the GEMs;

❖ There may be multiple ICD-9-CM codes for a single ICD-10 code; and

❖ There may be multiple ICD-10 codes for a single ICD-9-CM code.

Are there instances when it is not necessary to use the GEMs?

In the following instances, it may not be necessary to use the GEMs:

❖ When a small number of ICD-9-CM codes are being converted to ICD-10-CM and ICD-10-PCS codes, it may be quicker, easier, and more accurate to simply look up the codes in an ICD-10-CM or ICD-10-PCS code book; and

❖ When ICD-10-CM/PCS is implemented on October 1, 2014, coders will use coding books or encoder systems to code rather than using the GEMs.

RESOURCES

The chart below provides ICD-10-CM/PCS resource information.

For More Information About…	Resource
ICD-10-CM/PCS	http://www.cms.gov/Medicare/Coding/ICD10/index.html on the CMS website
ICD-10-CM/PCS Implementation Timelines	http://www.cms.gov/Medicare/Coding/ICD10/ICD-10ImplementationTimelines.html on the CMS website
ICD-10-CM/PCS Statute and Regulations	http://www.cms.gov/Medicare/Coding/ICD10/Statute_Regulations.html on the CMS website
All Available Medicare Learning Network® (MLN) Products	"Medicare Learning Network® Catalog of Products" located at http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/Downloads/MLNCatalog.pdf on the CMS website or scan the Quick Response (QR) code on the right
Provider-Specific Medicare Information	MLN publication titled "MLN Guided Pathways to Medicare Resources Provider Specific Curriculum for Health Care Professionals, Suppliers, and Providers" booklet located at http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNEdWebGuide/Downloads/Guided_Pathways_Provider_Specific_Booklet.pdf on the CMS website
Medicare Information for Patients	http://www.medicare.gov on the CMS website

This booklet was current at the time it was published or uploaded onto the web. Medicare policy changes frequently so links to the source documents have been provided within the document for your reference.

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