Converting MS-DRGs to ICD-10-CM/PCS: Methods Used, Lessons Learned

Save to myBoK

By Rhonda Butler, CCS, CCS-P, and Janice Bonazelli, RN

Like the rest of us, MS-DRGs have to transition to ICD-10-CM/PCS. The conversion is off to a good start, with a preliminary version already available. The project offered an early test of the General Equivalence Mappings and provides a conversion process for other applications.

In mid-September the Centers for Medicare and Medicaid Services posted a preliminary version of MS-DRG version 26.0 converted to ICD-10-CM/PCS from ICD-9-CM.

The conversion project, insofar as possible, used the General Equivalence Mappings, or GEMs, to produce a replicated version of the MS-DRGs 26.0 using ICD-10-CM/PCS codes. The conversion was intended to produce an equivalent version; in other words, its goal was that a record coded using ICD-10-CM/PCS codes would be assigned to the same MS-DRG in the converted MS-DRGs as it would have been if the record had been coded using ICD-9-CM codes.

The titles of the converted MS-DRGs were not changed. The conversion process involved the replacement of only the ICD-9-CM code lists that comprise the MS-DRGs with comparable lists of ICD-10-CM/PCS codes. The underlying logic of the MS-DRGs was not altered. The MS-DRG conversion project did not make changes to the MS-DRG logic based on the increased specificity of ICD-10-CM/PCS, since that was not the objective of the conversion project.

The converted ICD-10-CM/PCS–based version of MS-DRGs now on display is considered preliminary; the final version of MS-DRGs is subject to the federal government's normal rule-making process. In this process, CMS will publish a proposed rule in the *Federal Register* , accept public comments for a specified period, and then issue a final rule, which may or may not be modified based on the comments received.

What It Means to Produce Equivalent MS-DRGs

Producing an equivalent version of MS-DRGs using ICD-10-CM/PCS codes sometimes required minor modifications to the MS-DRG logic in order to replicate the ICD-9-CM MS-DRG definitions and obtain the same MS-DRG assignment. The ICD-10 version of MS-DRGs cannot be a *literal* replica of the ICD-9-CM version. If such a thing were possible, it would mean that the ICD-10-CM/PCS codes and the ICD-9-CM codes were exactly the same.

There are, of course, important differences in the code sets. That is, after all, why the industry is switching. Where replicating the MS-DRGs required minor changes to the ICD-10-CM/PCS version to produce the equivalent MS-DRG assignment, superficially it looks as if the MS-DRG definition has been changed. In fact, a great deal of effort has been expended to preserve the equivalent MS-DRG definitions.

An example of this is found in the case of the ICD-10-CM codes that specify atherosclerosis with angina. There are several combination codes for coronary atherosclerosis in ICD-10-CM that identify both the underlying diagnosis of atherosclerosis and an exacerbation of unstable angina. Although combination codes exist in both ICD-9-CM and ICD-10-CM, often they are not the same combinations of conditions. In this example, a cluster of two codes—an atherosclerosis code and an unstable angina code—is required in ICD-9-CM to identify what can be specified with one code in ICD-10-CM (see sidebar at right).

This difference between the code sets has ramifications for replicating an equivalent MS-DRG assignment. In the ICD-9-CM version of MS-DRGs, a principal diagnosis of atherosclerosis and a secondary diagnosis of unstable angina is assigned to MS-DRG 302 Atherosclerosis with CC (Complication/Comorbidity). In ICD-10-CM, the same diagnosis information is contained in

a single code. In some special cases, then, in order to replicate MS-DRGs in ICD-10-CM, a single ICD-10-CM combination code when coded as the principal diagnosis must also trigger the presence of a CC or MCC (major complication/comorbidity).

In order to replicate the ICD-9-CM MS-DRGs in these cases, the application logic for the ICD-10-CM/PCS–based version of MS-DRGs requires modification. For example, if any one of the ICD-10-CM codes shown in the sidebar is coded as the principal diagnosis—and there is no secondary diagnosis on the record that would trigger an MCC—the MS-DRG logic will be modified to assign MS-DRG 302 Atherosclerosis with CC, or the appropriate surgical MS-DRG "with CC," if a surgical procedure code is recorded.

Why Equivalent and Not Exact: An Example

Producing an equivalent version of MS-DRGs using ICD-10-CM/PCS codes does require minor changes in logic in some cases—after all, the code sets are different by design. As illustrated in the first example below, ICD-10-CM represents both an underlying diagnosis of atherosclerosis and an exacerbation of unstable angina in a single combination code. The same description in ICD-9-CM requires both a principal and secondary diagnosis. Thus the logic of the MS-DRG in the ICD-10-CM/PCS version must be adjusted so that the principal diagnosis triggers the presence of a CC or MCC (major complication/comorbidity).

Thus, if any one of the ICD-10-CM combination codes for atherosclerosis with unstable angina shown at bottom is coded as the principal diagnosis, and there is no secondary diagnosis on the record that would trigger an MCC, the MS-DRG logic will be modified to assign MS-DRG 302 Atherosclerosis with CC or the appropriate surgical MS-DRG "with CC," if a surgical procedure code is recorded.

ICD-10-CM	ICD-9-CM
Principal Diagnosis I25.110 Atherosclerotic heart disease of native coronary artery with unstable angina pectoris	**Principal Diagnosis** 414.01 Coronary atherosclerosis of native coronary artery **Secondary Diagnosis** 411.1 Intermediate coronary syndrome

ICD-10-CM Combination Codes: Atherosclerosis with Unstable Angina

I25.110 Atherosclerotic heart disease of native coronary artery with unstable angina pectoris

I25.700 Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris

I25.710 Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris

I25.720 Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris

I25.730 Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris

I25.750 Atherosclerosis of native coronary artery of transplanted heart with unstable angina

I25.760 Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina

I25.790 Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris

Testing the GEMs

In addition to the primary objective of creating an equivalent ICD-10–based version of MS-DRGs, the project had two secondary objectives:

- To test the accuracy and completeness of the ICD-10 GEMs
- To provide the industry with an example of a systematic conversion process that could serve as a template for the conversion of other applications from ICD-9-CM to ICD-10-CM/PCS

Using the GEMs as the basis for converting one of the most sophisticated payment applications in the country is a rigorous test of the accuracy and completeness of the GEM content as well as the usefulness of the GEM design. The GEMs were found to be instrumental to the success of the project, enabling accurate, consistent, and efficient translation of ICD-9-CM–based code lists to comparable lists of ICD-10-CM/PCS codes. The CMS report on the conversion contains many examples of conversion process efficiencies made possible through use of the GEMs.

The report also outlines changes that will be made to the GEMs in the 2010 update that were identified during the MS-DRG conversion project. The changes to the GEMs—and indeed, the GEMs themselves—are not "biased" toward MS-DRGs. Like a bidirectional foreign language dictionary, the GEMs are a general purpose translation aid between the two code sets. Any changes to the GEMs identified during the MS-DRG conversion project were made to improve the accuracy and completeness of the GEMs for all applications.

Basic Steps to Convert an ICD-9-CM Based Application to ICD-10-CM/PCS

The same systematic conversion process used to successfully convert MS-DRGs can be used to convert any application that contains ICD-9-CM code lists and record-processing logic. Following are the abbreviated summary steps, taken from the CMS report on the conversion project. The report, and the online version of this article, also include comments and notes on programmable process efficiencies.

Step	Description
1	Find the lists of ICD-9-CM codes in an application
2	Using the ICD-10-CM/PCS to ICD-9-CM GEMs in reverse lookup, find the translation of each ICD-9-CM code on a list
3	Using the translations found in the previous step, replace the ICD-9-CM–based lists with lists of their ICD-10-CM/PCS code counterparts
4	Identify ICD-10-CM/PCS list conflicts in an application Resolve ICD-10-CM/PCS list conflicts by choosing which list the ICD-10-CM/PCS code will be assigned to in the converted application

5	Identify general ICD-9-CM procedure codes that lead to inappropriate list assignment and tailor the list assignment accordingly
6	Identify ICD-10-CM/PCS clusters that are necessary to fully replicate application logic
7	Perform final review of translated lists ICD-10-CM/PCS and ICD-9-CM to identify: (1) Known areas that do not translate well between ICD-10-CM/PCS and ICD-9-CM, including the obstetrics chapters, injury and poisoning chapters, and the myocardial infarction category (2) Any additional areas of concern, based on knowledge of the application
8	Create an ICD-10-CM/PCS–based copy of the application by replacing the ICD-9-CM lists in the application with the final translated ICD-10-CM/PCS lists

A Template for Conversion Projects Closer to Home

The successful application of the GEMs demonstrates that they can be used as the basis for converting a wide range of applications to ICD-10-CM/PCS. The industry can make use of the GEMs and the knowledge gained during the MS-DRG conversion process to affect a smoother transition of their own systems to ICD-10-CM/PCS.

Many organizations will need to undertake conversion projects of their own. Any system or application that contains code lists and record-processing logic—such as those used for clinical quality improvement, risk assessment, case management or care management, claims adjudication, and contracting with providers or payers—will benefit from direct conversion to an ICD-10-CM/PCS–based application.

For many applications, it will be appropriate to initially replicate the existing ICD-9-CM–based application in ICD-10-CM/PCS, as was done with MS-DRGs. For other applications, such as claims editing systems, it may be more appropriate to take full advantage of the increased specificity of ICD-10-CM/PCS at the time of the initial conversion. However, designing a completely new claims editing system based on two brand new and unfamiliar code sets may be overwhelming.

Perhaps the most effective way to identify areas to optimize for ICD-10 specificity is to replicate the current application in ICD-10-CM/PCS and analyze the results. By first replacing the current lists of ICD-9-CM codes with comparable lists of ICD-10-CM/PCS codes and then seeing those new codes in the context of the current, familiar application, it will be much easier to identify areas where finer distinctions can be usefully made and the application modified to optimize for ICD-10-CM/PCS.

For example, many claims editing systems will want to use the information specifying the left or right body part, available in both ICD-10-CM and ICD-10-PCS, to develop edits for bilateral procedures, multiple injuries, et cetera.

The MS-DRG conversion project employed a cross-functional team of clinical data analysts, clinicians, and computer programmers. Clinical data analysts possess expertise in clinical coding and data analysis and detailed knowledge of the practical use of the application involved. HIM professionals who function in these capacities have the critical background needed to be key members of any conversion project team.

HIM professionals have the knowledge and expertise to evaluate the completeness and applicability of the code lists that have been translated from ICD-9-CM to ICD-10-CM/PCS using the GEMs and imbedded in the ICD-10-CM/PCS–based version of an application. They will be well equipped to identify translation issues such as the atherosclerosis combination example cited earlier that may require modifications to the application in order to produce an equivalent result. They can readily see areas where optimization based on the increased specificity of ICD-10-CM/PCS could be usefully undertaken.

The MS-DRGs were converted to ICD-10-CM/PCS as early as was practical, in part to develop a systematic conversion process that could serve as a template for the conversion of other applications of various sizes or levels of sophistication. For small-scale projects, such as updating a single policy document that contains a specific narrative description of diagnoses and procedures, it is faster and more efficient to simply look up the codes directly in ICD-10-CM/PCS using a book or encoder.

However, for applications containing multiple code lists and complex record-processing logic based on those code lists, the CMS report describes the basic steps that comprise a systematic conversion process. The steps are summarized in the table on page 42. Using the GEMs and following a systematic conversion process, ICD-9-CM applications can be readily converted to ICD-10-CM/PCS and optimized as appropriate.

Get the Full Report Online

The Centers for Medicare and Medicaid Services has posted a draft definitions manual containing the ICD-10-CM/PCS–based version of MS-DRGs online for public review and comment at www.cms.hhs.gov/ICD10/09_ICD10_MS_DRG_Conversion_Project.asp.

Also posted is a full report describing the objectives of the project, the methods used, lessons learned, and the resulting systematic conversion process developed. Perhaps most important for readers of the report, it describes how others can use the same process to convert their own applications to ICD-10-CM/PCS.

Rhonda Butler (rrbutler@mmm.com) and Janice Bonazelli are senior clinical analysts at 3M Health Information Systems.

Article citation:
Butler, Rhonda R.. "Converting MS-DRGs to ICD-10-CM/PCS: Methods Used, Lessons Learned"
Journal of AHIMA 80, no.11 (November 2009): 40-43.

Driving the Power of Knowledge