Transitioning ICD-10-CM/PCS Data Management Processes

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On January 16, 2009, the Department of Health and Human Services (HHS) published a final rule mandating that healthcare organizations implement ICD-10-CM/PCS codes by October 1, 2013. The implementation requires that organizations undertake enterprise-wide transition initiatives, ensuring that new technical aspects are in place and educating staff on the differences between ICD-9-CM and ICD-10-CM/PCS.

This practice brief outlines the technical differences of the two classification systems and the mapping tools that facilities can use with their ICD-10-CM/PCS implementations.

Code Set Differences

The healthcare industry depends on coded data for a variety of purposes including research, quality reporting, and other administrative uses. Therefore a smooth ICD-10-CM/PCS transition is critical in maintaining operations. ICD-9-CM and ICD-10-CM/PCS codes are different in structure and definition, raising data management challenges.

ICD-10-CM/PCS coding systems provide greater specificity and updated medical terminology than ICD-9-CM. For example, ICD-10-CM obstetrical diagnosis codes no longer identify the episode of care but provide information on the trimester.

ICD-9-CM offers three codes for spotting based on the episode of care:

- 649.50, Spotting complicating pregnancy, unspecified episode of care
- 649.51, Spotting complicating pregnancy, delivered
- 649.53, Spotting complicating pregnancy, antepartum

ICD-10-CM offers four codes depending on the trimester the spotting occurred:

- O26.841, Spotting complicating pregnancy, first trimester
- O26.842, Spotting complicating pregnancy, second trimester
- O26.843, Spotting complicating pregnancy, third trimester
- O26.849, Spotting complicating pregnancy, unspecified trimester

ICD-10-PCS procedure codes capture details such as the procedure's objective. ICD-10-PCS may capture this information with one code, where ICD-9-CM requires multiple procedure codes. For example, percutaneous transluminal coronary angioplasty (PTCA) with stent insertion requires one code in ICD-10-PCS (02713DZ, Dilation of coronary artery, two sites, using intraluminal device, percutaneous approach) instead of three from ICD-9-CM (00.66, PTCA of coronary artery; 00.41, Insertion of two vascular stents; and 36.06, Insertion of nondrug-eluting coronary artery stent).

Understanding the logic and hierarchical structure of ICD-10-CM/PCS is important in determining the system changes necessary to accommodate the following differences between the old and new code sets:

- Field size expansion. ICD-9-CM diagnosis codes may occupy three to five digits, whereas ICD-10-CM codes may occupy three to seven digits. Seventh-digit character extensions are required for some categories in ICD-10-CM. If a code requires a seventh character and does not have a fifth, it will need an "x" as a dummy placeholder. This can present technical challenges, such as ensuring the placeholder is accurate. ICD-9-CM procedure codes are four digits long, whereas ICD-10-PCS are seven digits.

- Alphanumeric composition. The first digit of ICD-9-CM diagnosis codes can be alpha or numeric. The first digit for ICD-10-CM is always alpha, the second digit is numeric, and digits three to seven may be alpha or numeric. All digits for ICD-9-CM procedure codes are numeric, while each digit in an ICD-10-PCS procedure code may be alpha or numeric.
- Use of decimals. ICD-9-CM and ICD-10-CM diagnosis codes are alike in that the decimal is placed after the first three digits. In ICD-9-CM procedure codes, the decimal is placed after the first two digits. However, there are no decimals in ICD-10-PCS procedure codes.
- Longer code descriptions. ICD-10-CM/PCS codes require longer descriptions because of their greater specificity.
- Expansion of flat files containing diagnosis and procedure codes. ICD-9-CM contains approximately 14,000 diagnosis codes; ICD-10-CM contains more than 68,000 codes. ICD-9-CM contains approximately 4,000 procedure codes, while ICD-10-PCS contains almost 72,000 codes.

HIM professionals can educate IT professionals on the technical differences of the code sets and collaborate with them on how they will affect the information systems, such as addressing the question of whether systems require new fields to accommodate the change.

Clearly communicating the differences to individuals working on the conversion project will ensure that systems are adequately prepared to accommodate ICD-10-CM/PCS codes. The practice brief "Planning Organizational Transition to ICD-10-CM/PCS" on page 72 provides details on communication plans and collaboration strategies to transition the code sets.

Impact on Information Systems

The transition will have a significant impact on systems both upstream and downstream that send or receive coded data. The following technical aspects will need to be addressed to accommodate the change:

- Field size expansion
- Change to alphanumeric composition
- Use of decimals
- Complete redefinition of code values and their interpretation
- Longer code descriptions
- Edit and logic changes
- Modifications of table structures
- Expansion of flat files containing diagnosis and procedure codes
- System interfaces

An organization-wide inventory of information systems and applications that use coded data will help prepare for the switch. Numerous systems may require changes (see sidebar).

Organizations also must determine which existing reports and forms will require modification or redesign. This includes all printed and online reports or forms that currently contain ICD-9-CM codes.

Much of the preparatory focus should include the many interfaces between information systems that share coded data. Each system and interface will have to be identified, modified, and tested prior to implementation. Systems not containing coded data should be identified to exclude them from interface testing activities. Testing time must be sufficient to ensure quality outcomes for all parties affected.

Mapping tools are available to convert data and assist in converting applications and systems from ICD-9-CM to ICD-10-CM/PCS. The Centers for Medicare and Medicaid Services (CMS) and the Centers for Disease Control and Prevention have created four public domain mappings known as the General Equivalence Mappings, or GEMs.

Change Coming

Numerous Organizational IT systems will be affected by the change to ICD-10-CM/PCS. Conducting an inventory of information systems and applications throughout the organization is a helpful first step in identifying

which systems may need to change to accommodate the new code sets. Systems requiring changes may include:

- Electronic health record systems
- Decision support systems
- Billing systems (e.g., inpatient, outpatient, physician or other provider, home care, long-term care)
- Treatment authorization systems (preapprovals, preauthorization)
- Managed care referral systems
- Clinical systems
- Encoding software
- Computer-assisted coding applications
- Medical record abstracting systems
- Registration and scheduling systems
- Aggregate data reporting
- Utilization management
- Quality management systems
- Case-mix systems
- Accounting systems
- Case management systems
- Incident reporting systems
- Disease management systems
- Operating room scheduling systems
- Provider profiling systems
- Provider credentialing systems
- Clinical protocol and pathway systems
- Ancillary department clinical and billing systems (e.g., pathology, radiology, anesthesiology)
- Test ordering and reporting systems
- Clinical systems
- Clinical reminder systems
- Performance measurement systems
- Medical necessity software
- Encounter form outpatient/physician billing documents and systems

Mappings

GEMs assist in converting applications and data between ICD-9-CM and ICD-10-CM/PCS. Since the GEMs are intended to support all uses of coded healthcare data, they were designed as a starting point, presenting all plausible translation alternatives between the systems. Mapping from ICD-10-CM/PCS codes back to ICD-9-CM codes is known as a backwards map, while a forward map is from ICD-9-CM codes to ICD-10-CM/PCS codes.

The GEMs are adaptable to small, medium, and large projects. For example, they can be used to convert disease management programs or convert ICD-9-CM–based edits. The GEMs can also be used for quality and financial modeling to enable the payer-provider contracting process prior to ICD-10-CM/PCS implementation.

The GEMs are the foundation of purpose-built (or applied) maps such as CMS's Reimbursement Mappings (available to the public at www.cms.hhs.gov/ICD10/downloads/reimb_map_guide_2009.pdf). Purpose-built maps are maps in which decisions have been made to identify the closest matching code from all possible codes. Reimbursement mappings are backward mappings created in response to non-Medicare payer requests. They can be used as a temporary mechanism for mapping ICD-10-CM/PCS codes submitted after October 1, 2013, to the reimbursement equivalent ICD-9-CM codes.

Some payers may use the reimbursement mappings for claims submitted with ICD-10-CM/PCS codes that need to be converted for reimbursement purposes in their legacy systems. Payers may also create custom purpose-built maps for their own specific applications.

For example, if a payer creates a map with an outpatient focus, it may determine ICD-10-CM code O26.842, Spotting complicating pregnancy, second trimester, maps to ICD-9-CM code 649.53, Spotting complicating pregnancy, antepartum. If the map is inpatient focused the mapping of the same ICD-10-CM code may change to 649.51, Spotting complicating pregnancy, delivered. In the GEMs both ICD-9-CM codes are appropriate maps for O26.842. For more information on the GEMs and the reimbursement mappings, visit the National Center for Health Statistics and CMS Web sites (see sidebar above).

Education on how to use and interpret the maps is critical for a successful conversion. It is important to understand the scope of GEM applications. Organizations should determine if they will use the GEMs or create purpose-built maps as well as identify who the users will be.

The GEMs likely will not provide an exact match for a code in one system to a code in the other, which limits their use in legacy systems. There will be comparability issues between legacy ICD-9-CM data and ICD-10-CM/PCS data due to the basic differences between the classification systems.

Organizations need to determine strategic objectives for managing coded data and decide how much ICD-9-CM data to convert to ICD-10-CM/PCS. The strategy will determine the amount of data to be converted. Potential options include:

- Complying with the regulatory rule. In this scenario, ICD-9-CM legacy processes are unchanged. A purpose-oriented (i.e., applied) map maps ICD-10-CM/PCS data to ICD-9-CM data for use in current ICD-9-CM processes, and ICD-9-CM legacy processes are used based upon a purpose-oriented map. For example, a payer accepts ICD-10-CM/PCS codes but internally uses the reimbursement map to convert the new codes back to ICD-9-CM codes. The converted codes are used to determine the amount of reimbursement.
- Replicating ICD-9-CM process. ICD-9-CM legacy processes are converted to ICD-10-CM/PCS, the converted ICD-10-CM/PCS process accepts ICD-10-CM/PCS data, and uses the ICD-10-CM/PCS codes in the same way as ICD-9-CM codes. For example, a payer accepts ICD-10-CM/PCS codes and internally processes the new codes. The reimbursement is determined based upon the same methodology as ICD-9-CM.
- Optimizing changes of ICD-10-CM/PCS system. In this case, ICD-9-CM legacy processes are converted to ICD-10-CM/PCS (similar to the replicate option), the converted ICD-10-CM/PCS process accepts ICD-10-CM/PCS data, and ICD-10-CM/PCS processes are modified based upon ICD-10-CM/PCS granularity. For example, a payer accepts and processes ICD-10-CM/PCS in its system and upon data analysis makes reimbursement changes to account for the new information contained in the classification system.

Since the transformation crosses functional areas and has many interdependencies, it is important to consider system support beyond the implementation date. This includes determining the purpose and length of time both legacy and new systems will need to be supported.

GEM Resources

The Centers for Medicare and Medicaid Services and the Centers for Disease Control and Prevention created the General Equivalence Mappings to assist in converting applications and data between ICD-9-CM and ICD-10-CM/PCS. The GEMs are designed as a starting point, presenting all plausible translation alternatives between the systems. For more on the GEMs and subsequent reimbursement mappings, see the following:

- National Center for Health Statistics. “International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), 2009 Update.” Available online at www.cdc.gov/nchs/about/otheract/icd9/icd10cm.htm.
- Centers for Medicare and Medicaid Services. “2009 ICD-10-CM.” Available online at www.cms.hhs.gov/ICD10/02m_2009_ICD_10_CM.asp.
- CMS. “2009 ICD-10-PCS.” Available online at www.cms.hhs.gov/ICD10/01m_2009_ICD10PCS.asp.
- CMS. “2009 CMS Sponsored Calls.” Available online at www.cms.hhs.gov/ICD10/06a_2009_CMS_Sponsored_Calls.asp.

Parallel Data and Process Management

During the proposed rule comment period many organizations suggested HHS consider a phased approach toward the ICD-10-CM/PCS conversion; however, HHS felt that such an approach would be too difficult and costly for the industry to manage. Thus, all entities must transition on a single compliance date.

Requiring the industry to transition at one time is expected to reduce the overall burden on both providers and payers. It enables them to edit in a single new coding system for claims received for encounters and discharges occurring on or after October 1, 2013, rather than maintaining two coding systems over an extended transition.

Although a single compliance date is established for a clear direction between using ICD-9-CM and ICD-10-CM/PCS, organizations will continue coding in ICD-9-CM and maintaining systems that support it for some time after the transition. The length of time will vary based on an organization's ability to complete claims processing using the ICD-9-CM codes, complete projects that may require access to ICD-9-CM codes, and other initiatives that require access to both classification systems and data.

Organizations should determine what staff and departments will continue coding in ICD-9-CM and what processes and systems they must use and maintain simultaneously. The best practice is to limit the burden of parallel processes and systems as much as possible. This can be accomplished during the planning and design phase of the program. In some cases there may not be a need to develop a completely new infrastructure if the entity can modify software to support the new code system.

Healthcare entities should begin discussions with vendors and other third parties that rely on the use of interfaces to assess and determine what their expectations are for supporting this effort. Parallel data and process management planning efforts must address the right questions and weigh the benefits and challenges in supporting both operations. As every organization varies, below are some issues and questions that can help organizations initiate dialogue among dependent stakeholders to address parallel activities.

Developing the Strategy

Strategically, organizations can use a SWOT analysis to weight their strengths, weaknesses, opportunities, and threats. Other, simpler models may also suffice. Either way, organizations can consider the following issues when developing their ICD-10-CM/PCS implementation strategies:

- Costs control accountability
- Parallel systems that must be maintained and justified
- Shortest timeline in maintaining parallel systems
- Lessons learned from similar projects (e.g., Y2K)
- Keep it simple concept: analyze potential modification of software code to prevent removing and replacing software in its entirety

Financial Aspects

Carefully determining the level of support for parallel data and processes will help prevent rising costs and ensure healthcare dollars are spent effectively. Clearly, supporting ICD-10-CM/PCS and ICD-9-CM for any length of time will add a financial burden.

The following questions can help identify and minimize the impact of supporting parallel processes:

- What processes may need to operate in parallel?
- Why is there a need for parallel operations?
- What is the shortest timeline that parallel operation must exist?
- What can be done to reduce the timeline, and how can barriers to this be addressed?
- What are the data storage costs associated with maintain ing two processes or systems?
- What is the financial impact of human capital to maintain two processes or systems?

It is important to begin the analysis early in the transition to address issues related to parallel processing.

Systems and Processes

For entities that have disparate and out-of-date processes and systems, the transition may serve as an opportunity to leverage changes and modify business and clinical practices that will maximize improvements that ICD-10-CM/PCS enables. The implementation will have a significant impact on an organization overall, and defining what to migrate with the implementation and what to sunset is critical in maintaining current financial and operational levels.

Entities can consider the following questions in making the determinations about parallel operations:

- Can software code be modified to prevent expensive software removal and replacement to accommodate parallel processes? For example, can the 5010 code be used to identify ICD-10-CM/PCS versus ICD-9-CM with the internal systems?
- What are the storage costs of parallel data?
- What are the costs and reliability of data translation systems?
- Are qualified staff members available to interpret the data, or do they need training?
- Can the data analysis be outsourced?
- Does the organization review only its top 25 MS-DRG and severity and mortality cases and not the entire database to cut costs?
- Can the paper encounter form become electronic two to three years before go-live?
- Would the SNOMED CT system assist with translations?
- Are there nonelectronic systems that will not meet the compliance date, and if so, what is the contingency plan?
- How will the organization address issues related to payers not accepting the new codes?
- What does an institution consider for research implications of doing retrospective reviews?

Planning for the transition to ICD-10-CM/PCS is a multifaceted effort. Collaborating with IT professionals to define technical differences between the two coding systems is vital to ensuring system readiness upon implementation. In addition, defining the organization's data management plan will facilitate a smooth transition to ICD-10-CM/PCS and optimize its greater specificity.

Appendix

ICD-10-CM/PCS Project Management Resources

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