Preparing for ICD-10-CM: A Clinician's Perspective

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America's physician practices are facing the biggest change in healthcare coding in decades: the replacement of ICD-9-CM by ICD-10-CM. This article discusses ICD-10-CM from a clinical perspective and reviews how electronic health record (EHR) systems will need to adapt to the transition.

ICD-10-CM vs. ICD-9-CM: The Major Differences

The differences between these coding systems of greatest relevance to physician practices are as follows:

1. ICD-10-CM codes make greater use of letters.
2. ICD-10-CM codes have up to seven characters, as opposed to five with ICD-9-CM.
3. ICD-10-CM codes are much more specific in general and specify many details that cannot be represented in ICD-9-CM, including laterality (which side of the body is affected) or ordinality of encounter (whether or not the care encounter is the patient's first for the condition).
4. ICD-10-CM has fewer nonspecific (aka "NOS") codes than ICD-9-CM.
5. ICD-10-CM in many cases categorizes diagnoses differently from ICD-9-CM. For instance, ICD-9-CM groups codes for injuries primarily by type of injury, while in ICD-10-CM they are grouped primarily by body area.

The differences in categorization is largely beneficial, since it brings diagnostic coding more in line with the way current medical knowledge leads clinicians to categorize and subcategorize disease. For many diseases, ICD-9-CM's approach to categorization doesn't jibe well with current thinking. For example, ICD-9-CM categorizes asthma as "intrinsic," "extrinsic," "chronic obstructive," or "unspecified"—an antiquated approach. In contrast, ICD-10-CM categorizes asthma into "mild intermittent," "mild persistent," "moderate persistent," and "severe persistent" forms. Those categories were established in widely accepted clinical guidelines published in 1997 and have been used as the basis of a substantial amount of clinical research.[1] Thus, not only do the ICD-10-CM codes for asthma make more sense to clinicians, they are more feasible for purposes such as automated clinical decision support and quality reporting.

On the other hand, the 1997 categorization is no longer current. Updated guidelines have further refined the categorization such that they are no longer perfectly matched by the ICD-10-CM codes for asthma.[2] This illustrates one of the fundamental issues with diagnostic coding systems: it is difficult to maintain them in a way that keeps them consistent with the rapidly advancing state of medical knowledge.

Diagnostic Coding in EHRs

Every EHR contains a master list of coded diagnoses that is usually prepopulated with ICD-9-CM codes and their descriptions. Clinicians choose from this list when specifying a diagnosis for a service such as a patient office visit. Most EHRs allow searching for codes by the description or the code itself. Many have tools to help the user find the right code, such as user-specific "favorites" lists that are shorter than the entire code list or the ability to associate synonyms with codes so they can be retrieved with search terms that a provider is likely to use. The increased size of the ICD-10-CM code set makes these tools more important, and if you are using an EHR you should help your providers become familiar with your system's capabilities in this area. If you are using an EHR but your providers use paper superbills instead of entering diagnostic codes electronically, you will want to move to direct electronic entry as soon as possible.

In addition, there are numerous other areas in most EHRs where coded diagnoses are used:

- Patient problem lists
- Built-in documentation tools (often referred to as templates, macros, forms, etc.)

- Customizable decision-support features (e.g., alerts that a patient is overdue for a routine preventive intervention)
- Noncustomizable decision-support features (e.g., drug-disease warnings based on third-party reference databases)
- Order sets with built-in default diagnoses
- Reports on clinical data (e.g., for quality management)
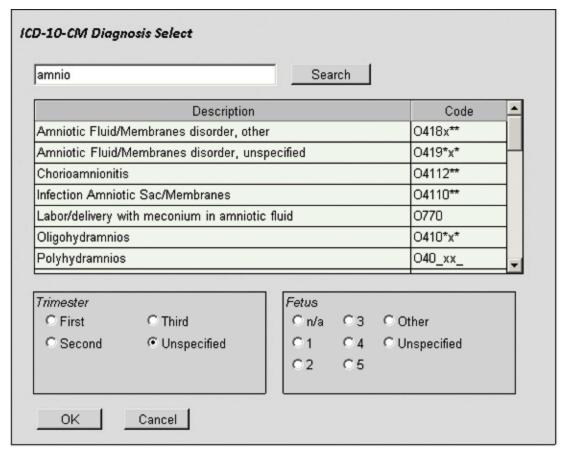- Interfaces with external systems

System vendors will need to update EHRs to ensure that all of these areas can accommodate ICD-10-CM codes where appropriate.

In addition, physician practices will need to replace ICD-9-CM codes with ICD-10-CM codes in patient records or in many configurable features like those mentioned above. To a degree, it may be possible to do this automatically with tools provided by the system vendor. These tools will be based on "cross-mapping" tables that indicate for a given ICD-9-CM code what the equivalent ICD-10-CM code is.

Such tables (termed General Equivalence Mappings) have been produced by the National Center for Health Statistics.[3] However, because of the inherent differences between ICD-9-CM and ICD-10-CM, the tables do not specify an ICD-10-CM code for every ICD-9-CM code. System vendors may provide a tool to automatically update patients' problem lists from ICD-9-CM to ICD-10-CM, but for some problems, it will not be possible to determine an ICD-10-CM code. It may be necessary for a clinician or an experienced coder to review each such problem and determine the appropriate ICD-10-CM code (or leave the problem uncoded).

If you use an EHR, it is important to start now to understand all the areas in your system where diagnostic codes are used and your vendor's plan for handling each of them. Keep in mind that your vendor is probably going through the same process of analysis, and their plans may be a work in progress.

Conceptual Mock-up of ICD-10 Diagnosis Selection

The seven choices on the grid represent the potential result of a user's search for the text string "amnio." Each one represents ranges of ICD-10-CM codes represented by the value in the "Code" column. The asterisks represent characters that a computer application could automatically infer based on the user's selection of "Trimester" and "Fetus." By selecting one of the choices on the grid below and the correct radio buttons in both frames, the correct ICD-10-CM code could be identified among 196 possible codes. For instance, if the user selected "Amniotic

Fluid/Membranes disorder, unspecified," the "Second" radio button under "Trimester," and the "n/a" button under "Fetus," the application would select ICD-10-CM code O4192x0.

Semantic Consistency in ICD-10-CM

In ICD-10-CM, a particular character or characters in a code may have a specific meaning ("semantic consistency"). This creates the potential for computer systems to make it easier to find the right ICD-10-CM code by collapsing long lists into a small number of choices for the end user. For instance, for most ICD-10-CM codes for disorders of amniotic fluid and membranes in pregnancy, the fifth character indicates the trimester to which the code applies, and the seventh character identifies the affected fetus in multiple gestations (or is 0 if there is only one fetus). The result is combinatorial explosion: a large number of codes due to the need for one code for every possible combination.

With a traditional searching approach, a user would have to peruse a list of 196 codes when searching for amniotic disorders in pregnancy. However, a computer program that takes advantage of this semantic consistency could present the user with a compacted list and prompt them to select among choices to which the semantic consistency applies (see "Conceptual Mock-up of ICD-10 Diagnosis Selection"). Instead of a list of 196 codes with unique descriptions to choose from, the user has a choice of seven, with two short radio-button lists to select from.

However, semantic consistency in ICD-10-CM applies only to limited (often noncontiguous) sets of codes. For instance, the seventh character, which in amniotic disorders codes identifies which fetus has the problem, in codes related to coma (those starting with R40.2) represents the point in the patient's care process at which the coma began. So for some ICD-10-CM codes, a seventh character of 2 means "condition affects fetus #2," but for codes beginning with R40.2, a seventh character of 2 means "coma was present at arrival to emergency department." This inconsistency presents a real challenge to the goal of automating the process of assisting users with ICD-10-CM code selection, but the semantic consistency in ICD-10-CM, such as it is, will hopefully be exploited to assist clinicians and other EHR users in coping with the vastness of ICD-10-CM.

Notes

1. National Heart, Lung, and Blood Institute. "Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma." February 1997. Available online at www.nhlbi.nih.gov/guidelines/archives/epr-2/asthgdln_archive.pdf.
2. National Heart, Lung, and Blood Institute. "Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma." August 2007. Available online at www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf.
3. Centers for Medicare and Medicaid Services. "General Equivalence Mappings: ICD-9-CM to and from ICD-10-CM and ICD-10-PCS." March 2009. Available online at www.cms.hhs.gov/MLNProducts/downloads/ICD-10_GEM_factsheet.pdf.

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