Unwrapping Data Standards

by Gina Rollins

Data content standards affect a wide range of day-to-day HIM work. Here's what you need to know.

They may sound like they belong up in the IT stratosphere, but data content standards-or the lack of them-affect a wide range of day-to-day HIM work right here on the ground. As standardization increases, electronic health information will begin to go farther and do more than ever before. Content standards are integral to the capture and processing of consistent, quality data in electronic practice. As a result, the presence or absence of content standards has consequences for all aspects of HIM practice, from coding and data analysis to performance reporting and public health surveillance.

Coming to Terms

Content standards describe the structure and content of data elements (as opposed to describing the transmission of information or messaging standards). Data content standards will facilitate the ultimate level of interoperability when disparate organizations can not only transmit data according to accepted protocols but also interpret data within the same context and with the same basis of understanding.

More and more attention is being placed on developing and harmonizing data content standards, primarily as a result of increased interest in EHRs and a nationwide health information network that would enable the secure sharing of health data among authorized providers throughout the country.

Broad-based initiatives are under way to create new and streamline existing data content standards that are duplicative or overlapping. Perhaps the most ambitious is the Healthcare Information Technology Standards Panel, a consortium of standards development organizations, associations, vendors, and the like, commissioned by the American National Standards Institute under contract to the Department of Health and Human Services. The consortium has been asked to demonstrate a consensus-based process for setting standards in the healthcare industry.

AHIMA is involved in a separate project under contract to the National Library of Medicine to validate the SNOMED CT to ICD-9-CM rules-based reimbursement use-case map. SNOMED is creating the map for inclusion in the Unified Medical Language System, a federally funded project to facilitate retrieval and integration of electronic biomedical information from a variety of sources. The common coding systems for claims processing are found within the system, as are more than 100 other terminology and vocabulary systems.

But content standards are less likely to receive as much attention at individual organizations. Even as these industry-wide efforts take root, many providers are still implementing EHRs and may not have focused extensively on data content standards. However, those standards are at the heart of their ability to share and receive electronic data and put those electronic data to work with minimum effort and maximum return in areas such as reimbursement, data analysis, and performance reporting.

Data Mapping

In the coding arena, the greatest effect of data content standards may be in efforts to map ICD-9-CM and CPT codes to SNOMED. This mapping will create an integrated record with robust clinical information tied to appropriate administrative data. With 350,000 concepts, SNOMED is a rich descriptor of diagnostic and clinical findings highly preferred by physicians over ICD-9-CM, which has a mere 13,000 codes. However, the HIPAA standard for submitting diagnoses on electronic

claims is ICD-9-CM. So when clinical records use SNOMED and electronic claims require ICD-9-CM, there must be a map from SNOMED to ICD-9-CM for data to flow seamlessly from clinical to billing formats.

A growing number of HIM professionals are involved in such data-mapping efforts, including Sandra Bailey, RHIA, an independent contractor for the Veterans Health Administration (VHA) based in Warrenton, VA. Bailey participates in a coding forum collaboration between the VHA and Kaiser Permanente. After multidisciplinary concept modeling teams describe the best codes and rules for a particular clinical concept in SNOMED and ICD-9-CM, the coding forum validates the recommended map or suggests modifications for the concept modeling team.

These types of mapping initiatives are becoming more widespread and definitely need HIM participation, according to Bailey. "Doctors present a very valuable piece to the puzzle by describing what the terminology means to them, but they can't do it alone. Especially when you are developing a use case, you need people who know the rules to be very involved," she explains. "You can have a perfectly legitimate linguistic concept, but without rules you will match words without concepts, which is meaningless."

Those involved in data-mapping efforts say that even with the participation of clinical, coding, and terminology experts, the process can be quite challenging, particularly when it comes to developing concepts and rules for codes that represent prospective care processes. Data mapping also doesn't eliminate the role of HIM in retrospective chart review and coding. "We're using a retrospective ICD-9-CM coding system in a prospective way trying to map administrative codes to SNOMED and anticipate how it will be used in the medical record when there is a lack of standards for prospective codes," explains Kathleen M. Schwarz, RN, MS, CCS-P, lead convergent medical terminology modeler and administrative coder for Kaiser Permanente in Oakland, CA. For instance, a physician treating a patient with an abscessed knee can't report at the point of care what type of organism is causing the infection because he won't have results of cultures taken at that time. This situation requires HIM involvement later to find the culture results through data mining and modify the original coding to reflect the type of infection.

Linking Evidence-based Medicine and Decision Support

Progress on SNOMED–ICD-9-CM mapping efforts will lead to more sophisticated EHR capabilities, such as linking evidence-based medicine and decision-support functions. These emerging higher-order uses eventually will spell profound changes for HIM practice, predicts Brian Levy, MD, senior vice president and chief medical officer at Health Language, a software firm located in Aurora, CO. The company's software facilitates incorporation of controlled medical vocabularies, coding standards, corresponding maps, and other terminology-related content into EHR software.

Certain EHR vendors with SNOMED embedded in their clinical applications are beginning to link SNOMED concepts with standardized treatment protocols. Similarly, companies that produce evidence-based content also are beginning to associate the content with SNOMED concepts. Eventually these functions will interface directly. For example, when a physician treating a patient for acute coronary syndrome enters that SNOMED concept in the EHR, a screen outlining the latest evidence about diagnosis and treatment will appear automatically. At the same time, another screen will appear showing standardized treatment protocols for acute coronary syndrome. This type of interface ultimately will dramatically alter the coding process for HIM professionals. "It will change from purely documenting the correct ICD-9-CM or CPT code to interfacing directly with SNOMED," explains Levy.

Making Data Meaningful

Other data content standardization efforts involve specific data elements in the EHR, either between applications within the same organization or in collaborations such as regional health information organizations. For instance, the VHA is involved in an extensive reengineering initiative to standardize terminology and content standards throughout its system. Melanie Loucks, MA, RHIT, a terminology analyst in the standards and terminology services arm of the VHA Office of Information in Salt Lake City, UT, is on the front line of this project.

Loucks has encountered numerous examples of how creating data content standards has made electronic health information not only transferable but also meaningful across the VHA. For instance, one initiative involved establishing clinical Logical Observation Identifiers Names and Codes (LOINC) as the standard for document note titles. Without such standards, the title of a note in one EHR system might be "Mr. Smith Pain Note in Blue Clinic," which might be perfectly clear at that particular

facility, but “if I weren’t in that institution, I wouldn’t know what it meant,” explains Loucks. So the standard for document note titles was changed to use clinical LOINC axes in the title. “You don’t have to use all five [axes]. You can create a note title to fit each one and define part of the axis in the title itself,” she says. For example, the title “Physical Therapy Clinical Note” will make clear that a physical therapist wrote the note and what it pertains to, which will greatly simplify the process of reviewing charts and understanding a patient’s treatment history and progress.

Data Analysis

Disparities between data content fields have a considerable effect on HIM practice involving data analysis, reports Lynn-Marie Wozniak, MS, RHIT, manager of health policy and information at Next Wave, a policy analysis firm located in Albany, NY. Wozniak collects and analyzes data from different organizations and agencies across the country, and she can recite a litany of problems associated with inconsistent data content. For instance, dates can be recorded as either date or text fields and may appear in several different orders including month-day-year, year-month-day, or day-month-year. One popular software application, SAS, even converts dates to a number that ties the date in question to the number of days since SAS was first launched, says Wozniak. Other programs still use a two-digit year with a century indicator in a separate field. The two fields have to be linked to arrive at a date.

Other examples include different methods of calculating age and length of stay, as well as different types of values in the same field, such as gender. Gender can be recorded as a binary (Y/N), numeric (1/2), or text (M/F) field, and certain software programs will automatically convert the field from binary to text unless programmed otherwise. Some of the data content variations are due to requirements of the various software packages, whereas others are related to the way the fields are defined and used, explains Wozniak.

Legacy Systems

Although much of the focus of data content standards is on newly implemented EHR systems, much of HIM practice still involves legacy systems that can be chock-full of inconsistencies, according to Pat Wilson, RTR, CPC, PMP, team leader at 3M in Salt Lake City, UT. Among other things, Wilson’s practice involves evaluating legacy systems for mapping to standardized terminology. Over the years, she has observed that organizations make what they think are minor changes to National Drug Codes (NDC) or their internal chargemasters without recognizing the potentially significant consequences.

For example, in the past, a drug in 200-milligram doses may have been packaged in 250-tablet lots. When the drug instead comes in 500-tablet packages, someone may edit the existing NDC code for 250-tablet packages rather than adding a new one for 500-tablet packages. “I see that all the time. People change the old code rather than creating a new one because they think the packaging doesn’t matter. They don’t understand the intent of data standards,” she notes. However, such inconsistencies can wreak havoc on data monitoring and outcomes research efforts.

The absence of certain data standards also touches HIM practice involving coding and reimbursement management. Lack of national provider, employer, and member identification numbers complicates the ability of payers to develop a comprehensive electronic record for health plan members, according to Lorraine Tully, RHIT, director of integrated informatics at Medco Health Solutions in Franklin Lakes, NJ. “Right now we don’t have a longitudinal view of care because a member could have three different names and the provider three different IDs,” which has implications for both patient care and health plan performance, she explains. “When we have longitudinal data, we’ll have better analysis of the disease process, cost, and outcomes,” Tully notes.

Trying Clinical Trials

Research-related patient safety monitoring, regulatory compliance, and outcomes analysis also are complicated by inconsistent data content standards. “When one pharmaceutical company buys or partners with another, they may have disparate definitions for data content, which makes migrating information to a new system very difficult. It’s a manual process,” says Vera Rulon, RHIT, CCS, director and global head of the trial master file leadership and support team at Pfizer in New York City. In such circumstances, without a common physician provider number for clinical investigators, Rulon’s team has to confirm manually the status of sometimes hundreds of investigators in Pfizer’s database.

As with EHR applications for patient care, research-related software packages also may have different titles for the 130 documents required by the Food and Drug Administration for a clinical trial. For instance, one system may title the patient's informed consent as an "informed consent form," but another may use the term "informed consent document." This discrepancy must be resolved through data mapping between the two fields.

Lack of generally accepted data content standards also affects HIM practice related to outcomes and pay-for-performance reporting. As an example, certain states require the use of E-codes to report adverse drug events, surgical complications, and the like, but others do not. The same applies to the Health Care Utilization Project National Inpatient Sample, which is used for policy research and to investigate national trends in health. According to Wozniak, 37 states participate in this effort and all have different reporting rules. "To me, that's the most worrisome [aspect of not having data content standards]. I can deal with formatting and mapping issues but not with records I don't have. I can pare down the records so they all match the state that requires the least amount of data, but you lose a lot of information in the process."

The presence or absence of data content standards has a direct effect on HIM practice today, whether it be data mapping, performance reporting, data analysis, coding, or other areas. This influence will only grow as the healthcare industry works toward its goal of true interoperability.

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Article citation:
Rollins, Gina. "Unwrapping Data Standards" *Journal of AHIMA* 78, no.1 (January 2007): 25-29.