CDI Expanding Beyond the Hospital Walls through Standards

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The proverbial comparison of "apples and oranges" is a well-known metaphor in casual conversation and discussion. When talking about expanding clinical documentation improvement (CDI) programs in today's environment of electronic health records (EHRs) and information governance efforts, the scope extends beyond the walls of the hospital to other areas, such as physician practices. In the apples and oranges scenario, these two types of documentation (inpatient and outpatient) are an apt comparison. Just as it's all documentation no matter the healthcare setting (and apples and oranges are both fruit, in the end), they also have their differences. But are they really all that different? Herein lies the challenge—bringing the two together requires that the inpatient CDI program be put in the same "fruit bowl" as the outpatient CDI program.

Why would a healthcare organization want to develop an outpatient CDI program in the first place? If an organization already has an inpatient program, it may be beneficial to tie in outpatient reviews. As providers discover and acknowledge benefits of inpatient CDI programs, they may begin to look toward defining an outpatient CDI program's benefits. One of these benefits includes better coding accuracy, which in turn would benefit more accurate diagnoses populating the patient problem list and then pulling the information into subsequent notes, so it could be coded and available for continuity of care. The result is better quality documentation and care for the patient.

The Centers for Medicare and Medicaid Services' (CMS') value-based reimbursement programs are bringing the apples and oranges together. As accountable care organizations are developed, consideration for bringing information from inpatient and outpatient encounters together makes for a sensible endeavor. EHR systems and patient portals may lend a wider view of patient encounters. One portal for both the outpatient office and the hospital may be available. Once a patient is assigned their patient portal, the problem list flows into the portal from interoperable inpatient, outpatient, and ancillary information systems and the patient can then see the complete, accurate, real-time documentation of their conditions. There are numerous ways CDI can impact the clinical specificity of these shared records, and the problem list is just one example. CDI programs bring those apples and oranges together and adapt the clinical documentation and diagnosis-related group (DRG) assignments based upon the documentation and diagnoses from the outpatient office notes and the hospital notes.

As healthcare shifts toward a system tied to quality of care practice and greater interoperability, it becomes increasingly necessary to ensure organizations' health information technology (HIT) infrastructure and CDI programs are up to the undertaking. An essential element to this is expanding the role of a CDI program and ensuring that key standards are met.

Standards and Standards-based Services for CDI

Standards enable the health IT infrastructure, which in turn allows various information systems to interoperate, communicating information broadly and overcoming distance, differing levels of expertise, location of delivery, and other barriers. Healthcare service delivery can cross physical walls of organizations, and can occur safely with accurate reimbursement and the appropriately applied support of both health IT and health information management (HIM) practice standards. These standards provide consistent, reliable, and trusted communication between patients and those involved in their care. The standards apply to all facets of healthcare delivery, delineating content and creating basic definitions on the required content. Data standards and information content standards are important in this regard.[1,2]

Data Standards

Vocabulary, terminology, and classification system standards allow uniformity with clinical content communication. The International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Clinical Modification (ICD-10-CM) and Procedure Coding System (ICD-10-PCS) and the Current Procedural Terminology (CPT) are the key standards for translation of human language in clinical documentation into machine-processable payload for health management,

epidemiologic efforts, and reimbursement. Diagnoses, procedures, diagnostic testing, and other services delivered can be uniformly communicated due to the use of these standards. For example, ICD-10-CM/PCS classifies diseases and health problems, while CPT translates delivered services in a uniform manner nationally and internationally.

The Systematized Nomenclature of Medicine–Clinical Terms (SNOMED CT) is a comprehensive multilingual clinical healthcare terminology with scientifically validated clinical content that enables consistent, processable representation of clinical content in EHRs including diseases and pharmaceutical, laboratory, and social factors data. SNOMED CT provides a standardized way to represent clinical phrases captured by the clinician and enables automatic interpretation of them. Mapped to other international vocabulary and terminology standards, such as ICD-10-CM/PCS, SNOMED CT is used in more than 50 countries.

In the United States, SNOMED CT is one of the designated standards for use in US federal government systems for the electronic exchange of clinical health information. It is also a required standard in interoperability specifications of the US Healthcare Information Technology Standards Panel (HITSP). As the United States National Release Center for SNOMED CT, the National Library of Medicine (NLM) provides SNOMED CT data and resources to licensees of the NLM UMLS Metathesaurus.[3]

Information Content Standards

The Continuity of Care Document (CCD) specification is an eXtensible Markup Language (XML)-based standard intended to specify the encoding, structure, and semantics of a patient summary clinical document for exchange.[4] CCD was developed by Health Level Seven (HL7) International, a standards development organization (SDO), in coordination with the ASTM International Technical Committee E31 responsible for development and maintenance of the Continuity of Care Record (CCR) standard.

CCD is a constraint on the HL7 Clinical Document Architecture (CDA) standard.[5] CDA specifies that the content of the document consists of a mandatory textual part (which ensures human interpretation of the document contents) and optional structured parts (for software processing). The structured part is based on the HL7 Reference Information Model (RIM) and provides a framework for referring to concepts from coding systems, such as SNOMED, Logical Observation Identifiers Names and Codes (LOINC), ICD-10-CM/PCS, and CPT. CDA can contain any type of clinical content, including a patient summary (administrative, demographic, and clinical information about a patient's healthcare, covering one or more encounters), discharge summary, imaging report, admission data, physical data, and laboratory report.

The HL7 Fast Healthcare Interoperability Resources (FHIR) is a draft standard describing data formats and elements (known as "resources") and an application programming interface (API) for exchanging electronic health records. FHIR is built on earlier HL7 data format standards, such as HL7 versions 2.x and HL7 version 3. One of its goals is to facilitate interoperation between legacy healthcare systems, to make it easy to provide information to providers and patients on a wide variety of devices—from computers to tablets to cell phones—and to allow third party developers to provide medical applications which can be easily integrated into existing systems. FHIR provides an alternative to a document-centric approach by directly exposing/specifying discrete data elements as resources for patient demographics, admissions, diagnostic reports, medications, etc.

Content Standardization Products

Computer-assisted coding (CAC) uses technology and linguistics within an EHR system to translate clinical language to ICD-10-CM/PCS, CPT, SNOMED CT, and other codes using mapping across these data standards. Assignment of diagnosis and procedural codes may be automated using CAC. Templated EHR documentation is able to auto-assign standard codes based on data entered, ensuring compliance with coding guidelines and enabling consistency in clinical documentation across clinicians.

Mapping services are critical to widespread acceptance and use of EHR systems by clinicians, data collection for research, governmental reporting, and reimbursement. The International Organization for Standardization, Technical Committee 215 Health Informatics (ISO/TC215) has been working on a new standard: Terminology Resource Map Quality Measures (MapQual). It defines the quality requirements for a terminology resource map set. Based upon the existing ISO standard—ISO Technical Report (TR) 12300 – Principles of Mapping Between Terminological Systems—the new standard will establish

measures (determinants) to assess the quality and utility of a map between terminological resources resulting from the mapping processes used (including manual and tool-based mapping). In addition, the standard determines the levels of measure required for common use cases in healthcare, which can be used for conformity assessment.

Natural language processing (NLP) is a tool that processes the words in free text using statistical inference algorithms to produce models that are robust to unfamiliar input (containing words or structures that have not been seen before) and to erroneous input (with misspelled words or words accidentally omitted). The increased use of the EHR has led to widespread adoption of NLP in health information systems, creating a more efficient user interface because the systems with NLP are based on automatically learning the rules—and can be made more accurate by recognizing/supplying more input data that enables machine learning.

Various SDOs, professional organizations, and governmental agencies have been developing content standardization tools to create standardized, semantically exchangeable clinical concepts templates and document templates, facilitating interpretation of information exchanged between sending and receiving systems. To explore capabilities of these tools for building standardized templates for healthcare organizations' CDI programs, AHIMA has hosted webinars with demonstrations of more than 15 of these tools. Demonstrations are available at http://engage.ahima.org/viewdocument/2016-ahima-content-standardization?.

Expanding Role of CDI Professionals in Supporting Outpatient Services

In 2004, CMS implemented the Hierarchical Condition Categories (HCC) model. Some institutions focusing on HCC scores may afford this supplementary revenue and severity capture. The overarching strategy provides for a stratified care reimbursement of Medicare Advantage plans based on a direct correlation of how ill their enrollees are reported to be. Medicare Advantage plans are encouraged to register members who are considered more ill or are considered more at risk due to their past medical history. Covering this "risk adjusted" patient population may garner more reimbursement. Approximately one-fourth of Medicare enrollees receive benefits via a Medicare Advantage plan. Every fiscal year, CMS adjusts the risk-associated weight for each HCC category; within each category are a multitude of codes. Accurate specification of as many of an enrollee's HCC-related diagnoses as possible benefits a hospital and/or its system when reporting HCC diagnoses of individual enrollees and its entire Medicare Advantage population. As part of the protocol for reporting, for each member, HCC scores are submitted at least once every 12 months, regardless of whether the encounter occurred in an inpatient or outpatient setting.

In considering that many CDI programs occur only in an inpatient setting, increasing the potential severity capture in the outpatient setting would be a likely next step. The role an outpatient CDI specialist would perform may parallel that of an inpatient CDI specialist. Careful evaluation should be undertaken regarding the appropriate diagnosis capture, as varying coding conventions and guidelines apply depending on the setting. In addition, assessing overlaying factors and the planned focus of the program is a necessary and compliant approach.

Depending on the type of medical facility, two areas often are considered for initial CDI program implementation: physician practices and the emergency department. Both locales may provide untapped areas of severity capture. Per CMS, while inpatient admissions have been steadily declining, outpatient visits have been increasing over the same period. A hospital may likely lose Medicare Advantage consumers if its CDI program focuses solely on the inpatient admission.

Another aspect to consider when implementing an expanded program is the type of record review: concurrent review, retrospective review, or a combination of the two. Areas of concern should include:

- Which services to target (general medical, medical sub-specialties, pediatrics, etc.)
- Location of review (in office or remote)
- Method of review (focused concurrent EHR review based on previously reported, third party vendor-assisted review, or a combined method of focused patient review and vendor-assisted review)

Lastly, providers in today's healthcare landscape are often the center of numerous requests; a balance should be created to permit the CDI specialist to perform his or her role without impeding the physician's day-to-day functioning.

As healthcare delivery is changing, and reimbursement is actively transitioning to the electronic environment, the need for CDI efforts are on the rise in both inpatient and outpatient settings: as inpatient CDI programs mature, natural expansion often leads to exploration of outpatient services for additional opportunity. The data and information content standards (SNOMED CT, ICD-10-CM/PCS, CPT, HL7/ASTM CCD/CCR, HL7 CDA, and FHIR), data mapping services, NLP, CAC, and content standardization tools provide foundation and building blocks for CDI programs to enable automation of health information capture, processing, and use across inpatient and outpatient healthcare organizations. The role of a CDI professional who understands documentation and reimbursement as well as standards and standard-based technology applications for interoperable CDI programs will increasingly be in demand as the healthcare industry continues to evolve.

Bringing the Apples and Oranges Together

A CDI program that encompasses inpatient and outpatient services enhances an organization's ability to accurately classify patients for registries, assign risk scoring to a patient or population, and participate in Medicare Advantage plans. Managing a population requires expanding beyond hospital walls. Current data standards, information content standards, and content standardization services normalize data across the continuum of healthcare for individual patient and population management. Bringing together the "apples" and "oranges" of the inpatient and outpatient environment requires CDI specialists and HIM professionals at large to engage in standards development as the world changes. As author and humorist Mark Twain said, "Why not go out on a limb? That's where the fruit is." If HIM professionals empower themselves with standards, they can definitely bring the apples and oranges together.

If you are interested in promoting awareness of standards for CDI programs or participating in standards development activities with the AHIMA Standards Task Force, please contact Standards@ahima.org.

Notes

[1] AHIMA. "AHIMA Standards Fact Sheet: Standards Category: Data Standards."

[2] AHIMA. "AHIMA Standards Fact Sheet: Standards Category: Information Content Standards."

[3] US National Library of Medicine. "SNOMED CT."

[4] Health Level Seven International. "HL7/ASTM Implementation Guide for CDA® R2 – Continuity of Care Document (CCD®) Release 1."

[5] Health Level Seven International. "CDA® Release 2."

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