Direct Route to Meaningful Use? Health Story Project Offers a Path to Integrate Clinical Documents into EHRs

By Liora Alschuler

The meaningful use final rule is spurring many organizations to implement electronic health records (EHRs). However, integrating clinical notes into EHRs continues to be a problem for many organizations.

The Health Story Project aims to streamline this process by supporting the development of industry standards to incorporate clinical notes into EHRs. HIM professionals should become familiar with the Health Story Project and its work to help their organizations meet the meaningful use requirements.

The Status Quo

More than a billion clinical notes are created by physicians in the US each year. These notes contain the lion's share of the clinical record, even after an organization implements an EHR system.

These notes document procedures, operations, consultations, diagnostic imaging reports, discharge summaries, and more. They also contain findings that are critical for compliance with the meaningful use final rule.

Today, most of this rich store of information is not available within the EHR unless it is rekeyed. Transcription and clinical documentation vendors routinely dumb down their source data because EHRs cannot accept it, even when it is coded to a national, industry standard. Even when the electronic source document contains discretely coded data, most EHRs are not yet capable of pulling it in.

Most transcription and clinical documentation firms today use Extensible Markup Language (XML) in their systems because of its consistent structure, and many use some form of Health Level Seven International (HL7) Version 2.x messaging to manage document workflow.[1] These two components are sufficient to support automated transformation to a basic Clinical Document Architecture (CDA) note because the CDA header is designed for compatibility with these messages and the CDA body can be very basic XML.

However, transcription and clinical documentation vendors routinely strip out the XML and coded metadata for delivery. With meaningful use, the healthcare industry now has a strong incentive to mine this information and pull it into the EHR to support compliance.

The Health Story Project's Mission

The Health Story Project (www.healthstory.com) was founded in 2007 to open the gateway between dictated notes and the EHR. The project has two agendas: support development of the industry standards needed to move information from notes into the EHR and promote the adoption of these standards.

The project uses contributions from members to support development of specifications for electronic documents, donating all intellectual property to HL7 and following HL7 policies for participation, ballot, and publication. Participation in development of the specifications is open to all. This tandem arrangement is often referred to as "agile standards development."

The HL7-Health Story Project associate charter agreement has produced technical implementation guides for eight common clinical documents within three years, several of which were recommended by the Healthcare Information Technology Standards Panel.[2]

How It Works (and the Limits)

XML alone is not sufficient to make data ready for EHR consumption. The HL7 CDA is an XML application that spells out what tags can and cannot be used; for example, <title> is used for the display title of the document. In addition, CDA accommodates semantic markup, which makes the text computable for an EHR; for example, specifying that the <code> element in the document header use a predetermined term to identify the document type (e.g., history and physical, consult, etc.).

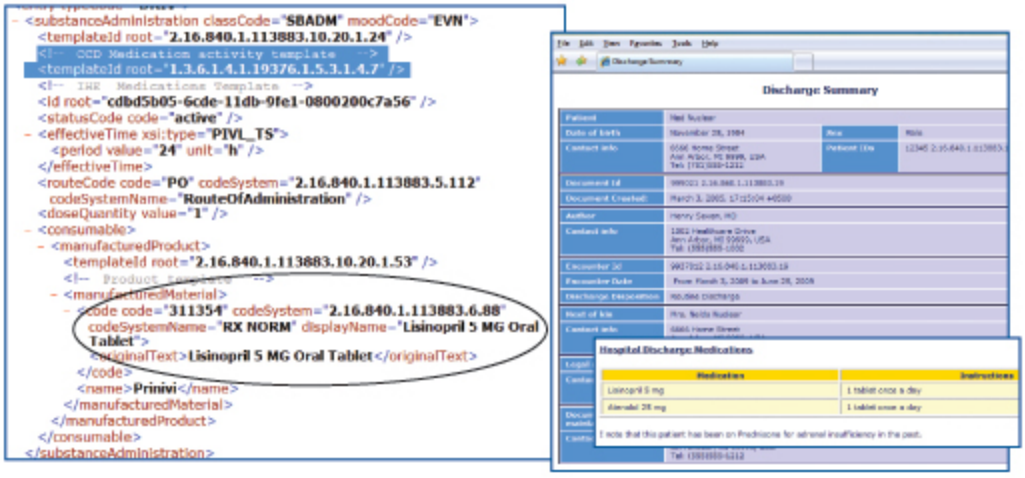
By design, Health Story follows the coding patterns and conventions used for the semantics within the HL7 Continuity of Care Document (CCD). These patterns are called CDA templates, and the overarching strategy is called "templated CDA." It creates a framework that supports the CCD for transfer of care summaries as stipulated by the meaningful use final rule and Health Story implementation guides for history and physical and consult. The framework can pump source data into the EHR from dictated notes using CCD templates.

Consider, for example, the meaningful use requirement to supply a discharge summary and to maintain a medication list within the EHR. A dictated Health Story-compliant note with structured data entries will contain the exact sample medication template as the CCD and meet the need for a discharge summary.

Meeting Meaningful Use Requirements for Discharge Summary

A dictated Health Story-compliant note, using structured data and the CCD medications template, can meet the meaningful use requirement for a discharge summary. Shown here is the note displayed in a Web browser and a fragment of the underlying code.

This template is known as the HL7 Implementation Guide for CDA Release 2: Care Record Summary, Release 2; Discharge Summary, Release 1. It is compatible with patient care profiles from Integrating the Healthcare Enterprise and available from HL7 at www.hl7.org.



The figure above shows the note displayed in a Web browser and a fragment of the underlying coded entries. Note the use of the CCD medications template and also that the text fragment on prior medication for adrenal insufficiency is structured as a simple paragraph, like HTML.

How Does a Dictated Note Acquire Codes?

A basic CDA note can be transformed from the current HL7 version 2, XML, and word-processing formats in use for dictation workflow. The resulting XML document can contain discrete data for provider, patient, type of document, date of encounter, and codes indicating what sections are present (e.g., chief complaint, current medications, etc.). *Any* dictated note can be delivered with this level of utility with a no-cost or minimal cost enhancement from the service provider.

There are multiple methods to enrich dictated notes with detailed coded entries, sometimes called "discrete reportable transcription."[3] Computer-assisted coding is implemented with various levels of automation, making coding more productive.

Natural language processing (NLP) is a mature and implemented technology for clinical notes. The XML structure and the minimum CDA markup make accurate NLP easier to achieve. Most implementations provide a review function to ensure accurate encoding, and the cycle is integrated into the usual review for signature.

Other applications support dictation within a tightly constrained data capture template that provides the semantic structure needed for coding. Other approaches use mobile and smartphone technology to combine structured entry with narrative dictation.

While many methods of creating discrete entries are in use, applying the standard HL7 CDA markup makes the entries usable within an EHR and for the meaningful use program. Without the common standard, no vendor could be reasonably expected to build an interface to accept coded electronic documents.

Tackling the Limits

Although the healthcare industry is within easy reach of structured and coded output from transcription and clinical documentation, there are still major barriers to leveraging these data for meaningful use. The largest one remains the EHR's inability to accept and integrate these data. This gap has been bridged in custom integrations by major EHR vendors, but it is not yet mainstream.[4,5]

Providers can begin taking advantage of the Health Story path to meaningful use by discussing it with their transcription and clinical documentation vendors.

To get started, see the sample language for transcription and EHR system procurement on the Health Story Project Web site at www.healthstory.com/standards/sec/require.htm.

Notes

1. Based on personal interviews with large and small transcription and clinical documentation vendors and informal survey of Health Story members. According to interviews, XML for transcription "provides the richness of a database with the simplicity of a portable document."
2. Health Story Project. "Data Standards." Available online at www.healthstory.com/standards/standards.htm
3. Anderson, Mark. "DRT-enabled EHRs." February 3, 2009. Available online at www.acgroup.org/images/2009-02_What_is_DRT.pdf.
4. Johnson, Stephen, Suzanne Bakken, et al. "An Electronic Health Record Based on Structured Narrative." *Journal of the American Medical Informatics Association* 15, no. 1 (2008): 54–64.
5. Health Story is developing a series of case studies. Currently, there is no published account of this type of integration outside of commercially developed literature.

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