Meaningful Use

Preserving the Health Story, Providing Structure for The EHR

NUANCE

Abstract

Achieving meaningful use of Electronic Health Records (EHRs) is paramount for healthcare organizations and providers seeking both to improve the quality of care and satisfy federal requirements. The recent release of Stage 2 meaningful use final rules has intensified the focus on health information exchange (HIE), leading many hospital administrators and CIOs to champion utilization of the EHR's structured documentation capabilities over narrative dictation and transcription. This paper highlights key requirements of Stage 2 Meaningful Use and discusses the limitations of traditional structured EHR input in meeting those requirements. It then offers as a solution technology that — rather than controlling physician input – extracts structured EHR data from physician dictations.

Meaningful Use: Preserving the Health Story, Providing Structure for the EHR

EHRs provide the timely, complete information necessary to improve physician decision making, decrease medical errors, enable cost-effective care and further patient involvement in their care and lifestyle choices.

The EHR's ultimate goals?[i]

- Better clinical outcomes

- Improved population health outcomes

- Increased transparency and efficiency

- Empowered individuals

- More robust research data on health systems

But EHRs have been a long time in the making.

CARROT OR STICK? THE HITECH ACT AND EHR ADOPTION

In use since the 1960s, EHRs became top-of-mind in the late 1990s when the Institute of Medicine published two landmark reports calling for adoption of electronic medical records to address the alarming number of medical errors in U.S. hospitals. Yet, by 2008, only 4 percent of U.S. providers had adopted comprehensive EHRs and only 13 percent had even basic EHR functionality.[ii]

On February 17, 2009, the federal government signed into law The Health Information Technology for Economic and Clinical Health (HITECH) Act, which authorized the U.S. Department of Health and Human Services (HHS) to establish programs to promote adoption and use of health information technology, especially EHRs. By 2011, 57 percent of Medicare physicians attested to using EHRs, and the Congressional Budget Office projected 90 percent physician EHR adoption by 2019.[iii] In two years, HITECH spurred more EHR adoption than IOM warnings had incited in nine. The difference? Incentives.

Under HITECH, eligible healthcare professionals and hospitals can qualify for Medicare and Medicaid incentive payments when they adopt and use certified EHR technology. If they don't, however, they not only forgo the incentive payments, they also could pay as much as 5 percent in penalties on Medicare reimbursement by 2019. The federal government has paid out nearly $7 billion in meaningful use incentive payments since the program launched in 2011, and expects to distribute approximately $20 billion before the program begins levying those penalties in 2015.[iv]

To secure the incentives and avoid the disincentives, hospitals and physicians must adopt EHRs 'certified' by the Office of the National Coordinator for Health Information Technology (ONC) to support 'meaningful use', as defined by the Centers for Medicare & Medicaid Services (CMS).

Meaningful use constitutes achieving specific CMS-determined objectives that are evolving in three stages, as follows:

- Stage 1 (2011-2012): Capturing and sharing data

- Stage 2 (2013): Advancing clinical processes

- Stage 3: (2015): Improving outcomes

As planned, Stage 1 began in 2011. It focused on transferring data to EHRs and enabling health information exchange (HIE), including electronic copies and visit summaries for patients.[v]

Stage 2 Meaningful Use final rules were published in August 2012, with standards for online access to health information by patients, and HIE between providers. To some extent, Stage 2 simply builds on Stage 1, requiring that providers write the majority of their prescriptions electronically, generate quality measures from the EHR and – most importantly – begin HIE.

ENTER STAGE 2: ADVANCING CLINICAL PROCESSES, IMPLEMENTING HIE

HIE makes patient information available when and where it's needed for effective, efficient coordinated care. As such, there is an increasing demand for it in order to:

- **Improve patient care:** Sharing key information between providers and across settings prevents readmissions, improves diagnoses, reduces duplicate testing, and prevents medication errors.[vi] Despite the frequency of such transitions (more than 40 percent of all outpatient visits involve a transition between different medical groups), in 2010, only 19 percent of hospitals exchanged patient clinical record information electronically with providers outside their systems.[vii] Primary care physicians report delays in care and additional testing, imaging, and office visits because of missing clinical information (such as medication lists, radiology images, and lab results), yet 73 percent of the time, they do not receive discharge[viii] information from hospitals within two days of their patients' discharge.

- **Support emerging care models:** HIE and data analytics infrastructure is critical for coordinating care and improving quality under new care models such as the Accountable Care Organization (ACO) and Patient-Centered Medical Home (PCMH). As a result, the number of active private HIE entities tripled from 52 in 2009 to 161 in 2010;[ix] 71 percent of U.S. hospitals plan to invest in HIE services.[x]

Stage 2's intensified focus on HIE addresses these issues. According to Dr. Farzad Mostashari, National Coordinator for Health Information Technology: "The Meaningful Use Stage 2 final rules define a common dataset for all summary of care records, including an impressive array of structured and coded data to be formatted uniformly and sent securely during transitions of care, upon discharge, and to be shared with the patient themselves." These include demographics, diagnostic and procedure codes, medications and key intra-clinical team communications.

Stage 2 objectives require eligible providers (EPs) to:

- Use secure electronic messaging to communicate with patients on relevant health information

- Provide summary of care records electronically for transitions and referrals

- Record electronic notes in patient records

- Record patient family health history as structured data

While the importance of sharing data is clear to physicians, the cost – an increased need for structured electronic data – falls squarely on physicians in the form of increased clinical documentation requirements.

THE PROBLEM WITH POINT-AND-CLICK

Two issues – EHR usability, and the correlative yet competing need for both structured and unstructured data – have challenged the widely accepted belief that EHR ubiquity would lead to more complete patient records and better quality care.

A new study from Dartmouth College suggests that increasing EHR functionality might actually lead to declining clinical outcomes.[xi] The issue is usability.

"I think everybody realizes that there are some usability issues that have to be overcome," said researcher, M. Eric Johnson, director of the Glassmeyer/McNamee Center for Digital Strategies at Dartmouth's Tuck School of Business in Hanover, N.H.[xii] Johnson, who has been studying EHR usability for several years, notes that to meet federal certification criteria, EHRs need only to demonstrate functionality, not usability. But usability – specifically, the usability of point-and-click, structured templates – is particularly challenging for physicians documenting in the EHR. More important, however, is the potential effect on patient care of point-and-click documentation.

By forcing input of standardized terms or concepts, structured data entry eliminates variability in terminology, enabling system interoperability and supporting HIE. In addition, as a systematic process that ensures necessary steps are not skipped, structured input potentially leads to more captured data and, ultimately, better quality of care.

However, structured data entry has its disadvantages:

- It's slower. "Clicking or typing text multiple times is generally slower than dictating."[xiii] This, based on personal experience and discussion with more than 50 organizations, from Dr. David E. Trachtenbarg, medical director for information technology at Methodist Medical Center Family Practice in Peoria, III., and clinical professor of family medicine at the University of Illinois College of Medicine at Peoria.

- It can cause omission of critical data. A study comparing unrestricted physician dictations with structured EHR input in EHR showed that "clinically significant information can be omitted if physician communication is limited to the structured information within a standard electronic health record rather than a full dictation."[xv] Even in the most conservative analysis, more than 50% of notes contain one or more omissions of clinical data that experts agreed would have serious consequences for the care of the patient.[xvi]

EHR systems structure patient data into codified medical information that can be exchanged and analyzed, allowing software to provide intelligent support for patient care, medical billing and medical research. For this reason, hospital administrators and CIOs sometimes champion utilization of the EHR's structured documentation capabilities over narrative dictation and transcription.

Physicians, who struggle with capturing the complexity of patients' stories within checkbox templates, typically prefer traditional narrative dictation and transcription. For physicians, clinical communication is written or dictated. Unlike the structured data generated by EHR templates, the unstructured patient narrative captures nuances of care to capture the complete health story.

Jason S. Shapiro, MD of Columbia University's Department of Bioinformatics, who has researched methods to organize narrative clinical information in a taxonomy that makes it easier to be accessed, writes, "Much of the meaning and inference that can be gleaned by the clinician through the use of narrative is lost when a rigidly structured template is used, and the ability to communicate complex ideas in an efficient and fluid manner diminishes."[xvii] Template-based EHR systems may create the structured data needed to support consistent and accessible patient information, but they do not support the most informed clinical interpretation.

Clinical narrative also drives coding and billing. For years, systems to codify procedures (CPT codes) and diagnoses (ICD-9 and SNOMED) have supported billing initiatives. In the United States, CMS and more than 90% of all payers support the Encounter & Management (E&M) visit coding schema for physician reimbursement. To ensure maximum reimbursement, physicians must document fully the services they provide, but template-based HPI and medical decision-making documentation methods limit physicians' ability to document encounters accurately and comprehensively.

The limitations of templates will be more evident when U.S. healthcare adopts ICD-10. With significantly more codes than ICD-9-CM, ICD-10 will give physicians the ability to document at more granular levels. At the same time, ICD-10's complexity will challenge their ability to document patient episodes fully. To ensure appropriate reimbursement, ICD-10 calls for the highly specific, exhaustive and clearly recorded patient information contained in the narrative.

The problem is that both types of data – structured and unstructured – are immediately important to achieving Meaningful Use and, ultimately, important to ensuring safe, affordable care. In the Stage 2 final rule, the HIT Policy Committee stressed the importance of narrative – in the form of progress notes – because some certified EHRs lack "clinical documentation and because they believe that a complete record (including progress notes) is required to deliver high quality, efficient care."[xviii]

For physicians, however, the clinical narrative poses a dilemma. While it is the preferred method of clinical documentation, it can be a duplicative effort when the clinician is asked to generate or enter the discreet data in addition to the narrative content – especially if that data is contained in the narrative.

TRANSCRIPTION IS DEAD; LONG LIVE TRANSCRIPTION

There are a variety of ways to create and store the patient narrative. Physicians can type information directly into the notes section. They can dictate and have transcriptionists type the narrative into the notes section, or upload it from the transcription system to the correct section of the EHR. Or they can use speech recognition to create the narrative directly in the note section, eschewing typing or transcription altogether.

Several studies attest to the ongoing use of transcription: [xix]

- 53 percent of physicians reverted to dictation or handwriting and 18 percent stopped using the EHR completely one year after purchasing it.

- Nationwide, only 27 hospitals had a majority of physicians using structured templates for clinical documentation.

- Provider organizations actively attempting to eliminate transcription entirely, still use it 30 percent of the time.

- Even in hospitals that are almost completely automated, structured templates within the EHR were used only 35 percent, while dictation and transcription were used 62 percent.

However, there are downsides to typing and traditional dictation. Requiring physicians to type reduces their productivity – and profitability. Dictation and transcription reintroduce some of the costs EHRs are supposed to eliminate.

Speech recognition has some limitations, too. While it gives physicians the ability to document in free-text quickly and easily, which preserves the patient narrative, speech recognition must be combined with sophisticated extraction tools to create structured data for the EHR.

Today's healthcare organizations must find a way simultaneously to:

- Optimize physician workflows to ensure productivity

- Preserve the patient narrative to enhance the quality of care

- Create codified, structured, discrete data to populate and achieve Meaningful Use of the EHR

The solution: Speech-driven clinical documentation and clinical transcription solutions that capture the free-form patient narrative and transform it into structured data for the EHR – without disrupting physicians' workflow or increasing their documentation burden.

THE NUANCE HEALTHCARE SOLUTION

Natural language processing (NLP), an evolving technology, enables information extraction, the automatic identification of information in unstructured text, including techniques explored in clinical domains.[xx]

Nuance's Clinical Language Understanding (CLU) leverages advancements in NLP, medical Artificial Intelligence (AI) and speech recognition technology to extract patient information from free text

and to produce actionable data used to improve patient care and streamline workflow. Nuance solutions improve clinician satisfaction, improve care team efficiency, create higher-quality clinical documentation and, ultimately, improve patient care.

Nuance Solutions:

- Capture the patient story anywhere, any time and on any device in a physician's preferred clinical workflow, supporting their adoption of new technologies.

- Understand what is captured, with Nuance Healthcare's Clinical Language Understanding technology, to unlock and transform unstructured clinical data into actionable information.

- Use it for good by providing analytics and insight for clinical good, business good and, most of all, patient good across the healthcare enterprise.

Dragon® Medical 360 provides clinical documentation understanding solutions for over 300,000 physicians. This portfolio captures the physician narrative to document care in the EHR. It spans both front-end speech recognition and back-end computer aided medical transcription, and, when necessary, prompts physicians for additional information to improve the quality of documentation.

Nuance's solutions employ a CLU engine that extracts clinical facts from the voice or text narrative, then transforms them into codified standard terminology – while retaining the original captured story. Nuance's clinical understanding solutions integrate into clinical workflows and systems to allow clinicians to capture both narrative and structured data within their clinical documentation, in the manner they prefer – dictation, point-and-click, or speech recognition – on the device they choose.

Nuance solutions drive EHR adoption, support transition to ICD-10 and enable appropriate and timely reimbursement. Nuance Healthcare's speech-driven clinical understanding solutions are fully integrated with leading EHR and RIS/PACS solutions to streamline and automate clinical documentation workflow and improve the adoption of health information technology. Nuance Healthcare also provides world-class transcription and professional services.

As a member of the Health Story Project, a collaborative of healthcare vendors, providers and associations working to develop and promote data standards through HL7 that support the flow of information between narrative documents and electronic medical records, Nuance is helping create the complete patient health story by enriching EHRs with important information created through dictation and transcription. Using the HL7-approved Clinical Document Architecture (CDA), Health Story standards create structured narrative data by using XML to tag, sort and export transcribed narratives into EHRs.

CONCLUSION

The true value of EHRs rests in the discrete information they contain — not on physicians entering information discretely. Rather than restricting their input, NLP and data extraction allow physicians to focus on patient care, expressing themselves — clinically — with natural, unrestricted language.[xxi] Nuance Healthcare's speech recognition and CLU solutions help healthcare organizations achieve meaningful use and maximize the potential of their EHRs to improve clinical, operational and financial outcomes, while preserving the clinical narrative critical to optimum patient care. ∎

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