WHITE PAPER

How Stage 2 Meaningful Use Certification Will Enhance Clinical Data Interoperability with the Emergency Department

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One of the greatest challenges for hospitals with best-of-breed electronic health records (EHRs) is interoperability of clinical information between the best-of-breed system and the enterprise EHR. Today, enterprise vendors make it difficult for hospitals using a best-of-breed emergency department information system (EDIS) to share information in a discrete, codified fashion as well as expensive to implement and maintain interfaces. However, selecting an EDIS that is specially designed to support the ED's unique workflow is critical; and Meaningful Use Stage 2 requirements enhance interoperability standards, which will make it easier than ever for hospitals to implement best-of-breed solutions that are most suited for the ED.

Interoperability Today Requires Expensive HL7 Interfacing

Today, the vast majority of enterprise EHRs do not support bidirectional medication or problem list interoperability, though some support allergy sharing. Several factors lead to difficulty in sharing information; for example, the lack of an HL7 message type for medications and multiple versions of HL7 in the field (e.g., 2.3.1 and 2.5). Another factor is the lack of implemented and standard meta data encoding. Medications are frequently stored with the encoding of the integrated drug knowledge base in the EHR, of which there are several. Recent advances with RxNorm and crosswalk tables from disparate drug knowledge bases and National Drug Codes (NDCs) are helping to slowly ease this problem. But interface development and maintenance costs are frequently prohibitive — often to the benefit of the enterprise vendor whose business goal is to sell its solutions in every hospital department, keeping out best-of-breed vendors. Meaningful Use Stage 1 helped to address interoperability challenges by requiring vendors to produce electronic documents with standardized encoded medications, allergies and problems list elements.

That said, Meaningful Use Stage 1 lacks several requirements that would make interoperability of these documents relevant for the hospital. First, vendors have the option of producing only one of a variety of Continuity of Care Document (CCD) or Continuity of Care Record (CCR) formatted documents. Second, vendors are not required to support any transport standard. Hospitals also are not required to share these documents between systems, instead attempting only one test of sharing; and failure to connect to another system is acceptable to meet this measure. Last, the required elements of the CCD or CCR are only a subset of clinically relevant items.

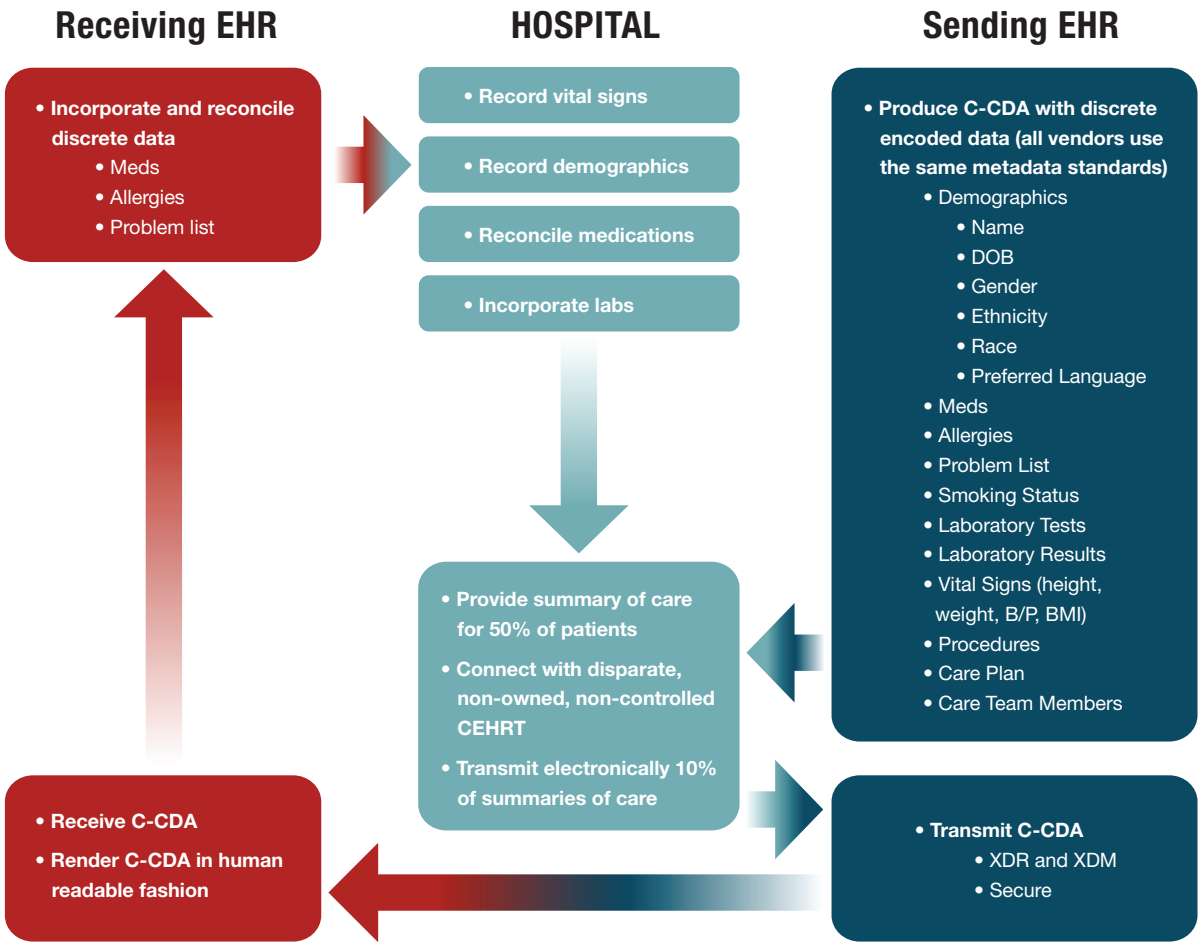
Stage 2 Meaningful Use Changes the Game, Creates True Interoperability for Meds, Allergies and Problem Lists

Stage 2 Meaningful Use, however, addresses all of these shortcomings and more. Since all hospitals meeting any stage of Meaningful Use after Sept. 30, 2013 must have vendor products certified against 2014 standards, hospitals will be able to reap the benefits of the Stage 2 changes, even if they are attesting for Stage 1. Essentially, these changes have "leveled the playing field."

To achieve 2014 certification, vendors will be required to use a single standard for electronic data sharing – the consolidated CDA (C-CDA). Each data element in the C-CDA will have a well-defined single standard for encoding. In addition, the required elements in the C-CDA have been expanded significantly and include many of the clinical elements that, when shared between systems, will positively affect transition of care workflow, patient safety and staff satisfaction. Duplicate documentation for many clinical elements can be eliminated. As well, vendors will be required to reconcile medications, allergies and problem list elements as structured data from C-CDAs received. Importantly, transmission standards for the C-CDA are well defined and do not include HL7. Instead, XDM and XDR web-based standards will

require vendors to support point-to-point transmission of electronic documents without requiring unique and costly interface development and maintenance. In short, EHR solutions certified for data sharing will produce, transmit, receive and reconcile data contained in a single electronic document type, encoded in a uniform fashion regardless of vendor/product, and transmitted in a fashion that is cheaper and easier than HL7.

The following diagram illustrates the interplay of these dramatic improvements fueled by Stage 2 Meaningful Use and 2014 certification criteria.



The "All ED Patients" Attestation Strategy for Stage 2

With the requirement that hospitals electronically transmit C-CDA documents for 10 percent of the transitions of care within the hospital, inter-system discrete encoded data sharing will become a reality. Vendors will need to provide the configurability to implement the XDM, XDR and web content accessibility (WCAG). Fortunately, configuring products with permissions to support this information transfer is significantly faster and dramatically less expensive than traditional HL7 interfaces.

The transition of care as defined by the Centers for Medicare and Medicaid Services (CMS) for hospital Meaningful Use include all discharges from the hospital for which follow-up care is expected. As many hospitals have experienced, using

all ED patients in their Meaningful Use attestation has led to threshold achievement, reduction of risk for the failure of the inpatient system implementation or adoption, and faster time to success. Hospitals are eligible to use this method of determining ED patients in Meaningful Use denominators, or the observation method in which only ED patients admitted or placed in observation are counted in denominators. Hospitals may also switch methods year to year, and they do not have to declare their method until attestation. Leveraging the "all ED patients" method provides an opportunity for the hospital to export C-CDA documents from its EDIS. As the ED represents the majority of patient contacts and discharges in the hospital, using the all ED patients method and exporting documents electronically from the EDIS streamlines threshold success.

Despite the fact that CMS does not consider the ED-to-inpatient movement a "transition of care" for Meaningful Use, the Meaningful Use interoperability standards allow information sharing between disparate systems, regardless of their physical location, ownership or function. This provides an opportunity for hospitals to connect systems within the enterprise as well, allowing clinicians to utilize best-of-breed systems designed to support the unique clinical and business needs of specialty departments. The benefits extend to the enterprise with improved throughput, cost containment and increased provider and patient satisfaction.

2014 Eliminates the Need for Complex Interfaces

In summary, as of Oct. 1, 2013, many hospitals will have deployed 2014 Meaningful Use-certified EHR systems. These systems, if certified for medication reconciliation and summary of care measures, will provide functionality that supports:

- The production of a C-CDA for all patient visits with robust, encoded clinical data elements
- The transmission of C-CDA documents using a single transport mechanism that supports web-based transport across dissimilar domains
- The ability to receive C-CDAs from other EHR systems
- The import and reconciliation of discrete data from C-CDA documents with single, well-defined encoding of individual elements. At a minimum, this will include medications, allergies and the problem list.

This functionality will allow hospitals to connect dissimilar systems, share and incorporate data without the complex and costly HL7 interfaces.