

# HOSPITAL QUALITY REPORTING: THE HIDDEN REQUIREMENTS OF MEANINGFUL USE

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- Hospitals must report on 15 required quality measures for Stage 1, using the certified EHR to not only capture all of the necessary data, but also calculate and report results for all patients.
- Simply meeting the Stage 1 functional requirements for data capture in meaningful use will only cover 35 percent of the unique data elements needed for the 15 required quality measures.
- The biggest challenge involving the rest of the data elements is that they require physician documentation and electronic medication administration, not just in the hospital, but also in the ED.
- These are the hidden functional requirements of Stage 1 meaningful use.

## Introduction

**“Certified EHR technology used in a meaningful way by providers is one piece of a broader HIT infrastructure needed to reform the health care system and improve health care quality, efficiency, and patient safety. “**

*CMS Interim Final Rule, December 30, 2009*

The American Recovery and Reinvestment Act of 2009 includes incentive payments for hospitals and physician practices that can demonstrate “Meaningful Use” of certified electronic health record (EHR) technology. Given the orientation of the program as an investment in improving health care, the focus on using the EHR to enable performance monitoring, performance improvement and external reporting of performance measures is not surprising. In fact, quality reporting is one of a small number of specific EHR functions mentioned in the original legislation. The final rule for meaningful use incentives for 2011 and 2012 was released on July 13, 2010.

Much attention has been paid to some of the explicit data capture requirements for meaningful use — Computerized Physician Order Entry (CPOE) in particular — because so much work lies ahead for most U.S. hospitals to implement these functions. However, we believe that **the quality reporting requirements for Stage 1**, the first increment of meaningful use to be achieved, **will be equally challenging**.

### The requirements for hospital quality reporting to achieve meaningful use — Final Rule

- For Stage 1 for hospitals, a set of 15 measures is specified for both the Medicare and Medicaid incentive programs. (Many more measures will be included in Stages 2 and 3, magnifying the challenges hospital face with Stage 1.)
- Hospitals are required to report on all quality measures for all patients regardless of payer, even if they do not have applicable patients.
- For each hospital's first reporting year, the measurement reporting period is three consecutive months; for subsequent reporting years, the period is a year.
- Hospitals will submit aggregate information for each measure in payment year 2011.
- As part of the submission, hospitals will attest to the **use of certified EHR technology to capture the data elements and calculate the results for the applicable quality measures**. They will also attest to the accuracy and completeness of the numerators, denominators and exclusions for each measure.
- In the 2012 payment year, hospitals will be required to submit the summary information electronically from the EHR.
- Hospitals participating in the Medicaid and/or Medicare incentive program will submit information to the Center for Medicare and Medicaid Services. Hospitals only eligible for the Medicaid incentive will submit information to the state in conformance with the state's Medicaid HIT plan.

To gain a deeper understanding of what it will take to capture the data, we deconstructed the 15 measures to examine the set of unique data elements. Based on the specifications for each measure and related data dictionaries, each data element was assigned to a source within the EHR. The sources incorporate core hospital applications such as registration/Admission/Discharge/Transfer (reg A/D/T) and laboratory system; the specific functional requirements for Stage 1 meaningful use such as CPOE, problem list and allergy list; and, for other data capture, the typical inpatient EHR modules (e.g., Medication Administration Record, physician documentation, discharge instructions).

Measure specifications are very clear when physician documentation (or that of an advanced practice nurse or other clinician with appropriate scope of practice) is the only accepted source of information for a particular data element, although a range of types of documentation is allowed (history and physical documentation, as well as progress, consult and operative notes). In the deconstruction of measures, all such data elements were assigned to the general category of physician documentation. For example, one of the exclusions for many of the required measures is **Comfort Measures Only – Documented**. The specification calls for “Physician/advanced practice nurse/physician assistant documentation of comfort measures only”; the possible data sources include admitting physician orders, consultation notes, discharge summary, emergency department (ED) record, history and physical, physician admitting note, physician orders, and progress notes.

This white paper shares what we learned from analyzing the deconstructed measures to help answer the following questions:

- What types of medical record information are required for the set of measures?
- How many of the data elements are captured by hospital core systems?
- How much of the needed information will be available once the hospital has met all of the Stage 1 functional requirements?
- Beyond explicit Stage 1 functional Requirements, what else is needed?



### **What Types of Medical Record Information Are Required?**

At first glance, today’s quality measures appear to be simple percentage calculations. However, as the quality nurses and other hospital staff who must assemble the information know all too well, each measure includes a number of different pieces of information in the numerator and denominator to:

1. Determine which patients to include in the population (inclusion criteria).
2. Determine which patients from the population should be excluded from the particular measure (exclusion criteria)
3. Determine if the recommended care was given or desired health outcome achieved (the outcome).

(Measure developers include the outcome in the inclusion criteria – the eventual numerator. In our analysis, we identified the specific data elements required to substantiate the outcome separately because strategies for data capture and employing clinical decision support would likely be different.)

## DATA ELEMENTS NEEDED FOR:

### 1. Inclusion

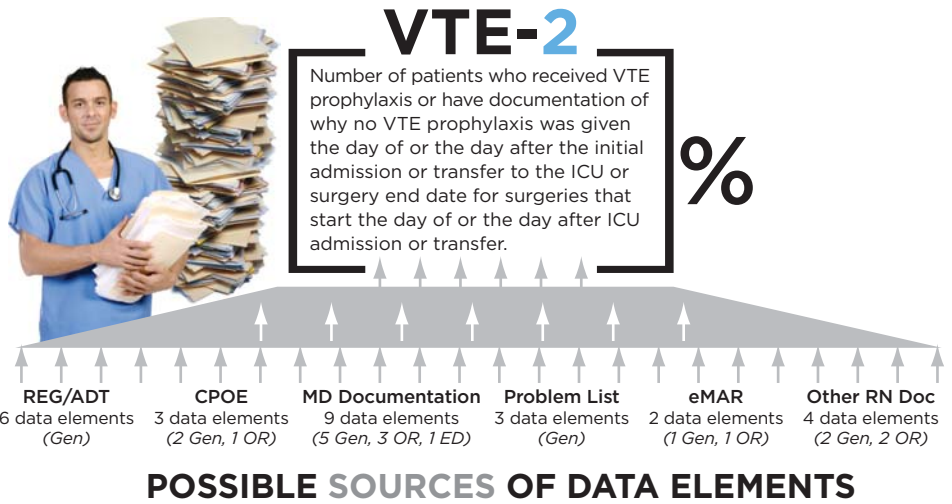
- Anesthesia start date
- Surgery end date
- Targeted surgical procedure code

### 2. Outcome

- VTE prophylaxis-pharmacologic-surgical patient
- VTE prophylaxis-pharmacologic-non-surgical patient
- VTE prophylaxis-mechanical-surgical patient
- VTE prophylaxis-mechanical-non-surgical patient
- VTE prophylaxis date-pharmacologic-surgical patient
- VTE prophylaxis date-pharmacologic-non-surgical patient
- VTE prophylaxis date-mechanical-non-surgical patient
- VTE prophylaxis date-mechanical-surgical patient

### 3. Exclusion

- Admission date
- Birth date
- Clinical trial relevant to measure
- Comfort measures only – order
- Comfort measures only – documented
- Discharge date
- Diagnosis of obstetrics
- Diagnosis of stroke
- Diagnosis of VTE
- SCIP surgical procedure code
- Reason for no VTE prophylaxis – non-surgical patient
- Reason for no VTE prophylaxis – surgical patient
- ICU admission date
- ICU admission or transfer
- ICU discharge date



Data Elements Needed for Inclusion and Exclusion Criteria and Measure Outcomes	
Usage	% of Data Elements
Inclusion	20%
Exclusion	42%
Outcome	38%

Requirements for Data Elements Needed for Stage 1 Meaningful Use Quality Measures Relating to Care Delivered in the Emergency Department and Surgical Suite	
Care Location	% of Data Elements
Surgical Suite	9%
Emergency Department	14%
All Other	77%

As can be seen in the deconstruction of the measure about venous thromboembolism (VTE) prophylaxis shown above, far more information is needed for exclusion criteria than for inclusion criteria or the outcome. In the set of 15 hospital measures for HITECH Stage 1, exclusions account for 42 percent of the required data elements. Although these data elements increase the clinical validity of the measure by excluding, for example in the VTE measure, patients receiving comfort measures or enrolled in a relevant clinical trial, they add considerably to the challenge of ensuring that all of the necessary information is available in the EHR.

Six different sources provide the information needed for the example VTE measure, as shown. In addition, this measure is one of several that addresses both care in the emergency department and care once the patient has been admitted, or care both on the acute care units and in the surgical suite. One of the noteworthy changes in the final rule issued in July 2010 is the addition of the ED to the scope of the data capture requirements for Stage 1. This expansion was not anticipated by members of the hospital community in initial planning for meaningful use. According to HIMSS Analytics, 36 percent of hospitals lack any Emergency Department Information System (EDIS).<sup>1</sup> Even in the 64 percent with an EDIS, it is not clear that all of the clinical information needed is captured and can be integrated with information regarding inpatient care for purposes of quality reporting.

Only two of the required hospital quality measures deal exclusively with care delivered in the ED to patients ultimately admitted to the hospital for inpatient care. However, in many hospitals a large number of admitted patients are first seen in the ED, and a number of the measures include data elements likely to be captured at that time. In addition, several measures require information about care during a patient's stay in the surgical suite. Many hospitals use standalone clinical software in these care areas or may lack clinical IT altogether. Our analysis shows that about 23 percent of the data elements originate in documentation of care in these areas, which will add to the challenge in any hospital that does not already have integrated, clinical software throughout the hospital that includes these areas.

### How Many of the Data Elements Are Captured by Hospital Core Systems?

Today virtually every hospital in the U.S. has software supporting registration and A/D/T (95 percent and 96 percent, respectively, according to the HIMSS Analytics Database for 2009<sup>2</sup>). Therefore, it was important to understand how much these sources can be expected to contribute. (Admittedly, the hospital will still need to have these data elements available in the "certified EHR," but at least the data are already captured.)

Core Hospital Systems - Contribution to Data Elements Needed for Stage 1 Meaningful Use Quality Measures	
Application	% of Data Elements
Registration/ADT	15%
Laboratory	3%
<b>Total</b>	<b>18%</b>

Registration and A/D/T can be expected to provide about 15 percent of the data elements for the required measures. Many of these relate to non-clinical details concerning the hospital stay (e.g., admission date, intra-hospital transfer history) and patient birthdate. Information such as laboratory test results or the date/time of testing that could be found in the laboratory information system accounts for about 3 percent of the information.

The bottom line is that in hospitals in which the inpatient EHR is just beginning to be rolled out, 82 percent of the data needed still reside in paper medical records.

### How Many of the Data Elements Will Be Available Electronically Once the Hospital Has Met Stage 1 Functional Requirements?

Meaningful use for Stage 1 requires implementation of CPOE for 30 percent of patients for medications only; constantly maintained problem, medication and allergy lists for 80 percent of patients; and electronic documentation of vital signs. In many hospitals, accomplishing all of this by 2011 or 2012 will be a big stretch, since only 17 percent of hospitals have implemented CPOE for medications and only 27 percent have an electronic inpatient problem list.<sup>3</sup> If these applications are added to the core hospital systems and are in widespread use, however, will all of the data requirements for quality reporting be met?

The Stage 1 requirements will capture more of the needed information, **provided that the functions are implemented for all patients** (e.g., problem and allergy lists for all patients). The problem list (if it actually reflects all current and **relevant** historical conditions, as defined for meaningful use) covers almost 11 percent of the necessary data elements. (As shown in the example above, measure specifications and data dictionaries are quite clear that this must be a physician-managed problem list.)

Once the other explicit functional requirements for data capture in Stage 1 have been met, the total new contribution at this point amounts to only 17 percent.

Contribution of Explicit Data Capture Requirements for Stage 1 Meaningful Use to Data Elements Needed for Hospital Quality Measures	
Application	% of Data Elements
CPOE (meds only)	2%
Allergy List	4%
Problem List	11%
Vital Signs	0%
<b>Total</b>	<b>17%</b>

When this is added to the 18 percent provided by hospital core systems, the troubling conclusion is that **the EHR will still only be able to provide about 35 percent of the electronic data needed for hospital quality reporting for Stage 1.**

### **Beyond Explicit Stage 1 Functional Requirements, What Else Is Needed?**

From the standpoint of capturing the data needed for quality measures, CPOE for non-medication orders is needed more than for medication orders. As shown, 6 percent of the remaining data elements come from this source.

Both physician documentation and medication administration are also major “hidden” data capture requirements, providing 42 percent of the data elements. Further, 30 percent of data elements from physician documentation and 10 percent of those from medication administration may come from the ED or surgical suite, depending upon the course of care during the patient’s stay.

Another significant remaining data capture gap is other nursing documentation (i.e., other than vital signs or medication administration). The specific data elements document patient education and nursing tasks primarily for use in the measures involving VTE prophylaxis, both within and outside of the surgical suite.

Data Capture Needed Beyond the Explicit Requirements for Stage 1 Meaningful Use for Hospitals	
<i>Application</i>	<i>% of Data Elements</i>
CPOE (other than meds)	8%
MD Documentation	29%
Med Administration	13%
Other RN Doc*	6%
Discharge Instructions	8%
Med List	1%
Other Doc (PT/OT)	1%
<b>Total</b>	<b>64%</b>

The most problematic of these “hidden” requirements is undoubtedly the need for physician documentation and medication administration in addition to the other software upgrades and application roll-outs already in the queue for Stage 1 meaningful use. The gap is significant; according to one recent survey, only 12 percent of U.S. hospitals have implemented electronic physician notes.<sup>4</sup> Because data elements for quality reporting must be structured (coded), even many of these early adopters are likely to require some optimization of current practices in order to capture the necessary information.

### **Implications and Recommendations**

Even after hospitals have met the explicit Stage 1 meaningful use requirements, there will be many gaps between what data elements are available electronically and what is needed to meet the requirement for quality reporting from the EHR.

Before finalizing plans to achieve meaningful use, it is important to gain a real understanding of the data that are combined into quality measures because many must be based on documentation by physicians (or by equivalently licensed clinicians such as advanced practice nurses or pharmacists in some cases). Physician documentation is very challenging because there is relatively little experience in the industry (compared with CPOE or nursing documentation, for example). In addition, quality reporting requires moving from free text to structured information provided by very busy clinicians who can ill afford increasing the time they must devote to the task.

A minimalist approach to Stage 1 meaningful use will not position any hospital for the future. Stages 2 and 3 of HITECH meaningful use will include many more measures and possibly also performance thresholds. At the same time, health care reform is accelerating the linkage between measured performance and reimbursement. The fact that quality measures for meaningful use include all patients regardless of insurance will not be missed by other health plans. Hospitals should expect demands for direct electronic quality reporting from the EHR to be coming from them soon.

In short, meeting the quality reporting requirements for meaningful use isn’t just a project aimed at the HITECH incentives. It is the future.



## References

- 1 HIMSS Analytics, The State of U.S. Hospitals Relative to Achieving Meaningful Use, 2009.
- 2 Ibid.
- 3 Use of electronic health records in U.S. hospitals. *New England Journal of Medicine*, April 2009.
- 4 Ibid.

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