

HIT Policy Committee – October 27, 2009
Comments for Registries and Quality Measures Panel
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The Committee is considering the current and potential future states for collection of performance measures, preferably electronically, with transmission to local, state, and national registries. For the purposes of this testimony, I define a registry to be a list of patients, sharing some set of common characteristics, along with some relevant details about those patients. For example, a diabetes registry would include a list of patients with the diagnosis of diabetes, along with details like HbA1c results, blood pressures, medications, etc. Registries may be used to assess and improve care for populations of patients, but also to produce accountability measures that may be used for accreditation, pay-for-performance, and public reporting. When data from multiple institutions are combined and compared, they must be standardized in format, content, coding, and semantics.

In the current state, health systems like Partners participate in several national registries such as the Society for Thoracic Surgery cardiac surgery database, the American College of Cardiology cardiac interventions database, the Joint Commission's National Hospital Quality Measures, the National Surgery Quality Improvement Program, and the American Nursing Association National Database of Nursing Quality Indicators. Data collection for these registries is a mix of electronic and manual abstraction, but all require considerable manual effort. In addition, there are a number of local institutional databases (registries) for conditions like heart failure, diabetes, and smoking. These registries rely much more extensively on electronically available data, but their intended use is different—to help understand and to provide better care to specific populations of patients.

With regard to quality measures that pertain to specialists, we also develop measures for internal use—these may be informed by published measure sets, but are more likely to be defined by clinical leaders, informed by the reality of what data is actually available in analytic databases, such as the Quality Data Warehouse, which I manage. An example of such a measure, for gastroenterologists, would be the percentage of patients with inflammatory bowel disease, who take 6-mercaptopurine, who are getting appropriate blood testing.

What I would like to focus on for the remainder of my testimony is to review the steps required to produce a measure from our electronic systems. As you know a measure has a numerator and denominator, as well as denominator exclusions. The following must be in place to produce the measure and transmit it to a registry:

1. *Capture data in electronic systems*

The data elements must exist or be added (for example, in the Meaningful Use measure related to smoking cessation counseling, the provision of counseling must be documented in the electronic health record). In addition, coding standards must be considered, especially if data is to be interoperable outside the institution. Ideally, data should be complete, accurate, and coded. And, codes should be consistently applied by individual users and across different sites. This is especially important if data or measures will be submitted to registries

and compared with other sites/users. In the example cited above (monitoring of 6-mercaptopurine therapy for IBD), it turns out that nearly ½ the time, patients get their blood tests at labs outside our institution. Thus, a measure that does not account for these outside labs may not be meaningful or comparable with other institutions.

2. *Make data available for reporting*

Reporting measures may take place directly from the EMR, but in many cases, as at Partners, data will be extracted to a data mart or data warehouse first. The extraction process may involve some cleaning and transformation of the data, e.g. standardizing units, mapping codes, removing or reviewing spurious values.

3. *Link data from multiple systems*

In some, if not most cases, in order to produce a measure, it will be necessary to combine data from multiple sources, i.e. not just the EMR. For example, calculating the percentage of hypertensive patients with BP under control may require ICD-9 codes (billing data) and patient demographics to define the denominator and blood pressure values to define the numerator. In addition, visit (schedule) information may be required to refine the denominator to include only individuals with at least one outpatient encounter during the first six months of the measurement year (NCQA). Where data must be linked from multiple sources, extraction of EMR data (and other data) to a data warehouse is a likely intermediate step.

4. *Produce the measure, applying required formats and codes where necessary*

Measures must be calculated and expressed in standardized ways if they are to be interoperable (combinable and comparable) with other institutions.

5. *Transmit the measure to a local, regional, or national registry*

Transmission must take place by specified protocols and mechanisms, e.g. XML.

In summary, in the current state, producing measures for internal use or for larger registries often relies on chart abstraction and manual processes. To automate these processes, as required under meaningful use, requires a number of steps, each of which must work correctly and each of which provides an opportunity for degradation or failure of the measurement process.

- EMR must provide functionality to capture the necessary data for numerator, denominator, and denominator exclusions.
- Clinicians must effectively use that functionality and use it in a consistent way.
- Data must be made available for reporting, either from the EMR directly, or more likely, from a data mart or data warehouse that allows for combining data from multiple sources.
- Where data is incomplete or invalid or codes not applied consistently, measures will not be valid.
- Measures must be calculated.
- Measures must be transmitted to appropriate registries.

I encourage the Committee to consider how the broad range of eligible providers and institutions are currently positioned to carry out these processes in a meaningful way and what kinds of infrastructure they will need to put into place to do so.