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FOR

US DEPARTMENT OF HEALTH AND HUMAN SERVICES
OFFICE OF NATIONAL COORDINATOR FOR HEALTH INFORMATION TECHNOLOGY
HEALTH INFORMATION TECHNOLOGY POLICY COMMITTEE (HITPC)
MEANINGFUL USE WORKGROUP AND CERTIFICATION AND ADOPTION WORKGROUP

Panel 3: Role of Clinical Documentation for Clinical Quality Measurement

FEBRUARY 13, 2013

In order to better inform the Meaningful Use Program, National Quality Forum (NQF) was asked to provide testimony on the role of clinical documentation functionality in electronic health records (EHRs) and its affect on the delivery of high quality clinical care. Specifically, NQF was asked to respond to the following questions:

1. Describe the disconnect between data needed for secondary use and data collected in an EHR (clinical documentation). What challenges do you face and what solutions have you identified to overcome them so that you can use data collected by providers in an EHR?
2. Privacy policies vary from state to state and for instance in public health, among communicable diseases. What impact does this have on capturing data for secondary use?
3. Discuss the role of inference in capturing data for secondary use of data (i.e. using data from clinical notes to infer a condition, etc.).
4. How has / can technology evolve to capture data for multiple purposes that does not always directly benefit the patient and the provider?
5. How do you use data to address dynamic data needs? (i.e. influenza breakout, etc.)
6. What policies have your implemented to streamline the data coordination process?

NQF appreciates the opportunity to provide testimony to the Health Information Technology Policy Committee (HITPC) Meaningful Use Workgroup and Certification and Adoption Workgroup for the Clinical Quality Hearing. We stand ready and willing to work with you to help ensure quality is improved and costs are reduced across the health system through interoperability using a robust data platform to directly measure and improve health. NQF will respond to three of the questions that are pertinent to NQF's role in quality measurement.

1. Describe the disconnect between data needed for secondary use and data collected in an EHR (clinical documentation). What challenges do you face and what solutions have you identified to overcome them so that you can use data collected by providers in an EHR?

When data necessary for quality measurement are captured as a byproduct of care delivery, and when those data are easily shared between health information technology (IT) systems, care can be better coordinated, and is safer, more efficient, and of higher quality. Ideally, the nation will achieve the National Quality Strategy by taking full advantage of the EHR to capture high-quality clinical data to improve quality. For instance, the use of diagnoses from a problem list, rather than billing data, should increase reliable and valid identification of target populations. Furthermore, EHRs should support actionable real-time information for improvement. Interoperable systems should allow us to track patients across sites of care. They should also provide portals for patients to self-report medication use, outcomes, and experience. It has long been held that EHR data can be used beyond direct patient care for secondary use to enhance chronic disease management, prevention, and clinical quality measurement.

Through NQF's eMeasure Learning Collaborative, measure developers, federal agencies, health information technology vendors, providers, payers, and other stakeholders convened to discuss

challenges, identify recommendations, and share best practices related to the efficient and effective use of data for electronic performance measurement. Challenges and solutions shared during the eMeasure Learning Collaborative sessions, as well as NQF participation in MU Stage 2 Clinical Quality Measures (CQMs) rollout serve as input into this testimony. An underlying factor of the main disconnect between "data needed for secondary use and data collected in an EHR" is the evolving paradigm shift in the purpose of the EHR. In addition to being a tool to "support clinical tasks, data entry practices, and care delivery"[1] , the EHR is now a tool to support quality measurement, reporting, and improvement. This poignantly illustrates the paradigm shift, from a focus on individual patient care to chronic disease management and performance measurement. Successful development and use of the EHR is contingent on tight collaboration between three sciences: quality measurement, informatics, and process re-engineering. For this reason, alignment across all three aforementioned scientific areas is needed, in order to facilitate effective use of electronic documentation for both primary and secondary data use.

Data collected in an EHR are often identified by local, idiosyncratic, and sometimes redundant and/or ambiguous names (or codes) rather than unique, well-organized codes from standard code systems. Without standardized dialogue boxes, drop-down lists, or other pre-defined menu options, there is no consistency in the content captured in free-text fields. As such, comparisons of entries across patients, providers, or other systems are exceedingly challenging and even with the use of sophisticated coding tools and analytics to interpret the underlying content, may be inaccurate.

All too often patient's medical information is inconsistently stored[2] – many times in multiple locations, within disparate systems that are not interoperable and frequently in free text fields which results in under reporting of performance[3]. As a consequence, facilities and vendors resort to inefficient processes to clean the data after care is provided. As an example, clinical quality measures require principal diagnosis, which is typically confirmed after inpatient discharge and stored in claims data outside of the EHR. In order to align quality reporting with clinical documentation contained within the EHR, efforts are underway to determine the most appropriate diagnosis (such as discharge diagnosis), that preserves the semantic meaning of the measure and can also be structured within the EHR for capture as a byproduct of care delivery.

In other situations, there are incongruences between data needed for quality measures and the corresponding data available in EHRs. For instance, a quality measure may contain one data element that maps to multiple data elements within the EHR, forcing vendors and providers to map data, thereby increasing variability in quality reporting across sites. At times, there may be different SNOMED codes

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[1] Tolar M, Balka E. Caring for individual patients and beyond: Enhancing care through secondary use of data in a general practice setting. *International Journal of Medical Informatics* (2012). 81 (7): 461-474.
[2] S Abhyankar, D Demner-Fushman, et al. Standardizing clinical laboratory data for secondary use. *Journal of Biomedical Informatics* (2012). 45(4): 642-650.
[3] US Department of Health and Human Services. Office of the National Coordinator for Health Information Technology. Strategic Health IT Advanced Research Projects (SHARP). 2011 Annual Progress Report. Area 4: Secondary Use of EHR data (SHARPn) Program. Available at: http://informatics.mayo.edu/sharp/images/5/51/SHARP_Annual_Report_2011_Final.pdf.

for the same concept (some are pre-coordinated and others are post-coordinated). This creates variability in vendor and provider interpretation and usage of these codes for quality measurement and may impact the validity of the quality measure. However, efforts underway by the National Library of Medicine's (NLMs) Value Set Authority Center (VSAC) will alleviate these issues.

Some quality measures use denominator exceptions to remove patients or events from the denominator only if the numerator interventions or outcomes are not met. These exceptions are used to allow providers to exercise clinical judgment and make decisions about care individually for each patient in cases where they do not meet the strict requirements of the guideline on which the measure is based. For instance, "discharge medication order not done along with a reason" (either medical, patient or system reason), is a denominator exception for six of the MU Stage 2 measures. However, exception logic is not frequently captured as a normal byproduct of care delivery. This requires additional data entry on the part of the clinician or use of electronic documentation logic to alert the clinician and if possible extract exception reason logic from existing clinical documentation data. Another example is clinical trials. Some quality measures require data that the patient is on a clinical trial (for which there is a SNOMED code), but in addition requires the reason the patient is on the clinical trial (disease process). This information is not typically captured as a byproduct of documentation but may require data from other electronic systems. Existing efforts underway to standardize the capture of exception data will require more granular representation of data supported by SNOMED, the Quality Data Model (QDM) and the Quality Data Reporting Architecture (QRDA). This will require electronic interfaces, more granular capture at the point of care, and potentially post coordination of data to link clinical trial SNOMED codes with the disease code. The capture of more granular exceptions increases documentation burden for clinicians at the point of care. Careful consideration of the costs of capturing data compared to the return on investment is needed. Research is needed to assess whether the increase in data (and data granularity with an increase in data attributes) is worth the potential increase in eMeasure implementation costs because validity and reliability of measurement is improved.

A recent study at a community health center (CHC)[4] attempted to identify and address these disconnects head on. Some of the solutions they implemented included documenting changes in work practices of the personnel necessary to make EHR data useful for secondary purposes. As a result of these changes researchers observed that work practices included the completion of additional tasks by clinical and administrative personnel related to follow-up tasks to support secondary data use. Among physicians, it was noticed that there was an increased awareness of specific initiatives and guideline compliance in terms of chronic disease management and prevention. Measurement should be better incorporated into clinician workflow so that important data are captured during care. Clinicians should not be pushed into electronic workflows that do not fit the flow of patient care for the sake of measurement. Measure development should include measure developers, EHR vendors, and clinicians to ensure that structured data fits clinical workflow.

[4] Tolar M, Balka E. Caring for individual patients and beyond: Enhancing care through secondary use of data in a general practice setting. International Journal of Medical Informatics (2012). 81 (7): 461-474.

3. Discuss the role of inference in capturing data for secondary use of data (i.e. using data from clinical notes to infer a condition, etc.).

The patient problem list is an important component of care delivery, enabling decision support and quality measurement. Studies demonstrate that up to 22% of electronic decision support rules depend on coded patient problems. An accurate, complete, coded problem list is also critical for quality measurement and research. However, input from attendees of the eMeasure Learning Collaborative revealed that the EHR problem list is often incomplete or fails to contain the level of specificity needed for care delivery or quality measurement. This is supported in the literature[5]. Researchers have begun to explore methods for inferring patient problems, based on findings and clinical documentation, to guide clinicians in documentation of problems.

Building on this, research at Partners is underway to explore and develop data mining techniques to automatically identify associations between problems and structured non-problem data in the EHR (medications and lab results in this analysis). The team's goal was to develop a knowledge base of medication-problem and laboratory result-problem associations in an automated fashion using data mining techniques, and to evaluate it. This knowledge base would have a variety of applications, foremost among them inferring clinical problems. Their findings showed the associations were nearly 90% accurate for medications and 50% accurate for problems suggesting that, with some appropriate manual review, one could consider implementing them as rules in a clinical information system. The results in both cases appeared to have reasonable positive predictive value, which would be important for any clinical decision support system.

6. What policies have you implemented to streamline the data coordination process?

A recent study at a community health center (CHC)[6] attempted to identify and address these disconnects head on. Some of the best practices include: (1) specific areas of focus have to be chosen for secondary data use; (2) initiatives have to be continuously evaluated and adapted to the workflow through a team approach; (3) collaboration between IT support and physicians is necessary to tailor the software to allow for the collection of clinically relevant data; (4) data entry procedures may have to be changed to encourage the usage of an agreed-upon coding scheme, required for meaningful use of secondary data; and (5) resources in terms of additional personnel or dedicated time are necessary to keep up with data collection and other tasks required as a pre-condition to secondary use of data, communication of the results to the clinic, and eventual re-evaluation . In addition to logic clarification and explanation on consistent use, episode of care, keeping problem lists up-to-date, a focus on whether an order was completed as opposed to ordered, and the need for documentation systems to support this.

As individuals, providers differ considerably in their use of EHRs leading to a highly inconsistent application of structured data capture across providers and provider institutions. Sometimes this

[5] Wright A, Chen ES, et al. An automated technique for identifying associations between medications, laboratory results and problems. Journal of Biomedical Informatics, Volume 43, Issue 6, December 2010, Pages 891–901.
[6] Ibid

inconsistency results from organizational policy or processes. For example, given the huge array of data, institutions prioritize the standardized capture and use of certain data elements over others, but this prioritization likely will not be consistent across organizations.

Organizational leadership plays a pivotal role in eMeasure implementation success. Providers, who shared their experiences during eMeasure Learning Collaborative meetings, identified the need for leadership teams who infuse eMeasurement into the entire spectrum of professional practice, not just health IT. Clinician-led organizational leadership was identified as one of the infrastructure components critical to successful adoption of eMeasures. Successful sites have clinician-led leadership teams who identify inter-professional stakeholders and engage them early and often so all decisions are informed by those providing care. They also start with a small, committed group who understand eMeasurement challenges. Sites who presented use cases all have a corporate-wide strategy and plan for data standardization, so every decision during implementation of eMeasures is guided by both national recommendations as well as the organization's enterprise-wide data standardization plan. Some sites are fortunate enough to have simulation centers with databases containing de-identified patient data. These data are used to test eMeasure creation, starting with data capture at the point of care through generation of electronic quality reports.

Once the leadership team is formed, successful implementation sites form an inter-professional team focused on implementation of eMeasures, including data capture, workflow processes, Clinical Decision Support (CDS), reporting, and evidence-based practice. The use of two parallel teams (leadership and professional practice) was identified as an important best practice.

When deciding on which measures to implement, the sites engage input from clinicians providing care. Meaningful involvement requires allowing sufficient time for the inter-professional team to think about and understand concepts contained within the measures. Most of the organizations start with measures that resonate with the clinicians. The participants spent much time discussing the importance of providing feedback directly to clinicians on individual performance through the use of dashboards.

One of the most critical functions of the inter-professional team is to focus on integration of eMeasures into practice. It is through integration into practice that the true intent of the clinical quality measure can be achieved and clinical decision-making can be enhanced. If the goal is to have consistent and comparable representation of data beyond billing codes, then it is imperative that approaches to eMeasurement hinge on clinician engagement so feedback on data use, inferences made with data, and workflow interplay with data capture during care delivery, can be obtained.

The first step of clinician engagement in the measurement process starts with understanding the clinical intent of the measure and identifying methods to build EHR function and processes of care around capturing data necessary for the measure. Once the measure intent is made meaningful to people providing care and feedback is given to clinicians on their individual performance, then driving forces extend beyond financial incentives into professional practice improvement and better clinical outcomes.

In addition to education, some of the sites conducted small-scale pilots before engaging in enterprise-wide implementations. Through pre-and post-measurement of the pilots, best practices were identified. Both education and the use of pilot testing before mass rollout were identified as key contributors to success, and many participants stated these factors are frequently ignored.

The participants of the eMeasure Learning Collaborative spent time discussing the need for further analysis in the following complex areas:

- Identification of best practices and the role for health IT to help identify the clinician(s) responsible for individual quality measures. This mapping is challenging when in most situations, multiple clinicians are involved in delivering care. There was a lack of agreement on best practice approaches, either in terms of professional practice or how health IT could be used.

- Standardization on use of electronic dashboards and identification of other data feedback loops is an important area worthy of further analysis.

- Implementation guidance is needed for the executive leaders (chief executive officers, vice-presidents, etc.) within organizations. There are multiple forces driving the need to demonstrate quality and safety. With fewer resources and increasing pressure from payment reform initiatives, the participants stated that executive leaders are struggling with how to use health IT for quality measurement and improvement.