

August 21, 2012

HIT-PTQ@AHRQ.hhs.gov  
Agency for Healthcare Research and Quality  
Attention: Rebecca Roper  
Program Officer for Health IT and Senior Research Scientist for the Center  
540 Gaither Road, Room 6000  
Rockville, MD 20850

RE: HIT-Enabled QUALITY MEASUREMENT RFI Responses

Dear Rebecca Roper MS, MPH,

The [Alliance for Nursing Informatics](#) (ANI) advances nursing informatics leadership, practice, education, policy and research through a unified voice of nursing informatics organizations. We transform health and healthcare through nursing informatics and innovation.

In that spirit we offer the following comments, as nursing stakeholders, regarding current successful strategies and challenges about quality measurement enabled by health IT.

***Questions Regarding Quality Measurement Enabled by Health IT***

1. Briefly describe what motivates your interest in clinically-informed quality measures through health information technology. To what extent is your **interest informed by a particular role** (e.g., provider, payer, government, vendor, quality measure developer, quality improvement organization, standards organization, consumer advocate) in this area?
  - ANI is a collaboration of organizations that represents more than 5,000 nurse informaticists and brings together 30 distinct nursing informatics groups globally. ANI crosses academia, practice, industry, and nursing specialty boundaries and works in collaboration with more than 3 million nurses in practice today.
  - Nurses constitute the largest single group of healthcare workers, including experts that serve in leadership positions on national committees and interoperability initiatives focused on healthcare policy, standards and terminology development, standards harmonization, informatics research, quality measurement, evidence based practice and health IT adoption.
  
2. Whose **voices are not being heard** or effectively engaged at the crucial intersection of health IT and quality measurement? What non-regulatory approaches could facilitate enhanced engagement of these parties?
  - Patients and families voices are not being heard. Despite recent efforts to better engage consumers at the national/federal level, at the local level patients and families are not heard by the stakeholders who are at the intersection of health IT and quality. Non-regulatory efforts like the "Consumer Pledge" that is being promoted by the Office of the National Coordinator (ONC) can be effective as well as grass roots education to all stakeholder groups, including patients and families.

- Academic clinical instructors' voices are not being heard or effectively engaged in health IT and quality measures.
  - Staff nurses and other direct care giver voices are not being heard.
  - A collaborative voice from all disciplines and sectors of society is TedMed sponsored by the Robert Wood Johnson Foundation (<http://challenges.tedmed.com/>). This non-governmental collaborative seeks to deeply understand the 20 great challenges in health care.
3. Some quality measures of interest have been more difficult to generate, such as measures of greater interest to consumers, measures to assess value, specialty-specific measures, measures across care settings (i.e., measures enabled by health information exchange), and measures that take into account variations in risk. **Describe the infrastructure** that would be needed to ensure development of such measures.
- Quality measures today are organization or process centric. We need to change the paradigm and fundamentally ask what matters to patients; what matters for better health and what matters for better care.
  - With any measure you need a definition, an initial measure and then a scoring system. Value means different things to different people so measuring the value is not necessarily a valid measure. The focus should be first on hard core data elements. Health Information Exchanges (HIEs) can provide, at least initially, for chronic populations measures that are understood across care settings. That should be the start. There should be one measure for one element, not several tweaked for different regulatory requirements.
  - As part of this RFI, AHRQ has issued [An Environmental Snapshot-- Quality Measurement Enabled by Health IT: Overview, Challenges, and Possibilities](#). One section of the environmental scan discusses infrastructure challenges. Listed below, we have utilized the same headings from the environmental scan and provided additional comments to be considered.

*How to Move Patient Centricity in a Fragmented Delivery System:*

We concur that patient-centric quality measurement will require "collecting and connecting data over time and across care settings to build a more complete view of the patient's care than is currently possible, "and will be strengthened with other technology such as mobile and telehealth. Composite measures focusing on outcomes of effective care coordination, from providers' and consumers' perspectives, may strengthen accountability across what traditionally have been considered fragmented care settings and support alignment of episode-based measurement, with bundled payments. While HIT automation and capacity for exchange is varied across care settings, new secure mobile-health and virtual health agent technologies may be able to simplify and leapfrog real-time measurement and engagement, for consumers and providers, and offset what is often cost-prohibitive HIT investment and adoption. We concur that, "the future measure set will need to include measures that are longitudinal, patient-centered, and focused more on outcomes than processes."

*How to effectively Align Incentives:*

We concur that this is a pivotal time to examine performance measurement and incentives due to the convergence of increased health IT adoption and the

implementation of new, patient-centered reimbursement and care delivery strategies (e.g., bundled payment, accountable care organizations, patient-centered medical homes). New incentives for care coordination, data exchange, and measurement need to address accessibility and affordability of not only EHRs, but also e-health and m-health technologies to consumers, neighborhoods and communities, especially in underserved, rural and critical access areas.


*Responsibility for Ownership and Funding:*

Investments in next generation EHRs may be limited until we can shift and frame how healthcare is delivered and measured to a patient and community-centric model, where accountability and value are distributed across the health ecosystem. Provider investments may remain guarded mostly due to costly vendor upgrades, and continued imbalance in technology adoption across various settings at the community level. New models are needed to support shared accountability, care coordination and mobility.

*Increased Information Exchange:*

We concur that "balancing privacy and interoperability remains an ongoing concern", and new models for consumer engagement where consent for exchange is more explicit are needed. While efforts to harmonize data exchanged between EHRs, to registry and quality measurement entities have been challenging, new care delivery and payment models, and new mobile technologies will also need to be considered.

4. What health IT-enabled quality measures, communication channels, and/or technologies are needed to better **engage consumers** either as contributors of quality information or as users of quality information?
  - First we should look to patients and families for these answers. AARP, patient advocacy groups, etc. offer a unique perspective. We also need to look to the wealth of information that primary care providers offer. A physical exam and history should include a survey of how patients use information in their day to day life to make informed decisions about their health. Nurses interact with patients and their families on a daily basis. These interactions should be leveraged to engage these stakeholders as contributors and users of quality information.
  - Many of the patient portals are not being used to full effectiveness in many practices because lack of appropriate staff. Many practices may not have the financial or technical resources to optimize their use of patient portals to engage the patient in their own care. Additionally, in inner cities and rural areas there is not an awareness or capacity to have input. This must be built for consumer engagement.
  - Workflow processes need to be reexamined to integrate use of patient portals as a strategy for engaging consumers in use of health IT.
  - Mobile health, telehealth, virtual agents, and cloud-based solutions will offer simple, low cost means to coordinate care and communication across diverse providers.
  - Remote patient monitoring, bio-metric and environmental sensors, will proliferate, and this super-convergence of provider and consumer directed/generated data offers new potential to engage consumers and care giving communities. Consumers, family members, care givers and providers will be both contributors and users of quality information.

- 
- Investments in real time data analytics, and visual data displays which support health interventions will be needed.
  - Providers and care coordinators will take on new roles, prescribing mobile health and telehealth interventions, and the necessary quality measurement for research and improvement.
  - Applied research on the social determinants of health, behavior change will support new thinking in IT enabled quality measures.
5. Describe how **quality measurement and “real-time”** reporting could inform clinical activity, and the extent to which it could be considered synonymous with **clinical decision support**.
- Standardized clinical performance measures should be collected as a byproduct of care delivery and clinician documentation. This serves two important national goals: a) clinical decision support (CDS) and trending in patient outcomes for real-time decision support and intervention at the point of care delivery, and b) the ability to aggregate enterprise-wide performance evaluation. A subset of existing National Quality Forum (NQF) endorsed measures should be incorporated for acute and post-acute care settings, including nursing sensitive measures that can enhance decision support and clinical measure reporting.
  - Quality measurement and real-time reporting imply that the measures being evaluated process data in real-time using a coded, standardized, nursing language. What would inform clinical activity is a coded patient care protocol which links the coded patient problem (diagnosis) with the coded multiple interventions. If an outcome such as a spiked temperature (coded and processed real-time) appears, then a real-time feedback loop should initiate a new problem which then initiates a new protocol to order new interventions to address the spiked temperature. This is very similar to following the nursing process of patient care.
  - The key is that the care process is documented at the ‘point of care’ and programmed using coded data elements that can be processed ‘real time’ allowing the data to be manipulated based on a protocol or decision rules using a feedback loop allowing for a specific intervention to be alerted automatically.
  - For example: the National Database of Nursing Quality Indicators® (NDNQI) quality measurement of nosocomial Infections of urinary catheters occur primarily from the contamination of the catheter when irrigated and/or changed using poor technique. Thus it is a series of interventions (coded data) that need to be processed and aggregated real-time to recognize the infection such as a spiked temperature. Thus, if a protocol (or algorithm) is programmed indicating that a patient with an indwelling catheter spikes a temperature (coded real time online) then the interventions/ actions that should be initiated to counter the infection will be implemented.
  - Real time reporting could assist Nurse Directors to monitor across all patients on their units; on how the unit is doing and what the manager or charge nurse needs to act on to insure that patients are staffed appropriately. Examples of such monitoring include patients with high risk for falls, with positive scoring for delirium, with high score on the CIWA (Clinical Institute Withdrawal Assessment) scale, and patients on IV opioids. Real time reporting can also assist with ensuring urinary catheters are removed as soon as possible to decrease

- infection rates. There are so many uses for real time reporting on a dashboard that can be used, including a nurse managing his/her own assignment to the manager of the unit, or the Senior Vice President/Chief Nursing Officer checking in to see how patients are being cared for in the hospital.
- Real time reporting is not at all synonymous with CDS; rather CDS intersects with critical thinking and helps to direct care toward evidence based practice. CDS can provide the backdrop for real time quality measurement compliance to requirements to the NQF, Product Quality Research Institute, HEDIS, The Joint Commission, etc.
6. Among health IT-enabled quality measures you are seeking to generate in a reliable fashion, including the currently proposed Meaningful Use Stage 2 measure set, what types of advances and/or **strategies for e-measure generation** if pursued, would support more efficient generation of quality measures?
- Quality measures need to be a byproduct of routine documentation of clinical care in order to be valid. Currently, source data for many quality measures are driven from required checklists that are not integrated with care delivery, which frustrates clinicians who are constrained by time and complete the checklist in haste to move on to other activities.
  - Valid quality measure reporting requires a solid foundation that includes industry standardization of nomenclatures and data definitions across the continuum of care. Historically, chart abstracted and claims based data were the cornerstones of quality measurement. However, the movement from paper based charting to electronic health records has necessitated alterations in documentation sources and data retrieval methodologies.
  - As we move toward the use of clinical data in the measurement of complex care processes, the need to homogenize the electronic capture of complicated medical terminology becomes more apparent. The utilization of industry standardized nomenclatures and data definitions is fundamental in the dispersal of patient level data within a multifaceted healthcare system. This strategy enables measure stewards to author e-measures that align quality reporting for physician practices, outpatient surgical centers, long-term care facilities and acute care hospitals. The utilization of these elemental building blocks is vital in the electronic capture of clinical data that has the potential to improve the overall quality of patient care.
7. Many EHR, HIE, and other health IT vendors are developing software code to support measures. **Tools such as the Measure Authoring Tool (MAT)** were created to improve efficiencies in the process of creating and implementing eMeasures. What additional approaches might be used to enable consistent, accurate, and efficient quality measurement when using health IT?
- We would suggest that there are too many measures that are tweaked to be just a little different but are measuring the same category on a regulatory basis.
8. How do you see the establishment and adoption of **data standards** impacting the future of health IT enabled quality measurement? For what types of quality measures should a combination of **natural language processing and structured data** be considered?

- Data standards are essential as are standardized and controlled medical vocabularies. More work needs to be done in this area. Natural Language Processing (NLP) is an emerging technology that will help address input. It does not address output. Data analyzed via NLP will still need to produce a structured and computable format to be useful downstream.
9. Much support has been voiced for the need of **longitudinal data** in quality measurement. What are the strengths and weaknesses of different information architectures and technologies to support health IT-enabled quality measurement across time and care settings? How can data reuse (capture once, use many times) be supported in different models? What examples might you provide of successful longitudinal health IT-enabled quality measurement (across time and/or across multiples care settings)?
- Patient centric interdisciplinary care is required to effectively improve the quality, safety and efficiency of care delivered to the patient. Nurses are at the center of care coordination within and across settings. Technology should be an enabler to support care coordination, enhancing the communication between care providers throughout the continuum of care. These transitions of care should be clearly articulated and future requirements should incorporate criteria on the use of electronic interdisciplinary education and care plans as well as multidisciplinary documentation flow sheets. The integration of data from these plans and flow sheets will enable higher standards of health information exchange across multiple providers.
  - We need to first remove the institutional barriers we place around data today. A person's health data is inclusive of data that he/she generates including their genomic data. This can include data from patient devices as well as data from multiple healthcare delivery stakeholders and/or the patients' providers, payers, and pharmaceutical companies. Data can even extend beyond traditional healthcare stakeholder to others (e.g. retail data - supermarket buying patterns of diabetic patients). This way of thinking will require a cultural shift around sharing of information and the information technology to lock down and secure and to keep private sensitive data.
  - Six Sigma and Lean models support the use of quality measurement across time and care settings. But because these are longitudinal they take time and voluminous amounts of data to analyze.
10. What are the most effective means by which to **educate providers** on the importance of health IT-enabled quality measurement and how clinical information is used to support health IT-enabled quality measurement and reporting? How can providers be better engaged in the health IT-enabled quality measurement process?
- Informatics competencies need to be integrated into the education of the entire healthcare workforce. Efforts such as the [TIGER Initiative Foundation](#) are beginning to define those competencies and to identify ways to more effectively incorporate them into curricula.
  - Engagement of providers has been difficult because they see IT as a "no choice mandate"; rather, champions and super users are required to push the process and engage users at their own comfort level.

- Models such as the Bangor Beacon community funded by ONC demonstrate the processes for engaging providers across health settings to share their quality measures and processes for ongoing improvement for the health of the community.
- *Anecdote* “I am a nurse practitioner with 14 years of experience and six of them using an EMR. I recently completed my DNP project entitled, “*Nurse Practitioners, Electronic Health Records and Chronic Disease Management*”. It was a qualitative study that explored how nurse practitioners use the EMR to manage chronic disease and what are some of the barriers and challenges. One of my findings that I thought was particularly interesting is that many nurse practitioners either lack the training or desire to look at aggregate data on their patients. They are working minute by minute in their jobs just to document their care and have to deal with many of the software and hardware glitches that are inherent in many systems.”

11. What is the best way to **facilitate bi-directional communication** between vendors and measure developers to facilitate collaboration in health IT enabled measure development?

- A great example is HIE's and the Beacon Community program.
- Vendors and measure developers should sit down face to face and understand there is no purchase or endorsement without the quality measurement component. Some managed care contracts build such a clause into contracts for performance guarantees.

12. **What tools, systems, and/or strategies has your organization been using to aggregate information from various EHRs and other health IT for use in quality measurement?** What strategies is your organization pursuing to move toward greater automation in quality measurement?

- *Anecdote* “The hospital uses business intelligence software, to design data universes that are directly connected to the electronic data warehouse. I primarily use the data universe that pulls from our EMR, but there are many other universes at our disposal (blood bank, Emergency department, etc.). This product gives me (and other data analysts) the ability to query the data warehouse for just about anything you could imagine (patient outcomes, demographic information, research questions, etc.). This product also has a built-in reporting system that allows data analysts to format the data from the query, analyze the data, and then dump the data into a spread sheet for mass distribution. I have been using this product to help me automate specific measures that are part of the nursing core metric program. For example, I combined a query from one universe with a query from the blood bank universe in order to automate the blood transfusion audit. I also used our product to automate the NDNQI pain audit. Currently, I am working with information services to design a new universe that will combine data from several systems so that I can automate the continuity of nursing care audit. Finally, I am using the product to automate the demographic section of both the NDNQI skin audit and the NDNQI PIV (Peripheral Intravenous Infiltration) audit.”
- *Survey findings:* One component of the [HIMSS Clinical Transformation Survey](#) explores the use of information technology to facilitate data analysis, management and quality measurement. Nearly all respondents (87 percent) indicated that their organization

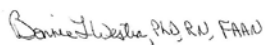
leverages technology to standardize and automate practices, such as the standardization of the format of a discharge summary, to enable additional focus on new quality initiatives. These respondents were also asked if they were leveraging data from diverse information sources to measure quality. Approximately half of respondents (53 percent) noted that they have created interfaces to support integration. Another third (35 percent) noted that their organization imports all data into a data repository/warehouse. Respondents were least likely (16 percent) to report that their organization used standards-based interoperability specifications to leverage data to measure quality. Only 12 percent of the respondents that are leveraging technology to standardize and automate practices reported that the tools they use are fully integrated into their EMR. Approximately half (55 percent) reported that these tools are partially integrated and 13 percent reported that these tools are not automated with organizational EMRs. 43 percent of respondents are using manual analysis to facilitate quality reporting. However, a closer look at the data suggests that only two percent of respondents are solely relying on manual means to analyze their data. Most of those that use manual analysis use this to complement other types of analysis. However, respondents don't believe that they are highly nimble with regard to the ability to respond to evolving changes/measures. On a scale of one to seven, where one is a very slow level of responsiveness and seven is highly responsive, respondents recorded an average score of 4.58. Nearly two-thirds of respondents noted that they are required to work with their vendor to make changes to their clinical IT systems in order to improve reporting capabilities. Another 54 percent of respondents indicated that the organization's IT staff has this responsibility. Only 12 percent of respondents noted that users are able to configure clinical IT systems to improve reporting capabilities.

ANI appreciates the opportunity to contribute to the conversation on HIT-enabled quality measurement challenges and successes. Please contact us at any time for further discussion of the comments offered here.

Sincerely,



Judy Murphy, RN, FACMI, FHIMSS, FAAN  
ANI Co-chair (HIMSS representative)  
Email: [judy.murphy@hhs.gov](mailto:judy.murphy@hhs.gov)



Bonnie Westra, PhD, RN, FAAN  
ANI Co-chair (AMIA representative)  
E-mail: [westr006@umn.edu](mailto:westr006@umn.edu)



## The Alliance for Nursing Informatics (ANI)

Sponsored by AMIA & HIMSS

### ANI Member Organizations

- American Medical Informatics Association (AMIA)
- American Nursing Informatics Association (ANIA)
- American Organization of Nurse Executives (AONE)
- Association of periOperative Registered Nurses (AORN)
- Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN)
  - Center for Nursing Classification and Clinical Effectiveness (CNC)
- Central Savannah River Area Clinical Informatics Network (CSRA - CIN)
  - Cerner Nursing Advisory Board
- Connecticut Healthcare Informatics Network (CHIN)
  - CPM Resource Center International Consortium
  - Croatian Nursing Informatics Association (CroNIA)
- Delaware Valley Nursing Computer Network (DVNCN)
  - Health Informatics of New Jersey (HINJ)
- Healthcare Information and Management Systems Society (HIMSS)
  - Informatics Nurses From Ohio (INFO)
  - MEDITECH Nurse Informatics program
- Midwest Nursing Research Society - NI Research Section (MNRS)
  - Minnesota Nursing Informatics Group (MINING)
    - NANDA International
  - National Association of School Nurses (NASN)
- New England Nursing Informatics Consortium (NENIC)
- North Carolina State Nurses Association Council on NI (NCNA CONI)
  - The Omaha System
    - Oncology Nursing Society (ONS)
  - Puget Sound Nursing Informatics (PSNI)
    - SNOMED CT Nursing Working Group
- South Carolina Informatics Nursing Network (SCINN)
- Surgical Information Systems - Clinical Advisory Task Force (SIS)
  - Taiwan Nursing Informatics Association (TNIA)
  - Utah Nursing Informatics Network (UNIN)

*Also affiliated with the American Nurses Association*