

Measure Registry Needs Assessment

Summary of Responses from the Call for Information about Current Systems and Approaches for Gathering, Storing, and Accessing Measure Information

Background

The Department of Health and Human Services (HHS) and others have expressed interest in being able to consistently identify and track measures and their related versions, including eMeasures, along the measure development, endorsement, and use pipeline. As a result, HHS has contracted with the National Quality Forum (NQF) to conduct a needs assessment to explore key issues and considerations for a single system or approach to gathering, storing, and accessing measure information.

The Measure Registry Needs Assessment project (www.qualityforum.org/RNA) will gather information and perspectives from across the quality measurement enterprise to assess the need for and related key considerations regarding the development of a consistent system or approach for tracking measure information. This document summarizes the responses to the first step in the project's information gathering phase – a call for information about the systems and approaches stakeholders in healthcare quality currently use for gathering, storing, and/or accessing measure information.

Summary of Responses

From May 16, 2012, through June 6, 2012, NQF conducted a call for information about current systems and approaches for gathering, storing, and/or accessing measure information (see Call for Information Form in Appendix A). NQF sought input from stakeholders involved in healthcare quality to learn about the systems and approaches stakeholders use or maintain to track measure information. Understanding that the three week timeframe included a long holiday weekend, NQF sent an email about the call for information to over 2,000 individuals who are on NQF's notification list, and targeted outreach to specific stakeholders who we expected to have a keen interest in the topic. Those stakeholders include federal agencies, state and regional healthcare collaboratives, measure developers, health plans, healthcare providers, and purchasers.

NQF received eight responses from a range of perspectives, including two stakeholders outside the quality measurement field (Table 1). Responses are summarized in three groups: 1) those who maintain their own systems or approaches for internal and external use; 2) those who use others' systems or approaches for their measure information needs; and 3) those outside of the healthcare quality industry whose systems or approaches may inform this effort. This document is a summary of the information received in those eight responses. However, as other stakeholders provide responses to the call for information or provide input into project via other means, NQF will factor those insights into the process.

Table 1. Open Call Respondents

	Stakeholder Perspective	Organization/Agency
1	Consulting Organization	Architelos
2	Electronic Health Record Vendor	Allscripts
3	Federal Agency	Agency for Healthcare Research and Quality (AHRQ), Department of Health & Human Services
4	Federal Agency	National Institute of Standards Technology (NIST), Department of Commerce
5	Federal Agency	Office of Informatics and Analytics (OIA), Department of Veteran Affairs
6	Health Plan	Humana
7	Quality Improvement Organization/ External Quality Review Organization	Health Services Advisory Group (HSAG)
8	Regional Health Information Organization	SunCoast RHIO, Inc.

Organizations that Maintain a System or Approach for Tracking and Storing Measure Information

Purpose of Systems or Approaches

The primary purpose(s) of the current systems or approaches described in five of the responses is to serve as a tool for internal information management and analysis, or to provide information to those outside the organization (Table 2). For those who use their system or approach for internal purposes, systems are used for housing and tracking measure information as well as for calculating measure results. The Health Services Advisory Group (HSAG) “tracks measures that the Centers for Medicare & Medicaid Services (CMS) is using, developing, and implementing,” while Allscripts “calculates numerator and denominators needed for quality measure incentive programs.”

Several respondents make their system available for use outside their organization so that the public can have access to information or use the system for benchmarking and comparison purposes. For example, the Agency for Healthcare Research and Quality (AHRQ) National Quality Measures Clearinghouse (NQMC) serves “to promote widespread access to quality measures.” Humana uses their system “so that practices can benchmark or compare themselves to others to foster competition.”

Table 2. Primary Purpose of System or Approach

Organization/Agency	Maintain System for External Use	Maintain System for Internal Use
Agency for Healthcare Research and Quality (AHRQ), Department of Health & Human Services	X	
Allscripts		X
Health Services Advisory Group (HSAG)		X
Humana	X	
Office of Informatics and Analytics (OIA), Department of Veteran Affairs		X

Design of Systems or Approaches

Of those measure information systems described, the format of each system and its components differ. Several organizations house their information via a web-based platform (e.g., electronic health record, Microsoft SharePoint website), a Microsoft Access database, or in hard copy documentation. The Veterans Health Administration (VHA) Office of Informatics and Analytics (OIA) utilizes a meta-database called the Performance Integrated Tracking Application (PITA). In addition to maintaining NQMC's public-facing website that is supported by a Content Management System (CMS), the contractor for NQMC maintenance, ECRI Institute, maintains internal SharePoint sites as well as hard copy documentation for managing NQMC's measure and tracking information (Table 3).

Table 3. AHRQ's National Quality Measures Clearinghouse (NQMC) Systems and Approaches

System/Approach	Purpose	Responsible for Maintenance	Format
NQMC Inclusion Tracker	Tracks and maintains measure submissions	ECRI Institute	Internal SharePoint site
NQMC Copyright Permission Tracker	Tracks copyright agreements for measure submissions	ECRI Institute	Internal SharePoint site
Citation Management System	Management of citations for measure summaries	ECRI Institute	Orbital Content Management System
NQMC Content Management System	Supports the public-facing NQMC website	Silverchair Sciences and Communications	Content Management System software
Measure Documentation	Management of measure information files	ECRI Institute	Print copies and electronic, when available

Types of Information Included

Respondents describe a variety of types of information included in their systems or approaches.

- Humana receives "both direct feeds from CMS and indirect measure information via their provider relations area."
- Allscripts houses specific measures as they relate to certain national programs: Meaningful Use Stage 1; 2011 and 2012 Physician Quality Reporting System (PQRS); and 2012 Healthcare Effectiveness Data and Information Set (HEDIS) measures.
- OIA's PITA includes the "technical attributes (definitions, numerator, denominator, scoring, etc.) and the administrative attributes (level of data available, refresh and report frequency and data delivery method)."
- HSAG's database includes only the "most current version of the measure as it is used by CMS." HSAG specifies that the "'version' or source of information is noted in a Notes field." For each measure, they collect the NQF endorsement status, endorsement date, and the NQF measures database fields. Additionally, HSAG tracks measures and their program status (e.g., in development but not in a program, measures proposed in rules, implemented measures, and archived measures).

The information captured in AHRQ's NQMC systems and approaches includes:

- *NQMC Inclusion Tracker* – Every new entry is designated a “unique tracker ID” as well as a “status of active, closed, and not pursuing.” Other information includes the “measure developer, actions taken to secure the submission (e.g., correspondence with measure submitter by date), date the entry was opened, date the entry was closed, date the entry was modified, and the source of the lead/submission.”
- *NQMC Copyright Permission Tracker* – Information captured includes the “measure developer, type of permission granted, and date the permission was granted.”
- *Citation Management System* – As described below under Content Management System, “each new citation entry is designated a unique citation number and group number, which are passed through the content management system.”
- *Content Management System* – “The content management system maintains the measure summaries posted on the NQMC website as well as summaries that are in various stages of preparation (e.g., abstraction, review). Each measure that is logged into the system is designated a unique NQMC ID.”
 - “The status and task of all measure summaries are tracked. The system allows for statuses of In-Progress, Published, Withdrawn, and Superseded. As measure summaries move through the NQMC Workflow (a process of 10 tasks that move a measure summary from login to publication), they are tracked by date completed and who completed the task.”
 - “All fields in the NQMC Template of Measure Attributes (measure summary) are included in the system for inputting content. The measure summary includes over 65 attributes of a measure, including the measure domain, rationale, denominator, numerator, evidence supporting the criterion of quality, whether the measure is in current use, data source, measure developer, whether the measure is used in a measure initiative (e.g., PQRS, NHQR/NHDR, Hospital Compare, etc.), whether the measure is NQF-endorsed – and if so, the date of endorsement – and the version of the measure in NQMC.”
 - “All measures in NQMC must have a “Source” citation. Most “Source” citations are given a publication date. This publication date is then entered into the *Date of Most Current Version in NQMC* field of the measure summary. This is how ECRI tracks versions of measures. If a “Source” is updated (i.e., publication date changes), then each measure contained in the “Source” is given a NEW unique NQMC ID and the more recent publication date is entered into the *Date of Most Current Version in NQMC* field.”
 - “All measure summaries in NQMC are also indexed using the U.S. National Library of Medicine (NLM) Unified Medical Language System (UMLS). ECRI’s master’s level indexers apply terms from selected UMLS vocabularies to each measure summary to facilitate searching and browsing and to create relationships between similar documents. These vocabularies are:
 - Healthcare Common Procedure Coding System (HCPCS)
 - International Classification of Diseases – Clinical Modification (ICD-9-CM)
 - Medical Subject Headings (MeSH)
 - Physician Data Query (PDQ)
 - Standard Product Nomenclature (SPN)
 - Systemized Nomenclature of Medicine (Clinical Terms) (SNOMED CT)
 - UMLS Metathesaurus (MTH)
 - Universal Medical Device Nomenclature System (UMDNS)”
- *Measure Documentation* – “Each measure identified in the print copy and/or electronic measure documentation is given a unique NQMC ID derived from the content management system.”

Maintenance of the System or Approach

In terms of maintaining the content and technical infrastructure of their system or approach, multiple respondents describe having specific teams within the organization that are responsible for managing the information and infrastructure. HSAG has two teams: a Database Development and Analysis Team to maintain the technical infrastructure and administration of the system, and a Measures Management Team to maintain the content. The Measures Management Team is responsible for updating the content based on proposed and final rules for the various CMS programs. The CMS program leads verify and update information on a quarterly basis, including any new measures or concepts being developed. HSAG indicates that they are “exploring the feasibility of updating the Endorsement Status electronically by using exports from the NQF measures database.” This, however, has proved challenging due to NQF’s transition from its old measures database to their new measure search tool, the Quality Positioning System (Beta).

VHA’s OIA has a Performance Measure Team, who is identified as the measure owner in their PITA system, and works with the measure sponsor and data sponsor to define the measure and its components. A measure is sent for final approval to the PITA administrator when a new measure is entered or changes are made to an existing measure. An administrative team – including the measure developer, computer specialist, and the Director of the Performance Measure Team – are sent a notification that the measure is undergoing final review and the measure developer is alerted when the review process is complete. PITA produces an electronic technical manual, which comprises real-time information about a measure.

For other respondents, external parties contribute to the maintenance of the system or approach. For instance, Allscripts has agreements with third party partners to maintain data warehouses and calculate the clinical quality measures using the data. Allscripts uses extract, transfer, and load protocols for inputting data into the warehouses. These inputs can occur daily or at the end of a patient encounter. Allscripts note that they rely on their electronic health records to perform the measure calculations.

AHRQ employs the services of ECRI Institute for maintaining the NQMC. AHRQ has an ECRI-NQMC Team to manage the content in the various systems and an ECRI-IT Team to administer the SQL server database that NQMC is built on. ECRI Institute uses an IT subcontractor, Silverchair Sciences and Communications, to maintain the content management system.

AHRQ maintains NQMC’s systems and approaches through the following mechanisms:

- *NQMC Inclusion Tracker* – “ECRI adds new entries and updates existing entries on a continual basis. Entries are added as soon as a measure submission is received or a new lead is identified. Existing entries are updated as review of the lead/submission is conducted. Measure developers/submitters are contacted if NQMC has questions regarding the measures meeting the inclusion criteria. Once a measure is accepted or rejected, the status of the entry in this system is changed and the measure either is not pursued or is included in the content management system. Information is updated weekly in this system.”
- *NQMC Copyright Permission Tracker* – “ECRI has the ability to add new entries and update existing entries in this system once copyright permission forms are received.”
- *Citation Management System* – “ECRI has designated staff members enter citation information into this system. NQMC citation information is submitted weekly to the staff that supports this system.”
- *Content Management System* – Silverchair Sciences and Communications maintains the back-end functionality of the content management system so that ECRI Institute can “create

summaries of measures, track measures that meet the NQMC inclusion criteria, and publish those measure summaries.”

- *Measure Documentation* – “Once a measure lead/submission is secured (and meets the NQMC Inclusion Criteria), the measure documentation will be printed out, copied, and a unique NQMC ID (generated from the content management system) will be written on the print copy next to each measure. The unique NQMC ID will also be included in the file name of the electronic version.”

Use of Systems or Approaches

Several organizations do not grant access to their systems or approaches to those outside their organizations. Allscripts’ systems can be accessed by Allscripts staff, Allscripts clients using the EHRs, and “partners with Allscripts acting as extensions to our product offerings.” VHA’s OIA specifies that “access to PITA for data entry is restricted to individuals that have been identified as one of the key roles of a measure (measure owner, data sponsor, technical manual contact, or measure sponsor).” The ability to export the electronic technical manual is available to all staff within the Department of Veterans Affairs (VA) and is used mostly by VA “providers, quality management staff, and program offices in the facilities.” HSAG indicates that while external access to their database is not allowed, CMS is the primary audience for most information in the database. HSAG describes that exports from the database are used to produce NQF’s Measure Application Partnership’s (MAP) Measures Under Consideration lists and to update the HHS Measures Inventory.

Some make their systems or approaches available to those outside of their organization. Humana specifies that their system is accessed by Beacon Communities, Chartered Value Exchanges, and Center for Medicare and Medicaid Innovation (CMMI) projects. AHRQ specifies a wide range of external stakeholders that use the NQMC, including: physicians and other clinicians; quality managers; health services/clinical researchers; measure developing organizations; hospitals; ambulatory care facilities; government agencies; health care professional organizations; and health plans.

Organizations that Use Others’ Measure Information Systems

Measure Information Systems Used

Three organizations (Allscripts, HSAG, and SunCoast RHIO, Inc.) rely on measure information systems that are external to their organization. Allscripts has partnerships with Team Praxis and DiagnosisOne for accessing certain measure information. HSAG uses several different systems, including:

- NQF’s older measure search tool as well as their new search tool, the Quality Positioning System (Beta);
- HHS Inventory maintained by AHRQ on the NQMC site; and
- AHRQ’s NQMC.

Additionally, SunCoast RHIO provides links through its provider portal to AHRQ, Meaningful Use measures, HEDIS measures, and NQF. They also rely on health information exchanges (HIEs), such as Syntranet, “with built-in tracking mechanisms that keep data updated in a range from real time to batch and via human interaction by manually checking repositories and their own software and processes.”

Types of Information Included

Allscripts accesses their partners' systems to identify information about clinical quality measures for Meaningful Use and PQRS incentive programs, as well as HEDIS measures, often accessing these systems for "management of the measure definitions and the queries needed for calculating numerators and denominators."

HSAG uses the measure information included in the NQF measures database, which includes measure summary information (e.g., NQF measure number, measure title, measure description, numerator statement), measure status information (e.g., endorsement type, endorsement date), and measure steward contact information (e.g., organization name, email address). HSAG states that while there are different needs for different purposes, in general, the "most important and most frequently needed elements are NQF number and endorsement status, measure owner/steward, and updated specifications." HSAG would highly value being able to access the NQF measure status for those measures that were not endorsed or had endorsement removed.

Frequency of Use

All three organizations indicated that they access measure information systems external to their organization on a frequent basis. HSAG uses measure information systems external to their organization on a daily basis. Allscripts and SunCoast RHIO access external systems when data is updated and when these updates are communicated by the organization. Allscripts also accesses systems outside of their organization when a measure calculation is needed.

Most Useful Functions and Content

HSAG notes that the most important functionality of any system or approach is the ability to export measure information. Allscripts indicates that because their partner organizations "manage the content from the measure stewards, including the data definitions from NQF and the queries needed for processing calculations," they all can access and update the same data definitions. SunCoast RHIO states more generally that measure information systems are "getting easier to find and understand. Our providers are driven to look at this more proactively because of the move away from fee-for-service and toward reimbursement models based on value purchasing, core measure quality, outcomes, evidence, patient satisfaction, patient safety, and efficiency."

Organizations Outside the Healthcare Quality Industry

The Department of Commerce's National Institute of Standards Technology (NIST) provided information about a data model that is used for standardizing real-time data exchange between software/equipment modules within the manufacturing industry. The manufacturing industry, much like the healthcare industry, does not have overarching processes in place for data flow. As a result, much time and money is devoted to data translation across systems. To overcome the interoperability challenge, the Quality Information Framework (QIF)¹ was developed to allow for data exchange across the manufacturing quality system: measurement planning, inspection programming, measurement execution, and quality

¹ <http://dmsstandard.info>

results analysis and reporting.² The QIF employs several information standard models in order to reduce interoperability costs and risks.³

The need for consistent standards and a framework is illustrated in a comment by Allscripts:

The measure definitions as well as the clinical data needed to produce metrics are complex, ambiguous and incomplete. Clear measure criteria that include data definitions which are commonly documented in the patient record are required before the complexity of metrics is manageable. Industry processes and standards for clinical quality measures are immature, inadequate or non-existent.

NQF also received general information about Architelos, a company that specializes in generic top-level domain (gTLD) registry consulting and management.⁴ A gTLD is one of the categories of top-level domains maintained by the Internet Assigned Numbers Authority for use in the Domain Name System of the internet. Examples of gTLDs include .com, .org, and .net.⁵ Architelos has expertise in the development and maintenance of gTLD registries, and further discussion with Architelos may offer insight on how to structure and track information within a measure registry system or approach.

Summary and Next Steps

Responses received to the Measure Registry Needs Assessment project's call for information about current systems and approaches for gathering, storing, and accessing measure information confirms that organizations within the healthcare industry maintain and track measure information in different ways and forms. Organizations employ internal and external systems and approaches, as well as rely on other partners, to meet their measure information and tracking needs. Information about the systems and approaches from non-healthcare quality industries may help inform current approaches to meeting measure information needs. In addition to incorporating into the insights information about NQF's own Quality Positioning System and the underlying measures database (OPUS), NQF intends to seek additional information from other stakeholders in the healthcare quality field to enhance the learnings from this call for information.

In the coming weeks, NQF will engage in discussions with specific stakeholders to understand their current information needs for measure tracking and/or use. NQF will then host a public webinar in late July 2012 to explore some of the measure information systems and approaches currently in use and to provide an open discussion forum for participants. Learnings from this information gathering phase will shape the content of an in-person meeting in early September 2012, at which major findings and key needs and related trade-offs for a defined system or approach to gathering, storing, and accessing measure information will be discussed. A final report summarizing the meetings' findings will be submitted to HHS and shared via the NQF web site by the end of the 2012 calendar year. More information on this project and updates on the project's activities and finalized dates can be found at www.qualityforum.org/RNA. Questions regarding this project should be directed to Anisha Dharshi at rna@qualityforum.org.□

² Zhao, Y., Kramer, T., Ripper, W., Horst, J., Proctor, F. *An Integrated Data Model for Quality Information Exchange in Manufacturing Systems*. 37th MATADOR Conference.

³ Horst, J. *The Quality Information Framework (QIF): Providing for more efficient and effective manufacturing control*. PowerPoint presentation. May 25, 2012. National Institute of Standards Technology.

⁴ <http://architelos.com>

⁵ <http://www.icann.org>

Appendix 1 – Call for Information Form

NQF Call for Information about Current Systems and Approaches for Gathering, Storing, and Accessing Measure Information

Measure Registry Needs Assessment Project

Based on the interest in and potential need for an approach or system to identify and track all information about measures, including versions, along the measure development, endorsement, and use pipeline, the Department of Health and Human Services (HHS) has contracted with the National Quality Forum (NQF) to investigate the degree to which key stakeholders would find value in such an approach or system. This work includes exploring potential structural and management issues involved in its development and maintenance. In its role as a neutral convener, NQF will seek input from and convene multiple stakeholders across the quality measurement enterprise to conduct this needs assessment. The information gathered through this process will be publicly available for use by any individual or organization.

Open Call for Information about Current Systems and Approaches for Gathering, Storing, and Accessing Measure Information

To support this work, NQF is collecting information about current systems and approaches for gathering, storing, and accessing information about measures and their related versions, in addition to learning from other systems or approaches used to gather, store, and share information that may be similarly structured or complex. Individuals and organizations wishing to share perspectives and information for this needs assessment are asked to provide the information below. Based on this input, four (4) approaches or systems will be featured during a public webinar, and the information gathered via this open call will be summarized and posted on NQF's website. Please send your responses and any supporting information via email to rna@qualityforum.org by June 6, 2012.

More information on the Measure Registry Needs Assessment project can be found at www.qualityforum.org/RNA. For questions about this call for information or the project in general, please contact Anisha Dharshi at rna@qualityforum.org.

Measure Registry Needs Assessment

Call for Information about Current Systems and Approaches for Gathering, Storing, and Accessing Measure Information

Name:

Title:

Organization:

E-mail address:

Please answer the following questions. **Feel free to include attachments or screenshots if appropriate.** Thank you for helping to inform this needs assessment regarding potential value in more consistently tracking all measures and their related versions.

1. Does your organization maintain a system or approach to track and store measure information?

If so:

- Briefly describe the design (electronic, paper, web-based, etc.) and purpose of your system or approach.
- What types of information (any and all information about measures, including versions, along the measure development, endorsement, and use pipeline) are included in your system or approach?
- Generally, how do you maintain the content and technical infrastructure of the system or approach? Who administers it?
- How is the information added to or updated in your system or approach? How frequently does that occur?
- Which stakeholders in healthcare quality currently use the system/approach?
- Do you give individuals external to your organization access to the information maintained in your system or approach? If so, provide the URL (online location, if any) and a brief description. Are there different levels of external (public) and internal (private) access to the system or approach? Do you have information about 'why' and 'how often' external groups access your approach or system, and how they use that information? If so, please include a brief description.
- Are you willing to share your approach to gathering measure information via a public webinar? (Yes or No)
- Are you willing to discuss in more depth the answers that you provided on this form? (Yes or No)

2. Do you use one or more measure information systems or approaches that are external to your organization?

If so, briefly describe the external systems or approaches you use to access or track information about measures.

- What are the names of the systems and who maintains them?
 - What kind of information is included in these systems or approaches?
 - What is the type of information you seek from these systems or approaches? What of this information is of the most use or value to you and why?
 - How often do you access the system(s) or use the approaches to meet your measure information needs?
 - What are the most useful attributes, functions, or content of each of these systems or approaches? Do you add any content or update any of the measure information contained in any of these systems or approaches?
 - Are you willing to discuss in more depth the answers that you provided on this form? (Yes or No)
-