NATIONAL QUALITY FORUM

Recommended Common Data Types and Prioritized Performance Measures for Electronic Healthcare Information Systems

This document includes the foreword and executive summary from the National Quality Forum report *Recommended Common Data Types and Prioritized Performance Measures for Electronic Healthcare Information Systems.*

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Foreword

Quality improvement leaders have long recognized the need for the widespread adoption of health information technology to accurately measure clinical quality, but, to date, most of the electronic health information readily available for quality measurement has been administrative, claims-based data, which include only limited clinical information. Conducting manual chart abstraction for additional clinical information is a heavy burden for healthcare providers. The lack of a set of precisely defined, universally adopted electronic measure definitions is an obstacle to automating measurement and comparing quality using electronic health information. To automatically compare performance nationally, all quality indicators need to measure the same concepts and speak the same technical language.

The National Quality Forum (NQF) Health Information Technology Expert Panel (HITEP) was charged with establishing a priority order for the current sets of AQA Alliance- and Hospital Quality Alliance-approved measures; identifying common data types from the subset of highest priority measures to be standardized for automation in electronic health records (EHRs) and health information exchanges; and developing an overarching quality measure development framework to facilitate developing, using, and reporting on quality measures from EHR systems. In this report, the panel presents its key recommendations to help provide a common road map for addressing gaps and for moving forward.

The technical and organizational approach described in this report should help define the common data quality types needed for EHR quality measurement and assist in the transition of quality measurement to EHRs.

NQF thanks HITEP for its work in helping to envision the EHR platform required for performance measurement in the future.

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Recommended Common Data Types and Prioritized Performance Measures for Electronic Healthcare Information Systems

Executive Summary

As described in the Institute of Medicine's (IOM's) *Crossing the Quality Chasm* report, the quality of healthcare in the United States is substantially lacking in many pivotal areas. Complex care is typically uncoordinated, and important information is frequently unavailable when needed by providers. Consequently, unexplained variations in the delivery of healthcare and the underuse, overuse, and misuse of healthcare products and services pervade the system, compromising the quality of American medicine and jeopardizing the health of its recipients.

Measuring quality is a first step toward improving American healthcare. Currently, however, collecting and reporting accurate, comparative healthcare performance data is complex and largely a time-consuming, manual process. Quality improvement leaders have long recognized that the widespread adoption of health information technology (HIT) will automate and simplify these processes by providing electronic information. Yet, to date, most of the electronic health information readily available for quality measurement has been administrative, claims-based data, which include only limited clinical information.

Electronic health record (EHR) systems have been identified as a fundamental HIT tool for collecting high-quality electronic clinical information. The federal government and private sector leaders have increased efforts to expedite and encourage the widespread adoption

of HIT by healthcare providers; yet significant barriers prevent the collection of needed quality information within the EHR. To compare performance nationally, all quality indicators need to measure the same concepts and speak the same language in order to consistently and reliably measure quality. Although there is no dearth of HIT standards, such standards do not exist when defining quality metrics (e.g., the definition of diabetes may be interpreted differently by different institutions). This lack of a set of precisely defined, universally adopted clinical definitions is an obstacle to measuring and comparing quality.

To address the need for standardization of healthcare quality measurement, the American Health Information Community (AHIC), an advisory committee to the Secretary of the Department of Health and Human Services (DHHS), established a Quality Workgroup to define how HIT can evolve to effectively support performance measurement. The workgroup recommended that an HIT expert panel be convened in order to accelerate ongoing efforts in this standardization process. The National Quality Forum (NQF) was commissioned by the Agency for Healthcare Research and Quality (AHRQ) to assemble and convene the expert panel and to provide a detailed account of its conclusions and recommendations. The NQF Health Information Technology Expert Panel (HITEP) members (Appendix A) were selected to ensure broad representation across the fields of quality measurement and HIT and of EHR vendors, health systems, and government organizations.

With the goal of achieving automated quality measurement, the panel was charged with the following tasks:

1. establish a *priority order* for the current sets of AQA Alliance- and Hospital Quality Alliance-approved measures;
2. identify *common data types* from the subset of highest priority measures to be standardized for automation in EHRs and health information exchanges; and
3. develop an overarching quality *measure development framework* to facilitate developing, using, and reporting on quality measures from EHR systems.

To prioritize measures for immediate attention, the panel used the IOM's priority conditions. Next, the panel identified the common data types (e.g., outpatient diagnosis, laboratory result, medication order) required by these high-priority measures. The panel then developed a set of criteria (e.g., level of data standardization, accuracy of data source) to assess the quality of each data type as it currently exists in EHRs. Each data type received a summary quality score from these criteria. Because measures are composed of numerous data types, the panel calculated overall scores for each measure as the average quality of its individual data types. This overall measure score can be used to assess a measure's readiness for EHR implementation and to focus efforts to improve (or replace) low-scoring measures and low-scoring data types. Although the work of HITEP was to establish an initial prioritization of measures and their associated data types, further data types should be identified as additional priorities and measures are developed.

A key product of the HITEP meetings, a list of common data types (i.e., diagnoses, laboratories, medications), was submitted to the Health Information Technology Standards Panel (HITSP) for the selection of standard terminologies, or code sets (i.e., ICD-9, LOINC, SNOMED), to express these data types. These computerized terminologies, identified in the HITSP Quality Interoperability Specification version 1.0, will support efforts for universal adoption of standardized performance measures in EHRs. Active engagement of standard development organizations by HITSP will aid in closing the gap between the quality and information technology enterprises. Additional recommendations for EHR functionality will be submitted to the Certification Commission for Healthcare Information Technology (CCHIT) for consideration in future certification criteria.

HITEP identified three broad requirements to improve the quality measurement information technology enterprise and suggested recommendations to CCHIT, HITSP, measure development organizations (MDOs), NQF, EHR vendors, and the HL7 EHR Technical Committee. First, quality measures should be designed to leverage the capabilities of EHRs. MDOs and NQF should work together to reinforce the use of high-quality data types during measure development and endorsement of measures into consensus national standards. Second, standard terminologies should be identified to code the common data types used in quality measure definitions. Finally, quality measure clinical information should be accurately captured in EHRs. Quality and information technology stakeholders should work with EHR vendors to develop functional criteria for software needed to capture the common data required for quality measurement. Key recommendations from the panel included the following:

1. NQF should evaluate the quality of data types used in measure specifications as a criterion in the endorsement of new measures, as well as in the reassessment of measures for continued endorsement.
2. A coded, interdisciplinary clinical problem list in the EHR should be used in place of billing codes to identify patient conditions, inclusion diagnoses, and exclusion diagnoses for quality measurement. It is further recommended that this problem list be accessible and utilized across care settings (e.g., inpatient, outpatient, long-term care facilities).
3. NQF should work with HITSP to develop a "reader's digest" version of a data dictionary for use by measure developers that would contain the HITEP data types and their corresponding HITSP-recommended code sets.
4. Medication allergies and side effects should be distinguished from one another and entered using standardized codes.
5. Standardized codes for summary impressions of diagnostic test results should be developed, where feasible. Quantitative results, when available, should accompany qualitative results of diagnostic studies.
6. EHR vendors should develop methods of presenting EHR medication data with external medication data from pharmacies and pharmacy networks to help providers assess patients' adherence to medication treatment plans.

7. Quality and information technology stakeholders should work together to define additional EHR functional requirements that support quality measurement.

Although many stakeholders agree on the need to transition the healthcare quality measurement enterprise toward EHRs, there has been no common road map for moving forward. There will clearly be a transition period, with reliance on clinically enriched claims data as a path toward quality measurement built on EHRs. This initial HITEP work focused on envisioning the EHR platform required for performance measurement in the future. The technical and organizational approach described in this report should assist in the transition of quality measurement to EHRs. HITEP's work provides important building blocks for this effort, including the common data quality types needed for quality measurement and a new method to assess data quality that should help the movement toward a more rational approach to measure development and endorsement.