

Hospitals Face Challenges Using Electronic Health Records to Generate Clinical Quality Measures

America's hospitals have adopted electronic health records (EHRs) to improve clinical care and patient health outcomes, believing the technology would support automated clinical quality reporting, empower clinicians to continuously improve the efficiency and effectiveness of care, and assist their local quality improvement initiatives. Based on the experience of four hospitals in a case study commissioned by the American Hospital Association, automated quality reporting does not yet deliver on the promise of feasibly generating valid and reliable measures or reducing the reporting burden placed on hospitals. This study describes the experience and impact of electronic clinical quality measure (eCQM) implementation in four hospitals. Each has significant experience with EHRs that predates the meaningful use program, and each uses a different EHR vendor. Specifically, the report identifies challenges hospitals face in four areas:

- **Program Design:** The timeline for implementing eCQMs is unrealistic, emphasizing regulatory requirements in advance of adequate development, vetting and testing of eCQM specifications for feasibility and clinical validity.
- **Technology:** eCQM tools were difficult to implement, did not work as expected, could not draw relevant data from other systems and could not efficiently generate accurate measure results.
- **Clinical:** eCQM implementation added to clinician workload without perceived benefit to patient care due to poor alignment with clinical workflow, and extensive validation efforts that were not successful.
- **Strategic:** Hospitals expended excessive effort on the eCQMs that negatively affected other strategic priorities.

Specific policy changes are needed to redirect the electronic clinical quality reporting requirements to focus on a small set of well-tested measures supported by a mature policy infrastructure that can guide valid and feasible measure development, testing and implementation:

1. Slow the pace of the transition to electronic quality reporting with fewer, but better-tested measures, starting with Stage 2 meaningful use.
2. Make EHRs and eCQM reporting tools more flexible so that data capture can be aligned with workflow.
3. Improve health information technology (IT) standards for EHRs and eCQM reporting tools to address usability and data management to achieve meaningful use program expectations.
4. Carefully test eCQMs for reliability and validity before adopting them in national programs. Implement eCQMs within hospitals as part of testing to ensure information flow is accurate and there is no adverse impact on quality and patient safety.
5. Provide clear guidance and tested tools to support successful hospital transition to increased electronic quality reporting requirements.

Program Design Challenges	Hospital Experience	Policy Recommendations
eQMs were introduced before robust testing for validity, accuracy and feasibility.	<ul style="list-style-type: none"> ■ Modifications led to multiple iterations of tools and associated workflow redesign. ■ Measure results were frequently inaccurate. ■ Costs to implement were much higher than expected. 	<ul style="list-style-type: none"> ■ Reduce pace of rollout with fewer, but more well-tested measures.
Specifications were hard to find, lengthy and frequently modified to correct errors.	<ul style="list-style-type: none"> ■ Hospitals spent excessive time searching for correct versions or used specifications for chart-abstract measures. ■ These problems contributed to inaccurate measure results. 	<ul style="list-style-type: none"> ■ Provide clear guidance and a consistent, reliable process for eCQM development, availability, updating and implementation.
Meaningful use eQMs require unfamiliar vocabularies for data elements (such as LOINC®, SNOMED-CT).	<ul style="list-style-type: none"> ■ Hospitals struggled with unfamiliar vocabularies. ■ Hospitals relied on eCQM reporting tools to manage the crosswalks between new vocabularies in the eQMs and the terms used locally or purchased another vendor's service to support new vocabularies. ■ Hospitals incurred additional costs. ■ Hospitals voiced concerns about potential errors in coding or billing and associated risks of subsequent audits. 	<ul style="list-style-type: none"> ■ Support the development of an accurate, complete and validated crosswalk from SNOMED-CT to ICD-10-CM and ICD-10-PCS. ■ Provide for adequate training and education.
Sub-regulatory guidance to ignore data accuracy conflicts with hospital goals for both quality improvement and other program policy to report accurate quality data.	<ul style="list-style-type: none"> ■ Hospitals and clinicians saw no benefit from generating inaccurate data. ■ Hospitals were worried that reporting data that they did not consider to be accurate would create a compliance issue. 	<ul style="list-style-type: none"> ■ Create an eCQM development, testing, and certification program that supports accurate measurement.
Technology Challenges	Hospital Experience	Policy Recommendations
EHRs are not designed to capture and enable re-use of information captured during the course of care for later eCQM reporting.	<ul style="list-style-type: none"> ■ Hospital clinical staff enter information multiple places in EHRs to ensure data availability for eCQM reporting. ■ Staff time devoted to manual re-entry of information that already exists elsewhere in the EHR reverses efficiencies gained from the use of EHRs and undermines the presumed value of automation for quality reporting and improvement. 	<ul style="list-style-type: none"> ■ Improve health IT standards for EHRs and eCQM reporting tools to address usability and data management. ■ Improve vendor tools to include workflow design flexibility.
EHRs are not designed to capture information from other department information systems at the level of detail needed for eCQM reporting.	<ul style="list-style-type: none"> ■ Quality or other staff abstract information from other department information systems and enter it into the fields in the EHR required to report the eQMs. 	<ul style="list-style-type: none"> ■ Improve EHRs and reporting tools to support intra-hospital interoperability.
EHR vendors update and separately deliver individual EHR components for Meaningful Use.	<ul style="list-style-type: none"> ■ Hospitals conducted multiple updates and iterative testing. 	<ul style="list-style-type: none"> ■ Establish a predictable update process and schedule for eQMs with easy access and notification of updates. ■ Require vendors to support the latest update on a specified schedule.

Clinical Challenges	Hospital Experience	Policy Recommendations
EHRs and certification requirements are not designed to support effective and efficient patient care workflows or draw data from them.	<ul style="list-style-type: none"> ■ Hospitals modified workflows solely to support adequate data capture, working iteratively with their vendors. ■ Ultimately, hospitals substantively altered clinical workflow solely to accommodate the data needed for the eQMs, with no benefit for patient care. 	<ul style="list-style-type: none"> ■ Give vendors more time to develop useful and accurate tools that support logical workflows and leverage data already in the EHR.
Hospitals were unable to validate the eQm results.	<ul style="list-style-type: none"> ■ Hospitals either reported the results of eQMs as inaccurate, but a work in progress, or did not report the eQm results directly to physicians and nurses. ■ Inaccurate results from the eQm reporting tool combined with increased workflow requirements led to clinicians mistrusting the data and not using it for care improvement. 	<ul style="list-style-type: none"> ■ Create an eQm development, testing, and certification program that supports accurate measurement.
Meaningful use Stage 1 eQm specifications are out-of-date and sometimes inconsistent with current care recommendations.	Physicians who use up-to-date sets of orders may cause the hospital to have poorer performance as measured by the eQMs.	<ul style="list-style-type: none"> ■ Create a mechanism to update eQMs to reflect new state of the art clinical practice and to match updates to corresponding chart abstracted measures.
Strategic Challenges	Hospital Experience	Policy Recommendations
Time and personnel requirements to implement eQMs were far beyond expectations and excessive.	<ul style="list-style-type: none"> ■ Hospitals added tasks to existing IT and/or quality management staff responsibilities and delayed projects. ■ Clinical staff expended considerable time documenting for eQMs, with no perceived value for patient care. ■ Excessive staff time spent on eQMs delayed focus on other priorities such as reducing readmissions, improving patient safety or advancing care coordination. 	<ul style="list-style-type: none"> ■ Consider the effort required in future policy for eQMs.
Combination of time and effort involved and inability to validate results meant hospitals saw no return on investment.	<ul style="list-style-type: none"> ■ Results damaged credibility of hospital leadership and meaningful use program as a whole. 	<ul style="list-style-type: none"> ■ Reduce pace of rollout with fewer, but more well-tested measures that can be generated by tools that support logical workflows and leverage data already in EHRs.



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