

## Developing and Using Valid Clinical Quality Metrics for Health Information Technology with Health Information Exchange

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<b>Principal Investigator:</b>	Kaushal, Rainu, M.D.
<b>Organization:</b>	Joan and Sanford I. Weill Medical College of Cornell University
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**Target Population:** Not Applicable

**Summary:** Recently proposed metrics for measuring quality of care in ambulatory settings have been largely designed to measure ambulatory care in isolation, independent of interactions with other health care providers and settings. Innovations in health care driven by the implementation of health information technology (IT) with health information exchange (HIE) require revised sets of quality metrics to assess the impact these interventions promise. For example, new metrics are needed to capture the effects of data sharing between generalists and specialists in the ambulatory setting, and sharing data across transitions between inpatient and outpatient settings. Further, new quality metrics are needed to capitalize on the rich clinical data that could be extracted from electronic health records (EHRs) and other electronic sources.

This project derived a set of quality metrics, built on existing and additional metrics, that capture the effects of health IT with HIE and can be retrieved electronically. This process was accomplished through the contributions of the Health Information Technology Evaluation Collaborative (a multi-institutional academic collaborative established to evaluate health IT and HIE initiatives in New York State), the New York State Department of Health, and four regional health information organizations (RHIOs) that are implementing health IT with HIE and focused on the ambulatory setting. Once derived, this quality metric set was presented to two groups for validation: a panel of national experts in quality measurement and the New York eHealth Collaborative, a multi-stakeholder organization dedicated to advancing health care performance measurement as supported by health IT. The metric set was then refined with the expert panel.

Dr. Kaushal's team will test the accuracy of electronic retrieval of the data for the metric set, as compared to the gold standard of manual chart review. The metric set will then be used to evaluate the effects on quality of using health IT with HIE, specifically EHRs and electronic portals. To do so, Dr. Kaushal's team will prospectively follow a randomly selected sample of physicians in ambulatory practices to determine if quality improves over 1 year of using health IT with HIE. This work has the potential to move closer toward capitalizing on the promise of health IT and HIE for improving quality measurement. If validated and effective, the metrics developed and interventions studied could also be disseminated widely to other ambulatory care communities.

**Specific Aims:**

- Develop a modified set of quality metrics that can be retrieved electronically and is sensitive to the types of improvements in quality that health IT with HIE may contribute in an ambulatory care setting. **(Achieved)**
- Validate the modified quality metric set. **(Achieved)**
- Test the reliability of electronic retrieval of the modified quality metric set. **(Ongoing)**
- Use the modified quality metric set to evaluate the long-term effects of using health IT with HIE on improving health care quality. **(Ongoing)**

**2010 Activities:** The project team focused on testing the reliability of electronic reporting. The identification of a collaborating partner was initially delayed because most vendors could not electronically report on the metrics. Dr. Kaushal is now working with a network of community health centers (CHCs) in New York. These CHCs are using a commercial EHR and have customized the EHR so that it is able to facilitate quality reporting. The project team developed a methodology for reporting on the metrics, which was reviewed by the Institutional Review Board. Additionally, the team refined data collection instruments, as all of the existing tools were designed for manual chart review, not electronic abstraction. Dr. Kaushal also worked with an experienced programmer to develop automated queries from the EHR to obtain the quality indicators of interest. The data captured by these electronic queries will be compared to manually extracted data. All of these efforts are part of the quality assurance (QA) effort to test the accuracy of the data entered and maintained in the EHR. QA will be followed by analysis and manuscript preparation.

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**Grantee's Most Recent Self-Reported Quarterly Status (as of December 2010):** The team is now mostly on track to complete the study and to expend all funds during a no-cost extension period. The project is meeting the revised time line and spending is roughly on target.

**Preliminary Impact and Findings:** National discussions about interoperability of EHR focus on the definition of meaningful use. These discussions, however, assume that providers will be able to report meaningful use metrics from their EHR. The metrics developed for this study, which are similar to potential meaningful use metrics, could not be easily reported by most vendor EHRs. This observation highlights larger policy ramifications as community providers strive to demonstrate meaningful use.

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**Strategic Goal:** Develop and disseminate health IT evidence and evidence-based tools to improve health care decisionmaking through the use of integrated data and knowledge management.

**Business Goal:** Knowledge Creation