

**Project Title:** Using Precision Performance Measurement to Conduct Focused Quality Improvement

**Principal Investigator:** Baker, David, M.D.

**Organization:** Northwestern University

**Mechanism:** RFA: HS07-006: Ambulatory Safety and Quality Program: Improving Quality through Clinician Use of Health IT (IQHIT)

**Grant Number:** R18 HS 017163

**Project Period:** 09/07 – 08/10

**AHRQ Funding Amount:** \$1,199,415

**Summary Status as of:** December 2008

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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:** Implementation and Use

**Summary:** This project was initiated in September 2007 and has completed the first third of the grant period. The project creates systems that improve quality data and that seamlessly link these data to practice-level quality improvement programs and point-of-care interventions. The project uses previously developed quality measurement programs using electronic health record (EHR) data to measure quality of care for coronary artery disease, heart failure, diabetes, hypertension, and preventive services. This study began at a large academic internal medicine practice and is now being implemented in four community practices that use the same Certification Commission for Healthcare Information Technology (CCHIT) certified EHR, Epic® (version Spring 2007). Exception codes are being introduced into the EHR for 18 national quality measures. Data will be extracted from the EHR every month to assess changes in the primary outcome: the proportion of eligible patients who do not satisfy a measure and do not have an exclusion criteria documented. The statistical significance of changes will be assessed with time series analysis. In addition, physicians will be surveyed multiple times to assess their attitudes toward the interventions described in the aims listed below, and the outcomes of the quality improvement activities will be monitored along with the costs of the intervention. In addition, this study will produce computerized tools and educational materials that can be provided to over 1,000 sites that use the Epic® ambulatory product.

### Specific Aims

- Integrate simple, standard ways for clinicians to document patient reasons or medical reasons for why quality measures are not met and assess the use of these exception codes, the impact of exception reporting on measured levels of quality, and the impact of using these codes on physician satisfaction and self-reported efficiency. **(Ongoing)**
- Use the exception codes (patient reasons and medical reasons) that clinicians enter to target three forms of quality improvement, including 1) peer review of all medical reasons for not adhering to guidelines followed by academic detailing if a clinician enters an unjustified reason for not following guidelines, 2) counseling for patients whose physician enters an exclusion code stating that the patient cannot afford a needed medication to determine ways of overcoming barriers, and 3) educational outreach to all patients who refuse recommended interventions (e.g., colorectal cancer screening), including mailing of plain language health education materials or DVDs. **(Ongoing)**

- Provide clinicians with highly accurate information on patients' quality deficits immediately prior to their visit as part of routine workflow and assess whether this intervention increases provision of recommended therapies/tests, and documentation of exclusion codes. (**Upcoming**)

**2008 Activities:** The Northwestern Medical Faculty Foundation (NMFF) and Evanston Northwestern Healthcare (ENH) teams have been working collaboratively and have created a new Best Practice Alert system that allows physicians to enter "not done, medical reason," "not done, patient reason, cost," and "not done, patient reason, non-cost." The system also allows physicians to enter a code to remove patients from disease registries (e.g., the patient does not actually have coronary artery disease, but this was entered as a diagnosis code in the past); indicate if a patient has a "global exception" to turn off all alerts (e.g., metastatic cancer); or indicate if a patient is no longer seen by the practice. A system was created so that the exception codes are visible under a separate heading in the EHR where physicians can easily see why a medication or test was not ordered. The EHR tools for clinicians to document patient reasons or medical reasons for why quality measures were not met were developed from September 2007 through January 2008. The EHR tools are fully implemented and operational. The project originally proposed 17 measures, but added aspirin for diabetes as the 18th. To date the project has completed outreach and quality reviews for approximately 500 patients each and is beginning analyses to evaluate the outcomes of this with the plan to submit two papers, one for each of these topics.

**Preliminary Impact and Findings:** For the first aim, changes in quality of care from February 7, 2008, to December 31, 2008, have been seen. Significant improvements have been seen for nine measures compared to baseline, and for four other measures there has been a significant improvement at the same rate as before the intervention began. For the second aim, to date, 6.5 percent of the quality reviews have identified an issue requiring feedback from an investigator to a clinician who entered a medical exception. For the patient outreach, the majority of patients do not want to talk about their refusal. Of all patients, 13.5 percent actually completed a test or medication that they originally declined.

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### **Selected Outputs**

The project team was invited to present live demonstrations or summaries of the project tools to the NMFF Board of Directors, the NMFF Information Technology Leadership Committee, and the ENH Department of Family Medicine Faculty Meeting. In addition, the project team has presented at the Healthcare Information and Management Systems Society (HIMSS) conference, 2008 AHRQ Annual Conference, and the Epic User's Group meeting.

AHRQ 2008 Annual Conference presentation: Use of Information Technology for Precision Performance Measurement and Focused Quality Improvement ([PowerPoint® File](#), 2.3 MB; [Web Version](#)).

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**Grantee's Most Recent Self-Reported Quarterly Status:** The team has requested to use some of the funds that have not been spent to add a group of Federally Qualified Health Centers as a dissemination site. This is very important because it is an underserved population, and they use a different EHR records tool (G.E. Centricity).

**Milestones:** Progress is mostly on track.

**Budget:** Somewhat under spent, approximately 5 to 20 percent.