

<b>Project Title:</b>	Crossing the Quality Assessment Chasm: Aligning Measured and True Quality of Care
<b>Principal Investigator:</b>	Weiner, Mark, M.D.
<b>Organization:</b>	University of Pennsylvania
<b>Mechanism:</b>	RFA: HS07-002: Ambulatory Safety and Quality Program: Enabling Quality Measurement through Health IT (EQM)
<b>Grant Number:</b>	R18 HS 017099
<b>Project Period:</b>	09/07 – 09/09
<b>AHRQ Funding Amount:</b>	\$812,237
<b>Summary Status as of:</b>	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:** Knowledge Creation

**Summary:** This project was initiated in September 2007 and has completed the first half of the grant period. The purpose of this study is to identify and quantify the impact on quality assessments of real-world circumstances in a Veterans Administration Medical Center (VAMC) and at the University of Pennsylvania Medical Center's (UPMC) ambulatory practices where the current cross-sectional measures of quality do not reflect the true quality of care being rendered. The project is leveraging more detailed and discrete data available from electronic medical records (EMRs) in order to develop measures that account for heterogeneity among different diabetic patient panels, credit improvement in the control of diabetes among individuals in a given population over time, recognize provider effort in medical management, and incorporate management of diabetes co-morbidities such as high blood pressure and hyperlipidemia. The project is reanalyzing data from the Diabetes Control and Complications Trial (DCCT) to determine evidence in a randomized controlled trial setting regarding the impact of an individual's variability in glycosylated hemoglobin (HbA1c) control on outcomes and the suitability of using HbA1c variability over time in addition to or as an alternative to the absolute level of HbA1c, as a quality measure. The result of the analysis is intended to create a new set of quality measures that is more consistent with actual clinical care.

The project team is collecting and analyzing data from two different EMRs. The UPMC uses Epic's Certification Commission for Healthcare Information Technology (CCHIT) certified EpicCare Hyperspace (version Spring 2007IU3), and the VAMC uses the VistA-based Computerized Patient Record System (CPRS).

### Specific Aims

- Evaluate structural and clinical issues that may affect the validity of comparisons among providers made using quality measures for diabetes. Among the issues to be explored are: 1) the manner in which diabetes is defined, 2) the way patients are linked to providers, and 3) the concordance between use of diabetes medications and achieving thresholds for quality of care. **(Ongoing)**
- Develop a new quality measure for diabetes that accounts for patient heterogeneity in terms of baseline HbA1c and expected trajectory of improvement in diabetes control based on clinical parameters and other data available through the EHR. **(Ongoing)**

- Explore the DCCT and patient data for year-to-year individual variability in diabetes control to assess the impact of variability in an individual's diabetes control over time on microvascular outcomes. **(Ongoing)**
- Disseminate findings through public policy communications through the Leonard Davis Institute, and work with practitioners and additional institutions to assess their quality of care under the old and proposed new quality-of-care measures. **(Upcoming)**

**2008 Activities:** The project began to compare and contrast the quality of diabetes care at UPMC and the VAMC. A set of patients seen at both institutions was identified to better examine the extent to which diabetes was recognized at both institutions, the patterns of HbA1c testing, and results of patients seen at both facilities. The degree of blood pressure control, HbA1c, and lipid levels are being analyzed. Differing definitions of diabetes for the quality measures are being considered, and to date the project has defined patient entry into an analyzable dataset as two diagnoses of diabetes assigned at some point in the past 2 years. A candidate set of characteristics used to predict expected diabetes control were tested with final results for the predictive model demonstrating that predicting control of HbA1c is attributed primarily to prior level of control versus a combination of co-morbidities, age, duration of diabetes, visit activity, and sex. The project received Institutional Review Board (IRB) approval in early 2008 and approval for continuing reviews of the project protocols in late 2008.

**Preliminary Impact and Findings:** Preliminary data on the predictive expectations of HbA1c control indicated that predicting control of HbA1c is attributed primarily to the prior level of controls versus other factors such as co-morbidities, age, duration of diabetes, visit activity, and sex. When comparing diabetes patients seen at the Veterans Administration (VA) and at the University of Pennsylvania Health System (UPHS), Dr. Weiner and his team found that over one-third of VA patients had been seen in primary care or subspecialty practices within UPHS. Only a minority of the patients had a corresponding diagnosis of diabetes known within UPHS, and there was a substantial redundancy in HbA1c ordering across the institutions and opportunities where data from the other institution could impact the measures of quality.

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### **Selected Outputs**

Merging Data across VA and Non-VA Settings: Exploring the Promise of Interoperability. 2008 VA eHealth University Meeting.

Persistently Elevated HbA1c: Poor Quality Doctors or Challenging Patients. 2008 Society of General and Internal Medicine Conference.

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**Grantee's Most Recent Self-Reported Quarterly Status:** The project is on track with most of its milestones.

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

**Budget:** Spending is roughly on target.