

<b>Project Title:</b>	Assessing the Impact of a Dynamic Chronic Care Registry on Quality of Care
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<b>Organization:</b>	Denver Health
<b>Contract Number:</b>	290-06-0020-6
<b>Project Period:</b>	09/07 - 05/09
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<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:** Synthesis and Dissemination

**Summary:** This contract sought to improve the quality of care provided to adult diabetic patients within an urban safety net system through an integrated diabetes registry. We used the registry to perform the following tasks: 1) distribute quarterly patient report cards to patients' homes and to participating providers in eight community health centers, as well as quarterly provider performance report cards with patient-level clinical quality data; 2) develop and use a point-of-care interface to improve adherence to guideline-based care; and 3) evaluate the effects of these interventions on process, quality, cost, and satisfaction with care. Ultimately, we hope that this approach can be applied to other chronic diseases and health care systems.

Diabetes registry data, including patient-level demographics, laboratory data, scheduling information, and pharmacy data, were transferred into a data warehouse using a Siemens Medical System. No applications were implemented or evaluated for this project. Methods for quantitative analyses included pre/post intervention-control multivariate regressions. All analyses were performed using SAS Enterprise Guide software version 9.1 (Cary, NC). The study period analyses accounted for differences in age, race/ethnicity, gender, degree of illness, and baseline levels for each outcome variable, and included generalized estimated equations to account for the within-subject correlation of repeated measures by individual patients. Qualitative analyses were performed through provider interviews at each clinic and patient surveys.

The intervention has been completed, and qualitative and quantitative analyses have generated preliminary findings.

### Specific Aims

- Assess the effect of patient report card mailings on a quarterly basis on process outcomes, such as the checking of diabetes labs or blood pressure. (**Achieved**)
- Assess the effect of point-of-care automated delivery of patient report cards at the time of patient check-in on intermediate outcomes, such as expert-recommended glycemic index, blood pressure, and lipid outcomes. (**Achieved**)
- Assess the impact of electronically delivered provider performance feedback, including patient-level data, on intermediate outcomes. (**Achieved**)
- Pilot a point-of-care interface for providers at one clinic site to improve guideline-based care. (**Achieved**)

**2008 Activities:** During the first quarter of 2008, we transferred diabetes registry data to the data warehouse and completed a user interface with the warehouse to generate reports and query data. The

patient report card and provider performance report card arms of the intervention, launched in December 2007, were completed in January 2009. The pilot for the point-of-care interface began in September 2008 and was completed in January 2009.

### **Preliminary Impact and Findings:**

#### *Process outcomes*

We found that mailed patient report cards did not improve process outcomes.

#### *Clinical outcomes*

Point-of-care delivery of patient report cards had a significant impact on lipid performance (the target being LDL < 100mg./dL) but not on glycemic or blood pressure control. Provider performance feedback with patient-level data significantly improved lipid control (LDL < 100 mg/dL), glycemic control (HbA1c < 7.0), and blood pressure control (BP < 130/80 mm Hg). Patients who received point-of-care report cards and who also were listed on provider performance report cards performed significantly better on lipid and glycemic measures.

#### *Provider feedback*

Providers rarely used the point-of-care interface at the pilot site. They cited the many competing demands during a 20-minute visit and the time it took to access the report as significant barriers.

Providers felt performance feedback provided motivation but created a competitive environment. They felt unable to effect change in their patient panel because of lack of time and resources, such as nurses to facilitate between-visit case management.

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### **Selected Outputs**

Poster Presentation. National Society of General Internal Medicine Meeting; 2009 May 15; Miami, FL.

Panel Discussion. Academy of Health Conference; 2009 June 29; Chicago, IL.