

## Evaluation of Effectiveness of a Health Information Technology-Based Care Transition Information Transfer System

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<b>Organization:</b>	Billings Clinic Foundation
<b>Mechanism:</b>	RFA: HS08-002: Ambulatory Safety and Quality Program Improving Management of Individuals with Complex Healthcare Needs through Health Information Technology (MCP)
<b>Grant Number:</b>	R18 HS 017864
<b>Project Period:</b>	September 2008 – September 2012
<b>AHRQ Funding Amount:</b>	\$1,155,371

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**Summary:** This project seeks to improve the coordination of care for patients with two or more chronic conditions who are discharged from a hospital to a rural primary care clinic. The project team has developed and implemented a Care Transition Information Transfer (CTIT) system for all Billings Clinic Hospital discharged patients and followup providers, with a particular focus on those living in rural communities. The CTIT system will pull patient data from the Billings Clinic integrated electronic health record (EHR).

Primary care clinics within the Billings Clinic integrated health system are notified of their discharged patients directly through the EHR. Primary care clinics outside the system receive notifications by e fax or email, providing basic data on the recent hospitalization, followup appointments, and medications. These providers are prompted to access more complete medical information by connecting through a Web-based portal to the hospital's EHR. The system provides patients and their primary care providers (PCPs) with discharge information, including a patient-friendly medication list, as well as information about followup visits, laboratory testing and results, and operative reports.

Project staff are conducting a prospective study to evaluate whether development and implementation of the CTIT system has improved patient and rural provider satisfaction with the hospital discharge process, and to measure system efficiency and process outcomes, and patient clinical outcomes. Patient clinical outcomes include patient adherence to medication instructions after discharge, patient receipt of reconciled medication lists, hospital readmission rates, ambulatory followup visits, and utilization of emergent care services. Clinical outcome data have been collected at three data points: baseline data were collected on 400 patients between October 2008 and August 2009, and post-intervention data were collected between April and December 2010 (401 patients), and from August 2011 to January 2012 (295 patients).

### Specific Aims:

- Develop a health information technology-based CTIT system. **(Achieved)**
- Evaluate the effects of the CTIT system on:
  - Clinical and systems-level outcomes. **(Ongoing)**
  - System efficiency. **(Ongoing)**

- Satisfaction with care transitions among rural PCPs. **(Ongoing)**
- Patient satisfaction with care transitions. **(Ongoing)**
- Timely communication of patient information. **(Ongoing)**

**2011 Activities:** During the first quarter of 2011, the research team completed data collection for the intervention period. The final medication reviews, to verify the accuracy of patient-friendly medication lists distributed at discharge and EHR medication lists at time of telephone call were conducted via telephone and chart review by research nurses and pharmacists. A total of 400 chart reviews were completed by registered nurses who have specific experience in medication assessment. In addition, 400 patient satisfaction surveys were sent and 154 returned, and 400 post-intervention-period telephone interviews were completed.

In July 2011, the project went live with the distribution of the Clinical Summary Form in the Housewide Depart (HWD) process. The HWD is a nurse-driven checklist that includes both patient and provider discharge information. This means that when any patient with a listed PCP is discharged from the hospital, the PCP will be notified that his/her patient has been in the hospital. Prior to this, only patients discharged by a participating hospital had a note sent to their PCP. This represents an increase from reaching 15 to 20 percent of discharged patients to approximately 80 percent.

The post-intervention round of data collection began in September 2011, and will continue into early 2012. So far, 194 patients have been called; therefore, Dr. Ciemins and her research team reached the goal of conducting 50 calls per month. The purpose of these calls is to assess followup health care utilization, education received, medication reconciliation, and medication correctness (i.e., whether medications are being taken correctly). The post-intervention round of expert medication reviews is also on track, and by December 2011, reviews had been completed on 68 of the 80 patients who had been targeted for this review.

In fall 2011, Dr. Ciemins embarked on a new collaborative effort with the Community Care Transitions Project (CCTP), led by the Quality Improvement Organization for Montana (Mountain Pacific Quality Health). CCTP is particularly interested in Dr. Ciemins' research in the area of transitions to non-hospital care settings because Billings Clinic Hospital is widely considered to be one of the most progressive hospitals in the region in terms of care transitions. CCTP is organizing community organizations, including assisted living and nursing homes throughout the area, and looking at transitions to other care settings in addition to patients' homes. The Billings Clinic Center for Clinical Translational Research is leading activities to identify measures and outcomes of care transitions.

As last self-reported in the AHRQ Research Reporting System, project progress and activities are on track and project spending is on target. Dr. Ciemins is using a 1-year no-cost extension to ensure adequate time to complete data collection, medication reviews, and data analysis.

**Preliminary Impact and Findings:** A total of 150 PCPs completed surveys on their satisfaction with the discharge process at baseline and following the intervention period. Post-intervention results showed that 63 percent of providers found the discharge process to be efficient and reliable, resulting in quality patient care, compared with 38 percent at baseline. Substantial improvements were also shown when providers were asked whether information was sufficient and timely, and when asked about whether they and their patients were provided with reconciled patient medication lists.

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**Target Population:** Adults, Chronic Care\*

**Strategic Goal:** Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

**Business Goal:** Implementation and Use

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*\* This target population is one of AHRQ's priority populations.*