

## Virtual Continuity and its Impact on Complex Hospitalized Patients' Care

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<b>Organization:</b>	University of Pittsburgh at Pittsburgh
<b>Mechanism:</b>	PAR: HS08-270: Utilizing Health Information Technology to Improve Health Care Quality Grant (R18)
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<b>Project Period:</b>	October 2009 – September 2012
<b>AHRQ Funding Amount:</b>	\$1,193,052
<b>Summary Status as of:</b>	December 2010

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### Target Population: Adults

**Summary:** Hospital care processes have changed dramatically over the last 10 to 15 years. Previously, hospitalized patients were cared for by their primary care physician (PCP), facilitating continuity of care between inpatient and ambulatory care settings. Now, many hospitalized patients are cared for by hospital staff physicians and are returned to their PCPs' care upon discharge. Without dedicated information transfer processes, this stratification of care can lead to information loss and medical error. Heightened communication with and involvement by the PCP in the care of hospitalized patients should decrease medication errors, diagnostic errors, and follow up errors, thereby improving medical care quality and safety as well as patient and physician satisfaction.

This project, started in October 2009, will enhance MedTrak, the University of Pittsburgh Medical Center (UPMC) electronic physician communication tool, with an initiative called Virtual Continuity. Virtual Continuity allows PCPs to follow their hospitalized patients electronically and participate more directly in their care through the use of e-mails that are triggered by clinical events with embedded links to electronic medical record (EMR) data and communication portals, medication lists electronically delivered at admission and discharge, and immediate notification of discharge with pertinent clinical details. The project is using the Cerner PowerChart EMR system, a Certification Commission for Health Information Technology-certified product.

To evaluate the impact of Virtual Continuity, a pre-post study will compare the frequency of discharge medication errors before and after initiation of the Virtual Continuity intervention. Additional evaluation measures include PCPs' frequency and timeliness of receiving information, PCPs' perception of information exchange adequacy and usefulness, patients' satisfaction with care and the information they receive, and rates of rehospitalization, post-discharge emergency department visits, and PCP followup visits. The information technology cost of implementing and maintaining the Virtual Continuity intervention will also be assessed.

### Specific Aims:

- Augment the present system of PCP notification through the development and use of electronic EMR links to allow virtual continuity for the PCP. **(Ongoing)**

- Measure differences in patient care safety and quality between PCPs receiving virtual continuity versus usual communication in a pre-post study. **(Upcoming)**
- Evaluate the impact of virtual continuity. **(Upcoming)**

**2010 Activities:** A steering committee and a working group consisting of project investigators and UPMC Information Services Department personnel continued to meet regularly to develop procedures that will allow enhanced hospital to PCP communication to occur. Planning of specific processes to implement and maintain the virtual continuity communication intervention is ongoing.

Physicians who serve as PCPs and are employed by the University of Pittsburgh or by UPMC, in concert with the UPMC Office and Physician Relations, have been recruited to participate in the study. Two research assistants have been hired. Patient recruitment and pilot data collection began in September 2010.

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**Grantee's Most Recent Self-Reported Quarterly Status (as of December 2010):** There has been slippage with project milestones because of delays initiating data collection with hospital patients. The data collection was expected to begin in October after the pilot was completed and is now expected to begin in February 2011. The budget is underspent as a result of project delays and difficulty hiring staff.

**Preliminary Impact and Findings:** The Delphi PCP survey was conducted via a Web-based interface. Rated items in the first round having a 95 percent confidence interval lower boundary of 4.0 or more were defined as accepted by the panel. Items with a 95 percent confidence interval upper boundary less than 3.0 were rejected. All other items were defined as indeterminate. In the second round of the survey, the panel was asked to reconsider those indeterminate data items, showing them their prior rating and the group mean for each item in an effort reach further consensus on those items.

In the first round of the Delphi survey, 37 of 89 items were accepted, one was rejected, and 51 were indeterminate. The second round survey considered these 51 indeterminate items and consensus to accept was found on 6 more items.

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**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:** Knowledge Creation