

Virtual Continuity and its Impact on Complex Hospitalized Patients' Care

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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. Currently, many hospitalized patients are cared for by hospital staff physicians and 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, diagnostic, and followup errors, thereby improving medical care quality and safety as well as patient and physician satisfaction.

This project enhanced MedTrak, the University of Pittsburgh Medical Center's electronic physician communication tool, with an intervention called Virtual Continuity. Virtual Continuity allowed 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.

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, 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. **(Achieved)**
- Measure differences in patient care safety and quality between PCPs receiving Virtual Continuity versus usual communication in a pre-post study. **(Ongoing)**
- Evaluate the impact of Virtual Continuity. **(Retired)**

2011 Activities: The research team conducted a Delphi PCP survey via a Web-based interface. Data

collection and analysis on the pre- and post-intervention period represented the majority of project work. Previous changes in study design, where the project is now collecting pre-intervention data via the EMR, have made it infeasible to collect survey data from this group, since informed consent, required for this data to be collected and linked to clinical data, cannot be obtained. In addition, the number of patients from whom they are able to obtain consent in the post-intervention phase continues to be well below their projections. The absence of pre-post data for comparisons and low numbers of surveys overall make evaluating the impact of Virtual Continuity difficult to achieve.

As last self-reported in the AHRQ Research Reporting System, project progress and activities are somewhat on track and the project budget funds are somewhat underspent. The original plan to evaluate the impact of Virtual Continuity was to measure PCP and patient satisfaction pre- and post- intervention. Pre-intervention study data being collected by the EMR have made it infeasible to collect survey data from this group because informed consent is required for this data to be collected and linked to clinical data. In addition, the number of patients from whom they were able to obtain consent in the post-intervention phase was well below their projections. Therefore, this aim was retired because the absence of pre-post data for comparisons and low numbers of surveys overall made it unlikely that it could be achieved.

Preliminary Impact and Findings: The Delphi survey results were completed. Rated items in the first round with 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 reached for six more items.

Target Population: Adults

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
