

## Improving Care Transitions for Complex Patients Through Decision Support

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<b>Organization:</b>	Duke University
<b>Mechanism:</b>	RFA: HS08-002: Ambulatory Safety and Quality Program: Improving Management of Individuals with Complex Healthcare Needs Through Health Information Technology (MCP)
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**Summary:** The care of patients with complex health care needs is often fragmented because patients receive care from multiple providers in disparate locations and because information related to this care is often not transmitted between providers or locations. Inadequate inter-provider communication and care coordination significantly lowers care quality and compromises patient safety. This project sought to improve outcomes, quality, and coordination of care for patients with complex health care needs by facilitating the availability of information following three types of care transitions into ambulatory care: hospital discharge, emergency department (ED) discharge, and specialty care referrals.

The project built upon the Community-Oriented Approach to Coordinated Healthcare, an existing regional health information exchange (HIE) network that connects providers serving Medicaid beneficiaries in rural and urban North Carolina. The project team implemented a Web-based service clinical decision support system (CDSS) application called CFM-CDSS to detect care transitions and produce and send care event summary reports to patients, their assigned medical homes, and care managers. These intervention notices support traditional clinic-based models of care, as well as models that incorporate population health management and cross-disciplinary teams. The system was based on HL7 standards for decision support and utilized routinely available claims and scheduling data in order to serve as a replicable model for broader use of care transition decision support. When the decision support system detected a care transition, four information interventions could be created: 1) care event summary reports faxed or emailed to the patient's medical home; 2) patient letters containing information similar to that in the care event summaries with reminders of scheduled appointments and health education material as appropriate; 3) release of information requests sent to the health information management department of the care encounter site on behalf of the patient's medical home; and 4) care event notices regarding the care encounters that were emailed to the patient's assigned care manager.

The impacts of the interventions were evaluated by randomizing patients with complex health care needs by family unit into one of three arms: 1) information on care transitions is sent to patients and clinic-based caregivers; 2) information on care transitions is sent to patients, clinic-based caregivers, and care managers; and 3) no information is sent (i.e., usual care). Outcome measures included outpatient, emergency department, and hospitalization utilization rates. In addition, the economic impact of the intervention was measured relative to usual care.

### Specific Aims:

- Augment an existing HIE and CDSS by creating new functionality that can detect transitions in care and can conveniently communicate valuable, timely information regarding these care transitions to patients, their primary care clinicians, and members of multidisciplinary care management teams. **(Achieved)**
- Implement the new functionality to improve the care of Medicaid beneficiaries with complex health care needs and evaluate the impact of the interventions in a three-arm randomized controlled trial. **(Achieved)**
- Assess the economic impact of the new interventions at both a societal and an individual stakeholder level. **(Achieved)**
- Disseminate information regarding the development and the impact of the interventions through Web teleconferences, professional meetings, educational lectures, peer review journals, and a promotional video. **(Achieved)**

**2012 Activities:** The 1-year randomized controlled trial (RCT) was completed in March 2012. Data collection, including patient, provider, and care manager surveys, as well as the chart audits to collect the clinical outcomes data, was completed in September 2012. Quality assurance activities and data analysis were completed, and manuscript development was in progress at the end of the year. In addition, the project team developed a video, *Using IT to Fight Care Fragmentation*, available at <http://www.youtube.com/watch?v=bP4iRjCMsk8>, describing the development and implementation of the intervention. Interviewees included Dr. David Lobach (the original principal investigator), a provider who used the reports, a care manager who received the alerts, and the project coordinator.

The project team used a 1-year no-cost extension to complete the RCT, which was delayed due to previous years' delays in programming the interventions and subsequent analysis and manuscript preparation. As last reported in the AHRQ Research Reporting System, project progress was on track and budget spending was on target. This project was completed in September 2012.

**Impact and Findings:** The decision support system was able to detect care transitions for this study's complex patients and provide relevant information to ambulatory care practices, patients, and care managers. In addition, the system was able to increase the number of care manager contacts for patients in the third study group versus the control group. The system is integrated into a regional HIE that permits the seamless integration of care transition information into the normal processes of the regional health network. The successful implementation of the study interventions demonstrates that the management of health care for a population is feasible through a regional HIE primarily populated with Medicaid patients. However, there were no differences in outpatient, emergency department, or hospitalization encounters among the three study groups.

Although the letters to patients and email notices to care managers were delivered successfully, the site audits found that only 60 percent of the information directed to providers was available and in patient charts when followup visits for complex patients occurred. Hence, the most important information for managing care transitions was frequently missing and not available to the medical home providers for consideration in their decisionmaking. Despite the fact that the project team performed workflow analyses for each study site, it appears that the integration of new information into existing workflows remained a problem for a significant number of study sites. Future studies in this area will need to pay particular

attention to sociotechnical issues to enable better delivery of information interventions.

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

**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.*