Improving Care Transitions for Complex Patients through Decision Support

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Organization: Duke University
Mechanism: 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 Status as of: December 2010

Target Population: Chronic Care*, Medicaid

Summary: The care of patients with complex health care needs is often fragmented because they receive care from multiple providers in disparate locations and because information related to this care is frequently not transmitted between providers or locations. Inadequate inter-provider communication and care coordination significantly lowers care quality and compromises patient safety. This project seeks 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 builds upon the Community-Oriented Approach to Coordinated Healthcare (COACH), an existing regional health information exchange (HIE) network that connects providers serving Medicaid beneficiaries in rural and urban North Carolina. It will also implement and utilize an open source clinical decision support (CDS) application called ClinicaCDS to detect care transitions, and produce and send care event summary reports to patients, patients’ assigned medical homes, and care managers. These intervention notices will support traditional clinic-based models of care as well as models that incorporate population health management and cross-disciplinary teams.

The impact of the interventions will be evaluated by randomizing patients by family unit with complex health care needs 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). The primary outcome measure is the overall rate of ED use. In addition, the economic impact of the intervention will be measured relative to usual care. Information-augmented care transitions between sites are expected to improve care coordination, quality, and appropriateness of care.

Specific Aims:
• Enhance the existing HIE network and decision support tool. (Achieved)
• Implement and evaluate the intervention. (Ongoing)
• Conduct the economic attractiveness assessment. (Upcoming)
• Disseminate the findings. (Upcoming)
**2010 Activities:** During 2010, the team made significant enhancements to the COACH HIE including completing the programming necessary for the importation of Admission/Discharge/Transfer (ADT) data feeds for the five participating hospitals. They are now receiving nightly ADT data files which will be used to generate notifications for care managers and primary care clinics regarding patient hospital discharges and ED encounters for Medicaid patients with complex care needs. In addition, the project team identified a method for identifying specialty encounter visits based on current procedural terminology (CPT)-4 evaluation and management codes, location of care delivery, and the specialty of the provider billing for a specialty care service in the Duke University Health System. They validated this method by conducting patient chart reviews.

The project team encountered delays during the year in programming the interventions into the Duke proprietary CDS system due to turnover of multiple staff and the learning curve associated with familiarizing programmers with the proprietary CDS. Therefore, the team decided to migrate to ClinicaCDS for this project with the hope that the application would be easier to develop, configure, implement, and maintain. The team was able to identify several modules that were part of the proprietary CDS system that could be reused in the new system. Upon completion of the specifications and requirements, the programmers “roughed out” all of the required components by creating prototypes of the interventions beginning from the detection of a care transition. This process allowed the team to demonstrate that all of the necessary components were functional by the end of October 2010. The software development effort during the months of November and December focused on refinement of these newly created rough components.

Because of a mandate by North Carolina Medicaid to reduce costs for hospitalizations and ED utilization, a second phase of the project was added. The network partners requested daily notices of hospital discharges and ED encounters from data in the COACH HIE. These requested notices are similar to the care manager-oriented interventions for the proposed study, although the care transition notices are driven from billing instead of ADT data. To accommodate this request, a new Phase 1, which provides care manager notices derived from existing claims data for operational needs on approximately 47,000 Medicaid beneficiaries, was implemented in December 2009. The 12 month randomized controlled trial (RCT), now called Phase 2, will provide the originally proposed study interventions for approximately 4,600 patients with complex health needs. The planned start for Phase 2 is expected to roll out in February 2011, pending the software migration and the programming of the interventions into ClinicaCDS.

During the year, the project team devoted considerable time to refining and finalizing the content for the four intervention documents: care event summary reports, patient letters, care event notices, and release of information requests. This process included completing the final focus group with patients to inform the content of the patient letters and the Health Education Brochures; defining the data elements and completing the data extraction for patient specialty care encounters for the care event summary reports and care event notices; working with the primary care sites to ensure that the content in the documents is appropriate; and submitting and receiving final approval from the State Medicaid office. In late 2010, the clinical research coordinator and the research assistant distributed materials and conducted onsite visits to introduce the project to the participating primary care clinics.

**Grantee’s Most Recent Self-Reported Quarterly Status (as of December 2010):** Project progress is on track in some respects, but not others, and project budget to date is significantly underspent, more than 20 percent. However, the project team made adjustments and there is a viable plan for meeting all project aims. Part of this delay was due to the mandate by North Carolina Medicaid while other delays involved the staffing retention and CDS migration described above.
Preliminary Impact and Findings: Evaluation outcomes will not be available until the RCT is complete.

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

* AHRQ Priority Population