

## e-Coaching: Interactive Voice Response-Enhanced Care Transition Support for Complex Patients

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| <b>Principal Investigator:</b> | Ritchie, Christine S., M.D., M.S.P.H.   |
| <b>Organization:</b>           | University of Alabama at Birmingham (UAB)   |
| <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 017786   |
| <b>Project Period:</b>         | September 2008 – September 2011   |
| <b>AHRQ Funding Amount:</b>    | \$1,199,999   |
| <b>Summary Status as of:</b>   | December 2010   |

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**Target Population:** Chronic Care\*, Chronic Obstructive Pulmonary Disease, Congestive Heart Failure, Elderly\*

**Summary:** For complex medical patients, the transition from hospital to home-based care is a vulnerable period, where the patient is at high risk for adverse events, including the experience of a medical error or loss of community tenure. Studies examining the Care Transition Intervention (CTI), which provides nurses who conduct home visits, telephone followup, and provide assistance at and after discharge report that it is a successful program but is costly and not feasible in settings serving geographically dispersed populations.

Dr. Ritchie and her team developed a cost-efficient technological solution that is based on the CTI: an interactive voice response (IVR)-supported care transition coaching intervention, e-Coach, that supports complex medical patients as they transition from hospital to home-based care. The e-Coach, using the TeleSage software application, supports patients with medication self-management assistance, maintenance of a paper-based personal health record (PHR), timely followup with primary or specialty care, and identifies ‘red flags’ indicating worsening of the patient’s condition. The e-Coach also has a Web-delivered monitoring dashboard which displays data in a meaningful way for the care transition coach to monitor collected patient data, listen to patient messages, and record responses. The team is currently performing a randomized control trial (RCT) and recruiting patients with congestive heart failure (CHF) or chronic obstructive pulmonary disease (COPD) who are discharging from the hospital. During 2011, the team will be completing the trial and evaluating the use of the e-Coach by patients, as well as evaluating the impact of the e-Coach on patient outcomes, including 90-day rehospitalizations, successful community tenure over a 3-month period, medication discrepancies, and patient self-efficacy. In addition, the investigators will quantify the cost associated with the e-Coach. If e-Coach is successful, it is likely to be easily disseminated and could result in substantial avoidance of medical errors in the hospital-to-home transition period, along with notable reductions in the risks and costs of rehospitalizations.

### Specific Aims:

- Randomize 720 patients to the e-Coach intervention or to usual care. **(Ongoing)**

- Evaluate the use of the e-Coach system by patient and health care providers. **(Ongoing)**
- Evaluate the effect of e-Coach on patient outcomes, including 90-day rehospitalizations, successful community tenure at home after discharge from the hospital, and patient self-efficacy based on the Care Transition Measure. **(Ongoing)**
- Quantify the costs associated with the e-Coach intervention. **(Ongoing)**

**2010 Activities:** Pilot testing of the e-Coach intervention, also called the UAB Back to Home Support Program, for patients with CHF was conducted in December 2009. After minor refinements were made to the dashboard and IVR system and tested, Dr. Ritchie and her team began study recruitment for the RCT in February 2010. In April and May 2010, the team implemented the pilot for patients with COPD to test feasibility and gather feedback from COPD patients on the use of the system, enunciation of questions, and ease of understanding question options. The dashboard for the COPD group was completed and the team began recruiting COPD patients during the summer.

The primary challenge experienced by the team relates to recruiting patients, mainly due to hospital census limitations and by their eligibility criteria. The team initiated several approaches to increase their enrollment rate, including expanding the screening protocols, engaging in daily “environmental scanning” throughout the two study hospitals, and communicating regularly with staff in areas with high volumes of COPD and CHF patients. In addition, they adjusted Care Transition Coach schedules to increase the availability of coaches for evening and weekend participant recruitment. Finally, research assistants trained in motivational interviewing to enhance skills in overcoming potential barriers to enrollment and as a strategy to increase effectiveness of the enrollment process.

As of the end of December 2010, the team enrolled 330 patients in the study representing 47 of the 67 counties in Alabama and seven surrounding States, demonstrating that the intervention effectively bridges geographic boundaries. Data collection is scheduled to occur at 1 week, 1 month, and 3 months following hospital discharge. The response rate for followup calls and data collection at the 90 days post discharge time is 94 percent. While recruitment is below their goal of 720 participants, the team is pleased with their less than 10 percent attrition rate and 82 percent IVR survey completion rate.

The team refined the data collection tool used for enrollment and capture of baseline data to minimize potential data entry errors and to be more visually distinct and user-friendly. Several data entry fields within close proximity to one another were moved to provide a less cluttered visual presentation and to minimize potential error during the data entry process.

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**Grantee’s Most Recent Self-Reported Quarterly Status (as of December 2010):** Progress is on track in some respects, but not others, and the project budget is somewhat underspent, 5 to 20 percent. There were delays in programming of the IVR software and e-Coach dashboard in 2009, leading to delays in the initiation of the RCT. In addition, as described previously, the project team had difficulty with recruitment of eligible study participants. They have initiated several strategies to increase enrollment and will request a no-cost extension to complete the project.

**Preliminary Impact and Findings:** Preliminary findings include the high receptivity from patients on the intervention, a higher anticipated response rate among patients receiving the IVR-supported intervention, and a reduction in the number of rehospitalizations for intervention versus the control group. In addition, an impact of this project has been the geographic reach they have been able to achieve through the use of IVR technology as opposed to in-home nursing care transition support as evidenced

by their enrollment of participants from 47 of the 67 counties in the State of Alabama, and individuals living in seven different States.

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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:** Implementation and Use

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\* *AHRQ Priority Population*