

Project Title:	Conversational Information Technology (IT) for Better, Safer Pediatric Primary Care
Principal Investigator:	Adams, William, M.D.
Organization:	Boston Medical Center
Mechanism:	RFA: HS07-007: Ambulatory Safety and Quality Program: Enabling Patient-Centered Care through Health Information Technology (PCC)
Grant Number:	R18 HS 017248
Project Period:	09/07 – 08/10
AHRQ Funding Amount:	\$1,159,609
Summary Status as of:	December 2008

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

Summary: This project, approximately mid-way through its scheduled duration, seeks to develop and evaluate an automated telephony system as part of prevention services delivered in a pediatric practice. The system gathers personal health data and counsels parents before scheduled visits, integrates the data with the physician’s electronic health record (EHR), and offers personalized follow-up assessment and counseling after visits. The internally developed interactive voice response (IVR) telephony system interfaces with the providers’ EHR (GE Centricity Physician Office). The telephony system, called the Personal Health Partner (PHP), uses fully automated, interactive conversations (including synthetic speech and speech recognition) to gather health data and counsel parents before scheduled pediatric primary care visits. Parent-entered data is shared with the child’s primary care clinician via the EHR, where data is reviewed and clinician decision support is provided. The system is being evaluated via a three-armed, randomized, controlled trial (PHP only, PHP assessment with counseling, or usual care groups) to determine the marginal effect of the PHP intervention on comprehensive preventive and medication management assessments during PCP visits; preventive and medication management counseling; healthier parental behaviors; and increased parental activation.

Specific Aims

- Develop an automated telephony system that uses fully automated conversations to perform pre-visit pediatric primary care assessments, offer parental counseling (including appropriate medication use), and support clinician decisionmaking by incorporating the PHP child assessments into their EHR at the point-of-care. **(Ongoing)**
- Conduct a randomized clinical trial to determine whether: 1) PHP assessment alone (no counseling) with EHR data exchange leads to higher quality preventive care and medication management; and 2) whether the addition of PHP counseling to PHP child assessments (before and after visits) is associated with increased quality and healthier parental behaviors. **(Upcoming)**

2008 Activities: The team has successfully accomplished Phase I of the project, which was the building of content with experts while concurrently building the IT infrastructure. The project team designed and developed a prototype system and final system to store and manage the PHP system. To accomplish this, Dr. Adams and his team gathered instruments, developed the content, and programmed all pre- and post-visit human and IVR call scripts, programming modules for routine health care maintenance, obesity, smoking, tuberculosis risk, depression, development, and medication safety assessments; developed the

parent activation measures, converting the language to be appropriate for speaking with parents of child patients; and planned, recruited for, and conducted two focus groups to gather feedback on the assessment questions, counseling content, and recruitment materials. In addition, the team developed a library of all children's medications. The system will be able to pull the medication names from the EHR, map them to medications from the library, and ask the parent if the child is currently on those medications. The system is being tested, and the team is putting their final touches on the data exchange process between the patient's EHR and the telephony system. Once the data are collected from the telephony system, parsed into module specific components, and input into the provider's EHR, the providers will be able to click on the data the patient has provided and decide whether to accept the information; if they do, the data will pre-populate the visit documentation. The team is currently building the forms and establishing the workflow for this data exchange process; finalizing the application that will manage potential and actual study participants; and building the application to extract appointment data, demographics, and medicines on medication lists from the EHR system to be input into the IVR system.

Preliminary Impact and Findings: No impacts or findings have yet been reported.

Selected Outputs

AHRQ 2008 Annual Conference presentation: Conversational IT for Better, Safer, Pediatric Care ([PowerPoint@ File](#), 1 MB; [Web Version](#)).

Grantee's Most Recent Self-Reported Quarterly Status: The project is meeting 80-99 percent of its milestones and is generally on time.

Milestones: Progress is mostly on track.

Budget: Spending is roughly on target.