

## Conversational Information Technology for Better, Safer Pediatric Primary Care

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<b>Organization:</b>	Boston Medical Center
<b>Mechanism:</b>	RFA: HS07-007: Ambulatory Safety and Quality Program: Enabling Patient-Centered Care through Health Information Technology (PCC)
<b>Grant Number:</b>	R18 HS 017248
<b>Project Period:</b>	September 2007 – August 2011, Including No-Cost Extension
<b>AHRQ Funding Amount:</b>	\$1,159,609
<b>Summary Status as of:</b>	December 2010

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**Target Population:** Medically Underserved, Pediatric\*

**Summary:** This project seeks to develop and evaluate an automated telephony system as part of prevention services delivered in an urban 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 followup 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 are shared with the child's primary care provider (PCP) via the EHR, where data are 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. **(Achieved)**
- Conduct a randomized clinical trial to determine: 1) whether 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. **(Ongoing)**

**2010 Activities:** Data exchange between the PHP telephony system and the EHR is complete, and the system is now fully operational. The hospital's clinical data warehouse continues to deliver appointment and medication data into the team's SQL Server database. Families are using PHP successfully and providers are able to access this information in the EHR. Providers can review the data provided by parents and determine whether to accept the information to prepopulate the visit documentation.

The grant team is using the PHP Manager (a PowerBuilder application) to print recruitment letters, appointment labels, and mailing labels. They have been actively recruiting participants since April 2009, and plan to continue recruitment through February 2011. Recruitment strategy improvements, including outbound reminder calls (initiated in late 2009) and increases in participant reimbursement (starting in September 2010), have continued to improve recruitment rates.

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**Grantee's Most Recent Self-Reported Quarterly Status (as of December 2010):** Active recruitment continued throughout 2010, and recruitment rates have continued to increase. The team remains approximately six months behind the original project schedule. Using no-cost extension funds, the team has extended the subject recruitment period and fully expects to achieve all study aims. Most milestones are being met, and there is a viable plan for achieving the others. Budget spending is roughly on target.

**Preliminary Impact and Findings:** Preliminary analyses, presented at the 2010 American Medical Informatics Association Conference in a poster titled, [The Personal Health Partner: Conversational IT for Better, Safer Pediatric Primary Care](#), indicate that use of a patient-centered IVR system such as PHP before routine health care maintenance visits can lead to more comprehensive information at visits, identifying and counseling parents with important issues, and better preparing parents and clinicians for visits. Such systems have the potential to improve quality and efficiency in primary care settings.

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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*