

Health Information Technology Enhanced Family Health History Documentation & Management in Primary Care

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Organization:	Brigham and Women's Hospital
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Summary: Increased understanding of genetic and hereditary components of disease has increased the importance of information about family history in patient medical records. However, it is very difficult for providers to get full family histories and make individual risk assessments during short primary care visits. Technology has the potential to improve providers' ability to capture this information and estimate and provide guidance on health risks based upon it. This project is developing two methods of collecting family health history as part of an integrated risk assessment module: 1) a telephonic interactive voice response system (IVRS) that uses a computer to detect voice during a normal phone call and encourages patients to provide their history through programmed questions; and 2) a Web-based tool with a series of questions. Patients will choose their preferred method and information gathered will be incorporated into the patient's electronic health record (EHR). Based on reported family history, a computer server will summarize information into a risk assessment for patient and provider discussion. This will be paired with assessment-based clinical decision support reminders to providers.

The integrated risk assessment module will be evaluated through a cluster randomized controlled trial of adult primary care patients in the Brigham and Women's Primary Care Practice-Based Research Network (PBRN). The evaluation of this project will assess the ability of the module to reach a large number of patients, its effectiveness in improving personalized risk assessment and counseling, and the facilitators and barriers of adoption and implementation. The findings from this research will increase understanding about how technology can improve collection of family health history information from diverse populations and be used to provide personalized risk assessment.

Specific Aims:

- Develop a patient-reported, EHR-integrated, personalized risk assessment module to provide tailored disease risk and risk reduction information for four common conditions (breast cancer, colorectal cancer, coronary heart disease, and type II diabetes) for the patient and his or her primary care physician (PCP). **(Ongoing)**
- Measure the reach and effectiveness of this integrated risk assessment module by conducting a cluster randomized controlled trial of adult primary care patients in the Brigham and Women's Primary Care Practice-Based Research Network. **(Upcoming)**
- Evaluate facilitators and barriers to the adoption and implementation. **(Upcoming)**

2012 Activities: The research team identified 13 practices to recruit patients to test the integrated risk assessment module. The complex structuring of the family history component required the team to find a skilled vendor with sophisticated voice technology. The risk assessment tool was created to incorporate both patient-reported family health history and lifestyle risk factors into a single tool. This will provide tailored disease risk and risk reduction information for the patient and PCP. In developing the tool, which is based on an algorithm developed at Washington University, the team reviewed literature on the metrics associated with lifestyle risk factors. Dr. Haas modified the tool to provide a risk score and calculation using the fewest possible data points so that only the most heavily weighted data elements are collected. This will allow them to keep the phone survey as short as possible to maintain the patients' attention.

The IVRS script was piloted and revised based on that pilot testing. Four different scripts were finalized and will be automated for the randomized controlled trial. Both study arms have pre- and post-visit scripts, which have also been translated into Spanish.

The format and mechanism for delivering the final risk assessment report to participating patients has been designed. Patient risk reports will be available to patients through an online personal health record or through the mail. Physicians will have access through the medical record. For the trial design, the intervention group will get the report 2 weeks before their visit. The hope is that this will stimulate discussion between the patient and provider. Patients in the control group will receive their reports after their visits.

The research team developed the post-surveys that will ask patients if they used the risk assessment data during their medical appointment and whether the physician talked with them and answered questions about the risk report. The development of a physician survey was also completed. This survey will measure self-efficacy for individualized risk assessment, patient counseling about personalized risk, and perceived barriers and facilitators to these activities in the primary care setting.

Dr. Haas worked with the IVRS vendor to revise, refine, and record the scripts for the telephone survey and develop modified versions for implementation as a Web survey that will interface with patient portal accounts. The pilot of the risk assessment in the IVRS identified quality problems with the system. Dr. Haas worked with the vendor to use live calls to support the IVRS system. The team created the protocol and tools necessary for data storing and data sharing throughout the period of data collection.

As last self-reported in the AHRQ Research Reporting System, project progress and activities are on track and project spending is on target.

Preliminary Impact and Findings: This project has no findings to date.

Target Population: Adults

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to improve health care decisionmaking through the use of integrated data and knowledge management.

Business Goal: Knowledge Creation
