

Technology for Optimizing Population Care in a Resource-Limited Environment

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Target Population: Adults

Summary: Health information technology (IT) initiatives have been designed by many organizations in recent years to help provide consistent, high-quality care to everyone, thereby improving health care in the primary care setting. However, despite the increasing adoption of basic health IT capabilities, studies continue to reveal low rates of appropriate preventive screening. The project team for the study titled Technology for Optimizing Population Care in a Resource-Limited Environment (TOP-CARE) is working to design, develop, and implement a novel cancer screening intervention program. The goal of this study is to improve clinical decision support and enhance preventive cancer screening. The screening program is being integrated with electronic health record (EHR) data to assess whether clinical decision support can efficiently enhance preventive care—specifically, breast, cervical, and colorectal screening—in a primary care setting.

User feedback is considered critical to guide the successful design of the TOP-CARE system, particularly from key stakeholders, such as: 1) primary care physicians; 2) practice contact delegates; 3) patient navigators; and 4) central administrative personnel. A practice cluster randomized trial of the TOP-CARE program will provide an opportunity to assess its impact on cancer screening rates in eligible patients. Practices within the Massachusetts General Primary Care Practice Based Research Network (MGPC-PBRN) will be randomly assigned to intervention or augmented standard care. This randomized clinical trial will use tailored outreach, including letters, and practice personnel or patient navigator contact to see whether screening rates differ when outreach is linked to the patient's needs. The control group will receive a standard of augmented care that mimics current population-level reminder systems, supplemented by the use of automation.

Using average cancer screening test completion rates for breast, cervical, colorectal, and prostate cancers, this study will demonstrate the use of a state-of-the-art approach to automated, cancer-specific patient reminders and its impact on involving clinicians in patient population management to facilitate between-visit, patient-centered cancer screening. This research is relevant to nationwide efforts to rigorously demonstrate the most effective ways to implement new IT-based delivery models. During the randomized trial, data related to the costs, preferences, and clinical and process outcomes will also be collected. While a formal cost-benefit analysis is outside the scope of this particular grant, the intention is that the data can be used in future cost analyses of the TOP-CARE study.

Specific Aims:

- Design, develop, and implement a novel cancer screening intervention program (TOP-CARE) that facilitates the identification, individualized contact, and subsequent tracking of patients overdue for screening. **(Ongoing)**
- Conduct a practice-randomized trial of the TOP-CARE program within the MGPC-PBRN assessing its impact on cancer screening rates in eligible patients. **(Ongoing)**
- Collect data prospectively throughout the randomized trial on costs, preferences, and clinical and process outcomes to inform a subsequent formal cost-benefit analysis. **(Upcoming)**

2010 Activities: Regarding the development of the TOP-CARE system, the project team has made substantial progress on many of the aspects of system architecture and developing TOP-CARE-specific functions. Development of the permission mechanism and security layer is 85 percent complete, the interface is 75 percent complete, and the integration of patient linkage methodology is 50 percent complete. Stakeholder input was solicited frequently throughout the design process and has proven useful in the design of a functioning interface. The development of the user interface is 50 percent complete after a fifth iteration of the design. The interaction functionalities have also been designed; features include a phone line, fax line, and e-mail account by which patients can provide information stored outside of the system. The pilot phase is planned to begin in the first quarter of 2011.

Regarding the randomized controlled trial, extensive work has been done to evaluate and improve on a new real-time process of linking a patient to a specific provider. Providers were given a list of 25 patients to review whether the real-time operational linkage algorithm was successful, with results indicating that it was. Also, letter templates have been developed for notifying patients of an overdue status for one or more cancer screening exams. These complex letters differ by cancer type and by sender, whether it is the physician, case manager, or automated control. These letters will include information about the value of cancer screening, the status of a patient's eligible screening exams, instructions for scheduling an exam, instructions for notifying a provider or practice of inaccurate information or outside tests, and additional educational material when appropriate. The randomization of practices within the MGPC-PCRN will occur in early 2011.

Grantee's Most Recent Self-Reported Quarterly Status (as of December 2010): The research team made significant progress this year. All project milestones are being met on time and spending is roughly on target.

Preliminary Impact and Findings: In the initial process of translating the validated algorithm into a real-time operational process, there were cases of patients being linked to a specific practice but not a specific provider. Extensive work was done in 2010 to evaluate and improve the real-time process, leading to a refined real-time operational linkage algorithm. Final implementation plans for this real-time linkage process are expected to be completed in the first or second quarter of 2011.

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