Economic Analysis of an IT-Assisted Population-Based Cancer Screening Program

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Organization: Massachusetts General Hospital
Mechanism: PAR: HS08-268: Small Research Grant to Improve Health Care Quality through Health Information Technology (IT) (R03)
Grant Number: R03 HS 020308
Project Period: March 2011 - August 2012
AHRQ Funding Amount: $100,000

Summary: The Massachusetts General Hospital Primary Care Practice-based Research Network (MGPC PBRN) has developed an innovative health information technology (IT) approach that is currently being applied to comprehensive cancer screening. The program, the Technology for Optimizing Population Care in a Resource-limited Environment (TOP-CARE), is using a health IT interface to facilitate the identification, individualized outreach, and subsequent tracking of patients overdue for breast, cervical, and colorectal cancer screening.

This project is looking at TOP-CARE's impact on improvements beyond the use of automated reminders, particularly with regard to its unique outreach strategy, which is based on the provider's individual knowledge of each of his/her patients. More specifically, this is an economic analysis of alternative strategies for improving cancer screening rates in the context of a large provider organization. Utilizing data that was collected during the initial randomized trial on costs, preferences, and clinical and process outcomes, this study will compare increasingly intensive interactions from Baseline Standard of Care (BSC) and Augmented Standard Care (ASC) to the TOP-CARE intervention. For the purpose of this study, BSC refers to visit-based reminders, whereas ASC is defined as a population-level reminder system with automated patient outreach. TOP-CARE is more intense than BCS or ACS due to its individualized outreach approach.

By examining the incremental cost-effectiveness of increasingly intensive interventions, this project will assess the impact of technologically-improved care management in large primary care networks. The analysis will determine the extent to which investments in health IT systems, combined with primary care providers' unique knowledge of their patients, yield improvements in breast, cervical, and colorectal cancer screening rates. Ultimately, the study will help determine whether ASC and TOP-CARE interventions are worth the additional investment in health IT and physician time. Evaluating the efficiency of health IT-assisted population-based care is essential to ensuring it is a strategy that can be disseminated broadly.

Specific Aim:

- Evaluate the marginal cost per patient screened of the TOP-CARE and augmented standard care programs compared to baseline standard care from an ICO perspective. **(Ongoing)**

2011 Activities: In order to achieve the project aim, the study team has established five milestones: 1) gathering wage data; 2) developing BSC estimates from surveys; 3) developing time use estimates from survey data and direct observation for the TOP-CARE intervention and ASC; 4) developing software cost estimates; and 5) conducting the cost-effectiveness and sensitivity analyses. The focus during 2011 was on

the milestones related to gathering wage data and developing the BSC and time estimates.

In their effort to gather wage data, the study team worked closely with the TOP-CARE staff to assess all active users of the system, including primary care physicians, nursing staff, medical assistants, patient coordinators and secretaries, and administrative staff. While all providers have been identified, the team continues to identify all the patient navigators who are using the system. Wage data for the intervention staff has been obtained and cost estimates are being calculated based on the average wage for each job class applied to the average daily cost of time devoted to cancer screening activities during BSC.

To determine the BSC estimates, the study team has identified the variables necessary for cost analyses, including the nature of the data and whether it would be available from current data systems. Information that will require survey methodology was identified. The survey instrument for primary care physicians, practice delegates, and navigators was developed, as well as a strategy to field the surveys to all TOP-CARE clinical personnel. The survey was administered in paper form to primary care providers and practice delegates during initial meetings and training sessions. Providers who were not present during the initial meeting or who did not turn in a completed survey were subsequently sent an electronic version and another paper copy. The survey will be re-administered at the completion of the study.

Time estimates for using the intervention and ASC are being established by evaluating the personnel time use by health IT personnel, physicians, case managers, delegates, and patient navigators. Training sessions on how to use the system were conducted beginning in May 2011 and health IT staff documented the time spent in initial training sessions and followup training sessions to reflect part of the implementation costs of TOP-CARE. The staff is also documenting time spent on additional support and training activities on an ongoing basis. Direct observation of system users will occur in the near future.

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

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

Target Population: Adults, Cancer

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
