Technology for Optimizing Population Care in a Resource-limited Environment

The Massachusetts General Primary Care Practice Based Research Network (MGPC-PBRN) comprises 19 primary care practices, including 10 community based practices and 5 hospital-based practices serving a diverse patient population in Eastern Massachusetts, and 4 community health centers located in low-income urban communities around Boston. Our network of over 200 primary care providers cares for approximately 150,000 adult patients, with approximately 1,000,000 visits between 2009 and 2011.

Partners Involved: Massachusetts General Hospital; Partners HealthCare; SRG Technology

Description of the Integration: Despite the increasing adoption of basic health IT capabilities, studies continue to reveal low rates of appropriate preventive screening. The Technology for Optimizing Population Care in a Resource-Limited Environment (TopCare) project designed, developed, and implemented a novel comprehensive cancer screening intervention program. The goal of this project was to improve clinical decision support and enhance preventive cancer screening. The screening program was 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. As part of a demonstration research project, practices within a large, urban primary care network affiliated with an academic medical center were randomly assigned to two versions of a population management system to perform non-visit based comprehensive cancer screening. The system identified eligible patients overdue for screening, facilitated outreach and tracked test completion status. In intervention practices, primary care providers (PCPs) screened real-time rosters of overdue patients overdue, and could individualize patient contact (letter, referral to delegate or patient navigator) or defer screening. In control practices, all overdue patients were sent a reminder letter without PCP review and then transferred to a delegate list. The study hypothesis was that involving PCPs would lead to more effective and efficient cancer screening. We found that involving PCPs in a visit-independent, population management health IT system did not increase cancer screening rates compared to an automated reminder system. However, similar rates were achieved with many fewer patient contacts in intervention practices. Though prior work has shown that population management systems can improve preventive care, the best ways to implement them remain uncertain. With the results from this demonstration available, the goal of this integration was to transition a research project implemented at Massachusetts General Hospital (MGH) into an operational system throughout our institution and expand it as the health IT population management system within the broader Partners HealthCare system that includes MGH.

As part of this integration effort, we worked with leaders at MGH and Partners to highlight the impact of TopCare, and proposed a mechanism to integrate TopCare into Partners’ population health efforts. After competing with multiple proposals from third-party population management system vendors, the leadership at Partners chose TopCare to become the Partners enterprise population management system. Going forward, Partners will not only financially support the expansion of TopCare across the network, but also establish a Partners TopCare Steering Committee to provide oversight for population management efforts. So far, the expansion of TopCare functionalities included the creation of additional tools to manage provider/practice’s patient panels, including patients with diabetes, heart failure, coronary artery disease, and hypertension. At the same time, Partners is also planning the role out of TopCare across its primary care network, which is comprised of 2 academic centers (MGH, Brigham and Womens Hospital), 3 community hospitals (Faulkner Hospital, North Shore Medical Center, Newton-Wellesley Hospital), and over 250 Partners-affiliated primary care practices within the next five years. Finally, the MGH Laboratory of Computer Science, the developer of the TopCare system, is now collaborating with a for-profit company, SRG Technology, to enhance the system’s functionality and to make the TopCare system available to healthcare organizations outside of Partners.

- Resources Required: Federal Agency for HealthCare Research and Quality Grant, Internal Funding
- Results: Success of the integration is being measured in multiple ways. First, we wanted to ensure that primary care physicians would use a population management system outside of office visits. During a 1-year demonstration project of TopCare for preventive cancer screening, 90% of primary care providers utilized the system to review patients who appeared to be overdue for screening. Over 30,000 patients were contacted by letter with supporting educational content to let them know of their overdue status and how to schedule a screening exam. We also surveyed primary care physicians before implementation of the population management system and 1-year after implementation. After
1-year, those who used the system reported spending less time per clinical session devoted to cervical and colorectal cancer screening, without any perceived increase in effort while the patient wasn’t present. Users of the system also reported that they believed the process for managing patients overdue for cancer screening improved over the one year study period (79%), 68% found the system easy to use, 63% found the system made time managing cancer screening more effective, and 88% were satisfied with the health IT system. Additionally, further analyses that are ongoing will explore changes in screening rates in the MGH primary care network over the prior 3 years to examine whether implementation of the TopCare system resulted in higher screening rates. As TopCare is now an operational system at MGH, future analyses will monitor cancer screening rates over time, use of the system, as well as the impact of its roll-out in other primary care networks at Partners HealthCare.

- **Key Elements for Success:** The success of integrating a health IT population management system across multiple institutions began with user feedback during the initial implementation at MGH. User feedback, particularly from key stakeholders such as primary care physicians, practice contact delegates, patient navigators, and central administrative personnel who would interact with the system were critical to the design and successful implementation of the TopCare system at MGH. During the implementation of TopCare at MGH as part of a demonstration project, we began implementing a modified version of TopCare at Brigham and Women’s Hospital Internal Medicine Associates as part of a pilot initiative. During implementation at a new institution, we began to collaborate with BWH leadership to discuss additional steps needed to extend use across their primary care network. This effort also served to inform key modifications and improvements to TopCare within MGH. The successful design and implementation at MGH, followed by implementation at a practice within BWH gave us unique knowledge and experience to successfully integrate this system across the entire Partners HealthCare network.

- **Lessons Learned:** Population management systems represent a novel use of health information technology designed to transform the delivery of care from one-on-one office-based visits to a patient centered approach where individuals interact with their primary care team in a variety of settings that meet their needs. Keys to the success of integration of this system as part of routine include; 1) strong network leadership support, 2) understanding of workflow needs of practice providers, 3) extensive training of personnel to interact with patients in new ways, and 4) financial models that support non-visit based care.

**Movement on the Integration Scale:** *Start:* Cooperation; *Finish:* Partnership; *Desired:* Merger

**Website Links:**

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