The Chronic Care Technology Project

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Organization: Aroostook Medical Center
Mechanism: RFA: HS05-013: Limited Competition for AHRQ Transforming Health Care Quality through Information Technology (THQIT)
Grant Number: UC1 HS 016154
Project Period: September 2005 – June 2009, Including No-Cost Extension
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Summary Status as of: June 2009, Conclusion of Grant

Target Population: Adults, Chronic Care*, Congestive Heart Failure, Chronic Obstructive Pulmonary Disease, Diabetes, Hypertension, Mental Health, Obesity, Rural Health*

Summary: This project helped providers in northern and eastern Maine implement new technologies through a regional learning collaborative of health care providers and related stakeholders. Rather than the usual methods of adopting and implementing technology, the project used a collaborative learning process based on the Institute for Health Care Improvement's (IHI's) Break Through Series (BTS), a proven model for achieving health care change at the practice level. The specific technology solutions and the associated implementation plans and execution are the products of this regional learning collaborative ("The Collaborative").

The project team identified and implemented technology that supports the Planned Care Model, a care system framework organized around six fundamental areas each with identified functionalities that can benefit from technical innovations. The technology solutions in the implementation phase of this project focused on two components of the Planned Care Model: 1) health practices, and 2) patients and families, specifically addressing facilitation of the transfer of information among providers and between providers and patients.

The IHI BTS collaborative process helped participants reach consensus about the adoption and implementation of technologies in health care systems. The project was evaluated using a survey instrument to measure the effectiveness of the main elements of the process, learning sessions, and Plan-Do-Study-Act change cycles. The survey findings were summarized after each learning session to provide an evaluation of the IHI BTS process and participants' impressions of it at various stages of the project.

Twenty-eight health care teams participated in the project, including nursing homes, physician practices, hospitals, rural health centers, a mental health center, a tribal health center, homecare services, a community action program, an industrial health program, and a pharmacy service. Teams represented a variety of settings: rural and urban, independent and system affiliated, large and small, and inpatient and outpatient. In addition, several organizations provided information technology (IT) and program support.

Major projects undertaken by the teams include: hospital electronic medical record access by nursing home staff, electronic prescribing, electronic ordering of patient homecare supplies, fax server implementation, phone system redesign, implementation of secure e-mail in primary care settings, and implementation of a decision support system for patient care and triage in primary care practices. In addition, two regional

health Web portals were created to provide a trusted, accurate source for basic health, wellness, and chronic disease self-management information, including a calendar of local health-related educational events and a searchable database of local health care and wellness resources.

Specific Aims:

- Assess whether the IHI collaborative model is an effective process to adopt and implement technological changes in health care systems (within practices and between practices). **(Achieved)**
- Assess whether technological changes improve the quality of information transfer by improving its timeliness, accuracy, efficiency, security, usefulness, and cost. **(Achieved)**
- Assess whether technological changes improve the quality of chronic disease care by improving both standards-based care delivery and patient health status. **(Achieved)**

2009 Activities: Analyses and evaluation continued into 2009 and through to the end of the project. Findings and lessons learned were described in the final report.

Grantee's Most Recent Self-Reported Quarterly Status (as of June 2009): The project grant is closed with all major aims achieved.

Impact and Findings: The project team reported many findings and lessons learned. They are described below.

Impact of Technology Adoption on Practice Efficiency and Patient Safety: For most organizations, the technologies adopted in this project were relatively simple (secure e-mail, scanners, development of referral templates, additional work stations); however, some practices implemented more technically challenging projects. In general, the new processes and technologies implemented through The Collaborative required fewer resources, resulted in fewer errors, and were perceived to be more secure. They increased the likelihood that information being transferred and received was complete, easy to read, and easy to interpret. One of the most important take-away messages from this project is that for many small, rural Maine practices in The Collaborative, even simple, comparatively cheap technologies like secure e-mail or scanning systems can have significant impact on practice efficiency and patient safety.

Impact of Technology Adoption on Patient Care Management: This project was intended to help organizations implement technology solutions to improve care as described in the Planned Care Model. Although actual improvements in patient care and patient health outcomes are not documented quantitatively, interviews and surveys of team leaders indicate that they perceive their projects improved patient care in some way, whether by improving the process of care, strengthening the care team, improving the efficiency of interactions with existing collaborators in the community, providing support for delivering evidence-based care, or providing better access to patient data.

By the end of the project, team leaders generally reported substantial changes. For example, before the project, more than 60 percent of team leaders reported that the process and technology they were using created problems with the security of health information; after the project, less than 10 percent reported security issues with the new process and technology. A substantial portion of team leaders also reported improvements in completeness of received and transmitted information, timelier receipt and transmittal of information, and reductions in cost to the organization.

Forming a Collaborative: Planning and organizing a collaborative around technology issues in rural Maine posed significant challenges, including the recruitment of an adequate number of team members. The project

team found that recruitment was more difficult than expected, particularly in the second year, because of staff turnover and the lack of a senior-level administrator. For recruitment to proceed smoothly, senior system level leaders must promote the value of The Collaborative and engage leaders at the organizational and practice level early in the process. Organizational leaders must see the benefits of participation and be willing to make a significant commitment to participation before signing up. Project staff must be assigned to carry out the day-to-day work of recruitment: identifying potential participants, answering questions, and doing extensive work with teams and leadership before the first learning session to ensure that teams have a full understanding of the commitment required.

Beyond recruitment, the project team learned that involvement of IT specialists from the first learning session onward—both organizational-level specialists and system-level specialists—is essential. Involvement of IT support from the start ensures that projects are in line with system-level priorities, that they are feasible, and that they will not duplicate other planned projects.

Effectiveness of the IHI BTS Collaborative Model: Despite the barriers faced by participating practices and associated frustrations, participation and interest in the project was maintained. For certain teams, The Collaborative was effective at getting teams together to start working on technological issues and prompting organizations to use existing technology or identify additional needs for technology. In some cases, small projects had significant impacts on practice efficiency and patient care, and even among teams that made little progress, the identification of new needs and the team building that occurred as a result of the IHI BTS collaborative process are expected to lead to additional improvements in the future.

For the most part, participants in The Collaborative came to meetings with far greater clinical and administrative skills than knowledge of and experience with technology. Previously, the vast majority of health IT projects were driven by IT departments. The project significantly improved the technical literacy of the project participants and made them more knowledgeable about what was available to aid their processes, better able to communicate IT solutions, and be a better partner with their technology departments.

Additionally, unlike organizations that came into The Collaborative with major technology projects in mind, organizations that focused on small, incremental changes were more likely to complete their projects because of the impetus of The Collaborative. These improvements to practice efficiency and patient safety would not have been achieved without The Collaborative.

More detail on the project findings is included in Mr. Nashan's final report: Nashan 2009 Final Report.

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*