

Project Title: Secure Messaging in a Pediatric Respiratory Medicine Setting
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Organization: Yale New Haven Health Services Corporation
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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: Implementation and Use

Target Population: Pediatrics*, Teenagers

Summary: Although e-mail may be an efficient clinician-patient communication tool, standard e-mail is not secure enough to meet Health Information Portability and Accountability Act guidelines. Firewall-secured electronic messaging systems have been developed for use in health care, but the impact and usability of these secure systems has not been broadly assessed.

This project evaluated how the implementation of a secure e-mail messaging (e-messaging) system between clinicians and patients and/or guardians affects provider efficiency, utilization of emergency department (ED) for medication refills, and patients' qualitative satisfaction with care in a pediatric respiratory medicine setting. The project was completed at the Yale Pediatric Respiratory Medicine Clinic, a subspecialty clinic in a tertiary care hospital that serves a diverse patient population. Study methods included: 1) pre-implementation survey of patients regarding Internet use, 2) tracking of messages, 3) open-ended qualitative interviews of users and non-users to describe the impact of the system, and 4) description of the implementation process.

Prior to enrollment of patients, a time-motion study was conducted on clinic providers' daily telephone use for scheduling, refills, and answering questions. Study results were compared with post-implementation provider time utilization to determine whether providing care (refills, answering questions, etc.) required similar or different amounts of provider time when conducted electronically.

This research contributes to understanding of use of secure messaging from the patient's perspective and increases implementation process information that other providers can use.

Specific Aims

- Understand the content of what children, adolescents, and their parents will send as a secure message to their providers. (**Achieved**)
- Evaluate the impact of secure messaging with regard to provider-time spent, ED-utilization for medication refills, and qualitative satisfaction by the patients and clinicians. (**Achieved**)

2009 Activities: The team completed a pre-implementation survey of 127 patient/families on their Internet use. Medical providers, nurses, patients, and their guardians were trained in the use of the messaging system. Audits of the secure messages and content analysis of both telephone calls and secure messages were conducted for a period of 8 months. Open-ended, qualitative interviews were conducted with 28 patients and their guardians to assess their attitudes toward electronic messaging. The interviews explored possible reasons for not signing up for secure messaging or for signing up but not using the system, as well as other barriers to adoption. Interviews with patients and guardians who did use the secure messaging system were conducted to learn about their experience and satisfaction. All collected

data were analyzed, and an electronic messaging implementation handbook was developed from notes captured during the implementation process. A manuscript was developed and submitted to Pediatrics for publication.

Impact and Findings: The pre-implementation survey determined that patients have access to and interest in using the Internet to communicate with health care providers. During the first 6 months after implementation, 127 patients enrolled in the system but sent only 5 messages. There was no change in the volume of telephone calls. Qualitative interviews with parents after implementation of secure messaging identified three themes: barriers to use of the system, promoters to its use, and ideas for potential uses.

While barriers for some patients were anticipated (lack of access to computers, literacy, discomfort with new technology), several unexpected barriers were identified in qualitative interviews with patients. Although families may have access to the Internet and strong interest in e-mailing, secure messaging was ultimately utilized only by a handful of patients because it was less convenient than phoning, too technically cumbersome, and lacked a personal touch.

The few users who initially used the system appeared to be patients/families who are newer to the practice. The project continued to enroll patients, targeting new patients, as more established patients were prone to resort to “tried and true” methods of communicating with the clinic.

While every indication was given that this new technology was desired, patients preferred more traditional methods of contact at the clinic. In order for secure messaging systems to be used to improve communication with providers and be part of a patient-centric model of care, they must be integrated into more readily-usable messaging portals and accompanied by content that is of interest to patients and their families.

Selected Outputs

Hsiao AL, Tolomeo T, Edmonds D, et al. Secure e-messaging: quality communication? Slow take-off of ‘kids’ airmail’ in a pediatric respiratory medicine clinic. Poster presented at the Institute for Healthcare Improvement 21st Annual National Forum on Quality Improvement in Health Care; 2009 Dec 6-9; Orlando, Florida.

Electronic Messaging Implementation Handbook.

**AHRQ Priority Population*