

Health Information Technology Center for Education and Research on Therapeutics

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Organization:	Brigham and Women's Hospital
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Summary: The Centers for Education and Research on Therapeutics (CERTs) demonstration program is a national initiative to conduct research and provide education that advances the optimal use of therapeutics (i.e., drugs, medical devices, and biological products). The program consists of six research centers and a CERTs Scientific Forum. The Health Information Technology CERT (HIT-CERT) is building on existing CERT resources and infrastructure and on the investigators' previous work related to health information technology (IT). The HIT-CERT will focus research on issues related to health IT use and impact on therapeutics. In particular, the project work involves health IT research and its translation into clinical practice for pharmacosurveillance and medication-related clinical decision support.

The HIT-CERT will address therapeutics issues related to appropriateness, safety, and efficacy in the outpatient, inpatient, and transitions in care settings within the context of health IT. Two cores—the methodology and data resources core and the translation and dissemination core— will oversee various aspects of all projects conducted within the HIT-CERT. The former core will coordinate the study for all projects by providing study design, data collection and management, and analysis support. The latter core will promote the dissemination of research findings and facilitate the translation of findings into practice and policy.

Currently, three projects are planned for HIT-CERT's 5-year duration:

1. *e-Pharmacovigilance II: Surveillance for Safety and Effectiveness.* This project will develop and implement an e-Pharmacovigilance system that integrates and interoperates with the Partners Healthcare electronic health record system. The e-Pharmacovigilance system will interface with patients either by a Web-based portal or an interactive voice response system to monitor the safety and effectiveness of treatment with Food and Drug Administration-approved medications for common chronic conditions. This project will be conducted in three phases over 5 years. Phase 1 involves the development and pilot testing of the integrated pharmacovigilance system. Phase 2 is implementation of the system. Phase 3 involves assessment of the translation and dissemination of the system using the RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework.
2. *Physician-Level Variation in Medication Overrides of Computerized Decision Support.* This project will assess, describe, and characterize physician-level variations in response to computerized decision-support safety issues and efficiency suggestions for both the inpatient and outpatient settings. The project will include evaluations of variation in medication overrides at baseline, followed by two cluster-randomized trials. A set of recommendations for improving decision support system safety and efficiency

will be developed based on the findings.

3. *Examining Human Factors Principles in the Design and Implementation of Medication-Related Decision Support Alerts.* This project will develop and evaluate a tool for assessing whether a medication-related decision support alert is appropriate relative to human factors principles. Over a 2-year period, an existing human factors instrument will be validated relative to override rates. Outcomes such as user's satisfaction with alerts will be assessed. Additionally, a set of recommendations on the best way to design medication alerts will be developed.

In the wake of increasing implementation and use of health IT and electronic prescribing, the HIT-CERT and its projects will provide information, strategies, and tools for utilizing health IT to improve clinical practices related to medication safety, effectiveness, and cost.

Specific Aims:

- Leverage new technologies to improve pharmacosurveillance. **(Ongoing)**
- Use new sources of data from clinical decision support to identify physician-level variation and use these results to improve safety and efficiency. **(Ongoing)**
- Improve medication-related clinical decision support. **(Ongoing)**

2011 Activities: Much of the HIT-CERT program efforts in 2011 focused on project start-up. All three projects have received approval from the Brigham and Women's Hospital's Institutional Review Board. Project development activities for each project are in progress and data collection will be initiated in 2012.

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

Target Population: Adults, Chronic Care*

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to improve the quality and safety of medication management via the integration and utilization of medication management systems and technologies.

Business Goal: Implementation and Use

* This target population is one of AHRQ's priority populations.