

Health IT Evaluation



Health information technology (health IT) enables the capture, analysis, sharing, and use of health information in new and innovative ways. As substantial investments are made in implementing and supporting clinical and public health information systems, it is critical to evaluate the impact of these technologies on care quality, safety, efficiency, and cost. RTI International takes a multidisciplinary approach to evaluating the impact of health IT. RTI creates teams of researchers with experience in clinical informatics, public health, quality measurement, health services research, economics, statistics, and policy analysis to assess how health IT affects both stakeholders and processes—from engaging patients to delivering care to practicing public health.

Overview

RTI is a recognized leader in program evaluation and in assessments of organizations, providers, and patients that adopt and use health IT. Our cross-institute teams have expertise in areas spanning technology and its users, clinical care, public health, evaluation methods, and public policy. We have evaluated clinical, financial, and operational impacts of emerging and advanced health information technologies, including mobile applications, personal health records (PHRs), health information exchange (HIE), and syndromic surveillance systems. Our evaluation clients include foundations and federal entities such as the Robert Wood Johnson Foundation (RWJF), the Agency for Healthcare Research and Quality (AHRQ), and the Centers for Disease Control and Prevention (CDC).

Areas of Expertise

The RTI research staff who conduct health IT evaluations include experts in

- System users—ambulatory and acute care organizations, primary and specialty care providers, and public health practitioners
- Technology—adoption and use of electronic health records (EHRs) and their related functions, PHRs, mobile health interventions, remote monitoring, and HIE
- Care processes—clinical guideline development and adoption, innovative health care delivery models, clinician workflows, and care transitions
- Public health—disease reporting and surveillance practices and systems; local, state, regional, and national public health organizations and programs
- Informatics—clinical, biomedical, and public health informatics; controlled medical terminologies and health information standards; knowledge modeling and management
- Methods—qualitative and quantitative methods, formative and summative evaluation methods, survey design, data collection and analysis, clinical quality measurement, technology economics, cost-benefit analysis, case study development/business case analysis, and usability and human-computer interaction assessments



- Policy and programs—federal and state privacy and security requirements, Department of Defense and Department of Veterans Affairs health information systems, HIE governance, Medicare and Medicaid EHR incentive programs, and meaningful use, Regional Exchange Centers, Beacon communities, and state HIE cooperative agreements.

By staffing teams with expertise in these and other domains, RTI provides a range of evaluation services to meet client needs. Our researchers have experience conducting both prospective and retrospective analyses, and they have investigated the adoption and use of health IT by providers, patients, and public health organizations alike. In all our work, we use proven tools, methods, systems, and processes to ensure rigorous evaluations with actionable findings.

Project Highlights

Project HealthDesign: BreathEasy—A PHR for Adults Living with Asthma and Depression. With support from RWJF, RTI and the Virginia Commonwealth University are developing a PHR application to assist adults with asthma and at risk for depression and anxiety to better manage their care. BreathEasy, part of RWJF's Project HealthDesign, was developed through a user-centered design approach with iterative development and feedback cycles. Approximately thirty patients with diagnoses of moderate to severe asthma were recruited from two Richmond, VA, primary care clinics to participate in this 6-month evaluation of the application, building on the latest clinical guidelines for treatment and self-monitoring of individuals with asthma. Patients are using an Android-based smartphone to record their observations of daily living (ODLs), including asthma and mental health symptoms, medication use, symptom triggers, physical activity, and activity limitations. Clinicians (i.e., physician/nurse pairs) will use a Web-based dashboard to review patient data and visualize trends and patterns in the ODLs. The team is incorporating an innovative messaging platform to provide alerts, cues to action, and health promotion messages tailored to individual patient preferences, health conditions, and behaviors. Evaluation over the 6-month period will focus

on improved communication between clinician and patient; better management of asthma symptoms and treatment; and changes to the medical practices, including improved quality.

Computerized Provider Order Entry (CPOE) Evaluation Tool.

For AHRQ, RTI researchers are updating a CPOE evaluation tool designed to help hospitals assess and improve their CPOE implementations. Using literature reviews and expert panel guidance, RTI will revise the tool, followed by field testing the new tool with target users. To support tool adoption, RTI will develop plans and guidance materials for user support.

Evaluation and Redesign of BioSense. RTI conducted an evaluation of biosurveillance activities in the United States, including CDC's BioSense facilities and BioSense users. BioSense, CDC's electronic biosurveillance system, was evaluated using a number of core activities, including case studies, assessment of data quality and timeliness, a cost estimation for development and maintenance by data-providing entities and users, a quantification of the utility of the biosurveillance system, and a usability assessment. RTI is now engaged in the redesign of the system based on these evaluation findings.

More Information

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