

# AHRQ HEALTH IT PORTFOLIO: LIST OF PUBLICATIONS

## AHRQ-Funded Project Reports

### *Communication-Focused Technologies Projects*

**Communication-Focused Technologies for Improving the Health of Young African-American Women.** Adapts an existing clinical patient education system—a Virtual Patient Advocate (VPA)—to deliver a behavior change intervention about preconception health for African-American women (15 to 25 years old). Five appendixes including tools and questionnaires are provided as well. December 2011. Available at <http://healthit.ahrq.gov/CommTechforAAWomenACTIONfinrep.pdf> as AHRQ Pub. No. 12-0013-EF.

**Health Messages for HIV-Positive Men Who Have Sex With Men.** Aims to develop and test a short message service (SMS)-based intervention, providing tailored health-communication messages for HIV-positive men who have sex with men (MSM) aged 25 and older. The final report summarizes the key findings, limitations, lessons learned, and recommendations for future research. June 2011. Available at <http://healthit.ahrq.gov/hlthmsgsHIVposmenACTIONfinrep.pdf> as AHRQ Pub. No. 11-0063-EF.



**Technologies for Enhancing Access to Health (TEAhM).** Evaluates the feasibility of utilizing telehealth technology to manage blood pressure in a community setting that targets high-risk elders. The final report highlights lessons learned for elders, community centers, and clinicians, as well as recommendations.

June 2011. Available at <http://healthit.ahrq.gov/TechforEnhancingAcctoHACTIONfinrep.pdf> as AHRQ Pub. No. 11-0066-EF.

### *Effective Use of E-Prescribing in Physician Practices and Pharmacies*

**Transmitting and processing electronic prescriptions: Experiences of physician practices and pharmacies.** Explores recent physician practice and pharmacy experiences with electronic transmission of new prescriptions and renewals and identifies facilitators of and barriers to effective electronic transmission and pharmacy e-prescription processing. Grossman JM, Cross DA, Boukus ER, et al. J Am Med Inform Assoc. November 2011. [Epub ahead of print] Available at <http://jamia.bmj.com/content/19/3/353.full.pdf>.

**Physician Practices, E-Prescribing and Accessing Information to Improve Prescribing Decisions.** Summarizes a qualitative study of 24 physician practices using e-prescribing systems. Study respondents highlighted two barriers to use: (1) tools to view and use the patient health information are cumbersome to use in some systems and (2) data are not always seen as useful enough to expend the extra effort to use them. HSC Research Brief No. 20. May 2011. Available at <http://hschange.org/CONTENT/1202/>.

### *Improving Quality Through Health IT*

#### **Use of an Electronic Referral System to Improve the Outpatient Primary Care–Specialty Interface**

*Final Report.* Assesses how the University of California San Francisco—San Francisco General Hospital’s (SFGH’s), SFGH’s eReferral system, and electronic referral systems in general, can best be used to support improvements in health care processes and outcomes. February 2012. Available at <http://healthit.ahrq.gov/ElectronicReferralSystemACTIONfinrep.pdf> as AHRQ Pub. No. 11(12)-0096-EF.

*Implementation Handbook.* Provides detailed descriptions and screenshots of the SFGH eReferral system that implementers may find useful when implementing a similar system. January 2012.

Available at

[http://healthit.ahrq.gov/ElectronicReferralSystem\\_ACTIONHandbook.pdf](http://healthit.ahrq.gov/ElectronicReferralSystem_ACTIONHandbook.pdf) as AHRQ Pub. No. 11(12)-0096-1-EF.

### **Secure Messaging in a Pediatric Respiratory Medicine Setting**

*Final Report.* Implements and evaluates the impact of a secure messaging system, specifically Kryptiq Secure-Messaging System™, in the Yale New Haven Children's Hospital, in New Haven, CT. January 2012. Available at

[http://healthit.ahrq.gov/SecureMessagingPediatric\\_ACTIONfinrep.pdf](http://healthit.ahrq.gov/SecureMessagingPediatric_ACTIONfinrep.pdf) as AHRQ Pub. No. 12-0012-EF.

*Implementation Handbook.* Provides detailed steps for implementing the Kryptiq Secure-Messaging System™ described above. January 2012. Available at [http://healthit.ahrq.gov/SecureMessagingPediatric\\_ACTIONHandbook.pdf](http://healthit.ahrq.gov/SecureMessagingPediatric_ACTIONHandbook.pdf) as AHRQ Pub. No. 12-0012-1-EF.

### **Assessing the Impact of a Dynamic Chronic Care Registry on the Quality of Care**

*Final Report.* Uses a diabetes registry to improve care delivery and the quality of care for adult diabetic patients at eight federally qualified community health centers. November 2011. Available at [http://healthit.ahrq.gov/DynamicChronicCareRegistry\\_ACTIONfinrep.pdf](http://healthit.ahrq.gov/DynamicChronicCareRegistry_ACTIONfinrep.pdf) as AHRQ Pub. No. 11(12)-0078-EF.

*Implementation Handbook.* Describes the design, existing infrastructure, outcomes, lessons learned, and recommendations derived from the implementation of a three-pronged intervention plan aimed at adult diabetic patients using an integrated diabetes registry. Intended for replication in similar programs using registries and for other institutions to gauge their suitability for this intervention. November 2011.

Available at

[http://healthit.ahrq.gov/DynamicChronicCareRegistry\\_ACTIONHandbook.pdf](http://healthit.ahrq.gov/DynamicChronicCareRegistry_ACTIONHandbook.pdf) as AHRQ Pub. No. 11(12)-0078-1-EF.

### **Impact of Health IT on Lab Order Use in Community Health Centers**

*Final Report.* Assesses how the use of health IT can improve care delivery and outcomes by documenting and facilitating the use of laboratory orders and results information by clinicians in community health centers. November 2011. Available at

[http://healthit.ahrq.gov/LabOrderUseCHC\\_ACTIONfinrep.pdf](http://healthit.ahrq.gov/LabOrderUseCHC_ACTIONfinrep.pdf) as AHRQ Pub. No. 12-0009-EF.

*Implementation Handbook.* Highlights key aspects of the electronic health record (EHR) system implementation process, with a specific focus on strategies for use of advanced functionality for customized, point-of-care decision support related to electronic laboratory data. Provides practical observations relevant to community health centers, physician practices, and other health care organizations contemplating EHR system adoption. November 2011. Available at

[http://healthit.ahrq.gov/LabOrderUseCHC\\_ACTIONHandbook.pdf](http://healthit.ahrq.gov/LabOrderUseCHC_ACTIONHandbook.pdf) as AHRQ Pub. No. 12-0009-1-EF.

### **Enhanced Medication Histories**

*Final Report.* Describes the implementation and evaluation of the Indiana Network for Patient Care (INPC) Enhanced Medication History (EMH) system. Also evaluates a method of providing INPC medication data to ambulatory primary care practices, with the intent of enhancing health care quality and safety. October 2011. Available at [http://healthit.ahrq.gov/EnhancedMedicationHistories\\_ACTIONfinrep.pdf](http://healthit.ahrq.gov/EnhancedMedicationHistories_ACTIONfinrep.pdf) as AHRQ Pub. No. 11-0077-EF.

*Implementation Handbook.* Describes the Enhanced Medication History Project and provides key findings, limitations, and lessons learned for health IT professionals seeking to implement a similar project. November 2011. Available at

[http://healthit.ahrq.gov/EnhancedMedicationHistories\\_ACTIONHandbook.pdf](http://healthit.ahrq.gov/EnhancedMedicationHistories_ACTIONHandbook.pdf) as AHRQ Pub. No. 11(12)-0077-1-EF.

### **Integrating Clinical Decision Support Into**

**Workflow: Final Report.** Identifies barriers and facilitators to workflow integration of clinical decision support (CDS) for colorectal cancer screening. Also prototypes and tests CDS design alternatives for

improved integration into workflow through a controlled simulation study. September 2011. Available at [http://healthit.ahrq.gov/IntegratingCDSintoWorkflow\\_ACTIONfinrep.pdf](http://healthit.ahrq.gov/IntegratingCDSintoWorkflow_ACTIONfinrep.pdf) as AHRQ Pub. No. 11-0076-EF.

**Improving Asthma Care With Health Information Technology: Final Report.** Describes the electronic asthma action plan (e-AAP) application—a computerized decision support tool that integrates the 2007 National Asthma Education Prevention and Promotion Guidelines for the Diagnosis and Treatment of Asthma into an electronic health record. This final report summarizes the key findings, limitations, lessons learned, and recommendations for future research. June 2011. Available at [http://healthit.ahrq.gov/improvingasthmacarewithHIT\\_ACTIONfinrep.pdf](http://healthit.ahrq.gov/improvingasthmacarewithHIT_ACTIONfinrep.pdf) as AHRQ Pub. No. 11-0068-EF.

## *Medicaid and CHIP Reports*

**Barriers to Meaningful Use in Medicaid: Analysis and Recommendations—Final Report.** Details the results of a study on the barriers Medicaid providers experience when trying to adopt and meaningfully use electronic health records (EHRs) to satisfy the criteria for Stage 1 of the Medicaid EHR Incentive Program. August 2012. AHRQ Pub. No. 12-0062-EF.

**Technical Assistance for Health IT and Health Information Exchange (HIE) in Medicaid and CHIP: Final Report.** Summarizes Medicaid and CHIP agencies' progress in adopting and implementing health IT and HIE initiatives since 2007 and details the external factors that have impacted their adoption and implementation. Also documents technical assistance (TA) provided by AHRQ (and its contractor RTI) to Medicaid and CHIP agencies, Agency involvement in TA, and available resources. August 2012. AHRQ Pub. No. 12-0080-EF.

**Quality Oral Health Care in Medicaid Through Health IT.** Aims to identify the potential impact of and barriers to health IT and the Medicaid electronic health record incentive payments on dentists serving Medicaid- and CHIP-eligible children. Also explores how the adoption of health IT and ensuing payment

incentives might be leveraged to expand access to quality oral health care for these children. September 2011. AHRQ Pub. No. 11-0085-EF.

**Technical Assistance for Health IT and Health Information Exchange in Medicaid and CHIP: A Guide to Calculating the Costs and Value of E-Prescribing.** Provides a summary presentation of what is known about the costs and value of e-prescribing, largely as reported in journal articles and techniques that may be used to compare costs to value as well as a discussion of some key topics in using these techniques. February 2010. AHRQ Pub. No. 10-0043-EF.

**Technical Assistance for Health IT and Health Information Exchange in Medicaid and CHIP: Assessment of Medicaid and CHIP Health IT and HIE Activities and Needs, 2008.** Describes the range of activities, challenges, planning, evaluations, and external factors facing Medicaid and Children's Health Insurance Programs (CHIP) agencies across the country as they undertake initiatives in health IT and health information exchange. July 2009. AHRQ Pub. No. 09-0072-2-EF.

All Medicaid/CHIP reports are available at <http://healthit.ahrq.gov/Medicaid-SCHIP>

## CASE STUDIES

Describes lessons learned from State agencies in the process of implementing cutting edge Medicaid-CHIP programs.

- **Developing a State Medicaid Health IT Plan (SMHP): Lessons Learned From Oklahoma Medicaid.** February 2011. AHRQ Pub. No. 11-0054-EF.
- **Developing a Universal Consent Form: Lessons Learned from Florida Medicaid.** September 2010. AHRQ Pub. No. 10-0104-EF.
- **Leveraging Existing Leadership to Support Health IT and HIE: Lessons Learned From Minnesota's Medical Assistance Program.** July 2010. AHRQ Pub. No. 11-0097-EF.
- **Developing an Electronic Prescribing Incentive Program: Lessons Learned From**

**New York Medicaid.** July 2010. AHRQ Pub. No. 10-0096-EF.

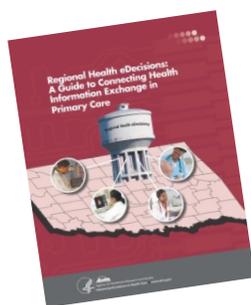
- **Collaborating to Improve the Quality of Care: Lessons Learned from the Alabama Medicaid Agency.** March 2010. AHRQ Pub. No. 10-0066-EF.

All Medicaid and CHIP case studies are available at <http://healthit.ahrq.gov/Medicaid-SCHIP>. Under the Medicaid and CHIP Repository section, select Repository.

## *Individual Project Reports*

**Health IT-Enabled Quality Measurement: Perspectives, Pathways, and Practical Guidance.** Examines the intersection of health IT and quality measurement, reflecting the expectation that health IT-enabled quality measurement can make quality improvement possible. Seeks to share information, stimulate discussion, assist communication among stakeholders, facilitate understanding, and provide guidance on potential infrastructure enhancements that could be pursued. Five appendixes summarize the input received and catalog the efforts of many organizations working to improve quality through health IT. September 2013. Available at <http://healthit.ahrq.gov/HealthITEnabledQualityMeasurement> as AHRQ Pub. No. 13-0059-EF.

**Regional Health eDecisions: A Guide to Connecting Health Information Exchange in Primary Care.** Addresses the entire process of connecting EHRs to a regional health information organization and establishing clinical decision support. Assessing readiness, setting up technology, and sustaining the use of an HIE are discussed. May 2013. Available at <http://healthit.ahrq.gov/RegionalHealthDecisionsGuide.pdf> as AHRQ Pub. No. 13-0018-EF.



**Reduction in Medication Errors in Hospitals due to Adoption of Computerized Provider Order Entry Systems.** Describes a systematic literature review and random-effects meta-analytic techniques conducted to derive a summary estimate of the effect

of computerized provider order entry systems on medication errors. Radley DC, Wasserman MR, Olsho LE, et al. J Am Med Inform Assoc 2013 Feb 20. [Epub ahead of print] Available at: <http://jamia.bmj.com/content/early/2013/01/27/amiajnl-2012-001241.full>

**Improving Consumer Health IT Application Development: Lessons From Other Industries, Findings From Key Informant Interviews.** Describes lessons learned from interviews conducted with nine key informants (such as application developers, design managers, and company executives) about consumer product development methods used in other industries. Presents design methods, processes, and approaches used in the development of successful consumer products, as described by key informants. Also discusses the implications for extension of interview findings to the design of consumer health IT research. July 2012. Available at <http://healthit.ahrq.gov/developmentmethodskeyinformantinterviewsreport> AHRQ Pub. No. 12-0079-EF.

**Quality Measurement Enabled by Health IT: Overview, Possibilities, and Challenges.** Presents an environmental snapshot of the intersection of quality measurement and health IT. Also provides an overview of the key themes identified from this environmental snapshot and then explores possibilities and critical challenges for the next generation of health IT-enabled quality measurement. Includes a *Partial Catalog of Current Activities to Improve Quality Measurement Enabled by Health IT* (Appendix A), which describes over 80 different programs and initiatives conducted by Federal agencies, State and regional communities, and private organizations that seek to address some of these challenges. July 2012. Available at <http://healthit.ahrq.gov/HealthITEnabledQualityMeasurement/Snapshot.pdf> as AHRQ Pub. No. 12-0061-EF.

**An Interactive Preventive Care Record: A Handbook for Using Patient-Centered Personal Health Records To Promote Prevention.** Introduces primary care practice personnel (e.g., office managers, clinicians, and nurses); practice leaders; and practice informatics staff to (1) using personal health records (PHRs) to promote

prevention, (2) preparing your practice to use a PHR for promoting prevention, and (3) implementing and sustaining the use of a PHR for prevention.

June 2012. Available at <http://healthit.ahrq.gov/KRIST-IPHR-Guide-0612.pdf> as AHRQ Pub. No. 12-0051-EF.

**Using Nursing Practices and Health IT To Reduce Fall-Related Injuries.** Focuses on developing and implementing clinical decision support tools to support nurses in the development of care plans and involvement in quality improvement activities in the area of fall prevention in acute care. Includes several tools as Appendixes to the main report. June 2012. Available at [http://healthit.ahrq.gov/NursingandHITtoReduceFallInjuries\\_ACTIONfinrep.pdf](http://healthit.ahrq.gov/NursingandHITtoReduceFallInjuries_ACTIONfinrep.pdf) as AHRQ Pub. No. 11(12)-0103-EF.

**Health IT Hazard Manager Beta-Test: Final Report.** Focuses on developing and testing a software tool to capture and manage information about prospectively identified health IT hazards before they have the potential to cause harm. Several correlating Appendixes are provided, including screen shots of the actual tool. May 2012. Available at <http://healthit.ahrq.gov/HealthITHazardManagerFinalReport> as AHRQ Pub. No. 12-0058-EF.

**Building Implementation Toolsets for E-Prescribing—Final Report.** Describes the development of two e-prescribing implementation toolsets (for physician practices and pharmacies), summarizes findings from the assessment of each toolset, and discusses how the toolsets were revised based on user feedback. December 2011. Available at <http://healthit.ahrq.gov/BuildingE-PrescribingToolsets.pdf> AHRQ Pub. No. 12-0015-EF.

**Health Care Comes Home: The Human Factors.** Outlines the impact of technology, environment, policy, and human factors on the growing field of home health care. Also describes the areas in which human factors can influence health care in the home. July 2011. Available at [http://www.nap.edu/catalog.php?record\\_id=13149](http://www.nap.edu/catalog.php?record_id=13149).

**Improving Consumer Health IT Application Development: Lessons From Other Industries, Background Report.** Summarizes and synthesizes

findings related to design methods used for the development of successful consumer products in industries other than health care, offers recommendations for developers of consumer health IT applications, and provides directions for future research. May 2011. Available at <http://healthit.ahrq.gov/developmentmethodsbackgroundreport> AHRQ Pub. No. 11-0065-EF.

**Reducing Disparities in Health Care Quality in Underresourced Settings Using Health IT Strategies: Expert Meeting Summary.** Provides a summary of an AHRQ-sponsored meeting of researchers, policymakers, and experts in health IT and health care disparities. The goal was to inform the Agency's research and action strategies to reduce disparities while improving health care quality. March 2011. Available at <http://www.ahrq.gov/research/dispmgsum09.htm>.

**Structuring Care Recommendations for Clinical Decision Support: Background Assessment, Synthesis, and Methods Report.** Provides a rationale for translating care recommendations (such as those from the U.S. Preventive Services Task Force) into a format that can be readily adapted for deployment by CDS implementers and describes the proposed methods for producing structured recommendations. March 2011. Available at <http://healthit.ahrq.gov/StructuringCareRecommendationsforCDS> as AHRQ Pub. No. 11-0025-1-EF.

**Electronic Prescribing in the United Kingdom and in the Netherlands.** Provides an overview of the development of e-prescribing in the United Kingdom (UK) and the Netherlands (NL) to inform the implementation of e-prescribing in the United States. February 2011. Available at <http://healthit.ahrq.gov/europe-e-prescribing-report> as AHRQ Pub. No. 11-0044-EF.

**Incorporating Health Information Technology Into Workflow Redesign. Summary Report.** Provides background material for Workflow Assessment for Health IT toolkit, which is designed to help small and medium-sized outpatient practices to assess their workflows and to successfully implement health IT. October 2010. Available at <http://healthit.ahrq.gov/workflowfinalreport> as AHRQ Pub. No. 10-0098-EF.

The list of tools considered for inclusion in the toolkit is available at <http://healthit.ahrq.gov/workflowtoolcompendium>.

**Incorporating Health IT Into Workflow Redesign: Request for Information Summary Report.** Summarizes information obtained from a Request for Information on developed methods and tools or initiatives for ambulatory workflow analysis and redesign and how health IT could support workflow redesign. July 2010. Available at <http://healthit.ahrq.gov/workflowreport> as AHRQ Pub. No. 10-0074-EF.

The Workflow Assessment for Health IT toolkit that resulted from the Workflow Redesign reports is available at <http://healthit.ahrq.gov/workflow>.

**Practice-Based Population Health: Information Technology to Support Transformation to Proactive Primary Care.** Describes an approach to care that uses information on a "population" of patients within a primary care "practice-based" setting to improve the care and clinical outcomes of patients, and the information management functionalities that may help primary care practices to move forward with this type of proactive management. July 2010. Available at [http://healthit.ahrq.gov/ahrq\\_commissioned\\_research](http://healthit.ahrq.gov/ahrq_commissioned_research) as AHRQ Pub. No. 10-0092-EF.

**Electronic Health Record Usability: Vendor Practices and Perspectives.** Addresses the information gap on current EHR vendor usability processes and practices during the different phases of product development and deployment. Available at [http://healthit.ahrq.gov/EHR\\_vendor\\_practices\\_and\\_perspectives](http://healthit.ahrq.gov/EHR_vendor_practices_and_perspectives) May 2010. AHRQ Pub. No. 09(10)-0091-3-EF.



**Industrial and Systems Engineering and Health Care: Critical Areas of Research, Final Report.** Explores the critical areas of research at the intersection of industrial and systems engineering and health care,

with a special emphasis on the supportive role of health IT, and proposes a detailed research and action

agenda. May 2010. Available at <http://healthit.ahrq.gov/engineeringhealthfinalreport> or in print as AHRQ Pub. No. 10-0079.

**Managing Personal Health Information: An Action Agenda.** Provides an action agenda for advancing understanding of consumers' health information management practices, and offers expert recommendations for advancing work in the field of consumer health IT. March 2010. Available at <http://healthit.ahrq.gov/consumerhitneedsactionagenda> as AHRQ Pub. No. 10-0048-EF.

**Electronic Health Record Usability: Evaluation and Use Case Framework.** Establishes a foundation of EHR user interface design considerations and proposes an action agenda for the application of information design principles to the use of health IT in primary care settings. October 2009. Available at [http://healthit.ahrq.gov/EHR\\_evaluation\\_and\\_use\\_case\\_framework](http://healthit.ahrq.gov/EHR_evaluation_and_use_case_framework) as AHRQ Pub. No. 09-0091-1-EF.

**Electronic Health Record Usability: Interface Design Considerations.** Provides insights intended to foster research and policy development to inform the next generation of EHR products and the clinical communities that use them. A companion product to *Electronic Health Record Usability: Evaluation and Use Case Framework*. October 2009. Available at [http://healthit.ahrq.gov/EHR\\_interface\\_design\\_considerations](http://healthit.ahrq.gov/EHR_interface_design_considerations) as AHRQ Pub. No. 09-0091-2-EF.

**Industrial and Systems Engineering and Health Care: Critical Areas of Research, Background Report.** Summarizes the past and relevant reports, to inform the development of a research agenda at the intersection of industrial and systems engineering and health care. September 2009. Available at <http://healthit.ahrq.gov/engineeringhealthbackgroundreport> or as AHRQ Pub. No. 09-0094-EF.

**Consumer Engagement in Developing Electronic Health Information Systems: Final Report.** Describes the use of focus groups to investigate how health care consumers believe that they should be involved in the design and deployment of health IT. July 2009. Available at [http://healthit.ahrq.gov/consumer\\_engagement\\_in\\_developing\\_electronic\\_health\\_is](http://healthit.ahrq.gov/consumer_engagement_in_developing_electronic_health_is) as AHRQ Pub. No. 09-0081-EF.

**Personal Health Information Management and the Design of Consumer Health Information Technology: Secondary Analysis of Data from the Medical Expenditure Panel Survey.** Summarizes an analysis of data from the Household Component of the Medical Expenditure Panel Survey relevant to personal health information management to identify the variables that affect the techniques that people use to manage their family's health information. July 2009. Available at <http://healthit.ahrq.gov/consumerhitneedsanalysisofMEPSdata> as AHRQ Pub. No. 09-0090-EF.

**Personal Health Information Management and the Design of Consumer Health Information Technology: Background Report.** Synthesizes findings from a literature review to (1) define the domain of personal health information management, (2) summarize extant research on this topic, and (3) offer recommendations that can enable better design of consumer health IT applications that create value for users. June 2009. Available at <http://healthit.ahrq.gov/consumerhitneedsbackgroundreport> as AHRQ Pub. No. 09-0075-EF.

**Creating Sustainable Local Health Information Exchanges: Can Barriers to Stakeholder Participation be Overcome?** Presents results from case studies conducted to explore how stakeholder participation affects the development of local health information exchanges, with a focus on stakeholder perspectives on the potential role of HIEs in quality initiatives. HSC Research Brief No. 2. February 2008. Available at <http://hschange.org/CONTENT/970/>.

**Physicians' Experiences Using Commercial E-Prescribing Systems.** Summarizes findings from a qualitative study of physician practices' experience with e-prescribing. Findings suggest that substantial gaps may exist between advocates' vision of e-prescribing and how physicians use commercial e-prescribing systems today. April 2007. Available at <http://www.ncbi.nlm.nih.gov/pubmed?term=17405773>.

## Evidence-based Practice Center Reports

**Enabling Patient-Centered Care Through Health Information Technology.** Reviews the evidence on the impact of health IT that supports patient-centered care (PCC) on health care processes; clinical

outcomes; intermediate outcomes (patient or provider satisfaction, health knowledge and behavior, and cost); responsiveness to needs and preferences of patients; shared decisionmaking and patient-clinician communication; and access to information. Also seeks to identify barriers and facilitators for using health IT to deliver PCC and gaps in evidence and information needed by patients, providers, payers, and policymakers. Evidence Report/Technology Assessment No. 206. June 2012. Available at: <http://www.ahrq.gov/clinic/tp/pcchttp.htm> or in print as AHRQ Pub. No. 12-E005-EF.

**Enabling Health Care Decisionmaking Through Clinical Decision Support and Knowledge Management.** Catalogues study designs used to assess the clinical effectiveness of clinical decision support and knowledge management systems (CDSSs/KMSs), identifies features that impact the success of these systems, documents the impact of CDSSs/KMSs on outcomes, and identifies knowledge types that can be integrated into CDSSs/KMSs. Evidence Report/Technology Assessment No. 203. April 2012. Available at: <http://www.ahrq.gov/clinic/tp/knownmgttp.htm> or in print as AHRQ Pub. No. 12-E001-EF.



**Enabling Medication Management Through Health Information Technology (Health IT).** Summarizes the evidence evaluating the effects of health IT on the medication management process across providers, settings, patients, and research methods. Evidence Report/Technology Assessment No. 201. April 2011. Available at <http://www.ahrq.gov/clinic/tp/medmgttp.htm> or in print as AHRQ Pub. No. 11-E008-1.

**Impact of Consumer Health Informatics Applications.** Reviews the evidence on the impact of consumer health informatics (CHI) applications on health outcomes, to identify the knowledge gaps and to make recommendations for future research. Evidence Report/Technology Assessment No. 187. August 2009. Available at <http://www.ahrq.gov/clinic/tp/chiapptp.htm> or in print as AHRQ Pub. No. 09(10)-E019.

**Barriers and Drivers of Health Information Technology Use for the Elderly, Chronically Ill, and Underserved.** Describes factors influencing the use and usability of interactive consumer health IT in the elderly, those with chronic illness or disabilities, and the underserved. It also summarizes the scientific evidence on outcomes of using these technologies, identifies gaps in the evidence, and provides a context for future inquiry. Evidence Report/Technology Assessment No. 175. November 2008. Available at <http://www.ahrq.gov/clinic/tp/hitbartp.htm> or in print as AHRQ Pub. No. 09-E004.

**Costs and Benefits of Health Information Technology.** Assesses the evidence base regarding benefits and costs of health information technology (Health IT) systems, that is, the value of discrete Health IT functions and systems in various healthcare settings, particularly those providing pediatric care. Evidence Report/Technology Assessment, No. 132. April 2006. Available at <http://www.ahrq.gov/clinic/tp/hitsystp.htm>.

## Findings of the Health IT Portfolio

### *Ambulatory Safety and Quality*

**Findings and Lessons From the AHRQ Ambulatory Safety and Quality Program.** Summarizes the most salient findings and lessons across the ASQ program as presented in the four reports on the program's health IT-focused initiatives. Organized according to key aspects of ambulatory care that can be supported and improved through the use of health IT. September 2013. Available at <http://healthit.ahrq.gov/asqreport> as AHRQ Pub. No. 13-0067-EF.

**Improving Management of Individuals With Complex Healthcare Needs Through Health IT.** Highlights key findings, lessons, and insights from the experiences of 12 projects focused on clinician and patient and family use of health IT in ambulatory settings to improve outcomes through more effective decision support or care delivery for patients with complex health care needs. September 2013. Available at <http://healthit.ahrq.gov/asqmcpreport> as AHRQ Pub. No. 13-0058-EF.

**Findings and Lessons From the Improving Quality Through Clinician Use of Health IT (IQHIT) Grant Initiative.** Presents key lessons and findings from 24 IQHIT grantee projects related to the development, implementation and use of health IT to assist clinicians, practices, and systems in improving the quality and safety of care delivery in ambulatory care settings. May 2013. Available at <http://healthit.ahrq.gov/asqihitreport> as AHRQ Pub. No. 13-0042-EF.

**Findings and Lessons From the Enabling Patient-Centered Care (PCC) Through Health IT Grant Initiative.** Presents key lessons and findings from 16 PCC grantee projects that examined ways to improve patient self-management; explored ways to provide patients, their caregivers, or providers' access to medical information (10 projects); and evaluated the impact of the use of health IT to support more effective patient-clinician communication (7 projects). February 2013. Available at <http://healthit.ahrq.gov/asqpcpreport> as AHRQ Pub. No. 13-0011-EF.

**Findings and Lessons From the Enabling Quality Measurement (EQM) Through Health IT Grant Initiative.** Presents 17 EQM grantee initial findings that inform research discussion and provide guidance to other entities implementing health IT systems for quality measurement and improvement. Identifies practical insights regarding the use of electronic clinical information systems such as EHRs to implement EHR-derived versions of existing quality measures or to develop new ones. May 2012. Available at <http://healthit.ahrq.gov/EQMReport2012.pdf> as AHRQ Pub. No. 12-0047-EF.

All reports, stories, and videos related to ASQ are available at <http://healthit.ahrq.gov/ASQ>.

### *Clinical Decision Support Demonstrations*

**Implementing Clinical Decision Support (CDS) Systems: The Experiences of AHRQ's Demonstration Projects—Third Annual Report.** Summarizes the accomplishments, challenges, and lessons learned during the third year (March 2011 to

June 2012) of the AHRQ CDS demonstration projects. August 2012. AHRQ Pub. No. 12-0089-EF.

**Implementing Clinical Decision Support (CDS) Systems: The Experiences of AHRQ's Demonstration Projects—Second Annual Report.** Summarizes the accomplishments, challenges, and lessons learned during the second year (March 2010 to June 2011) of the AHRQ CDS demonstration projects. September 2011. AHRQ Pub. No. 11-0097-EF.

**Implementing Clinical Decision Support (CDS) Systems: The Experiences of AHRQ's Demonstration Projects—Annual Report.** Highlights the individual and aggregate products of the CDS demonstration projects and describes the accomplishments, challenges, and lessons learned. November 2010. AHRQ Pub. No. 11-0011-EF.

**Challenges and Barriers to Clinical Decision Support (CDS) Design and Implementation Experienced in the Agency for Healthcare Research and Quality CDS Demonstrations.** Describes the challenges and barriers encountered by two AHRQ-funded CDS demonstrations, how they addressed these obstacles, and the effectiveness of their strategies. March 2010. AHRQ Pub. No. 10-0064-EF.

All reports related to the CDS Initiative are available at <http://healthit.ahrq.gov/cdsinitiative>.

### *Decisionmaker Briefs*

Describes outcomes and best practices from AHRQ-funded projects in various topic areas.



**Bar-Coded Medication Administration.** (AHRQ Pub. No. 08-0085)  
**Chronic Disease Management.** (AHRQ Pub. No. 08-0084)  
**Computerized Provider Order Entry.** (AHRQ Pub. No. 08-0093)  
**Telehealth.** (AHRQ Pub. No. 08-0045)

All Decisionmaker briefs are available at <http://healthit.ahrq.gov/emerginglessons> or in print under the corresponding AHRQ publication number.

### *Emerging Lessons Reports*

**Health Information Technology and Health Information Exchange Implementation in Rural and Underserved Areas.** Focuses on the challenges facing rural and underserved communities in integrating health IT into their health care delivery systems as identified by AHRQ grantees, along with their real-world solutions. February 2010. AHRQ Pub. No. 10-0047-EF.

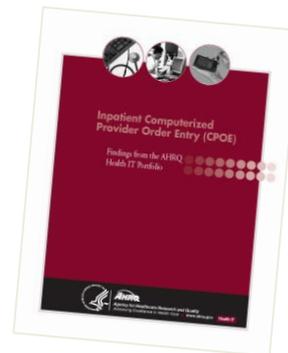
**Using Health Information Technology to Perform Medication Reconciliation.** Illustrates the different approaches that AHRQ-funded grantees are taking to implement and evaluate medication reconciliation processes using health IT. February 2010. AHRQ Pub. No. 10-0051-EF.

**Using Health Information Technology To Determine Medication Adherence.** Describes the approaches and challenges discussed by the seven AHRQ Ambulatory Safety and Quality program grantees that participated in the Medication Adherence Open Forums. November 2009. AHRQ Pub. No. 10-0010-EF.

**Implementation of Health Information Technology in Long-Term Care Settings.** Summarizes the key challenges noted, solutions identified, and lessons learned by AHRQ grantees implementing health IT in long-term care settings. October 2009. AHRQ Pub. No. 08-0087-EF.

**Innovations in Using Health IT for Chronic Disease Management.** Focuses on grants awarded in 2004-05 that are supporting implementation and evaluation of health IT to improve care for patients with chronic illnesses. January 2009. AHRQ Pub. No. 09-0029-EF.

**Inpatient Computerized Provider Order Entry (CPOE).** Describes the experiences with regard to challenges and lessons learned of AHRQ grantees who have implemented inpatient CPOE systems. January 2009. AHRQ Pub. No. 09-0031-EF.



**Using Barcode Medication Administration to Improve Quality and Safety.** Focuses on AHRQ grantees that are implementing or evaluating barcoding technologies to improve care for patients, increase efficiency, and contain costs. December 2008. AHRQ Pub. No. 09-0023-EF.

**Using Telehealth to Improve Quality and Safety.** Describes the challenges faced by AHRQ grantees in developing, implementing, or evaluating telehealth interventions. December 2008. AHRQ Pub. No. 09-0012-EF.

**Ambulatory Computerized Provider Order Entry (CPOE).** Focuses on AHRQ grantees that are implementing or evaluating CPOE outside of hospital settings to improve care for patients, increase efficiency, and contain costs. May 2008. AHRQ Pub. No. 08-0063-EF.

All reports related to Emerging Lessons are available at <http://healthit.ahrq.gov/emerginglessons>

## *Fact Sheets and Program Briefs*

**AHRQ's Health IT Portfolio: Federal Partnerships in Improving Health Care Quality.** Describes AHRQ Health IT Portfolio projects where the Portfolio served as a research partner with other Federal agencies to generate evidence or evidence-based tools or for which the Portfolio provided joint funding with other Federal entities to advance the quality of health care through the use of health IT. August 2013. Available at <http://healthit.ahrq.gov/ahrq-funded-projects> as AHRQ Pub. No. 13-P004-EF.

**AHRQ's Ambulatory Safety and Quality Program: Health IT Portfolio.** Provides information about recent awards in three areas through AHRQ's ASQ program: quality measurement, quality improvement, and patient-centered care through health IT. July 2012. Available at <http://www.ahrq.gov/qual/ambsafety/ambsafety.htm> and in print as AHRQ Pub. No. 12-P012.

**Health Information Technology: State and Regional Demonstration Projects.** Describes projects for supporting statewide data sharing and

interoperability activities on a State or regional level aimed at improving the quality, safety, efficiency, and effectiveness of health care for patients and population. August 2010. Available at <http://www.ahrq.gov/news/factix.htm#info> or in print as AHRQ Pub. No. 10-P011.

## *Grantee Success Stories and Program Findings*



### **Sustainability, Partnerships, and Teamwork in Health IT Implementation: Essential Findings From the Transforming Healthcare Quality Through IT (THQIT) Grants.**

Synthesizes findings across several sources, focusing specifically on sustainability, partnerships, and effective teamwork—which were recognized by THQIT grantees as critical aspects of successful health IT implementation. Includes a checklist to help rural and/or community-based hospitals assess their level of preparation for health IT implementation (Appendix A) and a notable case story (Appendix B). December 2012. Available at <http://healthit.ahrq.gov/THQITSynthesisReport2012> as AHRQ Pub. No. 12-0075-EF.

**AHRQ Health Information Technology Portfolio 2011 Annual Report.** Highlights the research areas and progress at both the Portfolio and individual project levels for 169 projects in 2011, consisting of 129 grants and 40 contracts.

September 2012. Available at <http://healthit.ahrq.gov/HTI2011AnnualReport> as AHRQ Pub. No. 12-0053-1-EF. (Annual reports for years 2008–2010 are also available.)



**Success Stories from the AHRQ-Funded Health IT Portfolio (2009).** Provides illustrative examples of the various AHRQ Health IT Portfolio-funded projects active in 2009 and shows

how health IT implementation has successfully demonstrated improvements in quality of care and the potential to translate these findings to other health care settings. November 2010. Available at <http://healthit.ahrq.gov/HITFeaturedProjects> as AHRQ Pub. No. 10-0095-3-EF.

### **Using Health IT: Eight Quality Improvement Stories.**

Highlights the experiences of eight pioneering projects completed under AHRQ's Transforming Healthcare Quality through Information Technology (THQIT) program.

September 2010. Available at <http://healthit.ahrq.gov/SuccessStoriesTHQIT> as AHRQ Pub. No. 10-0102-EF.



### **The AHRQ Health IT Value Grant Initiative: A Programmatic Review of the Peer-Reviewed Literature.**

Presents an initial programmatic review of the peer-reviewed publications of the AHRQ-sponsored Transforming Healthcare Quality through Information Technology (THQIT) Value grantees, whose projects focused on increasing the knowledge and understanding of the value of health IT to improve patient safety and quality of care. June 2010. Available at

<http://healthit.ahrq.gov/THQITValuePaper> as AHRQ Pub. No. 10-0063-EF.

Other health IT-related success stories and videos are available at <http://healthit.ahrq.gov/successstories>

## ***State and Regional Demonstrations***

### **Synthesis of Lessons Learned in the First 5 Years of State and Regional Demonstration Health Information Exchange Projects.**

Synthesizes information about challenges and success factors six AHRQ-funded HIOs addressed in developing sustainable statewide or regional exchange of health information. Presents narrative profiles for each of these HIOs and a synthesis of experiences and lessons learned. March 2011. AHRQ Pub. No. 11-0050-EF.

**Lessons Learned from AHRQ's State and Regional Demonstrations in Health Information Technology.** Describes the cumulative lessons learned across the six SRD contracts and their 5 years of experience. May 2010. AHRQ Pub. No. 10-0075-EF.

### **Liability Coverage for Regional Health Information Organizations: Lessons from the AHRQ-Funded State and Regional Demonstration (SRD) Projects in Health Information Technology and Other Community Efforts.**

Describes how eight regional health information organizations, including the six AHRQ-funded SRD projects, have navigated various issues and challenges associated with liability insurance for health information exchange. June 2009. AHRQ Pub. No. 09-0071-EF.

All State and Regional Demonstration reports are available at <http://healthit.ahrq.gov/stateandregionahie>

## **White Papers**

### **Clinical Decision Support Systems: State of the Art.**

Summarizes the state of the art of electronic CDS for clinicians. Also includes background information on the types of CDS, focuses on the outcomes of deploying these CDS interventions, and discusses the major issues and challenges of CDS implementation and evaluation. June 2009. AHRQ Pub. No. 09-0069-EF.

### **Clinical Practice Improvement and Redesign: How Change in Workflow Can Be Supported by Clinical Decision Support.**

Focuses primarily on electronic CDS, noting that the concepts illustrated also can be applied to paper-based tools. June 2009. AHRQ Pub. No. 09-0054-EF.

All reports related to the CDS Initiative are available at <http://healthit.ahrq.gov/cdsinitiative>

## Tools and Resources

### **Children's Electronic Health Record (EHR)**

**Format.** Provides information to EHR system developers and others about critical functionality, data elements, and other requirements that need to be present in an EHR system to address health care needs specific to the care of children, especially those enrolled in Medicaid or the Children's Health Insurance Program (CHIP). February 2013. Available in both full and abridged Format at <http://healthit.ahrq.gov/childehrFormat>.

### **Designing Consumer Health IT: A Guide for Developers and Systems Designers.**

Highlights strategies that have been used to produce outstanding consumer IT products. This guide presents 10 recommendations for designers and design teams that can be applied to the process of designing and developing a consumer health IT application. September 2012. Available at <http://healthit.ahrq.gov/developmentmethodsguide> as AHRQ Pub. No. 12-0066-EF.

### **Implementation Toolsets for E-Prescribing.**

Provides two toolsets, one for physicians in small practices and one for independent pharmacies, for supporting e-prescribing implementation, including a step-by-step guide for preparing for and launching an e-prescribing system. Includes advice on topics ranging from planning the implementation process, launching the system, troubleshooting common problems, and navigating into more advanced practice and pharmacy services. December 2011. Available at <http://healthit.ahrq.gov/eprescribingtoolsets>.

### **Consumer Health Information Technology in the Home: A Guide for Human Factors Design Considerations.**

Offers consumer health IT developers and vendors guidance on issues to consider for health IT systems to be used in the home and provides home health professionals guidance in selecting tools to complement professional home care services. July 2011. Available at [http://www.nap.edu/catalog.php?record\\_id=13205](http://www.nap.edu/catalog.php?record_id=13205).

### **Health Information Exchange Evaluation**

**Toolkit.** Guides users through the process of devising a realistic and achievable evaluation plan, with a step-by-step process for determining project

goals, what is important to stakeholders, what needs to be measured to satisfy stakeholders, what is truly feasible to measure, how to measure these items, and lists of measures to use to evaluate projects. March 2010. Available at [http://healthit.ahrq.gov/tools\\_and\\_resources](http://healthit.ahrq.gov/tools_and_resources) as AHRQ Pub. No. 10-0056-EF.



### **Health Information Technology Evaluation Toolkit.**

Helps project teams think through the process of developing an evaluation plan of their project. Also includes brief descriptions of several suggested measures that address clinical outcomes and processes, provider adoption and attitudes, and workflow and financial impacts. March 2010. Available at [http://healthit.ahrq.gov/evaluation\\_toolkit](http://healthit.ahrq.gov/evaluation_toolkit) as AHRQ Pub. No. 10-0056-1-EF.

**Health IT Evaluation Measures—Quick Reference Guides.** Provide details about individual measures that can be incorporated into a health IT evaluation plan. **February–March 2009.**

[http://healthit.ahrq.gov/evaluation\\_measures\\_quick\\_reference\\_guides](http://healthit.ahrq.gov/evaluation_measures_quick_reference_guides)

### **Health Information Technology (Health IT)**

**Literacy Guide.** Provides a guide and checklist for developers of health information technologies for populations with limited literacy and for purchasers of health IT (e.g., health plans, pharmaceutical companies, foundations, and other nonprofit organizations) to use to evaluate a health IT product. October 2007. Available at [http://healthit.ahrq.gov/literacy\\_guide](http://healthit.ahrq.gov/literacy_guide) as AHRQ Pub. No. 08-0010-EF.

### **The Health Information Security and Privacy**

**Collaboration Toolkit.** Provides guidance for conducting organization-level assessments of business practices, policies, and State laws that govern the privacy and security of health information exchange.

Available at  
[http://healthit.ahrq.gov/security\\_and\\_privacy\\_collaboration\\_toolkit](http://healthit.ahrq.gov/security_and_privacy_collaboration_toolkit).

## **How to Get These Resources**

These and other AHRQ resources are available at [www.healthit.ahrq.gov](http://www.healthit.ahrq.gov). Single copies of the printed materials are available at no cost by calling AHRQ's Publications Clearinghouse at 800-358-9295 or by emailing the title and publication number to [ahrqpubs@ahrq.hhs.gov](mailto:ahrqpubs@ahrq.hhs.gov).