

AHRQ HEALTH INFORMATION TECHNOLOGY PORTFOLIO

2011 ANNUAL REPORT



Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

HEALTH IT

AHRQ Health Information Technology Portfolio 2011 Annual Report

Prepared for:

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HEALTH IT

Director's Message

The mission of the Agency for Healthcare Research and Quality (AHRQ) is to improve the quality of health care for all Americans. AHRQ's Health IT Portfolio supports our broad mission by demonstrating where health IT improves quality, safety, and effectiveness, enhancing the evidence base for health IT, and preparing the field for effective use of future innovations.

The Health IT Portfolio is one of six portfolios within the Agency designed to bring practical, evidence-based information to medical providers, health care consumers, and policymakers. The Agency's health IT work is highly complementary to related activities supported by our colleagues in the public and private sectors.

We are very pleased to offer our stakeholders this annual report, which highlights the Portfolio's extensive accomplishments. AHRQ is currently funding 169 projects in 36 States. The projects active in 2011 constitute a real-world laboratory for examining how health IT can:

- Make care safer.
- Ensure that people and families are engaged as partners in their care.
- Promote effective communication and coordination of care.
- Facilitate development and spread of new health care delivery models.

We hope that the reader will find this report helpful and informative and that we inspire further exploration and collaboration across the research and health care community.

We welcome comments on the 2011 Health IT Portfolio Annual Report. Comments may be sent by mail to Vera Rosenthal: Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, MD 20850, or by email to Vera.Rosenthal@AHRQ.hhs.gov.



P. Jon White, M.D.

Director

Health Information Technology Portfolio

Acknowledgments

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AHRQ is most grateful to its contractors and grantees for their ongoing provision of timely, informative reports and their participation in this initiative.

Table of Contents

REPORT ACRONYM LIST	v
EXECUTIVE SUMMARY	1
I. INTRODUCTION	3
II. ABOUT THE HEALTH IT PORTFOLIO	4
A. Description of the Health IT Portfolio.....	4
B. National Resource Center for Health IT Web site	5
C. Funding Mechanisms	6
III. OVERVIEW OF THE HEALTH IT-SPONSORED PROJECTS	12
A. Health IT Portfolio Active Projects (Grants and Contracts).....	12
B. Grant Terms and Counts.....	13
C. Contract Information	14
D. AHRQ Target and Priority Populations.....	15
E. Project Successes	17
F. Dissemination of Health IT Information.....	19
IV. CONCLUSION	26

List of Tables

TABLE 1:	Health IT Project Counts of AHRQ Health IT Target Populations	15
TABLE 2:	Health IT Project Counts of AHRQ Priority Populations	16
TABLE 3:	Grantee Tools, Products, and Other Outputs from 2011	21
TABLE 4:	Contractor Tools, Products, and Other Outputs from 2011	21

List of Figures

FIGURE 1:	Number of Active Projects Sponsored by AHRQ's Health IT Portfolio as of 2011 by State ...	12
FIGURE 2:	Health IT Grants as of 2011, by Term of Grant.....	13
FIGURE 3:	Health IT Contracts as of 2011, by Term of Contract.....	14

Report Acronym List

ACTION–Accelerating Change and Transformation in Organizations and Networks
AHRQ–Agency for Healthcare Research and Quality
ARRA–American Recovery and Reinvestment Act
ARRS–AHRQ Research Reporting System
ASQ–Ambulatory Safety and Quality Program
CDS–clinical decision support
CERTs–Centers for Education and Research on Therapeutics
CMS–Centers for Medicare & Medicaid Services
CP3–Center for Primary Care, Prevention, and Clinical Partnerships
CPOE–computerized provider order entry
DHHS–Department of Health and Human Services
EHR–electronic health record
EQM–Enabling Quality Measurement through Health IT Program
FOA–funding opportunity announcement
HIE–health information exchange
HIO–health information organization
IAA–interagency agreement
IQHIT–Improving Quality through Clinician Use of Health IT Program
IRB–Institutional Review Board
MCP–Management of Individuals with Complex Healthcare Needs through Health IT Program
NIH–National Institutes of Health
NRC–National Resource Center for Health Information Technology
OCKT–Office of Communications and Knowledge Transfer
ONC–Office of the National Coordinator for Health Information Technology
PA–program announcement
PBRN–Practice-Based Research Network
PCC–patient-centered care
PEATOC–Program Evaluation and Analysis Task Order Contract
PHR–personal health record
PI–principal investigator
REC–regional extension center
RFA–request for application
RFP–requests for proposal
RFTO–request for task order
SEN–special emphasis notice
SRD–State and Regional Demonstration Project
TA–technical assistance
THQIT–Transforming Health Care Quality through Information Technology Program

Executive Summary

The Health Information Technology Portfolio in 2011

Research funded by the Agency for Healthcare Research and Quality (AHRQ) Health Information Technology (IT) Portfolio contributes to efforts for improving health care nationwide by demonstrating health IT innovations in various health care settings. The Portfolio staff works collaboratively with staff from other AHRQ Centers and Portfolios, as well as other Federal and outside partners. The Portfolio's body of research represents some of the most important sources of evidence regarding the impact of technology on improving quality, safety, effectiveness, and efficiency of health care. The research conducted in 2011 has generated evidence and insight that can facilitate successful design, implementation, and use of health IT. The Portfolio team hopes that this work will serve as a catalyst for further research and collaborations across the research community.

The projects funded through the Health IT Portfolio are conducted in real care delivery settings and identify the practical issues of health IT research, such as:

- Obtaining buy-in from staff and clinicians.
- Informing the effective implementation of health IT, especially in underserved and under-resourced areas.
- Evaluating costs and benefits of health IT.
- Identifying barriers and facilitators to implementation.
- Understanding the impact of health IT.

Report Purpose and Organization

The AHRQ Health IT 2011 Annual Report is designed to disseminate information on the research areas at both the Portfolio and project levels. The report describes activities that took place throughout the year, and synthesizes outputs, challenges, and successes of the 169 projects active in calendar year 2011. Dissemination activities of the project teams and the AHRQ Health IT staff are also highlighted.

Report Availability

The report is available as an easy-to-access Web-based document through the AHRQ-funded project search tool on the National Resource Center for Health IT (NRC) Web site (www.healthit.ahrq.gov). The NRC provides a platform to support outreach and delivery of information from AHRQ, and to share expertise across the multidisciplinary fields that are engaged in critical aspects of health IT research. Users of the Web site can search for project summaries, project-related news, and project publications, as well as identify projects based on several categories, including type of technology, care setting, and target population.

In addition, individual project summaries for the grants and contracts are available on the NRC Web site. The project summaries provide an overview and status updates of each of the projects' long-term objectives and specific aims, updates on completed or ongoing project activities, and preliminary or final findings and impact. The summaries are an excellent resource for implementers of health IT, prospective research applicants, and others interested in the challenges and successes of health IT implementation and use in terms of research and practical application. They describe the characteristics of successful research projects and principal investigators' abilities to adjust and persevere through the real-world challenges and setbacks encountered in health IT research.

2011 Annual Report Highlights

AHRQ's Health IT Portfolio comprised 169 projects in 2011 consisting of 129 grants and 40 contracts. Projects are diverse, representing the full range of technologies, care settings, and geography, including organizations in 36 States and the District of Columbia.

Highlights of the activities accomplished in 2011:

- The Enabling Quality Measurement (EQM) Through Health IT grant initiative, one of four Ambulatory Safety and Quality (ASQ) RFAs, concluded. The ASQ initiative, established in 2007, supported grants to improve the safety and quality of ambulatory health care in the United States. The research funded under the EQM program added to the knowledge base on developing safety and quality measures in ambulatory care settings, automating quality measurement, demonstrating the ability of electronic data systems to expand potential safety and quality measures, and demonstrating improved ability to export data for reporting performance on measures and improvement.
- The remaining three of the six contracts supporting AHRQ's 5-year State and Regional Demonstrations in Health IT concluded. These projects, in Delaware, Rhode Island, and Utah, supported data sharing and exchange activities aimed at improving health care on a State or regional level, and examined characteristics of health information organizations. The six States developed a variety of approaches to health information exchange (HIE), with different technical, business, and governance models.

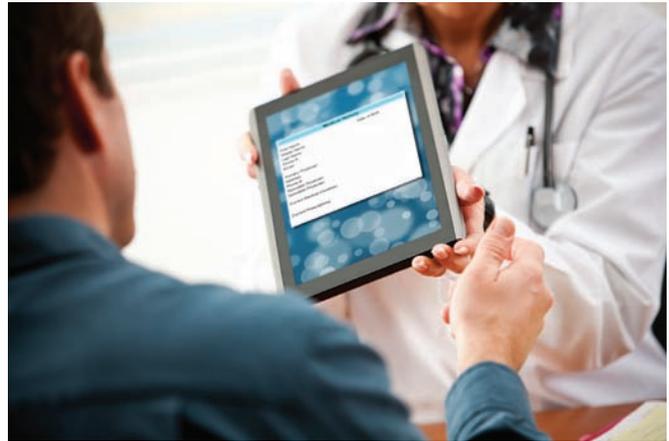
- The Portfolio released the first in a series of videos highlighting successful projects from grantees and contractors which can serve as a good example for future projects. The first video highlighted the development of DVD segments by Kate Lapane, Ph.D., and her research team on various health topics to help older adults address medication challenges. The video can be found at: <http://healthit.ahrq.gov/AHRQHealthITSuccessStoriesLapaneVideo>. Other videos, as well as written stories, are available at: <http://healthit.ahrq.gov/SuccessStories>.
- The National Research Council of the National Academies of Science conducted a project and formed a multidisciplinary consensus panel of recognized experts to examine a diverse range of behavioral and human factors issues resulting from recent trends and challenges associated with the increasing migration of medical devices, technologies, and care practices into the home. The project resulted in a consensus report identifying and discussing major human factors issues in home health care, as well as a brief companion designer's guide for home health care information technology.

AHRQ's Health IT Portfolio supports the Agency's broad mission by demonstrating where health IT improves quality, safety, and effectiveness, enhancing the evidence base for health IT, and preparing the field for effective use of future innovations. We hope that the reader will find this report helpful and informative and that the projects inspire innovative research and collaboration across the research and health care community.

I. Introduction

Welcome to the Agency for Healthcare Research and Quality (AHRQ) Health Information Technology Portfolio 2011 Annual Report. This report highlights the Portfolio's initiatives that support research projects that advance the field of health information technology (IT) in health care. By developing secure and private electronic health records for most Americans and making health information available electronically when and where it is needed, health IT can improve the quality of care, even as it makes health care more cost-effective. This report demonstrates how the projects supported through the Portfolio have helped develop an evidence base around the impact of health IT on the quality, safety, effectiveness, and efficiency of health care.

This report is available as a Web-based document on the National Resource Center for Health IT (NRC) Web site (www.healthit.ahrq.gov). In addition, the NRC Web site also provides individual project summaries, project-related news, and project publications. Projects can be identified by geography, principal investigator, type of technology, care setting, target population, and aspect of care.



In 2011, 169 health IT grants and contracts were active during the calendar year. The report overview includes information on AHRQ funding mechanisms and geographic distribution of projects. In addition, the report highlights some project successes and challenges, as well as the dissemination activities of the projects and the AHRQ Health IT team.

As this report illustrates, AHRQ is committed to improving the quality of health care for all Americans. The Health IT Portfolio initiatives are aimed at helping clinicians provide higher quality, safer health care; stimulating the implementation of health IT, especially in rural and underserved areas; and identifying the most successful approaches and barriers to health IT implementation.

II. About the Health IT Portfolio

A. Description of the Health IT Portfolio

AHRQ is the lead agency charged with supporting research designed to improve the quality of health care, reduce health care costs, and broaden access to essential services. AHRQ's wide array of research brings practical, evidence-based information to medical practitioners, consumers, and policymakers. The Agency is comprised of nine Offices and Centers and supports a series of interrelated health services research programs that individually and collectively seek to improve the quality, safety, efficiency, and effectiveness of health care for all Americans. AHRQ also has six Portfolios: Health IT, Comparative Effectiveness, Innovations and Emerging Issues, Patient Safety Research, Prevention and Care Management, and Value Research.

The primary focus of the Health IT Portfolio is to improve the quality of American health care by generating evidence through extramural research, synthesizing and disseminating best evidence, and providing evidence-based tools for health IT implementers and policymakers.

The Director of the Portfolio, P. Jon White, M.D., works with a core team of eight staff. Additional AHRQ staff members serve as program officials to support the Portfolio's activities. Portfolio staff members also collaborate with colleagues from other AHRQ Offices, particularly the Office of Communication and Knowledge Transfer (OCKT), to disseminate information from various health IT endeavors.

The AHRQ Health IT Portfolio supported a variety of activities in 2011.

The Health IT Portfolio members participated in AHRQ's fifth annual conference on September 18-21, 2011, in Bethesda, Maryland. This conference was designed to showcase the best of the Agency's research and provide examples of how that research is being implemented at all levels in health care delivery. Titled "Leading Through Innovation & Collaboration," the conference featured presentations in seven major themes, each of which intersected with health IT topics in some capacity. Portfolio staff also held a tabletop exhibit to share information about how research and demonstrations inform health IT policy and practice and how health IT can improve the quality and cost-effectiveness of American health care.

Throughout the year, members of the Health IT Portfolio made numerous presentations to various stakeholder groups and venues, including the Annual Conference and Exhibition of the Healthcare Information and Management Systems Society (HIMSS), the American Medical Informatics Association (AMIA), the Institute of Medicine (IOM), the Health Resources and Services Administration (HRSA) Health IT and Quality Policy Council, the Centers for Medicare & Medicaid Services (CMS) Multi-State Medicaid Health Information Technology for Economic and Clinical Health Conference, and the EHR Usability Symposium.

Portfolio staff partnered with Federal and private organizations to co-sponsor conferences, provide funding for projects, and share information. Partners included HRSA, the Indian Health Service (IHS), CMS, Kaiser Permanente, the Commonwealth Fund, and the Robert Wood Johnson Foundation.

B. National Resource Center for Health IT Web site

The National Resource Center (NRC) for Health IT Web site (www.healthit.ahrq.gov) is a central mechanism for disseminating findings generated from AHRQ-funded health IT projects. Additionally, it serves as a platform to support outreach and delivery of information from AHRQ and to share expertise across the multidisciplinary fields that are engaged in critical aspects of health IT implementation and research.

The NRC Web site is a collection of information, resources, and products largely generated by the Health IT Portfolio staff and sponsored grantees or contractors. The following categories represent just some of the information that is available on the NRC Web site:

Events: Past and upcoming health IT-related events sponsored by AHRQ are listed on the “Events” page of the Web site. The list of events includes activities such as the AHRQ Annual Conferences hosted annually in September and the National Web-Based Teleconferences that feature interactive presentations by experts in a particular field of health IT, and other important health IT activities. Links to resources, such as meeting agendas and presentations, are provided.

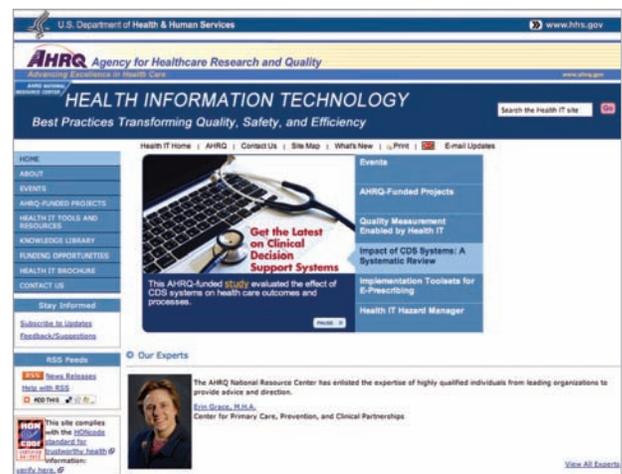
AHRQ-Funded Projects: Detailed information about each health IT-funded project is available on the “AHRQ-Funded Projects” page of the Web site. Users may search for projects by geography, health care setting, type of health IT technology, target population, aspect of care, and principal investigator. In addition, this section provides more in-depth content on various initiatives, for example:

- The “[Success Stories](#)” page is comprised of a series of project stories, highlighting projects that have demonstrated positive impact on health care outcomes or address gaps in the research literature.

- The “[Transforming Healthcare Quality through Health IT \(THQIT\)](#)” page highlights content from the 118 grants funded under the closed THQIT program to support health IT implementation. Case studies highlight a variety of the THQIT grants, and a report summarizes the peer-reviewed published findings of the Demonstrating the Value of Health Information Technology RFA (HS-04-012).
- The “[Clinical Decision Support Initiative](#)” page describes the two contracts that focus on the development, adoption, implementation, and evaluation of best practices using clinical decision support (CDS). These contracts are advancing the understanding of how best to incorporate CDS into health care delivery.

Health IT Tools and Resources: AHRQ and its community of contractors and grantees have developed tools to help health care organizations plan, implement, and evaluate health IT. These freely available tools provide users with the resources they need to learn more about many aspects of health IT, to conduct evaluations and surveys, to work through cost-benefit evaluations, to assess workflow, and to see examples of documents commonly used in health IT. Tools include the following:

- The [Health IT Projects Publication Database](#), a collection of publications describing work



from the AHRQ Health IT Portfolio-funded contracts and grants.

- The [Health IT Literacy Guide](#), which provides resources for the design and development of accessible health IT for populations with limited literacy and for purchasers to evaluate health IT products.
- The [Health IT Survey Compendium](#), a set of publicly available health IT surveys.
- The [Workflow Assessment for Health IT Toolkit](#), a toolkit designed for people and organizations interested or involved in the planning, design, implementation, and use of health IT in ambulatory care.



Funding Opportunities: AHRQ lists open funding opportunity announcements (FOAs) for health IT and provides links to other Federal grant programs through the National Institutes for Health, HRSA, the Department of Defense, the Centers for Disease Control and Prevention (CDC), and the National Institute of Standards and Technology, as well as links to funding Web pages for non-governmental not-for-profit organizations.

C. Funding Mechanisms

There are a variety of funding mechanisms used by the Health IT Portfolio. Each award mechanism specifies the content, format, and timeline for deliverables, including periodic reporting requirements for completion of milestones and budget updates. *Grants, cooperative agreements, contracts, and interagency agreements* are four common mechanisms that AHRQ applies to carry out a wide variety of health services research and administrative activities. Descriptions of each are provided below:

Grants and Cooperative Agreements

Grants provide money, property, or other direct assistance to allow eligible entities to carry out an approved project or activity in support of a public purpose that does not directly benefit the government. No substantial programmatic involvement with the recipient occurs during performance of the financially assisted activities. Cooperative agreements are used when there will be substantial Federal programmatic involvement, meaning that AHRQ program staff will collaborate or participate in project or program activities as specified in the Notice of Grant Award. For the purpose of this report, the term “grant” is used to include both grants and cooperative agreements.

Grant proposals are submitted in response to AHRQ’s issuance of a funding opportunity announcement (FOA). One-time FOAs are known as request for applications (RFAs), and recurring FOAs are known as program announcements (PAs). There have been three major funding initiatives funded by the Portfolio: 1) Transforming Health Care Quality through Information Technology RFAs, 2) Ambulatory Safety and Quality RFAs, and most recently 3) Health IT PAs. There are also other funding categories that contribute to the Portfolio’s body of research, such as those funded through the Centers for Education and Research on Therapeutics (CERTs) and the Health Services Research Dissertation (R36) grant program.

Transforming Health Care Quality through Information Technology (THQIT) RFAs.

The THQIT projects, awarded in 2004 and 2005, were designed to support different aspects of organizational and community-wide health IT implementation-related activities, elucidate various stakeholders’ perspectives, and/or demonstrate the value of health IT implementation and use, particularly in rural

hospitals and community-based health care settings. The THQIT initiative included 118 grants funded through four RFAs focused on planning, implementation, and evaluating the value of health IT. All 118 grants ended between 2006 and 2010.

Ambulatory Safety and Quality (ASQ) RFAs.

The ASQ initiative awarded a total of 69 grants in 2007 and 2008 to support projects that focused on patient-centered care, quality measurement, and clinical management of complex patients. The ASQ initiative funded grants through the following four RFAs:

- ***Enabling Quality Measurement (EQM) Through Health IT RFA (HS-07-002):*** Intended to develop safety and quality measures in ambulatory care settings, automate quality measurement, demonstrate the ability of electronic data systems, expand potential safety and quality measures, and demonstrate improved ability to export data for reporting performance on measures and improvement. All 17 grants awarded through this RFA in 2007 were closed by the end of 2011.
- ***Enabling Patient-Centered Care (PCC) Through Health IT RFA (HS-07-007):*** Designed to fund grants to investigate novel methods or evaluate existing strategies for using health IT to create or enhance patient-centered models of care in the ambulatory setting. Sixteen total grants were awarded in 2007 and will end by 2012.
- ***Improving Quality Through Clinician Use of Health IT (IQHIT) RFA (HS-07-006):*** Designed to investigate novel methods or evaluate existing strategies for clinician use of health IT in ambulatory settings to improve outcomes through more effective clinical decision support, medication management, or care delivery. Twenty-four total grants were awarded in 2007 and will end by 2012.

In April 2011, AHRQ published two new health IT-related FOAs to supplement its existing FOAs and special emphasis notice (SEN). These funding opportunities are designed to fund basic health IT research and fill gaps in the field that will lead to improved design of health IT systems.

- The [*Understanding Clinical Information Needs and Health Care Decision Making Processes in the Context of Health Information Technology \(IT\) \(R01\) FOA*](#) will fund research aimed at elucidating the nature of cognition, task distribution, and work in health care delivery settings. Research projects funded under this FOA will address current knowledge gaps regarding the understanding of health care providers' information needs and health care decisionmaking processes.
- The [*Understanding User Needs and Context to Inform Consumer Health Information Technology \(IT\) Design \(R01\) FOA*](#) will fund projects that will help build a knowledge base about consumers' personal health information management needs and practices and related design principles. Project results should lead to a better understanding of user needs and how their findings will impact consumer health IT design.
- ***Improving Management of Individuals with Complex Healthcare Needs through Health IT RFA (HS-08-002), also referred to as "Management of Complex Patients" (MCP):*** Served to demonstrate the ability of health IT to assist clinicians, practices, systems, and patients and families in improving the quality and safety of care delivery for individuals with complex health care needs in ambulatory care settings, particularly in high-risk care transitions. Twelve total grants were awarded in 2008 and will end by 2013.

Health IT Funding Opportunities. In September 2008, AHRQ issued three PAs designed to help achieve measurable and sustained improvements in the quality and safety of health care in ambulatory settings and in transitions of care through the development, implementation, and use of health IT. The funding opportunities (R03, R21, and R18) offer applicants incremental support for the conduct of increasingly complex health IT research projects. A total of 54 projects have been funded through these program announcements. New proposals for the R03 and R21 FOAs are still being accepted by AHRQ, while the R18 FOA closed in May 2011. The first grants of these FOAs were awarded in September 2009. The following are general overviews about each of the FOAs:

- ***Small Research Grants to Improve Healthcare Quality through Health IT (R03) (PAR-08-268):*** Supports different types of small research studies including: 1) pilot and feasibility or self-contained health IT research projects, 2) secondary data analysis of health IT research, and 3) economic prospective or retrospective analyses of health IT implementation. A total of nine projects have been awarded under this initiative.
- ***Exploratory and Developmental Grant to Improve Health Care Quality through Health IT (R21) (PAR-08-269):*** Provides funding for health IT exploratory and developmental research projects that support the conduct of short-term preparatory, pilot, or feasibility studies. The R21 grants are intended to be more comprehensive and broader in scope than the relatively smaller, self-contained health IT research projects supported by the health IT R03 FOA. A total of 24 R21 projects have been awarded since 2009.
- ***Utilizing Health IT to Improve Health Care Quality Grant (R18) (PAR-08-270):*** Supports demonstration research grants that

study health IT implementation and use to improve the quality, safety, effectiveness, and efficiency of health care in ambulatory settings and transitions between care settings. A total of 21 R18 projects have been awarded since 2009. This PA closed in May 2011. Researchers can submit new proposals to the [AHRQ Health Services Research Demonstration and Dissemination Grants](#) FOA (PA-09-071).

- ***Active Aging: Supporting Individuals and Enhancing Community-based Care through Health Information Technology (P50) RFA (HS-10-016):*** P50 grants focus on applied research with the objective of developing sustainable and reproducible strategies to translate research into practice effectively and efficiently. There is one grant in this category that was funded beginning in 2011 for up to 5 years to carry out community-based participatory research on the use of communication and health IT information to improve the health status of, and health-related services provided to, older adults.

Other Health IT-Funded Grants.

In addition to the grants described above, the Health IT Portfolio funds additional grants with a health IT focus, which are solicited through the following FOAs:

- ***Career and Dissertation Awards (R36, K01, K08):*** In 2008, AHRQ published a Special Emphasis Notice (SEN) (NOT-HS-08-014), to fund Career Development (K01, K02, K08) and Dissertation (R36) Grants focused on health IT, designed to support the next generation of health IT-focused researchers. In 2011, this SEN was reissued (NOT-HS-11-016).
- ***Conference Support Awards (R13, U13):*** AHRQ continues to support conferences through its Grant Programs to support both

small (PAR-09-231, Small Grant Program for Conference Support [R13]) and large (PAR-09-257, Grant Program for Large Conference Support [R13] and [U13]) conferences to help further its mission to improve the quality, safety, efficiency, and effectiveness of health care for all Americans.

- **AHRQ Health Services Research (R01):** In March 2007, AHRQ issued an agency-wide FOA (PA-07-243) for ongoing extramural grants for research, demonstration, dissemination, and evaluation projects to support improvements in health outcomes, strengthen quality measurement and improvement, and identify strategies to improve access. This FOA was reissued in 2009 (PA-09-070).
- **Centers for Education and Research on Therapeutics (CERTs) (U18, U19):** AHRQ was given responsibility for administering the CERTs demonstration program authorized by Congress as part of the Food and Drug Administration Modernization Act of 1997



(Public Law 105-115). CERTs conduct research and provide education to advance the optimal use of drugs, medical devices, and biological products; increase awareness of the benefits and risks of therapeutics; and improve quality while cutting the costs of care.

Contracts

A contract is an agreement that is initiated by the Government to, under specified terms, acquire a product or service. The Health IT Portfolio uses various contract mechanisms to solicit requests for proposals (RFPs), including one-time RFPs and requests for task orders (RFTOs) when a master contract has been issued under an Indefinite Delivery Indefinite Quantity (IDIQ). Master contracts are a special type of RFP that are issued to a group of well-qualified contractors who are then eligible to compete for a subsequent series of RFTOs. RFTOs are provided to master contract awardees for a particular program, such as the Primary Care Practice Based Research Networks.

1. National Resource Center (NRC) for Health IT Contracts.

The NRC contracts support AHRQ's mission of developing and disseminating evidence and evidence-based tools on how health IT can improve health care quality, safety, and efficiency. The NRC is a resource for research findings, best practices, lessons learned, and funding opportunities for health IT researchers, implementers, and policymakers. The NRC also plays a pivotal role in supporting AHRQ's management of the Health IT Portfolio. Thirty-two master contractors currently support the diverse needs of the NRC across the following four domains:

- **Domain 1** – Support for Health IT Program Management, Guidance, Assessment, and Planning.

- Domain 2 – Health IT Technical Assistance, Content Development, and Program-Related Projects and Studies.
- Domain 3 – Health IT Dissemination, Communication, and Marketing.
- Domain 4 – Health IT Portal Infrastructure Management and Web Site Design and Usability Support.

2. Health IT Contracts.

In addition to the NRC, AHRQ funds a variety of knowledge-generating contracts through additional funding mechanisms. The following are general overviews about each major contract mechanism.

- ***Accelerating Change and Transformation in Organizations and Networks (ACTION):*** The ACTION II network includes 17 large partnerships and more than 350 collaborating organizations. The networks conduct practice-based implementation research focused on testing or expanding the investigation of innovations that are new to the health care field; implementing interventions or improvement approaches that have been demonstrated to work in a limited type or number of settings; spreading one or more proven innovations or delivery system improvements; and evaluating and supporting sustainability. In 2011, there were nine active ACTION task order contracts funded by the Health IT Portfolio.
- ***Program Evaluation and Analysis Task Order Contract (PEATOC):*** AHRQ's PEATOC provides a mechanism to facilitate the production of focused, high-priority planning, evaluation, and other types of quantitative and qualitative analytical products for all Portfolios and crosscutting issues within the Agency. In 2011, there was one active PEATOC task order funded by the AHRQ Health IT Portfolio.
- ***Primary Care Practice-Based Research Networks (PBRNs):*** AHRQ funds primary care practice-based research networks defined as a group of ambulatory practices devoted principally to the primary care of patients and affiliated in their mission to investigate questions related to community-based practice and to improve the quality of primary care. In 2011, there were five active PBRN contracts funded by the AHRQ Health IT Portfolio.
- ***Evidence-Based Practice Centers (EPCs):*** AHRQ awards contracts to institutions to serve as EPCs. The EPCs review relevant scientific literature on clinical, behavioral, organizational, and financial topics to produce evidence reports and technology assessments. These reports are used for informing and developing coverage decisions; quality measures; educational materials and tools; guidelines; and research agendas. The EPCs also conduct research on methodology of systematic reviews. In 2011, there were four EPC task orders funded through the Health IT Portfolio.
- ***State and Regional Demonstrations in Health Information Technology (SRDs):*** In late 2004 and early 2005, AHRQ sponsored six SRD projects to create State or regional HIEs. The six projects have developed a variety of approaches to HIE with different technical, business, and governance models. Funding for the three ongoing SRDs ended in 2011.
- ***Clinical Decision Support (CDS) Services:*** In 2008, AHRQ funded two demonstration projects in support of the design, development, implementation, and evaluation of guidelines-based CDS. The demonstration projects were awarded to Brigham and Women's Hospital (Clinical Decision Support Consortium [CDSC] project) and Yale University School of Medicine (GuideLines Into Decision Support

[GLIDES] project). The CDS demonstrations focus on translation of clinical guidelines and outcomes related to preventive health care and treatment of patients with chronic illnesses. Each project was funded initially for a 2-year period, with an option for AHRQ to continue funding the projects for up to an additional 3 years. Both projects were ongoing in 2011.

Interagency Agreements

Interagency agreements (IAAs) are used to provide to, purchase from, or exchange goods or services with another Federal agency. In 2011, the Health IT Portfolio funded three projects managed by another Federal agency. One example is:

In late 2011, AHRQ and the National Science Foundation (NSF) jointly entered into a Memorandum of Understanding (MOU) that will result in an IAA that will promote the joint review and sponsorship of proposals to address the research challenges and agenda set forth in an NSF/AHRQ workshop that was held in September 2009. This particular workshop provided a forum for experts in health services research as well as industrial and systems engineering to explore where critical areas of research in their fields intersect. Through this collaboration, NSF and AHRQ look to foster new collaborations between health services researchers and industrial and systems engineers, with a specific emphasis on the supportive role of health IT.

III. Overview of the Health IT-Sponsored Projects

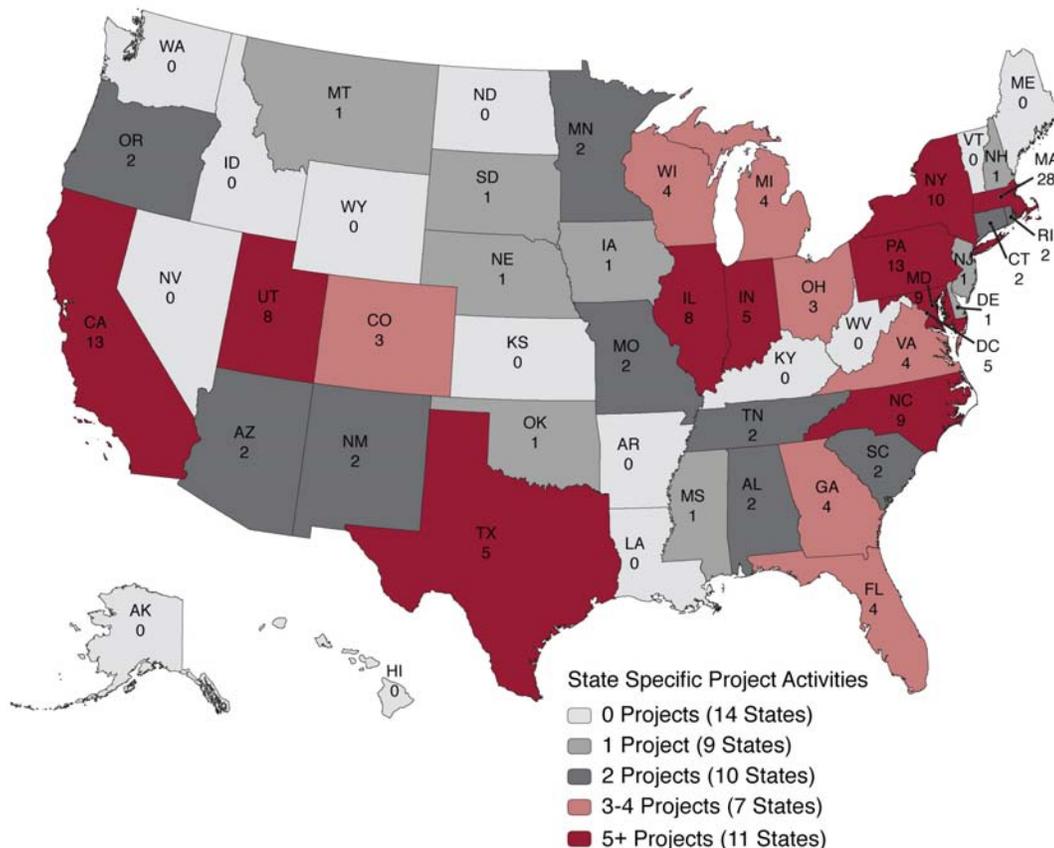
AHRQ’s Health IT Portfolio was comprised of 169 projects, both grants and contracts, in 2011. Through these projects, the Agency is supporting the development and dissemination of evidence on how health IT can be used to improve the quality, safety, efficiency, and effectiveness of care in a variety of health care settings. This section presents the geographic distribution of grants and contracts active in 2011, information on project categorization of AHRQ’s priority and the Health IT target populations, and a sampling of project successes.

A. Health IT Portfolio Active Projects (Grants and Contracts)

Geographic Distribution of Active Projects

In 2011, active projects were awarded to organizations located in 36 States and the District of Columbia (see Figure 1). One project was awarded to an institution in Ontario, Canada. Massachusetts, with 28, was the State with the highest number of active health IT projects. California and Pennsylvania, with 13 in each State, had the next-highest level of active health IT projects, followed by New York with 10, and Maryland with 9.

Figure 1: Number of Active Projects Sponsored by AHRQ’s Health IT Portfolio as of 2011 by State



Note: 168 projects in 36 states plus the District of Columbia. One project in Ontario, Canada, not shown.

B. Grant Terms and Counts

Term of Grants

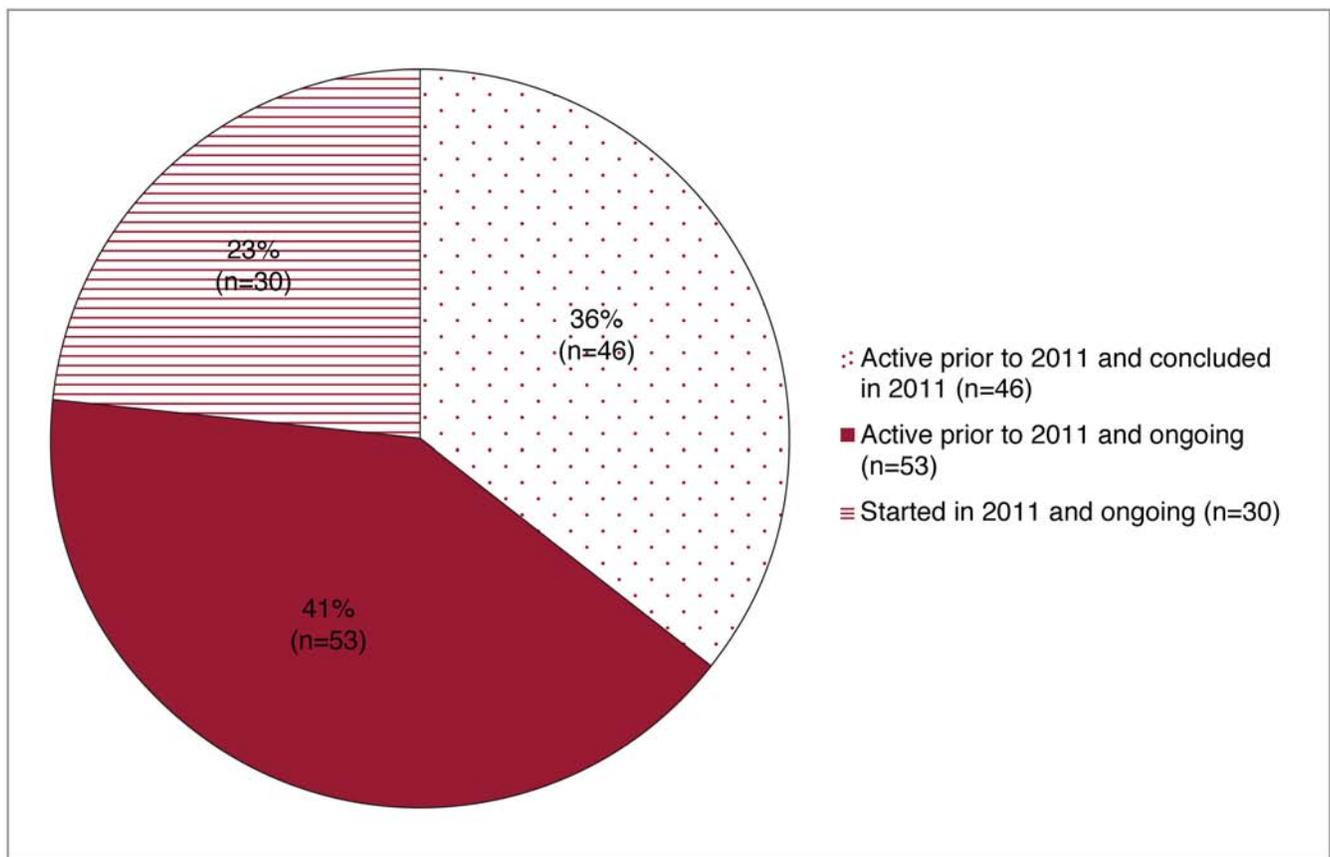
Maximum project periods for grants are specified in each RFA or PA. All of the Health IT Portfolio-sponsored grants active in 2011 were multi-year grants except for two R03 grants, two Health Services Research Dissertation (R36) grants, and two R13 grants, which are all 1-year awards.

Grants that are issued under expanded authority¹ are able to request a no-cost extension². Requests

can be made 1 month before the initial project end-date to extend the project period for up to 12 months, as long as there are no changes in scope. Grants, including cooperative agreements that were not issued under expanded authority may request no-cost extensions of up to 12 months.

Figure 2 shows the status of grants in terms of how many projects that began prior to 2011 concluded or remained ongoing at the year's end, as well as how many new grants began in 2011. As demonstrated in Figure 2, the majority of the grants (53 projects, or 41 percent) were ongoing through the entire year, 30 grants (23 percent) began, and 46 grants (36 percent) ended.

Figure 2: Health IT Grants as of 2011, by Term of Grant



¹ Operating authorities provided to grantees that waive the requirement for agency prior approval for specified actions.

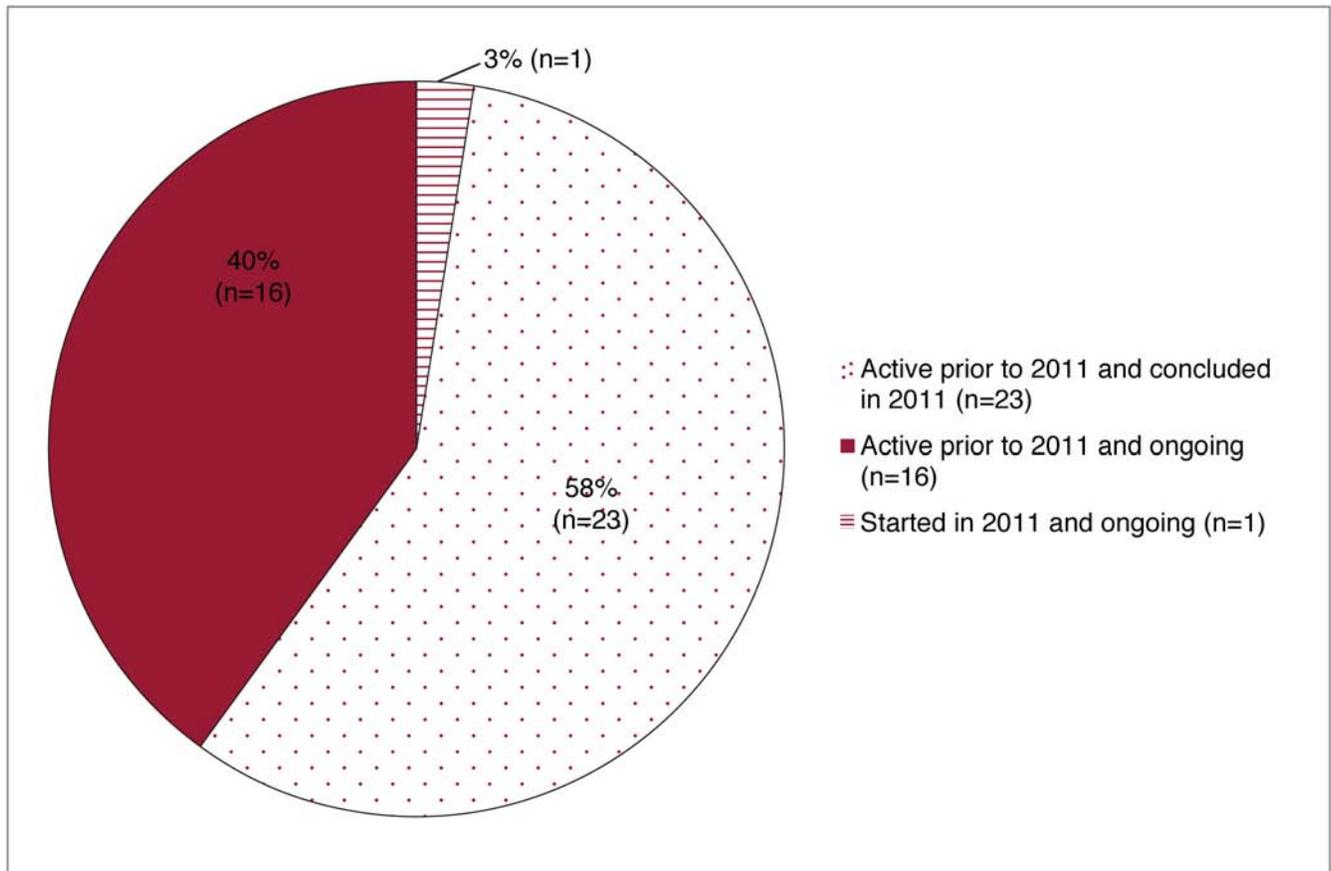
² An extension of the period of performance beyond the expiration date to allow the principal investigator to finish a project, with no additional cost to the government.

C. Contract Information

In 2011, the Health IT Portfolio had 40 active contracts with cumulative AHRQ lifetime funding of \$51.1 million. These contracts enabled individual projects to address a defined, pre-determined need. Initial project duration is specified in each contract, and some contracts have a provision to support additional option years. The duration of the 40 contracts active in 2011 varied from 1 year to more than 5 years.

Figure 3 shows the status of contracts in terms of how many projects that began prior to 2011 concluded or remained ongoing at the year's end, as well as how many new contracts began in 2011. As demonstrated in Figure 3, the majority of the contracts (23 projects, or 58 percent), ended during the year, 16 projects (40 percent) were ongoing through the entire year, and one contract (3 percent) began.

Figure 3: Health IT Contracts as of 2011, by Term of Contract



D. AHRQ Target and Priority Populations

Target Population

The AHRQ Health IT Portfolio assigns funded projects based on the target populations of their research, if applicable. These populations are

listed in the summaries for each project. Table 1 outlines the frequency of projects categorized by each Health IT target population. The most common target population category was adults (71), followed by chronic care (42) and pediatric (27). Projects can be tagged on more than one category.

Table 1: Health IT Project Counts of AHRQ Health IT Target Populations

Target Population	Counts of Projects
Adults	71
Chronic Care	42
Pediatric	27
General	24
Elderly	21
Racial or Ethnic Minorities	21
Diabetes	19
Medically Underserved	17
Not Applicable	17
Medicaid	16
Low-SES/Low Income	15
Hypertension	14
Safety Net	9
Cancer	8
Mental Health/Depression	8
Teenagers	8
Low Literacy	7
Coronary Artery Disease	6
Medicare	6
Obesity	6
Inner City	5
Women	6
Acute Respiratory Infections	4
Asthma	4
Chronic Obstructive Pulmonary Disease	4
Congestive Heart Failure (CHF)	4
HIV/AIDS	4
Other Conditions*	4
Uninsured	4
Veterans	4
Persons with Disabilities	2

Cerebral Palsy	1
Children with Special Health Care Needs	1
Hepatitis C	1
Kidney Disease	1
Men	1
Osteoporosis	1
Otitis Media	1
Sleep Apnea	1
Total	415

**Other conditions include atopic dermatitis and xerostomia.*

Priority Populations

The AHRQ priority populations were specified by Congress in the Healthcare Research and Quality Act of 1999 (Public Law 106-129), which states that research should “address health care needs of the priority populations³.” These populations consist of groups with unique health care needs or issues that require special focus, such as racial and ethnic minorities, low-income

populations, and people with special health care needs. Table 2 outlines the number of projects categorized by each priority population. The most common priority population category was chronic care (42), followed by children (29), elderly (21), and minorities (21). Projects can be tagged on more than one category.

Table 2: Health IT Project Counts of AHRQ Priority Populations

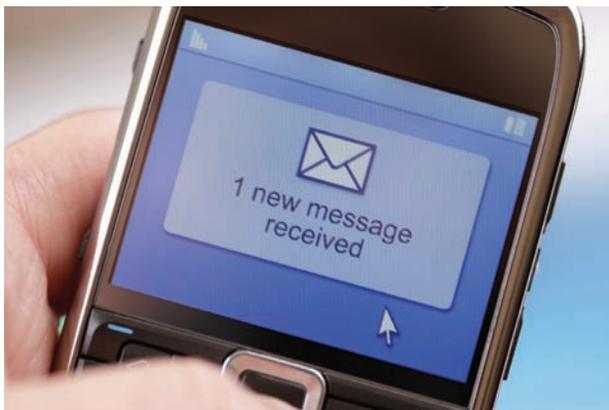
Priority Population	Count of Projects
Chronic Care	42
Children	29
Elderly	21
Minorities	21
Low Income	15
Women	6
Inner City	5
Disabilities	3
Men	1
Total	143

³ <http://www.gpo.gov/fdsys/pkg/PLAW-106publ129/html/PLAW-106publ129.htm>

E. Project Successes

The projects funded by the Health IT Portfolio address important gaps in the research and relevant literature about health IT implementation and use, particularly its impact on quality, safety, and improved health care outcomes, and the applicability of those findings to other health care settings. This section provides several examples of AHRQ-funded projects that were active in 2011 and demonstrate the range of the Health IT Portfolio's breadth.

Using a Short Message System to Improve Health Care Quality and Outcomes Among HIV-Positive Men (Contract # 290-06-0001-7): Dr. Jennifer Uhrig from RTI International directed a project that used a short message system, otherwise known as text messaging, to promote medication adherence and appointment attendance; reduce risk-taking behaviors; and enhance social support, general health and well-being, and patient involvement. Participants were very receptive to and satisfied with the intervention and the messaging used, stating specifically that the messages were easy to understand and described them as accurate, believable, effective, clear, informative, interesting, and realistic. Using a relatively inexpensive technology and intervention with potential for wide dissemination and high impact, this intervention exemplified the use of mobile phones and text messaging as an effective health information and communication tool.



Developing and Using Valid Clinical Quality Measures for Health Information Technology with Health Information Exchange (Grant # R18 HS 017067): Dr. Rainu Kaushal from the Weill Medical College of Cornell University led an effort to advance the goal of health IT-enabled quality measurement to improve health care in an ambulatory setting. More than ever before, physicians are using electronic health records (EHRs) and exchanging clinical data with other health care providers. Therefore, the ability to accurately measure quality from EHR data is important and presents a significant opportunity to improve quality. Dr. Kaushal validated and tested electronic quality measures at a Federally Qualified Health Center using EHR data and found the overall reliability of quality measures to be high. The study team also saw that performance on many of the measures improved over time, even though the study did not include a quality improvement intervention. This research provides lessons learned for other health care providers and facilities and is particularly pertinent to the on-going Meaningful Use Initiative which includes quality measurement as an integral component. A video detailing the successes of this project is available at: <http://healthit.ahrq.gov/EQMKAushalVideo>.

Harnessing Health IT to Prevent Medication-Induced Birth Defects (Grant # R18 HS 017093): Dr. Eleanor Schwarz from the University of Pittsburgh led a team of researchers in the development of two CDS systems to help providers remember to provide counseling to women about family planning services when prescribing medications that may cause birth defects. These systems were designed to address the issue that in many cases information about the risk of birth defects associated with certain medications is available; however, providers often do not provide this counseling to their patients. The two systems differed in that one generated a static alert to the provider while the other system provided tailored information and

links to additional information to facilitate safe prescribing. Both CDS systems were associated with improved quality of care as measured by increases in family planning services when potential teratogens were prescribed. In other words, when patients learned about teratogenic effects of medications they were prescribed, more women chose to use contraception. The CDS was considered to be a sustainable intervention that is potentially replicable in other clinical settings.



Web-Based Intervention for Alcohol Use in Women (Grant # R36 HS 018071): With funding from an R36 Dissertation grant, Katia Delrahim-Howlett, Ph.D., from the University of California San Diego, evaluated a health IT intervention designed to reduce risky alcohol use among low-income women. The intervention involved a Web-based screening tool that assessed alcohol consumption and provided personalized feedback related to each participant's alcohol use and the health risks associated with risky alcohol use, including information about fetal alcohol spectrum disorders. The study found that Web-based assessment alone is effective in reducing risky alcohol consumption and in sustaining that effect. More than 70 percent of participants reported a reduction in risky alcohol use whether

they received personalized feedback or generic feedback during the Web-based screening and intervention program.

Improving Quality in Cancer Screening: The Excellence Report for Colonoscopy (Grant # R18 HS 017017): Dr. Judith Logan from the Oregon Health and Science University led the effort to create and evaluate a quality measurement program for gastroenterologists using data from a specialty electronic medical record for gastrointestinal endoscopy. Effectiveness of colonoscopy screening procedures depends on providing high quality examinations that result in accurate diagnoses and few complications. In this project, endoscopists in 16 States were provided secure Web-based reports on the quality of the colonoscopies they performed based on current recommendations from professional societies. Clinicians were found to be very receptive to the receipt of the reports on their performance although, in this short study significant improvement was not indicated in the quality of care provided. However, significant lessons were learned about issues relating to workflow, interoperability, and reporting. There is also ongoing work being done to make it possible to share data across different systems and report data in a consistent fashion. A video detailing the successes of this project is available at: <http://healthit.ahrq.gov/EQMLoganVideo>.

These projects are a sample of the diverse research that the Health IT Portfolio funds. They demonstrate the positive impact of health IT implementation and use on changes in quality, safety, and improved health care outcomes. [Individual featured stories](#) for some of these projects have been developed and are available as featured projects on the NRC Web site.

F. Dissemination of Health IT Information

An important aspect of AHRQ's Health IT Portfolio is its mission to disseminate the information generated by its programs and partners. In 2011 there were a range of presentations and publications developed by members of the Health IT Portfolio team as well as the funded contractors and grantees. These were made available through various dissemination venues, including AHRQ's 2011 Annual Conference and the NRC Web site.

AHRQ's Annual Conference

The annual conference, titled "Leading Through Innovation and Collaboration," was held September 18-21 in Bethesda, Maryland. The conference was designed to showcase the best of the Agency's research and provide examples of how that research is being implemented at all levels in health care delivery. Presentations represented several major themes and health IT was a significant cross-cutting topic.

The conference featured presentations in six major tracks:

1. Making Care Safer by Reducing Harm Caused in the Delivery of Care.
2. Ensuring That Each Person and Family Are Engaged as Partners in Their Care.
3. Promoting Effective Communication and Coordination of Care.
4. Promoting the Most Effective Prevention and Treatment Practices for the Leading Causes of Mortality, Starting With Cardiovascular Disease.
5. Working With Communities to Promote Wide Use of Best Practices to Enable Healthy Living.
6. Making Quality Care More Affordable for Individuals, Families, Employers, and Governments by Developing and Spreading New Health Care Delivery Models.

Health IT Portfolio grantees and contractors gave several presentations, including the following:

Chuck Thompson, Ph.D., from RTI International, the principal investigator on the Barriers to Meaningful Use in Medicaid project (Contract # 290-07-10079), participated in a panel discussion that outlined the motivation for studying this issue, and the prior research on the facilitators and barriers of EHR use among Medicaid providers. Presenters summarized prior research and led an interactive discussion of barriers, policy, and technical assistance solutions. Next steps for the project team will be to conduct focus groups in four States as well as "virtual" focus groups. The subsequent report is intended to inform outreach and assistance to Medicaid providers as well as future Meaningful Use regulations.

Neil Fleming, Ph.D., C.Q.E., from Baylor Health, presented [results](#) from his project, the Impact of Health IT on Primary Care Workflow and Financial Measures project (Grant # R03 HS 018220). This project set out to estimate the cost and workflow impact of rapid implementation of



an EHR in primary care practices in order to reduce the uncertainty that health care providers currently face when considering EHR adoption. He summarized their results revealing that while there are short term decreases in workflow and financial measures after EHR implementation, the loss of revenue and productivity are not as burdensome as feared by practices considering EHR adoption.

The [presentation](#) by Terry Field, D.Sc., "Estimating the ROI for Computerized Clinical Decision Report," described the costs of developing an automated alert system to provide primary care providers with notification of hospital and skilled nursing facility discharge,

new drugs added during hospital stays, recommendations related to dosing and monitoring, and reminders to support staff to schedule followup visit. She also described the savings due to the intervention in the form of switching orders to lower-cost medications and reduced costs associated with adverse drug events (Grant # R18 HS 017817). She reported that the development costs of these interventions are significant and often require extensive time from clinicians. In addition, there are immediate direct cost savings related to switching to lower cost medications; however, savings from adverse events are likely to be substantial.

These presentations along with many others provided an opportunity for AHRQ project officers, grantees, and contractors to disseminate project results, share lessons learned, and build on each other's work. More information on these presentations and the other conference sessions, as well as general conference information, is available at: <http://www.ahrq.gov/about/annualconf11/>.

National Web-Based Teleconferences

The National Web-Based Teleconferences conducted throughout 2011 spanned a range of topics and were well attended by a variety of participants, including providers, researchers, and health IT professionals. The 2-hour sessions allowed for informative presentations and interactive discussions. Post-presentation materials for all teleconferences are available on the NRC Web site under [Events](#). Descriptions of the 2011 teleconferences are included below:

- The [Preventing Errors and Promoting Safety Through Better Medication Management](#) teleconference (February 16, 2011) was attended by 50 participants. Presenters described efforts to prevent patient safety errors through health IT and tools.
- Over 100 participants attended the [Putting the Patient Back in Patient-Centered Care](#)

teleconference (March 30, 2011) to learn about the use of health IT applications to improve patient involvement in the management of their health.

- Sixty-five individuals participated in the [Quality Metrics and Measurement](#) teleconference (April 28, 2011) where presenters described how current quality measurement systems will be used under the Patient Protection and Affordable Care Act and what changes will be implemented, the role of health IT in quality measurement and reporting, and how health IT can be used to improve health care quality.
- Over 300 individuals participated in the [Using Health IT Chronic Disease Management](#) teleconference (June 21, 2011). Presenters described the use of health IT applications to improve management of care for patients with chronic illnesses through the use of EHR interfaces.
- The [Findings from the Evidence-Based Practice Centers for Health IT](#) teleconference (July 20, 2011) was attended by 250 participants. Investigators from three of the EPCs provided an overview of three Health IT Portfolio-funded evidence-based reports. The EPC reports were based on rigorous, comprehensive syntheses and analyses of the scientific literature and highlight the state of the evidence on medication management using health IT, decision support tools, and consumer health informatics applications and their respective effect on the quality of care.
- Over 120 individuals participated in the [Utilizing Health IT to Improve Medication Management for the Care of Elderly Patients](#) teleconference (August 18, 2011). Presenters provided an overview of the unique care challenges elderly patients present in hospital, home, or nursing care settings and then described the innovative ways that care is being provided to the elderly using health IT.

Outputs

During 2011, grantees reported a total of 344 outputs, the majority of which (102) were peer reviewed publications. The outputs categorized as “other” included internal grantee documents and outputs such as a Web-based video demonstrating a recent version of a system

interface. Grantee outputs are categorized in Table 3.

During 2011, there were a total of 23 outputs from contractors, the majority of which were peer reviewed (8) and non-peer reviewed (8) publications. Contractor outputs are categorized in Table 4.

Table 3: Grantee Tools, Products, and Other Outputs from 2011

Type of Tool/Output	Count
Publication (peer reviewed)	102
Presentation	77
Poster	41
Internal Documents	27
Surveys	20
Final Report	18
Other	18
Tool/Product	14
Manuscript*	8
Data Collection Tools	6
Abstract	5
Publication (non-peer reviewed)	4
News article	2
Patent	1
Press release	1
Total	344

**Including manuscripts submitted, but not yet accepted for publication.*

Table 4: Contractor Tools, Products, and Other Outputs from 2011

Type of Tool/Output	Count
Publication (non-peer reviewed)	8
Publication (peer reviewed)	8
Surveys	4
Presentation	2
Poster	1
Total	23

Outputs from the grant and contract projects are reviewed for inclusion into one of three tools on the NRC Web site. Surveys and other data collection tools developed for the projects may be included in the Health IT Survey Compendium, a set of publicly available health IT surveys. Other grantee and contractor internal documents such as project schedules, business associate agreements, and requests for proposals are reviewed for the AHRQ Funded Project Resource Archives.

In 2011, a new tool was released on the NRC Web site. The [AHRQ Health IT Projects Publication Database](#) serves as a central repository for publications. The database provides the name of the project, the principal investigator's name, the publication type, and a link to the full citation for the publication.

Users can search the database by different categories to find articles that may be pertinent to their own research projects. At the time of this report's publication, the database contains over 325 entries. Several examples of these publications are:



- Based on natural language processing, Dr. Li Zhou (Grant # R03 HS 018288) developed an automated method to facilitate the creation and maintenance of mapping between RxNorm and a health care organization's local medication terminology for interoperability and Meaningful Use purposes. The process and results were published in the [Journal of Biomedical Informatics](#).
- The National Research Council of the National Academies of Science conducted a project (Contract # AHR7128) and, formed the Committee on the Role of Human Factors

in Home Health Care, a multidisciplinary consensus panel of recognized experts. This panel was brought together to examine a range of behavioral and human-factors issues that have arisen due to the increasing migration of medical devices, technologies, and care practices from formal health care facilities into private homes. The committee sought to determine how current and emerging human factors knowledge and methods, as well as future research, could best be applied to improve the safety, effectiveness, cost-effectiveness, and other aspects of the quality of health care in the home. The papers and resultant workshop summary, [Human Factors in Home Health Care: Workshop Summary](#), informed the committee's deliberations for its final report, [Health Care Comes Home: The Human Factors](#).

- Dr. Kate Lapane's paper (Grant # R18 HS 017150), [Alternatives to potentially inappropriate medications for use in e-prescribing software: triggers and treatment algorithms](#), was published in the *BMJ Quality and Safety Journal*. The paper described the development of 15 evidence-based electronic prescribing triggers and treatment algorithms for potentially inappropriate medications for older adults.

AHRQ's Office of Communications and Knowledge Transfer Dissemination Activities

Staff from the Office of Communications and Knowledge Transfer (OCKT) play a critical role in the synthesis and dissemination of findings from the Agency's research. Below is a summary of OCKT's marketing and media dissemination activities in 2011 in regard to specific deliverables from AHRQ Health IT Portfolio-funded projects.

- **Media Outreach:** In 2011, OCKT issued press releases on AHRQ-funded health IT research projects including:
 - [New Study Finds E-prescribing Is Safe and Efficient, but Barriers Remain](#), published online in November in the *Journal of the American Medical Informatics Association*.
 - [Connecting Local Providers to Academic Medical Centers Using Video Improved Hepatitis C Outcomes](#) published online in June in the *New England Journal of Medicine*.
- **Marketing Outreach:** In 2011, AHRQ conducted marketing outreach to key associations, Federal entities, advocacy groups, policy groups, and other stakeholders to promote relevant findings to the health IT industry. As a result, OCKT sent email announcements to various audiences including clinicians, policymakers, and implementers on topics such as:
 - **Workflow Assessment for Health IT:** In July, OCKT promoted and disseminated the [Workflow Assessment for Health IT Toolkit](#) funded by AHRQ and prepared by the University of Wisconsin-Madison's Center for Quality and Productivity Improvement. The toolkit was designed to assist small and medium sized practices in workflow analysis and redesign before, during, and after health IT implementation. It includes tools to analyze workflow, examples of workflow analysis and redesign, and others' experiences with health IT and workflow.
 - **Report on Practices, E-Prescribing and Accessing Information to Improve Prescribing Decisions:** In May, OCKT promoted and disseminated a report titled [Physician Practices, E-Prescribing and Accessing Information to Improve Prescribing Decisions](#). The report was funded by AHRQ and focused on how e-prescribing is being used for new prescriptions and renewals, the barriers to use, effects on pharmacies' prescription processing, and strategies to support more effective use of these features.
 - **Health Care Comes Home: The Human Factors:** In July, OCKT promoted the book [Health Care Comes Home: The Human Factors](#) to home health design experts and health IT industry analysts. The book outlines the impact of technology, environment, policy, and human factors on the growing field of home health care.
 - **Report on Improving Consumer Health IT Application Development: Lessons from Other Industries:** In August, OCKT promoted and disseminated a report titled [Improving Consumer Health IT Application Development: Lessons from Other Industries: Background Report](#) to consumer health IT designers, vendors, and implementers. The report explored how creators of consumer health IT products can use common design methods, and included a special emphasis on the important ways in which the health IT application development process diverges from consumer product development.
- **GovDelivery Updates:** AHRQ continued to garner new subscribers for its health IT listserv using the GovDelivery email subscription system. In 2011, AHRQ issued over 15 updates on health IT topics to more than 45,000 subscribers, 12,000 of whom joined in 2011. Updates included the following:
 - An AHRQ study identifies impact of health IT on oral health care among groups served by Medicaid.

- An AHRQ study that shows e-prescribing reduces medication errors.
- Funding opportunities for modeling of health services system design.

To sign-up to receive AHRQ Health IT News and Information

- Go to [AHRQ homepage](#)
- Select “Subscribe to updates,” located on the lower left corner

- **Twitter:** In 2011 OCKT used Twitter to broadcast reports, findings, and initiatives to AHRQ’s 12,000 plus followers. Over 25 messages were sent regarding health IT topics and activities; collectively, these messages were retweeted more than 75 times. Some of the most popular Tweets included:
 - [July 6, 2011](#): AHRQ introduces a toolkit to help small & medium sized practices analyze workflow before & after implementing health IT <http://bit.ly/oPCkqe>
 - [July 18, 2011](#): New report discusses best practices, environmental factors, tech advances, & changes in approach & policy in home health care: <http://bit.ly/qVJy5V>
 - [July 22, 2011](#): Want to know more about how different cultures approach health care in their homes? Read this new report <http://bit.ly/qVJy5V>
- **Podcasts:** [AHRQ’s Healthcare 411](#) is a news series that features audio podcasts on consumer-oriented and timely topics such as health care quality, safety, efficiency, and health IT. Weekly, 60-second radiocasts air on more than 1,000 radio stations nationwide and are shared with more than 700 professional organizations. Several podcasts

have highlighted results from projects funded through the health IT Portfolio. The podcasts, as well as their transcripts, are available for download. In 2011, AHRQ issued the following health IT-specific podcasts:

- [E-Prescribing and Reducing Medication Costs](#): This podcast, posted on February 16, 2011, describes how e-prescribing improves safety and may lead to lower costs on certain medications.
- [Keeping Kids in School via Telemedicine](#): This podcast, posted on March 2, 2011, highlights how innovations in telemedicine allow children who need ongoing monitoring to attend school.
- [E-Prescribing](#): This podcast, posted on December 14, 2011, provides insight on how e-prescribing can make prescriptions safer for patients.
- **E-Newsletters and Research Activities**
 - **AHRQ’s Electronic-Newsletter:** This newsletter summarizes the Agency’s research and programmatic activities. Featured critical topics in health IT are listed below:
 - [Personal Health Records](#)
 - [Health IT Enabled Medication Management](#)
 - [Human Factors in Home Health Care](#)
 - [Health IT Enabled Management of Chronically Ill Patients Web Conference](#)
 - [AHRQ Health IT Workflow Toolkit](#)
 - [Effective E-Prescribing](#)
 - **AHRQ’s Monthly Research Activities:** *Research Activities (RA)* is AHRQ’s monthly print and online newsletter that features articles and announcements on Agency products and projects and summarizes research findings from

AHRQ-supported studies. During 2011, *RA* had nearly 28,000 print and more than 32,000 electronic subscribers. There were a total of 20 Health IT-related headlines in 2011 including the following:

- [Health information technology improves care and saves lives \(January 2011\).](#)
 - [Parents using electronic kiosk provide more accurate clinical information than emergency room providers \(April 2011\).](#)
 - [Patients with limited health literacy less likely to use an Internet portal for diabetes and other health information \(April 2011\).](#)
 - [Physicians' unfamiliarity with electronic personal health records may slow their adoption \(June 2011\).](#)
 - [Physicians weigh the costs and benefits of integrating e-prescribing systems with electronic health records \(June 2011\).](#)
 - [Patients with type 2 diabetes express mixed reactions to a mobile phone and Web-based disease management program \(October 2011\).](#)
- 
- [Study identifies costs of implementing electronic health records in network of physician practices \(October 2011\).](#)
 - [Pediatric care providers identify desired characteristics for computerized flu vaccination alerts \(December 2011\).](#)

IV. Conclusion

As demonstrated throughout this report, the work funded through the AHRQ Health IT Portfolio in 2011 continued to make important contributions to the field of health IT and further the evidence base on the impact of technology in health care. Research findings have helped to demonstrate where health IT improves quality, safety, and effectiveness. The rigorous scientific research funded through the Portfolio is also preparing the field for using future innovations and enhancing the evidence base for health IT by evaluating factors associated with successful implementation and utilization of health IT. This report provided a comprehensive overview of AHRQ's Health IT Portfolio, comprised of 169 projects active in 2011, including 129 grants and 40 contracts. The projects are diverse, representing the full range of technologies, care settings, and geography, including organizations in 36 States and the District of Columbia.

New projects continue to be funded to support research through the Portfolio's R03 and R21 FOAs, as well as the general agency R01 and R18 and other FOAs through which the Portfolio funds projects. In addition, in an effort to continually address gaps in research, two new health IT FOAs were published in April 2011 that fund research that will lead to improved design of health IT systems. The Understanding



Clinical Information Needs and Health Care Decision Making Processes in the Context of Health IT (R01) FOA will fund research aimed at elucidating the nature of cognition, task distribution, and work in health care delivery settings. The Understanding User Needs and Context to Inform Consumer Health IT Design (R01) FOA will fund projects that will help build a knowledge base about consumers' personal health information management needs and practices, and related design principles.

Many Portfolio projects were completed in 2011, including those remaining from the Enabling Quality Measurement (EQM) Through Health IT initiative, which is now closed. The findings from the EQM program have provided valuable evidence on developing safety and quality measures in ambulatory care settings, automating quality measurement, demonstrating the ability of electronic data systems to expand potential safety and quality measures, and demonstrating improved ability to export data for reporting performance on measures and improvement. EQM was one of four initiatives that were funded under the Ambulatory Safety and Quality (ASQ) Grant Program, which began in 2007. All projects from the other three initiatives—the Improving Quality through Clinician Use of Health IT (IQHIT) initiative, the Enabling Patient Centered Care (PCC) initiative, and the Improving Management of Individuals with Complex Health Care Needs (MCP) initiative—will conclude by 2013.

As described throughout the report, the Portfolio initiatives have been strengthened by the partnerships between Portfolio staff and Federal and private organizations. Collaborative efforts have resulted in co-sponsored conferences, funding for projects, and robust sharing of information.

This report summarizes project successes and shows how research has improved clinical decisionmaking tools for providers and provided new insights on how to engage patients with health IT. Collectively, the results from the Portfolio's projects can be translated to many health care settings to help improve health care outcomes. This report also highlights many of the ways the evidence stemming from the projects are disseminated including presentations, publications, and AHRQ sponsored newsletters, as well as social media such as Twitter.

The AHRQ Health IT Portfolio 2011 Annual Report is designed for health IT researchers, prospective grant or contract applicants, and

others interested in the challenges and successes of health IT implementation and use in terms of research and practical application. For additional detail regarding activities, progress, challenges, successes, and findings among the AHRQ-funded projects active in 2011, the project summaries available on the NRC Web site are an excellent resource. The summaries provide an overview of the characteristics of successful research projects and the principal investigators' abilities to adjust and persevere through the real-world challenges and setbacks encountered in health IT implementation, use, and evaluation.



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