



AHRQ Health Information Technology Portfolio's 2009 Annual Report



Agency for Healthcare Research and Quality

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Health IT

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HEALTH IT

Preface

The Agency for Healthcare Research and Quality (AHRQ), through its Health Information Technology (IT) Portfolio, sponsors a variety of contracts, grants, and cooperative agreements that examine the impact of health IT implementation and use on quality, safety, and other important health care outcomes. This annual report features 121 grant and 59 contract project summaries of AHRQ-managed health projects, as well as a summary of activities in the Health IT Portfolio as of Calendar Year (CY) 2009. This summary does not include the Health IT Portfolio's Interagency Agreements (IAAs) to support projects managed by other Federal agencies or IAAs from other Federal agencies to contract for projects to be conducted by the National Resource Center (NRC) for Health IT.

AHRQ is most grateful to its contractors and grantees for their ongoing provision of timely, informative reports and their participation in this initiative to generate project-specific, calendar-year summaries.

We welcome comments on the utility of the summary of the Health IT Portfolio provided in this report and of the 180 Web-based project summaries. Comments may be sent by mail to the program officials below at: Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, MD 20850, or by e-mail to Vera.Rosenthal@AHRQ.hhs.gov.

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Executive Summary

Recent national efforts to improve health care reemphasize the ongoing relevancy of research funded by the Agency for Healthcare Research and Quality (AHRQ) Health Information Technology Portfolio. Through AHRQ-sponsored health information technology (IT) research, advancements are realized and disseminated on how health IT can be used across a variety of health care settings. The projects provide evidence on how health IT can ensure that medical information is available to appropriate individuals, in an understandable and actionable format, where and when it is needed. To support its broad mission of improving the quality of health care for all Americans, the Agency has focused its health IT initiatives on the following three goals:

- Improve health care decisionmaking.
- Support patient-centered care.
- Improve medication management.

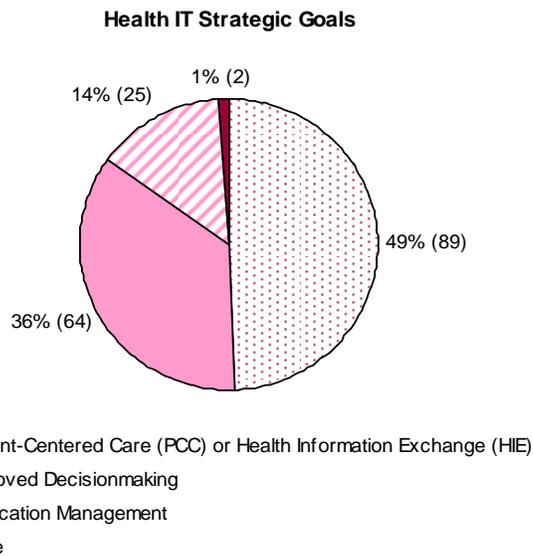
The research projects generate evidence and insight that facilitate successful design, implementation, and use of health IT, and examine the impact of health IT use on changes in quality, safety, and improved health care outcomes. These projects have been conducted in real care delivery settings and identify the practical issues of implementing health IT to:

- Help clinicians provide safe, high quality health care.
- Put the patient at the center of health care.
- Inform the effective implementation of health IT, especially in underserved and under resourced areas.
- Evaluate costs and benefits of health IT.

The AHRQ Health IT Portfolio's 2009 Annual Report includes 121 grant-specific and 59 contract-specific projects, and summarizes activities that took place throughout calendar year (CY) 2009. Each individual project summary provides an overview of the project's longterm objectives, status updates on the specific aims, and updates on completed or ongoing project activities, as well as highlighting strategic and business goals of each project. Each summary also describes some of the challenges experienced by the research team and the solutions used to address those issues, as well as a sampling of disseminated products and outputs from projects, such as tools, publications, and presentations. Preliminary findings are presented when applicable, and a status for overall progress in project milestones and spending on grant-funded projects is also indicated.

Highlights

The vast majority of the Health IT Portfolio's 180 projects spanned multiple years. Sixty-three projects started during CY 2009; 87 were ongoing from the previous year, while 30 others came to a close. The lifetime funding for these grants and contracts is \$122.2 million and \$68.4 million, respectively.



Nearly half of the Health IT Portfolio for CY 2009 was assigned the strategic goal of enabling Patient-Centered Care or Health Information Exchange. Improved Decisionmaking was the next most common strategic goal among the projects. Other projects focused on Medication Management as their strategic goal. Two projects (grants supporting conferences) were not assigned a specific Health IT strategic goal.

The geographic reach of the active Health IT-sponsored projects spanned 38 States and the District of Columbia in 2009. The Health IT Portfolio also included a diversified pool of grantee

principal investigators (PIs). There were 115 unique PIs responsible for 121 active grants (6 individuals served as PI on 2 health IT grants); 28 PIs had previously received a Federal career award or training grant to enhance their research abilities.

Of the 180 total projects active during the year, 30 projects (19 grants and 11 contracts) ended during CY 2009, including the 8 projects highlighted in the *Success Stories from the AHRQ-Funded Health IT Portfolio (2009)* Report, available at <http://healthit.ahrq.gov/SuccessStoriesCY2009>. The purpose of this report is to provide illustrative examples of the various types of the AHRQ Health IT Portfolio-funded projects. Collectively, these summaries show the wide range of successful projects supported by the Health IT Portfolio. Furthermore, the projects address important gaps in the research literature and/or health IT implementation, and thereby address the means by which health IT implementation has successfully demonstrated improvements in quality of care and the potential to translate these findings to other health care settings. Below is a description of the projects included in this report.

- **SAFEHealth – Secure Architecture for Exchanging Health Information:** SAFEHealth is a regional health information exchange that securely and immediately transfers patient health information to providers so that patients’ health information follows them wherever they go.
- **Use of Electronic Referral System to Improve the Outpatient Primary Care-Specialty Care Interface:** This project developed an eReferral system that allows referring physicians to electronically submit referral requests to adult medical specialty clinics. The system has improved access to specialty care and communication between specialists and referring physicians.
- **Implementation and Evaluation of Standing Orders Using Health Information Technology:** This project demonstrated that empowering staff to carry out electronic standing orders can improve the efficiency and quality of care by facilitating the timely delivery of necessary preventive services to patients.

- **Standardization and Automatic Extraction of Quality Measures in an Ambulatory Electronic Health Record:** This project successfully used pre-existing electronic health record technology to facilitate quality measurement reporting.
- **Personal Health Information Management and Design of Consumer Health IT:** A novel, 2-day workshop to bring together a multi-disciplinary group of experts to address and promote the design of consumer health IT systems based on consumers' personal health information management practices.
- **Consumer Engagement in Developing Electronic Health Information Systems:** A novel project investigating health care consumers' awareness, beliefs, perceptions, and fears of health IT, and the potential role of health care consumers in the design and use of health IT.
- **Use of Dense Display of Data and Information Design Principles in Primary Care Healthcare Information Technology Systems:** This contract was AHRQ's first initiative to guide innovation in electronic health record usability to benefit potential health IT users.
- **Computer-Based Provider Order Entry Implementation in Intensive Care Units:** This project successfully used human factors research to increase the success of a computerized provider order entry system.

This is just a small sampling of the projects funded through the health IT portfolio; collectively, the projects examine the impact of health IT implementation and use on changes in quality, safety, and improved health care outcomes. These individual summaries of each AHRQ health-IT funded project active in 2009 are available in an easy-to-access, Web-based format through AHRQ's National Resource Center (NRC) for Health IT Web site (www.healthit.ahrq.gov). Users can peruse the diverse projects by clicking on the map of the United States and review these project summaries as well as other project news and updates. This year's report also includes an interactive CD, where users can search for specific projects on several attributes including type of health IT, target population, and care setting. These resources should prove useful for health IT implementers, prospective research applicants, and others interested in the challenges and successes of real-world health IT implementation, use, and evaluation.

I. Purpose

The purpose of this project was to assemble and distribute information on the Health Information Technology (IT) Portfolio as of the end of 2009 at both the portfolio and project level. This report is the next installment of the inaugural Health IT Annual Report, first published for calendar year 2008. Through this exercise, AHRQ sought to understand the state of the Health IT Portfolio, inform the development of similar reporting for subsequent years, and provide the public with easy-to-access, Web-based project summaries for calendar year 2009.

This report summarizes the 180 projects that were directly funded by the AHRQ Health IT Portfolio active in 2009. For the purpose of this report, active is defined as ongoing for any period of time in calendar year 2009.

The Health IT Portfolio is summarized by the broad categories of projects, including: Health IT Portfolio strategic goals, AHRQ business goals, mechanism type (grant or contract), total funding from AHRQ over project period (i.e., AHRQ Lifetime Funding), duration of grants, principal investigator's (PI's) experience as a PI, State funding history, and usage rates of the National Resource Center (NRC) Web site.

The summaries synthesize individual projects' first-hand experience in the implementation, use, and evaluation of health IT to improve health care outcomes. The summaries include highlights of the challenges, mitigating factors, status of specific aims (ongoing, upcoming, and achieved), awardees' pertinent publications and presentations, preliminary findings, and grantees' overall progress in terms of spending pattern and meeting milestones.

Each of the 180 project-specific summaries is currently available through the AHRQ-funded project search tool at the NRC Web site (www.healthit.ahrq.gov). By clicking on the map of the United States, users can search for individual projects on several categories and review their project summary as well as other project-related news and publications. In addition, the complete Annual Report with all the project summaries is available at: www.healthit.ahrq.gov/HIT2009Report.

II. Background

AHRQ 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. In 2009, each of the extramural activities (i.e., grants and contracts) was organized into one of the following six AHRQ portfolios.

- Value
- Health Information Technology
- Comparative Effectiveness
- Prevention/Care Management
- Patient Safety
- Innovations/Emerging Issues

Health IT “allows comprehensive management of medical information and its secure exchange between health care consumers and providers. Broad use of health IT has the potential to improve health care quality, prevent medical errors, increase the efficiency of care provision and reduce unnecessary health care costs, increase administrative efficiencies, decrease paperwork, expand access to affordable care, and improve population health.”¹ Health IT applications can use a variety of platforms, such as desktop computer applications, cellular phones, personal digital assistants (PDAs), and touch-screen kiosks. Examples of health IT applications include electronic health records/electronic medical records (EHRs/EMRs), personal health records (PHRs), telemedicine, clinical alerts and reminders, computerized provider order entry (CPOE), computerized clinical decision support (CDS) systems, consumer health informatics applications, and electronic exchange of health information. Health IT is a tool that must be appropriately designed, implemented, and used if it is to be effective.

A. Project Classification

In 2009, each of the Health IT Portfolio-funded grants and contracts was categorized into one of three strategic goals, and one of three AHRQ business goals.

Health IT Strategic Goals

- **Medication Management:** Develop and disseminate health IT evidence and evidence-based tools to improve the quality and safety of medication management via the integration and utilization of medication management systems and technologies.
- **Patient-Centered Care (PCC) or Health Information Exchange (HIE):** Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

¹ U.S. Department of Health & Human Services. <http://healthit.hhs.gov/portal/server.pt>

- **Improved Decisionmaking:** Develop and disseminate health IT evidence and evidence-based tools to improve health care decisionmaking through the use of integrated data and knowledge management.

AHRQ Business Goals

- **Knowledge Creation**
 - Collecting data on and producing measures of the quality, safety, effectiveness, and efficiency of American health care and health care systems.
 - Fostering the development of knowledge about improving health care, health care systems, and capacity (e.g., training, placement).
- **Synthesis and Dissemination**
 - Creating tools and synthesis of evidence including knowledge, measure, and data.
 - Disseminating information to multiple stakeholders to improve the system.
- **Implementation and Use**
 - Partnering with stakeholders to implement proven strategies for health care improvement, including empowering Americans to be proactive patients.

B. Mechanisms

There are a variety of mechanisms for funding projects that further the goals of 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 of the common mechanisms that AHRQ applies to carry out a wide variety of directed health services research and administrative activities. Further description of each is provided below.

Grant

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. A grant is used whenever the Operating Division (OPDIV) anticipates no substantial programmatic involvement with the recipient during performance of the financially assisted activities.²

Cooperative Agreement

Cooperative agreements are used when there will be substantial Federal programmatic involvement. Substantial involvement means that OPDIV program staff will collaborate or

² Page B-6 of the HHS Grants Policy Statement (http://www.hhs.gov/grantsnet/docs/HHSGPS_107.doc)

participate in project or program activities as specified in the Notice of Grant Award. The difference between grants and cooperative agreements is the degree of Federal programmatic involvement rather than the type of administrative requirements imposed.

*For the purpose of this report, the term ‘grant’ is used to include both grants and cooperative agreements.*³

Contract

A contract is an agreement, initiated by the Government, to acquire an identifiable product or service under specified terms. Contracts may be awarded by AHRQ pursuant to the Federal Acquisition Regulation (FAR).

Interagency Agreement

Interagency Agreements (IAAs) are used to provide to, purchase from, or exchange goods or services with another Federal agency.

C. Health IT Portfolio

AHRQ’s Health IT Portfolio continues to be an active and committed force in the Nation’s 10-year effort to bring health care into the 21st century and improve the quality of care provided for all Americans by advancing the use of information technology. Through this research portfolio, AHRQ and its partners identify challenges to health IT adoption and use, solutions and best practices for making health IT work, and tools that will help hospitals and clinicians successfully incorporate new information technology. In addition, the Health IT Portfolio develops and disseminates evidence and evidence-based tools to inform policy and practice on how health IT can improve the quality of health care in the United States.

The Health IT Portfolio is both an organizing construct for research and a designation for a collaborative team of AHRQ staff mainly located in AHRQ’s Center for Primary Care, Prevention, and Clinical Partnerships. P. Jon White, M.D., Director of the Health IT Portfolio, works with a core team of 10 full-time employees. However, there are a number of staff across AHRQ who serve as program officials and support the Portfolio’s activities, including staff in the Office of Communications and Knowledge Transfer (OCKT); the Office of Performance, Accountability, Resources, and Technology; and the Office of Extramural Research, Education, and Priority Populations, as well as the numerous contracts that support the NRC.

In 2009, members of the health IT team applied their skills and dedication to the Health IT Portfolio in various ways, including: served as program officials on health IT-sponsored grants and contracts, managed the portfolio, set strategic and business goals for the portfolio, conducted intramural research, developed reports and published peer-reviewed manuscripts, reviewed grant applications submitted through grant funding opportunity

³ Page B-4 of the HHS Grants Policy Statement (http://www.hhs.gov/grantsnet/docs/HHSGPS_107.doc)

announcements (FOAs), issued a series of requests for task orders, published the inaugural Summary of AHRQ Health Information Technology Portfolio-Funded Projects as of 2008, developed and updated in-depth project-specific profiles on the NRC Web site, and participated in and presented at numerous interagency and public meetings.

AHRQ’s NRC for Health IT supports the Agency’s mission of developing and disseminating evidence and evidence-based tools on how health IT can improve health care quality, safety, and efficiency. AHRQ initially established the NRC for Health IT in 2004 as a way to communicate and deliver technical assistance to its grantees. Since then, AHRQ has made the NRC available to the public as a resource for research findings, best practices, lessons learned, and funding opportunities with health IT researchers, implementers, and policymakers.

In 2009, there were 121 grants and 59 contracts active during the year (see Table 1). Collectively, AHRQ’s lifetime funding for these projects was approximately \$191 million. Of the grants and contracts that were active in calendar year 2008, 19 grants and 11 contracts ended in 2009. Sixty-nine grants and 18 contracts were ongoing into 2010, and an additional 33 grants and 30 contracts started in 2009.

Table 1: Counts and Lifetime AHRQ Funding for Health IT Portfolio-Sponsored Grants and Contracts Active as of 2009

Mechanism	Count	Lifetime AHRQ Funding ⁴
Grants ⁵	121	\$122.2
AHRQ Project-Specific Contracts ⁶	59	\$68.4
Total	180	\$190.6

Grants: Funding Opportunity Announcements

Proposals for grants and cooperative agreements are submitted in response to AHRQ’s issuance of an FOA. One-time FOAs are known as Request for Applications (RFAs) and recurring FOAs are known as Program Announcements (PAs). An RFA is a one-time funding opportunity issued to solicit specific research projects quickly. A PA allows applications to be submitted over multiple years at one of three submission cycles in a given year.⁷ (See standard due dates at <http://grants1.nih.gov/grants/funding/submissionschedule.htm>.)

⁴ In millions of dollars.

⁵ Not included are projects sponsored by other AHRQ portfolios, e.g., Comparative Effectiveness, Innovations and Emerging Issues, Prevention/Care Management, Patient Safety, and Value, which may feature health IT components.

⁶ Includes six Health Information Exchange State and Regional Demonstration (SRD) projects, two clinical decision support (CDS) contracts, and 51 other individual contracts.

⁷ Original new and competing renewal applications that were submitted prior to January 25, 2010, will be permitted two amendments (A1 and A2). For these “grandfathered” applications, AHRQ expects that any A2 will be submitted no later than January 7, 2011, and AHRQ will not accept A2 applications after that date.

Table 2 (Page 20) outlines the history of the Health IT Portfolio’s funding. There have been three major funding waves: Transforming Health Care Quality through Information Technology RFAs, Ambulatory Safety and Quality RFAs, and most recently, Health IT-Oriented Program Announcements. All of the grants in the first two categories had been awarded through now-closed, one-time RFAs. The funding types are described below.

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

RFAs. The THQIT projects 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. AHRQ’s Health IT Portfolio’s THQIT initiative includes grants funded through the following four RFAs:

- The THQIT planning grants (HS-04-010) were designed to support the planning phase and development of health IT infrastructure for communities interested in preparing for effective exchange of health information across multiple community health care organizations. All 39 THQIT planning grants were completed in 2004 and 2005.
- The initial THQIT implementation grants (HS-04-011) were intended to assess the extent to which health IT implementation contributes to measurable and sustainable improvements in patient safety, cost, and overall quality of care. Only one of these grants was still active—and was completed—in 2009.
- The second set of THQIT implementation grants (HS-05-013), referred to here as ‘post-planning implementation grants’, had the same objectives as the initial THQIT implementation grants. The awarded institutions had the benefit of receiving and completing a planning grant prior to an implementation grant. Twelve of these grants were active during 2009, and all were completed by the end of the year.
- The THQIT value grants (HS-04-012) sought to generate insight on health IT’s value—including clinical, safety, quality, financial, organizational, effectiveness, efficiency, and other direct or indirect benefits—when health IT is used in the delivery of health care. According to the FOA, these value assessments were to be from various stakeholders’ perspectives, including patients, providers, purchasers, payers, policymakers, or other important stakeholders and decisionmakers. In 2009, four of these grants were active and completed.

In total, 118 THQIT grants were funded by AHRQ. As indicated in Table 2, 17 of those grants were still active in 2009, comprising 14 percent (17/121) of the active grants across all funding initiatives in that year. However, at the end of 2009, all THQIT grants were closed.

2. Ambulatory Safety and Quality RFAs. In 2007 and 2008, the Health IT Portfolio issued a series of RFAs (HS-07-007, HS-07-006, HS-07-002, and HS-08-002), that was

known as the Ambulatory Safety and Quality (ASQ) initiative and supported grants to improve the safety and quality of ambulatory health care in the United States.

- The purpose of the **Enabling Patient-Centered Care (PCC) Through Health IT RFA (HS-07-007)** was to support grants that investigate novel methods or evaluate existing strategies for using health IT to create or enhance patient-centered models of care in the ambulatory setting. Applicants were expected to demonstrate how patient-centered care can improve health outcomes, patient safety, and patients' reported experience with care. Applicants were encouraged to consider projects that focused on: shared decisionmaking, patient-clinical communication, PHRs, integration of patient information across transitions in care, or patient self-management of chronic conditions. Funding was set aside for three areas of research: primary care Practice-Based Research Networks (PBRNs), projects that serve vulnerable populations, and medication management. Regardless of set-aside research focus, all of these grants were assigned PCC or HIE as their Health IT Portfolio strategic goal because of the dominant theme of the RFA to enable PCC. All 16 of these grants were active through the end of 2009.
- The purpose of **Improving Quality Through Clinician Use of Health IT (IQHIT) RFA (HS-07-006)** was to support grants that investigate novel methods or evaluate existing strategies for clinician use of health IT in ambulatory settings to improve outcomes through more effective CDS, medication management, or care delivery. Applicants were encouraged to demonstrate the ability of EHRs and medication management systems to effectively move evidence-based clinical information to providers and participants in HIE. Research areas with set-aside funding were primary care PBRNs, projects that serve vulnerable populations, and medication management. Health IT Portfolio strategic goals were selected based on the primary objective of a given grant. All 24 of these grants were active through the end of 2009.
- The purpose of the **Enabling Quality Measurement (EQM) Through Health IT RFA (HS-07-002)** was to support grants that develop safety and quality measures in ambulatory care settings, automate quality measurement, demonstrate the ability of electronic data systems (such as EHRs or claims data merged with EHR data), to expand potential safety and quality measures, and demonstrate improved ability to export data for reporting performance on measures and improvement. All 17 of these grants were active in 2009; two grants ended during that year (one with a 3-month no-cost extension), and the remaining 15 were awarded 1-year no-cost extensions.
- The purpose of the **Improving Management of Individuals with Complex Healthcare Needs through Health IT** (also known as management of complex patients or MCP) **RFA (HS-08-002)** was to support the development of health IT that assists clinicians, practices, systems, and patients and families in improving the quality and safety of care delivery for individuals with complex health care needs (e.g., multiple chronic diseases) in ambulatory care settings, particularly in high-risk care transitions. The long-term goal of this effort is to ensure that

patients receive appropriate care and management for prevention and treatment of priority conditions. All 12 of these grants were active through the end of 2009.

3. Health IT-Oriented FOAs. In September 2008, AHRQ issued its continuum of three PAs (HS-08-268; HS-08-269; HS-08-270) to research how health IT can be used to improve health care quality in a progressively more complex fashion. Grants funded through these FOAs allow AHRQ to support the development and diversification of research infrastructures and individuals engaged in solving the important remaining challenges in health IT implementation, use, and evaluation as it relates to improving the health of all Americans.

Applications responsive to these FOAs focused on implementation of health IT in one or more of the following: ambulatory setting(s), transitions in care between ambulatory settings, or transitions in care between ambulatory and nonambulatory settings. For the purpose of these FOAs, ambulatory care settings include: health care clinician offices; outpatient clinics; outpatient mental health centers; outpatient substance abuse centers; urgent care centers; ambulatory surgery centers; community-based, school, or occupational health centers; safety-net clinics; pharmacies; homes; independent living centers; and long-term residential care facilities. These FOAs are open for a 3-year period. In September 2009, the first of these types of grants were begun. Potential applicants should consult the current version of the FOA for guidance on content and application requirements. The following are general overviews about each of these FOAs.

- **Small Research Grants to Improve Healthcare Quality through Health IT (R03) FOA (PAR-08-268)** support different types of small research studies, including: 1) small 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 three of these projects were awarded in 2009. Highlights of each type of health IT R03 study are:
 - *Health IT Small Pilot and Feasibility and Self-contained Research Projects* may be either preliminary or preparatory work that informs future health IT implementation.
 - *Health IT Secondary Data Analysis* investigates additional research questions that are related to, but distinct from, the specific aims of the original data collection.
 - *Health IT Prospective or Retrospective Economic Analyses* feature an evaluation of financial and non-financial costs and benefits of a companion health IT implementation project.
- **Exploratory and Developmental Grant to Improve Health Care Quality through Health IT (R21) FOA (PAR-08-269)** supports health IT exploratory and developmental research projects. These R21 grants support the conduct of short-term preparatory, pilot, or feasibility studies that are needed to inform future health IT implementation and may include but are not limited to the conduct of a health IT research demonstration grant. The R21 grants are intended to be more

comprehensive and broader in scope than the small, self-contained health IT research projects supported by the health IT R03 FOA. During 2009, a total of six projects were awarded.

- **Utilizing Health IT to Improve Health Care Quality Grant (R18) FOA (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. AHRQ awarded 12 of these R18 grants in 2009.

Researchers interested in AHRQ funding opportunities should periodically check the AHRQ Web site for updates: <http://www.ahrq.gov/fund/> as well as the most recent information on the peer review process, funding criteria, and application forms: <http://grants.nih.gov/grants/guide/notice-files/NOT-HS-10-002.html>.

4. Other Health IT-Funded Grants. The Health IT portfolio funds grants with a health IT focus, which are solicited through other FOAs including:

- **Career and Dissertation Awards.** In addition, the Health IT Portfolio issued a Special Emphasis Notice (SEN) (NOT-HS-08-014), articulating its commitment to enhancing the careers of health IT-focused researchers by funding K-awards and research dissertation grants (R-36). These grants support the career development of clinical and research doctorates who focus their research on one of three priority health IT research areas. There were nine active career and dissertation awards (three R36, five K08, and one K01) in 2009.
- **Conference Support Awards.** AHRQ continues to support conferences through its Grant Programs to support both small (PA-09-070 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. In 2009, there was one active R13 grant funded under the Health IT Portfolio in 2008 for a large conference, and two R13 small conferences that were funded in 2009.
- **AHRQ Health Services Research (R01) Purpose.** In March 2007, AHRQ issued an agency-wide FOA (PAR-09-231) 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. In 2009, there was one active R01 grant under the Health IT Portfolio, funded in 2009.
- **Centers for Education and Research on Therapeutics (CERTs) (U18).** 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). AHRQ awarded grants to

support the first four centers in September 1999, and the full CERTs program was established as part of the [Healthcare Research and Quality Act of 1999](#) (Public Law 106-129). 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. CERTs consist of 14 research centers and a coordinating center. In 2009, there was one active CERT program, funded under the Health IT Portfolio, awarded in 2007.

Table 2: AHRQ-Sponsored Health IT Funding Opportunity Announcements and Special Emphasis Notices, Published 2004-2009

Publication Number	Title and Hyperlink	Year Awarded	Number of Grants Active as of 2009	New Grant Proposals May be Submitted
RFA-HS-04-010	Transforming Healthcare Quality Through Information Technology (THQIT)—Planning Grants	2004	None ⁸	No
RFA-HS-04-011	Transforming Healthcare Quality Through Information Technology (THQIT)—Implementation Grants	2004	1	No
RFA-HS-04-012	Demonstrating the Value of Health Information Technology	2004	4	No
RFA-HS-05-013	Limited Competition for AHRQ Transforming Healthcare Quality Through Information Technology (THQIT)—Implementation Grants	2005	12	No
RFA-HS-07-004	Centers for Education and Research on Therapeutics (CERTs) (U18)	2007	1	No
RFA-HS-07-007	Ambulatory Safety and Quality: Enabling Patient-Centered Care Through Health IT (R18)	2007	16	No
RFA-HS-07-006	Ambulatory Safety and Quality Program: Improving Quality Through Clinician Use of Health IT (R18)	2007	24	No
RFA-HS-07-002	Ambulatory Safety and Quality Program: Enabling Quality Measurement Through Health IT (R18)	2007	17	No
RFA-HS-08-002	Ambulatory Safety and Quality Program: Improving Management of Individuals with Complex Healthcare Needs Through Health IT (R18)	2008	12	No
PAR-09-257	AHRQ Grant Program for Large Conference Support (R13) and (U13)	2008	1	No
PA-09-070	AHRQ Health Services Research (R01)	2009	1	No
PA-09-231	Small Grant Program for Conference Support (R13)	2009	2	No
PAR-HS-08-268	Small Research Grant to Improve Health Care Quality Through Health Information Technology (IT) (R03)	2009	3	Yes ⁹
PAR-HS-08-269	Exploratory and Developmental Grant to Improve Health Care Quality Through Health Information Technology (IT) (R21)	2009	6	Yes
PAR-HS-08-270	Utilizing Health Information Technology (IT) to Improve Health Care Quality (R18)	2009	12	Yes
NOT-HS-08-014	Special Emphasis Notice: Career Development (K01, K02, K08) and Dissertation (R36) Grants Focused on Health Information Technology (IT)	2009	9	Yes

⁸ The 39 THQIT planning grants finished in 2004 and 2005.

⁹ The three active Health IT FOAs and Special Emphasis Notice have an expiration date of November 17, 2011. AHRQ will consider their renewal as appropriate.

Contracts

The Health IT Portfolio uses various contract mechanisms to solicit requests for proposals (RFPs), including one-time RFPs and request for task orders (RFTOs) when a master contract has been issued. 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 Master Contract-issued RFTOs. The full text of closed AHRQ RFPs issued since 2000 are available at <http://www.ahrq.gov/fund/contrarch.htm>. RFTOs are provided to Master Contract awardees for a given program, such as the Primary Care PBRN.

The following section describes the AHRQ-funded contracts, starting with the contracts that support the activities of the National Resource Center for Health IT.

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

AHRQ initially established the NRC for Health IT in 2004 as a means of delivering technical assistance to its grantees and disseminating their findings. Since then, AHRQ has expanded the breadth of resources it disseminated for purposes of sharing research findings, best practices, lessons learned, and funding opportunities with health IT researchers, implementers, and policymakers. The NRC plays a pivotal role in supporting AHRQ's management of the Health IT Portfolio in various capacities, including: generating and disseminating synthesized reference documents, such as lessons learned and project success stories; conducting a series of national Web conferences; and organizing and posting numerous resources on the NRC Web site. More than 10,000 documents, presentations, articles, and tools are freely available on the NRC Web site. From 2004 through September 2009, the NRC was primarily supported through a single multi-year contract.

In anticipation of the continued growth of the NRC and the conclusion of the initial 5-year NRC contract, in 2008 AHRQ announced its intent to issue a new series of Master Contracts stratified across four domains to support the next 5-year phase of the NRC. This RFP, the Health IT Portfolio-issued AHRQ NRC for Health IT (Solicitation No. AHRQ-2009-10003) was published in January 2009 and is available at: <http://www.ahrq.gov/fund/contarchive/rfp0910003.htm>. Thirty-two master contractors were selected to support the diverse needs of the NRC across the following four domains, as listed in Table 3.

Table 3: National Resource Center Domains and Master Contractors

Contractors	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
	<ul style="list-style-type: none"> ▪ http://healthit.ahrq.gov/domain1 	<ul style="list-style-type: none"> ▪ http://healthit.ahrq.gov/domain2 	<ul style="list-style-type: none"> ▪ http://healthit.ahrq.gov/domain3 	<ul style="list-style-type: none"> ▪ http://healthit.ahrq.gov/domain4
	<ul style="list-style-type: none"> ▪ Booz Allen Hamilton ▪ Computer Sciences Corporation ▪ National Opinion Research Center ▪ RTI International 	<ul style="list-style-type: none"> ▪ Abt Associates ▪ Believe Health LLC ▪ Booz Allen Hamilton ▪ Fox Systems, LLC ▪ ICOR Partners, LLC ▪ John Snow, Inc. ▪ Mathematica ▪ National Opinion Research Center ▪ RTI International ▪ Thomson Reuters ▪ Trustees of Indiana University ▪ Westat 	<ul style="list-style-type: none"> ▪ AIR ▪ The Lewin Group ▪ Millennium ▪ National Opinion Research Center ▪ RTI International 	<ul style="list-style-type: none"> ▪ Amdex ▪ Booz Allen Hamilton ▪ Data Consulting Group ▪ Data Federal ▪ Function1 ▪ IBM ▪ IFMC ▪ National Opinion Research Center ▪ Project Performance Corporation ▪ RTI International ▪ FEI

For Fiscal Year 2009, the AHRQ Health IT program awarded an initial set of 19 tasks including:

- Developing requirements and plans for program management and governance of the new NRC.
- Synthesizing findings from the Program’s \$139 million in grants to small and rural health care organizations as well as \$50 million to establish State and regional demonstrations of health information exchange.
- Establishing Federal resources for the Patient Centered Medical Home (PCMH)

For more detail on these initial set of tasks, please see Table 4.

Table 4: National Resource Center Task Orders by Domain, 2009

Task Orders Awarded in CY 2009	Domain 1 Tasks Orders (Contractor)	Domain 2 Tasks Orders (Contractor)	Domain 3 Tasks Orders (Contractor)	Domain 4 Tasks Orders (Contractor)
	<ul style="list-style-type: none"> ▪ AHRQ Health IT Program Strategic Planning, Functional Requirements, and Operations Plan (BAH) 	<ul style="list-style-type: none"> ▪ Web-Based National Teleconferences to Conduct Interactive Presentations on Health Information Technology Implementation and Use (NORC) ▪ Support for AHRQ’s Clinical Decision Support Demonstration Projects (Westat) ▪ Health IT Project Monitoring and Reporting (JSI) ▪ Hardened Rules for Clinical Decision Support (Thomson Reuters)* ▪ Establishing Federal Resources to Support the Patient-Centered Medical Home Concept (Mathematica)* ▪ Health IT Grantee/Contractor Meeting (Abt Associates, Inc.) ▪ Technical Assistance to Support Progress and On-time Completion of Health IT Grants (BAH) ▪ Support for AHRQ’s State and Regional Demonstrations in Health IT (RTI) ▪ Synthesis Reports for Grants and Cooperative Agreements for Transforming Healthcare Quality through Information Technology (Mathematica)* 	<ul style="list-style-type: none"> ▪ AHRQ Health IT Partnership Strategy Development (RTI), ▪ AHRQ Health IT Marketing Communications Strategy Development (RTI) ▪ AHRQ Health IT Translation and Dissemination (RTI, NORC) 	<ul style="list-style-type: none"> ▪ NRC Health IT Website Content Operations Support (PPC, F1) ▪ NRC Health IT Portal Infrastructure and Database Support (F1) ▪ NRC Health IT Portal Security and Documentation Support (PPC) ▪ NRC Health IT Website Portal Development Support (PPC, F1, IBM, BAH, AMDEX, NORC) ▪ NRC Health IT Independent Verification and Validation of Web site and Portal (DCG) ▪ NRC Health IT PCMH Resource Center Public and Private Web Portal (BAH)

* Only those NRC contracts for projects that are considered ‘knowledge generating’ are included in the results section and have developed project summaries. The remainder of the NRC contracts are considered administrative or operational.

2. Health IT Contracts. In addition to the NRC, AHRQ funds a variety of knowledge-generating contracts through other mechanisms. The number of Health IT Portfolio contracts, by mechanism and the year they began are shown below.

Table 5: AHRQ-Sponsored Health IT Contracts

Number of Contracts Active as of 2009	Title	Years Awarded
One-Time Requests for Proposals		
6	State and Regional Demonstrations in Health Information Technology	2004 and 2005
2	Clinical Decision Support Services	2007
Master Contracts Through Which Active Health IT Portfolio Task Orders (TO) Were Issued:		
4	Program Evaluation and Analysis Task Order Contract (PEATOC)	2008 and 2009
1	Department of Health and Human Services Program Support Center (PSC)	2007
11	Primary Care Practice-Based Research Networks (PBRNs)	2007, 2008, and 2009
4	Evidence-Based Practice Care Centers	2008 and 2009
12	Accelerating Change and Transformation in Organizations and Networks (ACTION)	2007, 2008, and 2009
4	Blanket Purchasing Agreement (BPA) for Support Services	2008 and 2009
3	National Resource Centers Task Orders for “knowledge-generating” contracts	2009
10	Other Task Orders	2007, 2008, and 2009
2	Interagency Agreements (see below)	2006 and 2009

Interagency Agreements

In 2009, the Health IT Portfolio funded two projects that were managed by other Federal agencies. Through an Interagency Agreement (IAA) with the National Institutes of Health (NIH) and the National Library of Medicine, the Health IT Portfolio provided \$133,000 to an NLM-sponsored grant for the development of CDS guidelines. The second IAA was the Asthma Measurement Development with National Heart, Lung, and Blood Institute for \$50,000.

This report summarizes Health IT Portfolio-sponsored projects managed by AHRQ. It does not include the Health IT Portfolio’s IAA to support projects managed by other Federal agencies or IAAs from other Federal agencies to contract for projects to be conducted by the NRC.

III. Methods

Development of Project Summaries

John Snow, Inc. (JSI) and AHRQ staff developed multi-step content development and review processes for drafting project summaries of 121 grants and 59 contracts. Content for the summaries included data abstracted from multiple data sources, such as grant applications, contractor proposals, final reports, grantee quarterly reports from the AHRQ Research Reporting System (ARRS), and funding history documents provided by AHRQ. Information recorded in discussions with grantees and contractors during JSI's quarterly calls for its NRC Domain 2 Health IT Project Monitoring and Reporting contract also contributed to the content of the project summaries.

A template of the project summary was generated and pre-populated with data for each grantee and contractor project. New project summaries were created for projects that were funded in 2009; summaries for projects funded prior to 2009 were updated. JSI conducted followup calls with PIs and project directors (PDs) to collect missing information and/or to clarify and confirm information, and then submitted drafts of the summaries to the PIs and PDs for final review and sign-off.

To ensure consistency, JSI followed a standard operating procedure that outlined the steps of content development as well as the steps of the review process. For an overview of JSI's approach to developing these summaries, please see [Appendix A](#).

Most of these project summaries are snapshots of ongoing multi-year research projects. They neither preempt nor replace the peer-reviewed publications of findings that were generated after conclusion and analyses of projects. Rather, these project summaries articulate the challenges, milestones, and outputs from an array of ongoing and concluded-in-2009 Health IT Portfolio-sponsored initiatives in an unprecedented and more immediate fashion. AHRQ intends that the summaries be informative references for implementers of health IT, prospective research applicants, and others interested in the challenges and successes of health IT implementation and use.

IV. Results and Discussion

Through these 180 projects, AHRQ 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. In this section, the distribution of grants and contracts active in 2009 by Health IT Portfolio strategic goals, AHRQ business goals, and AHRQ lifetime funding are presented. Given the differences in reporting and tracking requirements between grants and contracts, there are additional characteristics of grants that are systematically tracked across grants. Therefore, this section provides additional information about grantee characteristics, including grantees' self-reported performance in terms of spending and overall status of grantee-specified milestones, and the PI's history with Federal grant funding.

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

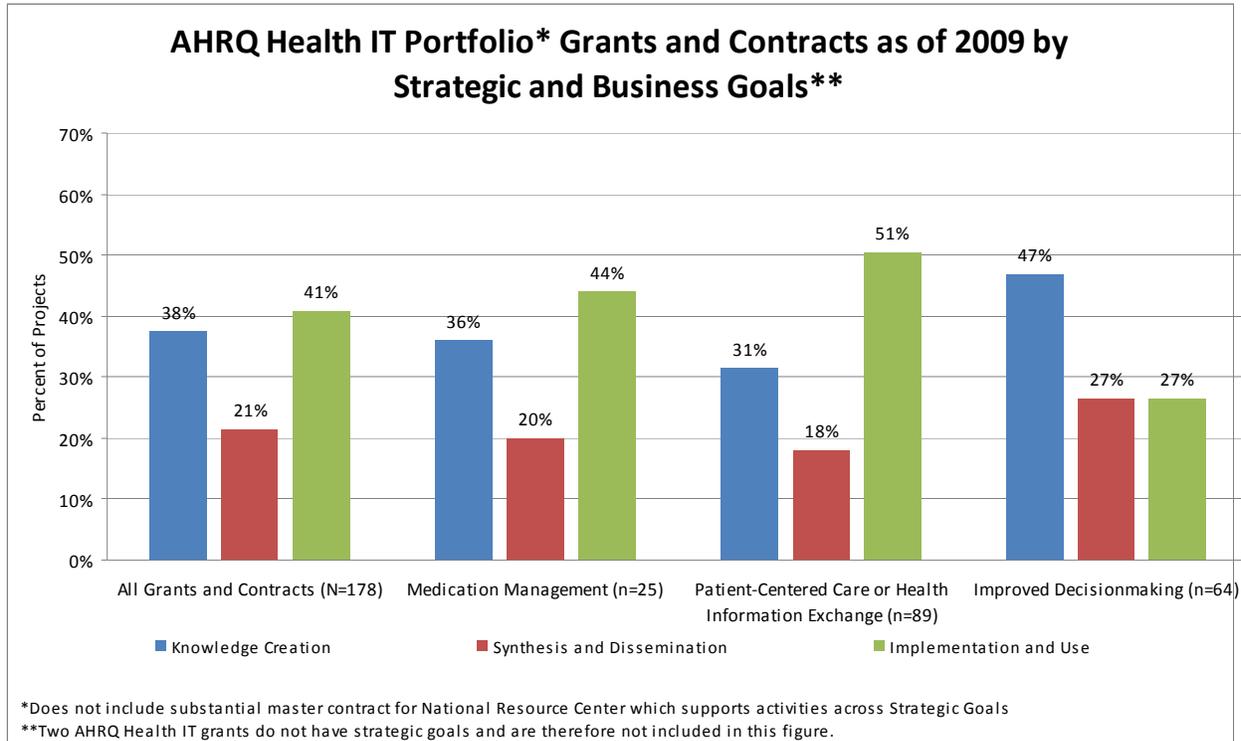
By Strategic and Business Goals¹⁰

Eighty-nine projects (32 contracts and 57 grants), or 49 percent of all Health IT Portfolio-sponsored projects as of 2009, were assigned the strategic goal of enabling patient-centered care or health information exchange (PCC or HIE). Sixty-four projects (23 contracts and 41 grants), or 36 percent of the Portfolio's projects, had improved decisionmaking as their strategic goal. Twenty-five projects (4 contracts and 21 grants), or 14 percent, focused on medication management as their strategic goal.

The distribution of business goals differs by type of mechanism (contract or grant). Of the 119 grants, 59 (50 percent) focused on implementation and use of health IT. Forty-nine grants (41 percent) focused on knowledge creation. Eleven grants, or 9 percent, focused on synthesis and dissemination. Among the 59 contracts, 27 (46 percent) focused on synthesis and dissemination. Eighteen contracts (30 percent) focused on knowledge creation, and 14 contracts (24 percent) focused on implementation and use of health IT.

¹⁰ Two projects (grants) were not assigned a specific Health IT strategic goal.

Figure 1: AHRQ-Sponsored Health IT Grants and Contracts as of 2009, by Strategic and Business Goals

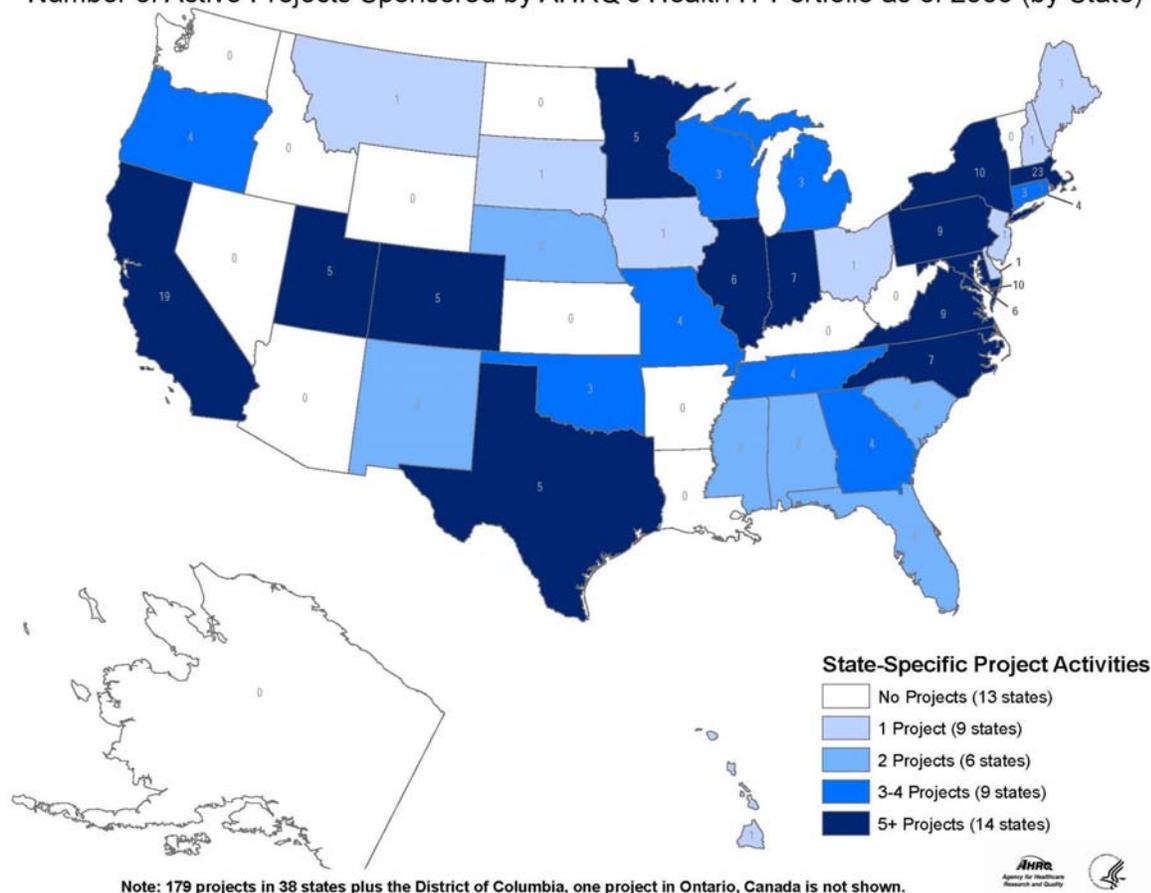


Geographic Distribution of Active Projects

In 2009, the active recipient project institutions spanned 38 States and the District of Columbia (see Figure 2). One project was awarded to an institution in Ontario, Canada. Massachusetts, with 23, had the highest number of active health IT projects. California, with 19, had the next-highest level of active health IT projects, followed by New York and Maryland, which had 9 each. Indiana, Virginia, Tennessee, North Carolina, and Pennsylvania are also examples of States with longstanding AHRQ-funded health IT research programs.

Figure 2: Number of Active Projects Sponsored by AHRQ's Health IT Portfolio as of 2009 (by State)

Number of Active Projects Sponsored by AHRQ's Health IT Portfolio as of 2009 (by State)



B. Grants

Term of Grants

Each FOA or PA specifies the maximum project period for a grant. All of the Health IT Portfolio-sponsored grants active in 2009 were multi-year grants except two R03 grants (PAR-HS-08-268) and three Health Services Research Dissertation (R36) grants, which were 1-year awards.

Grants that were issued under expanded authority¹¹ are able to request, 1 month before their initial project period end date, a no-cost extension¹² of up to 12 months beyond the grant project

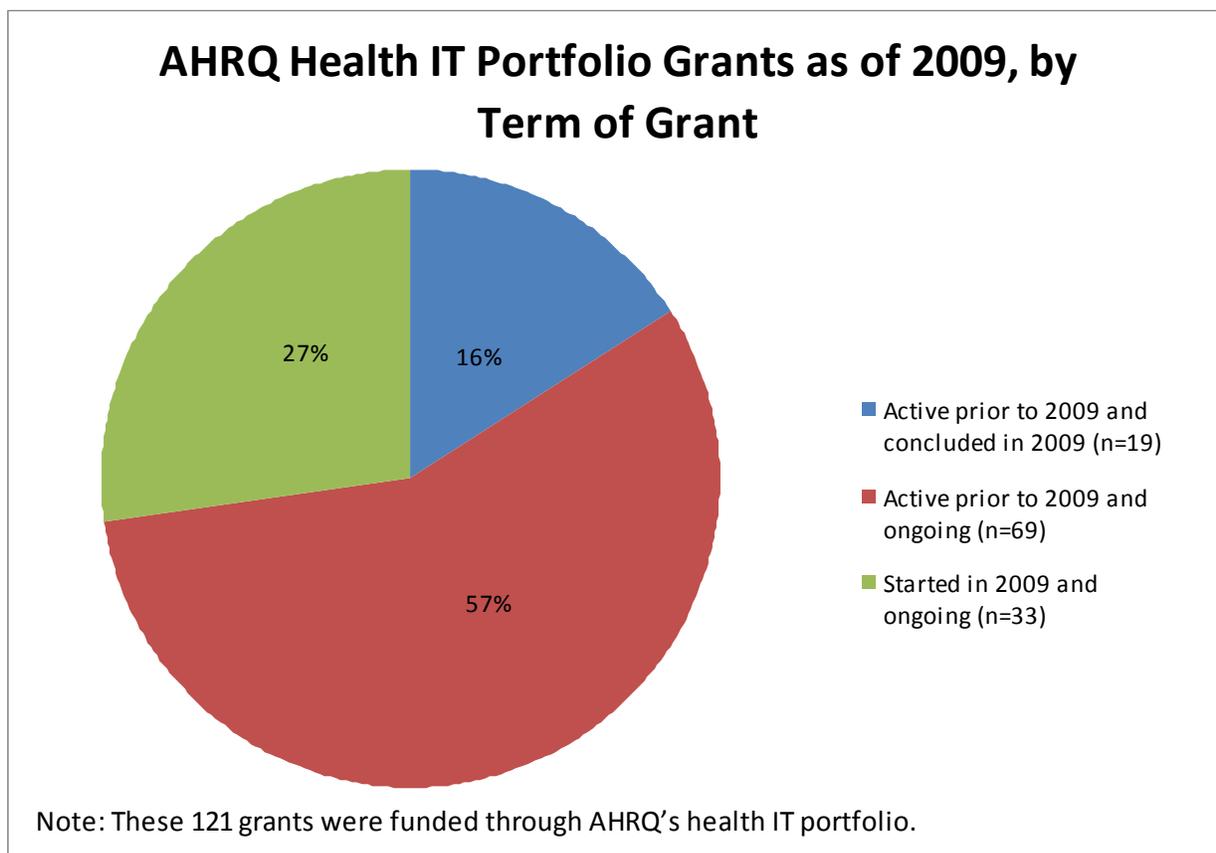
¹¹ Operating authorities provided to grantees that waive the requirement for agency prior approval for specified actions.

¹² An extension of the period of performance beyond the expiration date to allow the principal investigator to finish a project, with no additional costs provided.

period without prior approval by AHRQ, as long as there were 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. Among the 17 THQIT grants active in 2009, all were functioning under a no-cost extension and ended during 2009. As of the end of 2009, 16 of the 17 EQM grants (HS-07-002) had requested and were approved for a no-cost extension; all of these were for 1 year, with the exception of one project that received a 3-month no-cost extension and ended in late 2009. The Health IT Portfolio will continue to monitor the duration of and extent to which no-cost extensions are used among health IT grantees.

Figure 3 shows the disposition of grants in terms of whether they concluded in 2009, started in 2009, or were begun prior to 2009 and continued through 2010. As demonstrated by this figure, there was an increase in the number of active Health IT Portfolio research grants at the end of 2009, with 33 new grants beginning and only 19 ending. The number of new grants is related to the release of the new Health IT Portfolio PAs in 2008.

Figure 3: Health IT Grants as of 2009, by Term of Grant



Grants: Lifetime AHRQ Funding by Term of Grant and Strategic Goals

Lifetime AHRQ funding refers to the total support (direct plus indirect costs) that AHRQ obligates to a grant during the project period, as long as the grantee's performance indicates continuation of the grant.

Among the 119 grants assigned a strategic goal and active in 2009, 57 had the goal of enabling PCC or HIE and \$61.5 million lifetime AHRQ funding (see Table 6). The 21 medication management grants were comparably funded, with \$22.4 million, and the 41 improved decisionmaking grants had \$38.1 million lifetime AHRQ funding. It is not surprising that 48 percent were assigned the most-common strategic goal of PCC or HIE, since two FOAs (HS-08-002 and HS-07-007) funded projects that support health IT implementation and use for patients with complex medical needs and to support patient-centered care. Sixty-eight percent, or 13 of the 19 grants that were active prior to 2009 and concluded in 2009, had PCC or HIE as their strategic goal. Forty-seven percent (32 of the 68 grants active prior to 2009 and ongoing) had a PCC or HIE strategic goal, and 38 percent (12 of the 32 grants that started in 2009 and are ongoing) had a PCC or HIE strategic goal.

The grants that ended in 2009 included: 1 grant with a strategic goal of Medication Management and \$1.5 million lifetime AHRQ funding, 5 grants with a strategic goal of Improved Decisionmaking and \$6.3 million lifetime AHRQ funding, and 13 grants with a strategic goal of PCC or HIE and \$18.4 million lifetime AHRQ funding (see Table 6).

Table 6: Counts and Lifetime AHRQ Funding for Active Health IT Grants as of 2009, by Term of Grant and Strategic Goals*

Grant Term	Medication Management		Patient-Centered Care or Health Information Exchange		Improved Decisionmaking		Total	
	Number	AHRQ Funding**	Number	AHRQ Funding**	Number	AHRQ Funding**	Number	Total AHRQ Funding** (%)
Active prior to 2009; concluded in 2009	1	\$1.5	13	\$18.4	5	\$6.3	19 (16%)	\$26.1 (21%)
Active prior to 2009; ongoing	15	\$18.1	32	\$36.4	21	\$19.8	68 (57%)	\$74.2 (61%)
Started in 2009; ongoing	5	\$2.9	12	\$6.7	15	\$12.0	32 (27%)	\$21.6 (18%)
Total	21 (18%)	\$22.4 (18%)	57 (48%)	\$61.5 (50%)	41 (34%)	\$38.1 (31%)	119 (100%)	\$122.0 (100%)

*The two AHRQ Health IT grants without strategic goals are not included in this table.

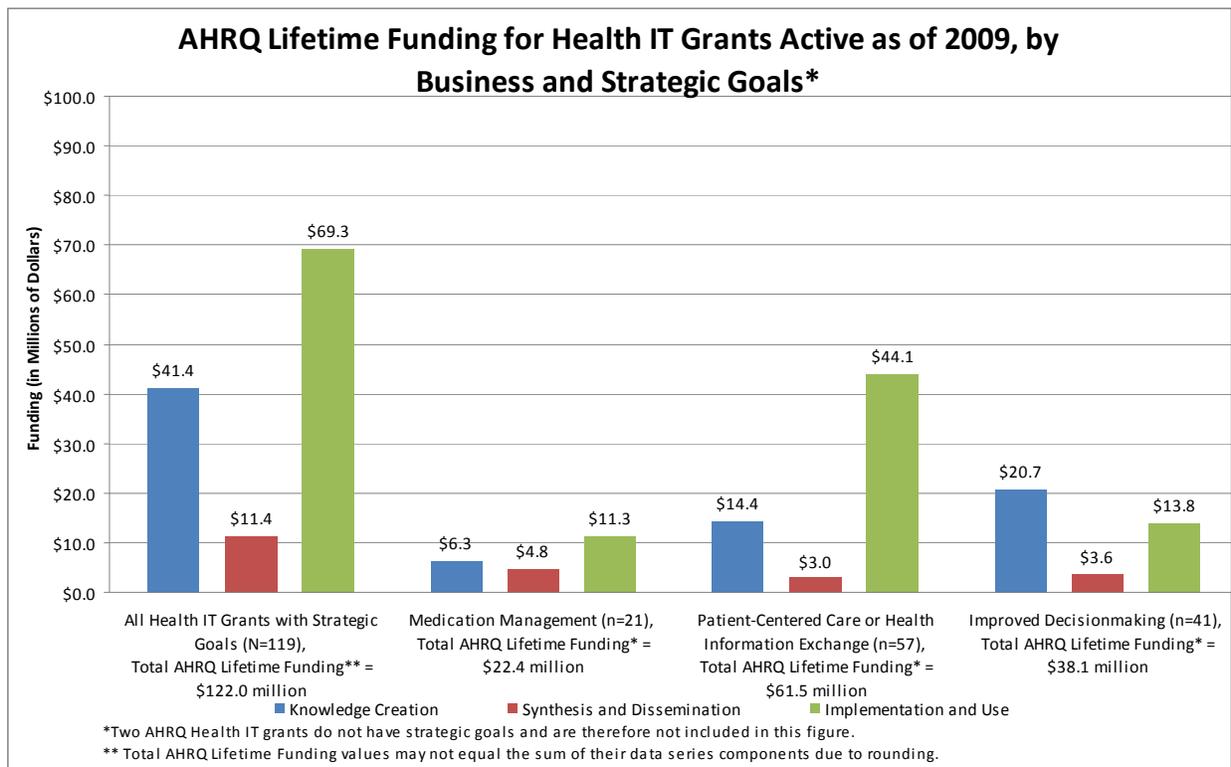
**In millions of dollars. Total AHRQ funding values may not equal the sum of their data series components due to rounding.

The distribution of AHRQ lifetime funding by business and strategic goals is shown in Figure 4. Grants that focused on implementation and use of health IT dominate the portfolio in terms of number of grants (50 percent, or 59 out of 119 grants) and percentage of AHRQ lifetime funding (57 percent, or \$69.3/\$122.0 million).

Grants that have a business goal of knowledge creation constitute 41 percent (49 grants) and 34 percent (\$41.4/\$122.0 million), respectively, of the AHRQ lifetime funding for grants. Knowledge creation is a growing focus of the Health IT Portfolio, as reflected in the purpose and scope of the health IT PAs that were published in 2008.

While only 9 percent (11/119) of grants have the business goal of dissemination and synthesis, this number does not indicate an undervaluing of dissemination or synthesis activities. On the contrary, dissemination of results is a requirement specified in each FOA and notice of grant award. Each grantee is encouraged to update the NRC on at least a quarterly basis to share with them the status of the grant, to post materials on the NRC Web site, to notify AHRQ’s OCKT when and where manuscripts are to be published, and to participate in the annual AHRQ-sponsored grantee meeting. However, these requisite dissemination requirements would likely be secondary to the business goals assigned to many of the grants.

Figure 4: AHRQ Lifetime Funding for Health IT Grants as of 2009, by Business and Strategic Goals



Grantees' Most Recent Self-Reported Project and Spending Status

In an effort to understand grantees' experience and performance in reaching their specific project milestones, AHRQ Health IT Portfolio grantees report their project progress and challenges to ARRS on a quarterly basis. Included in quarterly reports are self-reported categorical variables for grantees to indicate the extent to which they are on track in reaching overall milestones and spending plans. Since these self-characterizations are reported quarterly, fluctuation may occur from quarter to quarter for a given project. AHRQ also recognizes that, through the course of the grant process, unexpected delays (e.g., loss of key personnel, additional time to ensure the institutional review board's [IRB's] approval of plans for protection of human subjects, delays in software development, installation, or interfacing with pre-existing software) may temporarily affect research milestones and spending plans. AHRQ is mindful of the importance of early identification and remediation of such challenges, especially in health IT implementation research projects.

AHRQ-sponsored health IT grantees' self-reported overall goal status¹³ for calendar year 2009 (see Figure 5) were:

- 14 percent (15/107) reported progress is completely on track
- 58 percent (62/107) reported progress is mostly on track
- 22 percent (24/107) reported progress is on track in some respects but not others
- 0 percent (0/107) reported progress in meeting many milestones is stalled
- 0 percent (0/107) reported progress across the project is stalled
- 6 percent (6/107) did not report¹⁴

In general, these grantees report a high level of attaining grant-specified milestones, and during quarterly calls with JSI, no grantee reported problems that might lead to project failure. All grantees had identified alternative solutions or expected to request a no-cost extension to complete the project.

AHRQ-sponsored health IT grantees' self-reported status regarding spending for calendar year 2009 (see Figure 6)¹⁵ were:

- 13 percent (14/107) were significantly underspent, more than 20 percent
- 33 percent (35/107) were somewhat underspent, approximately 5 to 20 percent
- 49 percent (52/107) were spending roughly on target
- 0 percent (0/107) were somewhat overspent, approximately 5 to 20 percent
- 0 percent (0/107) were significantly overspent, more than 20 percent
- 6 percent (6/107) did not report¹⁶

Nearly half (46 percent) of grantees reportedly underspent budgeted AHRQ funds in their most recent (2009) quarterly report. Of the 21 grants that were funded in the last quarter of 2009, (September through December), 52 percent (11/21) reportedly underspent their allotted budget. Several of these grantees said that underspending was a result of delays in implementation of the

¹³ Training (K-awards and research dissertation grants [R-36]) and other Health IT grants (e.g., conference support grants) do not report progress on a quarterly basis and are therefore not included in these totals.

¹⁴ Three of these grants started in late 2009 and had not yet been prompted to submit a progress report.

¹⁵ Numbers may not add up due to rounding.

¹⁶ Three of these grants started in late 2009 and had not yet been prompted to submit a progress report.

project (e.g., hiring staff, awaiting IRB approval). Notably, grantees appear to be sound fiscal managers of their grant funding as evidenced by the lack of reports of significant overspending.

Reporting these spending levels through ARRS is, in part, voluntary. However, grantees are required to report budgeting and spending patterns in the requisite Public Health Service Form 2590 if they wish to receive approval for continuation of funding for each multi-year grant, such as these.

AHRQ is monitoring the milestone progress and spending patterns of grantees both within and across funding mechanisms in order to understand factors that influence project process and spending (see Figure 5).

Figure 5: AHRQ-Sponsored Health IT Grantees' Self-Reported* Status Regarding Overall Goals as of 2009, by Funding Opportunity Announcement

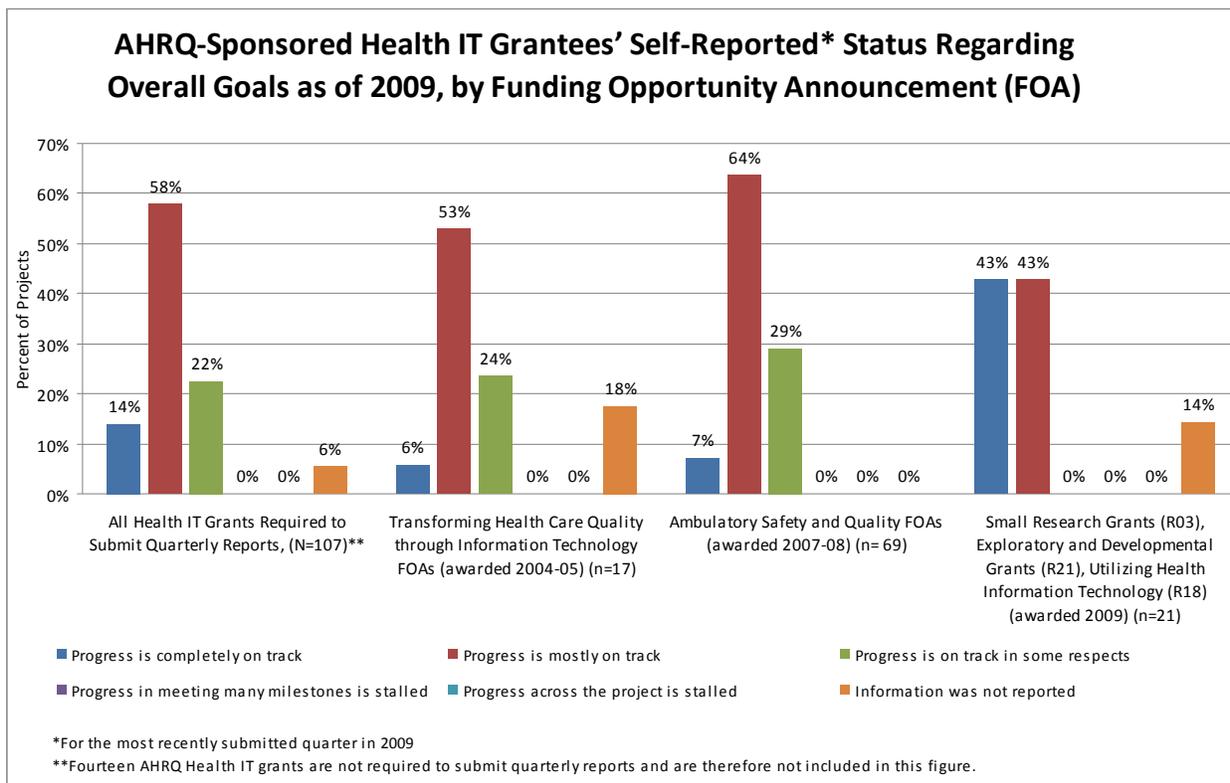
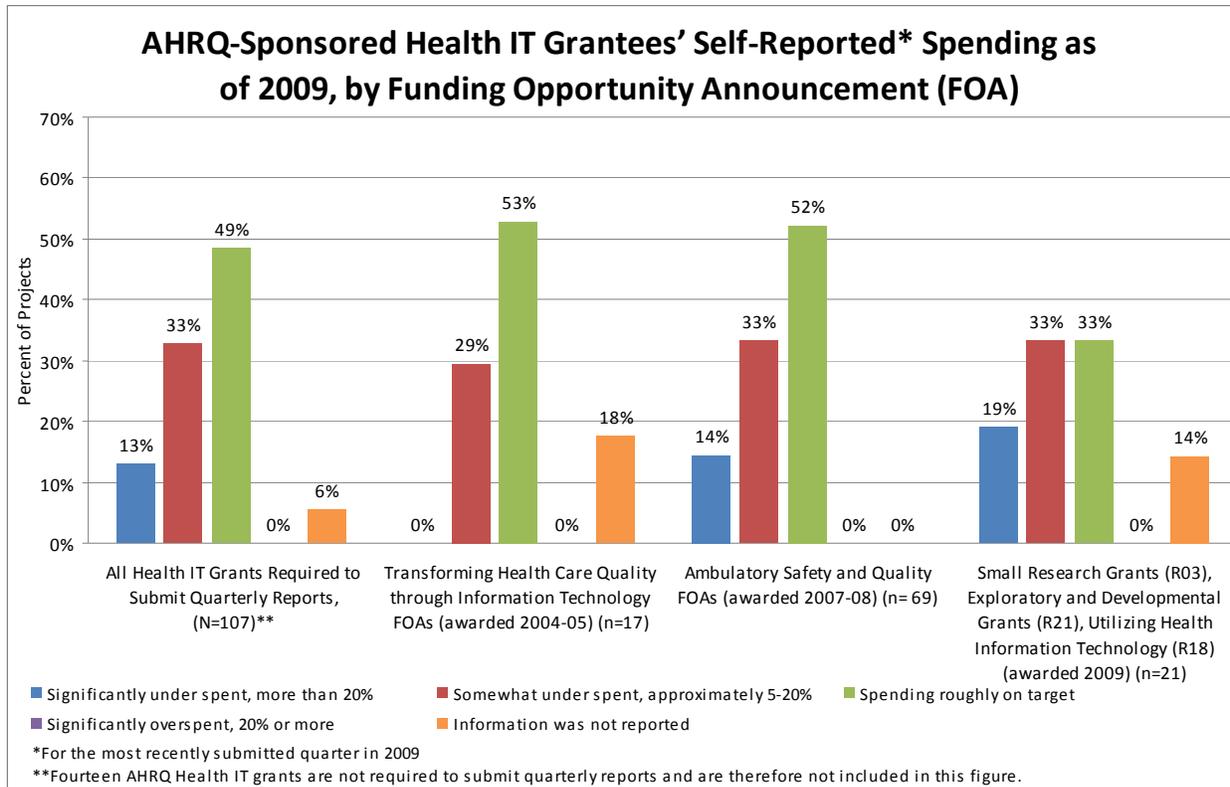


Figure 6: AHRQ-Sponsored Health IT Grantees' Self-Reported* Spending as of 2009, by Funding Opportunity Announcement



Principal Investigators

Grants and cooperative agreements are awarded to an institution and not to a PI. Yet, the PI is the individual who the recipient grantee organization designates responsible for the scientific, technical, and programmatic aspects and day-to-day management of the project. Among the 121 health IT grants active in 2009, there were 115 distinct PIs. Six of these PIs had two AHRQ-sponsored health IT grants active in 2009.

AHRQ gathered information about PI grantee award histories based on data from the Information for Management Planning, Analysis, and Coordination (IMPAC) II database. This grantee award database is maintained by NIH and is used by agencies within the Department of Health and Human Services. Among the 115 unique PIs in 2009 who had an active health IT-sponsored grant, 28 (24 percent) were prior recipients of a career award (K-award) or training grant (T-32) to enhance their research abilities. Among these 28 PIs, 13 had received 1 or more K-awards, 13 had received a T-32 training grant, and 2 PIs had received both a K-award and a T-32 training grant.

Table 7: The Distribution of First-Time Grant Principal Investigators, by Funding Opportunity Announcement¹⁷

Percentage of First-Time PIs	Transforming Healthcare Quality Through Health IT (THQIT) FOAs
33% (4/12)	RFA-HS-05-013 Limited Competition for AHRQ THQIT Implementation
100% (1/1)	RFA-HS-04-011 THQIT Implementation
0% (0/4)	RFA-HS-04-012 Demonstrating the Value of Health Information Technology
Percentage of First-Time PIs	Ambulatory Safety and Quality (ASQ) FOAs
44% (7/16)	RFA-HS-07-007 ASQ Enabling Patient-Centered Care through Health IT
25% (6/24)	RFA-HS-07-006 ASQ Improving Quality through Clinician Use of Health IT
24% (4/17)	RFA-HS-07-002 ASQ Enabling Quality Measure through Health IT
8% (1/12)	RFA-HS-08-002 ASQ Improving Management of Individuals with Complex Healthcare Needs through Health IT
Percentage of First-Time PIs	Health IT-Oriented PAs
33% (1/3)	PAR-HS-08-268 Small Research Grant to Improve Health Care Quality through Health IT (R03)
8% (1/12)	PAR-HS-08-270 Utilizing Health IT to Improve Health Care Quality (R18)
33% (2/6)	PAR-HS-08-269 Exploratory and Developmental Grant to Improve Health Care Quality through Health IT (R21)
Percentage of First-Time PIs	Training and Career
22% (2/9)	NOT-HS-08-014 Special Emphasis Notice: AHRQ Announces Interest in Career Development (K01, K02, K08) focused on Health IT
100% (3/3)	PAR-HS-06-118 AHRQ Grants for Health Services Research Dissertation (R36)
Percentage of First-Time PIs	Conference Support and Other FOAs
50% (1/2)	PA-HS-06-074 Small Grant Program for Conference Support (R13)
0% (0/1)	RFA-HS-07-004 Centers for Education and Research on Therapeutics (CERTs) (U18)
100% (1/1)	PA-HS-06-378 AHRQ Grant Program for Large Conference Support (R13) and (U13)
0% (0/1)	PA-HS-07-243 AHRQ Health Services Research (R01)

¹⁷ The Department of Health and Human Services (DHHS) IMPAC II database tracks research funding for several grant programs among various DHHS, including AHRQ, the 27 institutes at the National Institutes of Health, Health Resources and Services Administration, National Institute for Occupational Safety and Health, etc.

It is not surprising that the rates of first-time grantees were high (29 percent) across the THQIT grantees. The THQIT FOAs were designed for community health centers, rural hospitals, other health care settings, and community representatives concerned with health IT implementation but who may not have a history of conducting traditional health services research and evaluation. Therefore, the Health IT team anticipated that there would be some THQIT PIs who did not have prior grantee experience but could gather an experienced interdisciplinary research team.

The percentage of first-time grantees across the ASQ FOAs was varied. Only one of the 12 PIs (8 percent) for grants to the Improving Management of Individuals with Complex Healthcare Needs through Health IT (HS-08-002) was a first-time PI, while 24, 25, and 44 percent of the remaining three ASQ FOAs were first time PIs.

Two of the six PIs (33 percent) who had Exploratory and Developmental Grant to Improve Health Care Quality through Health Information Technology (R21) (PAR-HS-08-269) grants were new PIs. Only one (8 percent) of the 12 PIs who had Utilizing Health Information Technology to Improve Health Care Quality (R18) (PAR-HS-08-270) grants was new. One of the three (33 percent) PIs who had a Small Research Grant to Improve Health Care Quality through Health Information Technology (R03) (HS-08-268) grants was a new PI.

C. Contracts

In 2009, the Health IT Portfolio had 59 active contracts with a cumulative AHRQ lifetime support of \$68.4 million. These contracts enabled individual projects to address a defined, pre-determined need. All contracts were assigned one of three Health IT Portfolio strategic goals and one of three AHRQ business goals.

Initial project duration is specified in each contract. Some contracts have, at AHRQ's discretion, a provision to support additional option years. The start dates and duration of the 59 project-specific contracts active in 2009 vary.

- Five 5-year contracts for State and Regional Demonstration (SRD) Projects in Health Information Technology began in 2004. Three are scheduled to conclude in 2010, and two are scheduled to conclude in 2011.
- One 5-year contract for SRD Projects began in 2005 and is scheduled to conclude in 2011.
- One project began in 2007 and is scheduled to end in 2010.
- Of the 10 contracts begun in 2007, 9 ended in 2009, and 1 is scheduled to end in 2010.
- Of the 12 contracts begun in 2008, 4 ended in 2009, and 8 are scheduled to end in 2010.
- Of the 30 contracts begun in 2009, 1 concluded in 2009, 17 are scheduled to conclude in 2010, and 12 are scheduled to conclude in 2011.

As illustrated in Table 8, more contracts (n=32) and contract funding (\$44.2 million) are associated with the Health IT Portfolio strategic goal of PCC or HIE than the other two strategic goal categories combined (n=27 and \$24.2 million). Together, the six SRDs for HIE have an AHRQ lifetime budget of \$31.1 million; each of the SRDs has the strategic goal of PCC or HIE. There were 23 contracts with a Health IT Portfolio strategic aim of Improved Decisionmaking,

and a total of \$22.0 million funding. Health IT Portfolio support for Medication Management is lower than other categories, at \$2.2 million for 4 contracts.

For business goals, the majority of contracts had a business goal of Synthesis and Dissemination (n=27, 46 percent), followed by Knowledge Creation (n=18, 30 percent) and Implementation and Use (n=14, 24 percent).

Both of the 2-year projects for the Clinical Decision Support (CDS) Initiative (funded at \$6.2 million and \$6.3 million) had an AHRQ business goal of Knowledge Creation. Excluding the larger contracts for SRD and CDS, AHRQ lifetime funding ranged from \$50,000 to \$3 million for the remaining 51 contracts.

Table 8: Counts and Lifetime AHRQ Funding for Health IT Contracts as of 2009, by Health IT Portfolio Strategic Goal and AHRQ Business Goal

AHRQ Business Goal	Medication Management		Patient-Centered Care or Health Information Exchange		Improved Decisionmaking		Total	
	Number (%)	AHRQ Funding* (%)	Number (%)	AHRQ Funding* (%)	Number (%)	AHRQ Funding* (%)	Number (%)	Total AHRQ Funding* (%)
Implementation and Use	1	\$1.0	8	\$32.6	5	\$4.6	14 (24%)	\$38.2 (56%)
Knowledge Creation	2	\$0.8	11	\$3.9	5	\$13.6	18 (30%)	\$18.3 (27%)
Synthesis and Dissemination	1	\$0.4	13	\$7.7	13	\$3.8	27 (46%)	\$11.9 (17%)
Total	4 (7%)	\$2.2 (3%)	32 (54%)	\$44.2 (65%)	23 (39%)	\$22.0 (32%)	59 (100%)	\$68.4 (100%)

**In millions of dollars*

V. Dissemination

A hallmark of AHRQ's Health IT Portfolio is its commitment to prompt and easy-to-use dissemination of information generated through its program, related partners, and other Federal programs. In order to capture the breadth of synthesis and dissemination activities of the Health IT Portfolio, the presentations and outreach activities pursued by Health IT Portfolio members, activities led by staff of AHRQ's OCKT, and numerous NRC-sponsored activities and Web-based postings must be noted.

There are four complementary means for the AHRQ-led dissemination of health IT information.

- Presentation by members of the Health IT Portfolio
- AHRQ's Office of Communications and Knowledge Transfer
- The NRC Web site
- AHRQ's Annual Conference

Presentations by Members of the Health IT Portfolio

Numerous presentations were made to various health IT stakeholder groups and venues, including: Healthcare Information and Management Systems Society (HIMSS); American Medical Informatics Association Conferences; and cosponsored meetings with other Federal agencies including CMS, NIH, the Department of Health and Human Services Office of the National Coordinator (ONC) for Health IT, and HRSA.

AHRQ's Office of Communications and Knowledge Transfer (OCKT)

AHRQ's OCKT staff plays a critical role in the synthesis and dissemination of findings from the Agency's health IT research. In addition to preparing and disseminating content-specific multi-media newscasts and press releases, OCKT staff update various points-of-contact lists to ensure successful dissemination of materials as they are generated. For example, in CY 2008, OCKT launched a new health IT e-mail list using a sophisticated e-mail subscription system. By end of CY 2009, nearly 28,000 subscribers joined the health IT e-mail list.

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

- Go to AHRQ's homepage: www.ahrq.gov
- Select "E-mail Updates" located next to the red envelope on the upper right hand corner
- Enter your e-mail address
- Select "Health IT" under the "Quality & Patient Safety" heading

Highlights from OCKT's media and marketing outreach efforts during CY 2009 are listed below.

- **Marketing outreach:** OCKT conducted marketing outreach to key associations, Federal entities, advocacy groups, policy groups, and other stakeholders to promote relevant findings to health IT industry. OCKT also parlayed announcements made by the Office of the National Coordinator for Health Information Technology, including relevant news

surrounding the Health Information Technology for Economic and Clinical Health (HITECH) Act. OCKT issued 35 brief e-mail announcements on important health IT findings and activities to these key audiences.

- **Media interviews and coverage:** OCKT conducted more than 15 media interviews with mainstream and trade publications including
 - *AMIA E-News iHealthBeat*
 - *Federal News Radio 1500 AM*
 - *CongressDaily*
 - *The Health Care Blog*
 - *Doctor's Digest*
 - *CMA Today*
 - *Technology Review magazine*

- **Manuscripts and reports:** OCKT prepared approximately 14 health IT-oriented manuscripts in various formats, including the Emerging Lessons and Health IT Implementation Stories, which are available on the NRC website at http://healthit.ahrq.gov/portal/server.pt/community/ahrq-funded_projects/.

- **Journal commentaries and articles:** OCKT helped promote a special AHRQ-funded issue of Pediatrics. The January 2009 issue featured 14 articles on the effect that health IT has on the quality of health care for children. Below are links to abstracts of selected articles.
 - It is Time! Accelerating the Use of Child Health Information Systems to Improve Child Health by Fairbrother G, and Simpson LA. [Select to access the abstract.](#)
 - Alliance for Pediatric Quality: Creating a Community of Practice to Improve Health Care for America's Children by Miles PV, Miller M, Payne DM, Perelman R, Saffer M, and Zimmerman E. [Select to access the abstract.](#)
 - Linking Children's Health Information Systems: Clinical Care, Public Health, Emergency Medical Systems, and Schools by Hinman AR, and Davidson AJ. [Select to access the abstract.](#)
 - The Public Role in Promoting Child Health Information Technology by Conway PH, White PJ, and Clancy C. [Select to access the abstract.](#)

- **Meeting exhibits:** OCKT participated in nine national conferences and meetings that were relevant to the health IT community and promoted AHRQ's products and resources from its health IT portfolio to participants at each event.

- **E-Newsletters and Research Activities:** Approximately 49 articles and summaries on AHRQ's health IT programmatic and research activities were featured in three Agency electronic and print newsletters: AHRQ's periodic [Electronic Newsletter](#), AHRQ's monthly [Patient Safety and Health Information Technology E-Newsletter](#), and AHRQ's monthly [Research Activities](#).

- **Podcasts:** AHRQ's Healthcare411 (see: <http://www.healthcare411.org/>) is a news series that features consumer-oriented audio podcasts about health care quality, safety,

efficiency, and health IT. Sixty-second radiocasts now air weekly on almost 300 radio stations nationwide, and a 10-minute newscast produced by AHRQ on a bi-weekly basis is distributed to more than 500 professional organizations. OCKT issued five health IT newscasts, available at the following links:

- [Clinical Decision Support and Improving Patient Outcomes](#)
- [Clinical Decision Support White Papers](#)
- [Making Hospital Discharges Safer for Seniors](#)
- [Personal Health Records](#)
- [E-prescribing - A Cost Saving Alternative to Paper Prescriptions](#)

National Resource Center for Health IT Web Site

NRC Web Site Content

The NRC Web site (www.healthit.ahrq.gov) is a central means for the dissemination of findings from AHRQ's health IT projects. Additionally, it is 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.

Most notably, the NRC Web site is a gateway and historical repository of AHRQ's Health IT Portfolio. It is a comprehensive repository for various resources, detailed below. The vast majority of material posted on the NRC Web site is generated by Health IT Portfolio-sponsored grantees or contractors. As of 2009, information on the NRC Web site was continuously updated and organized by categories of information types, which include but are not limited to:

- **Events:** Past and upcoming events related to health IT are listed with links to resources, such as meeting agendas and presentations. The list includes activities sponsored by AHRQ, such as Web-based National Web Teleconferences featuring interactive presentations by experts in a particular field of health IT, and other important health IT activities such as those sponsored by the ONC. The list of upcoming events is proactively assembled and includes important professional meetings up to 1 year in advance.
- **AHRQ-Funded Projects:** By clicking on the map of the United States, the user interface allows user to identify groups of health IT-funded projects by health care setting, type of health IT technology, target population, PI, State of organization conducting the research, and community type.
- **Health IT Tools:** AHRQ and its community of contractors and grantees have developed tools to help health care organizations plan for, implement, and evaluate health IT. These tools describe and recommend strategies for addressing some of the common challenges organizations encounter when working with health IT systems. The tools are freely available but should be properly cited when referenced on the Web or in print. Tools include: Rural Health IT Adoption Toolkit, Health IT Literacy Guide, and the Health IT Bibliography.
- **Knowledge Library:** The Knowledge Library contains both evidenced-based and theoretical content gathered by health IT experts. The content is organized into two

categories. The Core Collection contains high-quality information that AHRQ NRC experts find central to the health IT discipline. Partner Contributions include content provided by professional societies and nonprofit organizations that have experience in health IT.

- **Funding Opportunities:** This Web site lists all of AHRQ's open FOAs for health IT and provides links to other Federal grant programs such as NIH, the Department of Defense, the National Science Foundation, the Centers for Disease Control and Prevention, and the White House Official Grant Catalog, as well as foundation funding Web sites for the Robert Wood Johnson Foundation, California Healthcare Foundation, and the Commonwealth Fund.

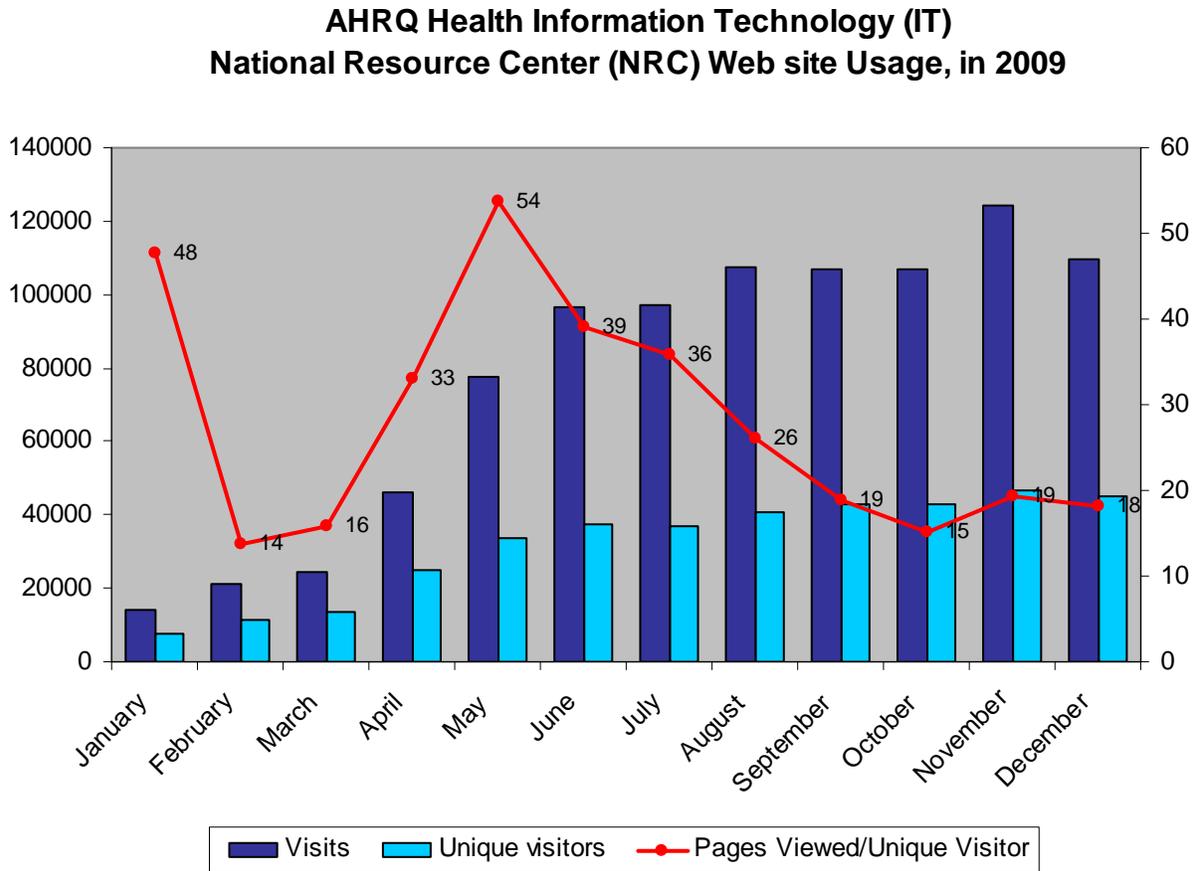
Key Performance Indicators

In 2009, the NRC monitored key performance indicators of visits to and information sought from the NRC Web site, including unique visitors, visits, and pages viewed per unique visitor by month. The NRC uses the AWStats Web usage reporting tool, which defines a unique visitor as someone who has made at least one hit on one page of the host's Web site during a month. If the user makes several visits during a month, it is counted only once. Most of these hits are tracked using the Internet protocol (IP) of devices participating in a computer network. However, many users surf the Web using proxy servers (e.g., AOL, Comcast), and these proxies use banks of servers to hit the same page to speed surfing. AWStats has a method for resolving proxy usage and avoids over-reporting of unique visitors.

Figure 7 shows the monthly values for number of visits, unique visitors, and average page views per unique visitor. The monthly key performance indicators for visits to the NRC Web site were:

- The mean number of visitors per month in 2009 was 77,747. The lowest number (14,333) of visitors was in January, after which the number increased every month until a high of 124,499 in November, which tapered off at 109,488 in December. The mean number of visitors during the year has increased considerably since 2008, when the average number was 16,034.
- The number of unique visitors per month follows a similar pattern, with an average of 32,022, steadily increasing every month. The lowest number of unique visitors was in January (7,690), to a high in November of 46,406, tapered off in December (45,204). The average number of unique visitors is considerably higher than in 2008, when the average was 8,671.
- The mean average number of page views per unique visitors in 2009 was 28. The lowest number of mean number of page views (14) per unique visitor was in February, and the highest number of page views (54) per unique visitor was in May.

Figure 7: AHRQ Health IT NRC Web Site Usage, in 2009



It is not surprising that the lowest values for two of the key NRC Web usage indicators—mean number of visitors per month and mean number of unique visitors per month— were in December 2009, as many people take vacations in December due to school closings and religious holidays.

The increased use of the NRC Web site is, most likely, partly due to the increased funding available through the three health IT focused FOAs (HS-08-268, HS-08-269, HS-08-270) and the master contracts and task orders to support the NRC. It is also likely that the increased use is due to the increased interest in health IT and visitors recognizing the Web site as a resource for information. However, there are no definitive answers regarding relative increases observed among key usage indicators over time.

AHRQ Annual Conference, 2009

To help advance its goal of improving health care for all Americans, AHRQ held its third annual conference from September 13 to 16, 2009, in Bethesda, MD. This conference, entitled “Promoting Quality...Partnering for Change,” was designed to showcase the Agency’s best research and provide examples of how that research is being implemented at all levels in health

care delivery. During the free 4-day meeting, there were more than 100 interactive in-person sessions, multiple poster sessions, and several support booths at the mAHRQet Place Café.

The conference featured presentations in six major tracks:

- Health Care Infrastructure
- Organization of How Services are Delivered
- Health Care Quality and Safety
- Improving Americans' Health Status
- Provider Performance and Payment Reform
- Increasing Patient and Consumer Involvement in Their Care

Sessions on Health IT. Eleven of the sessions were dedicated to discourse and dissemination about Health IT Portfolio-funded projects. These sessions addressed a variety of health IT topics (see Table 9). Approximately two dozen Health IT Portfolio-sponsored projects were represented. The PowerPoint presentations for these health IT sessions and other portfolios presentations from this meeting are available at <http://www.ahrq.gov/about/annualconf09/#contents>.

Table 9: Health IT Portfolio-Sponsored Sessions at AHRQ’s Annual Meeting, September 2009

Sessions on Health IT
Monday, September 14, 2009
Experience in Improving Health Care Decision-Making With Health IT: Impacts on Quality and Safety
The Role of Health IT in Measuring and Reducing Disparities
Personal Health Records: What Are They Good For? A Panel Discussion
First Do No Harm: Ensuring the Safe and Effective Use of Health IT: A Panel Discussion
Tuesday, September 15, 2009
Getting to Meaningful Use of Health IT: Experiences in Redesigning Workflow in the Ambulatory Setting
Are We Making Progress? Measuring the Adoption, Meaningful Use, and Impacts of Health IT
Moving Beyond Institution-Based Service Delivery: Medical Homes and Health 2.0
Building the Health IT Infrastructure: How Do We Get There? A Panel Discussion
Seeing the Forest for the Trees: Are Electronic Health Records Enough for Population Health? A Panel Discussion
Wednesday, September 16, 2009
Experiences in Patient-Centered Care: Improving Coordination and Communication Among Patients and Providers
Connecting Communities: Lessons From Six State Health Information Exchange Demonstrations

Health IT Grantee and Contractor Meetings. In order for AHRQ to facilitate grantee and contractor collaboration, networking sessions were carefully planned. There was a session for the 16 PCC grantees (HS-07-007), and two additional sessions for all grantees in combination. Similarly, there was one networking session for NRC and two sessions to meet with AHRQ Health IT staff to share ideas about how to improve and evolve the AHRQ Health IT Program. Finally, there were two health IT vendor roundtables, dedicated to networking with others using particular vendor systems.

mAHRQet Place Café. The health IT booth at the mAHRQet Place Café was staffed by health IT staff from the NRC, who provided 2 full days of demonstrations on how to use and search the NRC Web site (www.healthit.ahrq.gov); answered questions; and distributed Health IT Portfolio folders containing AHRQ publications, which provided overview and summary materials for various health IT-sponsored programs.

VI. Conclusion

In 2009, the Health IT Portfolio provided funding to numerous organizations and individuals through various mechanisms. Organizations in 38 States and the District of Columbia had active Health IT-sponsored projects, and there were 115 unique grant PIs among the 121 grants active. At the close of CY 2009, the Health IT Portfolio's 6th year, the Portfolio entered a phase of supporting projects that evaluate factors associated with successful implementation and utilization of health IT in order to improve the quality, safety, effectiveness, and efficiency of health care.

CY 2009 was a notable year for the grants funded through the THQIT initiatives. Of the total 118 grants funded under these initiatives in 2004 and 2005, 17 remained active and ended in 2009, bringing the funding for that inaugural program to a close. Through its THQIT-funded grants, AHRQ proactively focused on health IT implementation among rural hospitals and community-based health care settings, many of which had little or no prior experience in preparing for and implementing health IT systems. During the first few years of these grants (2005-2006), the NRC provided grantees with myriad opportunities for one-on-one and group technical assistance on various topics, including: governance; start-up and grant writing; research design and evaluation; health IT procurement, connectivity, privacy, security, and standards; and synthesizing, disseminating, and publishing findings. Both first-time and experienced grantees engaged in these activities and displayed a commitment toward honing new skills and building integrated communities that support health IT implementation and use.

AHRQ will continue to disseminate lessons learned from these grants. An NRC Task Order award to Mathematica Policy Research, Inc. in 2009 is helping the Health IT Portfolio to synthesize and evaluate the THQIT initiative in terms of the barriers, facilitators, and incentives for the timely completion of those grants, and the extent to which various types of health IT systems implemented through these grants have been sustained or modified, as well as other factors.

During the year, the first ASQ grants came to a close. Two grants from this initiative, which focused on health IT use impacting outcomes in ambulatory care settings, emergency departments, and transitions in care, closed, while the remaining ASQ projects that were scheduled to close in 2009 received a 1-year no-cost extension. These projects and other ASQ projects, originally funded through 2010 and 2011, remain active.

In total, 30 projects ended in CY 2009: 19 grants and 11 contracts. However, there were beginnings as well as endings: Thirty-three grants and 30 contracts were started.

Three new grant PAs and a Special Emphasis Notice (NOT-HS-08-014) were issued in 2008 to support research that examines how health IT can be used to improve health care quality in a progressively more complex fashion and to support career development, respectively. In September 2009, 21 new grants were awarded, including 3 regarding the use of health IT to improve health care outcomes through small research grants (HS-08-268 [R-03]), 6 exploratory

and developmental grants (HS-08-269 [R-21]), and 12 research and demonstration grants (HS-008-270 [R18]). In addition, there were 6 career development (K-awards) and 3 dissertation grants (R-36) awarded in 2009 (NOT-HS-08-014). These PAs are open through November 2011. Finally, there were two R13 small conferences (PA-09-070) and one R01 grant (PAR-09-231) funded in 2009.

The majority of the Health IT Portfolio's active grants in 2009 (69/121 or 57 percent) were funded through one of the four RFAs of the ASQ initiative. As of the end of 2009, 55 of the 69 ASQ grants entered their third year and continued to report challenges and triumphs, as discussed in their individual project summaries.

- Fifteen of the 17 Enabling Quality Measurement Through Health IT (HS-07-002) grants requested and received an additional 1-year no cost extension on top of their scheduled 2-year project funding periods. One EQM grant received a 3-month no-cost extension, closing at the end of 2009. An additional EQM grant completed the grant during the allotted 2-year funding period.
- Each of the 16 grants funded by Enabling Patient-Centered Care Through Health IT (HS-07-007) concluded their first 27 months of their scheduled 3-year project funding periods.
- Each of the 24 Improving Quality Through Clinician Use of Health IT (HS-07-006) grants concluded their first 27 months of their scheduled 3-year project funding periods.
- Each of the 12 Improving Management of Individuals with Complex Healthcare Needs Through Health IT grants concluded the first 15 months of their 3-year project funding periods.

Among the Health IT Portfolio contracts active in 2009, eight contracts across two program areas accounted for 63.9 percent of the Health IT Portfolio's contract funding.

- Six 5-year contracts to support a State and Regional Demonstration Project for Health Information Exchange began in 2004 and 2005. Their AHRQ lifetime funding is \$31.1 million.
- Two CDS Services contracts begun in 2008 currently have AHRQ lifetime funding of \$12.5 million and additional option years.

The remaining 51 contracts had AHRQ lifetime funding ranging from \$50,000 to \$3 million and typically had 2-year project periods. Individually and collectively, these projects serve to generate and disseminate much-needed insight.

On average, 32,022 unique visitors went to the NRC Web site (www.healthit.ahrq.gov) each month to access a variety of content or participate in the series of NRC-administered National Web Teleconferences. This average number of unique visitors is considerably higher than in 2008, when it was 8,671. AHRQ's OCKT was actively engaged in synthesis and dissemination of Health IT Portfolio including health IT-oriented manuscripts in various formats, including the Emerging Lessons and Health IT Implementation Stories. In addition, OCKT helped promote the special AHRQ-Funded issue of Pediatrics (January 2009), which featured 14 articles on health IT's impact on the quality of health care for children.

Early in 2010, AHRQ's Health IT Portfolio set forth a plan to aggregate extant information to allow NRC staff, with assistance from AHRQ staff, to develop comprehensive project summaries. This project has provided the Health IT Portfolio with a better understanding of the potential power of concise, informative project reporting to provide contextual explanations of triumphs and travails of health IT implementation and use. AHRQ will continue to explore these project summaries in order to identify technical assistance guidance. It is anticipated that the benefits of this informed guidance feedback loop will eventually outweigh the inconvenience of reporting for grantees.

AHRQ intends for the summaries to be informative references 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. Would-be grantees are encouraged to carefully peruse project-specific summaries in their fields of interest to learn more about characteristics of successful research projects and PIs' abilities to adjust and persevere through the real-world challenges and setbacks encountered in health IT implementation, use, and evaluation. The project summaries are available on the NRC Web site in an easy-to-access, Web-based format. Users can click on the map of the United States and search for projects, review their project summary, and view other project related news and publications. This year's report also includes an interactive CD, where users can search for specific projects on several attributes including type of health IT, target population, and care setting.

Large and diversified groups of stakeholders are committed to successful health IT implementation in order to achieve measurable and sustained improvement in the quality and safety of health care. AHRQ encourages readers to explore the NRC Web site (www.healthit.ahrq.gov) and sign up for the [AHRQ Health IT Portfolio Listserve](#) to receive updates on research findings and funding opportunities.

Appendix A – Process for Preparing Project Summary

Project Summaries Content Development Guidelines

The following guidelines support the objective to provide consistent writing of the project summaries. In following these guidelines, it is expected that there will be some reasonable differences in content based on project status and the information that the PI/PD has shared in their progress reports and phone calls.

The following categories of the project specific summaries were developed by the summary writer from abstracting data from multiple sources.

- Target Population
- Project Summary
- Specific Aims
- 2009 Activities (or the year the project ended)
- Preliminary Impact and Findings
- Selected Outputs
- For Grant Projects: Grantee’s Most Recent Self-Reported Quarterly Status. For grantees that have funding classified as “Other” (U18, R01, R13), “Training” (K08, K01), or “Dissertation” (R36), these sections are not included in the project summaries.

Guidelines and examples for each section include:

- **Target Population:** Each grant and contractor was assigned a target population as part of the development of profiles for new grants and contracts. For the majority of projects, this information was exported from JSI’s internally developed database and entered into the project-specific summary. For those grants or contracts that did not have a target population assigned, this was done at the time of summary development by JSI.
- **Summary (2-5 paragraphs):** The information included in the summary section is similar to and consistent with the information included in the profiles available on the NRC Web site, but with more detailed information on methodology.
 - Statement of problem (e.g., research need)
 - Technology/application; EHR/EMR, CCHIT status (if applicable)
 - Intervention—description of the intervention (if applicable)
 - Methodology—description of methodology and phases of research to be completed in each year of the project (i.e., second year of grant qualitative data will be analyzed, and in year three the randomized clinical trial data will be analyzed)
 - Statement of how research impacts building on current knowledge (similar to profile)
- **Specific Aims**
 - Write specific aims using the main verb (e.g., Implement, Improve, Introduce) with the status of the aim in parenthesis, and bolded. For example: (**Achieved**)

- In some cases, grantees may have some aims that are ongoing and are noted as **(Ongoing*)** with the following text beneath the full list of Aims: **This aim was not completed prior to scheduled conclusion of the grant (Month, Year); however, research will continue through other funding sources.*
- **2009 Activities** (1-3 paragraphs)
 - Progress as reported in the progress reports, quarterly calls from calendar year 2009.
- **Preliminary Impact and Findings** (1 paragraph)
 - Broad overview of findings to date; timing of expected findings if none to date may be included.
- **Selected Outputs**
 - Outputs were selected from the full list of outputs for the entire grant period (not exclusive to the year 2009). The full list of outputs was available in an Excel report from the JSI Access Database.
 - JSI reviewed all outputs, with the following priority for inclusion:
 - Peer-reviewed journal publications
 - Accepted presentations/manuscripts to conferences
 - Surveys that are part of the Survey Compendium
 - Other tools, surveys, and outputs
 - Order of outputs are chronological (newest publication first), and if output has no date, these are included at the end of the list alphabetically.
- **Grantees' most recent self-reported quarterly status** (1 paragraph) (Grants only)
 - This information was extracted from the last available grantee progress report of 2009 with supplementary or explanatory information from the call with the grantee.

Tracking Project Summary Development

A Tracking Spreadsheet was developed to track the development, distribution, review, approval, and posting of each grantee and contractor project summary. The tracking spreadsheet is an interactive tool that was updated by JSI team members as tasks were completed. The process tracking spreadsheet was reviewed at weekly team meetings to monitor project progress, identify activities that are lagging, and address issues that could stall the development of the project summaries and sections of the annual report development

