

AHRQ Annual Highlights 2010



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Abbreviations

ACTION - Accelerating Change and Transformation in Organizations and Networks

AHRQ - Agency for Healthcare Research and Quality

CAHPS® - Consumer Assessment of Healthcare Providers and Systems

CDC - Centers for Disease Control and Prevention

CER - Comparative Effectiveness Review

CERT - Center for Education and Research on Therapeutics

CMS - Centers for Medicare & Medicaid Services

CUSP - Comprehensive Unit-based Safety Program

CVE - Chartered Value Exchange

DEcIDE - Developing Evidence to Inform Decisions about Effectiveness

EHR - electronic health record

EMR - electronic medical record

EPC - Evidence-based Practice Center

ePSS - Electronic Preventive Services Selector

FY10 - fiscal year 2010

HAI - healthcare-associated infection

health IT - health information technology

HCUP - Healthcare Cost and Utilization Project

HHS - Health and Human Services

HIE - health information exchange

HRSA - Health Resources and Services Administration

MEPS - Medical Expenditure Panel Survey

MONAHRQ - My Own Network, powered by AHRQ

NHDR - *National Healthcare Disparities Report*

NHQR - *National Healthcare Quality Report*

NRC - National Resource Center for Health Information Technology

PBRN - practice-based research networks

PCMH - Patient-Centered Medical Home

PSO - Patient Safety Organization

QIs - Quality Indicators

QIO - Quality Improvement Organization

TeamSTEPPS® - Team Strategies and Tools to Enhance Performance and Patient Safety

USPSTF - U.S. Preventive Services Task Force

Introduction

In fiscal year 2010 (FY10), the Agency for Healthcare Research and Quality (AHRQ) was able to increase key investments to help improve the safety and quality of health care, ensure access to care, increase the value of health care, reduce disparities, and increase the use of health information technology.

In addition, the Patient Protection and Affordable Care Act (Affordable Care Act), signed by the President into law on March 23, 2010, brought new and exciting opportunities to improve the quality, safety, efficiency, and effectiveness of health care services.

Patient Safety and Quality

In the largest Federal investment connecting medical liability to quality, AHRQ awarded \$25 million in funding to support efforts by States and health systems to implement and evaluate patient safety approaches and medical liability reform models. In addition, AHRQ also invested \$17 million to expand projects to help prevent healthcare-associated infections (HAIs). The most common complication of hospital care, HAIs cause approximately 2 million infections and 99,000 deaths annually with a cost between \$28 billion to \$33 billion. One FY10 project, the Comprehensive Unit-based Safety Program (CUSP), shows significant promise in reducing central line-associated blood stream infections. A direct outgrowth of earlier successful AHRQ-funded efforts, CUSP reduced the rate of central line-associated blood stream infections by two-thirds within 3 months and over 18 months saved more than 1,500 lives and nearly \$200 million. AHRQ is now supporting the implementation of CUSP to all 50 States.

American Recovery and Reinvestment Act

Funding from the American Recovery and Reinvestment Act (Recovery Act), signed into law



by President Obama in February 2009, allowed AHRQ to expand its work in support of comparative effectiveness research including enhancing the Effective Health Care Program. The overarching goal of comparative effectiveness research is to improve health outcomes by providing evidence to patients and their medical providers to help them make the best decisions. AHRQ's collaborative and transparent Effective Health Care Program provides patients, clinicians, and others with evidence-based information to make informed decisions about health care.

Of the \$1.1 billion contained within the Recovery Act for comparative effectiveness research, \$300 million was allocated to AHRQ, \$400 million to the National Institutes of Health (NIH), and \$400 million to the Office of the Secretary of Health and Human Services (HHS). Beginning in FY09, AHRQ began issuing funding opportunity announcements and working with NIH and the Office of the Secretary to coordinate comparative effectiveness research under the Recovery Act. AHRQ agreed to manage the Office of the Secretary's \$400 million.

Recovery Act funds awarded from the Office of the Secretary focus on four main areas:

- Data infrastructure awards to enhance existing infrastructure and develop new databases, networks, and registries to make both public and private comparative effectiveness research endeavors robust and sustainable over time.
- Dissemination, translation, and implementation awards focused on ensuring the results of comparative effectiveness research are



disseminated, implemented, and used by patients, families, and clinicians.

- Research awards to provide key information on the relative benefits and harms of various medical and health system interventions.
- Patient-Centered Outcomes Research (PCOR) inventory and evaluation awards to catalog PCOR comparative effectiveness research activities and infrastructure to track investments in comparative effectiveness research going forward.

To execute Recovery Act funding effectively, AHRQ awards focus on the following areas of PCOR/comparative effectiveness research:

- Horizon scanning awards will identify new and emerging issues for comparative effectiveness review investments. Some of the richest topics for comparative effectiveness research will likely be found at the frontier of new health care and systems interventions, where there may be great promise but uncertain population benefits and risks. Horizon scanning is vital to understanding the relevant health care context and landscape, as a basis for identifying and beginning to prioritize among research needs.
- Evidence synthesis awards will increase the number of comparative effectiveness reviews conducted through AHRQ's Evidence-based Practice Center (EPC). The ultimate goal of comparative effectiveness research reviews is to present the "state of the science" on a given topic in a manner that can be directly applied to decisions made by users of health care information. These users include clinicians,

patients and caregivers, policymakers, and payers, and may be individuals or their related organizations. This program allows for input from all perspectives into the development of the research and implementation of the findings.

- Evidence gap identification awards will develop a formal process that will involve stakeholders, including clinicians, funding agencies, and researchers, to consider the gaps identified in systematic comparative effectiveness reviews. This will help shape future research agendas and set priorities for a national investment in new comparative effectiveness research based on the findings. Some projects have already been completed and identify future research topics in the important areas of hip fracture, prostate cancer, breast cancer, and diabetes.
- Translation and dissemination awards will expand AHRQ's translation and dissemination activities and strengthen the infrastructure supporting these activities by supporting grantees in developing and implementing innovative approaches to integrating comparative effectiveness research findings into clinical practice and health care decisionmaking. For example, one research team is adapting a summary of evidence about antidepressants produced by AHRQ for use as a decision aid—a tool that helps patients, including those with low health literacy, understand the pros and cons of these medicines. Other researchers will adapt, evaluate, and disseminate AHRQ summary guides on hypertension and type 2 diabetes for hard-to-reach and underserved black men, including men who are homeless or living in public housing, men in the correctional system, and men who participate in faith-based organizations.
- Evidence generation awards will establish a coordinated national investment in practical/pragmatic comparative effectiveness research. These studies will measure effectiveness—the benefit the treatment produces in routine clinical practice—and will include novel study designs focusing on real-

AHRQ 2010 Annual Conference

More than 1,800 people attended AHRQ's 2010 Annual Conference, held September 26-29, 2010. This year's annual conference featured 70 sessions that covered such topics as transforming health care delivery, developing new patient care models, strengthening preventive care and reducing health disparities, improving quality and patient safety, and measuring and reporting on provider and system performance. Interactive tabletop exhibits and 60 research posters filled the mAHRQet Place Café. For the first time, AHRQ also provided continuing education credits for a number of sessions. Sessions included:

- New and Improved: Registries for Evaluating Patient Outcomes and HIT
- Reducing HAIs: Effective Change Strategies From a National Collaborative of Regional HAI Programs
- Understanding Trends in Medical Care Costs: Analyzing the Impact of Changes in the Health Care System
- Quality Improvement Initiatives: National Implementation of CUSP and TeamSTEPPS®
- Medical Homes: Refining the AHRQ Blueprint
- Identifying, Preventing, and Reducing Diagnostic Error in Health Care
- Do Patient-Centered Medical Homes Lower Costs and Improve Quality?
- The Value of Information: An Innovative Approach to Prioritizing Comparative Effectiveness Research
- The Use of Trigger Tools to Identify Risks and Hazards to Patient Safety
- Improving Preventive Health Care for Older Americans

AHRQ's 2011 Annual Conference is scheduled for September 18-21, 2011.

world populations. One of the many projects will compare the effectiveness of surgery and radiation for localized prostate cancer, the most common male cancer. It will focus on modern technologies and control for differences in patients and treatments that may affect outcomes. Another study will compare treatments of bipolar disorder in real-world settings. Figuring out which treatments work best for which patients helps individuals assess options when making decisions regarding health care.

- Training and career development awards support the career development of clinicians and doctoral researchers focusing their research on the synthesis, generation, and translation of new scientific evidence and analytic tools for comparative effectiveness research. These awards will train leaders in comparative effectiveness research who will contribute substantially to

transforming our health system to one centered on improved health outcomes for all patients.

- The Community Forum initiative will expand AHRQ's existing efforts to obtain professional and consumer input to inform its Effective Health Care Program activities, build methods and capacity for obtaining public input, and allow the program to obtain guidance and insights from a broader public involvement.

For more information on AHRQ's Recovery Act investments, go to www.ahrq.gov/fund/ccfarra.htm.

Mission

As 1 of 12 agencies within HHS, the mission of AHRQ is to improve the quality, safety, efficiency, and effectiveness of health care for all Americans. The Agency fulfills this mission by working with information that:

- Reduces the risk of harm from health care services by using evidence-based research and technology to promote the delivery of the best possible care.
- Transforms the practice of health care to achieve wider access to effective services and reduce unnecessary health care costs.
- Improves health care outcomes by encouraging providers, consumers, and patients to use evidence-based information to make informed treatment decisions.

Ultimately, the Agency achieves its goals by translating research into improved health care practice and policy. Health care providers, patients, policymakers, payers, administrators, and others use AHRQ research findings to improve health care quality, accessibility, and outcomes of care. Disseminating AHRQ's research findings helps support a Nation of healthier, more productive people and results in an enhanced return on the Nation's substantial investment in health care. This report presents key accomplishments, initiatives, and research findings from AHRQ's research Portfolios during FY10.

The Agency's mission helps HHS achieve its strategic goals to transform health care, implement the Recovery Act, promote early childhood health and development, help Americans achieve and maintain healthy weight, prevent and reduce tobacco use, protect the health and safety of Americans in public health emergencies, accelerate the process of scientific discovery to improve patient care, and ensure program integrity and responsible stewardship. The Agency has a broad research portfolio that touches on nearly every aspect of health care including:

- Clinical practice.
- Outcomes and effectiveness of care.
- Evidence-based practice.
- Primary care and care for priority populations.
- Health care quality.
- Patient safety/medical errors.
- Organization and delivery of care and use of health care resources.
- Health care costs and financing.
- Health information technology.
- Knowledge transfer.

AHRQ's Customers

Clinicians use AHRQ's evidence-based tools and research to deliver high-quality health care and to work with their patients as partners. AHRQ also provides clinicians with clinical decision-support tools as well as access to evidence-based guidelines, preventive care recommendations, and quality measures.

Policymakers, purchasers, health plans, and health systems use AHRQ research to make more informed decisions on health care services, insurance, costs, access, and quality. Public policymakers use the information produced by AHRQ to expand their capability to monitor and evaluate changes in the health care system and to devise policies designed to improve its performance. AHRQ works with State policymakers to strengthen their Medicaid programs through a learning network of all Medicaid Medical Directors. In addition, AHRQ has worked closely with States on new efforts to assess and improve quality of care for children enrolled in CHIP and Medicaid.

Purchasers use the products of AHRQ-sponsored research to obtain high-quality health care services. Health plan and delivery system administrators use the findings and tools developed through AHRQ sponsored research to make choices on how to improve the health care system's ability to provide access to and deliver high-quality, high-value care.

AHRQ research helps consumers get and use objective, evidence-based information on how to choose health plans, doctors, or hospitals. In addition, AHRQ helps consumers play an active role in their health care and reduce the likelihood that they will be subject to a medical error. Personal health guides developed by AHRQ help people

keep track of their preventive care and other health services they receive.

Portfolios of Research

Research at AHRQ is performed under Portfolios that encompass nearly every aspect of health care. These research Portfolios include: Patient-Centered Outcomes Research, often referred to as Comparative Effectiveness, Patient Safety, Health Information Technology, Prevention/Care Management, and Value. AHRQ also has a number of Crosscutting Activities related to quality, effectiveness, and efficiency. AHRQ's Knowledge Transfer and Implementation Program supports these Portfolios by disseminating products, tools, and research to specific audiences taking full advantage of all new media and electronic networking vehicles.

Patient-Centered Outcomes Research/ Comparative Effectiveness

The mission of the Comparative Effectiveness Portfolio is to provide health care decisionmakers—including patients, clinicians, purchasers, and policymakers—with up-to-date, evidence-based information about their treatment options to make informed health care decisions. The evidence is generated from research studies that compare drugs, medical devices, test, surgeries, or ways to deliver health care.

Patient Safety

This Portfolio aims to identify risks and hazards that lead to medical errors and find ways to prevent patient injury associated with delivery of health care. Important goals include: providing information on the scope and impact of medical errors, identifying the root causes of threats to patient safety, and examining effective ways to make system-level changes to help prevent errors. Disseminating and translating research findings and

Navigating the Health Care System

AHRQ Director Carolyn Clancy, M.D., presents a series of brief, easy-to-understand advice columns for consumers to help them navigate the health care system. The columns address important issues such as how to recognize high-quality health care, how to be an informed health care consumer, and how to choose a hospital, doctor, and health plan. In addition, videos featuring Dr. Clancy on Navigating the Health Care System encourage patients to ask questions of their doctor, nurse, or pharmacist and to speak up if they have concerns about medications, tests, or procedures. Other topics include tips for taking medicines safely and how to avoid medical errors. In FY10, column subjects included:

- Improving Your Health Literacy
- Treating High Cholesterol
- Why It's Wise to Use a Health Advocate
- How to Avoid the Round-Trip Visit to the Hospital
- Healthcare-Associated Infections: They Can Happen to You
- Same-Day Surgery: What You Should Know
- Comparing Blood Pressure Medicines
- Comparing Diabetes Drugs
- Comparing Medical Treatments for Antidepressants
- Does Your Hospital Do A Good Job?
- Open Enrollment: What To Consider When Choosing a Health Plan

To view the columns and videos, go to www.ahrq.gov/consumer/cc.htm.

methods to reduce errors are also important. Additionally, the portfolio aims to develop an environment or culture within health care settings that encourages health professionals to share and report information about medical errors and ways to prevent them.

Health Information Technology

This Portfolio aims to identify challenges to health information technology (IT) adoption and use, solutions and best practices for making health IT work, and tools that will help hospitals and clinicians successfully incorporate new health IT. Research supported by the Portfolio aims to develop evidence and inform policy and practice on how health IT can improve the quality of American health care. Further portfolio goals include making the best evidence and consumer health information available electronically when and where it is needed, and developing secure and private electronic health records.

Prevention/Care Management

The mission of the Prevention/Care Management Portfolio is to improve the quality, safety, efficiency, and effectiveness of the delivery of evidence-based preventive services and chronic care management in ambulatory care settings. Portfolio goals include: (1) supporting clinical decisionmaking for preventive services through the generation of new knowledge, synthesis of evidence, and dissemination and implementation of evidence-based recommendations, and (2) developing the evidence base for and implementation of activities to improve primary care and clinical outcomes through health care redesign, clinical-community linkages, self management support, integration of health IT, and care coordination.

Value

The goal of the Value Portfolio is to help assure that consumers and patients are served by health care organizations that reduce unnecessary costs (waste) while maintaining or improving quality. This is done by developing measures, data, evidence, tools, and strategies that health care organizations, systems, insurers, purchasers, and policymakers use to reduce unnecessary costs while maintaining or improving quality. Strategies

include process redesign, leadership and management strategies, organizational and community-wide quality improvement initiatives, legal and regulatory changes, consumer choice, public reporting, incentives, and payment changes. Also, the portfolio conducts and supports methodological work and modeling to improve data and research, and to facilitate its use for policy and management.

Crosscutting Activities

The activities in this area provide the core infrastructure used by the AHRQ portfolios to do their work. Activities in this Portfolio include data collection and measurement, dissemination and translation, and program evaluation. In addition, support is provided for investigator-initiated and targeted research grants and contracts that focus on health services research in the areas of quality, effectiveness, and efficiency.

Knowledge Transfer and Implementation Program

Translating research into practice as quickly as possible is a high priority for AHRQ. As part of its mission to develop programs for disseminating and implementing the results of Agency activities, the Office of Communications and Knowledge Transfer directs a Knowledge Transfer and Implementation Program to promote the use of AHRQ tools, products, and initiatives by various stakeholders. Knowledge Transfer activities consist of a series of projects that disseminate and implement AHRQ products, tools, and research to a specific target audience. The goals are to:

- Enhance awareness about AHRQ's tools, research, and products.
- Assist target audiences in the actual implementation of AHRQ tools, research, and products.
- Gain feedback regarding the successes and barriers that organizations are experiencing in implementing AHRQ initiatives.

- Develop case studies showing how target audiences have actually disseminated and implemented specific AHRQ products.

Examples of dissemination projects and case studies are provided throughout this report. For more information about AHRQ's Knowledge Transfer program, go to www.ahrq.gov/news/ktint.htm.

Medical Expenditure Panel Survey

In addition to research portfolios, AHRQ supports the Medical Expenditure Panel Survey (MEPS). In FY10, MEPS was instrumental in informing HHS as well as the White House on health care spending and the costs and availability of health insurance, especially in the context of health reform legislation. Data from MEPS were incorporated into responses to a series of Congressional requests for assistance on information regarding employer costs for health insurance, health expenditures, and Medicaid participation rates. MEPS data were also used to update the Chronic Disease Cost Calculator, a tool for estimating the burden and cost of chronic disease among Medicaid beneficiaries. During FY10, the MEPS program produced 17 public use files and more than 35 statistical publications. This year, publications focused on trends in employer-sponsored insurance and trends in expenditures for specific services.

MEPS is the only national source of annual data on the specific health services that Americans use, how frequently they are used, their cost, and the sources of paying for them. MEPS is designed to help the managers and users of the nation's health care system understand how changes in private health insurance, and other dynamics of today's market-driven health care delivery system, affect health care in America. MEPS provides the foundation for estimating the impact of health policy changes on different economic groups and special populations, such as the poor, elderly, the uninsured, and racial/ethnic groups.

MEPS consists of a family of surveys that gather information about families and individuals, their

medical providers, and employers across the United States. The MEPS Household Component (MEPS-HC) collects information from families on demographic characteristics, health conditions, health status, use of medical care services, charges and payments, access to care, satisfaction with care, health insurance coverage, income, and employment. MEPS-HC public use data files released in FY10 cover the calendar year 2008, as well as early look data for 2009. These data files include full-year population characteristics; job information, home health care use and expenses; expenses for other medical equipment and services; and dental, medical, emergency room, office-based

Report by the Maryland Health Care Commission on Employer-Sponsored Coverage

The Maryland Health Care Commission has released a new publication based on MEPS data to summarize the characteristics of employer-sponsored coverage in Maryland. This report, *Medical Expenditure Panel Survey – Insurance Component, Maryland Sample through 2008*, provides information on employer-sponsored health insurance in private-sector establishments in Maryland in 2008. The report provides data on the establishments in Maryland that offer health insurance and the employees in these establishments who are eligible and enrolled, by employer category (e.g., firm size, industry grouping) and worker characteristics (e.g., full-time). The report also provides information on premiums and employee contributions, and details the numbers and types of employees who lack access to health insurance through private-sector employers in Maryland. Information provided in this report is based on an analysis of the Maryland Sample from the MEPS-IC survey, an annual national survey of business establishments (locations) conducted by the United States Census Bureau for the Agency for Healthcare Research and Quality. For a copy of the report, go to http://mhcc.maryland.gov/health_insurance/insurance_coverage/mepsic2008.pdf.

Table 1. MEPS responses to request for assistance on health initiatives for FY10

Source of Request	Assistance Provided
Senate Finance Committee	Detailed estimates and data analyses of the concentration and persistence in the level of health expenditures over time, controlling for age and health insurance coverage status.
Congressional Research Service	Detailed tabulations of employer costs for health insurance as a percent of establishment payroll, by firm size, based on MEPS–Insurance Component (MEPS-IC) 2008 private coverage data. National estimates from MEPS of the characteristics and numbers of individuals with group and nongroup health insurance coverage. Detailed estimates of COBRA enrollment for 2005–2008 for the private and government sectors, based on MEPS-IC data. Detailed estimates of trends in total premium costs and employers' and employees' shares for private employers, as well as costs to State and local governments, based on MEPS-IC data.
House Ways and Means Committee	Distributional estimates of employer-sponsored premiums, with a focus on premiums above the 80th percentile in the cost distribution, further disaggregated by industry type. Estimates derived from the MEPS-IC 2008 private coverage data.
Office of Health Reform, HHS	Detailed estimates of out-of-pocket spending for medical care according to certain dollar thresholds, by specific household characteristics.
Senate Joint Committee on Taxation	Detailed estimates of the socio-demographic characteristics of individuals with high cost premiums.
Assistant Secretary for Planning and Evaluation, HHS	Estimates of the population with extreme financial burdens for health care, obtained from MEPS. A national estimate for the United States was produced that is methodologically consistent with WHO and World Bank estimates. Estimates of single and non-single health insurance premiums at the State level, based on MEPS-IC data, for use in determining the small business tax credit included in the health care reform legislation.
Meena Seshamani, Office of Healthcare Reform, HHS	Estimates of the 2-year health insurance status (transitions) of persons under age 65 who were insured through an employer in January 1996, by age, race/ethnicity, perceived health status, chronic conditions, gender, poverty status, urban/rural status, and employment status.
House Committee on Veterans' Affairs/General Accounting Office	Detailed consultations and expert review of a Department of Veterans Affairs study of post traumatic stress disorder.
Senate Committee on Aging	Detailed briefing on AHRQ's assisted living collaborative, focusing on consumers and their use of assisted living.
Office of Congressman Lamar Smith	National estimates of the cost of providing non-emergent care in the emergency room compared with physicians' offices, using MEPS household data.
Office of Congressman Michael H. Michaud	Estimates of health insurance offer rates for large employers in Maine, derived from the MEPS-IC 2008 private coverage data.

provider, and outpatient hospital visits. MEPS also surveys medical providers of persons in the MEPS-HC to supplement information on health care expenses and payments.

The MEPS Insurance Component (MEPS-IC) collects data from a sample of private- and public-sector employers on the health insurance plans they offer their employees. The collected data include the number and types of private insurance plans offered (if any), premiums, contributions by employers and employees, eligibility requirements, benefits associated with these plans, and employer characteristics. MEPS-IC data released in FY10 included 2009 MEPS-IC Health Insurance Tables—National Estimates, as well as State and Metro Area Estimates.

MEPS and the Chronic Disease Cost Calculator

To help the States estimate the burden and financial impact of chronic diseases among their Medicaid beneficiaries, the Centers for Disease Control and Prevention and RTI International, in partnership with AHRQ, the National Association of Chronic Disease Directors, and the National Pharmaceutical Council, developed the Chronic Disease Cost Calculator.

The Chronic Disease Cost Calculator is a downloadable tool that makes use of MEPS data to support States in:

1. Estimating State Medicaid expenditures for six chronic diseases—congestive heart failure, heart disease, stroke, hypertension, cancer, and diabetes.
2. Generating estimates of the costs to Medicaid of selected chronic diseases using customized inputs (e.g., prevalence rates and treatment costs).

In FY10, these updates have been incorporated into Version 2 of the Chronic Disease Cost Calculator, which includes:

- Estimates of the prevalence and costs of asthma, arthritis, and depression;

- Expanded estimates, including costs to Medicare, private payers, and the total population.;
- Estimates of absenteeism costs; and
- Projections of future medical costs over the next 10 years.

Requests for Assistance on Health Initiatives

MEPS is an important data source to inform health care policy decisionmaking at the State and national levels. This was especially true as health reform initiatives were considered at the Federal level. In FY10, Congressional and Executive Branch analysts requested MEPS data on health care expenditures, including the costs of health insurance to employers and employees, costs of private health insurance, out-of-pocket spending, the financial burden of health care, consumers' use of assisted living, and the costs of emergency room care compared with care provided in physicians' offices. All analyses are posted at www.ahrq.gov. Table 1 briefly summarizes some of the responses AHRQ provided to specific requests in FY10.

Additional details on these requests can be found at www.ahrq.gov/data/mreqahi.htm.

MEPS Publications

MEPS data are displayed in a full range of analytic publications, including statistical briefs, research findings, methodology reports, and chartbooks. Examples follow of the findings in these publications:

- The annual premium for an employer-sponsored family health plan cost about 54 percent more in 2009 than it did in 2000: \$13,027 versus \$8,437 respectively, adjusted for inflation. During the same period, the average cost of an annual premium for a single individual rose by 41 percent, from an inflation-adjusted \$3,308 to \$4,669. In addition:

Healthcare 411

Healthcare 411 is an audio podcast series produced by AHRQ that supports AHRQ's mission to improve the quality, safety, efficiency, and effectiveness of health care for all Americans. Using the latest multimedia technologies, our *Healthcare 411* stories offer helpful information about new findings from AHRQ-sponsored research to a broad audience of consumers, employers, health care providers, researchers, educators, and others in the form of concise 60-second audio news programs that feature current research on important health care topics. Archived programs on the *Healthcare 411* Web site include longer-format interviews that range from 60 seconds to 15 minutes on a variety of health topics. Most previously released programs remain available and searchable on the *Healthcare 411* site. The site also hosts audio and video public service announcements produced by AHRQ and provides links to related consumer publications and other studies and guides funded by AHRQ. In FY10, podcasts released included:

- **Creating a Personal Medical Record** – Creating a personal medical record can help consumers receive better medical care, especially in an emergency.
- **Online Health Information** – Tips on how to find reliable online sources of health information.
- **New Guides for Spanish-Speaking Patients** – New Spanish-language guides serve as helpful resources to understand and compare treatment options.
- **Treating High Cholesterol** – Understanding the benefits and risks of various medicines used to treat high cholesterol.
- **Keep Track of Your Medicines** – Encourages health care consumers to take an active role in their health care by keeping a readily available pill card that lists all the medications they take.
- **Tips for Going Home from the Hospital** – Emphasizes the need to clarify all aspects of medical care, including medications, in preparation for leaving the hospital.
- **Bring a Health Advocate to Appointments** – Encourages health care consumers to bring a friend or family member to doctor appointments to ensure they collect accurate information about their condition.
- **Men's Health** – More men than women are hospitalized for preventable conditions.
- **Asking Questions To Get the Care You Need** – Be prepared for doctor visits by writing down questions and bringing them to the visit. Patients who ask questions get better quality health care.
- **Where Medical Errors Occur and How To Avoid Them** – Many of the medical errors that occur could have been prevented. Taking steps to reduce the chance of a medical error.
- **Diabetes and the Flu** – More adults with diabetes are getting flu shots.
- **Healthcare-Associated Infections** – How patients can reduce their risk.
- **How to Avoid the Round-Trip Visit to the Hospital** – Medical problems that send patients back to the hospital can be avoided.

- Just under a third (30.5 percent) of the 59 million U.S. workers who were enrolled in employer-sponsored health plans had family coverage, while about half were enrolled in single coverage plans, and nearly one-fifth had employee-plus-one coverage; that is, a plan that covered only the employee plus one family member at a lower premium than full family coverage.
- Among the 10 largest States, New York had the highest average premiums, ranging from \$13,757 for family plans to \$5,121 for single coverage, while Ohio had the lowest, ranging from \$11,870 for family coverage to \$4,261 for single coverage plans.
- The average annual employee contributions to health insurance premiums were \$3,474 for family coverage (26.7 percent of the average family premium), \$2,363 for employee-plus-one coverage (26.1 percent of the average premium) and \$957 for single coverage (20.5 percent of the average single premium).
- About 21 percent of workers with single coverage, 10 percent with employee-plus-one coverage, and 11 percent with family coverage made no contribution toward their health insurance premium. However, these proportions varied among the 10 largest States.
- In 2007, only a third of the 16.5 million Americans who reported that they had diabetes had all three examinations that are considered critical for managing their disease and preventing complications: checking the patient's blood sugar levels, examining their eyes for damage, and evaluating their feet for indications of poor circulation.
- Just 58 percent reported having had one or two of the exams, while 3 percent didn't have any done, and 6 percent said

Japan's Institute for Health Economics and Policy medical care expenditure survey modeled after MEPS

The Institute for Health Economics and Policy, an independent health care policy research organization founded by Japan's Ministry of Health, Welfare, and Labour, has conducted a medical care expenditure survey to improve the health care delivery and financing system in Japan. The survey is modeled after AHRQ's MEPS.

According to Naohiro Mitsutake, Ph.D., Associate Director of the Institute's research department, the information and advice the Japanese researchers received from AHRQ "were valuable in the design of our study."

The Japanese researchers turned to MEPS to reach their ultimate goal. They felt the government should have a panel design database, but needed a carefully designed survey methodology before beginning to collect data.

The initial Japanese pilot study, known as MEPS-J, was conducted by Institute researchers in 2008 and 2009 to test feasibility and capture new information on health care spending in the country. The study's findings showed significant private health insurance spending in a country where all residents are covered by public health insurance. While all residents of Japan are covered by one of the public health insurance programs, most residents under age 75 incur a 30 percent copayment at the time of service. Private insurance companies offer policies that cover some of those copayments. The MEPS-J survey found that more than 70 percent of respondents had one of the private insurance policies, which cover part of the out-of-pocket payments—a high rate of private insurance coverage that was not previously known.

In Japan, the government has several datasets which are regularly surveyed, such as the Patient Survey, the Survey of Medical Institutions, and Medical Care Claims Survey; however, there were no panel design surveys that included health care utilization as well as health status over time.

- they didn't know if they had had any of these tests.
 - Privately insured adults ages 18 to 64 were twice as likely as adults who were uninsured to have had all three tests (36 percent vs. 18 percent).
 - About 40 percent of adults ages 65 and older with diabetes who had Medicare plus a secondary private insurance plan had had all three tests, compared with 31.5 percent of those with Medicare only.
- For Americans ages 45 to 64 in 2006, total health care expenses (\$370 billion) were about double the inflation-adjusted total for 1996 (\$187 billion). The proportion of people ages 45 to 64 who incurred medical expenses did not change (about 89 percent), but average annual health care expenses for those with expenses increased from \$3,849 (after adjusting for inflation) to \$5,455. Prescribed medicines were a substantially higher proportion of total expenses in 2006 than in 1996 (25 percent and 15 percent, respectively). The proportion of total expenses for hospital inpatient care decreased (from 36 percent to 26 percent). The average expense per service rendered increased significantly (in 2006 dollars):
 - Physician office visit: \$128 in 1996 to \$207 in 2006
 - Inpatient hospital day: \$3,005 to \$3,491
 - Emergency room visit: \$563 to \$947
 - Dental visit: \$195 to \$265
 - Prescription medicines: \$103 to \$199
- Purchases of cholesterol and diabetes prescription drugs by elderly Medicare beneficiaries reached nearly \$19 billion in 2007—about one-fourth of the approximately \$82 billion spent for medications for the elderly. Metabolic drugs, which are used to reduce cholesterol levels, keep diabetes under control, and combat weight and thyroid problems, topped the list of the five leading categories of drugs purchased by the elderly. The other four drug classes in the top five categories in 2007 were:
 - Cardiovascular drugs, including blood pressure medicines, diuretics, and drugs to control abnormal heart rhythms such as atrial fibrillation (\$15 billion)
 - Central nervous system drugs, such as arthritis and other pain medications (\$8 billion)
 - Gastrointestinal drugs, which include anti-acid medications (\$7 billion)
 - Hormones, to treat osteoporosis, cancer, and other conditions (\$5 billion)

Reports, data files, and additional information on MEPS are available online at www.meps.ahrq.gov.

Patient-Centered Outcomes Research/Comparative Effectiveness Portfolio

AHRQ's Effective Health Care Program is a Federal leader in the growing field of comparative effectiveness research. Research that evaluates the benefits and harms of different health care interventions and ways to deliver health care helps clinicians and patients work together to choose the most appropriate treatment for an illness or condition.

The Effective Health Care Program, created by Congress in Section 1013 of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, produces rigorous reviews of existing scientific evidence for different health care interventions, funds new research to help fill gaps in our knowledge about effectiveness of different health care options, and provides concise, plain language guides for several audiences, including Spanish-speaking patients. Additional products are intended to specifically reach clinicians, nurses, pharmacists, and medical students include continuing education activities, training modules, downloadable presentations, Webcasts, videos, and podcasts in English and Spanish.

In FY10, the Effective Health Care Program released a total of 51 comparative effectiveness research reviews, original research findings, and summary guides for clinicians and patients. These publications included comparative effectiveness reviews of treatment options for common conditions such as nonoperative and operative treatments for rotator cuff tears, comparing core needle and surgical excision biopsy for diagnosing breast lesions, and radiotherapy treatments for patients with head and neck cancer. For emerging treatment options, the program released a technical report on percutaneous heart valve replacement. The program also published new research findings on using electronic medical records and administrative claims data for assessing type 2 diabetes care and quality measures for end-of-life care. In 2010, consumer summary guides and clinician guides remained the most popular products disseminated through www.effectivehealthcare.ahrq.gov and the AHRQ publications clearinghouse.

Comparative Effectiveness Research Reviews (CERs)

Evidence-based Practice Centers (EPCs) thoroughly review existing scientific studies to compare treatments and health strategies to characterize benefits and harms of different options to identify where more research is needed.

Three of the CERs published in FY10 are briefly summarized here:

- *Comparative Effectiveness of Core-Needle and Open Surgical Biopsy for the Diagnosis of Breast Lesions.* Breast cancer is the second most common malignancy of women, with approximately 250,000 new cases diagnosed each year. More than 180,000 of these cases are invasive breast cancer. Early detection and treatment improves survival. Routine screening with physical examination and mammography is widely used in the United States. Suspicious findings on mammography may require a biopsy for diagnosis. Over 1 million women have breast biopsies each year in the United



States. Between 20 and 30 percent of these biopsies yield a diagnosis of breast cancer. This review compares traditional surgical biopsies with various types of core-needle biopsies, which involve removing tissue through a hollow-core needle inserted through the skin. The researchers found that certain core-needle biopsies could distinguish between malignant and benign lesions approximately as accurately as open surgical biopsy, which is commonly considered the “gold standard” method of evaluating suspicious lesions. The report indicates that women who are initially diagnosed with breast cancer by surgical biopsy are more likely to undergo multiple surgical procedures during treatment than women who are initially diagnosed with breast cancer by core needle biopsy. Because it is less invasive, core-needle biopsy costs less than open surgical biopsy, consumes fewer resources, and generally is preferred by patients, according to the report.

- *Comparative Effectiveness and Safety of Radiotherapy Treatments for Head and Neck Cancer.* According to the National Cancer Institute, head and neck cancer accounts for nearly 3 to 5 percent of all cancer in the United States. These types of cancer are more common in men and in people older than age 50. Around 47,560 men and women in this country develop head and neck cancer every year. Tobacco and alcohol use are common risk factors for this cancer. This review found that intensity-modulated radiation therapy (IMRT) reduces side effects when treating head and neck cancers. IMRT employs three-dimensional

imaging and other technological and treatment enhancements that tightly control and target the amount of radiation delivered to the target area. The researchers found that IMRT leads to fewer cases of xerostomia (dry mouth) than traditional two-dimensional or three-dimensional radiation therapies. However, the researchers did not find evidence that IMRT is more successful than any other kind of radiation therapy in reducing tumors. In examining the evidence regarding proton beam radiation therapy, a technology that some clinicians believe targets radiation even more precisely than IMRT, the researchers did not find enough evidence to draw conclusions regarding its benefits or potential side effects.

- *Comparative Effectiveness of Angiotensin-Converting Enzyme Inhibitors or Angiotensin II Receptor Blockers Added to Standard Medical Therapy for Treating Stable Ischemic Heart Disease.* This review found that two medications—angiotensin-converting enzyme (ACE) inhibitors and angiotensin II receptor blockers (ARBs)—commonly used to treat high blood pressure appear to be effective in treating stable ischemic heart disease. Researchers found that treatment with these two medications can lead to a reduction in death, risk of heart attack, risk of stroke, and fewer hospitalizations for heart failure for patients suffering from stable ischemic heart disease. However, the drugs have risks. The risks associated with ACE inhibitors include a persistent cough, sudden fainting, too much potassium in the blood, and dangerously low blood pressure. Risks associated with ARBs include too much potassium in the blood and low blood pressure. Patients with stable ischemic heart disease who take an ACE inhibitor in addition to standard treatment can reduce their likelihood of death from heart attack or heart failure, non-fatal heart attacks, hospitalization for heart failure, and revascularization. Patients who take an ARB in addition to standard medications can reduce their risk of death from a heart-related cause, heart attack, or stroke.

Technical Briefs

A Technical Brief provides an overview of key issues related to a clinical intervention or health care service—for example, current indications for the intervention, relevant patient population and subgroups of interest, outcomes measured, and contextual factors that may affect decisions regarding the intervention. Technical Briefs generally focus on interventions for which there are limited published data and too few completed protocol-driven studies to support definitive conclusions. The emphasis, therefore, is on providing an early objective description of the state of the science, a potential framework for assessing the applications and implications of the new interventions, a summary of ongoing research, and information on future research needs. The Technical Brief published in FY10 is summarized below:

- *Percutaneous Heart Valve Replacement.* A newer, less invasive method of heart valve replacement shows promise and may be appropriate for patients who cannot tolerate traditional open heart surgery, but more research is needed to understand its potential risks and benefits. Percutaneous heart valve replacement is a realistic option for some patients with heart valve disease, especially older or sicker patients. Approximately 92 percent of patients who received a percutaneous valve survived the procedure; of those, 86 percent survived for at least 30 days. However, information is lacking on the potential long-term benefits and risks of this procedure, particularly compared with open heart valve replacement surgery. The report did not conclude that any of the seven replacement valves studied is safer or more effective than another.

Technical brief topics expected to be published in FY11 include:

- Evaluation of Suspicious Skin Lesions Using Noninvasive Diagnostic Techniques
- Stereotactic Radiosurgery for Extracranial Solid Tumors

- Wheeled Mobility (Wheelchair) Service Delivery
- Neurothrombectomy Devices for Treatment of Acute Ischemic Stroke
- Use and Safety of Positional Magnetic Resonance Imaging in the Management of Patients with Musculoskeletal Pain
- Fetal Surgery

New Research Reports

These reports are based on clinical research and studies that use health care databases and other scientific resources and approaches to explore practical questions about the effectiveness, safety, and appropriateness of health care items and services. They are produced by research centers that are part of AHRQ's Developing Evidence to Inform Decisions about Effectiveness (DEcIDE) Network and AHRQ's Centers for Education & Research on Therapeutics (CERTs).

In FY10, the Effective Health Care Program released 14 new research reports, two of which are summarized below:

- *Who Uses Exenatide for Glucose Control in Diabetes Mellitus? A Retrospective Cohort Study of a New Therapy.* Exenatide was approved by the Food and Drug Administration (FDA) in April, 2005 as adjunctive therapy for type 2 diabetes mellitus (DM). Researchers evaluated whether early use of this drug was consistent with the FDA-approved indications for use. Beginning in June 2005, 3,225 people filled a prescription for exenatide. Of these, 22 percent of users were obese, compared to 11 to 15 percent using other medications. Fourteen percent of users had used no other medication for DM in the preceding year, suggesting that exenatide was their initial therapy. Thirty percent filled a thiazolidinedione prescription within 60 days of filling exenatide. The researchers concluded that exenatide was used frequently early after its approval as monotherapy or with a thiazolidinedione (neither is an FDA-approved indication). Exenatide users had a higher

prevalence of obesity than patients using other therapies, suggesting that its weight-lowering benefits may be widely known.

- *Effectiveness of Isosorbide Dinitrate and Hydralazine in Racial/Ethnic Subgroups With Heart Failure.* Researchers assessed the associations between treatment with hydralazine-isosorbide dinitrate (H-ISDN) and mortality or heart failure hospitalization in veterans with heart failure. Their findings showed that H-ISDN prescription was not associated with risk of death in five of nine subgroups predefined by race/ethnicity (black, white, Hispanic) and time of initiation of H-ISDN (1 to 4, 5 to 12, or more than 12 months following heart failure diagnosis), but was associated with an increased risk of death in the four subgroups with longer times to initiation. H-ISDN was associated with a significantly increased risk of heart failure hospitalization in all but one subgroup. H-ISDN was associated with significantly lower risk for both mortality and hospitalization in blacks than in Hispanics or whites. Other evidence-based heart failure therapies (e.g., angiotensin converting enzyme inhibitors, beta-blockers, and combinations) had a strong association with reduced mortality. The researchers concluded that H-ISDN was not associated with significant reduction in mortality or hospitalization for heart failure in any subgroups analyzed. Blacks had lower risks of adverse outcomes with H-ISDN than Hispanics or whites.

Summary Guides

These short, plain-language guides—tailored to clinicians, consumers and patients, or policymakers—summarize research reviews' findings on the effectiveness and risks of treatment options. Patient guides provide background on health conditions, while clinician and policymaker guides rate the strength of evidence behind a report's conclusions. The guides on medications also contain basic wholesale price information.

Among the new consumer and clinical guides released in FY10 were:

- *Thinking About Having Your Labor Induced?* – This guide provides women with information about elective induction and helps answer questions, including: What are the possible problems with elective induction? What don't we know yet about elective induction?
- *Elective Induction of Labor: Safety and Harms* – This guide for clinicians summarizes evidence comparing the safety of elective induction of labor (induction at term without a medical indication) with expectant management (waiting for spontaneous labor in a term pregnancy). It also includes information about maternal and fetal outcomes when elective induction of labor is used.
- *Adding ACEIs and/or ARBs to Standard Therapy for Stable Ischemic Heart Disease: Benefits and Harms* – This guide summarizes evidence for clinicians to help address this question: “Should standard medical therapy in patients with stable ischemic heart disease be augmented with an ACEI (angiotensin-converting enzyme inhibitor) or an ARB (angiotensin II receptor blocker)?”
- *“ACE Inhibitors” and “ARBs” To Protect Your Heart?* – By providing simple text with a diagram, chart, and graph, this guide helps patients with stable coronary heart disease compare the benefits and possible side effects of ACEIs and ARBs.
- *Having a Breast Biopsy* – This guide for patients provides information about the different kinds of biopsies, what to expect during a breast biopsy, possible side effects, and research about how well different kinds of biopsies work to find cancer.
- *Core-Needle Biopsy for Breast Abnormalities* – This clinician guide compares core-needle biopsy with open surgical biopsy for diagnosing breast lesions. It also summarizes the accuracy and possible harms of various core-needle biopsy methods.



Slide Sets and CME/CE Credit

In FY10, AHRQ created the Effective Health Care Program Slide Library, which contains lectures created for faculty engaged in educating clinicians, researchers, and other health professionals in training. The lectures have slides, talking points, references that are linked to PubMed, and key words to find additional slides on a similar topic. Each slide can be individually viewed and downloaded, or the library can be searched by key word to assemble a customized presentation. In addition, presentations can be downloaded for faculty who are instructing clinicians, researchers, and other health professionals. Presentations can be downloaded in their entirety or searched by key word to assemble a customized presentation.

- *Comparative Effectiveness of Angiotensin-Converting Enzyme Inhibitors and/or Angiotensin II Receptor Blockers Added to Standard Medical Therapy for Treating Patients With Stable Ischemic Heart Disease and Preserved Left Ventricular Systolic Function.* This slide set is based on a CER of this topic.
- *Management of the Patient with Stable Ischemic Heart Disease and Preserved Left Ventricular Systolic Function.* This slide set is based on the CER Clinician and Consumer Guides for *Comparative Effectiveness of Angiotensin-Converting Enzyme Inhibitors (ACEIs) or Angiotensin II-Receptor Blockers (ARBs) Added to Standard Medical Therapy for Treating Stable Ischemic Heart Disease (IHD).*

- *AHRQ Training Modules for the Systematic Reviews Methods Guide.* This collection of 27 presentations was developed for instructors teaching clinical researchers and students about the science of systematic reviews and for Evidence-based Practice Center directors to use in mentoring and teaching new investigators. The presentations and quizzes are based on the *Methods Guide for Effectiveness and Comparative Effectiveness Reviews* and other resources.

AHRQ also developed continuing medical education (CME) and continuing education (CE) modules for health practitioners as well as continuing pharmacy education (CPE).

EHC Program Webcasts

Effective Health Care Program Webcasts are offered periodically to bring methodologists, researchers, and clinicians together to discuss research findings and the impact on future research needs.

- *New and Improved: Registries for Evaluating Patient Outcomes and HIT.* In this live Webcast from the AHRQ 2010 Annual Conference, the *Registries for Evaluating Patient Outcomes: A User's Guide: 2nd Edition*, was introduced. Following the presentations, participants discussed potential topics for future updates of this handbook.
- *Carotid Revascularization: Present Patterns of Use, What Will the Future Hold?* This Web conference featured speakers who described a DEcIDE study with two main objectives: (1) to evaluate temporal trends and geographical variation in the use of diagnostic imaging for carotid artery disease; and (2) to examine geographic variation in and predictors of carotid treatments and treatments for carotid artery disease. Medicare claims—one of the richest, most comprehensive sources of publicly available health care information—were used to gather retrospective data for analysis.

For more information on AHRQ's Effective Health Care Program, go to www.effectivehealthcare.ahrq.gov.

Evidence-based Practice Centers

Under the Evidence-based Practice Center (EPC) Program, institutions in the United States and Canada receive multiyear contracts to systematically review and critically appraise all relevant scientific literature on clinical, behavioral, organizational, and financing topics; methodology of systematic reviews; and other health care delivery issues. They also produce Evidence Reviews, Technical Briefs, and Updates (also see Research Reviews under Comparative Effectiveness Portfolio). The information in these reports is used by Federal and State agencies; private sector professional societies; health delivery systems; providers; payers; and others committed to evidence-based health care for informing and developing coverage decisions, quality measures, educational materials and tools, guidelines, and research agendas.

Recent Research Findings From the EPC Program

Some of the new evidence reports and technology assessments released by the 14 EPCs include:

- *Alzheimer's Disease and Cognitive Decline.* This report concluded there is insufficient evidence to identify which factors or interventions may increase or decrease the risks of developing Alzheimer's disease (AD) or other cognitive declines. Some studies suggest that diabetes, certain alleles of the apolipoprotein E gene, smoking, and depression increase the risk of AD and cognitive decline. Other studies suggest cognitive engagement and physical activity decrease risks. With the exception of the apolipoprotein E gene, however, evidence supporting these findings tended to be weak. The researchers noted that the data were often limited and the quality of evidence was low. The degree to which these factors modified risk was typically small to moderate for AD and small for cognitive decline.
- *Enhancing Use and Quality of Colorectal Cancer Screening.* This review found that factors such as low income or less education, being uninsured



or of Hispanic or Asian descent, not being acculturated into the United States, and having less or reduced access to health care are associated with lower screening rates for colorectal cancer (CRC). Factors that are associated with higher screening rates include being insured, of higher income or education, being non-Hispanic white, participating in other cancer screenings, having a family history of CRC or personal history of another cancer, and receiving a physician's recommendation to be screened. Interventions that effectively increased CRC screening with high strength of evidence include patient reminders, one-on-one interactions, eliminating structural barriers, and system-level changes. The largest magnitude of improvement came from one-on-one interactions and eliminating barriers. Purely educational small-media interventions did not improve screening rates.

- *Impact of Consumer Health Informatics Applications.* This review found that certain consumer health informatics (CHI) applications may effectively engage consumers, enhance traditional clinical interventions, and improve both intermediate and clinical health outcomes. In terms of the impact of CHI on intermediate health outcomes, the researchers found a significant positive impact for at least one intermediate health outcome for breast cancer, diet, exercise, alcohol abuse, smoking cessation, obesity, diabetes, mental health, asthma/COPD studies, and menopause/HRT utilization. Five out of the eight studies demonstrated a significant positive impact of CHI on at least one aspect of the doctor-patient relationship. In

terms of the impact of CHI on clinical outcomes, significant positive impact was demonstrated in at least one clinical outcome for breast cancer, diet, exercise, or physical activity, mental health, and diabetes. No studies included in this review found any evidence of consumer harm attributable to a CHI application.

- *Vaginal Birth After Cesarean: New Insights.* Researchers synthesized studies on vaginal birth after cesarean (VBAC) and found evidence that, while rare for both trial of labor and elective repeat cesarean, maternal mortality was significantly higher for elective repeat cesarean delivery. Risks for uterine rupture and perinatal death remain rare but elevated for trial of labor. Hispanic and black women were less likely than their white counterparts to have a vaginal delivery. The researchers found insufficient evidence on nonmedical factors such as medical liability, economics, hospital staffing, and structure and setting, which all appear to be important drivers for VBAC.

The EPCs are currently researching the following topics:

- Safety of Probiotics Used to Reduce Risk and Prevent or Treat Disease
- Management of Acute Otitis Media, Update
- Enabling Health Care Decisionmaking Through the Use of Health IT
- Assessment of Thiopurine Methyltransferase Activity in Patients Prescribed Azathioprine or Other Thiopurine-based Drugs
- Alcohol Consumption and Cancer Risk
- Inhaled Nitric Oxide in Preterm Infants
- Comparative Effectiveness of Treatments for Carotid Artery Stenosis
- Effectiveness of Cochlear Implants
- Lifestyle Interventions for Four Conditions: Breast Cancer, Prostate Cancer, Type 2 Diabetes Mellitus, and Metabolic Syndrome

For more information about the EPC Program, go to www.ahrq.gov/clinic/epcix.htm.

Centers for Education and Research on Therapeutics

The Centers for Education and Research on Therapeutics (CERTs) is a national program that conducts research and provides education to advance the optimal use of drugs, biologicals, and medical devices. The CERTs program, funded and overseen by AHRQ in consultation with the U.S. Food and Drug Administration (FDA), was originally authorized by Congress in 1997 to examine the benefits, risks, and cost effectiveness of therapeutic products; educate patients, consumers, doctors, pharmacists, and other clinical personnel; and improve quality of care while reducing unnecessary costs by increasing the appropriate use of therapeutics and preventing adverse effects and their medical consequences.

Clinician-Consumer Health Advisory Information Network (CHAIN)

Launched in 2009, this educational Web site offers expert perspectives, advice, and guidance on drugs, biological products, and medical devices. The Clinician-Consumer Health Advisory Information Network (CHAIN) links clinicians and consumers with information on therapeutics to assist in clinical practice and health care decisionmaking in areas where evidence is undergoing significant and rapid changes. The site also provides access to educational and informational resources developed from research conducted by CERTs. An educational section includes an online medication record and materials to assist consumers with clinician-patient conversations and decisionmaking. Resources for clinicians include a slide library that can be adapted to educate clinical audiences and educational materials that provide continuing medical education credit. For more information, go to www.chainonline.org.

Recent Research Findings From the CERTs Program

- *Proton-pump inhibitors and preventing bleeding ulcers.* Heart patients who took a stomach acid-suppressing proton-pump inhibitor along with

clopidogrel—a drug that prevents blood clots—were only half as likely to be hospitalized for upper digestive tract bleeding than those who used clopidogrel alone, according to a study by researchers from the Vanderbilt University Medical Center CERT. (*Annals of Internal Medicine*, March 2010)

- *Team-based care interventions for hypertension.* Adding pharmacists and nurses to the teams that help patients control their blood pressure (BP) improves outcomes, according to a systematic review of intervention studies by researchers at the University of Iowa CERT. Although nurses, pharmacists within primary care clinics, and community pharmacists all served to improve BP control, the greatest impact was seen for interventions that involved community pharmacists. The researchers found that team-based interventions that provided education about blood pressure medications were associated with a reduction in mean systolic BP (SBP) of 8.75 mm Hg and diastolic BP of 3.6 mm Hg. Pharmacist treatment recommendations were associated with a mean SBP reduction of 9.30 mm Hg; intervention by nurses a 4.80 mm Hg SBP mean reduction; and use of a treatment algorithm, 4.00 mm Hg mean SBP reduction. Compared with patients who received no intervention, patients who received a nurse intervention were nearly twice as likely to have controlled BP. Patients who received interventions from pharmacists in primary care clinics and community pharmacists were two to nearly three times more likely to have controlled BP. (*Archives of Internal Medicine*, October 2009)
- *Antibiotic prescriptions and increased patient satisfaction with emergency department visits.* Even though antibiotics are ineffective in treating viral conditions and contribute to antibiotic resistance, some patients give higher satisfaction ratings to emergency departments (EDs) that provide prescriptions for antibiotics, according to researchers from the University of Pennsylvania CERT. Surveying 463 patients who received care at 8 Veterans Administration

Medicaid Medical Directors' Learning Network utilizes comparative effectiveness review on use of atypical antipsychotic medications

As a result of participating in the Medicaid Medical Directors' Learning Network—an AHRQ Knowledge Transfer project—three State Medicaid agencies implemented findings from AHRQ's Effective Health Care Program. Alabama, Connecticut, and Oregon Medicaid agencies used the Comparative Effectiveness Review *Efficacy and Comparative Effectiveness of Off-Label Use of Atypical Antipsychotics* to develop an education program, legislation, and prescribing guidelines.

Atypical antipsychotic medications are second-generation drugs designed to cause fewer neurological complications than conventional antipsychotics. Some atypical antipsychotics approved to treat schizophrenia and bipolar disorders are being prescribed off-label for young children with behavior problems such as attention-deficit disorder and aggression.

Robert Moon, M.D., Medical Director for the Alabama Medicaid Agency, used the review to raise awareness in an effort to support an Alabama-specific analysis of off-label use. Alabama Medicaid claims data identified more than 400 children ages 4 years and younger who had received atypical antipsychotic medications during 2007. Approximately half of these children did not have an FDA-approved diagnosis; the other half would have had an FDA-approved diagnosis had they been older. Alabama Medicaid's Pharmacy and Therapeutics Committee convened a multi-agency task force to evaluate these findings and make recommendations. A two-phase education program was then developed for providers. In the first phase, educational letters were sent to providers whose prescribing practices differed from practices generally accepted as evidence-based for antipsychotic medications prescribed to children aged 18 and younger. In the second phase, board-certified child psychiatrists made educational phone calls to identified prescribers to discuss the use of these medications in children younger than 5 years of age. The calls did not deny coverage, but explored evidence-based and/or guideline-supported prescribing.

Connecticut Medicaid officials consulted the report during development of legislation for the Connecticut governor's 2009-2011 budget. That legislation adds behavioral health medications, such as atypical antipsychotic drugs, to Medicaid's preferred drug list and also provides for the monitoring of the drugs' use, particularly in children. Robert Zavoski, M.D., M.P.H., Medicaid Medical Director, Connecticut Department of Social Services, reports that in the past, behavioral medications were exempt from review by the Medicaid program. However, the AHRQ information, in combination with Connecticut State data, demonstrated the clear need—not just from a financial point of view, but also from a clinical point of view—to enhance the review of these medications and monitor their use far more closely than they had been.

The Oregon Department of Human Services noted that the mental health needs of foster children were a particular concern for the State. Walter Shaffer, M.D., Medical Director for Oregon's Division of Medical Assistance, reported that 32 percent of foster children in Oregon were prescribed at least one psychotropic medication between 2004 and 2006. Shaffer explored the safety concerns of second-generation antipsychotic prescribing patterns in young children, and led a department workgroup on psychotropic medications for foster children. The workgroup's review was presented to the Oregon Drug Use Review Board, the body that sets Medicaid drug use policy. The Board used AHRQ's Comparative Effectiveness Review findings as background material to develop prescribing guidelines for atypical antipsychotic use in children. Subsequently, a bill was approved by the Oregon legislature in 2009 authorizing annual reviews according to these prescribing guidelines.

(VA) EDs and 496 patients seen at 8 non-VA EDs, researchers found that patients at the non-VA hospitals were more satisfied with their visits when they received a prescription for antibiotics. In fact, 64 percent of patients at non-VA hospitals who received antibiotics reported high levels of overall satisfaction compared with 50 percent of patients who did not receive prescriptions. Receiving antibiotics did not affect satisfaction levels for patients seen at VA sites. The authors suggest that because EDs may be located at the same VA site where patients receive their primary care services, followup care may be easier to obtain.

(Academic Emergency Medicine, October 2009)

More information about the CERTs program can be found at <http://certs.hhs.gov>.

Patient Safety Portfolio

Finding ways to eliminate medical errors and improve patient safety are an integral part of the Agency's agenda. AHRQ-funded projects and partnerships identify, develop, test, and implement patient safety and quality measures and solutions. During FY10, AHRQ funded \$25 million in grants for demonstration projects on patient safety and medical liability reform and \$34 million to expand projects to help prevent healthcare-associated infections. The Agency also released updates to its Common Formats for Patient Safety Organizations, Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS®), and its suite of patient safety culture surveys. Finally, AHRQ developed several tools to help engage patients and families as part of the health care team.

Patient Safety and Medical Liability Demonstration Projects

In the largest Federal investment connecting medical liability to quality, AHRQ awarded \$25 million in funding to support efforts by States and

TalkingQuality Web site

In FY10, AHRQ released the newly revised TalkingQuality Web site, which is a resource for organizations that produce reports for consumers on the quality of care provided by hospitals, health plans, medical groups, nursing homes, and physicians. The TalkingQuality Web site offers resources that help organizations develop strategies for creating and disseminating reports to improve the quality of care that consumers receive. The site also offers ways to assess reports' effectiveness and to use the lessons learned. See www.talkingquality.gov for more information.

health systems to implement and evaluate patient safety approaches and medical liability reform models. The demonstration and planning grants are part of the patient safety and medical liability initiative that President Obama announced during a September 9, 2009, address to a joint session of the United States Congress.

As part of his vision for a health care system that puts patient safety first and allows doctors to focus on practicing medicine, the President directed the Secretary of HHS to help States and health care systems test models that put patient safety first and work to reduce preventable injuries; foster better communication between doctors and their patients; ensure that patients are compensated in a fair and timely manner for medical injuries, while also reducing the incidence of frivolous lawsuits; and reduce liability premiums.

Some of the reforms that are being planned and tested under HHS's initiative address limitations of the current medical liability system, such as costs, patient safety, and administrative burden for doctors. Grants support the creation of a judge-directed negotiation program, the development of "safe harbors" for State-endorsed evidence-based care guidelines, and early disclosure and offers of prompt compensation.

Of the \$25 million, \$23 million is allocated to grants and \$2 million is allocated to a contract to evaluate improvements in both patient safety and

medical liability systems. The evaluation is designed to develop the evidence base that will inform long-term solutions to the medical liability problem. For details on each project go to www.ahrq.gov/qual/liability/.

Preventing Healthcare-Associated Infections

Healthcare-associated infections (HAIs) are the most common complication of hospital care, resulting in 1.7 million infections and 99,000 deaths each year, according to a 2002 study by the Centers for Disease Control and Prevention. The added financial burden attributable to HAIs is estimated to be between \$28 billion to \$33 billion each year.

According to data from the 2007 Nationwide Inpatient Sample, adults who developed HAIs due to medical or surgical care while in the hospital in 2007 had to stay an average of 19 days longer than adults who didn't develop an infection, (24 days versus 5 days). For patients with an HAI, the rate of death in the hospital, on average, was 6 times as high as the rate for patients without an HAI (9 percent versus 1.5 percent). Also, on average, the hospital stay of an adult patient who developed an HAI was about \$43,000 more expensive than the stay of a patient without an HAI (\$52,096 versus \$9,377).

To address this growing problem, AHRQ is contributing in multiple ways to the national effort to prevent HAIs. At the HHS level, AHRQ participates in coordinated, Department-wide activities directed to HAIs by:

- serving on the HHS HAI Steering Committee, which is chaired by the Deputy Assistant Secretary for Healthcare Quality and has representatives from the HHS agencies involved in HAI projects;
- taking an active part in the Steering Committee's development and updating of the National Action Plan to Prevent HAIs;
- chairing the Research Working Group, the subcommittee of the Steering committee

Blood Thinner DVD Wins Two Telly Awards

AHRQ's patient education video "Staying Active and Healthy with Blood Thinners" earned two Telly Awards, one in the "Health and Wellness" category and one for "How-To/Instructional Video." Telly Awards honor the best local and regional cable television commercials and programs, as well as the finest video and film productions. More than 13,000 entries were evaluated against a rigorous set of standards. To view the video or the booklet, go to www.ahrq.gov/consumer/btpills.htm.

charged with developing plans for future research investments to combat HAIs; and,

- on behalf of the Steering Committee, directing the longitudinal evaluation of progress in achieving the National Action Plan's goals.

In a second role, AHRQ supports research and demonstrations to generate knowledge about the best ways to prevent HAIs and accelerate the wide-scale adoption of evidence-based approaches in routine practice. In FY10, AHRQ awarded \$34 million for grants and contracts that target HAI prevention. This represents a doubling of the \$17 million that was available to support HAI projects in FY09. The funded projects address HAI reduction efforts in all three tiers of health care settings: Tier 1, acute care hospitals; Tier 2, ambulatory surgery centers and hemodialysis/end-stage renal disease facilities, and Tier 3, long-term care.

A major focus of AHRQ's HAI prevention work involves the implementation of the Comprehensive Unit-based Safety Program (CUSP), which is based on an Intensive Care Unit (ICU) Safety Reporting System developed by the Johns Hopkins University Quality and Safety Research Group, Baltimore, MD. The CUSP integrates communication, teamwork, and leadership to create and support a "harm-free" patient care culture. CUSP is implemented at the unit level and provides a scalable program that can be implemented throughout an organization.

The Agency announced in October 2009 that the CUSP, which has successfully reduced central line-associated blood stream infections in intensive care units, will expand to all 50 States, the District of Columbia, and Puerto Rico as well as additional hospitals in States that are already participating in the program. Over a 3-year period, 10 of these States will test the CUSP as a strategy for reducing central line-associated blood stream infections in 100 ICUs. Participating hospitals will implement a checklist to ensure compliance with safety practices, educate staff on evidence-based practices to reduce blood stream infections, educate staff on team training, provide feedback on infection rates to hospitals and hospital units, and implement monthly team meetings to assess progress.

This additional funding will also extend the CUSP to general medical and surgical hospital units in addition to ICUs. It will also broaden its focus to address other types of HAIs, such as bloodstream infections in patients undergoing hemodialysis and catheter-associated urinary tract infections.

For more information on AHRQ's projects to prevent HAIs, see www.ahrq.gov/qual/hais.htm. A complete list of institutions and projects funded in FY10 is available at www.ahrq.gov/qual/haify10.htm.

Patient Safety Organizations

Established by the Patient Safety and Quality Improvement Act of 2005 (the Patient Safety Act), Patient Safety Organizations (PSOs) collect and analyze information on the patient safety events that health care providers report and provide feedback to help clinicians and health care organizations improve health care quality. Strong confidentiality provisions are also key to this voluntary reporting. At the end of FY10, there were 88 listed PSOs in 30 States, the District of Columbia, and Puerto Rico.

As outlined in the Patient Safety Act, AHRQ administers provisions governing PSO operations. To allow health care providers to collect and submit standardized information regarding patient safety

events, AHRQ coordinates development of Common Formats (i.e., common definitions and reporting formats) for reporting events to the PSOs. Common Formats optimize the opportunity for the public and private sectors to learn more about trends and patterns in patient safety, with the purpose of improving health care quality. AHRQ released the initial set of Common Formats for hospitals in FY09. In FY10, AHRQ released Common Formats (Version 1.1) that includes updated event descriptions, reports, and data collection forms, as well as technical specifications for software developers. Once the data have been made non-identifiable by the standards of the Patient Safety Rule, they will be transmitted to the Network of Patient Safety Databases in 2011 for aggregate analysis and generation of initial reports to be included in AHRQ's National Healthcare Quality and Disparities Reports.

Additional sets are being developed for nursing homes, ambulatory surgery centers, physician offices, and adverse events related to the use of medical or surgical devices or health information technology. For more information on the PSOs and Common Formats, go to www.pso.ahrq.gov.

TeamSTEPPS®

TeamSTEPPS® is an evidence-based teamwork system designed for improving communication and other teamwork skills among health care professionals. Developed by the Department of Defense in collaboration with AHRQ, TeamSTEPPS includes a comprehensive set of ready-to-use materials and training curricula necessary to integrate teamwork principles successfully into a health care system.

TeamSTEPPS is now a part of the Centers for Medicare & Medicaid Services (CMS) 9th Scope of Work for all Quality Improvement Organizations.

In FY10, 18 TeamSTEPPS 3-day master trainer courses were held at 5 Team Resource Centers: Duke University Medical Center, Durham, NC; Carilion Clinic, Roanoke, VA; University of Minnesota Fairview Medical Center, Minneapolis, MN; Creighton University Medical Center,

Association of periOperative Registered Nurses develops toolkit based on TeamSTEPPS®

As part of its Patient Safety First program, the Association of periOperative Registered Nurses (AORN) developed a patient handoff toolkit based on Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS®). Because problems in communication cause the majority of avoidable adverse events, AORN customized TeamSTEPPS materials for the perioperative environment to improve communication among surgical team members by standardizing handoffs. The perioperative toolkit includes a summary of the evidence-based research on patient handoffs, sample patient handoff templates, and a PowerPoint presentation on standardizing handoffs. The patient handoff toolkit is available free of charge on the AORN Web site at www.aorn.org/PracticeResources/ToolKits/PatientHandOffToolkit/.

Omaha, NE; and University of Washington Medicine, Seattle, WA. Additional training sessions for State hospital systems are underway. These 3-day training sessions will create a national network of master trainers, who will in turn offer TeamSTEPPS training to frontline providers in hospitals and other health care settings throughout the country.

Also, AHRQ released the TeamSTEPPS Teamwork Perception Questionnaire (T-TPQ). T-TPQ is a measurement tool that helps determine how an individual perceives the current state of teamwork within an organization. Measuring an individual's perception of collective teamwork offers a broader picture of an organization's team climate; thus, a measure of perception of overall teamwork serves as an additional measure of the effectiveness of TeamSTEPPS training. The T-TPQ has been designed to correlate with the AHRQ *Hospital Survey on Patient Safety Culture*.

More information on TeamSTEPPS® can be found at <http://teamstepps.ahrq.gov>.

Patient Safety Culture Surveys

In its 1999 landmark report, *To Err Is Human: Building a Safer Health System*, the Institute of Medicine cited studies that found that as many as 98,000 people die in U.S. hospitals each year as a result of preventable medical errors. As part of its goal to support a culture of patient safety and quality improvement in the Nation's health care system, AHRQ sponsors the development of patient safety culture assessment tools for hospitals, nursing homes, and medical offices. A survey for pharmacies also is under development. Health care organizations use these survey assessment tools to assess their patient safety culture, track changes in patient safety over time, and evaluate the impact of specific patient safety interventions. The three survey tools are: *Hospital Survey on Patient Safety Culture*, *Medical Office Survey on Patient Safety Culture*, and *Nursing Home Survey on Patient Safety Culture*.

AHRQ Patient Safety Network (PSNet)

The AHRQ PSNet (www.psnet.ahrq.gov/) is a national Web-based resource featuring the latest news and essential resources on patient safety. The site offers weekly updates of patient safety literature, news, tools, and meetings ("What's New"), and a vast set of carefully annotated links to important research and other information on patient safety ("The Collection"). Supported by a robust patient safety taxonomy and Web architecture, the AHRQ PSNet provides powerful searching and browsing capability, as well as the ability for diverse users to customize the site around their interests (My PSNet). It also is tightly coupled with AHRQ's WebM&M, the popular monthly journal that features user-submitted cases of medical errors, expert commentaries, and perspectives on patient safety.

Hospital Survey on Patient Safety Culture: 2010 Comparative Database Report

In FY10, AHRQ released the *Hospital Survey on Patient Safety Culture 2010 Comparative Database Report*. This report contains more data than any previous report, providing results from nearly 350,000 hospital staff in 885 hospitals. The report presents statistics on the patient safety culture areas or composites assessed in the survey, as well as the survey items. The appendixes present breakouts of the data by hospital characteristics (bed size, teaching status, ownership and control, region), respondent characteristics (hospital work area/unit, staff position, interaction with patients), and trends over time for the hospitals that administered the survey and submitted data more than once.

Consumer Guides

During FY10, AHRQ developed a wide range of tools to help patients and their families become more engaged in their health care. Bilingual brochures, videos, advice columns, podcasts, and other materials are available in English and Spanish at www.ahrq.gov/consumer.

In addition, AHRQ synthesized information from its patient safety research findings to develop a new easy-to-read guide called *Taking Care of Myself: A Guide for When I Leave the Hospital*. After hospital staff or patients fill in the information, the guide requests that patients track their medication schedules, upcoming appointments, and important phone numbers. The guide is adapted from the AHRQ-funded Re-Engineered Hospital Discharge

Hospitals implement AHRQ's Door-to-Doc patient safety toolkit

Bon Secours St. Mary's Hospital, a 320-bed nonprofit hospital in Richmond, VA, and Carilion Roanoke Memorial Hospital, an 825-bed, nonprofit teaching hospital in Roanoke, VA, implemented AHRQ's Door-to-Doc patient safety toolkit after attending an AHRQ-sponsored training session in September 2008.

With the Door-to-Doc model, patient flow is split into "less sick" and "sicker" patient groups. This determination is based on a brief analysis rather than a full triage. The system has the advantage of keeping the vast majority of patients—those who are less sick—moving during busy times, rather than waiting in the lobby or the ED. A key advantage with the Door-to-Doc model is that ED beds are reserved for sicker patients who truly need them. Less sick patients, who tend to be ambulatory, are not assigned beds; instead, they move among treatment areas as they would in a clinic setting. These patients remain dressed and mobile as much as possible and wait for lab and other test results away from the flow of other patients.

As a result of implementing Door-to-Doc, St. Mary's Hospital ED was able to decrease by nearly 50 percent the time patients must wait to see an ED physician—from more than 30 minutes to just 16 minutes. St. Mary's was also able to accommodate an increase in patient volume without experiencing any increase in the rate of patients leaving without being treated. Patient satisfaction scores increased from the 70th to the 90th percentile.

Carilion Roanoke Memorial Hospital had experienced a left-without-being-seen rate consistently over 7 percent, which had a negative impact on both patients and providers. Since implementing Door-to-Doc, Carilion reduced the number of patients leaving the ED without treatment to 2 percent, enabling the ED to see more patients and increase patient volume from 190 patients per day to 205 patients per day. This increase in patient volume has resulted in a \$156,000 increase in hospital revenue for every 1 percent reduction in the rate of patients leaving without treatment. In addition, using the toolkit allowed Carilion to reduce the wait times that less-sick patients spend in the ED from 228 minutes pre-Door-to-Doc to 186 minutes after implementation—an 18 percent improvement.

For more information on Door-to-Doc and other patient safety tools, go to www.ahrq.gov/qual/pips/.

project, known as Project RED. AHRQ Partnerships in Implementing Patient Safety grantee Brian Jack, M.D., Associate Professor of Family Medicine at Boston University, developed Project RED, which showed that preparing patients to care for themselves when they leave the hospital can improve patient safety and reduce re-hospitalization rates by 30 percent. The guide is available in both English and Spanish at www.ahrq.gov/qual/goinghomeguide.htm.

Recent Research Findings on Quality and Patient Safety

ARHQ-funded researchers published numerous studies in FY10, abstracts of which can be found on AHRQ's Patient Safety Network Web site at www.psnet.ahrq.gov. Among the highlights:

- Emergency departments (EDs) are a vulnerable area for patient care errors, especially during shift changes when physicians and nurses “hand off” patients. In researching how to make handoffs safer, the study found that the number of handoffs can be reduced by discharging patients near the time of shift changes. Another approach is to have outgoing and incoming ED personnel gather in a quiet, dedicated space where they account for every patient and provide succinct overviews of patients' statuses, including having lab and other study reports available. Researchers also recommend that receiving physicians ask questions and discuss outstanding tasks during these handoff sessions. (*Annals of Emergency Medicine*, February 2010)
- Drug labels that use simplified language, in some cases with patient-tested icons, can improve patients' ability to understand warning labels affixed to prescription drug containers. Researchers found that the rate of correct interpretation of drug warnings was lowest (80.3 percent) among patients who were shown standard warnings, higher (90.6 percent) for those shown simplified warning text, and highest (92.1 percent) for patients shown simplified text with icons. Patients with low

AHRQ WebM&M

AHRQ WebM&M (Morbidity and Mortality Rounds on the Web) is the online journal and forum on patient safety and health care quality. This site features expert analysis of medical errors reported anonymously by our readers, interactive learning modules on patient safety (“Spotlight Cases”), and Perspectives on Safety. Continuing medical education and continuing education unit credits are available. WebM&M can be found at www.webmm.ahrq.gov/.

literacy (below 7th grade reading level) were 35 percent less likely to correctly interpret standard drug warning labels than those who read at the 9th grade level or higher. Patients with marginal (7th and 8th grade reading levels) or low literacy were two to three times more likely to correctly understand warnings with both simplified text and icons than those with simplified text alone. (*Archives of Internal Medicine*, January 2010)

- Work hour restrictions allow medical residents to work up to 80 hours per week for no more than 30 consecutive hours. These restrictions have decreased the amount of time residents spend teaching medical students; however, residents report feeling less exhausted and more satisfied with the level of care they deliver. Residents completed a survey designed to measure various aspects of their working situations, including time spent teaching, number of hours worked, satisfaction with patient care, and level of exhaustion. Nearly a quarter (24 percent) of residents reported spending less time teaching, which was associated with working less than 80 hours a week, being a second- or third-year resident, and spending more time on administrative tasks. Residents with reduced teaching schedules reported feeling less emotionally exhausted and more satisfied with the care they provided patients. (*Journal of Hospital Medicine*, October 2009)
- Failing to order tests, report results to patients, and follow up with abnormal test findings are

leading causes of diagnostic errors, according to a survey of U.S. primary care and specialist physicians. Responding to a 6-item survey, nearly 300 physicians from 22 hospitals reported 583 cases of diagnostic error—the largest report ever published on diagnostic errors. The most commonly missed or delayed diagnoses included pulmonary embolism, drug reactions or overdose, lung cancer, colorectal cancer, acute coronary syndrome (including heart attack), breast cancer, and stroke. Diagnostic errors occurred most often in the testing phase (failure to order, report, and follow up laboratory results, 44 percent), followed by clinician assessment errors (failure to consider and overweighing competing diagnoses, 32 percent; inadequate history taking, 10 percent; incomplete physical examination, 10 percent); and referral or consultation errors and delays, 3 percent. Overall, 28 percent of the 583 diagnostic errors were rated as major, resulting in patient death,

permanent disability, or a near-life-threatening event. Another 41 percent resulted in moderate adverse outcomes that caused the patient short-term illness, a prolonged hospital stay, an invasive procedure, or more intense care; 31 percent of diagnostic errors were minor or insignificant. (*Archives of Internal Medicine*, November 2009)

- According to an AHRQ-funded research paper, health care organizations should disclose medical mistakes that affect multiple patients even if patients were not harmed by the event. Medical mistakes that affect multiple patients, known as large-scale adverse events (LSAEs) to researchers, are incidents or series of related incidents that harm or could potentially harm multiple patients. These events, which can include incompletely sterilized surgical equipment, poor laboratory quality control, and equipment malfunctions, are often identified after care has been provided and can affect thousands of patients. Researchers weighed

QIO Learning Network helps health care providers improve quality of care

The Quality Improvement Organization (QIO) Learning Network was established in January 2010 as a Knowledge Transfer project. Its primary focus has been to train QIOs and their providers on two AHRQ-supported tools: *Preventing Hospital-Acquired Venous Thromboembolisms: A Guide for Effective Quality Improvement* and the MATCH (medication reconciliation) toolkit. As part of this project, AHRQ is working with QIOs in the following States: Idaho, Indiana, Kentucky, Missouri, Nebraska, New Jersey, New York, North Carolina, South Carolina, Texas, and Washington.

The purpose of this learning network is to create an ongoing collaborative relationship between AHRQ and the QIOs. The goal is to provide training on AHRQ tools that will help the QIOs and their providers improve health care quality.

The QIO Learning Network has trained 3 QIOs and staff from 31 hospitals in 7 States on *Preventing Hospital-Acquired Venous Thromboembolisms: A Guide for Effective Quality Improvement*. As a result of the training, staff from all 31 hospitals have revised or developed a new venous thromboembolism (VTE) protocol based on information shared in the Guide. Staff from 3 hospitals are piloting the new or revised VTE protocol, and staff from 28 hospitals have implemented a new or revised VTE protocol.

In addition, 5 QIOs and staff from 58 hospitals, 11 home health agencies, 8 nursing homes and 1 pharmacy have been trained on the MATCH toolkit. The MATCH toolkit provides a comprehensive approach to improving medication reconciliation in the hospital and other health care settings. While this project is ongoing, of those trained, staff from 59 provider settings have used the toolkit to make changes to their medication reconciliation process. For example, staff from 34 hospitals have designed a document, called the “One Source of Truth” to list all medications a patient is taking, as recommended by the toolkit.

ethical considerations of whether to disclose such events. For instance, is disclosure ethical if patients were unlikely to have been physically harmed by the event but could be harmed psychologically by the disclosure? The authors reviewed instances in which health care institutions disclosed an LSAE and analyzed the method of disclosure and existing disclosure

policies. They concluded that, in most cases, these events should be disclosed and recommended that organizations develop an institutional policy for managing and planning the disclosure process, communicating with the public, and patient followup. (*New England Journal of Medicine*, September 2010)

Hospitals changed protocols for prevention of venous thromboembolism

Between September 2008 and May 2009, AHRQ hosted a series of seven Web conferences about its toolkit, *Preventing Hospital-Acquired Venous Thromboembolism: A Guide for Effective Quality Improvement* as part of an AHRQ Knowledge Transfer project. As a result of the Web conference series, several hospitals from New York changed their policies on caring for patients at risk for venous thromboembolism (VTE). The AHRQ toolkit is a comprehensive guide to help hospitals and clinicians implement processes to prevent dangerous blood clots.

Massena Memorial Hospital in Massena, New York, did not have a VTE prevention protocol in place at the beginning of the Web conference series. The hospital used the information to develop and implement a VTE protocol for the medical, surgical, intensive care, and obstetrics units. A baseline audit of Massena patient charts in November 2008 showed that 25 percent of patients received some form of VTE prevention. By September 2009, patients receiving some form of VTE prevention had increased to 90 percent.

St. Barnabas Hospital in New York City also did not have a VTE prevention protocol prior to participating in the Web conferences. The hospital developed a VTE order set for the medical unit that aligns with the toolkit's recommendations. St. Barnabas has provided in-service training for its residency programs on using the resources.

Catskill Regional Medical Center revised an existing VTE prevention protocol and switched from a points-based to a risk-category protocol and now recommends drugs to prevent blood clots for all patients at moderate risk for VTE. The new protocol also expanded the range of medications recommended for patients in this risk group. Catskill now conducts daily real-time reviews of VTE prevention rates. As a result of these efforts, the percent of patients at Catskill receiving some form of mechanical or medical VTE prevention increased from 30 percent in October 2008 to 80 percent in August 2009.

Lawrence Hospital Center also revised its VTE order set based on the information presented in the Web conference series. Originally using a points-based tool, the hospital now uses a protocol that groups patients into three clearly differentiated categories of risk. The protocol includes information about VTE prevention for each risk group and about contraindications.

Maimonides Medical Center made significant changes to the hospital's VTE prevention protocol after participating in the Web conferences. Maimonides streamlined what had been a fragmented paper-based form and put it online. The hospital also reduced the number of VTE risk categories from four to three and provided clearer prevention recommendations for each category.

Kingsbrook Jewish Medical Center used the information from the Web conferences to improve the risk assessment component of its existing protocol. Information about contraindications for certain approaches to VTE prevention was added electronically to the order set. The new computerized physician order entry VTE prevention protocol was implemented in the medical and surgical units in September 2009.

Implementing Re-Engineered Hospital Discharge (Project RED)

This Knowledge Transfer project aims to help hospitals implement the Re-Engineered Hospital Discharge (Project RED) intervention to improve the discharge process and reduce hospital readmissions. The ongoing project features development of Web-based training modules, and technical assistance for participants implementing the toolkit. Activities with each hospital/health system are customized based on unique needs. Below are highlights of the accomplishments of the project to date:

- Trained nearly 50 hospitals, including 2 complete health systems, to implement Project RED.
- Developed a comprehensive training plan for educating hospital staff during the discharge program implementation process.
- Developed a tool for participating sites' to use when measuring the potential impact of the Project RED intervention program. Components of the tool include readmission rates, length of stay, patient experience, frontline staff and primary care physician opinion about discharge process, timeliness of RED intervention, and completeness of after hospital care plan provided to targeted patients.

Health Information Technology Portfolio

AHRQ's health IT initiative is part of the Nation's efforts to put information technology to work in health care. Since its inception in 2004, the Health IT Portfolio has supported projects that develop and disseminate evidence and evidence-based tools about health IT's impact on the quality, safety, efficiency, and effectiveness of health care in three main strategic focus areas:

- To improve health care decisionmaking.
- To improve the quality and safety of medication management.
- To support patient-centered care, the coordination of care across transitions, and the use of electronic exchange of health information.

AHRQ has invested over \$300 million in contracts and grants to over 200 communities, hospitals, providers, and health care systems in 48 States to promote access to and encourage the adoption of health IT. These projects constitute a real-world laboratory for examining health IT at work and aim to achieve the following:

- Help clinicians provide higher quality, safer health care.
- Put the patient at the center of health care.

- Stimulate the implementation of health IT, especially in rural and underserved areas.
- Identify the most successful approaches and barriers to health IT implementation.
- Make the business case for health IT by evaluating costs and benefits.

In FY10, the AHRQ Health IT Portfolio published new reports on the development, challenges, and implementation of health IT systems, and released several new products including the *Health IT Evaluation Measures: Quick Reference Guides*, the *Health IT Survey Compendium*, and the *HIE Evaluation Toolkit*. The Health IT Portfolio team works closely with the Office of the National Coordinator for Health IT through the Health IT Resource Center, an online resource focused on disseminating practical approaches to clinicians, patients and communities. In addition, the Health IT Portfolio created a new Patient Centered Medical Home Web site as a part of its focus on using health IT to deliver patient-centered care.

Improving Health Care Decisionmaking, Medication Management, and Patient-Centered Care

The AHRQ Health IT Portfolio published several new reports on the development, challenges, and

implementation of health IT systems and released several new products.

In support of its focus areas on improving health care decisionmaking, medication management, and patient-centered care, the Health IT Portfolio produced the following publications:

- *Impact of Consumer Health Informatics (CHI) Applications Evidence-based Practice Center Report* reviews the literature on the evidence of the impact of currently developed CHI applications on health and health care process outcomes to identify the gaps in the literature and to recommend future research endeavors to better assess these IT applications. CHI applications are defined as any electronic tool, technology, or system that is primarily designed to interact with health information users or consumers and may be used with a health care professional, but is not dependent on a health care professional.
- *Industrial and Systems Engineering and Health Care: Critical Areas of Research* explores the critical areas of research at the intersection of industrial and systems engineering (ISyE) and health care, with a special emphasis on the supportive role of health IT. Investing in ISyE research may help in creating a fundamentally better health care delivery system. The report provides a vision of the new health system and a detailed research and action agenda.
- *Incorporating Health IT Into Workflow Redesign: Request for Information Summary Report* synthesizes comments submitted in response to a request for information (RFI) regarding developed methods and tools or initiatives for ambulatory workflow analysis and redesign and how health IT could support workflow redesign. Relevant RFI responses will be incorporated into a toolkit that health care organizations and decisionmakers can use to assess their workflows and determine when and how health IT may be used.
- *Practice-Based Population Health (PBPH): Information Technology to Support Transformation to Proactive Primary Care* describes the concept of PBPH—an approach to care that uses information on a group (“population”) of patients within a primary care practice or group of practices (“practice-based”) to improve the care and clinical outcomes of patients within that practice—and the information management functionalities that may help primary care practices to move forward with this type of proactive management.
- *Transforming Health Care Quality Through Information Technology (THQIT): Systematic Review of Peer-Reviewed Publications From the THQIT Value Grantees* analyzes the peer-reviewed publications of 24 THQIT research projects, finding commonalities in process and outcomes, and presenting new knowledge about the real outcomes of health IT across diverse health care environments. It also describes the other avenues that grantees used to disseminate their findings.
- *Challenges and Barriers to Clinical Decision Support (CDS) Implementation* examines the challenges and barriers to implementing CDS and found workflow, design, and clinician’s level of support are just some of the issues that can affect successful CDS implementation. The report describes the challenges and barriers that AHRQ contractors encountered as part of their CDS demonstration project, which can be successfully addressed by employing several key strategies such as utilizing standard data exchange formats, providing clinicians with appropriate training, and modifying CDS to address clinicians’ needs.
- *Electronic Health Record Usability: Vendor Practices and Perspectives* provides insight into the current processes, practices, and perspectives



of certified electronic health record (EHR) vendors with regard to key aspects of the usability of their products including the existence and use of standards and “best practices” in designing, developing, and deploying products; testing and evaluating usability throughout the product life cycle; supporting postdeployment monitoring to ensure patient safety and effective use; and the role of certification in evaluating and improving usability.

- *Electronic Health Record Usability: Evaluation and Use Case Framework* synthesizes the literature and best practices regarding the usability of EHRs, and it provides a set of use cases to evaluate information design in primary care IT systems.
- *Electronic Health Record Usability: Interface Design Considerations* provides recommended actions to support the development of an objective EHR usability evidence base and formative policies to systematically improve the usability of EHR systems.
- *Managing Personal Health Information: An Action Agenda* presents key recommendations and an action agenda developed during a 2-day workshop convened by AHRQ, entitled “Building Bridges: Consumer Needs and the Design of Health Information Technology.” As a result of the workshop, the participants developed a framework for studying personal health information management and patient-centered health IT to advance research, implementation, and policy development.

Medicaid/CHIP Technical Assistance

AHRQ is providing technical assistance (TA) to Medicaid and Children’s Health Insurance Program (CHIP) agencies to help them develop, implement, and participate in health IT and health information exchange (HIE). During FY10, this assistance included case studies designed to support dissemination of information and best practices in health IT and HIE for Medicaid and CHIP

agencies to agency personnel, policy makers, and stakeholders. The case studies provide Medicaid and CHIP agency staff with detailed information about peer agency projects in health IT and HIE. The TA program also includes a needs assessment to determine the types of technical assistance that will be offered in subsequent years, a repository of information to support the technical assistance and disseminate best practices, and Webinars along with other Web-based and in-person workshops.

Patient-Centered Medical Home Web Site

In FY10, the Health IT Portfolio launched a new Patient-Centered Medical Home (PCMH) Web site. The PCMH is a promising model for transforming the organization and delivery of primary care. Health IT plays a central role in successfully operationalizing and implementing the key features of the medical home. This Web site provides policymakers and researchers with access to evidence-based resources about the medical home and its potential to transform primary care and improve the quality, safety, efficiency, and effectiveness of U.S. health care. The Web site can be viewed at www.pcmh.ahrq.gov.

National Resource Center for Health Information Technology

As part of its health IT initiative, AHRQ created the National Resource Center for Health Information Technology (NRC), which 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 of communicating and delivering technical assistance to its grantees. Since then, AHRQ has made the NRC available as a public resource for sharing research findings, best practices, lessons learned, and funding opportunities with health IT researchers, implementers, and policymakers. More than 10,000 documents, presentations, articles, and

tools are freely available on the NRC. Traffic on the NRC has steadily grown since its inception, with recent usage averaging more than 40,000 unique site visits per month.

In FY10, the Health IT Portfolio, through its NRC, added, updated, or continued support for a key set of products focused on applying lessons learned from AHRQ research activities to improve the successful adoption, evaluation, and meaningful use of health IT and HIE activities. These products include:

- *Health IT Evaluation Measures: Quick Reference Guides* provide details about individual measures that can be incorporated into a health IT evaluation plan. Eleven guides were developed based on the literature and each guide includes a brief description of the measure, summary of current literature on the measure, measurement methodology, and study design and analysis considerations. The guides provide a starting point for evaluators in the development of an evaluation plan for a given measure.
- *Health IT Survey Compendium* is a searchable resource containing a set of publicly available surveys to assist organizations in evaluating health IT. The surveys in the compendium cover a broad spectrum, including user satisfaction, usability, technology use, product functionality, and the impact of health IT on safety, quality, and efficiency.
- *HIE Evaluation Toolkit* provides guidance on how to evaluate health information exchange. Example measures are provided along with suggested data sources and the relative costs to collect those measures. This Toolkit was enhanced in April 2010.
- *Issue Papers: Findings from the AHRQ Health IT Portfolio* are a series of reports on various topics that comprehensively record and disseminate lessons learned from the health IT grantees.
 - *Implementation of Health IT in Long-Term Care Settings* summarizes the key challenges noted, solutions identified, and lessons

learned by AHRQ-funded projects implementing health IT in long-term care (LTC) settings. The report is an examination of the project work that AHRQ has funded thus far in the LTC field, developed within the Agency's continued research interests in the care and support of persons with chronic or disabling conditions.

- *Medication Adherence* profiles the different approaches grantees have used to calculate medication adherence and the data sources that are being used by the projects.
- *Medication Reconciliation* examines how AHRQ-funded projects have implemented and evaluated medication reconciliation processes to help reduce medical errors and adverse drug reactions.
- *Health Information Technology and Health Information Exchange Implementation in Rural and Underserved Areas* focuses on the challenges facing rural and underserved communities in integrating health IT into their health care delivery systems.

The AHRQ Health IT Portfolio held six national teleconferences during fiscal year 2010. A listing of those teleconferences is below. Additional materials from these national teleconferences, such as PowerPoint slides and transcripts can be found on our AHRQ Health IT Events page at: <http://healthit.ahrq.gov/portal/server.pt/community/events/652>

- *Managing Patient Care Transitions: How Health IT Can Reduce Unnecessary Re-Hospitalization*, February 24, 2010
- *Leveraging Health Information Technology for Patient Empowerment*, April 8, 2010
- *Building and Maintaining a Sustainable Health Information Exchange (HIE): Experience from Diverse Care Settings*, May 14, 2010
- *Impact of Health IT on Quality Assessment: Innovations in Measurement and Reporting*, June 23, 2010
- *Using Health IT to Prevent Adverse Events*, July 13, 2010



- **Health IT Adoption in Rural Clinical Settings, August 27, 2010**

In addition, the following technical assistance Webinars and meetings were held with grantees:

- **Successful Dissemination Strategies: A Practical Approach to Effective Dissemination of Research Findings - January 2010**

With the ever-increasing emphasis on putting research into practice, AHRQ is interested in finding effective ways for stakeholders to learn about research in progress and rapidly become aware of new knowledge related to the use of health IT to improve quality. During this Webinar, experts provided grantees with guidance on effective dissemination techniques, submitting peer-reviewed manuscripts, working with AHRQ's Office of Communication and Knowledge Transfer and final report guidance.

- **Institutional Review Boards: Challenges and Best Practices - January 2010**

A critical milestone for many health IT-focused research projects is approval of the research protocol by an IRB. This Webinar addressed several key considerations related to working with IRBs, including (1) different policies, procedures, infrastructure, and models (e-IRB versus in-person) that reside within different institutional and community settings, (2) common challenges and issues that may arise during the application and approval process, (3) methods to mitigate challenging issues, and (4) best practices for successful IRB review.

- **Patient Recruitment: Challenges, Trends, and Best Practices - April 2010**

Recruiting patients for research studies is an essential component for many AHRQ research grants. Carefully planned design and implementation of sound recruitment and enrollment strategies, as well as follow-through, contribute to the efficiency and success of studies, from initiation to study completion. This meeting offered an opportunity for grantees to learn about possible strategies and approaches to common patient recruitment challenges.

- **Roundtable Discussions, AHRQ 2010 Health IT Grantee and Contractor Meeting - June 2010**

The format for the multi-grantee meeting was facilitated roundtable discussions held during the AHRQ 2010 Health IT Grantee and Contractor meeting. The goal of the discussions was to promote peer-to-peer knowledge sharing and networking, and to identify potential issues for future technical assistance events. There were four roundtable discussions covering the following topics: Health IT Implementation, Medication Reconciliation, Provider Engagement, and Quality Reporting.

- **Guidance and Recommendations for Ambulatory Safety and Quality (ASQ) Grants Closeout Requirements and Final Reports - July 2010**

HHS policy requires that a grant or cooperative agreement be "closed out" after the project ends. This Webinar was designed to review and discuss the grant closeout requirements, with a special emphasis on the Final Report. More specifically, this meeting focused on delineating the special ASQ reporting requirements that must be addressed by all grantees in receipt of an ASQ grant as well as FOA-specific requirements.



Support for Health Information Technology for Economic and Clinical Health (HITECH) Act

With the enactment of the Recovery Act in 2009, the role of health IT in improving the quality of the Nation's health dramatically changed. AHRQ, in collaboration with the Office of the National Coordinator (ONC) for Health Information Technology, developed the Health Information Technology Research Center (HITRC), part of the Health Information Technology for Economic and Clinical Health (HITECH) Act. A total of \$50 million has been made available for this effort, which will involve the award of 13 task orders funded under the Recovery Act. The HITRC will provide a forum for the exchange of knowledge and experience; accelerate the transfer of lessons learned from existing public and private sector initiatives, including those currently receiving Federal financial support; and assemble, analyze, and widely disseminate evidence and experience related to the adoption, implementation, and effective use of health IT that allows for the electronic exchange and the use of information including through the Regional Extension Centers. HITRC, along with the Regional Extension Centers, are referred to as the Health IT Extension Program and form the National Learning Consortium.

Recent Research Findings from the Health IT Portfolio

During FY10, research findings from the Health IT Portfolio included:

- Based on a review of studies on the use of health IT to improve monitoring of prescription drugs in ambulatory care patients, researchers found that passive alerts are likely to have little or no effectiveness and alerts that require physicians to navigate multiple steps also seem likely to fail. Interventions that employ a team of clinical pharmacists are more likely to reduce drug monitoring errors. Examples of errors include the failure to monitor potassium levels among patients receiving potassium supplementation and the failure to monitor liver and thyroid function among patients receiving amiodarone. (*Pharmacoepidemiology and Drug Safety*, December 2009)
- Using bar-code technology with an electronic medication administration record (eMAR) substantially reduces transcription and medication administration errors, as well as potential drug-related adverse events. Researchers compared 6,723 medication administrations on hospital units before bar-code eMAR was introduced with 7,318 medication administrations after bar-code eMAR was introduced. Having bar-code eMAR technologies in place was associated with reductions in errors related to the timing of medications, such as giving a medicine at the wrong time, and non-timing medication administration, such as giving a patient the wrong dose. The researchers documented a 41-percent reduction in non-timing administration errors and a 51-percent reduction in potential drug-related adverse events associated with this type of error. Errors in the timing of medication administration, meaning a patient was given medication an hour or more off schedule, fell

by 27 percent. No transcription errors or potential drug-related adverse events related to this type of error occurred. (*New England Journal of Medicine*, May 2010)

- Some EHR systems notify physicians when they deviate from guidelines in the care and treatment of a particular patient and allow them to indicate their reasons for making an exception to recommended practices (quality measures). This study found that in the vast majority of cases, the exceptions made by physicians are considered appropriate. A panel of medical experts reviewed all cases where physicians made an exception to 1 or more of 16 chronic disease and prevention quality measures. Physicians were then provided feedback regarding their exception decision and allowed to change their management of the patient. The expert panel found that 93.6 percent of 614 exceptions were deemed medically appropriate. Only 3.1 percent were considered inappropriate. After receiving feedback on their exception decisions, physicians changed the way they managed the patient in 42 percent of these cases (8 out of 19). (*Annals of Internal Medicine*, February 2010)

Health IT Implementation Stories

AHRQ-funded health IT projects are helping to revolutionize everyday clinical practice. Following are some stories and lessons learned from some of these pioneering projects.

Rural Hospitals Get Health IT Boost

To help rural hospitals across the United States make more informed investments in technology, researchers examined barriers to health IT adoption in rural Iowa hospitals as well as rural hospitals' health IT capacity, barriers to using technology, the costs of such technology for rural hospitals and which technologies were most strongly linked to better care for patients. Researchers then identified which technologies could have the greatest

applicability for these hospitals, especially in the State's critical access hospitals (CAHs). They found several roadblocks to IT adoption in rural hospitals. These included high costs related to infrastructure and software, technology that was not ready for a hospital environment, and a lack of reimbursement for the use of technology. As part of their effort to better understand these barriers, researchers formed the Iowa CAH Health IT Interest Group. The group met several times a year over a 3-year period and gathered input from the CAH Health IT Interest Group. They created Web-based tools to provide hospitals with information that would help them make better health IT investments.

Project Seeks To Cure What Ails Electronic Health Records

Many EHRs are limited in their ability to provide physician performance feedback on quality. The Partners Healthcare System, along with researchers at Brigham and Women's Hospital and Harvard Medical School, are examining whether information technology tools that provide both clinical-decision support and population-based performance feedback will increase the value of EHRs to clinicians while improving patient safety and quality for patients with acute respiratory illness or coronary artery disease. To make their EHRs more useful, researchers began implementing "smart forms" and "quality dashboards" at clinical practices in the Boston area affiliated with Massachusetts General Hospital and Brigham and Women's Hospital. Smart forms help physicians to document relevant clinical information and integrate best practice information and ordering capabilities into care. The quality dashboard, which works hand-in-hand with the smart forms, is a system that provides feedback to physicians on their patient population and gives them the ability to see how they are performing on certain measures of quality. The physician can drill down from the population view and see individual information on patients through the smart forms. Currently, the dashboard and smart form for acute respiratory patients has been introduced to about 1,000 doctors in 10 practices. The coronary artery disease/diabetes smart form is being rolled out to a

similar number of practices, while the dashboard for coronary artery disease is being pilot tested in 2 practices to 20 physicians.

AHRQ's Health IT Portfolio maintains a database of its new, current, and completed projects, as well as its initiatives, reports, tools, and products, at its Web site www.healthit.ahrq.gov.

Prevention/ Care Management Portfolio

The mission of the Prevention/Care Management Portfolio is to improve the quality, safety, efficiency, and effectiveness of the delivery of evidence-based preventive services and chronic care management in ambulatory care settings. This mission is accomplished by:

- Supporting clinical decisionmaking for preventive services through the generation of new knowledge, the synthesis of evidence, and the dissemination and implementation of evidence-based recommendations.
- Supporting the evidence base for and implementation of activities to improve primary care and clinical outcomes through:
 - Health care redesign
 - Clinical-community linkages
 - Self management support
 - Integration of health information technology
 - Care coordination

The programmatic work of the Portfolio is carried out through grants and contracts to generate new knowledge, to synthesize and disseminate evidence, and to facilitate implementation of evidence-based primary care. The Portfolio fulfills AHRQ's congressionally mandated role to convene and provide ongoing scientific, technical, administrative, and dissemination support to the United States Preventive Services Task Force.

Men's Preventive Health Campaign

In support of the Prevention/Care Management Portfolio, AHRQ, working with the Ad Council, launched its Men's Preventive Health Campaign. As part of this campaign, AHRQ created a Healthy Men Web site (www.ahrq.gov/healthymen) where men can find out more about the preventive medical tests they need. The site also features information for men on how to stay healthy, talk with their doctors, understand prescription medications, and how to make informed decisions about their health care.

AHRQ Support of the United States Preventive Services Task Force (USPSTF)

The USPSTF is an independent panel of non-federal experts in prevention and evidence-based medicine comprised of clinicians with primary care-relevant expertise with strong science backgrounds. The USPSTF conducts scientific evidence reviews of a broad range of clinical preventive health care services (such as screening, counseling, and preventive medications) and develops recommendations for primary care clinicians and health systems. These recommendations are published in the form of "Recommendation Statements."

The USPSTF was first convened by the U.S. Public Health Service in 1984 and in 1995 programmatic responsibility for the USPSTF was transferred to AHRQ. Since its inception, the USPSTF has worked to fulfill its mission of:

1. Assessing the benefits and harms of preventive services in people asymptomatic for the target condition, based on age, gender, and risk factors for diseases.
2. Making recommendations about which preventive services should be incorporated into primary care practice.

USPSTF recommendations are intended to improve clinical practice and promote public health. The USPSTF's scope is specific: its recommendations address primary or secondary preventive services provided in primary care settings, which target conditions that represent a substantial burden in the United States.

U.S. Preventive Services Task Force Web Site

A new USPSTF Web site was launched in FY10. The Web site contains the complete library of USPSTF recommendations and information about the USPSTF and its methods. In addition, the USPSTF implemented a new process by making its draft Recommendation Statements available for public comment before they are published as part of its ongoing effort to keep its work and methods clear to the public it serves. For more information, go to www.USPreventiveServicesTaskForce.org.

Publications Based on USPSTF Recommendations

Many clinically effective preventive services are substantially under-used. To support broader

uptake of services considered to be most important by the USPSTF, AHRQ has made available the following publications based on USPSTF recommendations:

- *The Guide to Clinical Preventive Services* includes USPSTF recommendations on screening, counseling, and preventive medication topics and includes clinical considerations for each topic. The 2010-2011 Guide offers recommendations on clinical preventive services made by the USPSTF from 2002 to March 2010. It is available both in published form as a pocket guide and on the AHRQ Web site.
- *Men: Stay Healthy at Any Age* and *Women: Stay Healthy at Any Age* show at a glance what the USPSTF recommends regarding screening tests and preventive medicine. Healthy lifestyle behaviors are also addressed. These two publications were updated for FY10 and are available in English. The Spanish versions will be available in early 2011.
- *Men: Stay Healthy at 50+, Checklist for Your Health* and *Women: Stay Healthy at 50+, Checklist for Your Health* show at a glance what

IBM Integrated Health Services

A computer-aided screening initiative based on the USPSTF recommendations and delivered via an online annual Health Risk Assessment has been successfully implemented for employees at IBM Integrated Health Services. Known as the Preventive Care Rebate, the initiative is designed to improve compliance, awareness, and the completion of appropriate clinical preventive screenings based on age, gender, and family history of disease. In addition to the USPSTF A and B recommendations (those services that the USPSTF recommends), the Preventive Care Rebate Program requirement also incorporates consumer materials from AHRQ's Effective Healthcare Program and AHRQ Director Dr. Carolyn Clancy's series of consumer advice columns, "Navigating the Health Care System."

During IBM's annual health plan enrollment, employees are given the opportunity to elect to participate in any of the company's Healthy Living Rebates—one of which is the Preventive Care Rebate. In 2008, 67,000 employees registered to participate in the Preventive Care Rebate Program. Of those employees, 58,000 completed the "Overdue Test Action" step, one of three requirements needed in order to earn a \$150 incentive.

Investing in prevention and well-being makes sense for IBM's employees and its business because healthy employees tend to experience a better quality of life, both in the workplace and in their personal lives. In addition, employees who discover health problems early may recover faster, spend less on medical care, and have decreased absenteeism.

the USPSTF recommends regarding screening tests and preventive medicine. Healthy lifestyle behaviors are also addressed. (Available in English and Spanish.)

Electronic Preventive Services Selector (ePSS)

The *Electronic* Preventive Services Selector (ePSS) is a tool that is both Web-based and downloadable to a PDA, iPhone, or iPad allowing clinicians to access USPSTF recommendations, clinical considerations, and selected practice tools at the point of care. It is designed to help primary care clinicians identify and offer the screening, counseling, and preventive medication services that are appropriate for their patients. The ePSS offers the current, evidence-based recommendations of the USPSTF and can be searched by specific patient characteristics, such as age, sex, and selected behavioral risk factors. In FY10, AHRQ created the ePSS widget.

Embedding a short line of Web-based code will add the ePSS widget to any Web site and the content will be automatically updated. The ePSS widget provides easy and free access to the clinical preventive service recommendations from the USPSTF. Since its debut in July 2010, the widget has received over 64,000 visitors.

Additional information is available at <http://epss.ahrq.gov>.

Recent Research Findings on Prevention/Care Management

- An AHRQ-funded study found that collaboration between physicians and telephone quit-lines can boost smokers' chances of getting the support they need to quit smoking. A total of 1,817 smokers from 16 primary care practices participated in the study. Physicians used an expanded "vital sign" intervention that included asking patients if they smoke, advising tobacco cessation if they do, assessing their interest in quitting, and referring interested patients to a quit-line via fax. The quit-line

offered four telephone counseling sessions as well as contact with the physician for possible drug therapy and followup. A control group of primary care practices just used the traditional tobacco use vital sign (identifying patients who never smoked, used to smoke, or currently smoke) without a system for patient assessment and referral. The percentage of smokers receiving cessation support was 40.7 percent in the intervention group and 28.2 percent in the control group. Implementing the systematic process resulted in a significant increase of in-office discussion of quitting smoking as well as referrals to quit-lines. The researchers found a greater frequency of cessation support in patients aged 35-54 years, and with male and more experienced primary care physicians. (*American Journal of Preventive Medicine*, April 2010)

Primary Care Practice-Based Research Networks

AHRQ supports local, regional, and national networks of primary care practices, which work with academic researchers to conduct research and advance efforts to improve the quality and transform the practice of primary care. Currently, 115 primary care practice-based research networks (PBRNs) from across the country are registered with AHRQ's PBRN Resource Center and are thus eligible to receive technical and other support. This includes a group of 10 PBRNs that are under contract with AHRQ to rapidly develop and assess methods and tools to assure that new scientific evidence is incorporated into clinical care in real-world practice settings. These networks are comprised of over 2,000 community-based practices that are located across the country and provide primary care services for 12 million Americans. Since 2000, AHRQ has also funded over 68 PBRNs through grant and contract programs and has provided technical and networking assistance for many others.

AHRQ Support of PBRNs

AHRQ has supported the PBRN Resource Center since 2002. The Center manages a national registry of active primary care PBRNs across the country and provides resources and assistance to registered PBRNs engaged in clinical and health services research. In addition, AHRQ provides PBRNs with Peer Learning Groups, which consist of conference calls and presentations to assist researchers and support staff in topical areas such as PBRN operations, quality improvement research, health information technology, and research methodology. These opportunities for information exchange empower the participants through expert consulting and training to share and improve skills.

The Electronic Repository of PBRN Research is a virtual library of research conducted in primary care center PBRNs. Such publications may include peer reviewed published journal articles (copyright permitting), pre-print articles, review articles, book chapters, conference papers, and supplemental journal article information. The PBRN Extranet provides secure Web space for PBRNs to share documents, collaborate, and communicate and develop resources with others within and outside the network.

American Recovery and Reinvestment Act Awards

In FY10, AHRQ awarded over \$20 million in grants through the Recovery Act to primary care PBRNs for comparative effectiveness research projects. Network awardees include:

- Clinicians Enhancing Child Health (CECH) at Dartmouth University for a comparison of methods to address teen mental health in primary care settings (Principle Investigator, Ardis Olson)
- Great Lakes Research into Practice Network (GRIN) at Michigan State University for a study of provider versus health plan delivered care management of chronic conditions. (Principle Investigator, Jodi Holtrop)
- Mecklenburg Area Partnership for Primary Care Research (MAPPR) for a comparison of community-based asthma interventions. (Principle Investigator, Michael Dulin)
- Utah Health Research Network (UHRN) for a study of strategies for primary care practice redesign. (Principle Investigator, Michael Magill)
- Distributed Ambulatory Research in Therapeutics Network (DARTNet), based in Denver, for a study of methods of conducting therapeutics inquiries. (Principle Investigator, Lisa Schilling)

Recent PBRN Research Findings

Findings from numerous AHRQ-funded projects conducted within PBRN settings were reported in 2010, and include the following.

- Investigators from the Pediatric Research Consortium at Children's Hospital of Philadelphia investigated whether a clinical decision support (CDS) system embedded in an EHR improves clinician adherence to national asthma guidelines. The guidelines include recommendations for writing prescriptions for controller medications, using spirometry for monitoring asthma, and having an asthma care plan. The study showed that primary care practices that used CDS in the EHR had improved compliance with national asthma guidelines over practices that did not have CDS in their EHR. Asthma is a chronic disease affecting millions of children in the United States and is also an AHRQ priority condition for research. (*Pediatrics*, March 2010)
- Researchers working with the Mecklenburg Area Partnership for Primary Care Research used a Geographical Information System to study patterns of health care use among Hispanics in North Carolina. The researchers were able to create utilization maps based on emergency department use, clinic use, and insurance type. Based on this data, the researchers were then able to create maps of

areas to target for increasing the Hispanic community's use of primary care. (*Journal of the American Board of Family Medicine*, January 2010)

- Investigators from the Iowa Research Network, the North Carolina Network Consortium and the State Networks of Colorado Ambulatory Practices and Partners completed work on how to improve the delivery of primary care to patients with community-acquired methicillin-resistant *Staphylococcus aureus* (MRSA) infections. Findings from these projects included a demonstrated need for improved documentation and coding of MRSA infections by providers, improved training in incision and drainage techniques, and increased patient education on wound care, hygiene, and follow-up care.

For more information on the PBRNs and their research projects, go to <http://pbrn.ahrq.gov>.

Value Portfolio and Related Activities

AHRQ's Value Portfolio and related activities aim to find a way to achieve greater value in health care—reducing unnecessary costs and waste while improving quality—by producing the measures, data, tools, evidence, and strategies that health care organizations, systems, insurers, purchasers, and policymakers need to improve the value and affordability of health care. The goal is to create a high-value system, in which providers produce greater value, consumers and payers choose value, and the payment system rewards value.

MONAHRQ-Input Your Data-Output Your Website

In May 2010, AHRQ released MONAHRQ (My Own Network, powered by AHRQ), a Web-based application developed to enable State and local data organizations, community quality collaboratives,

hospitals, health plans, and providers to input their own hospital administrative data and generate a data-driven Web site. MONAHRQ software analyzes, summarizes, and presents information on the quality of care at the hospital level, health care utilization at the hospital level, preventable hospitalizations at the county level, and rates of conditions and procedures at the county level.

MONAHRQ is built on the Windows version of AHRQ's Quality Indicators but expands its capability to analyze, summarize, and present information on health care utilization, rates of conditions and procedures, and quality of care in a format ready for use by consumers and other decisionmakers. MONAHRQ can be used to meet data analysis and reporting needs and to better understand health care in areas and hospitals. MONAHRQ can be used to:

- Generate reports and statistics to be used internally within organizations.
- Create a limited-access Web site for member organizations.
- Produce an open-access Web site for consumers and other decisionmakers to compare facilities in an area or to present health care outcomes in geographic regions.

In fall 2010, AHRQ launched the MONAHRQ Learning Network, a group of State and private organizations that are using MONAHRQ or plan to use MONAHRQ to build their own Web sites. Learning Network activities will include in-person and electronic meetings and will focus on issues such as potential uses of MONAHRQ, possible enhancements to MONAHRQ, and adoption of MONAHRQ. The State of Nevada was the first to publish a MONAHRQ-based Web site—Nevada Compare Care at <http://nevadacomparecare.net/Monahrq/home.html>. In addition, Hawaii also released its Web site at <http://hhic.org/publicreports.asp>.

For more information, see <http://monahrq.ahrq.gov/>.

MONAHRQ Learning Network Knowledge Transfer Project

This Knowledge Transfer project formed a Learning Network composed of current and potential adopters of MONAHRQ. Using in-person meetings, Web conferences, and a virtual collaborative workspace, the Learning Network solves problems, shares experiences, and works toward the goal of implementing the MONAHRQ software at their organizations. Accomplishments in FY10 include:

- Successful recruitment of 33 organizations from 22 States representing State departments of health, Chartered Value Exchanges, HCUP partners, hospital consortiums, single hospitals, and academic institutions.
- Developing MONAHRQnet, a collaborative virtual workspace that will enable the communication and support for the learning network.

Community Quality Collaboratives

Community quality collaboratives are community-based organizations of multiple stakeholders, that are working together to transform health care at the local level. These collaboratives include AHRQ's 24 Chartered Value Exchanges (CVEs)—multi-stakeholder initiatives with a mission of quality improvement and transparency. CVE stakeholders comprise a rich and diverse group that spans purchasers, consumer organizations, health plans, providers and others such as State data organizations or QIOs. In aggregate, these collaboratives involve more than 550 healthcare leaders and represent more than 124 million lives, more than one-third of the U.S. population.

In FY10, AHRQ continued its partnership with the CVEs by providing technical assistance to them through a Learning Network. Through the Learning Network, CVE members learn from each other and from experts, sharing experiences and best practices in areas such as collaborative leadership and sustainability, consumer engagement, public reporting, provider and consumer incentives, health information technology, and strategies to improve quality and efficiency.

Several new resources were released in FY10 to support the work of the CVEs and other community quality collaboratives. For example, *Selecting Quality and Resource Use Measures: A Decision Guide for Community Quality*

Collaboratives, was designed for collaboratives to guide their strategic and operational planning related to performance measurement. The Decision Guide presents evidence-based answers to 26 questions, identified in collaboration with CVE stakeholders themselves.

AHRQ also released the *Best Practices in Public Reporting* series, which provides practical approaches to designing public reports that make health care performance information clear, meaningful, and usable by consumers. Report 1 focuses on the presentation of comparative health care performance data. Report 2 focuses on the explanatory information in public reports, beyond the performance data itself that helps to accurately communicate quality ratings to consumers and motivate them to use the ratings in making informed health care decisions. Report 3 applies social marketing and other principles to explore how to target reports to specific audiences, develop messages to promote the report with key audiences, engage consumer advocacy and community groups in promoting reports and helping people use them, disseminate reports through trusted channels, and ensure that consumers see and use comparative quality reports.

Finally, the Learning Network convened several Web conferences each month in FY10, covering topics such as strategies for payment reform, tracking and reducing hospital readmissions, engaging consumers on the topic of health care quality, PCMH models and the latest evidence on pay-for-performance.

For more information on community quality collaboratives and the CVEs, go to www.ahrq.gov/qual/value/localnetworks.htm.

Crosscutting Activities

Crosscutting Activities include a variety of research projects and activities related to quality, effectiveness, and efficiency, which support the five research portfolios. These activities include data collection and measurement, dissemination, rapid cycle research, training, and intramural and extramural research sponsored by multiple portfolios.

Healthcare Cost and Utilization Project (HCUP)

HCUP is a family of health care databases and related software tools and products developed through a Federal-State-industry partnership and sponsored by AHRQ. HCUP databases bring together the data collection efforts of 43 State data organizations, hospital associations, private data organizations, and the Federal Government to create a national information resource of patient-level health care data. HCUP includes the largest collection of all-payer encounter-level longitudinal hospital care data in the United States, beginning in 1988. These databases enable research on a broad range of health policy issues, including cost and quality of health services, medical practice patterns, access to health care programs, and outcomes of treatments at the national, State, and local market levels.

HCUP Data Revisit Analyses

Made available for public use, the newly developed HCUP Supplemental Files for Revisit Analyses are discharge-level files designed to facilitate analyses to track patients across time and hospital settings in the HCUP inpatient, ambulatory surgery, and emergency department databases. Each record in an HCUP database represents one discharge abstract from a hospital setting (inpatient, emergency department, or ambulatory surgery)—meaning if an individual visited the hospital three

times in a given year, the HCUP databases would include three separate records in the respective database. After being combined with the corresponding databases, the HCUP Supplemental Files for Revisit Analyses allows researchers to uniformly identify sequential visits for an individual and use the available clinical information to study if the visits are unrelated, complications from a previous treatment, or an unexpected revisit or re-hospitalization. Total charge information from each visit can be combined to determine the total charge or cost for an episode of hospital care.

New Data Added to HCUP

In FY10, AHRQ added 2008 data to its HCUP national database marking the 20th anniversary of providing powerful data to researchers and policy makers. The Nationwide Inpatient Sample (NIS) for 2008 includes 1,056 hospitals from 42 States. Data from NIS are available from 1988 to 2008, allowing analysis of trends over time. The NIS is nationally representative of all short-term, non-Federal hospitals in the United States. It approximates a 20-percent stratified sample of hospitals in the United States and is drawn from the HCUP State Inpatient Databases, which include 90 percent of all discharges in the United States. The NIS includes all patients from each sampled hospital, regardless of payer—including persons covered by Medicare, Medicaid, and private insurance, as well as uninsured persons. It encompasses all discharge data from more than 1,000 hospitals in 40 States.

HCUP Statistical Briefs

In FY10, AHRQ continued to issue HCUP Statistical Briefs, a series of Web-based publications containing information from HCUP. These publications provide concise, easy-to-read information on hospital care, costs, quality, utilization, access, and trends for all payers (including Medicare, Medicaid, private insurance, and uninsured). Each Statistical Brief covers an important health care issue. For example:

- Nearly 25 percent of patients in public hospitals were covered by Medicaid, compared with 17.3

percent in private not-for-profit hospitals. Public hospitals cared for over 75 percent more uninsured patients than did private not-for-profit hospitals (8.3 percent versus 4.7 percent). Nearly 11 percent of all patients in metropolitan public hospitals were uninsured and 27.7 percent were covered by Medicaid.

(See *Public Hospitals in the United States, 2008*, www.hcup-us.ahrq.gov/reports/statbriefs/sb95.pdf.)

- The rate of infections among medical and surgical discharges peaked in 2004 and 2005 at 2.30 per 1,000 stays, then declined to 2.03, a rate similar to year 2000.

(See *Adult Hospital Stays with Infections Due to Medical Care, 2007*, www.hcup-us.ahrq.gov/reports/statbriefs/sb94.pdf.)

- In 2008, nearly one in five hospitalizations were related to patients with diabetes, totaling over 7.7 million stays and \$83 billion in hospital costs. Hospital stays for patients with diabetes were longer, more costly, and more likely to originate in the emergency department than stays for patients without diabetes.

(See *Hospital Stays for Patients with Diabetes, 2008*, www.hcup-us.ahrq.gov/reports/statbriefs/sb93.pdf.)

- In 2008, approximately 18 percent of Medicare beneficiaries were dually eligible for Medicaid. Dually eligible patients accounted for about one-third of all Medicare hospital stays with a principal diagnosis of pressure ulcers (36 percent), asthma (32 percent), and diabetes (32 percent); and roughly one-quarter of stays for urinary tract infection, chronic obstructive pulmonary disease, and bacterial pneumonia.

(See *Hospitalizations for Potentially Preventable Conditions among Medicare-Medicaid Dual Eligibles, 2008*, www.hcup-us.ahrq.gov/reports/statbriefs/sb96.pdf.)

- Hospital costs for bone marrow transplants shot up 85 percent from \$694 million to \$1.3 billion between 2004 and 2007. Ten procedures experienced rapid cost increases between 2004 and 2007. About 75 percent of the rise was due to increases in the number of patients who

underwent these procedures and 25 percent resulted from higher costs per case treated. In addition to bone marrow transplantation, the procedures with the most rapid increases in hospital costs included:

- Open surgery for noncancerous enlarged prostate: Up 69 percent to \$1 billion.
- Aortic valve resection or replacement: Up 38.5 percent to \$1.9 billion.
- Cancer chemotherapy: Up 33 percent to \$2.6 billion.
- Spinal fusion: Up 29.5 percent to \$8.9 billion.
- Lobectomy (a type of lung cancer surgery): Up 29 percent to \$1.8 billion.
- Incision and drainage of skin and other tissues: Up 29 percent to \$1 billion.
- Knee surgery: Up 27.5 percent to \$9.2 billion.
- Nephrostomy (surgery to allow urine to pass through the kidneys): Up 25 percent to \$683 million.
- Mastectomy (breast removal because of cancer): Up 24 percent to \$660 million.

(See *Procedures with the Most Rapidly Increasing Hospital Costs, 2004-2007*, www.hcup-us.ahrq.gov/reports/statbriefs/sb82.pdf.)

- Nearly 8 million patients were admitted to U.S. hospitals on weekends in 2007 and received 36 percent of major procedures on the day of admission. In comparison, patients who were admitted on weekdays received 65 percent of all major procedures on their first day in the hospital. For example:

- Patients who were admitted on weekends were more likely to be there due to emergencies, such as heart attack, stomach bleeding, fractures, or internal injuries, than patients hospitalized on a weekday (65 percent versus 44 percent).
- A smaller share of weekend than weekday admissions was elective (11 percent weekend and 28 percent weekday).

- Sixty-four percent of heart attack patients admitted on a weekend had a major cardiac procedure, such as angioplasty or heart bypass surgery, performed by the second day of their hospitalization, compared with 76 percent of heart attack patients admitted on a weekday. A smaller share of weekend than weekday admissions received treatment on the day of admission for back surgery (35 percent versus 90 percent); angina (23 percent versus 37 percent); gallbladder removal (23 percent versus 32 percent); and hernia repair (54 percent versus 68 percent).
- Weekday admissions were often planned in advance. For example, 99 percent of admissions for osteoarthritis and 93 percent of those for back problems occurred on weekdays.
- About 2.4 percent of patients admitted on a weekend died in the hospital, compared with 1.8 percent of patients admitted on a weekday.

(See *Characteristics of Weekday and Weekend Hospital Admission*, www.hcup-us.ahrq.gov/reports/statbriefs/sb87.pdf)

- Hospital charges for uninsured stays grew by 88 percent between 1998 and 2007. The average charge for an uninsured hospital stay grew from \$11,400 in 1998 to \$21,400 in 2007 after adjusting for inflation. In addition:
 - From 1998 to 2007, the number of uninsured hospital stays increased by 31 percent, which far exceeds the 13 percent overall increase in hospital stays during the period.
 - The percentage of uninsured hospital stays increased the most in the South, rising from 5.8 percent to 7.5 percent. In contrast, in the Midwest, the percentage of uninsured hospital stays declined from 4.7 percent to 4.0 percent.
 - The top reason that uninsured patients were hospitalized was for childbirth. In 2007, roughly a quarter of a million uninsured

women gave birth in hospitals. This reason was followed by mood disorders (94,300); chest pain with no observed cause (77,000); skin infections, which more than doubled from 31,000 to 73,300; and alcohol-related disorders (66,600).

(See *Trends in Uninsured Hospital Stays, 1998-2007*, www.hcup-us.ahrq.gov/reports/statbriefs/sb88.pdf.)

For more information about HCUP, go to www.ahrq.gov/data/hcup/.

AHRQ Quality Indicators

In FY10, AHRQ released an updated version of its Quality Indicators (QIs) software 4.1a and 4.1b (for both Windows and SAS®). The AHRQ QIs are used to highlight potential quality concerns, identify areas that need further study and investigation, and track changes over time. A number of the measures are also used in comparative hospital reporting and basing payment on quality. The AHRQ QIs are organized into four modules, each of which measures quality associated with the delivery of care occurring in either an outpatient or an inpatient setting:

- Prevention Quality Indicators (PQIs) are ambulatory care-sensitive conditions that identify adult hospital admissions that evidence suggests could have been avoided, at least in part, through high-quality outpatient care.
- Inpatient Quality Indicators (IQIs) reflect quality of care for adults inside hospitals and include: inpatient mortality for medical conditions; inpatient mortality for surgical procedures; utilization of procedures for which there are questions of overuse, underuse, or misuse; and volume of procedures for which there is evidence that a higher volume of procedures may be associated with lower mortality.
- Patient Safety Indicators (PSIs) also reflect quality of care for adults inside hospitals, but focus on potentially avoidable complications and patient safety events.

Knowledge Transfer project results in two States adding their data to HCUPnet

After attending workshops featuring HCUPnet offered as part of AHRQ's Knowledge Transfer Quality Diagnostic Tools for States project, two States—Maine and Tennessee—agreed to share their data publicly through HCUPnet (<http://hcupnet.ahrq.gov>).

Representatives from Maine attended the AHRQ Knowledge Transfer Program's "State Healthcare Quality Improvement Workshop." This workshop featured several AHRQ products and tools to diagnose quality issues and improve quality of care. The Maine participants were impressed by the various capabilities of the HCUPnet tool. After the workshop, they urged Al Prysunka, Executive Director of the Maine Health Data Organization, to share data in HCUPnet.

Prysunka, who also serves on the Healthcare Cost and Utilization Project Advisory Committee at AHRQ, notes that several participants from the December 2007 workshop called him to discuss sharing Maine's data as a result of the HCUPnet presentations and information gained at the meeting. Upon deciding to share Maine's data, Prysunka says that "the relationship between AHRQ and Maine is quite positive. AHRQ has a staff that does a lot of analytical and methodological work that is wonderful."

Another AHRQ workshop was influential in encouraging Tennessee's participation in HCUPnet. Tennessee officials attended a technical assistance meeting, "Using Administrative Data To Answer State Policy Questions," which focused on several AHRQ tools—including HCUP and HCUPnet—that support a State's analysis of administrative data. Attendees included staff from the Tennessee Hospital Association, which holds the State contract to collect hospital discharge data, as well as the Tennessee Department of Health, which regulates the collection of data. The workshop included a live demonstration of HCUPnet by HCUP staff. The demonstration impressed the Tennessee delegation and convinced its members that the State's information should be included in the online tool.

Brooks Daverman, Health Quality Analyst, Tennessee Department of Finance and Administration's Division of Health Planning, notes, "After the presentation, our delegation decided independently that Tennessee's data should be on HCUPnet, and we agreed upon our return to Nashville to seek the necessary approvals from our various groups. Those approvals were quickly obtained, and we were able to instruct AHRQ to put Tennessee's information on the AHRQ Web site soon after." Tennessee has continued to increase the amount of data the State shares in HCUP, recently adding emergency room data.

- Pediatric Quality Indicators (PDIs) are indicators of children's health care that can be used with inpatient discharge data. They are designed to examine both the quality of inpatient care and the quality of outpatient care that can be inferred from inpatient data, such as potentially preventable hospitalizations.

Currently, 48 AHRQ QIs and AHRQ QI composites are endorsed by the National Quality Forum. In addition, 21 States use the QIs, giving the public access to hospital quality information. For more information, see www.qualityindicators.ahrq.gov.

The 2009 National Healthcare Quality and Disparities Reports

In April 2010, AHRQ released the *2009 National Healthcare Quality Report* (NHQR) and the *2009 National Healthcare Disparities Report* (NHDR) the seventh consecutive, annual editions of the congressionally-mandated reports. Overall, the reports found that quality is improving, but the pace is slow. In addition, many disparities are not decreasing, with cancer, heart failure, and pneumonia needing particular attention.



The 2009 reports also include a new section on lifestyle modification, such as preventing or reducing obesity, which is crucial for the health of many Americans and an important task for health care providers. For example:

- More than 40 percent of obese adults have never received advice from their doctor about exercise.
- Obese adults who are black, Hispanic, or poor or have less than a high school education are less likely to receive diet advice from their doctor.
- Most overweight children and one-third of obese adults report that they have not been told by their doctor that they are overweight.
- Most American children have never received counseling from their health care provider about exercise, and almost half have never received counseling about healthy eating.

National Healthcare Quality Report (NHQR)

Sample of Findings: Deaths Due to Heart Attack

The 2009 NHQR found that the overall proportion of hospital patients who died in the hospital after a heart attack fell by 37 percent between 2000 and 2007, from 106 per 1,000 patients to 67 per 1,000 patients during the period. Medicare patients experienced the largest decline (37 percent) and Medicaid patients, the smallest (27 percent). While the privately insured and uninsured rates fell at a similar pace (32 percent), the uninsured were much more likely to die from a

heart attack (93 versus 67 deaths per 1,000 heart attack admissions).

Geographical Variations

From 2000-2007, Midwestern hospitals went from having the highest heart attack death rate in the country to the lowest (from 112 to 63 deaths per 1,000 heart attack admissions). Western hospitals had the highest rate of heart attack deaths than any other region in 2007 (71 deaths per 1,000 heart attack admissions). In 2000, they had the second-highest. The death rate from heart attacks fell the most in the largest hospitals (500 beds or more), and by 2007 the heart attack death rate was almost 1.5 times lower than that of smaller hospitals with fewer than 100 beds (60 versus 87 deaths per 1,000 heart attack admissions).

Sample of Findings: Deaths Due to Complications

The 2009 NHQR also found that fewer hospital patients died from complications in their health care between 2001 and 2006, but Asians/Pacific Islanders and Hispanics were less likely to survive than either whites or blacks. The overall death rate for patients ages 18 to 74 who developed a complication such as pneumonia, blood clots, or blood infections during their hospitalization decreased 23 percent (from 152 deaths to 117 deaths for every 1,000 patients with complications) from 2001 to 2006.

Although the death rate for Asians and Pacific Islanders fell 24 percent during the period, they had the highest death rate of any group in both 2001 and 2006. The death rate for Hispanic patients declined by 21 percent, yet by 2006, their rate was the second highest of any group (122 deaths per 1,000 patients). The largest decrease in death rate was for black patients, which declined by 30 percent. In 2001, blacks had higher rates than whites, but by 2006, the black death rate was the lowest of any of the four groups of patients (111 deaths per 1,000 patients).

2010 NHQR Theme: The Effects of Insurance Status on Quality of Care

The overall theme for the 2009 NHQR was insurance status. In summary, this increased

scrutiny on the effect of insurance status on quality of health care found that uninsured patients had worse outcomes and received worse care than patients with private insurance. Several key areas were identified as most pronounced:

- The overall proportion of hospital patients who died in the hospital after a heart attack fell between 2000 and 2006 for all insurance groups (the privately insured, Medicare and Medicaid recipients, and the uninsured). However, death rates among uninsured patients were higher than among patients with private insurance.
- The biggest difference in health care services was in receipt of mammograms by women ages 40 to 64, in which 74 percent of those with private insurance had a mammogram, while less than 40 percent of those with no insurance had been screened.

National Healthcare Disparities Report (NHDR)

One of the basic tenets of a high quality health care system is that all groups within the population should receive equally high care quality. Getting into the health care system (access to care) and receiving appropriate health care in time for the services to be effective (quality care) are key factors in ensuring good health outcomes for all groups.

Consistent with extensive research and findings in previous NHDRs, the 2009 report finds that disparities related to race, ethnicity, and socioeconomic status are still pervasive in the American health care system. Although varying in magnitude by condition and population, disparities are observed in almost all aspects of health care. Members of racial and ethnic minority groups, poor people, less educated people, and people without health insurance face significant barriers to care and experience worse health outcomes.

Sample of Findings: The Five Largest Observed Disparities

The NHDR identifies five measures for which the disparities are largest and are worsening over time

for racial and ethnic minorities compared with whites:

- Deaths per 100,000 population per year for colorectal cancer among blacks
- Asian adults age 65 and over who did not ever receive a pneumococcal vaccination
- American Indian and Alaska Native adults age 50 and over who did not receive colorectal cancer screening
- American Indian and Alaska Native hospital patients with heart failure who did not receive recommended hospital care
- Hispanic adults age 65 and over who did not ever receive a pneumococcal vaccination

Sample of Findings: Areas Where Multiple Groups Experience Disparities

In some cases, such as respiratory diseases, disparities are seen in multiple groups. The gap between the proportion of black and white Americans with asthma who took an inhaled or oral medicine daily to prevent attacks grew wider between 2003 and 2006. There was no significant difference in the use of daily asthma medicine between the two groups in 2003 (29 percent of blacks compared with 30 percent of whites). By 2006, the proportion of blacks who reported taking daily asthma medicine had fallen to 25 percent, while 34 percent of whites reported taking it.

The gap between Hispanic and white asthma sufferers who reported daily use of medicine also widened from 2003 to 2006. Specifically, roughly 28 percent of Hispanics and 31 percent of whites reported taking medicine daily for asthma in 2003, and in 2006, the number of Hispanics taking the drugs decreased to 23 percent, while the number of whites taking them increased to 35 percent.

Sample of Findings: In Some Areas, Disparities Are Decreasing

Disparities, however, are not exclusively increasing, as some disparities have been nearly eliminated. From 2003 to 2006, the gap in use of asthma medications closed between high-income people

and people at other income levels. During the same period, the gap also closed between people who did not finish high school and those with some college education.

Furthermore, improvements in care are being seen in some areas, with multiple groups experiencing increases in receipt of care. For example, screening women for osteoporosis rose dramatically. The proportion of women age 65 and over on Medicare who said that they had been screened for osteoporosis increased from 33 percent in 2001 to 64 percent in 2006. Additionally, the rate of bone density or bone mass screening in white women nearly doubled during the period (36 percent to 67 percent). Hispanic women reported the most dramatic increase in screening, from 22 percent to 55 percent. The percentage of black women who reported undergoing osteoporosis screening also rose significantly, from 16 percent to 38 percent. While all women reported increases in osteoporosis screening, income was a factor: by 2006, only 46 percent of poor women reported having had a screening test, compared with 80 percent of high-income women.

The number of residents at nursing homes who were kept physically restrained dropped by more than half from 2000 to 2007, from 10.4 percent in 2000 to 5 percent in 2007. Further analyses revealed that from 2000 to 2007, the gap between Asians/Pacific Islanders (APIs) and whites in the percentage of residents who were physically restrained decreased. Nevertheless, in 2007, the percentage of residents who were physically restrained was still higher for APIs than for whites (6 percent compared with 5 percent). From 2000 to 2007, the gap between Hispanics and whites also decreased. However, in 2007, the percentage of residents who were physically restrained was still higher for Hispanics than for whites (7 percent compared with 5 percent).

Sample of Findings: Disparities for Those With Hypertension

Despite improvements, disparities in some areas persist. At nearly 5 times that of whites, the hospital admission rate for blacks with

hypertension was 161 per 100,000 people in 2006, (compared to 33 admissions per 100,000).

Furthermore, the admission rate for Hispanics with high blood pressure was 61 per 100,000 people, or nearly twice that of whites. Asians and Pacific Islanders had the lowest admission rate for high blood pressure (26 per 100,000). Women were admitted for high blood pressure more often than men (56 versus 40 hospitalizations per 100,000). The poorest Americans were 2.5 times more likely to be admitted for high blood pressure than the wealthiest (83 versus 32 admissions per 100,000).

The 2009 NHQR and NHDR are available online at www.ahrq.gov/qual/qrd09.htm. In addition to copies of the reports, the Web site also includes an online Data Query System—NHQRDRNet—that provides access to national and State measures of quality, and access to nearly 40 data sources at <http://nhqrnet.ahrq.gov/nhqrdr/>.

State Snapshots

For FY10, the Agency's *State Snapshots*, a State-by-State health care quality and access comparison tool, was expanded to include increased data on health insurance. Much of the data on health care quality can now be categorized by source of payment, including private insurance, Medicare, Medicaid, and no insurance.

As always, the 2009 *State Snapshots* (available at: <http://statesnapshots.ahrq.gov>) provide State-specific health care quality information, which can compare strengths, weaknesses, and opportunities for improvement. State-level information used to create the State Snapshots stems from data collected for the 2009 NHQR. Overall, States get mixed reviews for the quality of care they provide. As in previous years, AHRQ's 2009 *State Snapshots* show that no State does universally well or poorly on quality measures.

Some States do far better or worse than others. For instance, Maine, Maryland, Wyoming, South Carolina, and the District of Columbia showed the greatest improvements. The five States showing the

Healthcare 411 en Español provides vital health care information to Spanish speakers

Healthcare 411 en Español is a new audio news series to provide Spanish speakers with evidence-based consumer information to help them stay healthy, prevent diseases, compare the effectiveness of various medical treatments, and obtain high-quality and safe health care. AHRQ is producing two 60-second audio reports each month and distributing them to Spanish-language radio stations nationwide. Each audio segment includes an interview with a native Spanish-speaking AHRQ physician who discusses current issues such as the importance of regular screening exams for people with diabetes or how to prepare for a doctor's appointment. AHRQ posts the audio to its Healthcare 411 Web site, where consumers can subscribe and download the segments to a computer or portable media device such as an MP3 player.

To listen to the Healthcare 411 audio segments in Spanish, visit www.healthcare411.ahrq.gov and select "En Español."

smallest improvements were North Dakota, Texas, West Virginia, Nebraska, and Washington. For each State, it is possible to identify specific clinical conditions that could account for the differing rates of improvement.

Furthermore, the new health insurance section allows users to compare payer-specific quality rates as well as differences among payers. For instance, a State can compare the quality of care received by Medicaid or uninsured patients with that received by these same patients nationally. In addition, a State can assess whether its insurance-related disparities are larger or smaller compared with the Nation as a whole.

The 2009 *State Snapshots* provide additional ways to analyze the quality of health care for each State compared with all States, or with States in the same region. For example, the Mountain States region of the United States, which includes Montana, Wyoming, Idaho, Utah, Nevada, Colorado, Arizona, and New Mexico, reported the lowest average (best) rate of potentially avoidable hospitalizations for heart failure in the Nation in 2006, at 266 admissions per 100,000 population. Continuing the regional analysis found that the following regions had the next lowest rates of potentially avoidable heart failure hospitalization rates:

- Pacific (which includes California, Oregon, Washington, and Alaska) had the second lowest

average rate, at 316.5 admissions per 100,000 population.

- West North Central (which includes North Dakota, South Dakota, Nebraska, Iowa, Missouri, Minnesota, and Kansas), 362 per 100,000.
- New England (which includes Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, and Maine), 364 per 100,000.

The regions with the highest rates were:

- East South Central (which includes Alabama, Mississippi, Tennessee, Kentucky), with a rate of 583 admissions per 100,000 population.
- East North Central (which includes Wisconsin, Michigan, Illinois, Indiana, and Ohio), 502 admissions per 100,000 population.
- West South Central (which includes Texas, Oklahoma, Arkansas, Louisiana), 496 admissions per 100,000 population.
- Southeast (which includes Florida, Georgia, North Carolina, South Carolina, Virginia, West Virginia, Maryland, Delaware), 460 admissions per 100,000 population.
- Mid-Atlantic (which includes New Jersey, New York, Pennsylvania), 430 admissions per 100,000 population.

Enhanced sections on asthma care, diabetes care, and health care disparities are also included on the *State Snapshots*. For example, two States, Oregon and Vermont, reported the Nation's lowest rates of potentially preventable hospitalizations for asthma in children ages 2 to 17 in 2006. Oregon reported the lowest rate of potentially avoidable hospitalizations, at 44 per 100,000 children, with Vermont followed closely with 46 admissions per 100,000 children. States that also reported low rates of potentially avoidable asthma hospitalizations per 100,000 children ages 2 to 17 included New Hampshire (62 per 100,000 children), Iowa (66), Utah (74), Nebraska (75), and Maine (78).

Recent Research Findings on Disparities and Minority Health

In addition to its work on the NHDR, AHRQ is leading Federal research efforts to develop knowledge and tools to help eliminate health care disparities in the United States. AHRQ supports and conducts research and evaluations of health care with emphasis on disparities related to race, ethnicity, socioeconomic status, and geographic variation. The Agency focuses on priority populations: minorities, women, children, elderly adults, low-income individuals, and people with special health care needs such as people with disabilities or those who need chronic or end-of-life care. Several studies, published during FY10, are summarized below.

- Material disadvantages, such as inadequate housing, lack of food, and being uninsured or underinsured, are linked to declines in walking ability and self-rated health among older Americans. Researchers examined data from both the 2004 and 2006 Health and Retirement Study on walking ability, an important predictor of disability and the need for later long-term care, as well as three factors: health insurance coverage, food insufficiency, and housing quality/affordability. All three factors contributed to declines in walking ability and self-reported health. Most Americans experienced at least one form of material disadvantage. Individuals with multiple forms of material disadvantage were at particularly increased risk of health decline and functional impairment as they aged. Common problems cited by older persons included issues with neighborhood safety (27.7 percent) and being either uninsured or underinsured (30.9 percent). More blacks (9 percent) than whites (2 percent) were disadvantaged in all three areas of health care, housing, and food. The same was true for 7 percent of participants with less than a high school education compared with 2 percent of those with a high school diploma. (*American Journal of Public Health*, November 2009)
- To contain health care costs and promote high quality care, States often require health care facilities to obtain approval before offering certain new or expanded services, such as coronary angiography facilities. When New Jersey eased these restrictions, access to angiography (an imaging technique used to diagnose heart problems) increased and eliminated a longstanding racial disparity. Researchers examined the effect of regulatory reforms between 1996 and 2003 and found that a doubling of angiography facilities closed the gap in blacks' and whites' access to these services. The average number of angiography procedures for blacks rose 46 percent for all New Jersey hospitals between the mid-1990s and 2001, with urban hospitals seeing the biggest influx of black patients. Annual utilization among whites rose a more modest 15 percent over the same period, closing the black-white gap in procedure rates. (*Health Affairs*, September/October 2009)
- Parents of children with special health care needs (CSHCN) often have to take time off work, reduce their number of work hours, or even quit a job altogether to care for their sick child. More than half of the CSHCN had some or a great deal of functional limitations due to their condition. Just over a third (35 percent) had changing health care needs. Nearly a quarter of parents (23.7 percent) reported some

type of work loss, with 13.3 percent of families reporting that a member had to stop work to care for their child. Factors associated with increased odds of work loss included having a younger CSHCN, increasing functional limitation and/or condition instability, being uninsured, and having public insurance. The odds of work loss were lower for families with post-high school education and those with a medical home. A medical home can save a family time and frustration by coordinating medical appointments and referrals, streamlining communication between primary care doctors and other providers, and reducing duplicative services. (*Pediatrics*, December 2009)

- An estimated 2.7 million U.S. children are severely obese. This number jumped more than 300 percent since 1976 and 70 percent since 1994. Researchers examined data representing 71 million U.S. children from the National Health and Nutrition Examination Survey and found that black and Mexican American boys aged 12 to 19 are most likely to be severely obese. Poverty is also a risk factor. More than a third of severely obese children face significant health risks and meet criteria of the adult metabolic syndrome: large waistlines, high triglyceride levels, high cholesterol, high blood pressure, and high blood sugar levels. Further, more than 400,000 adolescents may meet criteria to have bariatric surgery; that is, their BMIs classify them as morbidly obese. (*Academic Pediatrics*, September/October 2009)

Consumer Assessment of Healthcare Providers and Systems (CAHPS®)

AHRQ has been the lead Federal agency in developing and disseminating standardized, evidence-based surveys and related tools for assessing patients' experiences with the U.S. health care system. The Agency's Consumer Assessment of Healthcare Providers and Systems (CAHPS®) program has become the focal point of a national

effort to measure, report on, and improve the quality of health care from the perspective of consumers and patients. For example, almost all U.S. hospitals use the Hospital Survey (H-CAHPS) component to report patients' perspectives on their experience of care while hospitalized. (www.HospitalCompare.hhs.gov). CAHPS develops and supports the use of a comprehensive and evolving family of standardized surveys that ask consumers and patients to report on and evaluate their experiences with different aspects of the health care system.

CAHPS® Item Set for Addressing Health Literacy

In FY10, AHRQ released the CAHPS® Item Set for Addressing Health Literacy in English and Spanish. The primary purpose of the CAHPS Item Set for Addressing Health Literacy is to measure, from the patients' perspective, how well health care professionals communicate with their patients. This survey also:

- Identifies specific topic areas for quality improvement (e.g., communication about test results, medications, and forms).
- Assesses health care professionals' health literacy practices.
- Identifies behaviors that inhibit effective communication (e.g., talking too fast).
- Provides information to help providers develop an environment where patients feel comfortable discussing their health concerns (e.g., by showing interest in their questions).

The CAHPS Item Set for Addressing Health Literacy consists of 29 supplemental items designed for use with the CAHPS Clinician and Group Survey. It covers the following seven topics:

- How well nurses address health literacy
- How well doctors address health literacy
- Communication about tests
- Communication about discharge planning and self-care post discharge

- Communication about medicines
- Interpreter services
- Communication about forms

Surgical Care Survey Approved as CAHPS® Product

A team led by the Surgical Quality Alliance developed a survey of patients' experiences with surgical care. After extensive review of questionnaire content, data reliability and validity, and the development process, AHRQ's CAHPS® Consortium agreed in FY10 to grant use of the CAHPS trademark to this instrument. This survey expands on the current Clinician & Group Survey by incorporating domains relevant to surgical care, such as informed consent, provision of anesthesia, shared decisionmaking, and postoperative followup. Respondents are also asked to rate the anesthesiologist and the surgeon. The Surgical Care Survey asks respondents about a surgical episode, including care before, during, and after the procedure, rather than care received across a specified time period (e.g., 6 or 12 months) or just care over time or during a specific visit.

For more information about CAHPS, go to www.cahps.ahrq.gov.

National Guideline Clearinghouse™

The National Guideline Clearinghouse™ (NGC) provides physicians and other health professionals, health care providers, health plans, integrated delivery systems, purchasers, and others an accessible mechanism for obtaining objective, detailed information on clinical practice guidelines and to further their dissemination, implementation, and use. The NGC is a Web-based resource for information on over 2000 evidence-based clinical practice guidelines. Since becoming fully operational in 1999, the NGC has had over 63 million visits and receives approximately 500,000 visits each month.

In FY10, the NGC redesigned its Web site with updated design elements, new guideline summary



display, enhanced searching, and easier access to all content. Users of the new and improved site will notice significant upgrades to the accessibility of information, which have been accomplished through the following:

- Improved site architecture designed according to Web usability standards
- Improved home page and site navigation that allow users to more easily understand and access the sites' content (also, per Web usability standards)
- Improved presentation of summaries for guidelines, for ease of navigation both within the summary and to related content at the Clearinghouse
- Improved browse and search functionality that better leverages the classification of guidelines using key vocabulary standards

In FY10, the Web site for AHRQ's National Quality Measures Clearinghouse™ (NQMC) was also updated and revised. New upgrades include the same updates and revisions as the NGC site.

This is the third year in which AHRQ's NGC, in conjunction with the NQMC, has published a series called Expert Commentary. Together, the two resources published eight new Expert Commentaries which are editorial insights on current issues of importance to the guideline and/or measure fields including perspectives on trends in guideline and/or measure development, reviews/critiques of guidelines/measures, comments on topics related to evidence-based medicine, or similar themes. The topics of the commentaries

included challenges of measuring and improving quality in ambulatory care, the improved function and content for the NGC Web site, recommendations for initiating antiretroviral therapy, and developing health care guidelines and measures. Also covered was the Grading Recommendations Assessment, Development, and Evaluation approach, as well as health care information technology and the evidence classification scheme from the American Academy of Neurology. These commentaries were authored either by members of the NGC/NQMC Editorial Board or by experts working in conjunction with the board.

For more information about the NGC, go to www.guideline.gov.

Accelerating Change and Transformation in Organizations and Networks

Accelerating Change and Transformation in Organizations and Networks (ACTION) is a 5-year implementation model of field-based research that fosters public-private collaboration in rapid-cycle, applied research. With a goal of turning research into practice, ACTION links many of the Nation's largest health care systems with its top health services researchers. As a network, ACTION provides health services in a wide variety of organizational care settings to at least 100 million Americans. From 2006 through 2010, ACTION partnerships have received close to 100 awards totaling more than \$74 million.

ACTION funding has focused on task orders that relate directly to AHRQ's portfolio goals and performance measures. Examples of ACTION research include:

- HAI Reduction: In FY10, AHRQ awarded over \$10 million for ACTION contract task orders that target HAI prevention in acute care hospitals, and ambulatory, hemodialysis, and long-term care facilities. A major focus of the HAI prevention work in ACTION involves nationwide spread of CUSP to reduce central line-associated blood stream infections in intensive care units (see Patient Safety Portfolio, Preventing Healthcare-Associated Infections).
- TeamSTEPPS® Spread: Another ACTION project is achieving national spread of TeamSTEPPS, an evidence-based teamwork system designed for improving communication and other teamwork skills among health care professionals (see Patient Safety Portfolio, TeamSTEPPS). TeamSTEPPS includes a comprehensive set of ready-to-use materials and training curricula necessary to integrate teamwork principles successfully into a health care system. In FY10, 18 TeamSTEPPS 3-day master trainer courses were held at 5 Team Resource Centers across the country. There are now over 1,000 Master Trainers, who have in turn trained over 5,000 persons in TeamSTEPPS. AHRQ has funded follow-on work to continue training, evaluate impact, and sustain adoption.
- Improving Health Literacy: AHRQ's Pharmacy Health Literacy Center Web site (<http://pharmacyhealthliteracy.ahrq.gov/sites/PharmHealthLiteracy/>) was developed as part of an ACTION contract designed to assess organizational responses to four tools designed to help pharmacists meet the needs of patients with low health literacy. The new Web site allows interested users to download the tools and to access online technical assistance in using them. The Web site also provides a variety of other health literacy resources for pharmacists. The four tools featured on the site were developed under an earlier ACTION contract.
- Improving Emergency Preparedness: Many of the emergency preparedness tools and products featured on AHRQ's Web site for Public Health Emergency Preparedness (www.ahrq.gov/prep/) were developed and tested in ACTION. AHRQ's publishing, marketing, and media efforts have resulted in the dissemination of 4,500 tools, tens of thousands of Web site visits, and 13,000 more subscribers to Public Health Emergency Preparedness GovDelivery list, which now has more than 23,000 subscribers.

Physical therapists use AHRQ's *Research Activities* for communicating with both clinicians and patients

For over 15 years, Kauffman-Gamber Physical Therapy in Pennsylvania has used AHRQ's *Research Activities* (www.ahrq.gov/research/resact.htm) as a reliable source of evidence-based information in communicating with both clinicians and patients.

Timothy L. Kauffman, Ph.D., PT, says, "I find this publication invaluable as a diverse collection of pertinent health care and societal issues. The work published in *Research Activities* frequently becomes part of our office staff meetings." With a professional staff of five physical therapists and four physical therapist assistants, the clinics—one in Lancaster and another in Millersville—provide approximately 1,200 patient treatments monthly.

As an example of how valuable the publication is to his practice, Kauffman found the October 2009 article on back pain and exercise especially useful to share with physicians, nurse practitioners, and physician assistants. The AHRQ-funded research findings in that issue helped demonstrate and support his clinic's treatment approach as important in promoting good patient outcomes.

The cited research, led by Timothy Carey, M.D., M.P.H., and colleagues at the Cecil G. Sheps Center for Health Services Research, showed that treatment by physical therapists or chiropractors was the strongest predictor of a patient's receiving an exercise prescription. In addition, compared with physicians and chiropractors, physical therapists were more likely to supervise the exercise program and prescribe strengthening and stretching exercises. The research also showed that physicians rely too much on prescribing narcotics and not enough on prescribing specific exercises to treat back and neck pain. Kauffman says, "This information is very important and must get out to other providers."

In addition to using *Research Activities* with his physical therapy staff and other clinicians, Kauffman uses the information in discussions with patients. He finds it helpful in educating patients about the value of a specific therapeutic exercise program—tailored to their individual situation—as an essential part of their physical therapy plan of care.

More information on ACTION partnerships and projects can be found on the AHRQ Web site at www.ahrq.gov/research/action.htm.

To build upon and maintain ACTION's successes, AHRQ made new 5-year awards to 17 new partnerships in September 2010. These ACTION II partnerships include over 350 collaborating organizations. Like ACTION, collectively these partnerships span all States. They now provide access and care to an estimated 50 percent of the U.S. population, representing a broad geographic, demographic, and payer mix for care recipients. The partnerships are composed of diverse organizations involved in health care delivery and dissemination and spread of findings, including: inpatient, ambulatory and long-term care health care providers, health plans, health services research organizations/networks, consumer and patient

safety groups, professional or trade associations/organizations, and quality Improvement organizations.

ACTION II partnerships conduct practice-based implementation research focused on achieving one or more of the following four objectives:

- Test or expand investigation of innovations that are new to the health care field, (proofs of concept);
- Implement, in additional settings, interventions or improvement approaches that have been demonstrated to have worked in a limited type or number of settings;
- Spread, or take to scale, one or more proven innovations or delivery system improvements;
- Evaluate/support sustainability.

Health Care Innovations Exchange

AHRQ's Health Care Innovations Exchange is a comprehensive program designed to accelerate the development and adoption of innovations in health care delivery. This program supports the Agency's mission to improve the safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity of care—with a particular emphasis on reducing disparities in health care and health among racial, ethnic, and socioeconomic groups.

The Innovations Exchange aims to increase awareness of innovative strategies and activities among health care providers in a timely manner by providing a central repository of searchable innovations and QualityTools. It consists of a compilation of practical tools for assessing, measuring, promoting, and improving the quality of health care that enables health care decisionmakers to quickly identify ideas and tools that meet their needs, a standardized description of innovations and QualityTools, and opportunities for learning and networking with like-minded adopters of innovations.

The Innovations Exchange has the following components:

- **Searchable innovations.** Profiles of successful and attempted innovations describe the innovative activity, its impact, how the innovator developed and implemented it, and other useful information for deciding whether to adopt the innovation.
- **Searchable QualityTools.** Practical tools that can help assess, measure, promote, and improve the quality of health care.
- **Learning opportunities.** Resources that describe the process of innovation and adoption and ways to increase the chances that organization will accept these innovative approaches to care. Resources include expert commentaries, articles, perspectives, and adoption guides.
- **Networking opportunities.** Opportunities to interact with innovators and organizations that have adopted innovations to learn new approaches to delivering care and developing effective strategies and to share information. Posting comments on specific innovations is one way to connect with innovators. Types of comments include asking questions or responding to questions about how an innovation works and mentioning additional resources and lessons learned from adopting, implementing, and sustaining an innovation.

Currently, the Health Care Innovations Exchange hosts 480 Innovation Profiles and more than 1,500 quality tools. The site also supports a learning network focused on coordination of community care for at-risk populations and offers occasional Web conferences. An example of some of the Web conferences held in FY10 are below:

Connecting Those at Risk to Care: A Guide to Building a Community "HUB" To Promote a System of Collaboration, Accountability, and Improved Outcomes that discussed AHRQ's newly published guide that lays out a step-by-step process for developing the infrastructure within a local community to improve the quality and coordination of health and social services for at-risk populations.

Innovative Roles of Pharmacists in Health Service Delivery that featured two innovative service delivery strategies that tap into the skills and qualifications of clinical pharmacists to influence patient medication management.

For more information, go to www.innovations.ahrq.gov/.

A particular focus of ACTION II will be to increase understanding not only of whether particular innovations “work,” but how and why they work or not. ACTION II research is intended to be practice-based, implementation oriented, and rapid cycle. Information on ACTION II partnerships and projects is available on the AHRQ Web site at www.ahrq.gov/research/actionII.htm.

Conclusion

In FY11, AHRQ is continuing to further its mission to improve the quality, safety, efficiency and effectiveness of health care for all Americans, in addition to its work to eliminate healthcare-associated infections, promote health IT, and provide data and information for decisionmaking. The evidence developed through AHRQ-sponsored research and analyses helps everyone involved in patient care make more informed decisions about what treatments work for whom, when and, at what point in their care. AHRQ will continue to invest in successful programs that develop and translate into evidence, knowledge and tools that can be used to make measurable improvements in health care in America through improved quality of care and patient outcomes.



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