AHRQ Annual Highlights 2007

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Introduction

The U.S. health care system is considered by many to be the finest in the world. Americans are living longer, healthier lives, thanks to significant advances in biomedical and health services research, yet too many people still do not receive the quality of care that they expect and deserve. The quality of health care in this Nation continues to improve at a modest pace. However, the rate of improvement appears to be slowing. According to data from the *National Healthcare Quality Report*, the quality of health care improved by an average 2.3 percent a year between 1994 and 2005, a rate that reflects some important advances but points to an overall slowing in quality gains. The improvement rate is lower than the 3.1 percent average annual improvement rate reported in the 2006 reports. According to the *National Healthcare Disparities Report*, disparities in health care quality and access are not getting smaller. Progress is being made, but many of the biggest gaps in quality and access have not been reduced, and the problem of persistent uninsurance is a major barrier to reducing disparities.

Improving the quality and effectiveness of health care—providing the right care to the right patient at the right time, and getting it right the first time—remains a challenge in the United States. Our health care system faces many challenges including:

- Improving the quality and safety of health care.
- Ensuring access to care.
- Getting value for what we spend on health care.
- Eliminating disparities.
- Increasing the use of health information technology.
- Providing consumers, providers, and other stakeholders with evidence-based information that they can use to make informed health care decisions.

As 1 of 12 agencies within the Department of Health and Human Services (HHS), the Agency for Healthcare Research and Quality (AHRQ) has a mission to improve the quality, safety, efficiency, effectiveness, and cost-effectiveness of health care for all Americans. The Agency works to fulfill this mission by conducting and supporting health services research, both within AHRQ as well as in leading academic institutions, hospitals, physicians' offices, health care systems, and many other settings across the country, 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 research into practice to achieve wider access to effective health care 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 choices/decisions.

The Agency's mission helps HHS achieve its strategic goals to improve the safety, quality, affordability, accessibility of health care; public health promotion and protection, disease prevention, and emergency preparedness; promote the economic and social well-being of individuals, families, and communities; and advance scientific and biomedical research and development related to health and human services. The Agency has a broad research portfolio that touches on nearly every aspect of health care including:

- Comparative effectiveness.
- Patient safety/medical errors.

- Health care quality.
- Health information technology.
- Evidence-based medicine.
- Clinical practice.
- Outcomes of care and effectiveness.
- Primary care and care for priority populations.
- Organization and delivery of care and use of health care resources.
- Health care costs and financing.
- Health care system and public health preparedness.

This report presents key accomplishments, initiatives, and research findings from AHRQ's research portfolio during 2007.

AHRQ's Customers

Ultimately, the Agency's goal is to improve the quality and safety of health care. It achieves this goal 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:

- Clinicians who provide direct care and services to patients use AHRQ's evidence-based 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 guidelines and quality measures.
- Policymakers, purchasers, and other health officials use AHRQ research to make better 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. 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 can help patients and their families 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

Questions Are the Answer

AHRQ joined with the Ad Council to launch a national public service advertising (PSA) campaign designed to encourage adults to take a more proactive role in their health care. The campaign entitled "Questions Are the Answer: Get More Involved With Your Health Care" was launched during national Patient Safety Awareness Week (March 4-10, 2007). The PSA campaign encouraged all patients and caregivers to become more active in their health care by asking questions. The campaign included television, radio, print, and Web advertising that directed audiences to call a toll-free number, 1-800-931-AHRQ, and visit the Web site at www.ahrq.gov/questionsaretheanswer, to obtain tips on how to help prevent medical mistakes and become a partner in their health care. The site also features an interactive "Question Builder" that allows consumers to generate a customized list of questions for their health care providers that they can bring to each medical appointment.

Healthcare 411

Healthcare 411 is a news series produced by AHRQ. These weekly audio and video programs feature news and information on current health care topics with synopses of AHRQ s latest research findings. The stories keep consumers, employers, health care providers, researchers, educators, and others informed about the findings of selected AHRQ-sponsored research. Also on this site are links to AHRQ s public service announcements on issues such as quitting smoking, taking medication safely, eating healthy, and the importance of regular visits to a doctor as well as messages encouraging patients to be involved in their health care and ask questions of all their health care providers. In 2007, newscasts released included:

- Health literacy: how well people understand and evaluate information about health and health care
- Blood pressure medications: which medication is better at controlling high blood pressure
- High quality health care: advice on getting the services that give the best results
- Antidepressant medication: the effectiveness of common antidepressants and their side effects
- Medication errors and children: ways to keep children safe from drug or other medical errors
- Pediatric emergency departments: parents using information technology to help clinicians treat their child

care and other health services they receive. AHRQ's goal is to help people become better informed consumers and to be partners in their own care.

Comparative Effectiveness

AHRQ was authorized to perform comparative effectiveness research under the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003. The MMA authorizes AHRQ to conduct and support research with a focus on outcomes, comparative clinical effectiveness, and appropriateness of pharmaceuticals, devices, and health care services. The focus of this research is based on the top conditions that are common and costly among those whose health care is funded by Medicare, Medicaid, and the State Children's Health Insurance Program such as arthritis, cancer, chronic obstructive pulmonary disease, dementia, depression, diabetes, heart disease, peptic ulcer disease, pneumonia, stroke, and hypertension.

This work is conducted under the Agency's Effective Health Care Program, which was launched in 2005, and it focuses strategically on comparing the outcomes, clinical effectiveness, and appropriateness of pharmaceuticals, devices, and health care services. The Effective Health Care Program's primary principle is that all stakeholders should have the best available evidence on which to make decisions about health care items and services.

The Effective Health Care Program has three approaches to research on the comparative effectiveness of different treatments and clinical practices:

- Research reviews: comprehensive reviews and syntheses of evidence prepared by the Evidence-based Practice Centers (EPCs).
- New research: reports that cover new evidence and analytical tools produced by AHRQ's Developing Evidence to Inform Decisions about Effectiveness (DEcIDE) Network and the Centers for Education & Research on Therapeutics (CERTs).

Questions and Answers about Health Insurance

AHRQ and America's Health Insurance Plans released Questions and Answers about Health Insurance, a new guide designed to help consumers make important health insurance decisions. The guide explains how different types of health insurance work, including network-based plans, non-network based coverage, and consumer-directed health plans. It also provides a glossary of health insurance terms as well as additional resources to obtain more information. This guide is a critically important resource because today's more complex health care system requires consumers and employers to be more informed about their choices. Choosing and understanding how to use a health plan may be the key to helping consumers get the care they need when they need it. Copies can be downloaded at www.ahrq.gov/consumer/insuranceqa/.

- Summary guides: short, comprehensive summaries of research findings translated into a variety of useful formats by the John M. Eisenberg Clinical Decisions and Communications Science Center.

Comparative Effectiveness Reviews (CERs)

Seven new comparative effectiveness reviews (CERs) were published in 2007. The reviews use a research methodology that systematically and critically appraises existing research to synthesize knowledge on a particular topic. They also identify research gaps and make recommendations for studies and approaches to fill those gaps. The CERs are briefly summarized here:

- *Efficacy and Comparative Effectiveness of Off-Label Use of Atypical Antipsychotics*. The report indicates that some newer antipsychotic medications approved to treat schizophrenia and bipolar disorder are being prescribed to millions of Americans for depression, dementia, and other psychiatric disorders without strong evidence that such off-label uses are effective. They also found strong evidence that atypical antipsychotics can increase chances of adverse events.
- *Comparative Effectiveness of Second-Generation Antidepressants in the Pharmacologic Treatment of Adult Depression*. This report found that today's most commonly prescribed antidepressants are similar in effectiveness to each other but differ when it comes to possible side effects. The findings show that about 6 in 10 adult patients get some relief from the drugs.
- *Comparative Effectiveness and Safety of Oral Diabetes Medications for Adults with Type 2 Diabetes*. This report found that most oral medications prescribed for type 2 diabetes are similarly effective for reducing blood glucose, but the drug metformin is less likely to cause weight gain and may be more likely than other treatments to decrease "bad" cholesterol. The report summarizes the effectiveness, risks, and estimated costs for 10 drugs.
- *Comparative Effectiveness of Angiotensin-Converting Enzyme Inhibitors (ACEIs) and Angiotensin II Receptor Antagonists (ARBs) for Treating Essential Hypertension*. This report found that two common classes of blood pressure medications—angiotensin-converting enzyme inhibitors and angiotensin receptor blockers—are equally effective at controlling high blood pressure. There are no consistently apparent differences between them when it comes to impacting lipids, managing or slowing the progression of diabetes, controlling renal disease, or impacting heart function.

- *Comparative Effectiveness of Drug Therapy for Rheumatoid Arthritis and Psoriatic Arthritis in Adults*. This report concluded that for patients with rheumatoid arthritis, combining one well-known, lower cost synthetic drug with one of six biologic medications often works best to reduce joint swelling or tenderness. The report concluded that combining methotrexate, a synthetic disease-modifying antirheumatic drug (DMARD), with one of the biologic DMARDs works better than using methotrexate or a biologic DMARD alone.
- *Comparative Effectiveness of Treatments To Prevent Fractures in Men and Women With Low Bone Density or Osteoporosis*. This report indicates that bisphosphonates, medications commonly used to reduce the risk of bone fractures in people with osteoporosis, have not been proven more effective than alternatives. Researchers compared the effectiveness and risks of six bisphosphonates and also looked at estrogen, calcitonin, calcium, vitamin D, testosterone, parathyroid hormone, and selective estrogen receptor modulators.
- *Comparative Effectiveness of Percutaneous Coronary Interventions and Coronary Artery Bypass Grafting for Coronary Artery Disease*. Patients with mid-range coronary artery disease are more likely to get relief from painful angina and less likely to have repeat procedures if they get bypass surgery rather than balloon angioplasty with or without a stent. Bypass surgery and angioplasty patients had about the same survival rates and similar numbers of heart attacks, and bypass surgery presents a slightly higher risk of stroke within 30 days of the procedure. Studies that measured patients' quality of life 6 months to 3 years after undergoing the procedures found significantly more improvement for bypass surgery patients than for balloon angioplasty patients.

New Research Reports

- *Survey of Medicare Part D Plans' Medication Therapy Management Programs*, Effective Health Care Research Report No. 1. This report reflects that Medication Therapy Management (MTM) programs currently offered by Medicare Advantage Drug Plans and Prescription Drug Plans are highly variable. Once enrolled in an MTM program, the benefits were equally variable with some programs offering mailings or limited phone support services and others offering a range of services depending on patient needs.
- *Comparative Safety of Conventional and Atypical Antipsychotic Medications: Risk of Death in British Columbia Seniors*, Effective Health Care Research Report No. 2. This report indicates that elderly patients using conventional antipsychotic medications (APMs) are at no lower risk of mortality than those using atypical APMs.
- *Comparative Effectiveness of Beta-Adrenergic Antagonists on the Risk of Rehospitalization in Adults with Heart Failure,* Effective Health Care Research Report No. 3. Researchers found that among high-risk patients hospitalized with heart failure, the adjusted risks of rehospitalization for heart failure within 12 months were not significantly different among patients receiving atenolol, shorter-acting metoprolol tartrate, or carvedilol.

Summary Guides

In 2007, the Eisenberg Center produced 12 summary guides for consumers, clinicians, and policymakers. Examples include:

- *Antidepressant Medicines - A Guide for Adults With Depression*, Consumer Summary Guide. This guide, based on a review of research about the medicines often used to treat adults with depression, can help consumers work with their doctor or nurse to choose medicines for depression. It covers common

medicines for adults with depression, their side effects, and price.

- *Choosing Non-Opioid Analgesics for Osteoarthritis,* Clinician Summary Guide. This guide summarizes clinical evidence on the effectiveness and safety of non-opioid analgesics for osteoarthritis. It covers most available over-the-counter medications and prescription non-steroidal anti-inflammatory drugs.
- *Off-Label Use of Atypical Antipsychotic Drugs,* Policymaker Summary Guide. This guide reviews the benefits, risks, side effects, and price of five atypical antipsychotic drugs used for six conditions (dementia-related behavioral problems, depression, obsessive-compulsive disorder, post-traumatic stress disorder, personality disorders, and Tourette's syndrome in children and adolescents).

Developing Evidence to Inform Decisions about Effectiveness

The Developing Evidence to Inform Decisions about Effectiveness (DEcIDE) Network is a network of research centers that AHRQ created as part of its Effective Health Care Program in 2005 to generate new knowledge. The DEcIDE Network conducts accelerated practical studies about the outcomes, comparative clinical effectiveness, safety, and appropriateness of health care items and services. The Network provides research-based health organizations with access to electronic health information databases and the capacity to conduct rapid turnaround research. Initial research focuses on the outcomes of prescription drug use and other interventions for which randomized controlled trials would not be feasible or timely or would raise ethical concerns that are difficult to address. Other DEcIDE Network projects may focus on electronic registries, methods for analyzing health databases, and prospective observational or interventional studies.

DEcIDE: Registries for Evaluating Patient Outcomes

In 2007, AHRQ released Registries for Evaluating Patient Outcomes: A User's Guide, the first government-supported handbook for establishing, managing, and analyzing patient registries. As part of the Effective Health Care

Use of Findings from the Effective Health Care Program

Consumer Reports Best Buy Drugs, a public education project of Consumers Union, uses findings from AHRQ's Effective Health Care program to help clinicians and patients determine which drugs and other medical treatments work best for certain health conditions. For example, the Consumer s Unions used AHRQ's *Comparative Effectiveness of Management Strategies for Gastroesophageal Reflux Disease* to assist clinicians and patients in making informed decisions about which drugs to prescribe and use. The information is finalized into three final consumer products: a full report, a three-page summary, and a booklet that can be downloaded at no charge (www.crbestbuydrugs.org). The magnitude of the program's impact is evidenced by the fact that the Consumers Union drug class reviews are downloaded at a rate of 110,000 per month. Over the course of the two-year project, over 1 million reports have been downloaded.

The National Business Group on Health uses this research to provide employers and their employees the best available evidence for designing benefits and making treatment choices. Medscape, an online medical information and education tool for specialists, primary care physicians, and other health professionals, uses the reports for clinicians to get continuing education. In addition, most of the reports are published concurrently in one of the *Annals of Internal Medicine*.

Program, Outcome Sciences, Inc., a DEcIDE center, and the Duke Evidence-based Practice Center collaborated in a study of registries and the many elements involved in creating a registry. This handbook identifies the best scientific practices for operating registries.

DEcIDE Projects in Progress

At the close of 2007, DEcIDE had over 30 research projects in progress. The priority conditions and topics being studied include:

- Brain and nerve conditions
- Breathing conditions
- Cancer
- Diabetes
- Digestive system conditions
- Heart and blood vessel conditions
- Mental health
- Muscle, bone, and joint conditions
- Research methodology

Information on the Effective Health Care program, including full reports, can be found at www.effectivehealthcare.ahrq.gov.

Developing and Promoting the Use of Evidence

AHRQ supports efforts to improve health care by building the foundation of evidence for interventions and approaches in clinical practice. Patients, providers, and payers all need information on which treatments work most effectively, whom these treatments work for, under what circumstances, and the risks involved. This information needs to be objective, reliable, understandable, and easily accessible. AHRQ supports several initiatives to help synthesize and translate evidence-based information on health care effectiveness.

Evidence-based Practice Centers

Under AHRQ's Evidence-based Practice Centers (EPCs), institutions in the United States and Canada receive 5-year contracts to review all relevant scientific literature on clinical, behavioral, organizational and financing topics, methodology of systematic reviews, and other health care delivery issues, and produce evidence reports and technology assessments. 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.

Since the program was created in 1997, the EPCs have produced and published nearly 200 evidence reports on a variety of health care topics. Beginning in 2005, the EPCs began researching and preparing new evidence and technology reports as well as Comparative Effectiveness Reviews on medications, devices, and other relevant interventions for AHRQ's Effective Health Care Program.

In 2007, AHRQ announced the 14 institutions who will receive 5-year contracts which comprise the third iteration of its EPC program:

- Blue Cross and Blue Shield Association Technology Evaluation Center
- Duke University
- ECRI Institute
- Johns Hopkins University
- McMaster University
- New England Medical Center Hospitals.
- Oregon Evidence-based Practice Center;
- RAND Corporation
- RTI International/University of North Carolina at Chapel Hill

- University of Alberta
- University of Connecticut
- Minnesota Evidence-based Practice Center
- University of Ottawa
- Vanderbilt University Medical Center

The EPCs will develop reports of the scientific literature in the following focus areas:

- U.S. Preventive Services Task Force, where they will conduct systematic reviews of the evidence on specific topics in clinical prevention and provide technical support that will serve as the scientific basis for Task Force recommendations.
- AHRQ's Technology Assessment Program, where they will assess the clinical utility of medical interventions to assist the Centers for Medicare & Medicaid Services make informed decisions regarding its Medicare program.
- The Generalist Program, for which they will continue producing reports each year with private and Federal partners on a range of clinical, behavioral, economic, and health care delivery topics.
- The Effective Health Care Program, for which they will provide high-quality, reliable data in the form of comparative effectiveness reviews to help patients, clinicians, and policymakers make the best health care decisions.
- The Scientific Resource Center, through which they will provide scientific and methodologic technical support to the Generalist and Effective Health Care programs.

Recent research findings from the EPC program

In 2007, the EPCs released 20 new evidence and technology reports. Examples include:

- *Treatment of Primary and Secondary Osteoarthritis of the Knee*. This report found that glucosamine and chondroitin, over-the-counter dietary supplement ingredients that are used widely because of their purported benefits to relieve knee pain and improve physical functioning, appear to be no more effective than placebos. The review also failed to find convincing evidence of benefit from arthroscopic surgery to clean the knee joint with or without removal of debris and loose cartilage.
- *Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies: Volume 5 – Asthma Care*. This report concludes that a wide variety of types of quality improvement interventions have been found to improve the outcomes and processes of care for children and adults with asthma. Young children with asthma benefit most from quality improvement strategies that also include their caregivers or parents. General populations with asthma can have clinically

Evidence report used to develop clinical practice guidelines on occupational asthma

The American College of Chest Physicians (ACCP) used findings from AHRQ's Evidence Report No.129, *Diagnosis and Management of Work-Related Asthma*, to develop a clinical practice guideline as well as a user-friendly clinical resource guide on occupational asthma for physicians and patients. The guides were developed by a panel of 15 methodological and clinical experts, including the lead methodologists from the Alberta Evidence-based Practice Center who authored the evidence report, and other experts from ACCP's airways and occupational and environmental subspecialty network groups. ACCP intends to develop a user-friendly version of the guideline in the form of an educational/informational resource on CD-ROM for both patients and physicians and is in the process of implementing a broad dissemination strategy for its new guideline on occupational asthma.

significant improvements after participating in self-monitoring, self-management, or patient education interventions.

- *A Critical Analysis of Care Coordination Strategies for Children With Special Health Care Needs*. This technical review found that despite progress in defining care coordination and children with special health care needs (CSHCN), there remains considerable variation in current analytic approaches and definitions. However, some progress has been made in developing care coordination strategies for CSHCN and there is a major need to evaluate the impact of these strategies on health outcomes and costs.

For more about the Evidence-based Practice Center program, go to www.ahrq.gov/clinic/epcix.htm.

Centers for Education and Research on Therapeutics

The Centers for Education & 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, which is administered by AHRQ in partnership with the Food and Drug Administration, 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 appropriate use of therapeutics and preventing adverse effects and their medical consequences.

In 2007, AHRQ awarded $41.2 million which will be distributed over the next 4 years for a new CERTs coordinating center and 10 research centers as part of the CERTs program. In addtion to the existing centers, four new centers were previously funded in 2006 for a 5-year period. The new AHRQ-funded CERTs Coordinating Center is Kaiser Permanente's Center for Health Research in Portland, Oregon. The four new centers receiving first-time funding are:

- Brigham and Women's Hospital in Boston will focus on how health information technology can improve the safe use of medications.
- The University of Illinois at Chicago will focus on how reinvigorating formularies promote best medication uses.
- Cincinnati's Children's Hospital Medical Center will focus on improving pediatric patient care.
- The University of Chicago will focus on hospital use of medications and other therapeutics and their clinical and economic implications.

Six previously funded CERTs research centers won new funding awards:

- Duke University (therapies for disorders of the heart and blood vessels)
- Harvard Pilgrim Health Care on behalf of the HMO Research Network (drug use, safety, and effectiveness in defined populations cared for by health plans)
- University of Alabama at Birmingham (therapies for disorders of the joints and bones)
- The Arizona CERT at The Critical Path Institute (potentially harmful drug interactions, particularly in women)
- University of Pennsylvania (therapies for infectious diseases)
- Vanderbilt University (prescription drug use in Medicaid and Veterans populations)

The remaining four centers, which received funding in 2006, are:

- MD Anderson, Texas (risk and health communication; patient, consumer, and professional education)

- Rutgers, The State University of New Jersey (mental health therapies)
- University of Iowa (improving elderly care)
- Weill Medical College of Cornell University, New York (therapeutic medical devices)

Recent research findings from the CERTs program

- One study found that less than half of heart attack patients regularly took beta-blockers during the first year after their heart attack even though they had health insurance and prescription drug coverage. During the year after hospital discharge, only 45 percent of patients were adherent to beta-blockers, with the biggest drop in adherence between 30 and 90 days. After accounting for multiple factors, significant predictors of lower adherence were participation in a Medicare+Choice plan (compared with a commercial plan), residence in the Southeast, and ages 35 to 64 years.
- Widespread use of fluoroquinolines (FQs) has resulted in an increasing number of FQ-resistant bacterial infections in both hospitals and long-term care medical facilities, according to two studies. Researchers found that long-term care patients who had used FQ antibiotics in the past were at greater risk of developing FQ-resistant Escherichia coli urinary tract infections. A second study showed that the annual prevalence of FQ-resistant Pseudomonas aeruginosa at one hospital increased from 15 percent in 1991 to 41 percent in 2000.

More information about the CERTs program can be found at www.ahrq.gov/clinic/certsovr.htm.

National Guideline Clearinghouse™

In 2007, AHRQ's National Guideline ClearinghouseTM (NGC), in conjunction with the AHRQ's National Quality Measures Clearinghouse™ (NQMC), introduced a new Expert Commentary, a feature specifically designed to respond to the need for expert guidance on understanding, interpreting, and evaluating clinical practice guidelines and quality measures. To make the Expert Commentary a reality, NGC/NQMC assembled a 22-member Editorial Board comprised of members with a record of accomplishment and nationally or internationally recognized expertise in one or more topic areas relevant to the Clearinghouses.

The NGC is a Web-based resource for information on over 2,200 evidence-based clinical practice guidelines. Since becoming fully operational in early 1999, the NGC has had over 37 million visits and now receives over 1 million visits each month. The NGC helps health care providers, health plans, integrated delivery systems, purchasers, and others obtain objective, detailed information on clinical practice guidelines. For more information about the NGC, go to www.guideline.gov.

United States Preventive Services Task Force

In 2007, the U.S. Preventive Services Task Force (Task Force) continued to provide the "gold standard," recommendations that help build the evidence base for preventive services provided in this Nation. It was first convened by the U.S. Public Health Service in 1984. Sponsored by AHRQ since 1998, the Task Force is the leading independent panel of private-sector experts in prevention and primary care. The Task Force conducts rigorous, impartial assessments of the scientific evidence for the effectiveness of a broad range of clinical preventive services, including screening, counseling, and preventive medications. AHRQ provides technical and administrative support, but the recommendations of the panel are its own. The mission of the Task Force is to evaluate the benefits of individual services based on age, gender, and risk factors for disease; make

recommendations about which preventive services should be incorporated routinely into primary medical care and for which populations; and identify a research agenda for clinical preventive care.

Two new evidence-based consumer checklists released by AHRQ are based in part on Task Force recommendations: *Men: Stay Healthy at Any Age, Your Checklist for Health* and *Women: Stay Healthy at Any Age, Your Checklist for Health*. These checklists are designed to help men and women understand which medical checkup tests they need to stay healthy at any age and are available in English and Spanish. The checklist for men includes recommendations about cholesterol checks, tests for high blood pressure, colorectal cancer screening and recent Task Force recommendations on screening for abdominal aortic aneurysm, HIV and obesity. The checklist for women includes recommendations about screening for high cholesterol; breast, cervical and colorectal cancers; and osteoporosis. It also includes recent Task Force recommendations on obesity screening and screening for HIV for all pregnant women. The checklists are available on the AHRQ Web site at www.ahrq.gov/ppip/healthymen.htm and www.ahrq.gov/ppip/healthywom.htm.

The Task Force released the following new or updated recommendations in 2007:

- *Screening for Carotid Artery Stenosis* - recommends against screening for asymptomatic carotid artery stenosis (CAS) in the general adult population.
- *Screening for High Blood Pressure* - recommends screening for high blood pressure in adults aged 18 and older.
- *Aspirin or Nonsteroidal Anti-inflammatory Drugs for the Primary Prevention of Colorectal Cancer* - recommends against the routine use of aspirin and nonsteroidal anti-inflammatory drugs to prevent colorectal cancer in individuals at average risk for colorectal cancer.
- *Screening for Chlamydial Infection* - recommends screening for chlamydial infection for all sexually active non-pregnant young women aged 24 and younger and for older non-pregnant women who are at increased risk, as well as all pregnant women aged 24 and younger and for older pregnant women who are at increased risk.
- *Screening for Sickle Cell Disease in Newborns* - recommends screening for sickle cell disease in newborns.
- *Screening for Lipid Disorders in Children* - concludes that the evidence is insufficient to recommend for or against routine screening for lipid disorders in infants, children, adolescents, or young adults (up to age 20).
- *Counseling About Proper Use of Motor Vehicle Occupant Restraints and Avoidance of Alcohol Use While Driving* - concludes that the current evidence is insufficient to assess the incremental benefit, beyond the efficacy of legislation and community-based interventions, of counseling in the primary care setting, in improving rates of proper use of motor vehicle occupant restraints (child safety seats, booster seats, and lap-and-shoulder belts).

More information on the Task Force as well as copies of reports and guides can be found at www.ahrq.gov/clinic/uspstfix.htm.

Primary Care Practice-Based Research Networks

Primary care practice-based research networks (PBRNs) are organized groups of primary care clinicians and practices that work together with academic researchers to study issues related to health care, including improvement of the quality of care. The 120 primary care PBRNs known to be active in the U.S. include about

20,000 practices of pediatrics, family medicine, and general internal medicine located in all 50 States. These practices provide care for more than 20 million Americans. In 2007, AHRQ awarded over $4 million of grant funding to PBRNs for projects related to implementing health information technology and improving patient safety in primary care practices. In addition, AHRQ supports the growth and development of these networks through peer learning groups, a national PBRN registry, public and protected Internet sites, and an annual national PBRN conference.

Rapid Turn-Around Studies on Implementing Evidence Into Practice Conducted Within Primary Care PBRNs

In 2007 AHRQ awarded contracts to 10 primary care PBRNs to conduct studies on accelerating the implementation of evidence into practice and improving the quality of primary care. The following are examples of PBRN projects initiated in 2007:

- CaReNet, a Colorado-based network, and NCNC, a consortium of four networks located in North Carolina, are assessing the direct and indirect costs to primary care practices of collecting and reporting the quality performance measurement data required by certain insurers/payors.
- ACORN, a network headquartered in northern Virginia, is identifying barriers and potential solutions for collecting and reporting quality performance data in primary care offices.
- OKPRN, an Oklahoma-based PBRN, is studying the use of health information technology by primary care practices to support self care management among their patients during a pandemic influenza event.
- ORPRN, a network of practices located in rural Oregon, is assessing the clinical and financial impact of introducing into primary care practices a nurse-based chronic care management program.

Practice-Based Research Network Resource Center

The Practice-Based Research Network Resource Center provides resources and assistance to PBRNs engaged in clinical and health services research. Registration with the Resource Center allows PBRN researchers access to:

- technical expertise for collecting and managing data.
- methodological expertise and experience necessary for designing research projects.
- resources for operating a primary care PBRN such as communication strategies, project and network management, and member recruitment and retention.
- health information technology support and resources.
- notification of funding and research opportunities.
- forums for discussing PBRN issues with colleagues and experts in areas including quality improvement research within PBRNs.

A National Medication Error and Adverse Drug Event Reporting System for Ambulatory Care (MEADERS)

Through its PBRN Resource Center, AHRQ has supported PBRN researchers and practitioners in the design and testing of a user friendly system for reporting medication errors and adverse drug events observed in primary care practices. Since the system is Internet-based, it can be made easily accessible to any primary care practice with Internet access, while maintaining tight data security. With a single click, practitioners can opt to forward their report to the FDA's MedWatch program. During 2007, MEADERS was tested in 60 primary care practices that participate in four AHRQ-supported PBRNs. The results of this study, expected by the summer of

2008, will help AHRQ understand and remediate medication errors and adverse events that potentially lead to patient harm and hospital admissions.

National PBRN Research Conference

Over 250 people attended the 2007 AHRQ National PBRN Research Conference. Dr. Paul Thomas, an eminent PBRN researcher from the U.K., held a presentation titled "Organizing Strategies and Network Outcomes: Lessons from the U.K." which explored how four primary care research networks across London evaluated their research capacity, multidisciplinary collaboration and research productivity as a result of participation in a research network. In addition to this presentation, attendees also attended topical plenary sessions related to primary care research and PBRNs; participated in workshops addressing best practices, operations, information technology, quality improvement, and research methodology; and received updates on the most recent PBRN research.

Recent research findings from PBRNs

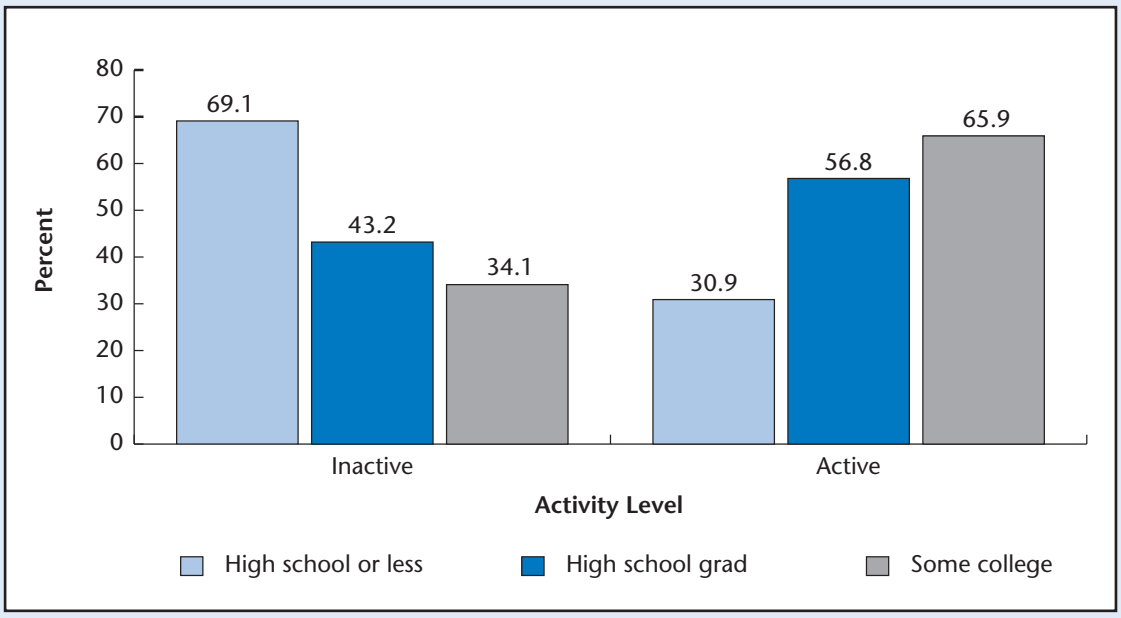
- Researchers surveyed adult primary care patients in four North Carolina family practices and found:
  - 62 percent ate two or fewer fruits or vegetables daily
  - 42 percent had hypertension
  - 42 percent reported consuming protein less than two times a week
  - 41 percent were obese
  - 40 percent scored as high-risk on a diabetes risk screen
  - 40 percent reported engaging in no regular physical activity
  - 36 percent ate three or more desserts weekly
  - 30 percent reported eating three or more fast food meals weekly
  - 29 percent drank three or more high-sugar beverages weekly
  - 24 percent were current smokers
- Researchers at the North Carolina Family Practice-Based Research Network analyzed survey responses from 258 patients who were considered at high risk for developing diabetes. The patients were asked about what helped and prevented them from engaging in physical activity. High-risk patients scored 10 points or higher on the American Diabetes Association risk test. They typically were patients who were older, overweight or obese, had a family history of diabetes or history of gestational diabetes, and were sedentary. Only 56 percent of these high-risk patients engaged in the recommended 150 minutes or more of moderate to vigorous activity per week. More individuals who had graduated from high school or attended college education met the recommended activity levels than those who did not graduate from high school (Figure 1).

Accelerating Change and Transformation in Organizations and Networks

During 2007, AHRQ awarded over $10.9 million in contracts to partnerships in the Agency's Accelerating Change and Transformation in Organizations and Networks (ACTION) program. These contracts will focus on health care organization and payment, patient safety, health information technology, prevention, and emergency preparedness.

Begun in 2006, ACTION is the successor to AHRQ's Integrated Delivery System Research Network. ACTION is a model of field-based research that fosters public-private collaboration in rapid-cycle, applied research. It links many of

Figure 1. Comparisons between inactive and active patients at high risk for diabetes by education level



Source: Donahue, K.E., Mielenz, T.J., Sloane, P.D., and others (2006, October). "Identifying supports and barriers to physical activity in patients at risk for diabetes." *Preventing Chronic Disease* 3(4), pp. 1-12.

the Nation's largest healthcare systems with its top health services researchers. Each of ACTION's 15 partnerships has a demonstrated capacity to "turn research into practice" for proven interventions targeting those who manage, deliver, or receive health care services. As a network, ACTION provides health services in a wide variety of organizational care settings to at least 100 million Americans. The ACTION partnerships span all States and provide access to large numbers of providers, major health plans, hospitals, long-term care facilities, ambulatory care settings, and other care sites. Each partnership includes health care systems with large, robust databases, clinical and research expertise, and the authority to implement health care interventions.

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

Improving the Safety and Quality of Health Care

In support of its mission to improve the quality, safety, efficiency, and effectiveness of health care, AHRQ supports research and develops successful partnerships that help generate the knowledge and tools required for long-term improvements. Finding ways to eliminate medical errors and improve patient safety have been an integral part of the Agency's research agenda since 2001. AHRQ-funded research projects and partnerships identify, develop, test, and implement patient quality and safety measures.

In 2007, AHRQ-funded patient safety research projects resulted in the development of toolkits to assist health care providers in implementing safe practices; DVDs on evidence-based hospital design; and training programs and resources for health care personnel in a systems-based

AHRQ Patient Safety Network (PSNet)

AHRQ s 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 on patient safety literature, news, tools, and meetings and a vast set of carefully annotated links to important research and other information on patient safety. 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.

approach to patient safety, creating a culture of patient safety within the health care workplace, and encouraging consumers to become more active in their health care.

Partnerships in Implementing Patient Safety (PIPS)

In 2007, AHRQ released 17 toolkits to assist providers in implementing safer health care practices and ultimately reduce medical errors. These toolkits resulted from the over $9 million awarded in 2005 for Partnerships in Implementing Patient Safety (PIPS) grants. The projects consisted of 2-year cooperative agreements that intended to assist health care institutions in implementing safe practice interventions that demonstrated evidence of eliminating or reducing risks, hazards, and harms associated with the process of care. Their goals were to:

- Identify the medical errors, risks, hazards, or harms.
- Develop an intervention implementation plan.
- Demonstrate the impact of the intervention on the process of care.
- Determine the efficacy of the intervention for adoption.

The PIPS projects focused on safe practice interventions that can be generalized to other settings of care. The toolkits are free, publicly available, and can be adapted to most health care settings. While some of the toolkits focus on identifying high-risk practices, others are designed to help health professionals reduce medication errors or other patient harms. Examples of the kinds of interventions that the toolkits promote include:

- The Re-Engineered Hospital Discharge "Project RED" toolkit standardizes the hospital discharge process through a set of manuals and software designed to improve communication between patients and clinicians.
- The Medications at Transitions and Clinical Handoffs "MATCH" toolkit identifies patient risk factors frequently responsible for inaccurate medication reconciliation, including limited English proficiency and low health literacy, complex medication histories, or impaired mental status.
- The ED Pharmacist as a Safety Measure in Emergency Medicine toolkit focuses on improving medication safety and reconciliation through the implementation of a program that assigns pharmacists to hospital emergency departments.

More information and a list of the 17 toolkits can be found at www.ahrq.gov/qual/pips.

Transforming Hospitals: Designing for Safety and Quality

Transforming Hospitals: Designing for Safety and Quality, is a DVD released by AHRQ in 2007 that reviews the case for evidence-based hospital design and how it increases patient and staff satisfaction and safety, quality of care, and employee retention, and results in a positive return on investment. The DVD presents the experiences of three model hospitals—Griffin Hospital in Derby, CT; Holy Cross Hospital in

Silver Spring, MD; and Woodwinds Health Campus in Woodbury, MN—that incorporated evidence-based design elements into their construction and renovation projects.

Hospital executives planning or executing a major capital construction project or minor renovations can use the information presented in this DVD to help identify how evidence-based design can improve the quality and safety of their hospitals' services. "Evidence-based design" is a term used to describe how the physical design of health care environments affects patients and staff. Key characteristics of evidence-based design in hospital settings include single-patient rooms, use of noise-reducing construction materials, easily accessible workstations, and improved layout for patients and staff.

More information on the DVD can be found at www.ahrq.gov/qual/transform.htm.

Patient Safety Improvement Corps

The Patient Safety Improvement Corps (PSIC) seeks to improve patient safety by providing knowledge, skills, and intervention initiatives to teams of hospital staff, patient safety officers, and others responsible for patient safety reporting and analysis. The PSIC is a partnership program between AHRQ and the Department of Veterans Affairs. The program content includes a number of topics, tools, and methods designed to help participants reduce medical error and improve patient safety.

In 2007, AHRQ and the Department of Veterans Affairs National Center for Patient Safety developed a new DVD that presents a self-paced, modular approach to training individuals involved in patient safety activities at the institutional level. Eight modules provide processes and tools that can be used to develop a systems-based approach to patient safety:

- Patient Safety, Why Bother?
- Creating a Culture of Safety.
- When to do a Root Cause Analysis.
- How to do a Root Cause Analysis.
- Human Factor Engineering.
- Management of Risk.
- Proactive Risk Assessment Tools.
- Statistical Tools and Patient Safety Indicators.

From 2003 through 2006, the PSIC program was focused primarily on States and their selected hospital partners. Because of its past success, the PSIC program was extended into 2008, and the participant focus is being expanded beyond State teams. Additional information on the PSIC and the DVD can be found at www.ahrq.gov/qual/psicdvd.htm.

Patient Safety Culture Surveys

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 ambulatory settings. In 2006, the Agency introduced the Patient Safety Culture Survey Database as a central repository for survey data so that hospitals and their units could determine how well they were doing in establishing a culture of safety in comparison to other hospitals or hospital units. Health care organizations can 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.

In 2007, AHRQ released the *Hospital Survey on Patient Safety Culture: 2007* Comparative Database Report. The report is based on data collected using AHRQ's *Hospital Survey on Patient Safety Culture,* a tool to help hospitals evaluate how well they had established a culture of safety in their institutions. Based on data provided voluntarily by nearly 400 U.S. hospitals, the Report provides an initial set of results that

Hospital Survey on Patient Safety Culture helps pharmacy students learn to create a culture of safety

Campbell University School of Pharmacy uses AHRQ's Hospital Survey on Patient Safety Culture in classes that teach pharmacy students to understand and create a culture of safety in their future careers. Robert Cisneros, PhD, Assistant Professor in Campbell's School of Pharmacy, uses the survey in medication error and management classes. Over 100 students have taken the classes since the survey was incorporated as a teaching tool. Since 2006, Cisneros has also used the survey to demonstrate what a culture of safety should be about when he gives presentations to pharmacists during Continuing Education classes.

hospitals can use as benchmarks in establishing a culture of safety. The Report presents statistics on the patient safety culture areas, hospital characteristics (bed size, teaching status, ownership and control, and region) and respondent characteristics (hospital work area/unit, staff position, and interaction with patients). For example,

- Most hospitals are nonteaching (76 percent) and nongovernment-owned (voluntary/nonprofit or proprietary/investor-owned) (72 percent).
- The majority of respondents within hospitals (70 percent) gave their work area or unit a grade of either "A-Excellent" (22 percent) or "B-Very Good" (48 percent) on patient safety.
- On average, the majority of respondents within hospitals (53 percent) reported no events in their hospital over the past 12 months. It is likely that this percentage represents an underreporting of events, and was identified as an area for improvement for most hospitals because potential patient safety problems may not be recognized or identified, and therefore may not be addressed.

Additional information on the Patient Safety Culture Surveys can be accessed at www.ahrq.gov/qual/hospculture/.

TeamSTEPPS™: Strategies and Tools to Enhance Performance and Patient Safety

TeamSTEPPS™ was developed by the Department of Defense in collaboration with AHRQ. TeamSTEPPS™ is an evidence-based teamwork system training curriculum aimed at optimizing patient outcomes by improving communication and other teamwork skills among health care professionals. It includes a comprehensive set of ready-to-use materials and training curricula necessary to integrate teamwork principles successfully into your health care system. TeamSTEPPS™ is presented in a multimedia format, with tools to help a health care organization plan, conduct, and evaluate its own team training program. It includes an instructor guide, PowerPoint™ presentations, a DVD, spiral-bound pocket guide, a CD-ROM with printable materials, and a poster to announce TeamSTEPPS™ activities in a heath care organization. More information on can be found at www.ahrq.gov/qual/teamstepps.

Pharmacy Tools

In 2007, AHRQ released two new tools to help pharmacies provide better quality services to people with limited health literacy: *Is Our Pharmacy Meeting Patients' Needs? A Pharmacy Health Literacy Assessment Tool User's Guide* and *Strategies to Improve Communication between Pharmacy Staff and Patients: A Training Program*

TeamSTEPPS™ training reaches over a thousand clinicians in Singapore

Two hospitals in Singapore: Singapore General and Changi General Hospital used TeamSTEPPS™ to train over 1,000 hospital staff. The Singapore clinicians were trained in less than four days by TeamSTEPPS™ trainers Sue Hohenhaus, registered nurse and clinical human factors nurse researcher at Duke University Health System; Jay Hohenhaus, certified registered nurse anesthetist at Soldiers and Sailors Memorial Hospital in Wellsboro, Pennsylvania; and Stephen Powell, managing principal of Healthcare Team Training and a captain for a major airline. In addition, the training team conducted a "Train the Trainer" session in Singapore for CEOs and other executives, nurses, and physicians.

for Pharmacy Staff. The pharmacy assessment tool can help raise pharmacy staff awareness of health literacy issues, detect barriers that may prevent individuals with limited literacy skills from using and understanding health information provided by a pharmacy, and may help identify opportunities for improving services. This tool includes an assessment to be completed by trained, objective auditors; a survey for completion by pharmacy staff; and a guide for focus groups with pharmacy patients. The training program for pharmacy staff includes the use of explanatory slides, small group breakout discussions, role play, and a question-and-answer session. These tools can be found online at www.ahrq.gov/qual/pharmlit/.

Recent research findings on patient safety and the quality of health care

- Implementing a simple five-step checklist reduced catheter-related bloodstream infections in Michigan hospital intensive care units by 66 percent. The steps in the checklist are: hand washing, using full-barrier precautions during the insertion of central venous catheters, cleaning the skin around the catheter insertion site with chlorhexidine, avoiding the femoral site if possible, and removing unnecessary catheters. The median rate of catheter-related bloodstream infections per 1,000 catheter days decreased from 2.7 infections at baseline to none at 3 months after implementing the infection control intervention.
- First-year doctors-in-training reported that working five extra-long shifts—of 24 hours or more at a time without rest—per month led to a 300 percent increase in their chances of causing a fatigue-related preventable adverse event that contributed to the death of a patient. Interns were three times more likely to report at least one fatigue-related preventable adverse event during months in which they worked between one and four extended-duration shifts. In months in which they worked more than five extended-duration shifts, interns were seven times more likely to report at least one fatigue-related preventable adverse event and were also more likely to fall asleep during lectures, rounds, and clinical activities, including surgery.
- An AHRQ-funded study found that teamwork breakdowns involving medical residents, fellows, and interns also caused a significant number of errors to occur during patient

AHRQ WebM&M

AHRQ WebM&M (Morbidity and Mortality Rounds on the Web) is a popular online journal and forum on patient safety and health care quality that features expert analysis of medical errors reported anonymously by readers, interactive learning modules on patient safety, perspectives on safety, and online discussions. CME and CEU credit are available. WebM&M can be accessed at www.webmm.ahrq.gov/.

Institute of Medicine study will examine resident work hours and patient safety

AHRQ is sponsoring an Institute of Medicine study that is expected to produce recommendations in late 2008 on the issue of resident work hours and safety. The maximum number of working hours for medical residents was capped at 80 hours a week in 2003 as part of an effort to reduce sleep deprivation and the chances of medical errors. Since then, health care experts have debated whether the limits have improved or hindered patient safety and quality of care. Two workshops have been held that explored the impact of duty hour requirements on residents' education and patient safety as well as the enforcement of schedule requirements. A committee is reviewing the evidence on the relationship between residents' work schedules, their performance, and the quality of care they deliver to patients.

handoffs. Adverse outcomes were serious: one-third resulted in significant physical injury, one-fifth in major physical injury, and one-third resulted in death. Teamwork factors accounted for 70 percent of the cases involving trainee errors. A lack of supervision accounted for 54 percent of the trainee errors, and handoff problems accounted for 19 percent. Attending physicians' failure to oversee the work of trainees was identified as a factor in 82 percent of the 129 cases where a lack of supervision contributed to a medical error.

Using Health Information Technology to Improve Patient Safety and Quality

As part of its mission to improve the quality, safety, effectiveness, and efficiency of health care, AHRQ has worked for many years to harness the power of health information technology (health IT) to improve the health of all Americans. By developing secure and private electronic health records and making health information available electronically when and where it is needed, health IT can improve the quality of care, even as it makes health care more cost-effective. More than $210 million in grants and contracts fund over 100 projects to support and stimulate investment in health IT. The goals of AHRQ's health IT initiative are to:

- Improve the safety and quality of prescription drug management via the integration of utilization of medication management systems and technologies.
- Improve the delivery and utilization of evidence-based care in ambulatory settings.
- Improve the delivery of patient centered care in ambulatory care settings, including specific focus on transitions of care, personal health records, and improved patient-provider communication and decision-making.
- Foster the development, deployment, and reporting of measures of safety and quality in ambulatory care settings and across high risk transitions in care.

Ambulatory Safety and Quality Grants

In 2007, AHRQ awarded 53 health IT grants totaling about $21 million as part of its Ambulatory Safety and Quality program. The program's goal is to improve the safety and quality of ambulatory, or outpatient, health care in the United States. The program accentuates the role of health IT in three areas:

- Enabling Quality Measurement Through Health IT.
- Improving Quality Through Clinician Use of Health IT.
- Enabling Patient-Centered Care Through Health IT.

Reports on Privacy and Security Solutions for Secure Exchange of Health Information

On August 1, 2007, AHRQ released a set of reports titled *Privacy and Security Solutions for Interoperable Health Information Exchange*. The 34 reports (33 States and Puerto Rico) review State Health Information Exchange plans and identify the challenges and feasible solutions for ensuring the safety and security of electronic health information exchange. Some of the key findings of the reports point to the need for additional research and guidance on:

- Identifying different interpretations of the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule among States and increasing awareness among stakeholders.
- Addressing variations regarding the potential intersections between Federal/State privacy laws.
- Evaluating the technologies available to protect the security and privacy of individuals as well as the associated administrative processes and liabilities.
- Developing a system that accurately and consistently matches individual patients with their health record information—one that is created and updated by various health care providers/organizations.
- Developing a standard set of definitions and terms to facilitate sharing of health information.

Report issued to Congress on electronic prescribing to reduce errors and cut costs

In April 2007, AHRQ released an evaluation report, *Findings From The Evaluation of E-Prescribing Pilot Sites*, to Congress that revealed the results of an electronic prescribing (e-prescribing) pilot project that assessed the ability to adopt new e-prescribing standards. These standards, required by the Medicare Modernization Act of 2003, were designed to reduce both medication errors and health care costs. The pilot project demonstrated that three initial standards are already capable of supporting e-prescribing transactions in Medicare Part D. These are standard transactions that provide physicians with patients' formulary and benefit information, medication history, and the fill status of their medications. The report also found that, with some adjustments, e-prescribing can work successfully in long-term care settings.

National Resource Center for Health Information Technology

The AHRQ National Resource Center for Health Information Technology (NRC) continued to be an important resource for the health care community in 2007. Much of the research and lessons learned from AHRQ's health IT initiative is conducted and coordinated through the NRC. The NRC helps facilitate adoption of health IT by disseminating the latest health IT tools, best practices, and research results:

- Health IT Evaluation Toolkit - provides guidance on how to evaluate health IT. Example measures relevant to quality, safety and efficiency are provided along with suggested data sources and the relative costs to collect the measures.
- Health IT Costs & Benefits Database Project - a searchable database that contains the results of a literature search on the relative costs and benefits of health IT.
- The Health Information Privacy and Security Collaboration Toolkit (new to the NRC in July 2007) provides guidance for conducting organization-level assessments of business practices, policies, and State laws that govern the privacy and security of health information exchange.

- HIE Evaluation Toolkit - provides guidance on how to evaluate health information exchange.
- Time and Motion Database - enables organizations to measure the impact of health IT systems on clinical workflow through the collection of time-motion study data.
- Health IT Literacy Guide - the *Accessible Health Information Technology (IT) for Populations with Limited Literacy: A Guide for Developers and Purchasers of Health IT* provides health IT developers with structure, strategies, and other resources for the development of health IT technologies for populations with limited literacy.

Recent research findings on health IT

- Researchers modified a computerized order entry system so that age-specific drug alerts only occurred when clinicians prescribed target drugs to elderly patients. The system then suggested an alternative medication. This approach limited the number of unnecessary alerts faced by prescribers, while still maintaining the effectiveness of the drug-specific alerts. Age-specific alerts resulted in continued effectiveness of the drug-specific alerts over a 1-year period and led to fewer false-positive alerts for clinicians.
- Researchers found that fewer than one in four Massachusetts practices had adopted electronic health records (EHRs). Adoption rates were lower in smaller practices, those not affiliated with hospitals, and those that did not teach medical students or residents. About 80 percent of doctors whose practices had not yet adopted EHRs cited financial factors, including start-up financial costs, ongoing financial costs, and loss of productivity, as barriers to technology adoption. The majority of physicians also pointed to lack of computer skills, lack of technical support, lack of uniform standards, and technical limitations of systems as important barriers, and 55 percent voiced concerns about privacy or security as a barrier to adopting use of EHRs.

AHRQ 2007 Annual Conference

Over 20 plenary and concurrent sessions on health IT were held at AHRQ s 2007 Annual Conference. Findings from recent studies and how health IT is being used to enhance performance, quality, and patient safety were presented. Topics included:

- Improving Quality of Care for Children through Health Information Technology
- Implementing Health Information Technology in the Long-Term Care Setting
- Medication Management and Safety
- e-Prescribing Standards and e-Prescribing Implementation
- Physician Adoption of Health Information Technology
- Patient Centered Health Information Technology
- Beyond Implementation: Achieving Success with Integration of Health Information Technology in Ambulatory Care
- Navigating Privacy and Security Issues for Health Information Exchange
- Using Health Information Technology to Improve Quality of Care Among Racial and Ethnic Minorities
- Assessing Quality of Telehealth

- Bar code medication administration (BCMA) technology is being implemented slowly in hospitals across the United States. A human factors engineer and a pharmacist observed use of BCMA technology during medication administrations to identify work system factors that affected nurses' use of and interaction with the technology when they administered medications. Nurses varied in the order in which they performed steps of the medication administration process, with a total of 18 different sequences identified. Some of these sequences were contrary to hospital policy and the original design of the medication administration process, and could be considered "workarounds" or potentially unsafe acts. Interruptions and patient factors typically were precursors to medication errors and workarounds.

More information on AHRQ's health IT initiative, toolkits, and copies of reports can be found at http://healthit.ahrq.gov/.

Eliminating Disparities in Health Care

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, and socioeconomic status. The Agency focuses on priority populations including minorities, women, children, the elderly, 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.

National Healthcare Quality and Disparities Reports

The *National Healthcare Quality Report* (NHQR) and its companion report, the *National Healthcare Disparities Report* (NHDR) are the fifth editions since the reports' inaugural release in 2003. These reports are mandated by Congress and are read widely by policymakers, health care analysts, public health advocates, health insurers, journalists and consumers. This year's NHQR synthesizes more than 200 "quality measures," which range from how many pregnant women received prenatal care to what portion of nursing home residents were controlled by physical restraints. The NHDR summarizes which racial, ethnic or income groups are benefiting from improvements in care.

While the quality of health care is continuing to improve at an average annual rate of 2.3 percent (based on data from 1994 to 2005), the reports reveal that the rate of improvement appears to be slowing. An analysis of selected core measures, which cover data from 2000 to 2005, shows that quality improvement has slowed to an annual rate of 1.5 percent. Measures of patient safety showed an average annual improvement of just 1 percent.

However, the reports also show some notable gains. For example, the NHQR indicates that the portion of heart attack patients who received recommended tests, medications or counseling to quit smoking improved an average of 5.6 percent annually from 2002 to 2005. The NHDR showed that while Hispanics remain more likely than whites to get delayed care or no care at all for an illness, that disparity decreased between 2000 to 2001 and 2004 to 2005. In addition, while black children between 19 and 35 months old remain less likely than white children to receive all recommended vaccines, that disparity also decreased.

Other significant findings from the NHQR include:

- Between 1999 and 2005, the proportion of women age 40 and over who reported that they had a mammogram in the past 2 years decreased overall by 3.7 percent.

- Between 1999 and 2004, the rate of breast cancer deaths decreased from 26.6 to 24.4 per 100,000 female population. At 24.4 deaths per 100,000 females, the overall breast cancer death rate in 2004 was higher than the Healthy People 2010 target of 22.3. At the present rate of change, this target could be met by 2010.
- In 1999-2004, 48.7 percent of adults age 40 and over diagnosed with diabetes had their HbA1c level under optimal control. This percentage is statistically unchanged from the 1988-1994 time period.
- In 1999-2004, 48.2 percent of those age 40 and over diagnosed with diabetes had their total cholesterol under control. This is an improvement over the 1988-1994 rate of 29.9 percent.
- The percentage of women who received prenatal care in the first trimester of pregnancy increased gradually from 82.8 percent in 1998 to 83.9 percent in 2004. As of 2004, the percentage of women who received prenatal care in the first trimester of pregnancy had not yet achieved the Healthy People 2010 target of 90 percent.
- From 1998 to 2005, the percentage of children ages 19-35 months who received all recommended vaccines increased from 72.7 percent to 80.8 percent.

Findings from the 2007 NHDR show that some disparities have been eliminated:

- The disparity between Black and white hemodialysis patients with adequate dialysis was eliminated in 2005.
- The disparity between Asians and whites who had a usual primary care provider was eliminated in 2004.
- The disparity between Hispanic and non-Hispanic whites and between people living in poor communities and people living in high income communities for hospital admissions for perforated appendix was eliminated in 2004.

However, the NHDR also reports on the biggest disparities in quality where there has not been improvement:

- The rate of new AIDS cases for Blacks was 10 times higher than whites and Hispanics had a rate of new AIDS cases over 3.5 times higher than that of non-Hispanic whites.
- Asian adults age 65 and over were 50 percent more likely than whites to lack immunization against pneumonia.
- American Indians and Alaska Natives were twice as likely to lack prenatal care in the first trimester as whites.

NHQRnet/NHDRnet

In 2007, AHRQ launched NHQRnet and NHDRnet, a pair of new, interactive Web-based tools for searching AHRQ's storehouse of national health care data. These online search engines allow users to create spreadsheets and customize searches of information in the 2006 *National Healthcare Quality Report* and the 2006 *National Healthcare Disparities Report*.

NHQRnet allows access to data on dimensions of quality including effectiveness of care, safety, timeliness, patient centeredness, and overall measures. Clinical conditions include asthma, cancer, diabetes, depression, end stage renal disease, heart disease, HIV and AIDS, influenza and upper respiratory infections, and pneumonia. Access to data on care types/settings is also available for immunizations, maternal and child health, and nursing home and home health care. NHQRnet users can:

- Display estimates from national tables that are specific to particular subpopulations (e.g., particular age ranges).
- Track and display trends over time for national estimates of nearly 50 measures, including dimensions of health care quality,

stages of health care, clinical conditions, settings of care, and access to health care.

- Access and download individual national and State data tables from the NHQR Tables Appendix.

NHDRnet content areas include quality of health care, access to health care, and priority populations. Clinical conditions include cancer, diabetes, heart disease, HIV/AIDS, and respiratory diseases. Dimensions of access include facilitators and barriers to health care and health care utilization. NHDRnet allows users to:

- Access data for quality of health care, access to health care, or for priority populations.
- Display estimates based on race, ethnicity, income, or education.
- Access and download individual tables from the NHDR Tables Appendix.

To access AHRQ's NHQRnet, go to http://nhqrnet.ahrq.gov. For NHDRnet, go to http://nhdrnet.ahrq.gov.

State Snapshots

AHRQ's *State Snapshots* Web tool was launched in 2005, and has been updated annually. Based on data drawn from more than 30 sources, including government surveys, health care facilities and health care organizations, the State Snapshots is an application that helps State health leaders, researchers, consumers, and others more easily access information about the status of health care quality in individual States, including each State's strengths and weaknesses. The 51 State Snapshots — every State plus Washington, D.C.—are based on 149 quality measures. Each measure provides information about a different aspect of health care performance including:

- Summary measures that provide an overall picture of health care quality in three different contexts: by types of care (such as preventive, acute, or chronic care), by settings of care (such as nursing homes or hospitals), and care by clinical area (such as care for patients with cancer or respiratory diseases).
- The 149 individual measures range from preventing bed sores to screening for diabetes-related foot problems to providing antibiotics quickly to hospitalized pneumonia patients.
- The *State Snapshots* also allow users to compare a State's performance against other States in the same region, plus how a State compares against "best performing States."

The *State Snapshots Web* site also offers these options for data searches:

- *Strongest and Weakest Measures:* This section summarizes areas in which a State has performed well compared to other States, plus areas in which a State's scores are comparatively low.
- *Focus on Diabetes:* Underscoring the need to confront a disease now afflicting more than 18 million Americans, this section illustrates how States compare in quality of care, treatment variations, and health care spending for diabetes.
- *All-State Data Table for All Measures:* With more than 5,000 entries, this downloadable spreadsheet includes all 149 individual performance measures for each State.

To access this year's *State Snapshots* tool, go to http://statesnapshots.ahrq.gov.

Recent research findings on disparities and minority health

- Education, income, and net worth explain more racial/ethnic disparities than either health behaviors or insurance coverage. Researchers found that crude mortality rates over a 6-year period for late middle-aged whites, blacks, English-speaking Hispanics

and Spanish-speaking Hispanics were 5.8 percent, 10.6 percent, 5.8 percent, and 4.4 percent, respectively. Higher mortality rates for black versus white people were mostly explained by worse baseline health. However, accounting for education, income, and net worth reduced disparities in declining self-reported overall health for blacks and English-speaking Hispanics (but not Spanish-speaking Hispanics) to nonsignificance. In contrast, health insurance and health behaviors (for example, smoking, alcohol use, and body mass index) explained little of the racial/ethnic differences in health outcomes.

- Although mortality rates from cardiovascular disease (CVD) in the United States continue to decrease, rates are rising among Native American Indians. CVD is the leading cause of death in American Indians beginning at age 45 compared with age 65 for the U.S. general population. Prevalence of hypertension in a rural group of 4,549 American Indians aged 45 to 74 increased from 42.2 percent in 1989-1991 to 61.3 percent among men 8 years later and from 36.4 percent to 60.3 percent among women. Prevalence of diabetes increased from 41.4 to 47.4 percent among men and from 48.4 to 55.8 percent among women during the study period—three times higher than the 16.4 percent of people with diabetes among a similar age group in the 1994 National Health and Nutrition Examination Survey.

Getting value for money spent on health care

According to data from the Medical Expenditure Panel Survey (MEPS), Americans spent $1.02 trillion in health care expenses for hospital inpatient and outpatient care, emergency room services, office-based health care providers, dental services, home health care, prescription medicines, and other medical services in 2005. Nearly 85 percent of the U.S. population had some medical expense with an average annual expense per person of approximately $4,000. The average expense for a person age 65 and over was more than $9,000, three times the average for a person under age 65 ($3,200). Despite this level of health care spending, health care quality in this Nation still needs improvement.

Value-Driven Health Care Initiative

AHRQ is working closely with the Department of Health and Human Services to fulfill the goals of HHS Secretary Mike Leavitt's Value-Driven Health Care Initiative. The goal of the Initiative is to create a health care system where patients can get better information about the quality and cost of their care that includes competition to provide them with the best value. The Initiative was launched on August 22, 2006, when President Bush signed an executive order to help increase the transparency of health care by requiring Federal agencies that administer or support health insurance programs to provide information on the cost and quality of health care. Under the Executive Order, all health care programs administered or sponsored by the Federal government are required to pursue collaborative efforts to promote four cornerstones for health care improvement:

- Connecting the system through the adoption of interoperable health information technology;
- Measuring and making available results on the quality of health care delivery;
- Measuring and making available price information on the costs of health care items and services; and
- Aligning incentives so that payers, providers, and patients benefit when care delivery is focused on achieving the best value of health care at the lowest cost.

Chartered Value Exchange

In 2007, working with AHRQ, HHS designated more than 100 Community Leaders that are encouraging the growth of community-based, multi-stakeholder collaboratives working to drive health care reform. These groups were the first eligible to apply to be a Chartered Value Exchange. As Chartered Value Exchanges, communities will have access to information from Medicare that gauges the quality of care physicians provide to patients. These performance measurement results can be combined with similar private-sector data to produce a comprehensive consumer guide on the quality of care available. The Chartered Value Exchanges are:

- Wisconsin Healthcare Value Exchange, Madison, Wisconsin
- Healthy Memphis Common Table, Germantown, Tennessee
- Greater Detroit Area Health Council, Detroit, Michigan
- Niagara Health Quality Coalition, Williamsville, New York
- Oregon Health Care Quality Corporation, Portland, Oregon
- Pittsburgh Regional Health Initiative, Pittsburgh, Pennsylvania
- Puget Sound Health Alliance, Seattle, Washington
- Utah Partnership for Value-driven Health Care, Salt Lake City, Utah
- Louisiana Health Care Quality Forum, Baton Rouge, Louisana
- Maine Chartered Value Exchange Alliance, Scarborough, Maine
- Minnesota Healthcare Value Exchange, St. Paul, Minnesota
- Massachusetts Chartered Value Exchange, Watertown, Massachusetts
- Alliance for Health, Grand Rapids, Michigan
- New York Quality Alliance, Albany, New York

These communities will join a nationwide Learning Network sponsored by AHRQ. This network will provide peer-to-peer learning experiences through facilitated meetings, both face-to-face and on the Web and access to HHS experts and new tools, including an ongoing private Web-based knowledge management system.

AHRQ launches a new series of advice columns

AHRQ director Carolyn Clancy, M.D., presents a series of brief, easy-to-understand advice columns for consumers to help navigate the health care system. The columns are designed to help consumers navigate the health care system, make decisions about their health care, recognize high-quality health care, be an informed health care consumer; and choose a hospital, doctor, and health plan. In 2007, subjects included:

- Where Medical Errors Occur and Steps You Can Take to Avoid Them
- Facing the Facts Get Involved to Get Better Car e
- Health Care Quality: Take A Closer Look
- Becoming an Involved Health Care Consumer
- Recognizing High-Quality Health Care

The advice columns are on the AHRQ Web site at www.ahrq.gov/consumer/cc.htm.

Recent research findings on health care costs and improving performance

- Educational outreach to individual physicians (individual academic detailing) to improve recommended prescribing of antihypertensive medications can reduce drug costs. Researchers at the HMO Research Network Center for Education and Research in Therapeutics found that the estimated annual drug cost savings (after the cost of the program) for individual detailing was $21,711 or $289 in savings per physician. Extrapolating these results to the plan level (7,600 newly diagnosed and treated hypertensive patients in a typical year) would result in an estimated $155,000 savings in the cost of antihypertensive medications with universal adoption of the individual detailing intervention.
- From 1996 to 2003, the financial burden of health care in the United States for people less than 65 years of age increased, especially among the poor and those with job-related and public insurance coverage, according to an analysis of MEPS data from 1996 and 2003. People with nongroup plans were nearly three times as likely to bear high total burdens as individuals in any other insurance category. Others at higher-than-average risk of incurring financial burdens were poor and low-income people, people under age 65, those in fair or poor health, those with a limitation in functioning, people suffering from a chronic medical condition, or those living in a nonmetropolitan area. High out-of-pocket burdens were associated with delaying or foregoing medical care for financial reasons.

Developing Tools and Data for Research and Policymaking

Efforts to improve the quality and efficiency of health care and reduce disparities in the United States must be based on a thorough understanding of how the Nation's health systems work and how different organizational and financial arrangements affect health care. AHRQ has a broad portfolio of data on costs, access to health care, quality, and outcomes that can be used for research and policymaking.

Medical Expenditure Panel Survey

The Medical Expenditure Panel Survey (MEPS) is the only national source of annual data on the specific health services that Americans use, how frequently the services are used, the cost of the services, and the methods of paying for those services. MEPS is designed to help us understand how the growth of managed care, changes in private health insurance, and other dynamics of today's market-driven health care delivery system have affected health care in America. MEPS provides the foundation for estimating the impact of changes on different economic groups or special populations such as the poor, elderly, veterans, the uninsured, or racial/ethnic groups.

MEPS consists of a family of surveys, which includes families and individuals, their medical providers, and employers across the United States. The MEPS Household Component full year public use data files released in 2007 cover the calendar year 2005. These data files include medical conditions, hospital inpatient stays, prescribed medicines, office-based medical provider visits, outpatient visits, emergency room visits, home health, other medical expenses, dental visits, full-year population characteristics, and job information.

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 estimates are available on the MEPS Web site

MEPS data helps estimate the economic impact of diabetes

Economic data derived from MEPS on the prevalence of diabetes-related complications were used in a report titled, *The State of Diabetes Complications in America*. Issued by the American Association of Clinical Endocrinologists, in partnership with the Amputee Coalition of America, Mended Hearts, the National Federation of the Blind, and the National Kidney Foundation, the report is an analysis of national health and economic data specific to type 2 diabetes complications. The report synthesized economic data from the 2000, 2002, and 2004 MEPS with data on prevalence of diabetes-related complications from the 1999-2004 National Health and Nutrition Examination Survey. It shows that an estimated 57.9 percent of the people with type 2 diabetes have at least one other serious health problem commonly associated with the disease, and that these health problems are taking a heavy financial toll. In 2006, the nation spent an estimated $22.9 billion on direct medical costs related to diabetes complications.

in tabular form for national, regional, state, and metropolitan areas, as well as in publications using MEPS-IC data and interactive data tools.

MEPS Publications

MEPS publishes various reports including statistical briefs, research findings, methodology reports, and chartbooks. These analytic publications are based on data collected through MEPS. For example:

- In 2005, prescription drugs represented about 20.8 percent of all medical expenditures for persons under age 65.
- In 2005, hospital inpatient expenses comprised the largest share of expenses for persons age 65 and over, while expenses for ambulatory care in office and hospital outpatient settings comprised the largest share for persons under age 65.
- From 1996 to 2006, the percentage of uninsured children declined from 15.7 percent to 11.0 percent. Hispanic or Latino children were the most likely to be uninsured in each year from 1996 to 2006 (19.9 percent in 2006).
- From 1997 to 2004, total expenditures for outpatient prescription drugs increased over 160 percent from $72.3 billion to $191.0 billion. The average expenditure for persons with a prescription medicine purchase age 65 and older increased approximately 130 percent (from $819 to $1,914), and approximately 140 percent (from $347 to $838) for persons under age 65 when comparing 1997 to 2004.

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

Healthcare Cost and Utilization Project

The Healthcare Cost and Utilization Project (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 38 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.

Infections with Methicillin-Resistant *Staphylococcus Aureus* (MRSA) in U.S. Hospitals, 1993 2005, Statistical Brief #35

- In 2005, there were about 368,600 hospital stays for infections with MRSA. In that year, hospital stays for these infections were more than three times higher than in 2000 and nearly ten times higher than in 1995.
- On average, hospital stays for MRSA infections cost $14,000, compared with $7,600 for all other stays, and the length of hospitalization was more than double—10 days for MRSA infections versus 4.6 days for all other stays.
- The in-hospital death rate for MRSA stays was 4.7 percent compared with 2.1 percent for non-MRSA stays.

Outpatient Data Initiatives

The largest growth in HCUP has been in outpatient data initiatives—the acquisition of additional State Ambulatory Surgery Databases and State Emergency Department Databases, partnership discussions about improving outpatient data collection and measurement of the quality of outpatient care, and dissemination of outpatient data and its capacity. In 2007, 25 States contributed data on ambulatory surgery and other outpatient services for a combined total of 37,158,615 visits in over 3,849 facilities. In addition, 24 States contributed outpatient emergency department (ED) data, for a combined total of 52,502,037 visits in 2,434 hospitals. Analysis began in 2007 to assess the feasibility and advisability of creating a nationwide ED database.

HCUP Statistical Briefs

The HCUP Statistical Briefs are 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 the uninsured). Each Statistical Brief covers an important health care issue. For example:

- *The National Hospital Bill*. In 2005, the national hospital bill totaled nearly $875 billion for 39 million hospital stays. This represents an increase of 89 percent since 1997. During this same time period the number of admissions increased from 34.7 million annually to 39.2 million—a 13 percent increase.
- *Hospital Stays Related to Depression*. In 2005, nearly 10 percent of all hospital admissions—2.9 million stays—were related to depression and totaled $21.8 billion in hospital costs.
- *HIV Hospitalizations*. Hospitalizations with a principal HIV diagnosis decreased by 21 percent from 93,870 in 1998 to 74,604 in 2005.
- *Trends in Potentially Preventable Hospitalizations among Adults and Children*. In 2004, hospital costs for potentially preventable conditions totaled nearly $29 billion or 1 out of every 10 dollars of total hospital expenditures. As many as 4.4 million hospital stays could possibly be prevented with better ambulatory care, improved access to effective treatment, or patient adoption of healthy behaviors.

AHRQ Quality Indicators

AHRQ has developed an array of health care decisionmaking and research tools that can be used by audiences such as program managers, purchasers, researchers, government agencies, and others. The AHRQ Quality Indicators (QIs) tool is widely used to highlight potential quality concerns, identify areas that need further study and investigation, and track changes over time.

The AHRQ QIs are a set of indicators organized into four modules, each of which measures

quality associated with the delivery of care occurring in either an outpatient or an inpatient setting. In 2007, AHRQ released Version 3.1, an update of all four modules:

- Prevention Quality Indictors (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 iatrogenic events.
- Pediatric Quality Indicators (PedQIs) are indicators of children's health care that can be used with inpatient discharge data. They are designed to help hospitals 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.

The AHRQ QIs are being used for national, State-level, and hospital-level public reporting and tracking. For example, AHRQ's *National Healthcare Quality* and *Disparities Reports* and their derivative products incorporate many PQIs and PSIs for tracking and reporting at the national level. In addition, the demand for information to better inform consumers has increased -- specifically the demand for standardized hospital-level comparative data as a result of concern over quality and patient safety in the hospital setting. Currently, there are 11 States that report some or all of the AHRQ QIs: Vermont, Texas, New York, Wisconsin, Massachusetts, Oregon, California, Utah, Florida, Kentucky, and Iowa.

Quality Indicators User Meeting

The Quality Indicators User Meeting was held in conjunction with AHRQ's 2007 Annual Meeting. Intended for both active users of the QIs and for those interested in how the QIs might be used in their organizations, sessions focused on:

- Validation studies in the literature and current research activities.
- Results from the AHRQ QI Validation Collaborative Pilot for selected Patient Safety Indictors.
- Guidance on use of the AHRQ QI medical record data collection tools to improve data quality and processes of care.
- Future directions for collaborative validation studies of the AHRQ QIs.

Preventable Hospitalization Costs

In October 2007, AHRQ released *Preventable Hospitalization Costs: A County-Level Mapping Tool,* a SAS software program that maps selected AHRQ QIs for a State (by county) and estimates the cost savings associated with reducing the level of potentially avoidable hospitalizations. The tool assists health care decisionmakers in identifying communities for future interventions, such as improving preventive and primary care services or improving patient safety, and tracking the impact of such interventions over time.

More information on the AHRQ QIs can be found on the Web site at www.qualityindicators.ahrq.gov/.

PSIs and QIs form the basis of a Canadian hospital report card

The Fraser Institute in Canada has issued a hospital report card and interactive Web site assessing 50 measures of patient safety and quality of care for every acute care hospital in Ontario. The report uses AHRQ's Patient Safety Indicators (PSIs) and Quality Indicators (QIs) as the basis for its methodology. Both Fraser's report card and Web site include information for all 136 acute care hospitals in Ontario from 1997 to 2005, comprising more than 8.5 million patient records. Forty-three hospitals agreed to have their institutions identified by name; other hospitals are shown anonymously in the report by number. Using AHRQ PSIs and QIs, the report is based on anonymous patient-level data purchased from the Canadian Institute for Health Information (CIHI). These data are used to produce various CIHI reports and indicators.

Consumer Assessment of Healthcare Providers and Systems

AHRQ has been the lead Federal agency in developing and distributing standardized, evidence-based surveys and related tools for assessing patients' experiences with the U.S. health care system. The Agency's Consumer Assessment of Health Care 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. 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 health care. The program was originally launched as the Consumer Assessment of Health Plans Study but as the products have evolved beyond health plans, the name has evolved as well to capture the full range of survey products and tools.

CAHPS Hospital Survey Chartbook

In 2007, CAHPS released the CAHPS Hospital Survey Chartbook, which presents summary-level results from the CAHPS Hospital Survey (H-CAHPS) voluntarily submitted by 927 hospitals representing a total of 190,690 respondents across the country in 2006. AHRQ's National CAHPS Benchmarking Database (the CAHPS Database) compiled these summary data for use by hospitals and their vendors for comparison to their own results prior to the public reporting of H-CAHPS by the Centers for Medicare & Medicaid Services (CMS) in March of 2008. Highlights of the survey results presented in this report include:

- High ratings for hospital care by a majority of survey respondents with 60 percent of survey respondents rated their hospitals either "9" or "10" on a 10-point scale where "0" is the "worst possible hospital" and "10" is the "best possible hospital."
- Highest scores for communication with doctors and nurses with 84 percent and 77 percent of respondents reporting that doctors and nurses (respectively) always treated them with courtesy and respect.
- Lowest scores for communication about medications and discharge information with 26 percent of respondents reporting that hospital staff never described possible side effects of new medications in a way they could understand.
- High-to-moderate scores for pain management and the hospital physical environment with 72 percent of respondents reporting that hospital staff always did everything they could to help with pain. However, only 59 percent reported that their

pain was always well controlled when they needed pain medication.

Interactive Chartbook: CAHPS Hospital Survey

CAHPS released the *CAHPS Hospital Survey Chartbook*, which presents summary-level results from the CAHPS Hospital Survey (H-CAHPS) in 2006. In 2007, CAHPS released an Interactive Chartbook designed to present summary level H-CAHPS results by selected hospital characteristics (region, bed size, teaching status, and ownership and control) or by selected respondent characteristics (gender, age, race, and self-reported health status). The Interactive Chartbook includes a question bank so that users can view the following:

- a list of questions from the H-CAHPS or frequency of responses for a particular question.
- question level frequencies and cross tabulations for individual survey questions.
- bar charts showing the distribution of survey results for each of the H-CAHPS composites and question items.

CAHPS Health Plan Survey Chartbook

The 2007 *CAHPS Health Plan Survey Chartbook* presents national summary-level results for the CAHPS Health Plan Survey 3.0 and 4.0 versions. Data for the adult commercial, adult and child Medicaid, and Medicare Managed Care sectors are presented. Key findings related to the 4.0 survey results include:

- The majority of survey respondents rate their medical care providers highly. Fully 60 percent or more of respondents across all sectors rated their personal doctors and specialists either "9" or "10" on a 10-point scale where "0" is the worst possible and "10" is the best possible.
- Respondents rate their health plans and overall health care lower than they rate their personal doctors and specialists. Commercial plan enrollees rate their health plans the lowest across the sectors, with only 40 percent of respondents scoring their plans a "9" or "10."
- Respondents report the most positive experiences for questions related to "how well doctors communicate." Nearly 70 percent or more of all respondents report that their doctors "always" explain things, listen carefully, and show respect for what they had to say.
- Respondents report the least positive experiences for questions about "health plan customer service." Less than half of commercial plan respondents report "always" getting needed help or information from their health plan.

CAHPS Item Set for Children with Chronic Conditions

To better address the needs of children with chronic conditions, the CAHPS Consortium adopted an extensive set of items that would enable users to assess the experiences of this population with health plans and health care services. This supplemental set allows sponsors to compare the experiences of children with special health care needs with those of similar children in other health plans and/or the general population of children in the same plan. In July 2007, the CAHPS Consortium released an updated item set for the CAHPS Health Plan Survey 4.0.

Clinician & Group Survey and Reporting Kit 2007

The *CAHPS Clinician & Group Survey and Reporting Kit 2007* provides access to the CAHPS Clinician & Group Survey as well as several documents designed to assist users in administering the survey and analyzing the results. The CAHPS Clinician & Group Survey asks patients to report on and rate their

Talking Quality's Report Card Compendium

AHRQ developed a new Web tool demonstrating a variety of approaches for health quality report cards. The new Health Care Report Card Compendium is a searchable directory of over 200 samples of report cards produced by a variety of organizations. It can inform and support the various organizations that develop health care quality reports, provide easy access to examples of different approaches to content and presentation, and meet the needs of health services researchers. The compendium was developed as a resource for report sponsors to supplement guidance provided on AHRQ's TalkingQuality Web site (www.talkingquality.gov). The Health Care Report Card Compendium can be found at www.talkingquality.gov/compendium/.

experiences with a specific physician and that physician's practice. Questionnaires are available in English and Spanish for adults and children who have visited a physician in adult primary or speciality care and child primary care.

CAHPS Health Plan Survey and Reporting Kit 2007

The CAHPS Health Plan Survey and Reporting Kit 2007 includes both the 3.0 and the new 4.0 versions of the CAHPS Health Plan Survey. The contents include questionnaires for adults and children enrolled in commercial or Medicaid plans in both English and Spanish.

Preparing for Public Health Emergencies

AHRQ supports research and the development of models, tools, and reports to assess, plan, and improve the ability of the U.S. health care system to respond to public health emergencies that result from natural, biological, chemical, nuclear, and infectious disease events. These initiatives focus on an array of issues related to clinicians, hospitals, and health care systems, including the need to establish linkages among these providers with local and State public health departments, emergency management personnel, and others preparing to respond to events that have the potential to cause mass casualties. In 2007, AHRQ released several new resources for emergency response planners and health care providers.

Mass Medical Care with Scarce Resources

Mass Medical Care with Scarce Resources is a guide to provide planners at the facility, community, State, and Federal levels with valuable information that will help them plan for and respond to a mass casualty event (MCE). The guide was written by leading experts in six areas related to mass casualty care: prehospital care, hospital and acute care, alternative care sites, palliative care, ethical issues, and legal considerations. This guide provides information on:

- The circumstances that communities likely would face as a result of an MCE.
- Key constructs, principles, and structures to be incorporated into planning for an MCE.
- Approaches and strategies that could be used to provide the most appropriate standards of care possible under the circumstances.
- Examples of tools and resources available to help States and communities in their planning process.
- Illustrative examples of how certain health systems, communities, or States have approached certain issues as part of their MCE-related planning efforts.

Preparedness for Chemical, Biological, Radiological, Nuclear, and Explosive Events: Questionnaire for Health Care Facilities

States, localities, and hospitals can use this questionnaire in assessing emergency preparedness. The fully functional, downloadable questionnaire is designed to collect information on preparedness and response activities that are the responsibility of and under the control of hospital leadership. The questionnaire covers activities that could be executed by hospitals and was developed for two types of users:

- States, localities, and multi-hospital systems can administer the survey to hospitals and health care facilities to assess overall hospital emergency preparedness.
- Individual hospitals or health care facilities can use the questionnaire as a checklist of areas that should be considered as a facility develops or improves emergency preparedness and response plans. The questionnaire also serves as a checklist for planning, performing, and evaluating drills or exercises.

The questionnaire is available on AHRQ's Web site at www.ahrq.gov/prep/cbrne/.

Cross Training Respiratory Extenders for Medical Emergencies (Project XTREME)

AHRQ released a DVD titled "Cross Training Respiratory Extenders for Medical Emergencies (Project XTREME)," to train health care professionals who are not respiratory care specialists to provide basic respiratory care and ventilator management to adult patients in any mass casualty event. The DVD includes six training modules with interactive quizzes to test viewers' knowledge. The modules cover infection control, respiratory care terms and definitions, manual ventilation, mechanical ventilation, airway maintenance, and airway suctioning.

Emergency Preparedness Atlas: U.S. Nursing Home and Hospital Facilities

The *Emergency Preparedness Atlas: U.S. Nursing Home and Hospital Facilities* publication is intended to help local communities identify the health care facilities that could be available and prepared to provide assistance under emergency conditions in their communities. The Emergency Preparedness Atlas includes six case studies in North Carolina, Oregon, Pennsylvania, southern California, Washington, and Utah with a series of maps depicting the locations and capacity of nursing homes and hospitals as well as their geographic relationship to emergency management and bioterrorism preparedness regions, such as HAZMAT response regions, emergency management regions, and Red Cross chapters.

Also published with the Atlas is a report, *Nursing Homes in Public Health Emergencies*, which presents the results of a series of focus groups convened to collect information about disaster- and bioterrorism-related planning activities among nursing homes in the same six States used in the Atlas case study series. The report addresses the roles that nursing homes could play in regional preparedness.

Adapting Community Call Centers for Crisis Support: A Model for Home-based Care and Monitoring

This report, *Adapting Community Call Centers for Crisis Support: A Model for Home-based Care and Monitoring*, recommends expanding the capabilities of poison control centers, nurse advice lines, and drug information centers and health agency hotlines to assist persons at home or in public shelters in the event of public health emergencies. The report and its four appendices include strategies for using these types of community call centers in the event of aerosol anthrax attacks, pandemic influenza, plague, or food contamination.

The strategies and tools are designed to help community call centers respond to callers concerned about their health risks; collect disease surveillance data; assist with sorting calls according to urgency and decision support for health concerns; assist with monitoring or contacting persons quarantined at home; help callers identify dispensed drugs, provide instructions on how to take them, and explain potential adverse reactions; and train health call center staff to identify callers who may benefit from referral to mental health care providers.

Recent Research Findings on Public Health Emergency Preparedness

- Researchers examined hospital emergency department (ED) daily surge as a foundation to more accurately predict how well hospital EDs will respond to a catastrophic surge in demand for their services. The researchers propose that daily and catastrophic ED surge can be measured by the magnitude of the surge, as well as by the nature and severity of the illnesses and injuries of arriving patients. The magnitude of an ED surge can be measured by the patient arrival rate per hour. The nature and severity of the surge can be measured by the type (for example, trauma, infection, or biohazard) and acuity (triage level) of the surge.
- A proposed system that identifies patients who can be discharged early can improve hospital surge capacity. Researchers developed a classification system that categorizes inpatients according to suitability for immediate discharge, a type of reverse triage. Patients with a risk too high for a simple discharge home are patients potentially suitable for transfer to another medical facility. Patients at high risk can be transferred to a major acute facility only. Finally, very high-risk patients are patients who might be too unstable or critically ill even for transfer to another facility.

AHRQ has funded more than 60 emergency preparedness-related studies, workshops, and conferences to help hospitals and health care systems prepare for public health emergencies. More information about these projects can be found online at www.ahrq.gov/prep/.

Looking to the Future

In 2008, AHRQ will continue its mission to improve the quality, safety, and cost-effectiveness of health care in America with a focus on greater uptake and use of its tools and research. Examples from key programs and initiatives follow.

Patient Safety Culture Surveys

Using the Hospital Survey on Patient Safety Culture as a starting point, new surveys addressing resident safety culture in nursing homes and patient safety culture in ambulatory outpatient medical offices are under development. Each of the new surveys will contain new and revised items assessing dimensions that more accurately apply to each setting.

New Priority Topics for the Effective Health Care Program

Through discussion with and extensive input from stakeholders, the Secretary of the Department of Health and Human Services chose 10 priority conditions to guide this work in 2008:

- Arthritis and nontraumatic joint disorders (Muscle, bone, and joint conditions)
- Cancer (Cancer)
- Chronic obstructive pulmonary disease and asthma (Breathing conditions)
- Dementia including Alzheimer's disease (Brain and nerve conditions)
- Depression and other mood disorders (Mental health)

- Diabetes mellitus (Diabetes)
- Ischemic heart disease (Heart and blood vessel conditions)
- Peptic ulcer disease and dyspepsia (Digestive system conditions)
- Pneumonia (Breathing conditions)
- Stroke and hypertension (Heart and blood vessel conditions)

Collaboration to Study Possible Heart Risks with ADHD Medications

AHRQ and the Food and Drug Administration will collaborate in the most comprehensive study to date of prescription medications used to treat attention deficit hyperactivity disorder (ADHD) and the potential for increased risk of heart attack, stroke or other cardiovascular problems. Researchers will examine the clinical data of about 500,000 children and adults who have taken medications used to treat ADHD to determine whether those drugs increase cardiovascular risks.

Evidence-based Practice Centers Topics In Progress

The Evidence-based Practice Centers are expected to release a number of new reports in 2008. The following is a list of some of the topics for which work has begun on evidence reports:

- *Regulation of Healthcare Costs.* This report will examine the effects of mandates on health insurance/health maintenance organization premiums, insurer administrative costs, the likelihood of being uninsured, and access to providers.
- *Barriers and Drivers of Health IT Use for the Elderly, Chronically Ill, and Underserved.* This report will examine the current level of use of consumer health IT in the elderly, chronically ill, and medically-underserved populations, its effectiveness in improving outcomes, barriers, and what facilitators may stimulate the use of consumer health IT.
- *Effectiveness of Weight Reduction Programs in Children.* This report will examine what is known about the effectiveness and safety of weight reduction programs, drug therapies, and surgical therapies for treatment of overweight or obese children.

CAHPS®

The CAHPS Team has initiated the development of new sets of supplemental survey items in development during 2007 and expected to be released in 2008:

- *CAHPS Health Literacy Item Set.* This set of supplemental items will ask adults to report on their providers' efforts to improve their health literacy.
- *CAHPS Health Information Technology Item Set.* This item set will ask patients about their experiences with health information technology in the context of care from a physician.

In Conclusion

The evidence developed through AHRQ-sponsored research and analyses helps everyone involved in patient care make more informed choices about what treatments work, for whom, when, and at what cost. Health care quality is improving, but much more remains to be done to achieve optimal quality. AHRQ will continue to invest in successful programs that develop and translate useful knowledge and tools so that the end result of the Agency's research will be measurable improvements in health care in America through improved quality of care and patient outcomes and value gained for what we spend.

AHRQ Pub. No. 08-0031
May 2008

www.ahrq.gov