AHRQ Annual Report on Research and Financial Management, FY 2003

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Message from the Director

Welcome to the Agency for Healthcare Research and Quality's FY 2003 Annual Report on Research and Financial Management, which summarizes AHRQ's programmatic and financial achievements. We all benefit from safe, effective, and efficient health care, and this report demonstrates our resolve to improve the quality of health care services provided in this Nation, as well as our continued commitment to assure sound investments in programs that will make a difference.

AHRQ's research is driven by the needs of our users—patients, clinicians, health system leaders, and policymakers. The Agency's research provides the scientific foundation for the Nation's efforts to improve the quality, safety, effectiveness, and efficiency of health care. AHRQ supports the work of health services researchers at America's leading academic centers and maintains a rigorous intramural research program that collects and analyzes data to understand changes in health care quality, cost, use, and access. AHRQ also supports efforts to develop the tools and information used by the public and private sectors to measure and improve health care quality.

An important part of our mission is to translate the findings of our research into practice. AHRQ develops evidence reports on best practices for improving care for the most urgent priorities confronting U.S. health care. These reports provide a roadmap for our partners by clarifying which strategies are most effective and by identifying where additional research is required. Our ultimate goal is to make measurable improvements in the quality of health care and help ensure that the American people get the highest quality and safest health care possible.

Every day it becomes more apparent that AHRQ's research is making a difference, as more patients, clinicians, health system leaders, and policymakers seek evidence to inform their health care decisions. Our long-standing programs continue to inform health care decisions made at all levels of the health care system, while our newer programs are releasing findings that promise to have a significant impact on the health care system.

I am also excited about our future direction, as we move to make AHRQ a "problem solving" agency. This will entail a greater focus on implementation research that is designed to develop strategies for overcoming barriers to the adoption of clinical interventions that are both effective and cost effective. We need to be more proactive in closing the gap between what we know is effective and cost effective in health care and what is done in daily practice.

I take pride in our accomplishments to date, and I look forward to building on our past successes to achieve new gains for the American people. The end result of our research will be measurable improvements in health care in America, gauged in terms of improved quality of life and patient outcomes, lives saved, and value gained for what we spend.

Carolyn M. Clancy, M.D.
Director
Agency for Healthcare Research and Quality

Message from the Acting Chief Financial Management Officer

This FY 2003 Annual Report highlights the research and financial management efforts of the Agency for Healthcare Research and Quality and its employees to develop more efficient and effective ways to fulfill our mission while maintaining and protecting the integrity of the resources entrusted to us. The report brings to light our major programmatic and managerial accomplishments and serves as an important tool to measure our progress and identify future challenges.

In FY 2003, AHRQ made significant progress towards implementing each of the five President's Management Agenda (PMA) initiatives: strategic management of human capital, competitive sourcing, improved financial performance, expanded electronic government, and budget and performance integration. We took many steps to attract, retain, motivate, and reward a quality and high-performing workforce, including revamping our recruiting and hiring programs and creating a state-of-the-art, competency-based performance management system. By realigning the work we do with our strategic goals and those of the Department, we improved the integration of budget and performance.

Over the past year, we examined the broad spectrum of our work and reorganized our activities and programs under 10 portfolios of work that cut across our Offices and Centers. Our goal is to capitalize on the research strengths and expertise throughout the Agency, communicate the focus of our research clearly, and ensure that our focus stays on moving research from idea generation to strategies that can be adopted into practice. We continued to improve the Agency's financial performance by enhancing our information systems and developing new applications to create an Agency-wide enterprise financial network. The aim of this network is to align AHRQ's research investments with our accomplishments, thus allowing managers to use this information to make informed budget decisions.

In accordance with PART, OMB's Program Assessment Rating Tool for the formal evaluation of Federal programs, we conducted a review of the Agency's patient safety activities. This review provided the basis for the Agency to move forward in more closely linking high quality outcomes with associated costs of programs. Over the next few years, the Agency will focus on fully integrating financial management of these programs with their performance.

In the spirt of Secretary Thompson's initiative to make HHS "One Department," AHRQ worked closely with the Department in a number of endeavors. To meet the accelerated submission date for accountability reports and audited financial statements, we collaborated with the Department to identify, develop, and implement

practical solutions. AHRQ also fully supported the development and implementation of the Department's Unified Financial Management System (UFMS), which will replace five legacy accounting systems now in use throughout HHS.

While we are pleased with the steps forward we have taken during the past year, we realize that much work remains to address future financial management and program performance issues. We are committed to work toward achieving the highest levels of accountability, and we will continue to stress the significance of a robust internal control program to meet our programmatic and fiscal responsibilities.

Robert Graham, M.D.
Acting Chief Financial Officer
Agency for Healthcare Research and Quality

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Part 1.
AHRQ Activities and Accomplishments, FY 2003

Chapter 1. Health Care in America

The overall health of people living in the United States has improved dramatically over the last century. In the last decade alone, the Nation has seen significant reductions in infant mortality, great improvement in the rate of childhood vaccinations, declining substance abuse, fewer people dying from heart disease, and promising new cancer treatments.

Most Americans are never very far from medical help, and emerging health information technologies could bring care, and the best possible science to enhance that care, even closer. Indeed, people come from all over the world to share in the benefits of the U.S. health care system.

Despite the remarkable strides we have made in the past few years, there are many problems and challenges associated with the U.S. health care system. For example:

- Health care costs continue to rise. According to the most recent annual data available from the Medical Expenditure Panel Survey (MEPS), expenditures for health care services to the U.S. community population totaled $726 billion in 2001, an increase of 15.7 percent over 2000.
- Average health insurance premiums in 2001 were $2,889 for single coverage and $7,509 for family coverage, representing increases of 8.8 percent and 10.9 percent, respectively, over 2000. This continued a trend of increasing premiums each year since 1996.
- Access to health care continues to be a problem for many Americans. In 2001, 31.3 million Americans under age 65 were uninsured for the entire year, and another 30.6 million were uninsured for some part of the year. Over the first half of 2002, 45.9 million Americans under age 65 lacked health insurance, representing 18.5 percent of the nonelderly population. In addition, according to the 2000 MEPS, 18 percent of the U.S. community population does not have a usual source of health care.
- In 2002, 12 percent of infants were born preterm, and 7.8 percent were born with low birthweight. Since the mid-1980s, rates of preterm birth and low and very low birthweight have increased. In addition, the rate of decrease in the infant mortality rate has slowed in recent years (one-tenth of a percentage point per year for 1998-2001).
- Recent studies have raised questions about differences in care provided to different populations, including women, children, racial/ethnic minorities, the elderly, and people with chronic conditions. By the year 2050, it is estimated that nearly one in two Americans will be a member of a racial or ethnic minority group. These demographic changes have different implications for communities across the Nation and the systems of care that are in place and available to serve the residents.

- Gaps in income between the richest and poorest households in America are widening. People of lower socioeconomic status face many barriers to obtaining timely and high-quality health care.
- Access to care continues to be a problem for some Americans, and different patient groups experience the impact of barriers to care differently. For example, transportation to providers may pose the greatest problem for the rural elderly or disabled, while working adults may only be able to get care in the evenings and on weekends. These and other obstacles—such as difficulty in obtaining referrals to specialty care—can lead people to delay needed care or seek care in inappropriate settings, such as the hospital emergency room.
- The United States, like all developed nations, is facing demographic challenges attributable to the successes of biomedicine—that is, the aging of the population and growing burden of illness attributable to chronic conditions, such as heart disease, diabetes, high blood pressure, and cancer. By the year 2020, an estimated 16 percent of the U.S. population will be age 65 or older, posing a significant challenge for the U.S. health care system. For example, experts have predicted that Medicare and Medicaid expenditures for long-term care will double over the 4-year period 2001 to 2005.
- Over the past 40 years, the prevalence of obesity among adults in the United States has increased from 13 percent to 27 percent. Obesity is associated with many significant health problems, including high blood pressure, diabetes, heart disease, decreased quality of life, and premature death.
- Obesity in children is on the rise as well. The percentage of children who were obese or overweight increased significantly and steadily from 1986 to 1998. By 1998, the prevalence of obesity/overweight had risen to 22 percent among black and Hispanic children and 12.3 percent among non-Hispanic white children.

AHRQ: Working to Improve Health Care in America

The Agency for Healthcare Research and Quality (AHRQ) is one of 13 agencies of the Department of Health and Human Services. AHRQ has a leadership role in

New director appointed for AHRQ

Carolyn M. Clancy, M.D., a general internist and health services researcher, was named permanent director of AHRQ in February 2003. She had served as acting director of the Agency since March 2002 and, before that, as director of AHRQ's Center for Outcomes and Effectiveness Research.

Dr. Clancy holds an academic appointment at George Washington University School of Medicine, and she serves as Senior Associate Editor of the journal, *Health Services Research*. Her major research interests include women's health, primary care, access to care, and the impact of financial incentives on physicians' decisions.

Dr. Clancy has been with the Agency since 1990 and has also served as director of AHRQ's Center for Primary Care Research.

finding answers to difficult questions about the Nation's health care system. The products developed by the Agency include the scientific evidence that supports decisionmaking to improve health care, as well as tools to assist in improving quality and reducing costs. AHRQ's focus is on getting research results into the hands of those who can put it to practical use as rapidly as possible. As advances in information and communications technology make it feasible to deliver the best possible evidence to the point of care, the role of evidence-based information in improving the quality, safety, efficiency, and effectiveness of health care for all Americans will become even more essential.

Role and Mission of AHRQ

AHRQ's mission is to improve the quality, safety, efficiency, and effectiveness of health care for all Americans.

AHRQ promotes improvements in health care quality by conducting and supporting health services research that results in scientific evidence regarding all aspects of health care. Health services research addresses factors related to the organization, delivery, financing, and use of health care services; patient and provider behavior; quality and patient safety; outcomes and effectiveness; access to care; and cost. Health services researchers evaluate both clinical services and the system in which these services are provided.

AHRQ's role in the research arena

AHRQ's health services research complements the biomedical research of the National Institutes of Health by helping clinicians, patients, health care institutions, and policymakers make choices about what works best, for whom, when, and at what cost.

Findings from health services research provide answers to real-world questions about health care. AHRQ's goal is to foster research that helps the Nation's health care system provide access to high quality, cost-effective services; to be accountable and responsive to consumers and purchasers; and to improve health status and quality of life for all Americans. An essential outgrowth of this goal is assuring that research findings are ready for use by health care decisionmakers, including policymakers, private-sector leaders, providers, clinicians, and patients/consumers.

To meet these challenges, the Agency has established a broad base of expertise in scientific research. The findings from AHRQ-supported research promote improvements in clinical and health system practices, including the prevention of diseases and other health conditions.

AHRQ's Customers

Findings from the research conducted and supported by AHRQ help clinicians, policymakers, and patients, as well as purchasers and systems managers. For example:

Physicians and other health care providers:

- Findings from AHRQ research help practitioners diagnose and treat patients more effectively. A computerized clinical information system developed with AHRQ support is now being used to help clinicians determine the most appropriate timing for giving antibiotics to surgical patients.
- AHRQ's Web M&M, an online journal and forum on patient safety and quality, helps physicians and other clinicians learn more about, and ultimately improve, patient safety. The site features expert analysis of medical errors reported anonymously by readers, interactive learning modules, and forums for online discussion. Each month, five interesting cases involving medical errors and patient safety problems are posted—one each in medicine, surgery/anesthesiology, obstetrics-gynecology, pediatrics, and other fields—along with commentaries from distinguished experts and a forum for readers' comments.
- AHRQ's National Guideline Clearinghouse™ provides clinicians, health plans, health care delivery systems, and purchasers a free, Web-based mechanism for obtaining objective, detailed information on clinical practice guidelines.

AHRQ has materials to help patients make decisions about preventive services

AHRQ, through its Put Prevention Into Practice (PPIP) program, makes available materials to increase the appropriate use of clinical preventive services, such as screening tests, chemoprevention (the use of medications to prevent disease), and counseling. PPIP is based on evidence-based recommendations from the U.S. Preventive Services Task Force.

PPIP consumer materials, which are available from AHRQ, include checklists for men and women and pocket guides for older adults and children.

- *Men: Stay Healthy at Any Age* and *Women: Stay Healthy at Any Age*. These checklists are designed for patients to take along on visits to health care providers to make it easier to talk about screening tests. The checklists include recommendations about cholesterol checks and tests for high blood pressure, cancer, diabetes, depression, and sexually transmitted diseases.
- *Pocket Guide to Staying Healthy at 50+*. The guide includes tips and recommendations on good health habits, screening tests, and immunizations for older Americans. It provides easy-to-use charts to track personal health information and includes questions to ask health care providers, as well as resources for more information.
- *Pocket Guide to Good Health for Children*. Designed for parents to help them keep their children healthy. It provides tips for asking the right questions during medical visits and information on recommended immunizations, developmental milestones, good nutrition, suggestions for injury prevention, and other important topics.

Public policymakers and other health officials:

- AHRQ provides information and technical assistance to State and local policymakers through user-driven workshops on topics that include improving care delivered to children served by State agencies and developing strategies to reduce health disparities.
- Data from AHRQ surveys, including MEPS and the Healthcare Cost and Utilization Project (HCUP), provide policymakers and others with the information they need to craft policies, clinical guidelines, legislation, and other materials that affect how health care is delivered and paid for in the United States. Both MEPS and HCUP are discussed in detail in Chapter 6 of this report.

Responding to bioterrorism

AHRQ has a substantial investment in research related to bioterrorism preparedness and response. For example:

- Researchers at Weill Medical College of Cornell University have designed a new computer model to help hospitals and health systems plan antibiotic dispensing and vaccination campaigns to respond to bioterrorism or large-scale natural disease outbreaks. The model was developed by AHRQ-funded researchers after testing a variety of patient triage and drug-dispensing plans. Now, for the first time, hospital planners can estimate the number and type of staff needed to vaccinate an entire community in an efficient and timely fashion.
- AHRQ-funded researchers at the University of Alabama at Birmingham and Research Triangle Institute have developed training modules to teach health professionals how to respond to varied biological agents, including pathogens rarely seen in the United States. The Web site covers anthrax, smallpox, botulism, tularemia, viral hemorrhagic fever, and plagues and has modules designed for ER practitioners, radiologists, pathologists, and infection control specialists. This site was up and running just 1 week after the anthrax attacks in October 2001, and it was developed specifically to respond to clinicians' needs.

Patients and consumers

- AHRQ's research assists people in getting objective information on how to choose health plans, doctors, and hospitals based on their experience and performance.
- Personal health guides developed by AHRQ help individuals keep track of their preventive care and other health services they receive.

Chronic disease self-management

Improving chronic illness care is one of the top challenges for health care in the 21st century. Patients who co-manage their chronic illnesses have better outcomes than those who are less involved in their own care.

A successful bilingual chronic disease self-management program called "Living with Chronic Illness: How to Overcome Your Symptoms Through Self-Management," has been implemented in San Antonio, TX. It is the result of a research study cosponsored by AHRQ and the State of California.

The San Antonio program is offered in English and Spanish through the Texas Diabetes Institute. It was developed through a 5-year research study conducted by Researchers at Stanford University. During the first year the course was offered, more than 130 patients participated in nine classes, including four classes in Spanish.

Chapter 2. AHRQ's Research Portfolio

Agency activities start and finish with the end-users of AHRQ research. Our research agenda is user- or customer-driven—the needs of AHRQ's customers determine our research priorities and are crucial to our success. AHRQ regularly solicits input from our public- and private-sector customers through a variety of mechanisms, such as the Agency's National Advisory Council, meetings with stakeholder groups, Federal Register notices, and through comments submitted by the public via the Agency's Web site at www.ahrq.gov.

The Agency carries out a variety of activities to accomplish its research mission. Together, these activities build the infrastructure, tools, and knowledge for measurable improvements in America's health care system. Researchers—including grantees, contractors, and intramural investigators—build on the foundation laid by biomedical researchers who have determined which interventions can work under ideal circumstances. But knowing that these interventions work is only a first step. We also need to know in which circumstances they work, for whom they work and don't work, and other critical information to make sure that the interventions are used appropriately and efficiently to improve patients' health and that they are effective in everyday practice.

Opportunities for Research

Talented and imaginative health services researchers are a critical component of our work at AHRQ, and they are essential to our ability to pursue and fulfill the Agency's mission. These researchers are dedicated to excellence in their own work. In addition, they collaborate with other researchers and health care decisionmakers so they can address relevant research questions and ensure that the findings are translated as improvements in health care. In addition to the researchers on AHRQ's staff, about three-quarters of the Agency's budget is awarded as grants and contracts to support the work of researchers at universities, in clinical settings such as hospitals and doctor's offices, and in health care organizations.

Unique AHRQ Research Investments

In 2003, research on pharmaceuticals and other therapeutics, practice-based research, infrastructure building, and disparities were priorities for new research. AHRQ issued solicitations in these areas as detailed below.

- Centers for Education and Research on Therapeutics (CERTs) Program: The CERTs program, initiated in 1999, conducts research and provides education to advance the optimal use of drugs, medical devices, and biological products such as vaccines. The CERTs concept grew out of recognition that, while pharmaceuticals and other medical products improve the lives of many patients, underuse, overuse, adverse events, and medical errors may cause serious impairment to patient

health. In 2003, existing CERTs competed for additional funds to allow grantees to build on and expand their current work. CERTs at the University of Alabama at Birmingham, HMO Research Network, and University of Pennsylvania received funding to perform research to develop and implement educational strategies focused on translating the most promising findings of current work into everyday practices, to address existing gaps within the overall CERTs program, and to enhance the work of the CERTs consistent with AHRQ's patient safety agenda.

- CERTs Coordination: The CERTs Coordinating Center is located at Duke University Medical Center. Its mission is to support the work of the research centers by enhancing cross-center synergy and disseminating findings from the research conducted by the centers. The coordinating center is currently organizing a series of workshops focused on the risks of therapeutics.
- Primary Care Practice-Based Research Networks (PBRNs): The goal of the seven small research grants awarded in 2003 is to allow existing PBRN research networks to conduct exploratory/pilot projects or feasibility studies. A PBRN is a group of ambulatory practices devoted principally to providing primary care to patients. The practices are affiliated with each other (and often with an academic or professional organization) in order to investigate questions related to community-based practice. These grants will address issues such as network strategies for assuring that new research evidence is translated into actual practice and that its impact is assessed; innovative use of information technology in primary care practices; feasibility of implementing electronic health records in primary care and assessing the impact on safety, quality, effectiveness, and efficiency of care; optimal methods of delivering preventive services in primary care settings; methods for improving community-based detection and responses to emerging public health threats, including bioterrorism; and clarification of primary care-based strategies for diminishing disparities in health care delivery and health outcomes for AHRQ priority populations.
- National Research Service Awards: Believing that tomorrow's health care quality is achieved through an investment in educational excellence today, AHRQ is firmly committed to building a strong, visible infrastucture for the conduct of future health services research through support of a network of NRSA institutional training programs located throughout the country. Funds are provided to support over 150 clinical and nonclinical predoctoral and postdoctoral students annually in order to equip them with the necessary knowledge, skills, and experience to conduct health services research that will meet the needs of patients, providers, plans, purchasers, and policymakers. These awards allow scholars to gain the necessary methodological and substantive multidisciplinary expertise required to address critical issues facing the Nation's health care system, including patient safety and the delivery of cost-effective care.
- Building Research Infrastructure and Capacity (BRIC): AHRQ's BRIC program was launched in FY 2001 to build research capacity in States that have not traditionally

been involved in health services research. The primary goals of BRIC are to enhance the competitiveness of research institutions and organizations in the BRIC-eligible States for AHRQ-funded grants and to increase the probability of long-term growth of AHRQ competitive funding to investigators at institutions from these eligible States. In 2003, AHRQ funded new BRIC grants with institutions in Utah, Louisiana, New Jersey, Kentucky, and Mississippi.

Innovative Research: Addressing Current and Emerging Challenges

The topics addressed by innovative research proposals reflect timely issues and ideas from the top health services researchers. In 2003, close to half of the grants and cooperative agreements funded by AHRQ were initiated by individual investigators who developed research proposals within an area of interest to the Agency. AHRQ uses Program Announcements (PAs) to invite applications and communicate the Agency's priorities for new and ongoing research topics. Examples of new and ongoing FY 2003 PAs include:

- Building the Evidence to Promote Bioterrorism and Other Public Health Emergency Preparedness in Health Care Systems. Projects funded under this PA are examining and promoting the health care system's readiness for a bioterrorist event and other public health emergencies. Emphasis is focused on a vital area of bioterrorism preparedness concern know as "surge capacity," which is a health care system's ability to rapidly expand beyond normal services to meet the increased demand for qualified personnel, medical care, and public health in the event of a large-scale public health emergency or disaster.
- Translating Research Into Practice. Projects funded under this PA, which was issued jointly by AHRQ, the Department of Veterans Affairs, and the National Institutes of Health, are conducting innovative and rigorous research and evaluation projects related to the translation of research findings into measurable improvements in quality, patient safety, health care outcomes, and costs, use of services, and access to care. Specific priorities are to: one, compare the use of interventions to translate research into practice across different health care systems, and two, measure the impact of translation activities, including the testing of interventions that foster measurable and sustainable improvements in quality and safety or consistent quality and patient safety at a lower cost.
- Patient-Centered Care. Customizing Care to Meet Patients' Needs. These projects focus on design and evaluation of care processes to empower patients, improve patient-provider interaction, help patients and clinicians navigate through complicated health care systems, and improve access, quality, and outcomes.
- Impact of Payment and Organization on Cost, Quality, and Equity. Many health care leaders have concluded that the gap between the level of quality that could be

provided and that which is provided to most people is attributable to a lack of incentives and rewards, as well as inattention to organizational factors that make doing the right thing the easy thing to do. These projects focus on the effects of payment and organizational structures and processes on the cost, quality, and equity of health care.

The following summaries are representative of new projects funded in FY 2003 that are focused on well-defined research areas or topics.

- Using barcode technology may help to improve medication safety. Medications are the most commonly used form of medical therapy and are the single most frequent cause of adverse events. Many of these adverse events are caused by medication errors, which often occur in the dispensing, transcribing, and administration stages of the medication use process. This project focuses on using barcode technology in conjunction with an electronic medication administration record system to reduce medication errors. Specifically, the researchers are examining how effective barcode and electronic medication administration record technology is at reducing medication errors in hospitalized patients, what the impact is of this technology on nursing and pharmacy efficiency and satisfaction, and whether the cost of this technology can be justified by its benefits.
- Drug cost-sharing may affect the safety and affordability of drugs. Drug cost-sharing between the consumer and the provider is a commonly used method to control prescription drug costs. This study is addressing the safety and economic effects of drug cost-sharing. It includes a broad sample of Medicare beneficiaries. The researchers are evaluating how drug cost-sharing affects clinical outcomes and total medical costs, which is a particular concern given that the most extreme version of cost-sharing—no provider coverage—is associated with poor health. Also, poor drug adherence may lead to higher downstream medical costs.

Selected Examples of Recent Findings from AHRQ-Funded Research

- Rates of antibiotic-resistant bacteria. An AHRQ study of 16 Massachusetts communities found that 8 percent of children under age 7 carry antibiotic-resistant *Streptococcus pneumoniae*, a bacterium commonly found in healthy children but which presents a low risk of illness to them. Although this rate is much higher than a decade ago, a new vaccine is reducing the presence of strains of the bacterium that can cause significant infection. This study is the first of its kind performed after introduction of a new vaccine to protect children from the seven most invasive strains of *S. pneumoniae*.
- Outpatient prescription drug-related injuries in older patients. In a new study sponsored by AHRQ and NIH's National Institute on Aging, medical researchers found that Medicare patients treated in an outpatient setting may suffer as many as 1.9 million drug-related injuries a year because of medical errors or adverse drug reactions not caused by errors. About 180,000 of these injuries are life-threatening

or fatal, and more than half are preventable, say the researchers, who based the estimates on a study of over 30,000 Medicare enrolles.

- Risk ractors for retained instruments and sponges after surgery. A study funded by AHRQ estimates that a surgical instrument or sponge is left in more than 1,500 patients during surgery each year. In this study, patients who had emergency surgery were nine times more likely to have a sponge or surgical instrument left in their body than patients undergoing scheduled surgery. In addition, the risk increased four-fold for patients who had unplanned changes in their procedure. Patients who had a higher body mass index (i.e., measure of body fat based on height and weight) were found to be more likely to have a foreign body left after surgery. Researchers concluded that a number of techniques are available to reduce the incidence of foreign bodies left in patients after surgery, including counting instruments and sponges before and after the procedures and x-raying patients for instruments that may inadvertently have been left behind.

Building the Research Infrastructure

Health services researchers focus on some of the most complex and challenging issues currently affecting health care in the United States, and training new investigators is fundamental to producing the next generation of health services researchers. AHRQ believes that future improvements in health care depend in large part on the investments we make today in the research infrastructure. These investments also return a more immediate payoff in the form of high-quality research findings that accumulate naturally as a result of the training process. The products and lessons learned from such research are useful to regional, State, and national decisionmakers in assessing the effectiveness of current programs and planning for future policies that address the costs and financing of health care, the use of health care services, and access to care across diverse regions and populations.

One way AHRQ contributes to excellence in health care delivery is by providing support to maintain and nurture health services researchers. The agency supports a variety of training and career development opportunities through individual and institutional grant programs. In FY 2003, AHRQ provided support for approximately 240 trainees and new investigators through these programs:

- Dissertation research support.
- Kerr White Visiting Scholars Program.
- National Research Service Awards (pre- and postdoctoral fellowships), including both individual and institutional programs.
- Career Development Awards (K awards).
- Building Research Infrastructure and Capacity (BRIC) awards.
- Minority Research Infrastructure Support Program (M-RISP) awards.

Investments in Training

In 2003, AHRQ continued its mission to increase the geographic and demographic diversity in the pool of researchers through its BRIC and M-RISP programs, which respectively are designed to broaden the national capacity to conduct health services research across a wide range of States and in institutions that traditionally have served minorities. The following examples illustrate the types of projects AHRQ has funded recently under the BRIC and M-RISP initiatives.

BRIC Projects

- A pilot study was conducted in which diabetes patients treated for foot ulcerations in Louisiana's State-wide public hospital system via telemedical consultation (advanced technology used to help geographically distant physicians consult with each other on patient cases) were compared with patients treated by a diabetes foot program. The management of foot ulcers by telemedical consultation was administered by a certified wound care nurse. The percent of wounds healed after 12 weeks was 81 percent in the telemedicine group and 85 percent in the diabetes foot program group. The results suggest that telemedicine, implemented via real-time interactive consultation, appears to be technically and logistically feasible to geographically extend the effectiveness of a currently existing diabetes foot program.
- Researchers conducted a retrospective analysis of indigent patients who participated in a comprehensive, interdisciplinary congestive heart failure disease management program from December 1996 to May 2002 at the Chabert Medical Center, one of nine public health care facilities in Louisiana. They found that the mortality rate was 19.6 percent for participants compared with 36 percent for nonparticipants.
- Enlisting the help of many organizations and collaborators, the Mississippi BRIC project was able to collect data on over 13,400 Mississippi Delta children enrolled in child care services. Most of the subjects were impoverished African American children. A significant number of these children were receiving no dental care. Pilot testing is underway to identify best practices for providing early dental care to those children at highest risk for dental disease.

M-RISP Projects

- Montana/Wyoming Tribal Leaders Council. The goal of this project is to address research on disparities in American Indian health care and to support the creation of a research infrastructure through the development of databases, research methodologies, and collaborative working relationships. Two studies concentrating on the significant health issues of American Indians in Montana and Wyoming are underway. The first study is focusing on research to identify factors affecting breast and cervical cancer screening, followup of abnormal findings, and development

and implementation of a pilot program to increase the proportion of American Indian women who receive screening tests. The second study is designing and testing a methodology for reporting results from a survey that collects information on patient satisfaction from American Indians who receive care through the Indian Health Service.

- Puerto Rico Health Services Research Institute. The goal of this project is to develop the Puerto Rico Health Services Research Institute at the University of Puerto Rico Graduate School of Public Health. The Puerto Rico health care delivery system has experienced dramatic changes over the last 20 years. Amid different reforms implemented in the past, critical health disparities exist that are intertwined with cost, access, and quality issues affecting vulnerable populations. Puerto Ricans in the United States also exhibit the poorest health status profile of all Latino subpopulation groups. To assist decisionmakers in evaluating health policy options, this project is establishing an administrative structure that will support and foster the development of health services research capability with emphasis on health disparities. The resulting infrastructure will provide methodological and technical support to facilitate research projects and development of research proposals for external funding and dissemination of research findings. In addition, it will allow implementation of a faculty development and mentoring program to enhance the faculty's capabilities to undertake health services research. Finally, researchers will be able to conduct pilot projects in health services research that will lead toward more comprehensive projects supported by external funding.
- Morgan State University Health Research Enhancement Project. The goal of this project is to strengthen and expand the capacity at Morgan State University to conduct rigorous health services research. This interdisciplinary research project is focusing primarily on maternal and child health issues in the black community in inner city Baltimore. For example, the focal point of one undertaking is to assess the long-term impact of a school-based comprehensive program for pregnant adolescents on their health, education, and sociodemographic outcomes.

AHRQ also sponsors Research Career Awards, which are intended to foster the development of promising new scientists and clinicians who are committed to a career in health services research. Particular emphasis is placed on their development as independent scientists. Examples of the impact of the research produced by these grantees follow.

- Based on an evidence review of the safety of vaginal birth after cesarean, the American Academy of Family Physicians is formulating clinical guidelines for family medicine providers.
- Research findings on the needs of dying children have been used to motivate and guide the design of pediatric palliative, end-of-life, and bereavement services that were featured prominently in the IOM report *When Children Die*.

- Research from one project led to Washington State legal guidelines/advocacy for appropriate legal access to needed health care services for minors living on the streets.
- Research inspired the implementation of a policy to decrease the percentage of patients discharged early to post-acute care settings after major orthopedic procedures.
- Research findings, which will be included in an upcoming Centers for Disease Control and Prevention (CDC) report, have helped CDC prepare for optimal health care delivery in the event of a polio outbreak.

Chapter 3. From Research to Results

Partnerships and Coordination

Forming partnerships allows organizations in both the public and private sectors to strengthen their capabilities in improving health care, stimulate new forms of integration among organizations, and contribute to ensuring better access to health services and better health outcomes.

The Agency for Healthcare Research and Quality has a long and successful history of developing partnerships and working in collaboration with various organizations within the Department of Health and Human Services, other components of the Federal Government, State and local governments, and private-sector entities. Working in partnership with these other organizations helps us meet our goals.

AHRQ's partnerships and collaborative efforts span the spectrum of our activities: developing new knowledge; developing tools, measures, and other decision-support mechanisms so that existing knowledge can be easily used; and working with the agencies and organizations in the public and private sectors to accelerate the adoption of effective health care interventions.

Because our authorizing statute provides the agency with a unique focus on improving the quality of the health care delivery system, AHRQ has developed several initiatives that place great emphasis on partnerships and collaboration. In 1999, AHRQ developed the first initiative—Translating Research into Practice (TRIP)—a targeted research effort designed to assess the effectiveness of different strategies and methods for applying the often technical findings from research in daily practice. This was followed by the establishment of two "real world" research networks—the Integrated Delivery System Research Network (IDSRN) and the Practice-Based Research Network (PBRN)—that serve as ongoing, living laboratories, enabling us to quickly assess emerging trends in health care and evaluate the impact of new interventions. With our recent initiative, Partnerships for Quality, AHRQ is now working with other public- and private-sector entities to ensure that AHRQ-supported research will be applied to achieve meaningful and lasting improvements in care.

Examples of the many ways in which AHRQ works in collaboration and partnership to carry out the Agency's mission follow.

- Develop new knowledge through research.
  - AHRQ's focus is on developing new knowledge regarding effective health care services and efficient approaches to financing and delivering those services. We co-fund individual research projects with other public- and private-sector funding organizations and sponsor joint research solicitations with other HHS agencies and research foundations. When we co-fund a project supported by other agencies, our goal is to ensure that the research addresses issues that are significant and important in daily practice, such as the comparative cost-effectiveness of alternative treatments, which would otherwise go unaddressed.

- Develop tools, measures, and other decision-support mechanisms so that existing knowledge can be easily used.
  - It is becoming increasingly difficult to keep abreast of the rapidly increasing amount of medical literature. It is even more challenging to determine how to apply research findings effectively. To address these challenges, AHRQ supports the assessment and synthesis of existing scientific knowledge and the development of tools, measures, and decision-support mechanisms to assist physicians, patients, and others in using the evidence on what works best.
  - AHRQ increasingly is being seen as the source of definitive assessments of existing scientific evidence. A growing number of Federal agencies—(e.g., the National Institutes of Health (NIH), the Centers for Medicare & Medicaid Services (CMS), the Social Security Administration, and the Department of Veterans Affairs)—professional societies, and other health care providers are working closely with AHRQ's Evidence-based Practice Centers (EPCs) to develop syntheses of existing scientific evidence to guide their work. In addition, CMS uses technology assessments prepared by the EPCs to inform decisions about Medicare coverage of new and existing health technologies. For example, when Medicare asked AHRQ to evaluate the effectiveness of lung-volume reduction surgery, we concluded that there was insufficient evidence to reach a determination. However, we pointed out to Medicare the potential for developing the evidence through an innovative process of conditional coverage in which Medicare would pay for the procedure in selected institutions, provided the surgeons and patients agreed to the collection of outcomes data. This resulted in a partnership between Medicare, NIH's National Heart, Lung, and Blood Institute, and AHRQ to assess the procedure. As a result of this study, we now know which patients are likely to benefit, and even more importantly, the study identified a subgroup of patients who experienced increased mortality as a result of the procedure, which means that avoidable deaths can be reduced.
  - Evidence reports prepared by AHRQ-supported EPCs have been used in the development of clinical practice guidelines by a number of private-sector organizations, including the American Psychiatric Association, the American Academy of Pediatrics, the American Heart Association, and many others. For example, the American Academy of Pediatrics has developed a practice guideline based on the AHRQ evidence report on diagnosis of attention-deficit/hyperactivity disorder (ADHD). Also, the Department of Veterans Affairs is using the meta-analysis (i.e., a statistical method of combining the results of independent studies and synthesizing summaries and conclusions) in our EPC report on prostate cancer as part of its continuing medical education program.

- Working in concert with public- and private-sector efforts to accelerate the adoption of effective health care interventions.
  - Even when the scientific evidence is clear and clinicians, patients, and others have the tools to use existing knowledge, it may not be used. Findings from AHRQ-supported TRIP research and research conducted through AHRQ's IDSRNs and PBRNs can help identify the organizational, financial, and cultural barriers to implementation and help assess the effectiveness of alternative approaches to facilitate adoption. AHRQ's Partnerships for Quality vehicle can then use this research to speed the adoption of effective practices and, in turn, further assess and refine these implementation strategies.
  - The goal of the TRIP cooperative agreements is to identify sustainable and reproducible strategies to overcome the barriers to using effective health care interventions and identify ways to facilitate adoption of effective interventions.
  - AHRQ supports nine IDSRNs that conduct fast-track, cutting-edge research on health policy and delivery system issues. More than 700,000 physicians, a majority of hospitals, more than 2,000 outpatient clinics, 450 long-term care facilities, 50 rehabilitation facilities, 30 home heath agencies, and 60 dental facilities are affiliated with these networks.

Use of AHRQ technology assessments

AHRQ serves as a science partner with the Centers for Medicare & Medicaid Services (CMS) by preparing technology assessments that CMS can use to inform coverage decisions for the Medicare program and to provide guidance to Medicare carriers. The following technology assessments were developed by AHRQ in FY 2003:

- Acupuncture for Fibromyalgia
- Acupuncture for Osteoarthritis
- Electrical Bioimpedance for Cardiac Output Monitoring
- Magnetic Resonance Spectroscopy for Brain Tumors (MRS)
- Obesity in the Elderly
- Positron Emission Tomography for Brain, Cervical, Ovarian, Pancreatic, Small Cell Lung, and Testicular Cancers
- Screening Immunoassay Fecal Occult Blood Testing
- Knee Arthroscopy
- Wound Care Technologies

To find these and other technology assessments, go to the AHRQ Web site at www.ahrq.gov and click on "Technology Assessments" under the "Clinical Information" section. Assessments can also be accessed through a full-text link to the CMS Web site.

- PBRNs are groups of practices devoted principally to patient care that work together with researchers and/or professional organizations to study and improve the delivery and quality of primary care. AHRQ supported 33 networks involving 10,000 providers and 10 million patients in 2003.
- The Partnerships for Quality grants originally funded in 2002 are designed to accelerate the pace with which research findings can be translated into improved quality of care and health care system performance. The 22 projects span much of the Nation and involve more than 88,000 medical providers; 5,800 hospitals, nursing homes, and other health care facilities; and 180 health plans.

Working in partnership

- AHRQ worked collaboratively with the American Medical Association and the American Association of Health Plans (now America's Health Insurance Plans) to develop the National Guideline Clearinghouse (NGC™), an internet resource for evidence-based clinical practice guidelines. Currently, the NGC includes more than 1,000 guidelines that have been submitted by over 165 health care organizations and other entities.
- The Healthcare Cost and Utilization Project (HCUP) is a long-standing public-private partnership between AHRQ and more than 33 partner States to build and maintain a multi-State data system.
- AHRQ and the Centers for Medicare & Medicaid Services (CMS) are working together to develop a module of the CAHPS® survey that will report consumer satisfaction with regard to hospital care. AHRQ staff are also working to develop messages CMS can use to target information to Medicare beneficiaries.

- Coordination with other HHS agencies.
  - AHRQ continues to play a leadership role in the HHS Patient Safety Task Force, which includes CDC, the Food and Drug Administration (FDA), and CMS. The goal is to work closely with the States and the private sector to improve existing systems to collect and analyze patient safety data. AHRQ, on behalf of the Patient Safety Task Force, awarded a contract to develop and implement a user-friendly, Internet-based patient safety reporting format that will greatly simplify the burden on those required to report patient safety events, enable faster cross-matching and electronic analysis of data, and facilitate more rapid responses to patient safety problems. In 2003, AHRQ and the Patient Safety Task Force supported 13 grants to assess risks to patients and devise ways to prevent them, as well as implement safety practices that show evidence of eliminating or reducing known hazards to patient safety.

- AHRQ has been a very active participant in the Research Coordination Council (RCC). We have received valuable input from the RCC workgroups that will help us strengthen coordination and collaboration in several areas of the Agency's research. For example, the Disability, Aging, and Long-Term Care Workgroup made recommendations related to AHRQ's research agenda on nursing home quality, disability measurement, and efforts to improve the long-term care data infrastructure. Recommendations from the Health Research Workgroup focused on improving coordination and efficiency in research translation, dissemination, and implementation, as well as improving coordination of research related to health care. The Science Workgroup recommendations are related to an HHS Secretarial Initiative on Prevention.

In 2003, AHRQ staff participated in the RCC workgroups, which reviewed the FY 2005 research budget requests submitted by the agencies and assisted in the development of findings and recommendations for consideration by the Secretary's Budget Council. The purpose of these workgroups is to identify ways to increase the efficient use of existing resources by identifying opportunities to collaborate with other agencies. Some examples of how AHRQ contributed to the RCC follow.

- Identifying the potential for overlapping areas of focus or gaps in research efforts:
  - The health care information technology (HIT) program efforts include improvements in the Indian Health Service's electronic health record and joint programming with CMS.
- Increasing collaboration and coordination with other HHS agencies:
  - AHRQ, FDA, CDC, and CMS will join together to develop a National Patient Safety Network.
- Improved RD&E programs or efficiencies related to the FY 2005 planning process:
  - AHRQ, the HHS Assistant Secretary for Planning and Evaluation, CMS, the National Center for Health Statistics, and the National Institute on Aging are working to improve the Department's long-term care data systems.
  - AHRQ, CDC, the Health Resources and Services Administration, the Indian Health Service, and the Administration on Aging will work collaboratively to implement the prevention funding CDC received.

Translating Research into Practice

It may take as long as several decades for findings from original research to be incorporated into routine clinical practice. Thus, the translation of research findings into sustainable improvements in everyday practice and patient outcomes remains one of the most significant challenges to be met in improving the quality of health care received by patients. Accelerating the uptake of evidence-based practice is a top priority for AHRQ.

In 2000, AHRQ funded 13 new projects to evaluate different strategies for translating research findings into clinical practice. The goal of these cooperative agreements, known collectively as TRIP-II, is to identify strategies that can be validated and replicated to help accelerate the impact of health services research on direct patient care and improve the outcomes, quality, effectiveness, and efficiency of care through partnerships between health care organizations and researchers.

The projects funded in 2000 joined 14 others that were funded in 1999 as part of a major initiative by AHRQ to close the gap between knowledge and practice to ensure continuing improvements in the quality of the Nation's health care. There now are 458 sites (hospitals, physician's offices, nursing homes, Head Start programs, outpatient clinics, and research network practices) involved in this initiative. More than 150,000 patients/participants; 1,547 physicians; and 4,276 nurses, pharmacists, and other health care providers are taking part in AHRQ's TRIP-II initiative.

Two areas of particular importance to the TRIP-II initiative are improving the health care provided to priority populations and using information technology to translate research findings into health care improvements and health policy. Collaboration is the key to realizing these goals. A number of partnerships have been formed between researchers and health care organizations such as integrated service delivery systems, practice-based networks, academic health centers, managed care organizations, and others. The structural and organizational diversity of these health systems may help to facilitate the evaluation of models and tools for research translation to actual care settings that might not otherwise occur.

These partnerships are helping to accelerate and magnify the impact of research on health care practice by:

- Disseminating evidence-based knowledge to audiences that include practitioners, patients, and administrators.
- Identifying information important to the efforts of organizations to improve the quality of health care.
- Providing practical assistance to physicians and other providers in implementing research in direct patient care.
- Supporting the further development and refinement of successful and sustainable strategies to translate research into practice and thereby improve outcomes.

A steering committee made up of grantees and AHRQ staff is working to strengthen individual studies and facilitate collaboration and synergism between the studies. Several work groups have been formed to discuss common issues, data elements, methods, tools, and outcomes. The goal is to advance the scientific base for clinical research implementation.

In 2002, AHRQ and the Department of Veterans Affairs (VA) supported grants addressing the translation of research findings into clinical practice to improve quality, patient safety, and health care outcomes. Because the challenge of translating

research into practice confronts all health care organizations, this effort is an unprecedented collaboration between AHRQ and the VA to encourage evaluation of improvement strategies that can be broadly replicated. For instance, one of the studies is looking at whether headache management programs (i.e., diagnosis, patient education and activation, clinical treatment, and regular monitoring and followup), should be promoted as an effective and cost-effective strategy for managing patients with chronic disabling headache. Though headache in its many forms is common and sometimes debilitating, consultation rates for it are low, training on how to manage it is insufficient, and effective diagnostic tests to help evaluate patients with headache are lacking. The study's foundations are AHRQ technical reviews on the state-of-the-science in headache management and the practice guidelines developed by the Headache Guideline Consortium.

Improving Primary Care Through Practice-Based Research

In 2003, AHRQ supported 33 primary care practice based research networks (PBRNs) at a total cost of $3.5 million. These networks directly involve about 10,000 family physicians, pediatricians, general internists, and nurse practitioners, whose practices are spread across all 50 States, and who provide care for about 10 million patients. Also, AHRQ awarded eight small research grants to existing PBRNs to conduct exploratory/pilot

AHRQ's technology partnerships

AHRQ works in partnership with other public- and private sector entities to advance the use of health technologies to improve health care quality. AHRQ's first technology partnership began in 2003, when ePocrates, a market leader in providing clinical information to physicians and other health care professionals, agreed to publish ePocrates DocAlert® messages featuring recommendations from the AHRQ-supported U.S. Preventative Services Task Force and other AHRQ research findings. DocAlert® messages deliver clinical news such as medication safety alerts, customized information on medical specialties, and Task Force recommendations directly to clinicians' personal digital assistants (PDAs).

AHRQ partners with Clinical Content Consultants, LLC, to incorporate the latest Task Force recommendations in its Prevention Encounter Form software, which provides clinical decision support prompts that automatically alert providers when preventive services are due and allow for easy documentation and tracking.

AHRQ partners with InfoPOEMs®, Inc. (Patient-Oriented Evidence that Matters), to produce daily e-mails, called DailyPOEMs®, to health care providers alerting them to the latest developments in clinical research. These InfoPOEMs® can also be accessed through InfoRetriever®, an online database system that provides a full range of information from decision-support tools to diagnostic calculators, and from clinical practice guidelines to Cochrane Systematic Review abstracts (reviews of health care interventions).

projects or feasibility studies for a range of issues including prevention of adolescent smoking and childhood obesity, use of electronic medical records to improve care, and the application of tools for translating research into practice.

PBRNs are groups of practices devoted principally to patient care that work together with academic researchers and/or professional organizations to study and improve the delivery and quality of primary care. These networks facilitate the sharing of ideas, questions, observations and resource information with greater frequency than a single practice normally would be able to maintain. Through cooperative agreements, AHRQ supports network efforts to define the practice base of each PBRN and to improve network methods of managing data and translating research into practice.

Several of the networks are made up entirely of rural practices. Others, especially those comprising mostly inner-city practices or community health centers, serve large minority and low-income patient populations. In addition to several regional networks, the group includes two national networks managed by major primary care professional organizations: the American Academy of Family Physicians and the American Academy of Pediatrics.

In particular, AHRQ is interested in improving in-office systems designed to assure that the primary care delivered in practice is consistent with current medical evidence. In addition to collecting survey data about their provider and patient populations, the networks have tested the use by practitioners of various electronic information technologies, including handheld devices, notebook computers, and Web-based applications. Two networks conducted qualitative studies on patient and provider concerns about the privacy and confidentiality of patient-related data collected in primary care practices.

AHRQ partnered with the Robert Wood Johnson Foundation to develop the Prescription for Health Initiative, a new PBRN-targeted project designed to develop effective, practical strategies that primary care providers can use to help Americans

Examples from the Prescription for Health Initiative

- Create new types of staff positions, such as community health advisors, who link patients to specific local opportunities.
- Recommend Web sites that offer patients ways to access information, local resources, and assistance from their doctor.
- Develop a personal digital assistant (PDA) tool to help clinicians tailor counseling to individual patients.
- Establish links to community resources that provide regularly scheduled counseling by phone matched to each patient's stage of adaptation.
- Perform a PDA-based assessment of health risks for adolescents with e-mail followup.

change their unhealthy behaviors. Seventeen PBRNs received grants to design and test innovative projects to assist primary care providers in helping patients become more physically active, eat healthier foods, avoid or quit smoking, and moderate use of alcohol.

Fast-Track Research Through Integrated Systems

Most health care in the United States is delivered through complex health systems such as managed care organizations, hospitals and hospital networks, large physician groups, and nursing homes. As a result, these organizations have become increasingly important as both creators and users of information. Many of these organizations have considerable research capacity, including sophisticated data systems that follow patients over time and across different health systems; ties between research and operations staff; and strong teams of researchers. Then again, many delivery systems—even some very large ones—do not have these capacities.

AHRQ created the Integrated Delivery System Research Network (IDSRN) in 2000 to expand the capacity for research and facilitate fast-track, cutting-edge research on health policy and delivery system issues. The IDSRN is a creative agency-private-sector partnership that links AHRQ with the Nation's top researchers and some of the largest health care systems in the country. The Network is being tapped for research by a number of AHRQ's sister agencies, including CMS and HHS's Office of Minority Health and Office of Public Health Preparedness.

Network partners

The IDSRN includes the following nine practice-based research consortia and their collaborators:

- HMO Research Network
- Abt Associates, Inc.
- Center for Health Care Policy and Evaluation (UnitedHealth Group)
- Research Triangle Institute-University of North Carolina Network
- Emory Center on Health Outcomes and Quality
- Denver Health
- University of Minnesota Consortium
- Marshfield Medical Research and Education Foundation
- Weill Medical College of Cornell University

The rapid turn-around nature of these contracts permits the Agency to quickly generate findings to answer priority policy questions. For example, an Institute of Medicine roundtable meeting examined the policy implications of studies linking good outcomes with large volume hospitals—hospitals that treat or perform procedures such as coronary artery bypass surgery on a large number of patients. This study found that little is known about what causes this association or what lies behind some of the outliers (i.e., small-volume hospitals with good outcomes and large-volume hospitals with poor outcomes). To find the answer, one of AHRQ's IDSRNs is doing a qualitative study focusing on the processes of care at high- and low-volume hospitals with good and bad outcomes.

The IDSRN includes nine practice-based research consortia and their collaborators that provide care to more than 55 million Americans across the United States. Many of those who receive care in participating facilities represent hard-to-reach populations, such as those covered by Medicare or Medicaid, uninsured individuals, racial/ethnic minorities, and rural residents.

With access to linked private-sector data about care in outpatient and inpatient settings, the IDSRN is uniquely situated to develop, disseminate, and implement scientific evidence about what works in a variety of health care settings. The partners and collaborators collect and maintain administrative, claims, encounter, and other health care data on large populations that are clinically, demographically, and geographically diverse. The IDSRN represents a real-world laboratory for organization- and system-level demonstrations, and it serves as a dissemination medium for putting evidence-based findings into practice.

Network participation

Provider type	Number participating in IDSRN
Physicians	Majority of U.S. physicians
Hospitals	Majority of U.S. acute care facilities
Outpatient clinics	More than 2,000
Long-term care facilities	450
Rehabilitation facilities	50
Home health agencies	30
Dental facilities	60

In its first 3 years of operation, awards totaling more than $11 million were made to support research on a variety of topics, including patient safety, health care quality, information technology, the organization and financing of care, bioterrorism preparedness, and disparities in health care. Many of these studies include analyses of financial incentives, payment policies, and/or the impact of costs on care. FY 2003 IDSRN awards total about $2.9 million and include studies that address long-term care, quality and cost performance, patient safety/patient care, and disparities in health care.

Findings from IDSRN projects are of interest to a broad range of stakeholders, including policymakers, employers, public purchasers, health information organizations, clinicians, and patients. The network and the pool of providers and patients it represents are key dissemination vehicles for research findings from IDSRN studies. Findings are also disseminated through more traditional channels, such as conferences, Web sites, training programs, press briefings, fact sheets, and other publications.

Examples of recent findings from IDSRN projects follow.

- Health plans use software to identify disparities. RAND and the Center for Health Care Policy and Evaluation have developed a spreadsheet tool to help health plans identify disparities in performance between different racial/ethnic and/or socioeconomic-status subgroups of enrollees on a given HEDIS (Health Plan Employer Data and Information Set) measure or discern patterns of disparities across a set of measures. HEDIS, sponsored by the National Committee for Quality Assurance, is a set of standardized performance measures related to many significant public health issues such as cancer, heart disease, smoking, asthma, and diabetes. These measures are designed to ensure that purchasers and consumers have the information they need to reliably compare the performance of managed health care plans. To date, two different plans within UnitedHealth and Molina Health Care are using this remarkably flexible tool to assess disparities, and other plans have expressed interest in obtaining the tool. AHRQ also expects that this tool will be used by plans participating in a new AHRQ and Robert Wood Johnson collaboration to reduce disparities in healthcare.
- Hospital improves discharge processes to decrease medication errors. A Seattle hospital is now supporting discharge planning and transitions through extensive information sharing—ensuring that hospitals have accurate information about all active prescriptions a patient should have been taking when they were admitted and that all of the ambulatory physicians who have active prescriptions associated with a patient know their patient is being discharged. This change in practice is directly attributable to study findings from a Research Triangle Institute IDSRN project that examined how integrated delivery systems manage information transfer, a potential cause of medical errors.
- Improving transitions and outcomes for heart failure patients. A joint study by Weill Medical College of Cornell University and the Visiting Nurse Services of New York to improve transitions and outcomes for heart failure patients through a hospital-home health care information exchange has resulted in the development of an electronic tool to replace a paper-based information exchange. This tool, which will shorten processing time and improve information flow between care settings and providers, has been very well received by operational leadership, clinicians, and informatics personnel at the two institutions. Cornell University plans to implement use of the electronic system in its geriatrics and general medicine facilities.
- Leadership training for physicians. An IDSRN study conducted by Weill Medical College of Cornell University on the impact of leadership in enhancing patient safety resulted in the New York Presbyterian Healthcare System deciding to implement General Electric's Six Sigma program to train a cadre of its physicians to improve patient safety in a variety of hospital units. Six Sigma is a highly disciplined process that focuses on delivering near-perfect products and services.

The central idea behind this process is that if you can measure how many "defects" there are in a process, you can systematically figure out how to eliminate the defects and get as close to "zero defects" as possible.

- Bioterrorism antibiotic prophylaxis model. Recent bioterrorism events have intensified the need for communities to develop concrete response plans. Weill Medical College of Cornell University produced a simulation model for outpatient antibiotic distribution in the event of a bioterrorist attack. This point-of-dispensing (POD) model has been used as a template by the Office of Emergency Management and the Department of Health in New York City to set up and run a number of POD sites. For example, Presbyterian Hospital implemented a POD in its hospital cafeteria to brief, triage, and distribute antibiotics as necessary to employees and patients. In 2003, this model was refined to provide a field-tested, scalable, scenario-appropriate template for combined medical and public health responses to bioterrorism attacks.
- Tri-POD drill. Following the development and use of the POD model described above, the simulation model of mass antibiotic prevention of disease was tested last year in a large-scale, live exercise in New York City. The drill succeeded in triaging and providing simulated antibiotics to over 1,250 "patients" per hour. The mock patients, who had been trained to present with or without various symptoms of illness, were tracked using bar-code technology that allowed the organizers to measure both processing time and accuracy. Officials hope to use the results of this exercise to develop a template for bioterrorism response that can be adapted by other U.S. cities and around the world. Subsequently, Weill researchers were invited by the CDC's National Pharmaceutical Stockpile Program and the U.S. Public Health Service Commissioned Corps Readiness Force to train personnel responsible for distribution and dispensing of pharmaceuticals in the event of a catastrophic incident in the United States.
- First evidence-based anthrax triage protocol to distinguish anthrax from flu and flu-like illness. Researchers from Weill Medical College of Cornell University developed a four-step triage and screening protocol to distinguish anthrax from flu and flu-like illness for use in the pre-hospital setting in the aftermath of any future anthrax attack. A comparison of clinical data from the 2001 anthrax attacks and historical

Characteristics of IDSRN facilities

Top study settings

- Outpatient clinics
- Hospitals
- Emergency rooms
- Nursing homes

Top medical conditions

- Diabetes
- Pregnancy, labor, and delivery
- Cardiovascular disease
- Stroke

Top special populations

- People with chronic conditions
- Elderly
- Medicaid/low socioeconomic status
- Ethnic/racial minorities
- Rural residents

accounts of inhalation anthrax cases with published accounts of the presenting signs and symptoms of flu and influenza-like illness were used to develop the protocol. This is the first evidence-based approach to the critical patient care and resource allocation issues that will accompany any large-scale mass prevention of disease effort in response to suspected or confirmed anthrax exposure.

- Bioterrorism preparedness planning tool shared with the 2004 Olympic Planning Committee in Greece. A U.S. Northern Command participant in the Denver Health's Rocky Mountain Regional Care Model for Bioterrorist Events Working Group was interested in how to identify the "best" alternative care sites in the event of a bioterrorist threat. For example, what are the advantages vs. disadvantages of using churches, schools, hotels, auditoriums, and other nontraditional facilities, depending on the type of bioterrorist attack. In response to this need, Denver Health developed an "Alternative Care Site Selection Matrix Planning Tool," which assists with rating various facilities by comparing the facilities to a hospital. The U.S. Northern Command—established in 2002 by the Department of Defense to plan, organize, and execute homeland defense and civil support missions—was very pleased with the tool and shared it with the Athens 2004 Olympic Committee.

Partnerships for Quality

Research and experience have taught us that new scientific knowledge does not automatically translate into practice to improve patient care. In order for research findings to make their way into everyday clinical practice, the new knowledge must be linked with supportive environments and incentives for change. Systematic approaches are required for changes to take place and services to be implemented that have the potential to improve care.

AHRQ's Partnerships for Quality initiative works to close the gap between the level of quality that is possible and that which is achieved. This initiative supports projects that are designed to accelerate the pace with which research findings can be translated into improved quality of care and improvements in the health care system's ability to deliver that care.

In response to AHRQ's 2002 call for research proposals, the Agency funded 22 cooperative agreements that are primarily focused on improvements in the delivery and outcomes of health care, with emphasis on priority health issues, such as long-term care, bioterrorism, and children's mental health. Second-year funding for this initiative totals about $6.5 million, an increase of over $4.0 million over first-year funding support.

For example, one of the partnerships looks to improve the quality of care and life in nursing homes. The partners for this project are the American Medical Directors Association (AMDA), the AMDA Foundation and its Long-Term Care Research Network, the American Health Quality Association (representing State Quality Improvement Organizations), Quality Improvement Partners of Rhode Island, and the National Long-Term Care Quality Coalition consisting of representatives from more than 15 long-term care professional and provider groups. The project's primary goal is to improve outcomes for the 1.6 million residents of long-term care facilities by: implementing community-based quality improvement programs for nursing homes that maximize knowledge and resources through collaboration; validating AMDA's pain and pressure ulcer clinical practice guidelines; and disseminating evidence-based clinical practice guideline implementation and training models that can be used in nursing homes throughout the country. The project will be rolled out in 50 facilities across California, Indiana, Florida, Ohio, Pennsylvania, and Texas.

Partnerships for Quality projects will:

- Test financial incentives and rewards to speed the adoption of recommended hospital patient safety practices.
- Test an innovative team-oriented, practice-based continuing medical education program to improve care for patients with type 2 diabetes.
- Build partnerships to promote cooperation in implementing quality improvement strategies in long-term care facilities.
- Incorporate validated quality measures into the recertification of family physicians.
- Test approaches to implementing tools and research findings into everyday health care.
- Help community-based primary care practices adopt quality improvement models for treating heart disease, stroke, diabetes and other conditions.
- Create a national center for value-based purchasing methods.
- Test a bioterrorism simulation model with large health care networks.

Monitoring the Nation's Health Care Safety Net

In 2000, the Institute of Medicine (IOM) released a report stating that the rising numbers of uninsured patients, together with changes in Medicaid policies and cutbacks in government subsidies, are putting unprecedented pressure on the United States' health care safety net. The health care safety net—the Nation's system of providing health care to low-income and other vulnerable populations—comprises public hospitals, community health centers, local health departments, rural health clinics, and special service providers such as AIDS clinics and school-based clinics. Many of these providers have either a legal mandate or an explicit policy to provide services regardless of a patient's ability to pay.

In addition to describing the health care safety net in the United States as "intact but endangered," the IOM report emphasizes:

- The precarious financial situation of many of the institutions that provide care to Medicaid, uninsured, and other vulnerable patients.
- The changing financial, economic, and social environment in which these institutions operate.
- The highly localized, "patchwork" structure of the safety net.

One of the report's five key recommendations focuses on the need to improve data systems used to monitor the capacity and stability of the Nation's health care safety net to meet the health care needs of vulnerable populations. In response to this recommendation, AHRQ and the Health Resources and Services Administration (HRSA) began a joint safety net monitoring initiative. An expert meeting provided an overview of the issues involved in establishing a monitoring system. Attendees at the meeting recommended a monitoring system that would provide baseline information to policymakers about the status of safety net providers and the populations they serve to help in designing interventions and strategies to achieve policy objectives.

We need to develop more precise knowledge of what should be measured, identify data and measures that are currently available, determine opportunities and strategies to develop data capacity, and assess the feasibility of monitoring these areas. To that end, AHRQ and HRSA are producing a series of products to meet policymakers' needs.

In 2003, two data books that describe the current status of the safety net were published. Core information for these data books was drawn from a wide variety of existing data sources. The information covers demand for services, financial support, the structure of the safety net, and a wide variety of community contextual characteristics. A total of 118 different measures of the safety net are included.

The first book, *Monitoring the Health Care Safety Net-Book 1: A Data Book for Metropolitan Areas,* presents data from 90 metropolitan areas, including 355 counties and 172 cities in those areas. It provides extensive data tables as well as an overview of the findings from the measures included.

The second book, *Monitoring the Health Care Safety Net-Book 2: A Data Book for States and Counties*, shows data for over 1,800 counties across 30 States and the District of Columbia, including both metropolitan and nonmetropolitan counties.

In conjunction with these books, a Web-based safety net profile tool was developed (www.ahrq.gov/data/safetynet/ profile.htm).

The Profile Tool provides easy access to all of the data included in the books and guides users step-by-step to obtain needed statistics. It can be used to generate reports that compare multiple measures for one or more geographic areas. In addition, a 3-day, Web-assisted audioconference series, broadcast in the fall of 2003, was designed to inform State and community officials about the data books and teach them to use the books and other tools for monitoring the health care safety net.

The third companion book, *Monitoring the Health Care Safety Net-Book 3: Tools for Monitoring the Health Care Safety Net*, will be published in 2004. This product provides "how to" manuals on a variety of topics, including estimating the size of local uninsured populations, conducting local surveys, using administrative data, assessing the financial health of safety net providers, and using geographic information systems to monitor the safety net. This product can assist State and local health officials, planners, and analysts in assessing the capacity and viability of their existing safety net providers and help them understand the characteristics and health outcomes for the populations served.

To further assist State policymakers in using the information in these three books, HRSA has funded a grant through the National Governor's Association Center for Best Practices. The project is entitled "Enhancing the Safety Net Through Data-Driven Policy." This intensive technical assistance project is designed to help policymakers in four States develop a series of data-driven recommendations to enhance the strength, structure, and stability of their health care safety nets. As part of the project, interdisciplinary State teams are using the two data books to access new information about their safety net systems, and they are using these data tools as the basis for crafting their own policy initiatives to strengthen and sustain the health care safety net. (For more information, go to www.nga.org/center/safetynetdemo.) AHRQ staff are actively involved in providing technical assistance for this project, which began in 2003. In 2004, technical assistance will continue, and AHRQ will publish *Developing Data-Driven Capabilities to Support Policymaking*, the fourth publication in the Monitoring the Health Care Safety Net series.

Measures included in the safety net data books:

- Demand for safety net services. Includes measures of uninsurance, poverty, disability, and HIV/AIDS.
- Financial support for safety net services. Includes measures related to Medicaid, disproportionate share hospital payments (i.e., additional Medicare program payments that help hospitals finance care to low income and uninsured patients), and community health centers.
- Safety net structure and health system context. Includes a wide range of measures describing area hospitals, the distribution of uncompensated and Medicaid discharges, characteristics of the ambulatory care system, managed care penetration, and physician supply.
- Community context. Includes a wide range of measures on topics such as population size and growth, racial/ethnic distribution of the population, immigration, the economy, housing, education, and crime.
- Outcomes and safety net performance. Includes measures of preventable hospitalizations, birth outcomes, and barriers to accessing care.

Chapter 4. Areas of Special Interest

Research on Bioterrorism

As demonstrated by the attacks of September 11, 2001, and the subsequent use of anthrax as a biological weapon, bioterrorism represents a significant public health threat to the United States. To address this threat, the capacity of Federal, State, and local entities to respond to potential bioterrorism events must be developed. To be as effective as possible, these efforts must be directed toward improving the ability of both our public health system and our health care delivery system—including the individual systems of care, facilities, and clinicians—to detect and respond promptly to such events. They also must focus on ensuring that these entities can work together on short notice and with other related systems, such as emergency preparedness and law enforcement, as effectively and efficiently as possible.

AHRQ's bioterrorism initiative, which started in 2000 before the attacks, is a critical component of the larger U.S. Department of Health and Human Services initiative to develop public health programs to combat bioterrorism. The agency recognizes the need for a strong health infrastructure to coordinate, prepare for, and respond to acts of terrorism. To inform and assist primary care doctors and practices, community health centers, managed care organizations, emergency departments, and hospitals in meeting the health care needs of the U.S. population in the face of bioterrorist threats, AHRQ-supported research focuses on the following:

- Emergency preparedness of hospitals and health care systems for bioterrorism and other rare public health events.
- Technologies and methods to improve the links between the personal health care system, emergency response networks, and public health agencies.
- Training and information to prepare community clinicians to recognize the manifestations of bioterrorist agents and manage patients appropriately.

AHRQ's bioterroriosm research is a natural outgrowth of the agency's ongoing efforts to develop evidence-based information to improve the quality of health care in the United States. Examples of products and tools that are currently available include the following:

- Web-based training modules to teach health professionals how to address various biological agents. Separate modules exist for emergency room doctors, radiologists, pathologists, nurses, and infection control specialists. Clinicians can obtain continuing medical education (CME) credit at www.bioterrorism.uab.edu.
- A Real-Time Outbreak and Disease Surveillance (RODS) System for bioterrorist events. The purpose of RODS is to provide early warning of infectious disease outbreaks possibly caused by an act of bioterrorism so that treatment and control measures can be initiated to protect and save large numbers of people.

- Use of a city-wide electronic medical records system as a model for surveillance and detection of potential bioterrorism events across a wide range of health care facilities, including primary care practices, public health clinics, emergency rooms, and hospitals.
- A new online survey that hospitals can use to assess their capacity to handle potential victims of bioterrorism attacks or for evaluating existing emergency plans. The survey covers subjects such as biological weapons training for personnel, procedures to permit rapid recognition of credentialed staff from other facilities, on-call nursing policies, and designated areas of emergency overflow for patients.

In FY 2003, AHRQ received nearly $9 million, both in appropriated funds and funds from other agencies, to help continue the Agency's efforts to support national preparedness for a bioterrorist event. Approximately $5 million was committed to support research grants that examine and promote health care systems' readiness for a bioterrorist event through the development of new evidence, tools, and models.

In addition to the bioterrorism efforts described in the "Fast-Track Research Through Integrated Systems" section of this document (see Chapter 3), the following AHRQ projects have culminated in some major accomplishments that contribute to the Department's strategic goal to enhance the ability of the Nation's health care system to effectively respond to bioterrorism and other public health challenges.

- An AHRQ-sponsored Web conference designed to address the issues and activities related to preparing our Nation to respond to the potential threat of a smallpox outbreak was conducted via the World Wide Web and telephone. A bioterrorist attack using smallpox would pose a significant threat to public health in the United States. The reintroduction of the smallpox virus—which has not infected anyone in the world for nearly three decades—into an unprotected population could cause substantial morbidity and mortality and overwhelm public health resources. While the threat of such an attack is of national concern, it is at the local level that public health officials and health system planners must be ready to respond.
- A Web-based data tool and manual was developed, the *Abt-Geisinger Resource Inventory for Preparedness (AGRIP),* that facilitates the health care system's ability to monitor and track resources that would be needed to respond to a bioterrorist event. This work features rural hospitals as a model and is being incorporated into the Health Resources and Services Administration's Bioterrorism Hospital Preparedness Program guidance as a resource for State and local grantees.
- An evidence report was published, *Evaluation of Hospital Disaster Drills: A Module-Based Approach*, that presents an overview of current knowledge on how disaster drills and training are conducted and evaluated for bioterrorism preparedness. The report includes a tool for evaluating disaster drills and training. The report and tool are being disseminated to States and other interested groups via the AHRQ

publications clearinghouse, regional meetings with grantees of other HHS agencies, and through the HRSA Bioterrorism Hospital Preparedness Program guidance as a resource.

- An evidence report was published, *Regionalization of Bioterrorism Preparedness and Response*, that provides an overview of potential relevant regional models for the delivery of medical and non-medical services in the event of a bioterrorist attack, including a framework for identifying the key decisions made by clinicians, public health officials, and others during a bioterrorism response and the information systems that enable regionalization of services. This report has been disseminated to States and other interested groups through the AHRQ clearinghouse, regional meetings with HRSA/CDC grantees, and integrated into the HRSA Bioterrorism Hospital Preparedness Program guidance as a resource on regional planning.
- Three regional meetings were held for HRSA/CDC and other Federal agency and departmental representatives to disseminate final reports, tools and models. Over 100 participants attended each of these meetings.
- AHRQ held a series of five free Web-assisted audio conferences in 2003 to assist State and local health systems decisionmakers in their efforts to promote health systems preparedness. The important up-to-date information—which was drawn from health services research and the promising practices of States, communities, and health systems from across the country—was shared with over 2,000 participants.

HIV/AIDS in the United States

More than 20 million people have died worldwide in the last 20 years of human immunodeficiency virus and its complications. In the United States, the impact of and response to HIV and AIDS (acquired immunodeficiency syndrome) have been widespread. For example:

- An estimated 850,000 to 950,000 people in the United States are living with HIV infection, and one-quarter of those who are infected are not aware of it.
- Each year, about 40,000 new HIV infections occur in the United States. About 70 percent of these new infections are among men, and 30 percent are among women. About half of those who are newly infected are younger than age 25.
- AIDS is currently the fifth leading cause of death in the United States among people aged 25 to 44. As of December 31, 2001, nearly 470,000 deaths among people with AIDS had been reported to the Centers for Disease Control and Prevention.

AHRQ's HIV/AIDS Research Agenda

AHRQ conducts and supports research on a variety of HIV/AIDS-related topics, including the effects of HIV infection on various population groups, outcomes of treatment with antiretroviral therapy, quality of life for HIV-infected individuals and their families, the costs and financing of care for HIV/AIDS, and access to and use of care.

HIV Research Network

In addition to support for research studies, AHRQ collaborates with other HHS agencies—including the Substance Abuse and Mental Health Services Administration, the Health Resources and Services Administration, and the Office of AIDS Research at the National Institutes of Health—to support the HIV Research Network (HIVRN). HIVRN is a network of HIV providers who pool data and collaborate on research to provide policymakers, researchers, and others with timely information about access to care and the costs, quality, and safety of HIV care, and to share information and best practices among Network participants. The HIVRN currently includes 18 medical practices located across the Nation that treat more than 14,000 patients. Clinicians, policymakers, and patients need to know about the latest treatments, who is receiving treatment, where they are receiving it, and how care is being financed. The goal of the HIVRN is to disseminate this information widely using the most recent data that are available.

Recent findings from AHRQ-supported research on HIV/AIDS include:

Generalist physicians who are experienced in HIV/AIDS care can provide care comparable to that provided by HIV/AIDS specialists. For this study, researchers analyzed data on 1,820 patients and 374 primary care physicians enrolled in the HIV Cost and Services Utilization Study (HCSUS), a nationally representative survey of patients receiving care for HIV and their physicians.

Among people with HIV/AIDS, whites are much more likely than blacks to use medication to treat psychological problems, according to a survey of nearly 1,490 HIV-infected patients receiving medical care in the United States. The patients completed an interview form and questionnaire on psychotropic medications used during the previous 6 months. Most of the patients had previously screened positive for depression or anxiety disorder.

HIV-infected patients consistently report more problems with hospital care than outpatient care. Most of the problems involve ineffective provider-patient communication. For example, 39 percent of patients complained that their hospital clinicians communicated different things to them, and 28 percent said their pain was not dealt with promptly. Overall, 1,704 patients provided ratings of inpatient care, 2,204 reported on outpatient care, and 818 patients reported on both inpatient and outpatient care.

HIVnet

Health officials and others can access HIV data online through AHRQ's HIVnet, which draws from HIVRN data. This interactive service, which was launched in 2002, provides statistical answers in real time to questions about HIV patients' use of outpatient care in 2000 by age, sex, race/ethnicity, HIV risk group, use of highly active antiretroviral therapy (HAART), and other variables.

To ensure that the identities of patients and providers remain confidential, HIVnet does not contain any information that can be used to identify individual patients or providers, nor does it contain information on specific regions of the country. HIVnet can be found at www.ahrq.gov/data/HIVnet.htm.

Promoting Evidence-Based State and Local Health Policymaking

Outreach to State and Local Health Officials

AHRQ's User Liaison Program (ULP) synthesizes and distributes research findings to local and State policymakers for their use in making evidence-based decisions about health care policy. ULP holds regional and local workshops, sponsors telephone and Web-supported audio conferences, and distributes other information to provide recent research findings to policymakers on critical issues in today's changing health care marketplace. Topics are chosen with input from legislators, executive agency staff, and local officials.

In addition to providing information and tools to make informed health policy decisions, the ULP serves as a bridge between State and local health policymakers and the health services research community by bringing back to the Agency the research questions being asked by key policymakers. ULP workshops are user-driven, user-designed, and highly interactive, with an emphasis on information sharing between participants and presenters.

In FY 2003, ULP held 17 different activities: 8 national workshops, 5 State-based workshops, and 4 series of Web conferences. In all, more than 6,800 health care policymakers took part in these activities, representing all 50 States, the District of Columbia, the territories, and other countries. These activities covered a wide variety of issues such as bioterrorism, patient safety, racial/ethnic health disparities, long-term care, and rising health care costs.

AHRQ often receives feedback from workshop and audioconference participants on how they used the information shared at these events. Some examples of feedback include:

- ULP cosponsored a meeting with New Jersey State officials on improving patient safety. Information obtained at that meeting was incorporated into a 2004 law requiring medical error reporting to State regulators as well as an analysis by hospitals as to how and why serious mistakes occur.

- As a direct result of a State-specific workshop on using evidence in policymaking that was presented for Texas legislators, their staff, and the Texas Health and Human Services Commission, the Commission used the principles presented to develop performance measures for quality improvement projects in their Medicaid/SCHIP Division. In addition, the Commission will provide training for all staff in the Division in evidence-based policymaking. They are also implementing a telemedicine pilot program that will adhere to standards of evidence, based on workshop principles, in constructing the program evaluation.
- As a result of a ULP meeting cosponsored with Washington State on patient safety, the Washington Patient Safety Coalition was formally launched. Using the products of the conference work groups, the coalition has continued to work on a number of the issues over the past 2 years. The coalition developed a project on surgical site verification initiated at the ULP meeting, which has as its goal the elimination of wrong-site surgery in Washington by 2005. In support of this goal, the coalition held a conference on surgical site infections, and to date, a number of hospitals across the State have created agreements to implement joint policies on wrong-site surgeries. The coalition continues to offer conferences and workshops including a State-wide conference in the fall of 2003 and a conference on health information technology in the spring of 2004.
- A Tennessee executive agency official used information shared at a ULP patient safety meeting to establish a task force of individuals to address architectural safety, fire safety, and infection control in licensed health care buildings. The task force—which is made up of hospital engineers, industry representatives of architects and engineers, and State surveyors and engineers—has held three meetings and will be making recommendations to the board that has oversight responsibilities for all health care facilities in the State.
- An Indiana executive agency official used information shared at a ULP meeting on caring for the chronically ill to solidify the State's thinking on a Medicaid plan to implement a coordinated care management program. The program, which works with a nurse care manager to develop a treatment plan for special targeted services to enrollees with diabetes, chronic heart failure, and asthma, was subsequently approved by CMS.
- Information shared at a ULP Health Care Summit for the Florida legislature helped a number of initiatives move forward. The meeting was the impetus for much needed conversation between the legislature and Florida's Agency for Health Care Administration regarding Medicaid reform.
  - Since the Summit, the State has been developing a complete Medicaid reform proposal and will seek a Federal wavier later this year to place the entire program under the wavier. In addition to concerns regarding growing Medicaid expenditures, the State also addressed drug formulary issues through the banning of the "Value-Added Program," with conservative estimates of saving over $63 million in prescription drug costs.

- The 2003 Health Summit reviewed the effect of the increase in health care spending through the discussion of "Health Care Cost Pressures and Financing Fundamentals." As a result, the "Select Committee on Affordable Health Care for Floridians" was created in August 2003. Subsequently, the "2004 Affordable Health Care Act" was passed, which addresses many of the complex issues contributing to the increase in cost for health care services.
- The 2004 legislature passed a law establishing a new licensed health care provider, the anesthesiology assistant, to help address a growing shortage in the health care workforce. During legislative deliberations about this law, members often cited statistics and information that was presented at the 2003 health care summit on workforce and scope of practice issues.
- After a ULP Web conference on bioterrorism preparedness, an interim study was initiated on hospital surge capacity within and across Florida's seven Regional Domestic Security Task Forces.

To enhance the speed with which research results are used in health care practices and policy, AHRQ's User Liaison Program plans to shift its focus from dissemination to a more active process aimed at having practitioners, purchasers, and policymakers use knowledge from research findings when making practice and policy decisions. AHRQ has a long-standing interest in knowledge transfer, which is the processes by which knowledge and expertise are transferred between researcher and user communities to facilitate the use of research findings by decisionmakers for health care improvement. Specifically, AHRQ's User Liaison Research Translation program has the following goals.

- Target a broader audience such as hospital and other health system administrators, providers working in those systems, and purchasers, in addition to State and local health policymakers.
- Work with others in the Agency to develop longer term strategies to better assist target audiences in incorporating new knowledge into their policy and practice decisions. These strategies will be based on an intersection of Agency priorities and user needs. Such activities may include Web conferences, national workshops, issue briefs, self study modules, learning networks (groups of users, researchers and content experts who regularly convene to share a common interest in improving the delivery of care around a certain health care topic, such as patient safety), and individualized assistance.
- Build strategies for accelerating the use of research findings instead of conducting one-time events.

Research Translation for Health Care Policymaking

AHRQ's research translation team produces research syntheses targeted to AHRQ stakeholders—the Research in Action series. The purpose of these syntheses is to share research findings and the impact the findings have had so that other stakeholders can

learn from our experiences and related research from the field. The subject areas of the syntheses are grouped into six categories: cost, dental, disease-related, elderly, pharmaceuticals, and quality of care. AHRQ has produced 12 research syntheses through FY 2003. A summary of the research syntheses published in FY 2003 follows.

- *AHRQ Tools and Resources for Better Health Care.* This report describes the tools and resources that AHRQ makes available to health care policymakers, administrators, employers and other purchasers of health insurance, clinicians, and consumers. These include data resources and tools such as the Medical Expenditure Panel Survey (MEPS), the Healthcare Cost and Utilization Project (HCUP), HIVnet, CAHPS®, the Hospital Bioterrorism Preparedness Tool, and Put Prevention into Practice (PPIP). Online resources available from AHRQ include the National Guideline Clearinghouse®, the Child Health Toolbox™, and AHRQ's Quality Indicators.
- *AHRQ Tools for Managed Care.* Managed care organizations (MCOs) are responsible for ensuring that individuals enrolled in their plans receive quality health care, and MCOs must satisfy State and Federal requirements to meet certain quality standards. Therefore, MCOs need a reliable source for the most current and scientifically sound tools. AHRQ has funded research to compile a database of evidence-based clinical guidelines and to develop clinical performance measures, member satisfaction surveys, and preventive care recommendations. This synthesis describes the tools and how they have been used, and it provides information on where to learn more about these resources.
- *Advance Care Planning: Preferences for Care at the End of Life.* The aging of the population has given new importance to the need for end-of-life discussions and advance directives. Although research funded by AHRQ indicates that advance directives are underused, it also shows that most patients are willing to discuss end-of-life options with their doctors. Research also shows that while such discussions are usually reserved for the terminally ill, advance care planning is also a good idea for people suffering from chronic illnesses. Findings from AHRQ-funded studies show that fewer than half of severely or terminally ill patients have an advance directive in their medical records. Only 12 percent of patients who have advance directives had help from physicians in developing them. Between 65 and 76 percent of physicians were unaware of the existence of an advance directive. This synthesis illustrates and quantifies gaps in communication between patients at the end of life and their health care providers and discusses the need to reduce these gaps in communication.
- *Dental Care: Improving Access and Quality.* This synthesis highlights dental care research sponsored by AHRQ that looks at the impact of a wide variety of factors including reimbursement, race, income, and age on access to and use of dental care. Research suggests that educating families about how to enroll in and access the Medicaid system, streamlining Medicaid administrative procedures, and adjusting provider reimbursement could facilitate broader access to dental care.

Studies show that specific treatments such as dental sealants for children may have a positive impact on both health outcomes and costs. Also, the quality of dental care can be further improved by developing and using performance measures for specific treatments. Finally, the production of evidence reports evaluating research on various aspects of care helps to advance evidence-based dental practice and thereby improve the quality of care.

National Reports on Healthcare Quality and Disparities

During FY 2003, AHRQ completed work on the inaugural editions of two congressionally mandated annual reports: the *National Healthcare Quality Report* and the *National Healthcare Disparities Report*. The two reports were released in late 2003. They represent the first national comprehensive effort to measure the quality of health care in America and differences in access to health care services for priority populations.

The reports provide baseline information on quality and differences in access to and use of services for seven clinical conditions, including cancer, diabetes, end-stage renal disease, heart disease, HIV and AIDS, mental health, and respiratory disease. The reports also present data on maternal and child health, nursing home and home health care, and patient safety.

National Healthcare Quality Report

The *National Healthcare Quality Report* offers hopeful signs in several areas. For example:

- The majority of women are screened for breast cancer (70 percent of women over 40 within the previous 2 years) and cervical cancer (81 percent of women 18 and older within the previous 3 years).
- Most people have their blood pressure and cholesterol levels checked to help prevent or control heart disease, and 85 percent of people experiencing a heart attack receive aspirin upon arrival at the hospital.
- Approximately 83 percent of pregnant women have prenatal care in their first trimester.
- Over 73 percent of children aged 19 to 35 months have all recommended vaccinations.

The report also indicates that greater improvement in health care quality is possible. For example:

- Only about 20 percent of patients who are prescribed a medication to treat diagnosed depression have at least three recommended followup visits to monitor their medication in the 12 weeks after diagnosis.

- Rates for blood pressure screening are 90 percent, and rates for cholesterol screening in adults 45 or older are more than 80 percent. However, only about 25 percent of people with high blood pressure have it under control.
- Rates of children who are admitted to the hospital for asthma are 29.5 per 10,000.

National Healthcare Disparities Report

The *National Healthcare Disparities Report* presents data on the same clinical conditions and other measures as the Quality Report as they apply to priority populations, including women, children, the elderly, racial and ethnic minority groups, low-income groups, rural residents, and individuals with special health care needs. The latter includes children with special needs, people with disabilities, and people in need of long-term or end-of-life care.

According to the Disparities Report, there is room for improvement in a number of areas. For example:

- Minorities and people of lower socioeconomic status are less likely to receive cancer screening services and more likely to have late stage cancer when the disease is diagnosed.
- Minorities and people of lower socioeconomic position are less likely to receive childhood immunizations.
- While most of the population has health insurance, racial and ethnic minorities are less likely to repot health insurance compared with whites. Lower income individuals are also less likely to report insurance compared with those who have a higher income.
- Minorities and people of lower socioeconomic status are less likely than others to have a usual source of care.

Availability of the Reports

The measures included in the reports provide an important snapshot of America's health care system. The reports are available on a new Web site, www.qualitytools.ahrq.gov, which serves as a Web-based clearinghouse to facilitate use of the reports by health care providers, health plans, policymakers, purchasers, patients, and consumers to improve the quality and safety of health care.

These reports point to an important priority for HHS and AHRQ to ensure that all Americans have the safest, highest quality health care services possible. Future reports will help the Nation make continuous improvements by tracking quality through a consistent set of measures that will be updated as new measures and data become available.

Chapter 5. Research on Health Care for Priority Populations

As part of the Agency's overall research portfolio, AHRQ supports and conducts research and evaluations of health care delivery for priority populations. These include individuals who live in inner city and rural areas (including frontier areas), low-income groups, minorities, women, children, elderly individuals, and people with special health care needs, including those with disabilities and those who need chronic or end-of-life care. Further, the Agency supports the generation and dissemination of health services research to promote equitable access to health care services for all Americans and the elimination of health disparities among racial and ethnic minority populations. This section of the report is focused on AHRQ's activities with regard to three of these priority populations: minorities, women, and children.

Health Care for Minorities, Women, and Children

AHRQ's research emphasizes the needs of priority populations, who generally are underserved by the health care system and underrepresented in research. Disparities in health care for minorities, women, and children have been well-documented in recent years. These disparities span a broad range of medical conditions and health care delivery issues. For example:

- In 2001, more than one-third of Hispanics and one-fifth of blacks were uninsured during the first half of the year, compared with about 15 percent of white non-Hispanics.
- One AHRQ-supported study of mortality following heart attack found an 11 percent 2-year mortality rate for women before age 60 compared with 7 percent for men in the same age group.
- Uninsured pregnant women are less likely than those who have insurance to receive timely prenatal care.
- Elderly black and Hispanice women are screened less frequently for breast and cervical cancer than their younger counterparts.
- Adolescents who live outside two-parent families are significantly more likely to be uninsured than those who live in two-parent families, and adolescents living in households headed by grandparents are most likely to be uninsured.

Minority Health

Although the overall health of Americans has improved dramatically over the last century, racial and ethnic minorities have in the past experienced poor health and challenges in accessing high quality care. Findings from the 2000 Census indicate continued diversification of the U.S. population and growth in some groups considered to be at high risk for missing the benefits of health care.

This will become even more problematic, since some racial and ethnic minority populations are growing at a much more rapid pace than the majority white population. By the year 2050, it is estimated that nearly one in two Americans will be a member of a racial or ethnic minority group—that is, black, Hispanic, Asian, or American Indian.

Despite the high quality of care available, research has suggested that a gap exists between ideal health care and the actual care that Americans sometimes receive. For example:

- Blacks have a 10 percent higher cancer incidence rate and a 30 percent higher cancer death rate than whites. Although cancer death rates are declining more quickly for blacks compared with whites, cancer survival is lower among blacks for almost all cancers regardless of age or site.
- Hispanics and American Indians or Alaska Natives are less likely than whites to have their cholesterol checked.
- Black, Hispanic, and people of lower socioeconomic status are less likely than whites and people who are more affluent to have their blood pressure checked or to receive counseling and treatment for some cardiac risk factors.
- Compared with whites, blacks and Hispanics have higher rates of hospitalization for complications of diabetes.

AHRQ Focus on Minority Health

Closing the gap for minority populations is a major priority for the Department of Health and Human Services and for AHRQ. Indeed, AHRQ has been funding and conducting research on topics relevant to minority health for many decades. In FY 2003 alone, AHRQ funded about $42 million in research with a major emphasis on minority health. This commitment includes continued funding of the Excellence Centers to Eliminate Ethnic/Racial Disparities (EXCEED) grants, a major research effort to improve our understanding of the factors that contribute to ethnic and racial inequities in health care, and the Minority Research Infrastructure Support Program (M-RISP), which was established to increase the capacity of institutions that serve racial and ethnic minorities to conduct rigorous health services research.

Current and Recently Completed Research on Minority Health

Examples of other current and recently completed research projects focused on minority health include:

- In a project underway at the University of Rochester, researchers are examining the impact of HMOs on disparities. They are comparing the scope and magnitude of disparities between managed care and traditional fee-for-service insurance plans in several areas, including prevention, health status change, use of highly technological procedures, avoidable complications, and mortality.

- Researchers at the University of Florida are assessing the effectiveness of a culturally sensitive model of care for hypertension applied at the patient, provider, and organizational levels in a primary care clinic serving an ethnically diverse population.
- Use of preventive asthma care among black children is the focus of a project underway at the University of North Carolina, Chapel Hill. Researchers are investigating how race—when defined explicitly as social class, culturally derived health beliefs, and exposure to racism and other structural forces—mediates use of preventive asthma care by black children.
- Researchers at the Children's Hospital Research Center in San Diego are using focus groups, cognitive interviews, and field testing of an existing sample of children with special health care needs to develop and test a questionnaire on barriers to care. The questionnaire is being fielded in both English and Spanish.

Recent Research Findings Related to Minority Health

Examples of recent findings from AHRQ-supported research on minority health include:

- When black and Hispanic patients suffering from depression were provided with recommended medications or psychotherapy by culturally competent providers, as well as language translation when needed, they were substantially less likely than similar patients receiving usual care to be depressed 6 or 12 months later. The study involved 398 Hispanics, 93 blacks, and 778 whites from 46 primary care practices in six U.S. managed care organizations.
- The Program of All-Inclusive Care for the Elderly (PACE) was carried out at 12 demonstration sites around the country from 1990 to 1996. The demonstrations involved 2,861 patients (859 blacks and 2,002 whites). PACE provides comprehensive medical and long-term care services—ranging from physical therapy and durable medical equipment to medications and transportation—for nursing home-eligible older people who live in the community. A greater proportion of black elders enrolled in PACE survived compared with white elders, according to the researchers who conducted the study. Survival for black and white patients was 88 percent and 86 percent, respectively, at 1 year, 67 percent and 61 percent at 3 years, and 51 percent and 42 percent at 5 years. After adjusting for coexisting medical conditions and other factors, elderly black PACE patients still had a 23 percent lower mortality rate than white patients.
- Expanding insurance coverage by itself will not eliminate racial/ethnic disparities in access to high quality health care services, according to a recent study by AHRQ researchers. They found that other factors—including income, local area demographic and economic indicators, and individual patient characteristics—also play a role. The researchers used data from the 1996-1999 Medical Expenditure Panel Survey, county-level health care system data, and data from other sources to

examine the roles that insurance coverage, the health care delivery system, and other external factors play in explaining racial/ethnic disparities in access to outpatient care among patients of all ages.

- Problems with doctor/patient communication may be at least partly to blame for racial/ethnic disparities in use of health care. Researchers from Baylor College of Medicine found that blacks and Latinos are hospitalized and undergo surgery or other invasive procedures that require a doctor's order at lower rates than white patients, even when they have the same access to care, diagnosis, and severity of illness. This suggests that at least some disparities in health care use emerge after the patient gets to the doctor, in the context of the doctor-patient interaction, not from problems in getting to the doctor in the first place. This may be because patients from different ethnic groups may be more or less inclined to provide a health narrative to the doctor, may use different terms to describe the same symptoms, and may screen out views that they think the doctor will find unacceptable (for example, non-Western beliefs about illness). Also, ethnic and cultural norms influence a patients' willingness to ask questions, express concerns, and be assertive during a medical interaction.

Women's Health

The life expectancy of U.S. women has nearly doubled in the past 100 years, from 48 in 1900 to nearly 80 in 2000, compared with an average of 74 for men in 2000. Although women have a longer life expectancy than men, they do not necessarily live those extra years in good physical and mental health. On average, women experience 3.1 years of disability at the end of life.

AHRQ supports research on all aspects of health care provided to women, including quality, access, outcomes, and cost. AHRQ is particularly interested in studies that examine ways to enhance active life expectancy for older women.

AHRQ's women's health research agenda supports studies that are designed to:

- Enhance care for women with chronic illnesses and disabilities.
- Identify and reduce differences in health care received by minority women.
- Address the health care needs of women living in rural areas.

Examples of current AHRQ-supported research on women's health include:

- In this study led by researchers at the Medical College of Wisconsin, the goal is to determine the impact of false-positive mammograms. Women will be categorized as false-positive or true-negative mammogram status, and researchers will compare both groups according to days of work missed, perceived health status, physician visits, and medical expenditures. Outcomes and associations with race, age, socioeconomic status, and comorbidity will also be compared.

- Researchers at Montefiore Medical Center in New York are focusing on the effectiveness of various domestic violence interventions. An important goal is to establish a methodology to define outcome measures. In addition, they will determine the feasibility of monitoring outcomes through a prospective cohort study and create a methodology for a cost-benefit analysis.
- Researchers at Rutgers University are using nationally representative data to estimate the out-of-pocket prescription drug burden on female Medicare beneficiaries over age 65. The researchers will estimate the proportion of elderly women with high out-of-pocket expenditures and determine how health care access problems exacerbate the burden for these drugs for subgroups of elderly women.

In addition to these projects, other studies underway focus on cardiovascular disease in women, breast and cervical cancer screening and treatment, hysterectomy and alternative treatments for benign gynecological conditions, urinary incontinence, access to care, quality of care, intimate partner violence, clinical preventive services, reproductive health, and other topics important to women.

Recent findings from AHRQ research on women's health

- Insurance status does not explain male/female differences in heart attack treatments and outcomes. This study involved more than 327,000 men and women who suffered heart attacks between 1994 and 1997. Women received fewer cardiac treatments and procedures and had worse outcomes than men, but insurance status was not the reason.
- Lumpectomy followed by radiation and mastectomy are equally effective for treating early-stage breast cancer. Two studies from Georgetown University examined the cost-effectiveness of surgical treatments for early-stage breast cancer and patients' quality of life after surgery. They found that giving older women with early-stage breast cancer a choice between breast-conserving surgery and radiation and mastectomy is cost effective. They also found that how older women are treated during their care, not the therapy itself, is the most important determinant of long-term quality of life.
- Telecolposcopy can enhance diagnostic accuracy for women with abnormal Pap smears or other indications for colposcopy who are examined at rural clinics. The study was carried out by researchers at the Medical College of Georgia.
- Researchers at the University of Maryland, Baltimore, interviewed 1,300 women to assess urinary incontinence before and after hysterectomy and found that UI improves for the first 2 years after surgery for most women who have moderate or severe incontinence.

Children's Health

Childhood is a unique developmental stage of life, childhood health may affect adult health, and the child health care system is distinctive. For these and other reasons, children's health has been a research and policy priority in the United States for many years. The following four distinguishing characteristics have important implications for policymakers, clinicians, and others who are involved in health care for children:

- Developmental change. Children develop at a rapid rate, and their health depends in large measure on the success of their cognitive, emotional, and physical growth and development.
- Dependency. Children depend on parents and other adults for financing and accessing health care.
- Differential epidemiology. Children experience a unique pattern of health, illness, and disability, and a different pattern of health care use.
- Demographic patterns. These include the high rate of children living in poverty, family size, and family composition.

A unique set of health care financing and organizational arrangements has evolved for U.S. children. Poor children have been a mandatory population for the Medicaid program from the beginning, and adolescents were added gradually over time to the program. In 1997, the State Children's Health Insurance Program (SCHIP) was created to provide coverage to certain uninsured low-income children who are not eligible for Medicaid. Other health care financing mechanisms for children include the Maternal and Child Health Block Grants and Social Security, which provides cash benefits to eligible families to help pay for health care for some disabled children.

AHRQ's Child Health Research Agenda

A special research focus is necessary to improve the delivery of health care services to children and adolescents. AHRQ's child health research agenda is focused on finding ways to improve outcomes, quality, and access to health care for America's 70 million children and adolescents. The goal is to improve the quality and safety of care provided to children, enhance their access to care, and improve the delivery of care to children with special needs, those living in rural and underserved areas, and children from poor or near poor families.

AHRQ's work helps to fill the major gap that exists in evidence-based information on the health care needs of children and adolescents. In FY 2003, AHRQ committed nearly $10 million in total support for new child health services research projects and training grants, contracts, and interagency agreements relating directly to health care issues affecting children and adolescents.

Examples of Ongoing Research and Recent Findings

Examples of current AHRQ-supported research on health care for children and adolescents include:

- Researchers at the University of Washington in Seattle are examining whether providing evidence at the point of outpatient pediatric care will improve antibiotic use for childhood illnesses, reduce duration of therapy for acute sinusitis, reduce use of bronchodilators, and increase the use of intranasal steroids for allergic rhinitis.
- A study underway at West Virginia University is assessing the usefulness of a motivational tobacco intervention for rural smokers ages 14 to 18 who seek emergency care for an illness or injury.
- Using evidence-based asthma management strategies, researchers at Arkansas Children's Hospital in Little Rock are assessing the effectiveness of a case management intervention implemented by Head Start personnel. The goal is to identify and describe the factors associated with poor asthma management in 1,000 enrollees and estimate the cost of the intervention.
- Researchers at the Medical College of Wisconsin, Milwaukee, are developing a triage instrument for use by ER clinicians to help them triage pediatric patients to the appropriate level of care.

Child Health Insurance Research Initiative (CHIRI™) studies

In 1999, AHRQ—in partnership with the Health Resources and Services Administration and the David and Lucile Packard Foundation—funded nine 3-year projects for more than $9 million to examine ways to improve health care for low-income children receiving care through publicly funded programs, including SCHIP. The projects were dispersed around the country and focused on identifying which features work best for low-income, minority, and special-needs children. Five of the projects have been completed; the following four projects are still in progress:

- Evaluation of Kansas Healthwave, Kansas Health Institute
- Medicaid vs. Premium Subsidy: Oregon's CHIP Alternatives, Center for Health Economics Research, Waltham, MA
- New York's SCHIP: What Works for Vulnerable Children, University of Rochester
- Provider Participation and Access in Alabama and Georgia, University of Alabama at Birmingham

Examples of findings from recently completed AHRQ-funded studies on health care for children and adolescents include:

- Children experienced a substantial number of potentially preventable patient safety problems during hospital stays in 1997, according to a study conducted by AHRQ staff researchers. They found that the rates of such problems ranged from

0.2 (foreign body left during a procedure) to 154.0 (birth trauma) problems per 10,000 hospital discharge records. They also found that children who experienced a patient safety problem in the hospital also faced a 2-18 times greater risk of death than children who did not have such a problem.

- Researchers at Montefiore Medical Center, Bronx, NY, found that the availability of a school-based health center measurably improved the health and school performance of 949 inner-city children with asthma. They conclude that such centers may offer a practical response to the limited access that poor and uninsured children have to health care.
- According to researchers at the Vanderbilt University Center for Education and Research on Therapeutics in Nashville, erythromycin therapy in newborns increases the risk of gastric outlet obstruction. Using Tennessee Medicaid files from 1985 to 1997, they found that infants who received erythromycin between 3 and 13 days after birth were at substantially increased risk for developing infantile hypertrophic pyloric stenosis, which results in gastric outlet obstruction requiring surgery.
- Increasing use of preventive medications may reduce disparities in asthma burden, according to researchers at Harvard Pilgrim Healthcare in Boston. They analyzed data on Medicaid-insured children with asthma in five managed care organizations and interviewed parents to gauge asthma status and evaluate racial/ethnic variations in the processes of asthma care. Despite having worse asthma than white children, black children (31 percent) and Hispanic children (42 percent) were much less likely than white children to be using inhaled antiinflammatory medication. Subsequent research found that racial and ethnic minority parents' concerns about using the medication may contribute to the differences in care.

Chapter 6. AHRQ Program Objectives

Goal 1: Safety and Quality

Patient Safety and Reducing Errors in Medicine

The November 1999 report of the Institute of Medicine (IOM), *To Err is Human: Building a Safer System*, focused attention on the unacceptable number of medical errors occurring in the United States every day. The report brought patient safety to the forefront of our attention and led to unprecedented efforts to find solutions. The report showed that a wide gap exists in the quality of care people receive and the quality of care that we as a Nation are capable of providing. According to the IOM, as many as 44,000 to 98,000 people die in hospitals each year as a result of medical errors. Even using the lower estimate, this would make medical errors the eighth leading cause of death in this country.

Medical errors cause more deaths annually than automobile accidents (43,458), breast cancer (42,297), or AIDS (16,516). An estimated 7,000 people die each year from medication errors alone, about 16 percent more deaths than the number attributable to work-related injuries. Moreover, while errors may be more easily detected in hospitals, they affect every health care setting: day-surgery and outpatient clinics, retail pharmacies, nursing homes, and home care.

Research on medical errors and other patient safety issues is not new to AHRQ. We have recognized for some time that reducing medical errors is critically important for improving the quality of health care. In 1993, the agency published one of the first reports focused on medical errors. This landmark report noted that 78 percent of adverse drug reactions were due to system failures, such as the misreading of handwritten prescriptions. Subsequent studies sponsored by AHRQ have focused on the detection of medical errors, investigation of diagnostic inaccuracies, the relationship between nurse staffing and adverse events, computerized monitoring of adverse drug events, and tools for computer-assisted decisionmaking that can reduce the potential for errors and improve safety.

The IOM's 1999 report also called for the establishment of patient safety reporting systems, including State-based systems for accountability purposes that focus on serious adverse events and no-harm events (near misses). The IOM report also recommended that steps be taken to develop data standards to maximize the usefulness of the data collected, minimize the reporting burden, and allow for comparisons across reporting systems and over time.

To encourage the growth of voluntary, confidential reporting systems so that practitioners and health care organizations can correct problems before serious harm occurs, the report recommends Federal legislation to protect the confidentiality of

certain information. Hospitals first, and eventually other places where patients get care, would be responsible for reporting such events to State governments. Currently, about one-third of the States have their own mandatory reporting requirements.

AHRQ has made considerable progress in the area of providing guidance to facilitate State reporting efforts. These efforts include analyses of State-based patient safety reporting systems conducted by the National Academy for State Health Policy and through the work of the HHS Patient Safety Task Force (PSTF). The PSTF consists of AHRQ, the Centers for Disease Control and Prevention, the Food and Drug Administration, and the Centers for Medicare & Medicaid Services. The Task Force's efforts are focused on how to improve adverse event reporting through the systems these agencies presently operate to better coordinate research and analysis efforts and promote collaboration on reducing the occurrence of injuries that result from medical errors.

In carrying out these and other activities, AHRQ identified the need for additional guidance on the standardization and coding of data submitted to patient safety reporting systems. To further advance our knowledge in this area, IOM published a report in November 2003, requested and funded by AHRQ, that provides input on how patient safety can be improved through the establishment of a national health information infrastructure and health care standards. This report also provides input that will assist with other ongoing patient safety improvement programs, including HHS work on a consolidated patient safety database and AHRQ's current patient safety research aimed at identifying how to improve safety and move those findings into practice.

Between FY 2001 and 2003, AHRQ invested $160 million in research grants, contracts, and other projects to reduce medical errors and improve patient safety. This effort represents the Federal Government's largest single investment in research on medical errors. These projects fall into four broad categories:

- Identifying medical errors and the causes of patient injury associated with the delivery of health care.
- Identifying, designing, testing, and evaluating practices that eliminate medical errors and system-related risks and hazards that compromise patient safety.
- Disseminating information, increasing knowledge, and implementing practices that minimize errors.
- Monitoring and evaluating threats to patient safety over time.

The results of this research will identify improvement strategies that work in hospitals, doctors' offices, nursing homes, and other health care settings across the Nation. Also, as mentioned earlier, the work of the HHS Patient Safety Task Force will help in strengthening the reporting, analysis, and sharing of information on adverse patient safety events.

The results of AHRQ's substantial investment in a multi-year effort to reduce medical errors, enhance patient safety, improve quality in all areas of health care, and inform patients about how they can influence the quality of care they receive, are now being incorporated into practice. For example, AHRQ's Center for Education and Research on Therapeutics (CERT) at the University of Arizona Health Science Center developed a unique educational and research tool that contains a list of 72 drugs that can cause life-threatening heart arrhythmia (abnormal heartbeat). Caregivers around the globe can go to this online resource at www.qtdrugs.org to research specific drugs that might pose a risk to their patients as well as to submit clinical cases of drug-induced arrhythmias to the registry. Researchers are using the information submitted to develop profiles of people most at risk for drug-induced arrhythmias and to develop a genetic test that can identify them in advance of treatment.

In FY 2003, AHRQ continued its research to raise the level of patient safety in U.S. health care. Following are examples of new AHRQ-supported projects in this area.

- Challenge grants. AHRQ and the HHS Patient Safety Task Force awarded almost $4 million to fund 13 projects that will assess patient safety risks to patients, devise ways to prevent them, and implement safe practices that show evidence of eliminating or reducing known hazards to patient safety. AHRQ will provide up to 50 percent of the total cost of the grants, while grant recipients are required to provide a minimum of 50 percent of the total costs. Topics being addressed by this research include improving drug safety by linking lab and pharmacy data, blood product transfusion safe practices, pediatric chemotherapy processes risk analysis, statewide efforts to improve care in intensive care units, and technology to improve medication safety in nursing homes.
- Online patient safety journal. The agency launched the AHRQ WebM&M (Morbidity and Mortality Rounds on the Web), the Nation's first Web-based patient safety resource and journal. This monthly peer-reviewed tool, found on the Internet at webmm.ahrq.gov, showcases patient safety lessons drawn from actual cases involving medical errors. It was developed to educate health care providers about medical errors in a blame-free environment. Every month the site includes five interesting cases of medical errors and patient safety problems—one each in medicine, surgery/anesthesia, obstetrics-gynecology, pediatrics, and other fields such as psychiatry, emergency medicine, and radiology—that are submitted anonymously through the Web site. One of the cases each month is expanded into a "Spotlight Case," an interactive learning module that features readers' polls, quizzes, and other multi-media elements and for which clinicians can receive continuing medical education credits. The remaining four cases each month are followed by a commentary, written by an expert in the relevant clinical or patient safety field. The site also includes a users' forum where readers can post and react to comments that relate to the cases, as well as links to other resources and facts about patient safety, medical errors, and health care quality. Since the launch of the AHRQ WebM&M, thousands of people have become registered users, and there are approximately 19,000-20,000 visitors who come to the site monthly.

- Patient Safety Improvement Corps. AHRQ, in partnership with the Department of Veterans Affairs (VA), is supporting a training program for State health officials and their selected hospital partners—the Patient Safety Improvement Corps. Its purpose is to train teams of State health officials and their selected private or public hospital partners in analyzing reported medical errors, identifying their root causes, and developing and implementing interventions to improve patient safety. The VA's National Center for Patient Safety is conducting the training, which includes participating organizations from the following 15 States: Alaska, Connecticut, Maryland, Massachusetts, Minnesota, Missouri, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Texas, Utah, Virginia, and Wisconsin.
- National Quality Forum (NQF) report. The NQF released a report, funded in part by AHRQ, that reflects consensus among the NQF's 173 member organizations about the need to put better systems and procedures in place to help prevent medical errors. The member organizations—which include representatives of the Nation's leading health care and consumer groups—endorsed 30 patient safety practices that should be universally used in health care settings to reduce the risk of harm resulting from processes, systems, or environments of care. These patient safety practices include:
  - Informing patients that they are likely to fare better if they have certain high-risk, elective surgeries at facilities that have demonstrated superior outcomes.
  - Specifying explicit protocols for hospitals and nursing homes to ensure adequate nurse staffing.
  - Hiring critical care medicine specialists to manage all patients in hospital intensive care units.
  - Making sure hospital pharmacists are more actively involved in the medication use process.
  - Creating a culture of safety in all health care settings.
- Evidence report on heart failure treatment. According to a new evidence report, Pharmacological Management of Heart Failure and Left Ventricular Systolic Dysfunction: Effect in Female, Black, and Diabetic Patients, and Cost Effectiveness, ACE inhibitors and beta-blockers (drugs used to treat high blood pressure and heart disease by lowering blood pressure and slowing the heart) reduce deaths in a broad range of patients with left ventricular systolic dysfunction, a type of heart failure. This report, developed by AHRQ's Southern California-RAND Evidence-based Practice Center, concluded that while the use of ACE inhibitors and beta-blockers is cost effective, the value of using these drugs in women with no symptoms or signs of left ventricular systolic dysfunction is uncertain. In addition, based on data from a single study, the beta-blocker bucindolol may be associated with increased mortality in blacks, whereas other beta-blockers provide similar benefits to blacks and whites.

Making Quality Count

Quality health care means doing the right thing, at the right time, in the right way, for the right person, and ultimately, achieving the best possible results. The United States has many of the world's finest health care professionals, academic health care centers, and other institutions. Every day, millions of Americans receive high-quality health care services that help to maintain or restore their health and ability to function. However, far too many do not, and some patients receive substandard care.

Quality problems may be reflected in a wide variation in the use of health care services, underuse of some services, overuse of other services, and even misuse of services, including an unacceptable level of errors. Sometimes patients receive more services than they need or they receive unnecessary services that undermine the quality of their care and needlessly increase costs. At other times they do not receive needed services that have been proven to be effective.

For example, nationwide only about 40 percent of the 31 million Americans with diagnosed high blood pressure have their blood pressure adequately controlled. An increase to 68 percent—the level already achieved by the Nation's top health plans—would save an estimated 28,000 lives per year. The loss of life is compounded by the financial costs the Nation pays for these unnecessary gaps in care. Hospitalizations due to avoidable second heart attacks cost the American economy more than $1.6 billion a year.

The research that provided much of the basis for the 2001 report by the Institute of Medicine (IOM), *Crossing the Quality Chasm*, goes back several decades to early studies on quality of care, most of which were supported by AHRQ and its predecessor agencies. In its report, the IOM pointed out that quality problems occur across all types of cancer care and in all aspects of the process of care. For instance, the IOM report described "underuse of mammography for early cancer detection, lack of adherence to standards for diagnosis, inadequate patient counseling regarding treatment options, and underuse of radiation therapy and adjuvant chemotherapy following surgery."

Journal features AHRQ-supported research on health care quality

Four articles, stemming from AHRQ-supported research, about different aspects of health care quality were featured in the March/April 2003 issue of *Health Affairs*—a peer-reviewed journal that explores health policy issues of current concern in both domestic and international spheres. The articles examined the following topics:

- Link between staffing and different outcomes at low- and high-volume hospitals.
- Use of patient safety indicators based on hospital data to identify potential safety-related problems.
- Inability of insurance coverage alone to explain racial and ethnic disparities in care.
- Focusing on high-cost conditions to identify target areas to improve quality of care.

Poor quality care results in patients who are sicker, have more disabilities, incur higher costs, and have lower confidence in the Nation's health care system. The National Committee for Quality Assurances' *State of Health Care Quality Report: 2003* finds that the health care system's failure to treat just five health care conditions—asthma, depression, diabetes, heart disease, and high blood pressure—with the best available care is responsible for nearly 41 million sick days. This translates to the equivalent productivity of more than 173,000 workers and annual costs to American companies of more than $11.5 billion.

There is great potential to improve the quality of health care provided to Americans, and AHRQ is committed to this goal. We are working to maintain what is good about the existing health care system while paying special attention to the areas that need improvement. Improving the quality of care and reducing medical errors are priority areas for the Agency. AHRQ is working to develop and test measures of quality; identify the best ways to collect, compare, and communicate data on quality; and widely disseminate information about effective strategies to improve the quality of care.

Following are findings from recent AHRQ–supported research on health care quality.

- Atrial fibrillation tool. Thousands of Medicare patients with atrial fibrillation can benefit from a new quality improvement tool developed with support from AHRQ. Researchers found that their new CHADS2 method for predicting risk of stroke in patients with atrial fibrillation is more accurate than existing methods. CHADS2, which is an acronym for the five factors that increase the risk of stroke—congestive heart failure, hypertension, age, diabetes, and stroke—may be especially helpful for identifying low-risk patients who, by taking aspirin, can avoid the office visits, expense, and side effects associated with the blood thinning drug, warfarin (also sold as Coumadin), which carries a risk of bleeding.
- Underuse of hip replacement surgery in Hispanic patients. Even when they have insurance, elderly Hispanics undergo far fewer hip replacement operations than non-Hispanic whites of the same ages. A study of people aged 65 or older in Texas, New Mexico, Arizona, and Illinois found that Hispanics were less than one-third as likely as non-Hispanic whites to undergo total hip replacement, an operation that can alleviate pain and improve physical function and quality of life in patients with severe osteoarthritis, a degenerative joint disease. According to the researchers, underuse of hip replacement surgery in the large and growing U.S. Hispanic population could have important consequences for Medicaid because the resulting excess disability could increase long-term custodial costs (i.e., costs associated with a person's daily living activities such as walking assistance or getting in and out of bed).
- End-of-life discussions. Findings from this AHRQ study can be used to improve end-of-life care and promote more effective use of health care resources by encouraging discussions between terminally ill HIV patients and their doctors. Half of all HIV-infected people in the United States—especially blacks, Hispanics,

injection drug users, and people with low education—never talk about end-of-life care with their doctors. Such discussions could improve physicians' understanding of the care their patients do and do not want when they are very ill and close to death.

- New severity measure for hospitalized pneumonia patients. Hospitalized pneumonia patients who have abnormal vital signs, mental confusion, or problems with eating or drinking in the 24 hours prior to discharge are more likely than other pneumonia patients not to be able to resume normal activities upon discharge. These patients also face a greater chance of readmission or death. AHRQ-supported researchers at Mount Sinai School of Medicine developed a simple severity-of-illness measure that can be used by clinicians to judge whether it is safe for a patient to be discharged from the hospital. The measure uses information from the five vital signs that are checked several times a day in hospitalized patients—temperature, heart rate, blood pressure, respiratory rate, and oxygen levels in the blood—as well as an assessment of the patient's mental status and ability to eat and drink. Patients in this study who were discharged with two or more unstable factors had a five-fold greater risk of readmission or death. Using this instrument, the researchers found that one in five of the participating patients had been "medically unstable" when discharged.

Following are examples of AHRQ-supported research projects now in progress that focus on improving health care quality.

- Understanding variability in community mammography. This community-based, multicenter study involves a unique collaboration among three geographically distinct breast cancer surveillance programs in the States of Washington, New Hampshire, and Colorado. The investigators are collecting breast cancer outcomes and interpretive data on more than 500,000 mammograms from 91 facilities and 279 radiologists. The goals are to identify reasons for variability in the interpretation of mammograms and determine how the quality of mammography can be improved.
- Otitis media: Parent education to avoid antibiotic use. Acute otitis media (AOM) continues to be a major child health problem. The average child experiences 2.6 AOM episodes per year in the first 2 years of life. The overuse of antibiotics for AOM has led to the emergence of disease-causing organisms (e.g., bacteria) that are resistant to multiple antibiotics, even though research has shown that 80 to 90 percent of children with AOM will recover without antibiotics. This AHRQ-funded study is evaluating the safety, effectiveness, out-of-pocket costs, and acceptability of a course of action consisting of parent education, nonantibiotic therapy, and careful followup of children with mild AOM. The goals are to establish the safety of withholding antibiotics from children with mild AOM and assess the ability to change parents' expectations about universal antibiotic treatment of AOM.

- Evidence-based reminders in home health care. Researchers are comparing the effectiveness of two alternative information-based strategies with the goal of improving provider performance and promoting adherence to evidence-based guidelines among home health care nurses. This study assigns nurses to one of two treatment groups: a basic intervention group or an augmented intervention group. The nurses in the basic intervention group receive "just in time" e-mail reminders highlighting six condition-specific practices they should follow for patients with either heart failure or cancer pain. The nurses in the augmented intervention group receive the same e-mail reminders along with additional information and consulting services from an expert peer. This study addresses a critical need to provide information and resources that can affect delivery of home health care.

Tools for Patients and Health Care Consumers

As part of AHRQ's commitment to enhancing the quality of health care for all Americans, the Agency has played a major role in developing, refining, and disseminating quality measures and related resources. These research-based tools serve two purposes. First, they provide consumers with the reliable, evidence-based information they need to choose wisely among health plans, practitioners, and facilities and get the health care that is best for them. Second, they offer providers the validated, comparative data they need to assess strengths and weaknesses in their performance.

In particular, AHRQ has been the driving force behind a set of measures and tools that focus on patients' experiences with health care and services. Under the CAHPS® program, the Agency is funding a public-private team of researchers to develop a comprehensive and evolving family of surveys that ask consumers and patients to evaluate the interpersonal aspects of health care. CAHPS surveys probe those aspects of care for which consumers and patients are the best and/or only source of information, as well as those that consumers and patients have identified as being important.

The acronym CAHPS initially stood for the Consumer Assessment of Health Plans Study. However, in the current CAHPS program—known as CAHPS II—the products have evolved beyond health plans, so the acronym now stands alone as a registered brand name.

In FY 2003, the results of the widely adopted CAHPS Health Plan Survey were available to help more than 123 million Americans with their health care benefits decisions. Building on the success of the Health Care Survey, the Agency and the CAHPS research team (known as the Consortium) began work on "Ambulatory CAHPS," or A-CAHPS. The goal of this new initiative is to develop an integrated suite of survey instruments that will provide consumers and providers with information on patients' experiences with medical groups, individual clinicians, sites of care, and health plans.

In conceiving the A-CAHPS initiative, AHRQ and the CAHPS Consortium relied heavily on extensive market research with both users and non-users of CAHPS products to identify and clarify their information needs. To ensure that the research-based products that arise from this initiative truly do meet the needs of those who will put them into practice, AHRQ also embarked on a long-term process of building bridges with a variety of stakeholders, including associations that represent medical groups, health plans, and individual clinicians.

To expand on the usefulness of CAHPS products, CAHPS II calls for an exploration of new uses for information on quality of care from the patients' perspective. Consequently, AHRQ and its partners have been evaluating the usefulness of survey-based information as a quality improvement tool for health care organizations, which can use the standardized data to identify relative strengths and weaknesses in their performance and determine what aspects of interpersonal care they need to improve. To support this new emphasis, the Agency and members of the CAHPS team initiated two collaborations with the health care industry:

- Members of the CAHPS Consortium worked closely with the National Committee for Quality Assurance (NCQA), which uses the CAHPS Health Plan Survey as part of its public reporting and its accreditation program for health plans. They conducted research with the plans to understand how they are currently using results of the CAHPS Health Plan Survey and how the survey could be enhanced to make the results more actionable. This research led to the development of a new set of survey items that plans can use to identify areas in need of improvement.
- Other members of the CAHPS Consortium began a partnership with the Institute for Clinical Systems Improvement and eight primary care and specialty groups in Minnesota. This project is designed to develop and test a survey instrument at the group level that clinicians can use to improve quality of care. One key element of the project is participation in a year-long collaboration to develop and refine practical quality interventions and tools that will contribute to improved performance in the areas measured by this CAHPS survey.

The results of these projects will be incorporated into the A-CAHPS initiative.

In addition to finding ways to make CAHPS surveys more useful in the quality improvement arena, CAHPS II focuses on assessing the experiences of special populations (such as American Indians) and refining techniques for reporting survey findings and other quality information to consumers. In FY 2003, AHRQ and the CAHPS Consortium conducted substantial research to identify effective reporting strategies and the challenges posed by different subgroups in the population.

CAHPS II also includes a requirement for the development, testing, and distribution of effective tools for assessing patients' experiences with levels of the health care system beyond health plans. One example of this work is the ECHO Survey, which assesses patients' perspectives on behavioral health services. This survey was submitted and accepted as a formal CAHPS survey in FY 2003. In addition, FY 2003

saw significant progress in the development of several other CAHPS products, all of which benefitted from collaborations with a variety of public and private organizations.

- In coordination with the California HealthCare Foundation and the Pacific Business Group on Health (PBGH), AHRQ and the CAHPS Consortium put the finishing touches on a new survey that assesses patients' perceptions of the care received from providers in group practices. Building on substantial research and testing, the CAHPS Group Practice Survey reflects the practical experiences of PBGH with its group-level instrument in California.
- In 2002, CMS requested that AHRQ and its partners develop and test a standardized survey instrument that would enable consumers to assess the quality of inpatient care using consistent criteria across hospitals. The purpose of the Hospital CAHPS initiative is two-fold: (1) to help consumers and providers make more informed choices among hospitals and (2) to create incentives for hospitals to improve performance.

Working closely with CMS and its partners in the Consortium, AHRQ made substantial strides with Hospital CAHPS (HCAHPS) in FY 2003. Specifically, we gathered and assessed existing inpatient surveys, developed a draft survey, conducted cognitive testing with consumers, sought input from various stakeholder groups (including hospitals, data collection vendors, and others), elicited feedback from consumers, received and responded to extensive public comments, and initiated a field test of the draft instrument in three States.

AHRQ and its partners also worked with CMS to develop and test displays of the survey results, which will be published on CMS's public "Medicare Compare" Web site.

- AHRQ and CMS also collaborated in the development of two other survey products. The CAHPS Nursing Home Survey will consist of two instruments—one for residents and the other for family members—designed to gather their assessments of the health care and services received in nursing homes. In FY 2003, the CAHPS Consortium finalized the resident instrument and prepared it for field testing.
- The CAHPS Dialysis Center Survey is being developed to enable patients with end-stage renal disease to assess the facilities where they receive dialysis. In FY 2003, AHRQ and

Sample questions from HCAHPS

1. During this hospital stay, how often did doctors explain things in a way you could understand?
2. During this hospital stay, how often did nurses treat you with courtesy and respect?
3. During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it?
4. Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital?

its partners gathered and analyzed existing surveys, elicited guidance and feedback from subject experts and stakeholders, drafted an instrument, and initiated testing.

- Finally, in FY 2003, AHRQ and the CAHPS Consortium continued their work on a survey module designed to address the needs of people with mobility impairments. This work is being done in collaboration with the National Institute on Disability and Rehabilitation Research, the Centers for Disease Control and Prevention, and the National Rehabilitation Hospital Center for Health and Disability Research. In an effort to analyze different definitions of disability, the team developed a set of items designed to identify people with impairments. This "screener" is being tested as part of the Massachusetts Health Survey.

Making Quality Count for Patients and Consumers

One of AHRQ's most important priorities is translating research into practice. We are constantly working to make sure research findings are put to work to help patients and consumers get the best possible health care. AHRQ and its partners continue to develop and disseminate many products to help patients choose wisely when it comes to their health care. The following examples illustrate projects undertaken in FY 2003 that focus on providing health care quality information that will be useful to patients and consumers.

- AHRQ and the American Academy of Pediatrics (AAP) partnered to promote a new fact sheet called *20 Tips to Help Prevent Medical Errors in Children*. It offers evidence-based, practical tips on avoiding medical errors related to prescription medicines, hospital stays, and surgery. AHRQ and AAP will distribute copies of the fact sheet to AAP's 57,000 member pediatricians, as well as to groups representing children and parents.
- AHRQ and the National Council on Patient Information and Education released a new resource, *Your Medicine: Play it Safe*, to help consumers use prescription medicines safely. To get the best results, this guide makes four recommendations to consumers.
  - Give your doctor or other health care professionals who prescribe your medicine important information about the medicines you're already taking. This includes whether you have medicine allergies, if you have had problems when taking a medicine before, and if you have any other illness or medical conditions like diabetes or high blood pressure.
  - Get the facts about your medicine. For example, read the prescription, know what your medicine is for, and ask questions.
  - Stay with your treatment plan. For instance, take all the antibiotics you were prescribed, and ask your doctor if your prescription needs to be refilled.
  - Keep a record of the medicines, vitamins, and other dietary supplements you take.

AHRQ, the Centers for Medicare & Medicaid Services, the Office of Personnel Management, and the Department of Labor created posters and fact sheets called *5 Steps to Safer Health Care*, which offer evidence-based practical tips on the role that patients can play to help improve the safety of the care they receive. The tips address errors related to prescription medicines, laboratory tests, procedures, and surgery.

National Quality Measures Clearinghouse™ and QualityTools™

AHRQ launched the new Web-based National Quality Measures Clearinghouse™ (NQMC™) in FY 2003. Currently, the NQMC™ contains more than 300 quality measures. It presents the most current evidence-based quality measures and measure sets available to evaluate and improve the quality of health care.

The site is designed to be a "one-stop shop" for physicians, hospitals, health plans, and others who may be interested in quality measures. Users can search the NQMC™ for measures that target a particular disease/condition, treatment/intervention, age range, sex, vulnerable population, or setting of care. Additionally, users may browse NQMC™ by organization or measure domain. Visitors can compare attributes of two or more quality measures side by side to determine which measures best suit their needs. The site also provides material on how to select, use, apply, and interpret a measure.

In order to be included in the NQMC,™ measures must satisfy the NQMC™ inclusion criteria. The NQMC™ inclusion criteria are available at the following Web page: http://www.qualitymeasures.ahrq.gov/about/inclusion.aspx.

Following is a brief description of the criteria:

- The measure(s) must address some aspect of health care quality and relate to one of four domains: access, process, patient experience, or outcome.
- English-language documentation of the measure rationale, numerator, denominator, and data source must be provided.
- Documentation of supporting evidence appropriate for the measure domain must be provided.
- The measure(s) has been cited in one or more reports in a National Library of Medicine indexed, peer-reviewed journal, applying or evaluating the measure's properties; or the submitter provides documented peer-reviewed evidence evaluating the reliability and validity of the measure; or the measure has been developed, adopted, adapted, or endorsed by an organization that promotes rigorous development and use of clinical performance measures.
- The measure(s) must be in current use or currently in widespread testing and must be the most recent version if the measure has been revised.

Measures can be submitted to NQMC™ on an ongoing basis. Measures are submitted by national, State, and local organizations involved in developing and/or using quality measurement tools. These include health care systems, accreditation

organizations, professional associations, research institutions, licensing boards, and other relevant organizations.

The NQMC™ builds on AHRQ's previous initiatives in quality measurement and is linked to an umbrella quality improvement clearinghouse, Quality Tools™, which can be found at www.qualitytools.ahrq.gov. This new, expanded site comprises over 140 quality, clinical information, and decision tool components for patients, consumers, providers, purchasers, payers and policymakers. QualityTools™ enables these audiences to find tools to meet their specific needs. Examples of tools contained in the clearinghouse include:

- Clinical recommendations or processes (i.e., guidelines and measures).
- Patient safety practices.
- Benchmarking and comparative data.
- Tools relating to a specific disease or condition.
- Prevention and wellness information.
- Quality improvement initiatives or strategies.
- Information on health care delivery and services.
- Consumer information on patient medication and safety.

QualityTools™ also features the *National Healthcare Quality Report* and the *National Healthcare Disparities Report* and is linked to the National Guideline Clearinghouse™ (NGC™), providing users ready access to evidence-based clinical practice guidelines. The NQMC™ and NGC™ linkage allows users to coordinate their search for quality measures with the original supporting guideline recommendations.

Goal 2: Effectiveness

Prevention Research: Keeping People Healthy

Thousands of Americans die prematurely each year as a result of diseases that often are preventable, such as heart disease, diabetes, some cancers, and HIV/AIDS. Individual behaviors often contribute to these diseases and to other causes of death. These behaviors include tobacco use, lack of physical activity, poor eating habits, substance abuse, and violence.

Individuals, communities, clinicians, health systems, policymakers, and businesses can contribute to preventing disease and to improving the health of the Nation. Involving such a broad constituency in prevention requires the coordinated, widespread dissemination of science-based information about which prevention efforts are effective in improving health and the quality of life.

To address these issues, AHRQ convenes the U.S. Preventive Services Task Force, an independent panel of experts in primary health care and prevention. The first Task

Force was convened in 1984; the third Task Force began work in 1998 to update recommendations formulated by the first two Task Forces and to address new topics. Task Force recommendations are considered the gold standard for clinical preventive services.

The mission of the Task Force is to conduct comprehensive assessments of a wide range of preventive services—including screening tests, counseling activities, immunizations, and preventive therapies—and to make recommendations about which services should be provided routinely as part of primary health care. The evidence-based recommendations developed by the Task Force have been used by a diverse audience interested in clinical prevention, including:

- Clinicians and professional societies.
- Health plans, insurers, and policymakers.
- Students, trainees, health educators, and researchers.

In 2003, the Task Force issued recommendations on the following topics:

- Screening for obesity in adults.
- Counseling to prevent tobacco use.
- Counseling for skin cancer.
- Counseling to promote breastfeeding.
- Screening for high blood pressure.
- Counseling for vitamin supplementation to prevent cardiovascular disease and cancer.
- Screening for dementia.
- Screening for diabetes in adults.
- Screening for gestational diabetes mellitus.
- Screening for cervical cancer.
- Counseling to promote a healthy diet.

For more information about the U.S. Preventive Services Task Force and to access recommendations and materials for clinicians and others, go to the AHRQ Web site at www.ahrq.gov and select “Preventive Services.”

Task Force recommendations released in early 2004

Recommendations on the following topics were released in early 2004, as this report was being finalized.

- Screening for family and intimate partner violence.
- Screening for hepatitis C.
- Primary care interventions to prevent low-back pain
- Screening for asymptomatic bacteriuria
- Screening for hepatitis B virus infection
- Screening for oral cancer
- Screening for Rh (D) incompatibility
- Screening for coronary heart disease
- Screening for thyroid disease

For more information, go to www.ahrq.gov and check out preventive services under clinical information.

Put Prevention Into Practice

Put Prevention Into Practice (PPIP) is the implementation arm of the U.S. Preventive Services Task Force. It is a national program to improve delivery of appropriate clinical preventive services on the one hand, and to improve the general public's awareness of what we all can do to stay healthy on the other. PPIP was launched in 1994 by the Department of Health and Human Services' Office of Disease Prevention and Health Promotion. Management of PPIP was transferred to AHRQ in 1998, and it has been integrated into the Agency's overall program in clinical prevention.

PPIP materials are derived from the evidence-based recommendations of the U.S. Preventive Services Task Force. PPIP tools and materials enable doctors, nurses, other clinicians, and patients to determine which services patients should receive, facilitate the delivery of clinical preventive services, and make it easier for patients to understand and keep track of their preventive care.

An important goal for the PPIP program is to reduce barriers to the effective delivery of clinical preventive services. These barriers include:

- Clinician barriers: Lack of prevention training, lack of confidence that the preventive interventions can make a difference, lack of time, confusion due to conflicting recommendations, lack of knowledge about new tests, inadequate reimbursement for prevention, and liability concerns or patient demand.

- Office barriers: Lack of knowledge, motivation, readiness for change, or support among office staff; clinical settings focused on illness rather than prevention; and inadequate office systems for tracking delivery and followup of preventive services.
- Patient barriers: Lack of knowledge or motivation, anxiety about procedures and possible results, inconvenience, costs, and unrealistic expectations about the benefits of some services.

PPIP in action

Since 1994, the Texas Department of Health has used Put Prevention Into Practice to develop systems for the delivery of preventive care services. The TDH provided start-up funds to primary care sites, including local health departments and community health centers, to build an infrastructure to effectively deliver preventive care. TDH has developed customized materials such as risk assessment profiles and has trained public health nurses to implement PPIP.

PPIP works to overcome barriers to prevention and promotes the use of appropriate preventive services—such as screening tests, immunizations, and counseling. The PPIP program develops and disseminates tools to help clinicians deliver preventive services and materials for patients to help them understand what they can do to stay healthy and to help them keep track of their preventive care.

PPIP materials include:

- *What's New from the U.S. Preventive Services Task Force*. This series of fact sheets summarizes individual USPSTF recommendations in a one-page, easy-to-read format.
- *A Step-by-Step Guide to Delivering Clinical Preventive Services: A Systems Approach* describes easy-to-follow, logical steps through the process of implementing a formal system for delivering clinical preventive services.
- Materials for clinical office staff, including preventive care flow sheets, reminder postcards, and prevention timeline posters.
- Pocket-sized guides and pamphlets for patients and the general public, including the *Pocket Guide to Good Health for Adults*, the *Pocket Guide to Good Health for Children*, and *Pocket Guide to Staying Healthy at 50+* (all guides are available in English and Spanish), as well as *Women Stay Healthy at Any Age: Checklist for Your Next Checkup* and *Men Stay Healthy at Any Age: Checklist for Your Next Checkup*.
- *Clinician's Handbook of Preventive Services,* Second Edition. This publication is both a reference guide and a practical tool to delivering clinical preventive services in a variety of settings. It includes information on more than 200 preventive services, including cancer screening tests, blood and urine tests, x-rays and other radiologic screening tests, prenatal and newborn screening, and counseling interventions related to behavioral change (e.g., smoking, diet, and exercise).

- A PDA tool has been developed that allows clinicians to search the AHRQ Web site for USPSTF recommended preventive services by patient age and sex.
- A Web chart for consumers will be available in the near future. This chart will allow health care consumers to search by age and sex for the preventive care they need.

PPIP materials are based on research-tested interventions for improving the delivery of preventive services in primary care settings and on focus group testing with clinicians, office staff, and patients. These materials have been developed with the cooperation of many public and private institutions, including Federal agency experts and contributors from academic institutions, State departments of health, professional groups, and voluntary organizations. PPIP materials are available online through the AHRQ Web site and in print from AHRQ's Publications Clearinghouse.

Promoting Safe and Effective Use of Pharmaceuticals

Since 1992, AHRQ has funded pharmaceutical research. AHRQ funded studies have focused on patient outcomes related to medications, medication safety, strategies intended to improve the efficiency of drug use, and ways to control medication costs.

Findings from AHRQ pharmaceutical research projects have yielded important insights for the health care system. Some key issues and recent findings from AHRQ research include:

- ACE inhibitors and beta-blockers reduce deaths in a broad range of patients with heart disease. However, the value of using ACE inhibitors in women with asymptomatic left ventricular systolic dysfunction is uncertain, and the beta-blocker bucindolol may be associated with increased mortality in blacks.
- After decades of being on the rise, antibiotic use by U.S. children fell by almost 25 percent from 1996 to 2000, and more than half of the decrease came from decreased use of antibiotics

Use of antidepressants among elderly primary care patients

According to a recent study by researchers at Rutgers University, primary care prescribing of antidepressants for elderly patients increased markedly between 1985 and 1999. This increase was probably due to a combination of factors, including the introduction of a new class of antidepressants in 1988—the selective serotonin reuptake inhibitors (SSRIs)—which have fewer side effects than earlier antidepressants, increased recognition of depression in the elderly by primary care physicians, and financial incentives leading to more reliance on antidepressants instead of more costly psychotherapy.

As many as one-sixth of elderly Americans suffer from clinical depression. Elderly patients are more likely than younger ones to feel the stigma of depression, report fatigue and other somatic symptoms instead of psychological symptoms, and prefer treatment by their primary care physicians.

for ear infections. Awareness by public health and professional groups, as well as attention by the news media to antibiotic overprescribing, may have contributed to this change in prescribing practices.

- Counterdetailing—using pharmacists to work with physicians to help control medication costs—can save money and improve outcomes. This approach developed from AHRQ research helped Partners Community Healthcare, Inc., (PCHI) in Boston save over $5 million in pharmacy costs. PCHI comprises 1,200 primary care physicians and 3,000 specialists serving about 1.5 million patients. In counterdetailing, pharmacists use an educational approach to work with physicians in an approach adapted from the pharmaceutical industry's practice of "detailing" physicians about new drugs.

Centers for Education and Research on Therapeutics

The Centers for Education and Research on Therapeutics (CERTs) program, which is administered by AHRQ, is a unique network of seven research centers and a coordinating center focused on improving the use of medical therapies. A key feature of the CERTs program is collaboration across all sectors—public and private, industry and government, academia and business—to improve the use of medicines and medical devices.

There have been more than 130 CERTs projects to date that run the gamut from clinical studies to evaluation of teaching methods to policy-changing outcomes research. Reducing risk to patients is integral to the CERTs mission, and more than 70 projects have focused on ensuring the safe use of therapeutics. Examples of recent findings from CERTs research include:

- Researchers at the Vanderbilt CERT found that adults who use high-dose (more than 25 mg) rofecoxib, a nonsteroidal antiinflammatory drug (NSAID), are nearly twice as likely to be hospitalized with a heart attack or die from serious coronary heart disease than users of other NSAIDs,

Use of corticosteroids following acute asthma episodes

Disadvantaged inner-city adults with poorly controlled asthma often end up in the ER or are hospitalized for acute asthma episodes. They also are prone to relapse for weeks following acute asthma treatment, which can lead to another hospital stay.

According to researchers at the University of Texas Southwestern Medical Center, a short course of oral corticosteroids (for example, prednisone) following ER treatment for acute asthma may prevent relapse. The researchers followed a group of 309 adults—most of whom were black or Hispanic—who had been discharged from a public hospital ER following acute asthma care between 1997 and 1999. They identified which care processes were effective in improving lung function and found that although there was a positive association between improved lung function and appropriate use of all processes of acute asthma care, only the appropriate use of systemic corticosteroids had a significant effect.

such as ibuprofen, naproxen, or celecoxib. Adults typically take NSAIDs to alleviate the pain and inflammation associated with conditions such as rheumatoid arthritis. The study involved nearly 400,000 noninstitutionalized adults aged 50 to 84 who were enrolled in Tennessee's Medicaid program.

- Researchers at the University of Pennsylvania CERT used data on dispensed prescriptions from Medicaid programs in six States that used the same retrospective drug utilization review software vendor. For each State and each month, they calculated the rate of potential prescribing errors per thousand prescriptions and compared the rate before and after implementation of drug utilization review. The researchers found no reduction in the rate of potential prescribing errors coincident with the onset of drug utilization review. They also found no effect of this review on two clinical outcomes: the incidence of all-cause hospitalization or cause-specific hospitalization. Results were consistent across subgroups, including high-dose subgroups where one would expect to find the largest effect. Given the lack of evidence for effectiveness and suggestions of potential harm found in previous research, the CERT researchers suggest that policymakers reconsider the impact of drug utilization review programs.
- Prolongation of the QT interval on the electrocardiogram can predispose a person to torsades de pointes, a potentially fatal ventricular arrhythmia. The use of QT-prolonging medications—such as certain antiarrhythmics, antipsychotics, antibiotics, and antidepressants—can put patients at risk for torsades de pointes. Researchers at the Duke University CERT surveyed a group of experts on the QT interval. The majority of experts said they would always check an ECG before and after starting certain antiarrhythmics, one-third to one-half would always check an ECG before and after starting certain antipsychotics, and less than one-third said they would always check an ECG before and after starting certain antibiotics or antidepressants. The researchers cited a list of medications that experts consider likely to cause QT-prolongation, propose ways to enhance risk management of these medications, and suggest proper monitoring of the QT interval in patients receiving them. They note that in addition to certain medications, other factors that predispose a person to QT prolongation include older age, female sex, low left ventricular ejection fraction, left ventricular hypertrophy, ischemia, slow heart rate, and electrolyte abnormalities.
- Fluoroquinolone (FQ) antibiotics are highly potent, target a broad spectrum of bacteria, and are tolerated well by most patients. However, increasing FQ use in recent years has resulted in FQ resistance by several types of bacteria, including the bacteria that cause pneumonia. Strategies to limit this emerging resistance should target the frequently inappropriate use of FQ in hospital emergency departments, according to researchers at the University of Pennsylvania CERT. They found that 80 percent of FQ use among ED patients was inappropriate. The study involved 100 ED patients at two hospitals; 81 of the patients received FQ for an

inappropriate indication. Of these, 53 percent were judged inappropriate because another medication was judged to be first-line treatment, 33 percent because there was no evidence of infection, and 14 percent because of insufficient evaluation. Of the 19 patients who received an FQ for an appropriate indication, only one patient received both the correct dose and duration of therapy.

CERTs organization and focus

University of Arizona	Improve therapeutic outcomes and reduce adverse events caused by drug interactions, especially those affecting women. Also, identify and describe mechanisms for drug-induced arrhythmias.
Duke University	Advance the optimal use of cardiovascular drugs, medical devices, and biological products.
University of North Carolina	Improve the use of therapeutics in the pediatric population (neonates, infants, toddlers, children, and adolescents).
University of Pennsylvania	Optimize drug prescribing and improve the risk/benefit balance from drugs, particularly for anti-infectives. The focus is on antibiotic drug resistance, drug use, and intervention studies.
University of Alabama at Birmingham	Evaluate the effectiveness, safety, and impact on health-related quality of life of therapeutics for musculoskeletal disorders, and guide and evaluate changes in the practice community based on new therapeutic knowledge.
Vanderbilt University	Focus on observational studies of medication effects, evaluation of the effects of policy changes, and improving medication use.

continued

CERTs organization and focus *(continued)*

HMO Research Network	Emphasizes studies of the use and outcomes of therapeutics in large, defined populations and of methods for changing provider and patient behavior with regard to prescribing and adherence to therapy. This CERT comprises 10 HMOs across the country, and studies usually involve multiple HMOs to achieve a large, diverse population and range of delivery systems.
CERTs Coordinating Center	Provides overall CERTs support through strategic planning, program development, and outreach. The coordinating center is housed at Duke University.
Steering Committee	The steering committee comprises the principal investigators from each CERT and representatives of government agencies, leaders in private industry, and consumer representatives.

Promoting Evidence-Based Health Care

Since the Agency established the Evidence-based Practice Center (EPC) program in 1997, evidence-based reports and technology assessments have been produced on more than 90 topics. In 2002, AHRQ awarded 13 new 5-year contracts to continue and expand the work performed by the first group of EPCs begun in 1997. The EPCs support technology assessment for the Centers for Medicare & Medicaid Services, provide evidence reports for the U.S. Preventive Services Task Force, and develop evidence reports for use by Federal and non-Federal partners to improve health and health care.

Over the past several years, the EPC portfolio has expanded from a primarily clinical focus to encompass studies of health policy issues and special economic studies. The availability of clinical and methodological expertise within the EPCs has drawn an increasing number and variety of professional societies, providers, payers, and policymakers to work in partnership with AHRQ and the EPCs. Beginning in FY 2002, the EPCs moved more fully into the health policy arena as providers and purchasers asked that the EPC expertise also be channeled into production of evidence-based information to help employers make purchasing decisions that will lead to quality health care for their employees.

In AHRQ's reauthorization legislation, the Congress directed the Agency to provide widespread guidance on systems or methods to rate the strength of scientific evidence. As a first step in developing such guidance, AHRQ commissioned the EPC report, *Systems to Rate the Strength of Scientific Evidence*. This important report is an essential teaching tool not only for researchers but also for purchasers and providers, educating them on how to assess the scientific strength or credibility of health care studies.

Two years ago, AHRQ formed a partnership with the Office of Medical Applications of Research (OMAR) at the National Institutes of Health to include EPC systematic reviews on each clinical condition presented at OMAR's Consensus Development Conferences. Providing OMAR with topic-specific, evidence-based reports will ensure that the NIH Consensus Development Conferences have the latest scientific evidence available to support their deliberations.

Today, the 13 EPCs are providing systematic reviews and analyses in evidence reports for a variety of professional societies, providers, and other private-sector entities that will use the reports to develop evidence-based clinical care practices and related health policies. For example, ongoing EPC report topics include:

- Perinatal depression
- Effectiveness of soy in health care
- Electronic health information technology systems: Costs and benefits
- Payment strategies to support quality-based purchasing
- Best practices for providing quality care (for conditions included among the Institute of Medicine's priority conditions)

The EPCs also review and summarize evidence that is relevant to HHS priorities, such as the validation of tools to improve quality of care for hospitalized Medicare beneficiaries. Improvement in the quality and effectiveness of health care can occur only through establishing the evidence for such care and translating that evidence into practical tools that are easily understood and used by the various sectors and individuals involved in health care.

Evidence report topics published in FY 2003

- Parkinson's disease
- Worker-related musculoskeletal disorders of the upper extremity
- Blood pressure monitoring outside of the clinic setting
- Neonatal hyperbilirubinemia
- Disability and chronic fatigue syndrome
- Allergic rhinitis in the working-age population
- Deep venous thrombosis and pulmonary embolism
- Bronchiolitis in infants and children
- Disability in infants and children:
  - Low birthweight
  - Failure to thrive
  - Short stature
- Vaginal birth after cesarean
- Effects of health care working conditions on patient safety
- Supplemental use of antioxidants for prevention and treatment of cancer
- Ephedra and ephedrine for weight loss and athletic performance enhancement
- Treatment-resistant epilepsy
- Use of immuno-augmentation therapy and naltrexone for treatment of cancer
- Evidence-based cancer control interventions
- Coronary heart disease in women
- Heart failure and left ventricular systolic dysfunction in female, black, and diabetic patients
- Supplemental use of antioxidants for prevention and treatment of cardiovascular disease
- Use of glycated hemoglobin and microalbuminuria in monitoring of diabetes
- Hyperbaric oxygen therapy for brain injury, cerebral palsy, and stroke

Evidence report topics and partners, FY 2003

- Evaluation and treatment of acute stroke – American Association of Health Plans
- Closing the quality gap: A critical analysis of quality improvement strategies, Vol. 1. Diabetes mellitus and hypertension
- Celiac disease – Office of Medical Applications Research (OMAR), NIH
- Depression and postmyocardial infarction – American Academy of Family Physicians
- Effective payment strategies to support quality-based purchasing – Employer Health Care Alliance Cooperative
- Episiotomy – American College of Obstetricians and Gynecologists
- Food-related health claims – Food and Drug Administration
- Impaired glucose tolerance – American College of Physicians; American Academy of Family Physicians; American Academy of Pediatrics
- Multiple sclerosis: Criteria to determine disability – Social Security Administration
- Occupational asthma: Burden of illness/economic consequences – American College of Chest Physicians
- Perinatal depression – HHS Safe Motherhood Group
- Preventing violence and related health-risking behaviors in adolescents – OMAR
- Sexuality and reproductive health following spinal cord injury – Consortium for Spinal Cord Medicine
- Wound healing: Laser treatment and vacuum-assisted closure – American Association of Health Plans
- Recruitment of medically underserved populations to clinical trials: Knowledge and access to information – National Cancer Institute
- Spirometry – Chronic obstructive pulmonary disease – American Thoracic Society; American College of Physicians; American Academy of Family Physicians; American Academy of Pediatrics
- Health information technology – HHS, Office of the Assistant Secretary for Planning and Evaluation; Office of Disease Prevention and Health Promotion

National Guideline Clearinghouse

The National Guideline Clearinghouse™ (NGC™) is an online, comprehensive database of evidence-based clinical practice guidelines and related documents. NGC was developed by AHRQ in partnership with the American Medical Association (AMA) and the American Association of Health Plans-Health Insurance Association of America (AAHP-HIAA).

NGC was launched in January 1999 and is updated weekly with new content. NGC has established a collection of over 1,100 evidence-based guidelines from more than 200 nationally and internationally known health care organizations and other entities. Over the past 5 years, NGC has had more than 8.5 million visitors.

The NGC mission is to provide physicians, nurses, and other health care providers, health plans, integrated delivery systems, purchasers, and others an accessible mechanism for obtaining objective, detailed information on clinical practice guidelines and to further the dissemination, implementation, and use of guidelines.

Key Components of NGC

- Structured abstracts (summaries) about each guideline and its development.
- Links to full-text guidelines, where available, and/or ordering information for print copies.
- Palm-based PDA downloads and Microsoft Word downloads of the Complete NGC summary for all guidelines represented in the database.
- A guideline comparison utility that gives users the ability to generate side-by-side comparisons for any combination of two or more guidelines.
- Guideline syntheses, which are unique guideline comparisons prepared by NGC staff. The syntheses compare guidelines covering similar topics, highlighting areas of similarity and difference. NGC guideline syntheses often provide a comparison of guidelines developed in different countries, providing insight into commonalities and differences in international health practices.
- An electronic forum, NGC-L for exchanging information on clinical practice guidelines and their development, implementation, and use.
- An annotated bibliography database where users can search for citations of publications and resources about guidelines, including guideline development and methodology, structure, evaluation, and implementation.

Other User-Friendly Features

- "What's New?" enables users to see what guidelines have been added each week and includes an index of all guidelines in NGC.
- NGC Update Service is a weekly electronic mailing of new and updated guidelines posted to the NGC Web site.

- Detailed Search enables users to create very specific search queries based on the various attributes found in the NGC Classification Scheme.
- NGC Browse permits users to scan for guidelines available on the NGC site by disease/condition, treatment/intervention, or developing organization.
- PDA/Palm List provides users with information regarding full-text guidelines and/or companion documents available through the guideline developer that can be downloaded for the handheld computer (Personal Digital Assistant [PDA], Palm, etc.).
- Guideline Resources page with links to many other Web sites with content that is complementary to NGC.
- List of AHRQ evidence reports/technology assessments provides users with links to the summaries and full-text reports for evidence reports and technology assessments produced through AHRQ's Evidence-based Practice Center (EPC) program.
- Glossary provides definitions of terms used in the standardized abstracts (summaries).

NGC also offers a new RSS feature that gives Web developers the ability to easily incorporate headline information from the NGC Web site into their own Web pages. This feature directs users of other health care Web sites back to the NGC site for access to detailed summaries and other features.

NGC promotes quality health care by making the latest evidence-based clinical practice guidelines available 24 hours a day in one easy-to-access location. Like all good tools, NGC is very versatile and can be used according to personal preference. Although AHRQ does not require NGC visitors to register in order to use the site, we know from customer satisfaction surveys who is using the site. Nearly half of NGC visitors are physicians, and about 20 percent are nurses and/or nurse practitioners. In the most recent survey of users, more than 93 percent of respondents reported that they were either "fairly" or "very" satisfied with the site.

Goal 3 – Efficiency

AHRQ continues to support research on ways to overcome barriers to care, provide more efficient and effective care, and improve access to care for all Americans. Research in these areas has become more important than ever, as health care costs continue to rise.

Expenditures for health care constitute a substantial portion of the Nation's gross domestic product. For example, data from AHRQ's Medical Expenditure Panel Survey (MEPS) show that total outpatient drug expenses for the Nation's community population grew from $65.3 billion in 1996 to $94.2 billion in 1999, an increase of 44 percent.

In addition, MEPS data show that employee contributions for employer-sponsored health insurance are also on the rise. In 2001, average employee contributions were $498 for single health insurance coverage and $1,741 for family coverage. Employee contributions increased 10.8 percent and 7.8 percent, respectively, over the 2000 levels, continuing the trend from previous years.

Given the increasing costs of health care, it is vitally important for us to find ways to become more efficient and effective in providing high-quality health care. AHRQ research is at the forefront of this effort to improve health care efficiency and effectiveness. For example:

- Maimonides Medical Center in Brooklyn, NY, uses the five-level triage instrument developed through an AHRQ grant. The Emergency Severity Index, or ESI, changed both hospital policy and clinical practice in the hospital's emergency department (ED). Using ESI, the hospital is able to more efficiently and effectively channel resources to patients according to the severity of their condition. Maimonides Medical Center is a 704-bed, urban, tertiary-care teaching hospital with approximately 80,000 ED visits annually, all of which are evaluated by ESI triage. AHRQ researchers developed the ESI for stratifying patients into five groups with distinct clinical situations. Triage levels range from Level 1, which includes patients who are unresponsive, not breathing, or intubated, to Level 5, which includes patients who are predicted to require only the taking of a history and a physical exam.
- Philips Medical Systems, a large private-sector electronics company, is using software developed as a result of AHRQ-funded research conducted by Tufts-New England Medical Center. There researchers developed software for use with electrocardiogram machines to assist clinical decisionmaking for heart attack patients seen in hospital emergency rooms. Known as the Acute Cardiac Ischemia Time-Insensitive Predictive Instrument (ACI-TIPI), it helps physicians diagnose cardiac ischemia more quickly and recommends whether thrombolytic drugs should be administered. Philips Medical offers the software as a standard feature on their ECG machines sold worldwide. The AHRQ study published in 1998 estimated that widespread use of this instrument could result in 204,000 fewer hospital admissions each year and 112,000 fewer coronary care unit admissions, for an overall annual savings of $728 million.
- A recent AHRQ-funded study by researchers at the University of California, San Diego, found that consultations by specialists to help resolve ethical conflicts resulted in a significant reduction in life-sustaining treatments that were highly unlikely to be beneficial to dying patients. In this randomized controlled trial involving seven U.S. hospitals, dying patients who were in conflict with family members or their health care team over the course of their treatment were offered ethics counseling. Patients who received counseling and died before discharge

spent 3 fewer days in the hospital and nearly 1.5 fewer days in the intensive care unit, as well as 2 fewer days receiving life-sustaining treatments such as mechanical ventilation. There was no difference in overall mortality between the patients who received ethics consultation and those who did not.

Surgeon's experience linked to patient outcomes

Seeking out surgeons who frequently perform certain cardiac or cancer-related operations may increase older patients' odds of surviving major surgery, according to this recent AHRQ-supported study.

Previous research has suggested that outcomes are better when certain types of surgery are performed in high-volume hospitals, but little is known about the relationship between hospital volume and surgeon volume in relation to patient death rates. This study was conducted by researchers at Dartmouth Medical School.

Addressing Challenges to Care

The combination of rapid advances in medical knowledge and increased use of evidence-based decisionmaking in medicine holds great promise for improving health care. Developments in genomics, pharmaceuticals, informatics, and other technologies promise increased longevity and better health and functioning. Health care, however, can only be as good as the systems that provide it.

Much of the health care provided in the United States is delivered within large and often fragmented systems with complex funding streams. While the United States has an excellent health care system in many ways, it also exhibits waste and inefficiency which in turn exacerbates health care costs, affects affordability, and creates access problems. Low-income individuals, from both rural and urban areas, and those who lack health insurance are particularly likely to experience these problems. In addition, the current health care system lacks the continuity of services that chronically ill patients need.

One byproduct of the current health care system is an increased incidence of injuries to patients from the care that is intended to help them. Problems with patient safety represent only a small part of the unfolding story of problems with quality in American health care. The current health care system also has an impact on other dimensions of quality, such as efficiency, effectiveness, equity, timeliness, and patient-centeredness.

In this complex and sometimes confusing health care marketplace, all participants in the health care system—employers, insurers, providers, consumers, and Federal and State policymakers—need objective, science-based information they can rely on to help them make critical decisions about health care costs and financing and ways to enhance access to care.

For many years, AHRQ has been supporting research to meet this need. The Agency addresses critical health policy issues through ongoing development and updating of nationally representative databases, the production of public use data products, and research analyses conducted by AHRQ staff and extramural researchers.

Impact of Payment and Organization on Cost, Quality, and Equity

In order to be successful, efforts to improve the quality and efficiency of health care 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's research initiatives address these issues by asking questions such as:

- How do different payment methods and financial incentives within the health care system affect health care quality, costs, and access?
- What has been the impact of purchaser and public-sector initiatives on quality, costs, and access to health care and health insurance? For example, what is the impact of employer and coalition efforts on the quality and cost-effectiveness of care in the marketplace? Other important and related questions focus on the impact of State efforts to monitor and improve access and quality and the impact of public and private payment changes on access to health care and health insurance for vulnerable populations.
- What impact do managed care features—such as patient cost or sharing, provider payment method, and use of quality assurance techniques—have on the processes of care in relation to evidence-based care recommendations, clinical outcomes, and patient satisfaction?
- How do different organizational and financial features of health plans affect the care provided to people who have chronic illnesses, such as asthma, diabetes, ischemic heart disease, or glaucoma?

To answer these and other related questions, AHRQ issued a Program Announcement on the effects of payment and organization on the cost, quality, and equity of health care. Examples of projects funded under this program announcement include:

Effects of managed care on chronically ill patients

In 1998, AHRQ joined with the American Association of Health Plans Foundation and the Health Resources and Services Administration to award seven research teams over $10 million to investigate the effects of various features of managed care on patient outcomes and satisfaction with care. The teams focused on:

- Protocols governing referral of patients to specialty care.
- Arrangements for paying physicians.
- Use of guidelines.

The researchers based their studies on survey data and patient records from physicians, managers, and patients in 32 health plans. Government-sponsored programs in five States and 50 medical group practices participated in the studies.

Project descriptions, initial findings, and ongoing studies are described on the AHRQ Web site. Go to www.ahrq.gov and select "managed care."

- Hospital finances and the quality of hospital care. These researchers are examining the relationship between a hospital's financial condition, its operational and resource allocation decisions, and the quality of clinical care provided at the hospital. Many hospitals and provider organizations in the United States are facing significant financial constraints. This project will help to explain how financial conditions affect operational decisions.
- Purchaser/provider evaluation: Hospital quality data. These researchers are comparing the perceptions of health care purchasers (employers) and hospital administrators regarding the relative importance of hospital quality measures and how purchasers use reports of hospital performance when negotiating health coverage. The study also will address key policy questions, such as the impact and utility of public disclosure of hospital patient safety measures; possible pathways for improving hospital performance; and ways to increase the impact of future hospital comparative reports.
- Physician networks and children with chronic conditions. The goal of this project is to examine the effects of offering out-of-network benefits for children with one of two chronic conditions: asthma or diabetes. The researchers will determine the associations between the out-of-network benefits and cost-sharing of health plans and children's likelihood of seeing an out-of-network physician. They also will determine whether quality of care and expenditures are significantly different for children seeing in-network versus out-of-network physicians.

Research on Lowering Health Care Costs

AHRQ has a broad portfolio of research focused on identifying ways to lower health care costs without negatively affecting the quality and safety of care. Particular attention is given to initiatives that have the potential to lower costs to the Medicare and Medicaid programs. Examples of findings from recent AHRQ research on lowering health care costs include:

- Prescription drug formularies. Spending on prescription drugs increased by more than 200 percent between 1990 and 2000, making it the most influential driver of increases in health care spending. A recent AHRQ-funded study found that prescription drug formularies—a select list of covered drugs that an insurer usually obtains at discounted prices from the manufacturer—can reduce drug costs. When the Veterans Health Administration implemented a national closed formulary in 1997, they effectively shifted patients toward the selected formulary drugs, achieved substantial price reductions from drug manufacturers, and greatly decreased drug spending. Overall, the formulary saved an estimated $82.4 million for five classes of drugs over a 26-month period following implementation of the closed formulary.
- Impact of financial policies on patient treatment and outcomes. Two recent AHRQ-funded studies demonstrate that State and Federal health care financial

policies have an effect on the treatments patients receive and their outcomes. One study found that Medicare physician fees influence the type of surgery—either mastectomy or breast-conserving surgery—offered to older women with breast cancer. This finding suggests that physicians are responsive to financial incentives when the alternative procedures have clinically equivalent outcomes. The other study found that market reforms instituted in New Jersey led to an increase in the mortality rate among that State's uninsured heart attack patients. The rates of expensive cardiac procedures for these patients decreased as well, which may partly explain this finding.

- Cost of hospital care for diabetes patients. According to this study, half of hospital costs for diabetes patients in 1999 were linked to the subset of patients who had multiple hospitalizations. Hospital costs per patient were nearly three times as high for patients with multiple versus single hospital stays. Elderly Hispanics and blacks were more likely than whites to have multiple hospitalizations, as were patients covered by Medicare or Medicaid and those living in low-income areas. The presence and type of diabetes complications among patients with multiple hospitalizations varied by age, race/ethnicity, and insurance status. Adults were more likely to be hospitalized for chronic complications of diabetes. The acute complication rate was much higher for blacks than for other racial/ethnic groups, and it was more than twice as high for uninsured as for insured patients. Acute complications of diabetes was the primary or coexisting condition for the more than 60 percent of children with diabetes who had multiple hospitalizations. The researchers note that many of these complications and related hospitalizations might be prevented with quality outpatient care.

Improving Access to Care

Identifying ways to improve access to care—particularly for low-income individuals, minorities, and other priority populations—has been a major focus for AHRQ research for many decades. Examples of AHRQ-supported research on access to care include:

- Enhancing access to cervical cancer screening through telecolposcopy for rural women who have abnormal Pap smears.
- Eliminating system-level barriers to delivery of preventive services to adolescents during primary care visits.
- Ensuring that individuals enrolled in Medicaid managed care receive care equal to that of privately insured individuals.
- Providing equal access to life-saving therapies for heart attack, regardless of sex or race.
- Using nontraditional avenues to provide poor and minority women with access to mammography services.

Recent findings from AHRQ research on access to care include:

- Language proficiency independently affects care, according to a study of care assessments completed in 2000 by more than 49,000 adults enrolled in Medicaid managed care plans in 14 States. Racial/ethnic minorities had lower reports of care than whites who spoke English, especially for timeliness of care and staff helpfulness (courtesy and respect). Non-English speaking Asians had the lowest reports and ratings of care of all groups studied. Non-English speaking whites and Hispanics had worse reports and ratings of care than people who spoke English or were bilingual. The researchers suggest potential remedies, including the use of interpreters, cultural competency training for office staff, and use of community health workers.
- Medicaid shifts to widely used mental health carve-out programs may interrupt therapy among the most needy patients, particularly those suffering from schizophrenia and other serious mental illnesses. A disruption in continuity of care for these patients may lead to the loss of medication adherence, putting patients at risk of having acute psychotic episodes that require hospitalization. A study of more than 8,000 adults enrolled in Tennessee's Medicaid program revealed that the sickest patients were most likely to miss more than 60 days of antipsychotic therapy and to experience interruptions in their outpatient care.
- Title I funds from the Ryan White Act help many people with HIV/AIDS obtain medical and dental care, case management, substance abuse treatment, mental health services, and other support services. Title I of the Ryan White Act provides emergency assistance to eligible metropolitan areas that are disproportionately affected by HIV/AIDS to provide health care for low-income, uninsured, and under-insured people with HIV. Although Title I programs received about $604 million through the Act for FY 2001, many programs needed to use waiting lists for some services. Congress appropriated over $1.9 billion for the programs in FY

Factors affecting access to and use of hospice care

Local preferences and factors other than market structure influence county differences in hospice use. Use of hospice care varied more than 11-fold across U.S. metropolitan statistical areas in 1996, but differences in the major components of the health care infrastructure—such as the availability of hospitals, nursing homes, or doctors—did not explain the differences in hospice use.

Rather, the difference seemed to be due to local factors, such as local preferences, differences in the mix of services available from local hospice providers, and differences in community leadership on end-of-life issues. Three demographic factors were significant: individuals living in counties with more white collar employees, people living in the least densely populated counties, and those living in counties with relatively more cancer deaths were more likely to use hospice care.

2002, but this increased funding was not sufficient to provide care for all eligible individuals with HIV disease.

- Early access to specialty care improves survival among patients with end-stage renal disease (ESRD). The annual mortality rate for ESRD patients is 20 percent, with a 5-year survival rate of about 29 percent for patients undergoing renal dialysis. The risk of death is highest during the first year of dialysis, but early nephrologist evaluation is associated with better patient outcomes. Nevertheless, 25 percent of ESRD patients first see a nephrologist just 1 month before beginning dialysis. ESRD patients who consult with a nephrologist more than 3 months before beginning dialysis and those who see the specialist more often are less likely to die during the first year of dialysis than patients with delayed referral. Other factors affecting survival include coexisting disease, black race, and lack of health insurance.

Medical Expenditure Panel Survey

AHRQ's Medical Expenditure Panel Survey (MEPS) is the only national source for 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 these services. In addition to collecting detailed information from American households, MEPS also collects data from medical providers and establishments. As a result, the survey is unparalleled in its degree of detail.

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, and are likely to affect, the kinds, amounts, and costs of health care that Americans use. No other survey 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.

Since 1977 when data from the first expenditure survey became available, AHRQ's expenditure surveys have been an important and unique resource for public and private-sector decisionmakers. Over the years, this rich data source has become more comprehensive and timely. Design enhancements have improved the survey's analytic capacities, allowing for analyses over an extended period of time with greater statistical power and efficiency. The ability of MEPS to examine differences in the cost, quality, and access to care for minorities, ethnic groups, and low-income individuals provided critical data for the National Healthcare Quality Report and the National Healthcare Disparities Report, which present baseline views of the quality of health care and differences in use of services.

Findings Based on MEPS Data

MEPS data have been used by researchers both within and outside the Federal Government to examine issues of importance to policymakers, consumers, and providers. For example, in a recent study published in Health Affairs, researchers used

MEPS data to estimate the medical costs attributable to overweight and obesity and found that they may account for as much as 9.1 percent of total U.S. medical expenditures. In 2003, researchers also used MEPS data to:

- Estimate the amount and distribution of medical spending for the 15 most costly conditions.
- Determine how much it would cost to provide health care coverage to the uninsured under various private and public programs.
- Examine the importance of out-of-pocket premium costs in workers' decisions to enroll in employer-sponsored health insurance.

According to new MEPS data released in 2003, expenses for outpatient prescribed medicines increased from $72.3 billion in 1997 to $103 billion in 2000. Specifically:

- Outpatient prescription medications accounted for a greater proportion of total medical expenses, increasing from about 13 percent of total expenses in 1997 to more than 16 percent in 2000.
- Average out-of-pocket medication expenses were more than three times higher for people age 65 and older than for people under age 65 every year from 1997 through 2000.
- Between 1997 and 2000, the average expense for people age 65 and older with any prescription medicine expense increased about 35 percent—from $819 to $1,102. For people under 65, the amount increased about 40 percent, from $347 to $485.
- Each year from 1997 through 2000, the average number of prescriptions for people age 65 and older was more than twice the average number of prescriptions for younger people.

During the last few years, AHRQ has developed a series of statistical briefs using MEPS data. These briefs, which are on the MEPS Web site (www.meps.ahrq.gov), offer timely statistical estimates on topics of current interest to policymakers, medical practitioners, and the public at large. Topics in 2003 included smoking, asthma treatment, trends in antibiotic use among children, expenditures, and insurance. For example, more than 25 million Americans have been told by a physician or other health care provider that they have asthma according to data collected in 2000 by the MEPS. In the 12 months prior to their interview, 6.5 million adults and 3.2 million children had an asthma attack. Asthma attacks—caused by inflammation of the lower airways and obstruction of airflow—can vary from mild to life-threatening. Further, the data showed that:

- Children under the age of 18 are more likely than adults to use asthma medications, but they are less likely than adults to use inhaled steroids. About one-third of asthma patients have a peak flow meter in the home. A peak flow meter is a portable, hand-held device used to measure how air flows from lungs in one "fast blast" to measure the ability to push air out of the lungs.

- Females are more likely than males to use inhaled steroids and are more likely to have a peak flow meter at home.
- Children under the age of 18 are more likely than adults to have asthma. Among children, males are more likely than females to have active asthma. Among adults, females are more likely than males to have active asthma.

Collecting MEPS Data

AHRQ fields a new MEPS panel each year. Two calendar years of information are collected from each household in a series of five rounds of data collection over a 2-1/2-year period. These data are linked with additional information collected from respondents' medical providers and employers. This series of data collection activities is repeated each year on a new sample of households, resulting in overlapping panels of survey data.

MEPS data are comprehensive and widely used and quoted

The *Consumers' Checkbook 2003 Guide to Health Plans* used MEPS data to display the level of expenses by health plan. According to the Guide, MEPS data were the most important data used to compare the likely dollar cost to the consumer by plan. Consumers' Checkbook is an independent, non-profit consumer authority that rates local service firms.

The data from earlier surveys have quickly become a linchpin for the Nation's economic models and projections of health care expenditures and use. The level of detail these surveys supply permits the development of public and private-sector economic models to project national and regional estimates of the impact of changes in financing, coverage, and reimbursement, as well as estimates of who benefits and who bears the cost of a change in policy.

MEPS establishment surveys have been coordinated with the National Compensation Survey conducted by the Bureau of Labor Statistics through AHRQ's participation in the Inter-Departmental Work Group on Establishment Health Insurance Surveys. Based on the Department's survey integration plan, MEPS linked its household survey and the National Center for Health Statistics' National Health Interview Survey, achieving savings in sample frame development and enhancements in analytic capacity.

AHRQ has moved from conducting a medical expenditure survey every 10 years to following a cohort of families on an ongoing basis. Doing so has four primary benefits. It: (1) decreases the cost per year of data collected, (2) provides more timely data on a continuous basis, (3) creates for the first time the ability to assess changes over time, and (4) permits the correlation of these data with the National Health Accounts, which measure spending for health care in the United States by type of service delivered (e.g., hospital care, physician services, nursing home care, and other types of care) and source of funding for those services (private health insurance, Medicare, Medicaid, out-of-pocket spending, and so on).

MEPS data are used:

In the public sector: Entities such as the Office of Management and Budget, the Congressional Budget Office, the Medicare Payment Advisory Commission, the Treasury Department, and State and local governments rely on MEPS data to evaluate health reform policies, the effect of tax code changes on health expenditures and tax revenue, and proposed changes in government health programs such as Medicare.

Since 2000, data on premium costs from the MEPS Insurance Component have been used by the Bureau of Economic Analysis to produce Estimates of the Gross Domestic Product (GDP) for the Nation. The GDP represents the total goods and services produced over a given period, usually 1 year.

In the private sector: MEPS data are used by many private businesses, foundations, and academic institutions—such as RAND, the Heritage Foundation, Lewin-VHI, and the Urban Institute—to develop economic projections.

By researchers: MEPS data are a major resource for the health services research community at large.

Public Use Data Files and Other MEPS Products

AHRQ ensures that MEPS data are readily available, consistent with privacy policies, for use in research and policymaking. MEPS data are released in a variety of ways as described below.

- Data files. MEPS data populate a number of analytical databases. Several public use data files that facilitate national estimates of expenditure for use of health care services are released annually.
- Printed data. AHRQ publishes MEPS data in tabular form on a range of topics. Printed publications include methodology reports, findings, and chartbooks.
- Web site. AHRQ maintains a Web site specific to MEPS. Data files and other MEPS products are made available to the research community and other interested audiences. Go to www.meps.ahrq.gov to access the site. MEPS maintains an-e-mail address for technical assistance. In 2003, over 1,000 inquiries were answered, most within 24 hours.
- MEPSnet. AHRQ has developed a set of statistical tools to allow immediate access to MEPS micro data in a nonprogramming environment. From the MEPSnet section of the MEPS Web site, through a series of interactive queries, the most inexperienced user can generate national estimates in a few seconds. Go to www.meps.ahrq.gov/MEPSNet to access this resource.
- LISTSERV. The purpose of the MEPS LISTSERV is to allow free exchange of questions and answers about the use of the MEPS database. Currently, there are more than 500 subscribers to the MEPS LISTSERV.

- Training. AHRQ conducts workshops—ranging in length from a few hours to several days—to educate policymakers, researchers, and other users about the range of questions that MEPS can answer and how the data can be properly used.
- Data Center. AHRQ's Center for Financing, Access, and Cost Trends (CFACT) operates an on-site data center to facilitate researchers' access to data that cannot otherwise be publicly released for reasons of confidentiality.

Recent Key Findings from the MEPS Household Component

- In 2001, approximately 12 percent of U.S. women ages 18 to 64 had not received Pap test screening within the previous 3 years. Those who were uninsured or covered by Medicaid or other public health insurance were less likely to have had Pap tests than those with private health insurance.
- In 2001, nearly 25 percent of children under age 18 had not been to a doctor's office or visited a clinic during the previous 12 months. Of the 75.8 percent of children who did receive care, 91.9 percent were reported to have had no problems receiving needed care. While a high percentage of Hispanic children were reported to have no problems receiving necessary care (88.4 percent), the percentage was lower than it was for black (91.7 percent) and white children (92.7 percent).
- In the first half of 2002, 16.4 percent of Americans (46.2 million people) were uninsured.
- Among those under age 65, more than a third of Hispanics (36.1 percent) and 20.4 percent of black non-Hispanics were uninsured during the first half of 2002, compared with 14.6 percent of white non-Hispanics.
- In 2002, young adults ages 19-24 were the age group at the greatest risk of being uninsured, with over one-third (34.9 percent) of this group lacking health insurance.
- From 1996 to 2002, the percentage of uninsured children declined from 15.7 percent to 12.9 percent. Concurrently, the percentage of children covered only by public health insurance increased from 21.3 percent to 26.3 percent.
- Higher hourly earnings were associated with a greater likelihood of workers having health insurance coverage through their primary place of employment (83.2 percent of workers making $21 or more per hour had such coverage). Only one-third of workers making less than minimum wage ($5.15 per hour) had insurance coverage from their primary employer.
- Employees who belonged to a labor union were much more likely to be covered by health insurance through their main job (88.0 percent) than nonunion workers (57.6 percent).

Recent Key Findings from the MEPS Insurance Component

- In 2001, average health insurance premiums were $2,889 for single coverage, $5,463 for employee-plus-one coverage (a plan covering the employee and one other person), and $7,508 for family coverage. Premiums for single and family coverage increased 8.8 percent and 10.9 percent, respectively, over 2000, continuing a trend of increasing premiums each year since 1996. Data on employee-plus-one premiums were collected in 2001 for the first time.
- In 2001, the percent of employees in the 10 largest States opting for single coverage ranged from 38.2 percent in Ohio to 52.4 percent in Texas. The 10 States are California, Texas, New York, Florida, Illinois, Pennsylvania, Ohio, Michigan, New Jersey, and Georgia.
- Single premiums ranged from $2,777 in California to $3,105 in New Jersey, employee-plus-one premiums ranged from $5,098 in California to $6,055 in New York, and family premiums ranged from $7,162 in California to $8,227 in New York.
- The average employee contribution to health insurance premiums in 2001 was $498 for single coverage, $1,070 for employee-plus-one coverage, and $1,741 for family coverage. Employee contributions increased 10.8 percent and 7.8 percent for single and family coverage, respectively, over 2000.
- Employee contributions for single coverage ranged from $369 in California to $584 in Florida, family coverage from $1,358 in Ohio to $2,217 in Florida, and employee-plus-one coverage from $688 in Michigan to $1,663 in Florida.
- Full-time private-sector employees that work for firms with 50 or more employees are almost always offered health insurance by their employer. By comparison, only 55.3 percent of firms with 10 or fewer employees offer health insurance to their full-time employees.
- In 2001, the average health insurance premiums for State and local government employees were $3,182 for single coverage, $5,463 for employee-plus-one coverage, and $7,336 for family coverage. Premiums for single and family coverage increased 11.5 percent and 10.2 percent over 2000.

Healthcare Cost and Utilization Project

As health care costs in the United States escalate and concerns about quality of care become more pronounced, the need for accurate and timely health care data has increased dramatically. Policy analysts, administrators, and the research community require comprehensive and precise data resources in order to evaluate cost, quality, and access to care. The AHRQ-sponsored Healthcare Cost and Utilization Project (HCUP) is a resource comprising a family of databases that meets this need for reliable data.

HCUP develops and maintains a family of health care databases, related software tools, support services, and products whose information resources are grounded in vital partnerships among Federal, State, and industry associations. HCUP databases integrate the data collected by State governments, hospital associations, private data organizations, and the Federal government (a mosaic of "Partners") to create a national health care information resource of hospital, ambulatory surgery center, and emergency department data. HCUP features the largest collection of hospital care data collected over a period of time in the United States. All-payer, encounter-level information is available beginning in 1988.

The multi-State databases contain discharge-level information in a uniform format designed to ensure patient privacy. The resulting HCUP databases facilitate research on a broad range of health policy and health services issues, including:

- Cost and quality of health services.
- Medical practice patterns.
- Access to health care.
- Hospital costs and use, including use by special populations.
- Diffusion of medical technology.
- Effects of market forces on hospitals.
- Treatment outcomes at the national, regional, State, and local market levels.

Because of their large size and scope, HCUP databases enable analyses, such as investigating specific medical conditions and procedures (including rare events); tracking use for population subgroups, such as minorities, children, women, and the uninsured; and analyzing different geographic levels (national, regional, State, and community) within the United States. To augment the HCUP databases, software tools and Web-based products are publicly available for use by audiences with varying levels of research experience.

The collaboration of Federal, State, and industry partners creates a mutually beneficial opportunity for sharing data and building a national resource. HCUP research benefits extend to a diversity of institutions and individuals:

Policy analysts: HCUP data enable policy analysts and decisionmakers to develop effective and informed recommendations on crucial health care policy issues such as cost, use, quality, and access to health care.

Hospital industry: HCUP provides hospital associations, hospitals, and provider alliances with access to national health care databases. Hospital industry members are able to make national comparisons of efficiency, cost, value, and quality of service.

Statewide data organizations: Participants in this national project can contribute to the health care knowledge base and reinforce the value of their data collection efforts. States are also able to compare their health care statistics to other States and to

regional and national indicators. Those States that are just starting data collection programs may benefit from HCUP technical assistance and the experience of other organizations already collecting these data.

Researchers: The comprehensive data available in HCUP databases enable researchers to conduct health services research in many different areas, including but not limited to quality of care, medical practice patterns, and treatment outcomes.

HCUP databases include:

- The Nationwide Inpatient Sample (NIS) with inpatient data from a national sample of over 1,000 hospitals.
- The Kids' Inpatient Database (KID) is a nationwide sample of pediatric inpatient discharges.
- The State Inpatient Databases (SID) contain inpatient discharge abstracts from non-Federal hospitals in participating States.
- The State Ambulatory Surgery Databases (SASD) contain data from ambulatory care encounters from hospital-affiliated and sometimes freestanding ambulatory surgery sites.
- The State Emergency Department Databases (SEDD) contain data from emergency department encounters from hospital-affiliated emergency departments.

AHRQ expands the HCUP databases each year by adding new States that will improve national and regional representation and by expanding the number of partners that contribute ambulatory surgery and emergency department data. In the last year AHRQ added Minnesota, Nebraska, Rhode Island, and Vermont to HCUP. Each of the four new States supplied data beginning with the 2001 data year. AHRQ also added three new ambulatory surgery databases and three new emergency department databases. Currently, 33 Statewide data organizations participate in HCUP.

Over the past 2 years, AHRQ has implemented a multifaceted effort to make HCUP data more accessible to researchers and other interested users. A centerpiece of this effort is HCUPnet, an interactive tool for identifying, tracking, analyzing, and comparing statistics on hospital care. HCUPnet queries generate statistics in a table format using data from the NIS and SID databases for those States that have agreed to participate. New data have recently been added from the Kids' Inpatient Database (KID). Aggregate statistics from HCUPnet are made available to the public on the AHRQ HCUPnet Web site at www.ahrq.gov/data/hcup/hcupnet.htm.

Another means instituted by AHRQ to enhance access to HCUP data is the HCUP Central Distributor, which was developed by AHRQ to prepare and distribute HCUP data for use by researchers outside of AHRQ on behalf of participating HCUP partner organizations. Participation in the HCUP Central Distributor is voluntary, and it includes only the partner organizations that agree to release their HCUP data to public and private users.

Since September 2002, AHRQ has been building an HCUP user support infrastructure that includes telephone and e-mail access to technical support staff and a publicly available Web site that features database documentation and HCUP product information. The goal of HCUP user support is to increase awareness of the strengths and uses of HCUP data and to enhance the skills of those using HCUP data and tools for their work in research, education, and policy analysis.

In 2003, HCUP launched a new toll-free dedicated technical assistance phone line (866-290-HCUP) and a new dedicated e-mail service (hcup@ahrq.gov). A new Web site has also been established at www.hcup-us.ahrq.gov/home.jsp. This Web resource offers general information regarding the HCUP databases, available technical support, project contact information, and background information on the technical support team.

Other HCUP-related activities currently underway at AHRQ include the development of a new fact book that addresses potentially avoidable hospitalizations using the AHRQ Prevention Quality Indicators. This fact book will describe ambulatory care sensitive conditions—that is, conditions that usually can be avoided through timely and effective outpatient care. The fact book will use graphs and tables to describe these conditions, including priority conditions such as asthma, diabetes, congestive heart failure, and hypertension, as well as the incidence of low birthweight infants. Specifically, the fact book evaluates time trends between 1994 and 2000; variations across regions of the United States; and differences among priority populations, including children, the elderly, women, low-income individuals, and rural residents.

Another new resource is *Care of Children and Adolescents in U.S. Hospitals*, a fact book that examines hospital care for children and adolescents, providing insight into the types of conditions for which children are hospitalized, the types of procedures they receive, who is billed for the stays, the resource use associated with children's hospital stays, and where children are discharged to when they leave the hospital. The fact book begins with an overview of hospital care for children overall and, to put this care into perspective, compares information about children to information about adults' hospital stays. It then provides more detailed information for three major subgroups of pediatric hospital stays: (1) neonatal stays—newborns and infants 30 days and younger; (2) stays for other pediatric illness—admissions for children and adolescents not related to neonatal and maternal conditions; and (3) stays for adolescent pregnancy and delivery—admissions for maternal care. The data source for this fact book was the 2000 Kids' Inpatient Database (KID).

Use of HCUP Data

The HCUP databases are being used by a variety of Federal agencies and national health care organizations to examine practices and trends and guide health care decisionsmaking. For example:

- HCUP NIS and SID (2000) data were used to prepare AHRQ's first National Healthcare Quality Report and National Healthcare Disparities Report. These two

reports are flagship projects of the Agency that provide national and State-level indicators of how well our health care systems are working.

- A new AHRQ study published in the October 8, 2003 issue of *JAMA* showed that medical injuries during hospitalization result in longer hospital stays, higher costs, and a higher risk of death based on 2000 HCUP data. The study, which identified medical injuries in 7.45 million hospital discharges from 994 acute care hospitals across 28 States, found that the impact of medical injuries varies substantially. The study provided, for the first time, specific estimates for excess length of stay, charges, and the risk of death for 18 of the Patient Safety Indicators.
- The March of Dimes used HCUP NIS data to analyze and compare hospital charges for infant stays related to prematurity and typical newborn stays. Using these data, the March of Dimes Perinatal Center found that hospital charges for all infant stays with any diagnosis related to prematurity totaled $11.9 billion in 2000. The $11.9 billion figure was cited in the headline of a March 2003 press release announcing the March of Dimes 5-year, $75 million national campaign to decrease the rate of premature births.
- The Vermont Program for Quality and Health Care produces an annual report that examines quality of care and identifies ongoing improvement efforts within the State. The *Vermont Healthcare Quality Report* provides information regarding high-volume, hospital-based procedures, as well as services delivered within practitioners' offices, nursing homes, and emergency rooms, as well as home based care. The Vermont Program used the HCUP data to benchmark Vermont State-wide estimates. The project uses statistics from HCUPnet and also performs more in-depth analyses using the NIS data files. The use of HCUP data to measure health care quality underscores that HCUP data can be used by State policymakers not only to examine quality in their own State, but also to compare their State to national benchmarks.
- A General Accounting Office (GAO) report on emergency department overcrowding used HCUP Nationwide Inpatient Sample (NIS) data to compare statistics on the types of DRGs (diagnosis related groups—a patient classification system that provides a way of describing the types of patients a hospital treats) and the type of insurance (e.g., managed care, fee-for-service, Medicare, Medicaid, and so on) for patients admitted to the inpatient setting through the emergency department with those admitted through other routes. HCUP staff conducted special analyses to provide these statistics to GAO, which were used in the March 14, 2003 GAO report: *Hospital Emergency Departments: Crowded Conditions Vary among Hospitals and Communities*, GAO-03-460.
- HCUP assisted GAO with a report released in 2003 on specialty hospitals. HCUP State Inpatient Databases (SID) for six States—Arizona, California, New Jersey, New York, North Carolina, and Texas—were one of the sources of data used in the report. The recent growth in specialty hospitals that are largely for-profit and owned, in part, by physicians, has been controversial. Advocates of these hospitals

contend that the focused mission and dedicated resources of specialty hospitals both improve quality and reduce costs. Critics contend that specialty hospitals siphon off the most profitable procedures and patient cases, thus eroding the financial health of neighboring general hospitals and impairing their ability to provide emergency care and other essential community services. Critics also contend that physician ownership of specialty hospitals creates financial incentives that may inappropriately affect physicians' clinical and referral behavior. For this report, GAO was asked to examine: State policies and local conditions associated with the location of specialty hospitals, how specialty hospitals differ from general hospitals in providing emergency care and serving a community's other medical needs, and how specialty and general hospitals in the same communities compare in terms of market share and financial health.

- The Centers for Disease Control and Prevention, the Hawaii Health Information Corporation (HCUP partner), and AHRQ conducted a collaborative study on Kawasaki's disease—a childhood disorder that primarily affects children younger than 5. It is the leading cause of acquired heart disease in kids, and it is most prevalent in children of Asian and Pacific-Islander background. This study used 1996-2001 Hawaii SID data and 1997-2000 HCUP KID data to investigate the epidemiology, use of care, and outcomes associated with Kawasaki's disease in Hawaii.
- The National Institute for Child Health and Human Development is using HCUP KID data to help in priority setting for their response to the Best Practices for Children Act (BPCA). The BPCA mandates that pediatric-specific pharmaceutical research be conducted. HCUP data are being used to help identify priority conditions and subpopulations on which to focus.
- The Health Resources and Services Administration (HRSA) is using HCUP KID data to create a pediatric-specific case mix index, which will be used in determining payments to children's hospitals in support of graduate medical education at free-standing children's institutions. The current method is based on the Medicare Prospective Payment System; however, because children's hospitals serve a pediatric population and represent a wider spectrum of children's services than hospitals providing care to Medicare patients, HRSA is exploring alternative payment formulas using HCUP data for discharge-level analyses.
- The National Institute of Allergy and Infectious Diseases (NIAID), in collaboration with AHRQ, used the HCUP SID (1993-2001) data to examine the effects of a rotavirus vaccine on hospital admissions among children. Rotavirus is a common cause of severe diarrhea among children and is responsible for half a million deaths in developing countries each year. After a previous study showed an increased risk of a serious and life-threatening complication (intussusception) following administration of rotavirus vaccine, the vaccine was withdrawn from the market. The NIAID and AHRQ analysis found no evidence of increased hospitalizations for intussusception during the period of vaccine availability,

which suggests that the risk may be much lower than previously thought. This new information has implications for future vaccine policy.

Quality Indicators

AHRQ's Quality Indicators (QIs) are measures of health care quality that make use of readily available hospital inpatient administrative data, such as diagnoses and procedures, along with information on a patient's age, sex, source of admission, and discharge status. The first QIs were developed in the early 1990s and came out of HCUP through the data partnership among the Agency, the health care industry, and States. These original HCUP QIs, which were created in response to requests for assistance from State-level data organizations and hospital associations, enabled these entities to use their administrative data for quality improvement and tracking.

In preparation for the National Healthcare Quality Report, AHRQ worked in partnership with the University of California, San Francisco (UCSF)/Stanford Evidence-based Practice Center to refine, expand, and risk adjust these measures. The resulting updated AHRQ QIs include three modules: the Prevention Quality Indicators (PQIs), the Inpatient Quality Indicators (IQIs), and the Patient Safety Indicators (PSIs). The AHRQ QI software analyzes administrative data on inpatient stays to produce information about potentially avoidable adverse hospital outcomes such as postsurgical pneumonia, potentially inappropriate and over used hospital procedures such as cesarean section deliveries, and potentially preventable hospital admissions such as pediatric asthma. The AHRQ QIs are designed to highlight probable quality concerns, identify areas that need further study and investigation, and track changes over time. Users include hospitals, managed care organizations, business-health coalitions, researchers, and others at the Federal, State, and local levels. The software is available free on the AHRQ Web site at www.qualityindicators.ahrq.gov.

AHRQ QIs are used by health care leaders

- Improve collective understanding of hospital outcomes, community access to care, use of care, and costs.
- Contribute to assessments of the effects of health care program and policy choices.
- Inform health care policymaking.

The first three AHRQ QI modules—the Prevention Quality Indicators (PQIs), the Inpatient Quality Indicators (IQIs), and the Patient Safety Indicators (PSIs)—include a total of 73 indicators. These QIs are designed for use with inpatient hospital discharge data and primarily apply to the inpatient setting. However, the PQIs are pertinent to outpatient care, since the indicators represent hospitalization rates for events that potentially could be prevented by improvements in access to and/or delivery of outpatient care.

- Prevention Quality Indicators (PQIs). These indicators, released in November 2001, represent "ambulatory care sensitive conditions." These are conditions for which evidence suggests that hospital admissions could be avoided with good access to quality outpatient care or illness could be less severe if the condition is treated early and appropriately. There are 16 PQIs covering conditions such as diabetes, asthma, heart disease, pneumonia, and selected pediatric conditions.
- Inpatient Quality Indicators (IQIs). These indicators, released in June 2002, reflect quality of care inside hospitals and include inpatient mortality; use of procedures for which there are questions about overuse, underuse, or misuse; and volume of procedures for which there is evidence that a higher volume of procedures is associated with lower mortality. The 31 indicators are specific to hospital care for heart disease and surgery, hip repair, pneumonia, childbirth, and other conditions and procedures.
- Patient Safety Indicators (PSIs). These indicators, released in March 2003, provide information on potential in-hospital complications and adverse events following surgeries, procedures, and childbirth. There are 26 indicators that address such topics as birth trauma, complications of anesthesia, transfusion reaction, accidental puncture and laceration, and postoperative infections.

The AHRQ QIs are being used by a variety of providers, purchasers, and State agencies as an integral part of quality improvement programs. Their use has exceeded all Agency estimates. Each month AHRQ responds to an average of 30 user requests, supports 1,920 LISTSERV subscribers, and logs between 3,500 and 6,000 visits to the Web site and over 1,000 downloads of QI documentation and software. The rapid uptake of the QIs has been due to many factors including a demand for standardized measures using readily available data for both quality improvement and comparative quality reporting, an increased emphasis on public reporting, and efforts to link payment to quality. Examples of QI use include.

- Providers:
  - A number of State hospital associations have integrated the PSIs into their member quality improvement programs. These users include the Healthcare Association of New York State, Georgia Hospital Association, Missouri Hospital Association, Montana Hospital Association, Oregon Association of Hospitals and Health Systems, West Virginia Hospital Association, and a subsidiary of the Illinois Hospital Association that also serves hospitals affiliated with the Association of Kentucky Hospitals and Health Systems.
  - The Dallas-Fort Worth Hospital Council uses the IQI and PSI software to generate comparative data and reports using data from 1999-2002. They published hospital-specific comparative information for their members with

their own patient-level data for detailed evaluation and quality improvement activities, as well as provided members with an analysis of the PQIs for the north Texas region.

  - The National Association of Children's Hospitals and Related Institutions is currently collaborating with AHRQ researchers to examine patient safety events, using the AHRQ Patient Safety Indicators, in children's hospitals compared with discharges from general medical-surgical hospitals using their member data file and the 2000 KID.

- Purchasers:

  - The Niagara Health Coalition used the IQI software and the New York State hospital discharge data file to generate comparative data and reports for all hospitals in New York State. They initially published these data and reports on their Web site in fall 2002 and updated the results by adding a second year of analyses in March 2003.

- State agencies:

  - The Texas Healthcare Information Council uses the IQI software and their hospital discharge data to generate comparative data and reports for all hospitals in the State of Texas. They released their initial findings on their Web site at the close of FY 2002. Their Web site currently contains IQI analyses for 3 years (1999-2001), and 2002 data will be published soon.

- Federal agencies:

  - AHRQ used the QIs to produce the first ever National Healthcare Quality Report and National Healthcare Disparities Report in 2003.

  - The PSIs are being used in the CMS-Premier national pay-for-performance demonstration projects. These projects involve an estimated 300 hospitals across the country. In addition, the PSIs have been integrated into several leading private sector pay-for-performance programs, including those being led by Anthem Blue Cross and Blue Shield of Virginia.

  - The Medicare Payment Advisory Committee used all three QI modules to examine the quality of care provided to Medicare beneficiaries. Their findings will be presented to Congress sometime in 2004.

  - The Department of Veterans Affairs (VA) Patient Safety Indicator (PSI) study is a jointly funded VA-AHRQ study that is validating the PSIs against NSQUIP (a database maintained by the VA and based on medical record review of postsurgical patients). In addition to validating selected PSIs, the study will also compare VA and non-VA experience of potential patient safety events using five HCUP States as the non-VA comparison group.

- Researchers:
  - AHRQ researchers used the PSIs to create estimates of excess deaths, excess days in hospitals, and excess charges associated with adverse events as published in the October 2003 issue of *JAMA*.
- Hospital and Healthcare Systems:

  AHRQ's QIs can help hospitals and healthcare systems answer specific questions like these:
  - How does our hospital's cesarean section rate compare with the State or the Nation?
  - Do other hospitals have similar mortality rates following hip replacement?
  - How does the volume of coronary artery bypass graft surgery in our hospital compare with other hospitals?
- State data organizations and community health partnerships:

  These groups use AHRQ QIs to ask questions that provide initial feedback about clinical areas appropriate for further, more in-depth analysis, such as:
  - What can the AHRQ pediatric QIs tell us about the adequacy of pediatric primary care in our community?
  - How does the hysterectomy rate in our area compare with the State and national averages?
- State hospital associations:

  State hospital associations use the AHRQ QIs to do quick hospital quality and primary care access screens. Other potential users include managed care organizations, business-health coalitions, State data organizations, and others poised to begin assessments using hospital discharge data to answer questions such as:
  - Can we design and implement community quality improvement interventions in areas surrounding hospitals that have high rates of admissions for diabetes-related complications?
  - Which QIs can be incorporated into performance management initiatives for our member hospitals?

- Federal policymakers:

  AHRQ QIs help these users track health care quality in the United States over time and assess whether health care quality is improving, for example:

  – How does the rate of coronary artery bypass graft surgery vary over time and across regions of the United States?

  – What is the national average for bilateral cardiac catheterization (a procedure that is not generally recommended), and how has this changed over time?

Chapter 7. Strategic Goals and Performance Planning at AHRQ

A Road Map for AHRQ's Activities

The Agency for Healthcare Research and Quality (AHRQ) promotes health care quality improvement by conducting and supporting health services research to develop and disseminate scientific evidence regarding all aspects of health care. Health services research addresses issues of organization, delivery, financing, use, patient and provider behavior, quality, outcomes, effectiveness, safety, and cost. It evaluates both clinical services and the systems in which these services are provided.

Health services research includes studies of the structure, processes, and effects of health services for individuals and populations. It addresses both basic and applied research questions, including fundamental aspects of both individual and system behavior and the application of interventions in practice settings.

In FY 2003, AHRQ made significant progress in establishing our "Portfolios of Work," which represent the groups of activities currently being funded by the Agency. The Portfolios of Work are linked to our strategic goal areas as depicted in the chart on page 100.

We are in the process of refining AHRQ's performance goals to better address planned activity in each portfolio, and we are creating outcome goals for our portfolios to meet the health care challenges confronting us in this first decade of the 21st Century. Our current and future efforts include the development of a software application that will map each AHRQ-funded activity to the portfolio structure.

An overview of AHRQ's program performance appears on pages 101-102.

	AHRQ Strategic Goal Areas			
	Safety/Quality – Improve health care safety and quality for Americans through evidence based research and translation.	**Efficiency –** Develop strategies to improve access, foster appropriate use, and reduce unnecessary expenditures.	**Effectiveness –** Translate, disseminate, and implement research findings that improve health care outcomes.	**Organizational Excellence –** Develop efficient and responsive business processes.
AHRQ Portfolios of Work				
Bioterrorism	**X**	**X**	**X**	
Data Development		**X**	**X**	
Chronic Care Management	**X**	**X**	**X**	
Socio-Economics of Health Care		**X**	**X**	
Informatics	**X**	**X**	**X**	
Long-Term Care		**X**	**X**	
Pharmaceutical Outcomes	**X**	**X**	**X**	
Prevention			**X**	
Training	**X**	**X**	**X**	
Quality/Safety of Patient Care	**X**	**X**	**X**	
Organizational Support				**X**

Program Performance Overview

Performance at a Glance

Performance Measure	FY 2003 Target	FY 2003 Results
Quality/Safety of Patient Care Portfolio		
Patient safety events report	Develop reporting mechanism data structure	•
Implementation of patient safety practices	Awards to six facilities or initiatives	•
Deploy hospital practices	Established Patient Safety Improvement Corps training	•
Informatics Portfolio		
Identify/recommend national message format and clinical vocabulary standards	Develop consensus on standards	•
Chronic Care Management Portfolio		
Improve the quality and safety of health care for the American public	Establish baselines for: Pediatric asthma Pneumonia Influenza	 • • •
Report on national health care trends	Publish the first National Quality Report	•
Pharmaceutical Outcomes Portfolio		
Develop a structure to fulfill authorizing legislation	Finalize charters for the steering committee and public-private partnerships	•
Data Development Portfolio		
Timeliness in availability of: Insurance Component tables MEPS use and demographic files Full year expenditure data	 Within 7 months of data collection Within 17 months of final data collection Within 18 months of end of data collection	 • • •
Use of HCUP databases, products, or tools	Two organizations will use HCUP/QIs	•
Partners contributing data to HCUP databases	Increase the number of partners required	•
Increase availability of CAHPS data and increase the number of users	Produce a CAHPS module for consumer assessments of care received in nursing home settings	•

continued

Program Performance Overview *(continued)*

Performance at a Glance

Performance Measure	FY 2003 Target	FY 2003 Results
Organizational Support Portfolio		
Strategic management of human capital	Identify gaps in agency skills/abilities	•
	Integrate competency models into organizational processes	•
	Finalize identification of technical competencies	•
	Plan for vertically/horizontally collapsing organizations	•
	Reduce organizational levels	•
Information technology and e-government	Increase IT organizational capability	•
	Improve IT security/privacy	•
	Establish IT enterprise architecture	•
Budget/performance integration	Develop/test planning system linking budget and performance	•
	Conduct PART reviews on selected agency programs	•

• = Goal Achieved

Examples of FY 2003 performance highlights by portfolio of work follow.

Bioterrorism

AHRQ conducted two 1.5 day regional bioterrorism and health system preparedness workshops focusing on AHRQ-supported bioterrorism research findings and promising practices implemented by States, localities and health systems.

Chronic Care Management

A team-oriented approach to testing for chlamydia increased the screening rate of sexually active 14- to 18-year-old female patients from 5 percent to 65 percent in a large California HMO, according to new study findings from researchers at the University of California, San Francisco, Department of Pediatrics and Kaiser Permanente of Northern California. This screening should greatly reduce the incidence of infertility, since chlamydia is a major cause of infertility.

Data Development

Four new State partners jointed HCUP in FY 2003: Minnesota, Nebraska, Rhode Island, and Vermont. They were selected based on their diversity in terms of geographic representation and the population ethnicity they bring to the project, along with the quality of their data and their ability to facilitate timely processing of data.

Socioeconomics of Health Care

An AHRQ Integrated Delivery System Research Network (IDSRN) project conducted by Marshfield Health Clinic assessed the impact of its Coumadin Clinic on health care use, including urgent care, emergency department, and inpatient care. While the estimates are still preliminary, testimony given by Marshfield Clinic representatives before the Way and Means Committee's Subcommittee on Health strongly suggest that State disease management projects like this one offer the potential for significant cost reductions by averting hospital inpatient stays and emergency department visits. Medicare, for example, would save an estimated $235,943 per 100 person years. Moreover, failure to manage patients on Coumadin appropriately is a leading cause of avoidable medical errors in older patients.

Informatics

AHRQ is funding two projects that are studying the use of hand-held computerized physician order entry (CPEO) systems with decision support capability (i.e., software that taps into database resources to assist users in making decisions on issues such as care options) in primary care clinics. The studies are evaluating the impact of these systems on reducing medical errors and improving clinical care. They are also assessing the barriers to use of these systems and the cost-effectiveness of using this technology.

Long-Term Care

AHRQ is funding centers to focus on safety issues for the elderly and especially those in residential care settings such as assisted living and nursing homes. Safety is a major concern for the elderly as well as for the staff in these facilities. The center at New York University is focusing on safety in home care, while the center at Emory University is determining how to prevent falls and pressure ulcers in nursing homes and assisted living facilities.

Pharmaceutical Outcomes

AHRQ's Duke University Center for Education and Research on Therapeutics (CERT) program found that patients with certain types of heart disease are not taking medicines that may save their lives. Aspirin is inexpensive and available over-the-counter, and it greatly reduces the risk of health attack, stroke, and related death in people with coronary artery disease (CAD). Similarly, beta-blockers, have been shown to help people with congestive heart failure (CHF). Data collected by the Duke University CERT showed that 97 percent of cardiac patients were using aspirin. This reflects, in part, the adoption of the recommendations from the AHRQ-sponsored U.S. Preventive Services Task Force. However, data collected by Duke also confirmed that 13 percent of people with CAD were not receiving adequate therapy. People with CAD who were not taking aspirin were almost twice as likely to die within 2 years as those who were taking aspirin. The news was only slightly better for people with CHF who were not taking a beta-blocker—they had 1.5 times the risk of dying compared with people who were taking the medicine. The Duke CERT is now investigating ways

to get life saving medicine to people who need it. Programs to overcome barriers and save lives can be designed once more is understood about why people are not taking these medicines.

Prevention

In FY 2003, AHRQ's U.S. Preventive Services Task Force reviewed the evidence of effectiveness and developed recommendations for clinical preventive services covering screening for cervical cancer, prostate cancer, dementia, diabetes, gestational diabetes, and osteoporosis, as well as counseling for tobacco use, prevention of cancer and cardiovascular disease, and breastfeeding.

Training

Virtually all of the students supported through AHRQ training programs begun in 1986 (94 to 98 percent of postdoctoral students who have completed training) are gainfully employed in health services research or administration. Three-quarters of all students graduating from AHRQ-sponsored training programs publish in peer-reviewed journals, and up to 80 percent are first authors on their publications. The remaining trainees are actively engaged in the conduct of applied research or its administration and are working in government, private industry, research foundations, and the health care delivery system. Key recent publications produced by former students in journals such as *JAMA (Journal of the American Medical Association)* and the *New England Journal of Medicine* have been nationally acclaimed. For example, one published research project found no difference in neonatal outcomes or HMO expenditures between early discharge programs and State-mandated programs preventing early discharge of newborns.

Quality/Safety of Patient Care

Medicare patients treated in the outpatient setting may suffer as many as 1.9 million drug-related injuries a year because of medical errors or adverse drug reactions not caused by errors, according to medical researchers sponsored by AHRQ and the National Institute on Aging. About 180,000 of these injuries are life-threatening or fatal, and more than half are preventable, say the researchers, who based the estimates on a study of over 30,000 Medicare enrollees followed during 1999-2000.

Part 2. Financial Management

AHRQ'S Financial Performance, FY 2003

Overview of Financial Performance

AHRQ's Chief Financial Officer (CFO) is responsible for overseeing all financial management activities relating to the programs and operation of the Agency, and is accountable for ensuring that financial management legislation, such as the Chief Financial Officers Act of 1990, the Federal Managers Financial Integrity Act (FMFIA) of 1992, and the Government Management and Reform Act (GMRA) of 1994, are implemented.

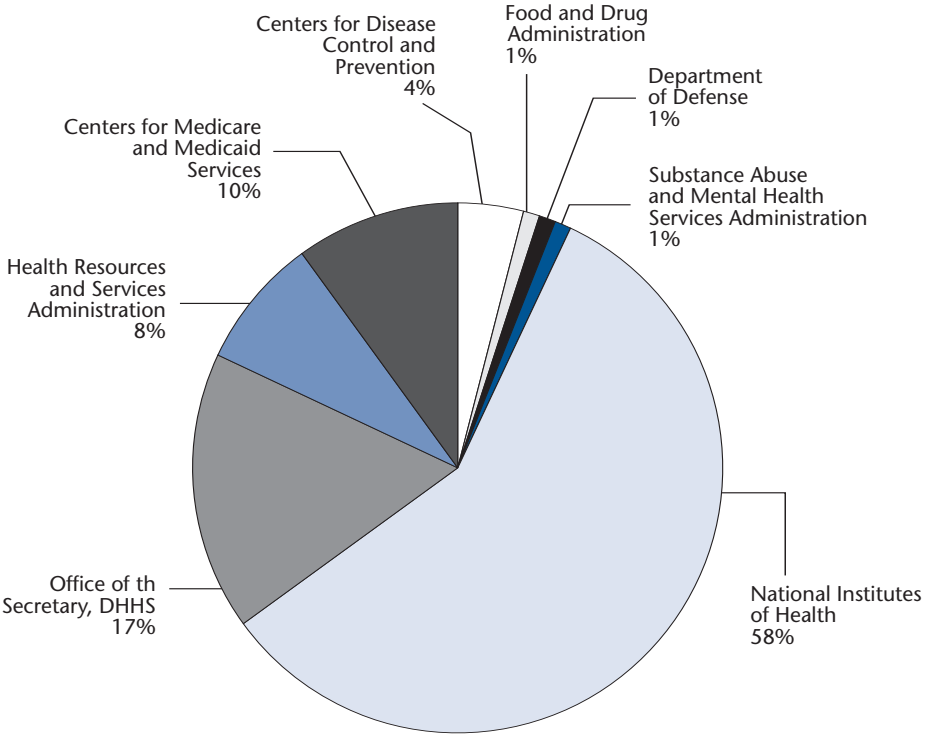
AHRQ's Office of Performance Accountability, Resources, and Technology (OPART) takes the lead in directing financial management activities including budget formulation and execution, funds control, and appropriation legislation; developing automated financial management systems; supporting the linking of the budget and planning processes; ensuring that program planning is integrated with budget formulation and performance; and serving as the Agency's focal point for Government Performance and Results Act activities. AHRQ purchases its fund accounting, financial reporting, debt management, and other related fiscal services from the Program Support Center's (PSC) Division of Financial Operations (DFO) on a fee-for-service basis. To facilitate meeting the earlier audit cycle deadlines mandated in the Reports Consolidation Act, OPART staff worked closely with PSC staff to develop AHRQ's financial statements and participate in the Department's top-down annual audit process in FY 2003.

Budgetary Resources

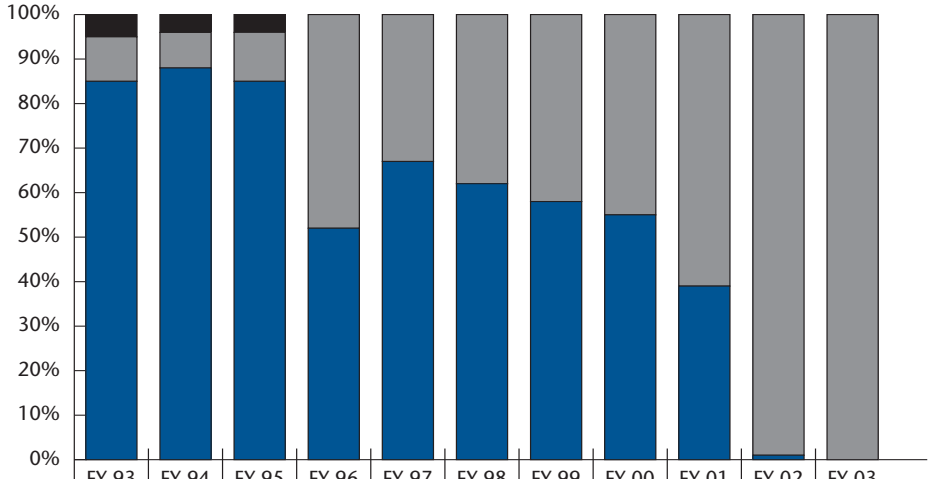
AHRQ receives its funding through an annual discretionary appropriation that includes Federal funds and miscellaneous reimbursements. The reimbursements come from other Federal agencies, usually in the form of expenditure transfers (payments made from one account to another). In FY 2003, AHRQ reimbursements totaled about $26.0 million, and the funding partner for about $15.0 million of these funds was the National Institutes of Health (NIH). AHRQ's health services research complements the biomedical research of the NIH by helping clinicians, patients, and health care institutions make choices about what treatments work best, for whom, when, and at what cost.

The Secretary of the Department of Health and Human Services is authorized to reallocate up to 2.1 percent of the funds appropriated to Department agencies in any given fiscal year. These funds are known as PHS Evaluation Funds. AHRQ's $303.7 million FY 2003 appropriation was comprised entirely of PHS Evaluations Funds. Because PHS Evaluation Funds are provided from the appropriations of other

FY 2003 AHRQ Reimbursable Partners
(Percentage of AHRQ Reimbursable Funds by Partner)



AHRQ Appropriations by Funding Source
(Dollars in Millions)



	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03
Trust Funds	$6	$6	$6	$0	$0	$0	$0	$0	$0	$0	$0
PHS Evaluation Funds	$13	$13	$18	$60	$47	$56	$71	$89	$165	$296	$304
Budget Authority	$109	$135	$135	$65	$97	$91	$100	$110	$105	$3	$0

HHS agencies, they are considered reimbursements and as such, are classified as exchange revenue on AHRQ financial statements.

AHRQ also receives modest funds from Freedom of Information Act (FOIA) fees. The FOIA provides individuals with the right to request records in the possession of the Federal government, and the fees collected allow an agency to recover part of the costs associated with responding to these requests.

Mechanisms of Support

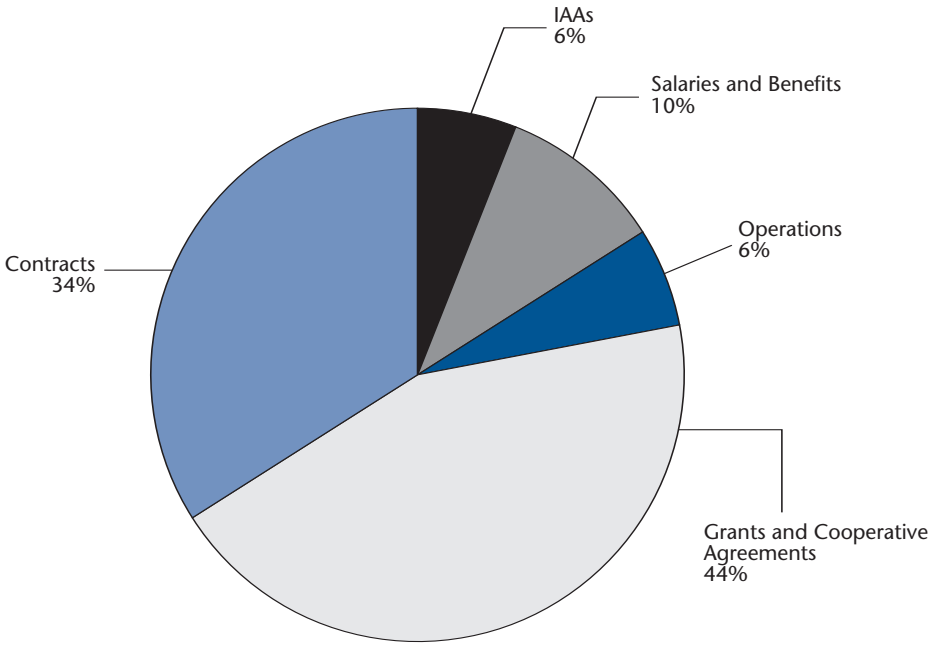
AHRQ provides financial support to public and private nonprofit entities and individuals through the award of grants, cooperative agreements, contracts, and interagency agreements (IAAs).

What determines the mechanism?	
Grants and Cooperative Agreements	Used when there is a public purpose authorized by statute that must be accomplished.
Contracts	Used when the required product or service is for the direct use or benefit of the Federal government.
Interagency Agreements	Used when a Federal agency provides to, purchases from, or exchanges goods or services with another Federal agency.

Program Announcements (PAs) are employed to invite applications for new or ongoing grants of a general nature, and Requests for Applications (RFAs) are used to invite grant applications for a targeted area. In FY 2003, 54 percent of AHRQ grants and cooperative agreements were in response to RFAs and 46 percent were in response to PAs.

AHRQ also supports small grants that facilitate the initiation of studies for preliminary short-term projects, dissertation grants undertaken as part of an academic program to earn a research doctoral degree, conference grants that complement and promote AHRQ's core research and help the Agency further its mission, and training grants that support a variety of training and career development opportunities through individual and institutional grant programs.

FY 2003 AHRQ Obligations by Mechanism



The Agency also awards minority supplements to ongoing grants that have a least 2 years of committed support remaining. These supplements are used to train and provide health services research experience to minorities or to support research on minority health issues.

AHRQ uses the contract and Interagency Agreement (IAA) mechanisms to carry out a wide variety of directed health services research related activities. AHRQ announces its contract opportunities by publishing Requests for proposals (RFPs) in the Commence Business Daily. Proposals received in response to these RFPs are peer-reviewed for scientific and technical merit by a panel of experts in accordance with the evaluation crteria specified in the RFP.

Analysis of Financial Statements

In accordance with the Chief Financial Officers Act of 1990 and subsequent laws, Federal agencies are required to prepare and have audited five principal annual financial statements.

Statement Name	Purpose
Balance Sheet	Conveys a snapshot of the an organization's financial standing at an instant in time. Provides information on financial position—what an organization owns (assets), and what an organization owes (liabilities).
Statement of Net Cost	Presents the net cost of operations—the total costs incurred by the organization less any earned revenue.
Statement of Budgetary Resources	Reports information on how an organization's budgetary resources were obtained and the status of the remaining balances.
Statement of Financing	Reflects the relationship between proprietary accounts (cost based financial transactions) and budgetary accounts (budget based transactions).
Statement of Changes in Net Position	Presents the beginning net position (i.e., unexpended appropriations and the budgetary resource available less expenses), the transactions that affect net position for the period, and the ending net position.

These financial statements provide an accountability for the federal monies used, resources consumed, and level of performance and program effectiveness achieved. AHRQ's financial statements report The Agency's financial information on an accrual basis–where transactions are recorded when they occur, regardless of when cash is received or disbursed. This method of accounting allows an accurate evaluation of operations during a given fiscal period, and takes into account future operations.

How AHRQ's PHS Evaluation Funds Are Reflected in the Financial Statements

Starting in FY 2003, AHRQ's PHS Evaluation Funds, which comprised the Agency's entire budget in FYs 2002 and 2003, were deemed to be exchange revenue as opposed to non-exchange revenue. Exchange revenue arises when a Government entity provides goods and services to the public or to another Government entity for a price.

In the past, when AHRQ's PHS Evaluation Funds were considered non-exchange revenue, these funds would be billed and collected in the same fiscal year they were appropriated. Now that AHRQ's PHS Evaluation Funds are deemed exchange revenue, these funds are billed and collected for a given fiscal year over a three year period. The amounts billed and collected are based on actual PHS Evaluation Fund expenses (disbursements and accruals) incurred by AHRQ plus estimated accruals for grants and contracts. For example, AHRQ's PHS Evaluation Funds totaled $303.7 million in

FY 2003. Based on actual usage and accruals, $84.4 million—28 percent of the total PHS Evaluation Funds made available to AHRQ in FY 2003—was billed and collected in FY 2003. The remaining $219.3 million will be billed over the next 2 fiscal years as actual expenses are incurred.

The accounting treatment and presentation for exchange versus non-exchange revenue differs greatly. Consequently, the amounts shown on AHRQ's FY 2003 financial statements reflect a significant change (decreases in most cases) from the amounts reported on AHRQ's FY 2002 financial statements. These reductions are due to the change in the billing and collecting process—AHRQ is collecting its PHS Evaluation Funds over a three-year period instead of in the same fiscal year the funds were appropriated. Accordingly, AHRQ's assets, collections and financing sources as shown on our financial statements are less than in prior fiscal years.

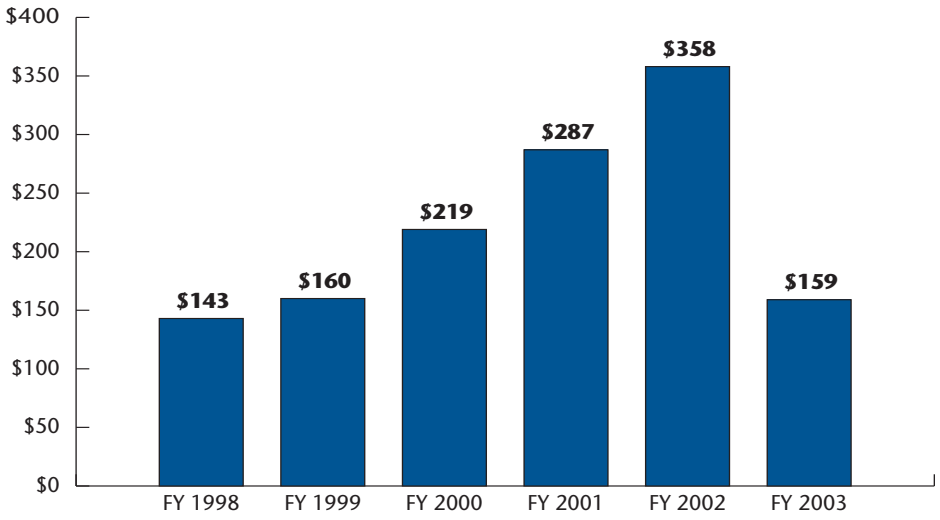
Balance Sheet

The major components of the balance sheet are assets, liabilities, and net position.

Assets

Assets represent tangible or intangible items owned that have future economic benefits, and with some exceptions, are initially recorded when received regardless of when payment is made or the asset is consumed. AHRQ's FY 2003 assets totaled $158.7, a decrease of $198.9 million from the FY 2002 amount of $357.6 million. The decrease, realized in the fund balance with Treasury, displays the impact of treating AHRQ's PHS Evaluation Funds as exchange revenue as opposed to non-exchange revenue. Fund balances represent undisbursed cash balances from appropriations-dollars maintained at the Treasury Department to pay current liabilities, accounts

Fund Balance with Treasury
(Dollars in Millions)

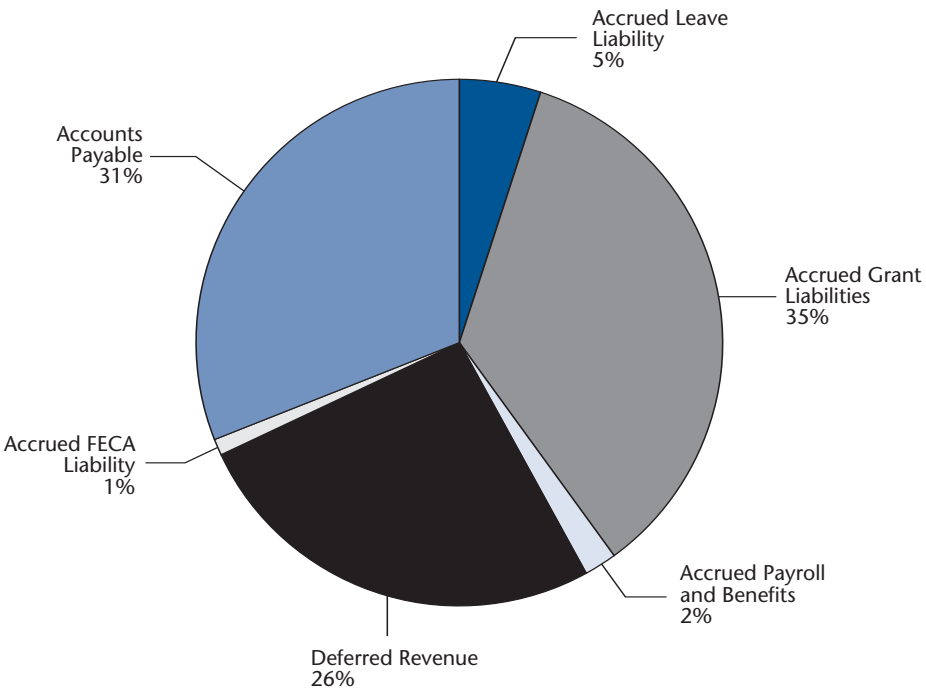


payable, and undelivered orders. AHRQ's fund balance with Treasury comprised about 97 percent of the Agency's total assets. AHRQ does not maintain any cash balances outside of the U.S. Treasury and does not have any revolving or trust funds. The remaining 3 percent of AHRQ's assets were made up of accounts receivable–funds owed to ARHQ by other Federal agencies under reimbursable agreements, funds owned to AHRQ by the public, or purchases of equipment less accumulated depreciation.

Liabilities

Liabilities represent funded and unfunded activities that require future budgetary resources. In FY 2003, AHRQ's liabilities totaled $43.0 million, an increase of $17.2 million over FY 2002. The largest liability component was accrued grant liability at $14.7 million, followed by accounts payable at $13.3 million. Accrued grant liabilities represent the difference between grant advances paid through the Payment Management System (PMS) and estimated grant accruals for expenses incurred but not yet reported by the grantees. Accounts payable reflect funds owed primarily for contracts and other services.

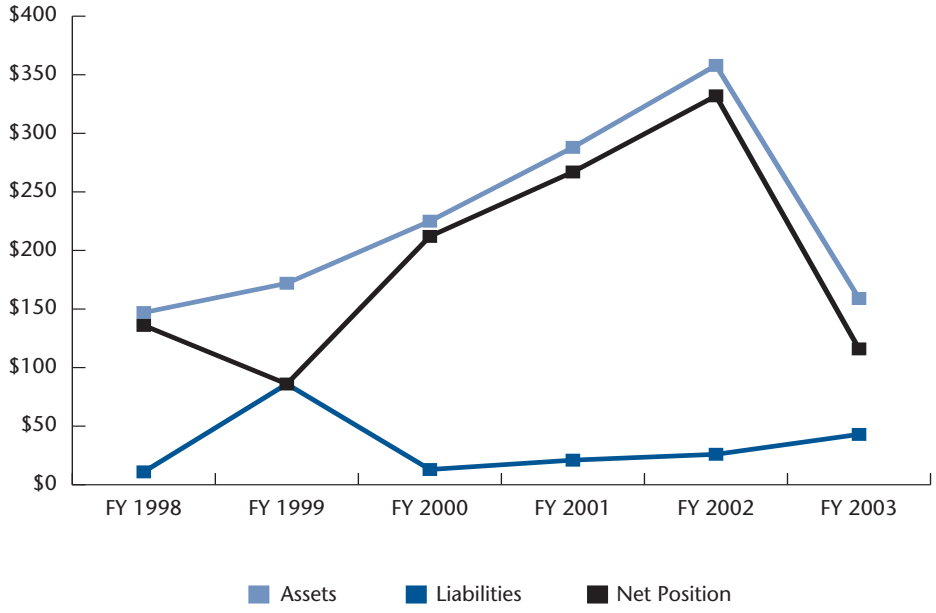
FY 2003 Liabilities by Type



Net Position

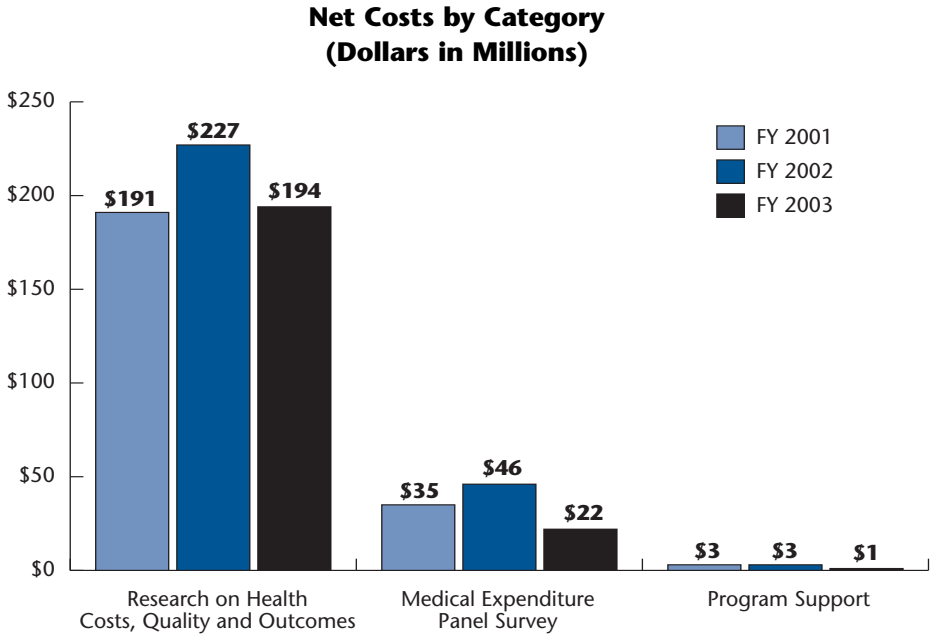
AHRQ's net position, which reflects the difference between assets and liabilities and signifies the Agency's financial condition, totaled $115.8 million, a decrease of $216.0 million from FY 2002. Net position is broken into two categories: unexpended appropriations—the amount of authority granted by Congress that has been obligated but not expended ($9.9 million)—and cumulative results of operations—the net results of operations since inception plus the cumulative amount of prior period adjustments ($105.9 million). The downward change in net position between FY 2002 and FY 2003 was driven primarily by the decreased fund balance with Treasury—a byproduct of treating AHRQ's PHS Evaluation Funds as exchange revenue as opposed to non-exchange revenue. As shown below, AHRQ's net position parallels assets, while liabilities remain relatively constant during the past six years.

Financial Condition for 6-Year Period
(Dollars in Millions)



Consolidated Statement of Net Cost

The Consolidated Statement of Net Cost displays the Agency's total costs less all revenues attributed by program. Net costs recognize costs when incurred, regardless of the year the money was appropriated. The line items on this statement reflect AHRQ's budget activities (major programs), thus making it possible to relate program costs to GPRA performance measures and other programs. AHRQ's FY 2003 net cost of operations totaled $216.8 million: $320.0 million in gross costs less $103.2 million in earned revenues. The Agency's Research on Health Costs, Quality, and Outcomes program comprised about 90 percent of the total. The FY 2003 net cost amount of $216.8 million reflects a decrease of $58.9 million from the FY 2002 net cost amount



of $275.7 million. This drop represents the fact that AHRQ's PHS Evaluation Funds were treated as exchange revenue in FY 2003 as opposed to non-exchange revenue as was the case in prior fiscal years.

Consolidated Statement of Changes in Net Position

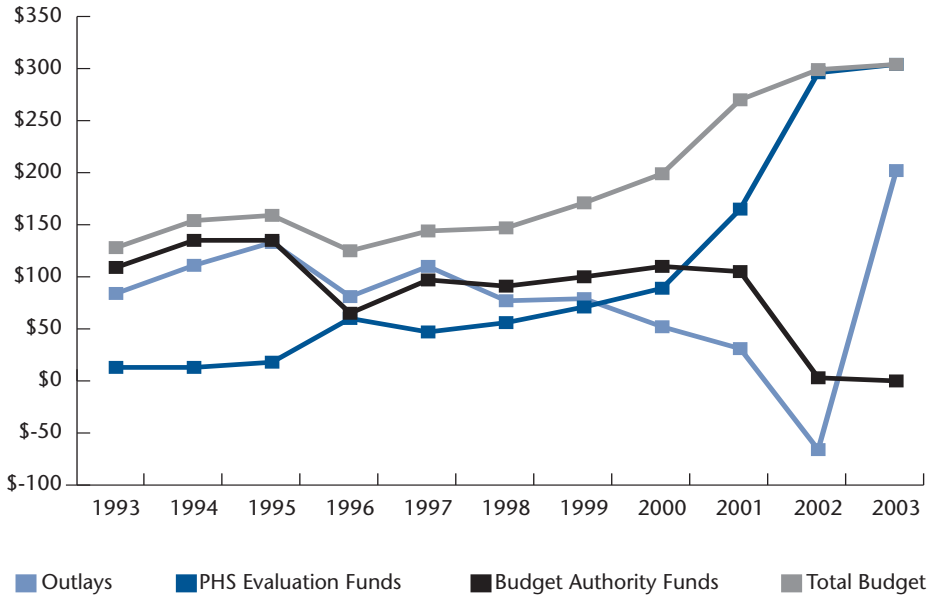
The Consolidated Statement of Changes in Net Position reports all financing sources available to AHRQ. This statement takes account of amounts accumulated over the years, less expenses and losses, including imputed financing costs paid for by others. AHRQ ended FY 2003 with a consolidated net position total of $105.9 million: $322.7 million in budgetary resources available offset by $216.8 million in net cost of operations. The FY 2003 net position of $105.9 million is $190.6 million less than AHRQ's FY 2002 net position of $296.5 million. Again, this decrease is due to considering AHRQ's PHS Evaluation Funds as exchange revenue as opposed to non-exchange revenue in FY 2003.

Statement of Budgetary Resources

The Statement of Budgetary Resources focuses on budgetary resources available to AHRQ (appropriated and reimbursable funds), the status of those resources (obligated or unobligated), and the relationship between the budgetary resources and outlays (collections and disbursements). AHRQ's FY 2003 budgetary resources totaled $355.1 million, with most of the resources coming from spending authority from offsetting collections ($298.0 million), which includes PHS Evaluation Funds and reimbursable funds received from other organizations. This statement shows that about 93 percent ($329.7 million) of the resources available to the Agency in FY 2003 were obligated.

AHRQ's FY 2003 net outlays totaled $202.1 million: $312.2 million in disbursements less $110.1 million in collections. Because PHS Evaluation Funds are considered reimbursable funds, they are treated as collections and as such offset disbursements. As illustrated below, the proportion of PHS Evaluation Funds to AHRQ's total budget has steadily increased, which has resulted in a progressive decrease of AHRQ's net outlays and a negative outlay in FY 2002. The increase in AHRQ's FY 2003 outlay amount is the result of collecting PHS Evaluation Funds over a three-year period instead of in the same fiscal year the funds were appropriated.

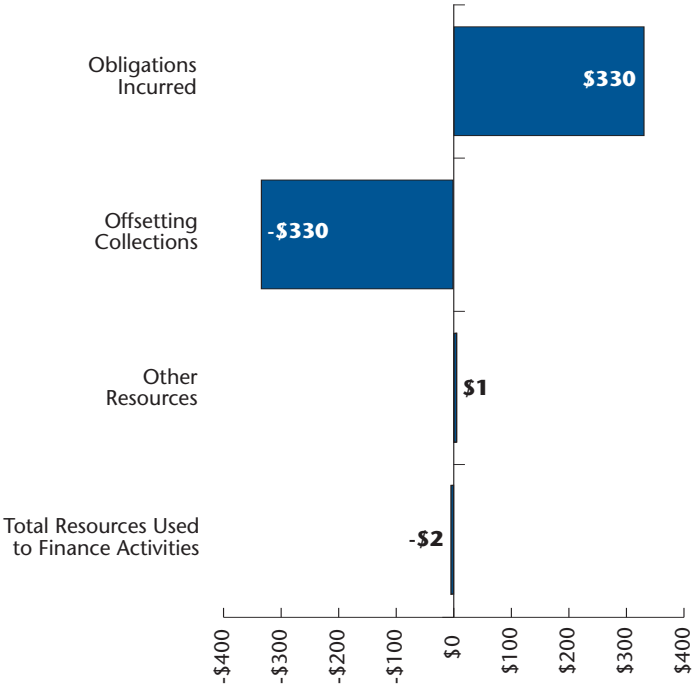
Net Outlays
(Dollars in Millions)



Combined Statement of Financing

The Combined Statement of Financing links proprietary and budgetary accounting information and reconciles obligations incurred with the net cost of operations. While the budgetary accounting system tracks resources and the status of those resources, the financial accounting system facilitates the translation of budgetary resources into financial statements on an accrual basis. Financial data based on accrued costs are essential to measuring performance and determining total financial resources needed to achieve a particular output or outcome. For FY 2003, the resources used to finance AHRQ activities totaled -$2.0 million, which represents obligations incurred and any other resources used to finance activities ($331.4 million), less spending from offsetting collections ($333.4 million). AHRQ's offsetting collections principally consist of PHS Evaluation Funds.

FY 2003 Resources Used to Finance Activities



Note: The financial statements have been prepared by the Division of Financial Operations, Program Support Center (PSC), to report the financial position and results of operations of AHRQ, pursuant to the requirements of 31 U.S.C. 3515(b).

While the statements have been prepared from the books and records of AHRQ in accordance with generally accepted accounting principles and the formats prescribed by OMB, these statements are in addition to the financial reports used to montior and control budgetary resources, which are prepared from the same books and records.

The statements should be read with the realization that they are for a component of the U.S. Government, a sovereign entity. One implication of this is that liabilities cannot be liquidated without legislation that provides the resources to do so.

Other Performance Issues

Federal Managers' Financial Integrity Act (FMFIA)

The FMFIA Act of 1982 requires that Federal agencies establish processes to develop and implement appropriate, cost-effective management controls; assess the adequacy of management controls within programs and operations; identify needed improvements; take corresponding corrective action; and submit a summary report at the end of the year. Management controls are defined as the organization, policies, and procedures used to reasonably ensure that:

1. Programs achieve their intended results.
2. Resources are used consistent with agency mission.
3. Programs and resources are protected from waste, fraud, and mismanagement.
4. Laws and regulations are followed.
5. Reliable and timely information is obtained, maintained, reported, and used for decisionmaking.

In accordance with the Act, AHRQ has implemented a streamlined Management Accountability and Control Program (MACP) that uses periodic reviews, audits, and studies to met the aforementioned management control goals. This program integrates efforts to meet the requirements of FMFIA with other Agency efforts to improve effectiveness and accountability.

A representative sample of MACP activities undertaken in FY 2003 are outlined below. Based upon an evaluation of these activities, the Agency did not identify any high-risk areas, critical weaknesses, or non-comformances in FY 2003. In addition, AHRQ does not have any financial systems as defined by FMFIA.

FY 2003 FMFIA activities

- Performed periodic audits of travel documentation processed through the Travel Management System to ensure that travel expenditures conform to Department and Federal travel regulations.
- Performed periodic audits of government IMPAC credit card holders, focusing on the adequacy of documentation and compliance with established procedures and regulations governing credit card usage.
- Conducted a semiannual review of FTE allocation and utilization. The Agency has a uniform procedure for requesting, reviewing, and making FTE allocation decisions. The procedure, as documented, requires managers to specify the organizational need for the position, to identify the specific skill and content gaps to be filled, and to describe the position's relationship to objectives in the Agency's strategic plan.

continued

FY 2003 FMFIA activities *(continued)*

- Adopted the Information Technology Security Policy Manual that contains necessary policies for management, operational, and technical areas relating to IT security.
- Completed an analysis of certain financial management practices within the Agency in association with Clifton Gunderson, through an OIG contract with this firm. The final report identified efficiencies and presented options and recommendations for operational improvements, as well as mapping budget execution processes including Interagency Agreements (IAAs), contracts, other types of procurement, and grants processes. Office of Performance Accountability, Resources, and Technology (OPART) staff are currently developing an action plan to address the financial management process issues. It is likely that any improvements in efficiency or changes to procedures that are identified would be pilot tested in FY 2004 and FY 2005.
- Continued to work towards efficiencies in the areas of administrative consolidation, strategic workforce planning, and organizational delayering. The new Agency structure reduces the number of organizational components from 10 to eight and has created a flattened organizational structure, which will allow AHRQ to achieve the 1:15 supervisor/employee ratio encouraged by the Department.
- Entered into a contract agreement with the Center for Organizational Excellence (COE) to assist in the development of performance-based contracts for the Agency's Director and 14 senior managers. Additionally, COE will provide training to other managers in order to replicate the process throughout the Agency. The desired outcome is a sustainable performance management process that serves AHRQ in strategically prioritizing and focusing its operational activities to achieve the Agency mission and relevant Department level goals.

The Agency remains committed to developing more efficient and effective ways to perform its mission while maintaining and protecting the integrity of the resources that have been entrusted to us. AHRQ has and will continue to use this activity as an opportunity to ensure that its financial and internal management systems and controls adequately support the accomplishments of the Agency's mission.

President's Management Agenda

In August 2001, the President launched a Management Reform Agenda that focuses on improving the management and performance of Federal government through the following five management initiatives:

- Strategic Management of Human Capital
- Competitive Sourcing
- Improved Financial Performance
- Expanded Electronic Government
- Budget and Performance Integration

AHRQ continued as well as initiated many activities in FY 2003 to address the five President's Management Agenda (PMA) initiatives, and plans to continue and expand upon these efforts in the coming years. A brief discussion of the PMA activities undertaken in FY 2003 follows.

Strategic Management of Human Capital

AHRQ's human capital initiative focuses on identifying gaps in workload and workforce to help build the workforce of the future, restructuring the existing workforce to achieve efficiencies, and placing grater emphasis on performance and accountability.

- Strategic Workforce Planning. Like several other OPDIVs, AHRQ is facing an aging workforce. Forty-eight percent of Agency staff are at least 50 years of age with approximately 12.2 percent of employees currently eligible for optional retirement, and 22.6 percent eligible for early retirement. In the next 5 years, approximately 32 percent of non-supervisors and 44 percent of managers will be eligible for optional retirement. The Agency has historically filled vacated positions with "seasoned" staff at the higher grade levels. Though this fills an immediate need, AHRQ has a limited number of entry-level professionals who are able to fill the void left by retirement-eligible staff. In order to ensure continuity and continued growth in Agency programmatic areas, measures must be initiated immediately to cultivate and nurture new talent. That said, AHRQ has been engaged in strategic workforce planning to ensure highly educated, adaptable staff are recruited to replace current employees lost through attrition. Progress to date includes:
  - Focusing efforts on recruiting professional, mission-critical staff to create a more balanced and efficient organization to support and conduct health services research and support flagship research programs.
  - Hiring two Emerging Leaders from the 2003 class. One individual was hired under the public health path to support Agency efforts in the area of bioterrorism, and the other was hired from the information technology path and works with leading AHRQ researchers in the field of clinical informatics. The Agency plans to hire an additional Emerging Leader in FY 2004.

- Expanding the number of applicants selected to participate in the AHRQ summer intern program. This is an opportunity for the Agency to infuse new talent into programs and activities.
- Working with the HHS to develop an Agency brochure that emphasizes the "One Department" philosophy and also articulates AHRQ's contributions to health services research. This will be used at national meetings, job fairs, college/university recruitments, and other venues.
- Implementing the use of "Quick Hire" for a majority of the Agency's recruitments to streamline the process and reduce the amount of time it takes to fill critical vacancies.

* Workforce Restructuring/Delayering. Over the past year, AHRQ has undergone a number of changes. With the appointment of Dr. Clancy as Director, the Agency has expanded its outreach beyond conducting, supporting, and disseminating research findings and has increased its role to help the health care system translate research into improved practice and policy. AHRQ's revised mission emphasizes working with public and private-sector partners to translate research supported and conducted by the Agency into practical knowledge and meaningful information that can be used to improve health care for all Americans.

  In April, 2003, Dr. Clancy, Director, AHRQ, began a series of dialogues with senior management at the Department to discuss her vision for the Agency's future and the accompanying organizational changes necessary to create a leaner, more efficient organization. Upon the Secretary's approval, the Agency formally announced the organizational changes in the July 25, 2003, *Federal Register*. The new AHRQ structure reduced the number of organizational components from 10 to 8, and eliminated subcomponents within the Office of Performance Accountability, Resources, and Technology (formerly known as the Office of Management), as well as the Division of Research, Policy, Coordination and Analysis within the Office of Extramural Research, Education, and Priority Populations (formerly known as the Office of Research Review, Education, and Policy).

  These organizational modifications allow for Office synergy in the areas of performance, budgeting, and accountability; review, education and priority populations; as well as knowledge transfer and communications. The elimination of one research component focuses the remaining Centers on improving information for policymakers and legislators on health care access, economic trends and systems financing; devising strategies that improve the efficiency of the health care system; improving the effectiveness and outcomes of care through the use of evidence based clinical information by patients and providers; improving the quality and safety of health care; and increasing consumer and patient use of health care information, as well as a strategic focus on primary care and rural health.

AHRQ's recent reorganization has allowed the Agency to reduce, phase out, and streamline program activities that no longer are "priority" areas of study and do not require vast resources (e.g., a dedicated budget as well as human capital) in order to function as a free-standing Office or Center in AHRQ. Rather, Agency management has realigned and restructured programs and staff in order to focus more on the core business reflected in its new mission. Additionally, AHRQ's new organizational structure reduces the overall size of the organization (both horizontally and vertically), and maintains a "flattened" structure with no more than three decision making layers, which allows the Agency to become more "citizen centered" in its approach to how business is conducted.

- Administrative Consolidation. In order to support Departmental administrative consolidation efforts, AHRQ transferred one position to the Program Support Center to support the Small OPDIV IT consolidation efforts. The Agency is also evaluating current administrative practices and protocols in an effort to streamline, improve efficiency and eliminate waste and redundancy. This year, the Agency has been successful in eliminating six administrative support positions.
- Accountability. AHRQ established performance contracts for the Agency Director and all senior management officials. First-line supervisors were also placed on cascading performance plans that link to their respective Office/Center Director. Now, the Agency is working to "cascade" throughout certain organizations (where feasible) with full implementation to the general workforce beginning in FY 2005.

Competitive Sourcing

Competitive Sourcing is an examination of commercial activities to determine the most cost-effective and efficient method of acquisition. Commercial activities are defined as those activities resulting in a product or service that could be obtained from the private sector. Competition results in cost savings to taxpayers while maintaining high quality service to the Government.

The President's goal is for Federal agencies to study 50 percent of its commercial workforce by FY 2006. The Office of Management and Budget (OMB) established goals for Federal agencies to study 5 percent of its commercial workforce in FY 2002 and 10 percent in FY 2003.

In May 2003, AHRQ undertook six streamlined cost comparison studies on the following commercial activities to meet OMB's FY 2003 goals:

- Accountant/Contracting Support Services
- Information Technology Services
- Office Services Support
- Program Assistance
- Program Analysis Services
- Visual Information Services

The FY 2003 studies were completed in September 2003. The Government won the competition for all six studies, and all of the studies resulted in the functions being retained in-house.

Improved Financial Management

Federal managers continue to experience growing pressures from their executive leaders, Congress, their customers, and the public to achieve more under the programs they manage. To that end, this initiative asks agencies to evaluate their financial management capabilities to ascertain if sufficient internal controls are in place to safeguard against the misuse of federal funds, and to ensure that these controls provide the accountability required to make certain funds are spent as intended. The goals of this initiative are to:

- Meet the accelerated November 15th deadline for audited financial statements.
- Receive a clean opinion on audited financial statements.
- Resolve auditor-identified and Integrity Act material weaknesses in internal controls.
- Ensure funds are disbursed in strict compliance with appropriations law.
- Integrate financial systems and provide timely and reliable financial information.
- Use financial and performance information routinely to make informed budget decisions.
- Substantially reduce erroneous payments

Selected highlights of FY 2003 AHRQ activities follow.

- Unified Financial Management System (UFMS). The Agency continued to support the development and implementation of the Department's Unified Financial Management System. AHRQ has members on the Steering Committee and the Planning and Development Committee, and participates in meetings for the PSC-serviced agencies. AHRQ staff participated in UFMS workshops including those addressing funds management, reporting requirements, and budget execution, as well as in the UFMS Fit/Gap Workshops, which focused on reconciling the gaps where the software did not meet the technical and functional requirements.
- Improper Payment Risk Assessment Plan. In accordance with the Improper Payment Act (IPIA) of 2002, AHRQ developed a risk assessment plan that looked at whether Agency grant, contract, and simplified acquisition activities are susceptible to significant erroneous payments. AHRQ's preliminary finding was that our programs were not susceptible to significant erroneous payments because of the many safeguards and controls in place. In FY 2004, AHRQ plans to gather evidence of Agency erroneous payments encountered to pinpoint their exact nature to determine whether the errors are administrative in nature-user errors and to a lesser extent, system/process limitations-as opposed to the more consequential

causes such as lack of internal controls, oversight, and/or monitoring; inadequate eligibility controls; and fraud, waste and abuse.

- Accelerated Financial Reporting Requirements. To meet the accelerated submission date for accountability reports and audited financial statements, AHRQ staff worked closely with the Department to identify, develop, and implement practical solutions. AHRQ made it a priority to provide sound and timely financial information required by the Department to meet the accelerated schedules, and to make our financial data more easily accessible to the Department and our program managers.

Expanded Electronic Government

AHRQ's major activities regarding the integration and implementation of the PMA through e-Government technologies within the Agency include: 1) Government Paperwork Elimination Act (GPEA), 2) Security, and 3) Full participation in HHS PMA activities that intersect with the mission of the Agency, Patient Safety, and Consolidated Health Informatics initiatives that cross Government Agency boundaries.

In line with these program initiatives, AHRQ's Information Technology (IT) services team explicitly defined its mission and vision, buttressed by three strategic goals:

- Provide quality customer service and operations support to AHRQ's centers, offices and outside stakeholders.
- Ensure AHRQ's IT initiatives are aligned with departmental and agency enterprise architectures.
- Continue development of IT systems that link AHRQ's IT initiatives directly to the mission and performance goals of the Agency by developing an electronic planning system. The planning system will allow selection and tracking of business investments (grants, contracts and intramural research) that link directly to the Agency mission and GPRA goals and budget performance.

AHRQ's FY 2003 accomplishments toward meeting the requirements set forth in the above laws follow.

IT Security Related Accomplishments

- Conducted an Asset Based Security Program Assessment that identified all of AHRQ's assets and prioritized their importance against the mission of the Agency. The quantifiable and repeatable approach focused on the business function of AHRQ and provided a documented approach on how AHRQ planned on mitigating weaknesses based on the prioritized list of assets. With the most critical (based on AHRQ's mission) assets identified, risk assessments are being conducted on those assets, and identified weaknesses will be incorporated into the Agency's Plan of Action and Milestones (POA&M).

- Determined the need to develop a set of Baseline Security Requirements (BLSR) that can be applied to all aspects of the Agency's Security Program—an outcome of the Asset Based Security Program Assessment. From developing applications, outlining requirements in the contracting process, and conducting Risk Assessments, the BLSRs provide a complete list of requirements that assets can be assessed against, and from there a prioritized corrective action plan can be developed from identified deficiencies.
- Started implementing this corrective action plan, addressing the weaknesses identified, and laying out a tactical implementation plan for activities that will take greater planning to accomplish. Chief among these is the implementation of Microsoft's Active Directory, which will serve as a foundation technology for integrating other security enhancements. Accomplishment of this project was put on hold to avoid disrupting the transfer of IT infrastructure support to the newly formed HHS IT Service Center.
- Adopted the Information Technology Security Policy Manual that contains necessary policies for management, operational, and technical areas relating to IT security—the cornerstone of the AHRQ Security Program. Policies were developed, refined, approved, and implemented in FY 2003 and Agency personnel were informed of these policies through the launch of the updated Security Awareness Training. The Agency accomplished training for 100 percent of its users during August of 2003, and has plans to accomplish the same level of training for FY 2004.
- Developed Grants-OnLine-Database (GOLD). This application includes an extensive search mechanism for the quick and efficient retrieval of information by end users along with the ability to print and save abstracts. The advent of GOLD established a vehicle that will significantly reduce the volume of hard copy requests for AHRQ grant abstracts and alleviate the time associated with preparing and distributing hard copy responses to requesters.
- Initiated the Publications Clearinghouse project. This initiative, which was started in FY 2003 and will be completed in FY 2004, is focused on the reengineering of legacy Publications Clearinghouse applications as well as establishing new solutions to support the AHRQ publication dissemination process. This project actually crosses all elements of AHRQ work and will lead to a an Agency-wide system that uses the same data repository to track and report publications related to AHRQ funded grants, contracts and other collaborative work, regardless of whether these documents are available for public dissemination or published in trade journals. This project directly relates to the Government Paperwork Elimination Act.

PMA e-Government Activities

AHRQ is quite active in several PMA programs: the Consolidated Health Informatics and the Government wide e-Grants programs. AHRQ has several staff members serving on the Consolidated Health Informatics (CHI) program team, and is the lead agency on another related activity—the Patient Safety Task Force. These programs, taken together can be used to form the basis for another emerging program within HHS that may rise to the level of one of the PMA programs-the Public Health Architecture. Although the Public Health Architecture concepts are still in the planning stages, it is clear that the type of multi-Agency effort that AHRQ is leading with the Patient Safety network would be a model for such an effort. AHRQ personnel are serving as team members on several HHS cross-cutting projects: the HHS Enterprise Architecture Team, the HHS Public Key Infrastructure Team, the HHS Enterprise E-mail Team, and the HHS Portfolio Management Team.

Budget and Performance Integration

General program direction and budget and performance integration is accomplished through the collaboration of the Office of the Director and the offices and centers that have programmatic responsibility for portions of the Agency's research portfolios. The Agency links budget and performance management through its focus on the Annual Performance Plan.

As a result of the increased emphasis on strategic planning, the Agency has shifted from a focus on output and process measurement to a focus on outcome measures. These outcome measures are being developed to cascade down from our strategic goal areas of safety, quality, effectiveness, efficiency and organizational excellence. Portfolios of work (combinations of activities that make up the bulk of our investments) support the achievement of our highest level outcomes.

In continuing AHRQ's commitment to budget and performance integration, we recently reorganized the management structure. This new structure aligns those who are responsible for budget formulation, execution and providing services and guidance in all aspects of financial management with those who are responsible for planning, performance measurement and evaluation. These functions are now within one office.

Current and future efforts include continuing the development of a software application that maps each AHRQ funded activity to the portfolio structure. This is a work in progress and we look forward to sharing our success as we continue this journey.

Finally, AHRQ completed comprehensive program assessments on four key programs within the Agency: The Medical Expenditure Panel Survey (MEPS); the Healthcare Cost and Utilization Project (HCUP); the Consumer Assessment of Health Plans Study (CAHPS®); and, the grant component of the Agency's Translation of Research into

Practice (TRIP) program. For the FY 2003 budget, the Agency conducted a review of patient safety. These reviews provide the basis for the Agency to move forward in more closely linking high-quality outcomes with associated costs of programs. Over the next few years, the Agency will focus on fully integrating financial management of these programs with their performance.

Financial Statements

U.S. Department of Health and Human Services
Agency for Healthcare Research and Quality
CONSOLIDATED BALANCE SHEET
As of September 30, 2003 and 2002
(in thousands)

ASSETS	2003	2002
Intragovernmental		
Fund Balance with Treasury (Note 2)	$153,866	$356,423
Accounts Receivable, Net (Note 3)	4,545	800
Total Intragovernmental	158,411	357,223
Accounts Receivable, Net (Note 3)	–	
Advances to Grantees (Note 5)		
Advances and Prepayments	–	
Property and Equipment, Net (Note 4)	325	375
TOTAL ASSETS	$158,736	$357,598
LIABILITIES		
Intragovernmental		
Accounts Payable (Note 6)	$2,544	$2,467
Deferred Revenue (Note 6)	11,320	
Accrued Payroll and Benefits (Note 6)	396	359
Total Intragovernmental	14,260	2,826
Accounts Payable (Note 6)	10,738	12,463
Accrued Payroll and Benefits (Note 6)	481	1,435
Accrued Grant Liability (Note 5)	14,708	7,224
Actuarial FECA Liability (Note 6)	569	516
Accrued Leave Liability (Note 6)	2,208	2,010
Liability for Deposit Funds (Note 6)	–	(679)
TOTAL LIABILITIES	42,964	25,795
NET POSITION		
Unexpended Appropriations	9,867	35,314
Cumulative Results of Operations	105,905	296,489
TOTAL NET POSITION	115,772	331,803
TOTAL LIABILITIES AND NET POSITION	$158,736	$357,598

The accompanying notes are an integral part of these statements

Agency for Healthcare Research and Quality
CONSOLIDATED STATEMENT OF NET COST
For Fiscal years Ended September 30, 2003 and 2002
(in thousands)

	2003	2002
CURRENT PROGRAMS		
Research on Health Costs, Quality and Outcomes	$194,463	$227,432
Medical Expenditure Panel Survey	22,245	45,698
Program Support	42	2,545
Totals - Current Programs	$216,750	$275,675
NET COST OF OPERATIONS	$216,750	$275,675

The accompanying notes are an integral part of these statements.

U.S. Department of Health and Human Services
Agency for Healthcare Research and Quality
CONSOLIDATED STATEMENT OF CHANGES IN NET POSITION
For Fiscal Years Ended September 30, 2003 and 2002
(in thousands)

	2003 Cumulative Results of Operations	2003 Unexpended Appropriations	2002 Cumulative Results of Operations	2002 Unexpended Appropriations
1. Beginning Balances	$296,489	$35,314	$177,137	$89,680
2. Prior period adjustments				–
3. Beginning balances, as adjusted	296,489	35,314	177,137	89,680
Budgetary Financing Sources:				
4. Appropriations received				2,600
5. Appropriations transferred-in/out (+/-)				–
6. Other adjustments	14	(1,164)	19,952	(19,057)
7. Appropriations used	24,283	(24,283)	37,909	(37,909)
8. Nonexchange revenue	–		336,015	
9. Donations and forfeitures of cash and cash equivalents.	102		–	
10. Transfers-in/out without reimbursement			–	
11 Other budgetary financing sources			–	
Other Financing Sources:				
12. Donations and forfeitures of property			–	
13. Transfers in/out without reimbursements			–	
14. Imputed financing from costs absorbed by others	1,767		1,167	
15. Other			(16)	
16. Total Financing Sources	26,166	(25,447)	395,027	(54,366)
17. Net Cost of Operations	216,750		275,675	
18. Ending Balances	$105,905	$9,867	$296,489	$35,314

The accompanying notes are an integral part of these statements.

U.S. Department of Health and Human Services
Agency for Healthcare Research and Quality
STATEMENT OF BUDGETARY RESOURCES
For the Fiscal Years Ended September 30, 2003 and 2002
(in thousands)

Budgetary Resources:	2003	2002
1 Budget Authority		
Appropriations Received		$2,600
Net Transfers		
Other	100	1,767
2 Unobligated Balances - Beginning of Period		
Beginning of Period	22,737	5,196
Net Transfers		
3 Spending Authority from Offsetting Collections Earned		
Collected	298,011	223,024
Receivables from Federal Sources	4,545	–
Change in Unfilled Customer Orders		
Advance Received	(188,249)	113,728
Without Advance from Federal Sources	218,149	(5,022)
Anticipated for Rest of Year		–
Subtotal	332,456	331,730
4 Recoveries of Prior Year Obligations	939	1,884
5 Temporarily Not Available Pursuant to Public Law	–	–
6 Permanently Not Available	(1,156)	(15)
7 Total Budgetary Resources	$355,076	$343,162
Status of Budgetary Resources:		
8 Obligations Incurred		
Direct	$(2,569)	$4,467
Reimbursable	332,239	315,958
Subtotal	329,670	320,425
9 Unobligated Balances - Available		
Apportioned	22,519	8,567
Exempt from Apportionment	100	
10 Unobligated Balances - Not Available	2,787	14,170
11 Total Status of Budgetary Resources	$355,076	$343,162

continued

STATEMENT OF BUDGETARY RESOURCES *(continued)*

Relationship of Obligations to Outlays:	2003	2002
12 Obligated Balance, Net-Beginning of Period	341,939	289,128
13 Obligated Balance Transferred, Net	–	–
14 Obligated Balance, Net - End of Period		
Accounts Receivable (-)	(4,545)	–
Unfilled Customer Orders from Federal Sources (-)	(218,949)	(800)
Undelivered Orders	345,463	326,018
Accounts Payable	14,159	16,720
15 Outlays		
Disbursements	312,208	270,752
Collections (-)	(110,122)	(336,752)
Sub-Total	202,086	(66,000)
Less: Offsetting Receipts		
Net Outlays	$202,086	$(66,000)

The accompanying notes are an integral part of these statements.

U.S. Department of Health and Human Services
Agency for Healthcare Research and Quality
COMBINED STATEMENT OF FINANCING
For the Fiscal Years Ended September 30, 2003 and 2002
(in thousands)

Resources Used to Finance Activities:	2003	2002
Budgetary Resources Obligated		
1 Obligations incurred	$329,670	$320,425
2 Less: Spending from offsetting collections and recoveries	333,395	333,614
3 Obligations net of offsetting collections and recoveries	(3,725)	(13,189)
4 Less: Offsetting receipts	–	–
5 Net obligations	(3,725)	(13,189)
Other Resources		
6 Donations and forfeitures of property	–	–
7 Transfers in/out without reimbursements	–	–
8 Imputed financing	1,767	1,167
9 Other resources	–	(16)
10 Net other resouces used to finance activities	1,767	1,151
11 Total resources used to finance activities	$(1,958)	$(12,038)
Resources Used to Finance Items Not Part of the Net Cost of Operations		
12 Change in budgetary resouces obligated for goods, services and benefits ordered but not yet provided	(23,044)	63,997
13 Resources that fund expenses recognized in prior periods		
14 Budgetary offsetting collections and receipts that do not affect net cost of operations		
14a. Credit program collections which increase liabilities for loan guarantees or allowance for subsidy		
14b. Other budgetary collections and receipts	102	(336,015)
15 Resources that finance the acquisition of assets		
16 Other resources or adjustments to net obligated resources that do not affect net cost of operations	(201,904)	–
17 Total resources used to finance items not part of the net cost of operations	(224,846)	(336,015)
18 Total resouces used to finance the net cost of operations	$222,888	$323,977

continued

COMBINED STATEMENT OF FINANCING *(continued)*

		2003	2002
	Components of the net cost of operations that will not require or generate resouces in the current period:		
	Components Requiring or Generating Resouces in Future Periods:		
19	Increase in annual leave liability		111
20	Increase in environmental and disposal liability		
21	Upward/downward reestimate of credit subsidy expense		
22	Increase in exchange revenues receivable from the public		
23	Other		
24	Total components of net cost of operations that will require or generate resources in future periods.	–	111
	Components not Requiring or Generating Resources:		
25	Depreciation and amortization	76	117
26	Revaluation of assets or liabilities		
27	Other	(6,214)	15,586
28	Total components of net cost of operations that will not require or generate resources	(6,138)	15,703
29	Total components of net cost of operations that will not require or generate resources in the current period	(6,138)	15,814
30	Net cost of operations	$216,750	$339,791

The accompanying notes are an integral part of these statements.

Notes to Financial Statements

Note 1. Significant Accounting Policies

Reporting Entity

AHRQ is an operating division (OPDIV) of the Department of Health and Human Services (HHS), which is a Cabinet agency of the Executive Branch of the United States Government. AHRQ, formerly known as the Agency for Health Care Policy and Research (AHCPR), was established in December 1989 under Public Law 101-239, Omnibus Budget Reconciliation Act of 1989, to enhance the quality, appropriateness, and effectiveness of health care services and access to these services. The Agency's mission is to promote health care quality improvement by conducting and supporting health services research that develops and presents scientific evidence regarding all aspects of health care. AHRQ is structured into the following nine major functions.

- Office of the Director
- Office of Performance Accountability, Resources, and Technology
- Office of Extramural Research, Education, and Priority Populations
- Office of Communications and Knowledge Transfer
- Center for Delivery, Organization, and Markets
- Center for Financing, Access, and Cost Trends
- Center for Outcomes and Evidence
- Center for Primary Care, Prevention, and Clinical Partnerships
- Center for Quality Improvement and Patient Safety

The Office of HHS' Chief Financial Officer (CFO) provides Department-wide accounting policy oversight. The Division of Financial Operations (DFO) of the Program Support Center (PSC) provides the accounting and fiscal services, including the preparation of the financial statements, on a fee-for-service basis. DFO is considered part of AHRQ's management.

AHRQ maintains appropriated funds and a small trust fund. The appropriated accounts may include 1-year and indefinite authority. In addition, AHRQ also uses a number of receipt, deposit, and budget-clearing accounts. The financial statements report activity for the appropriated funds listed below. Also included are the related appropriation account symbols, which represent a health research and training function. AHRQ's programs are designated by OMB as falling under the health budget function category.

Appropriations

75X1700	Agency for Healthcare Research and Quality
75 1700	Agency for Healthcare Research and Quality
75X8512	Agency for Healthcare Research and Quality Gift Fund

Basis of Accounting and Presentation

The financial statements of the Agency for Healthcare Research and Quality have been prepared to report the financial position and results of operations of HHS, pursuant to the requirements of 31 U.S.C. 351 (b), the Chief Financial Officers Act of 1990 (P.L. 101-576), as amended by the Reports Consolidation Act of 2000 (P.L. 106-531). They have been prepared from Departmental records in accordance with the form and content guidance of the Office of Management and Budget (OMB) Bulletin 01-09 and generally accepted accounting principles (GAAP) for the Federal government as prescribed by the Federal Accounting Standards Advisory Board (FASAB) and recognized by the American Institute of Certified Public Accountants (AICPA). These statements are therefore different from financial reports prepared pursuant to other OMB directives that are primarily used to monitor and control HHS' use of budgetary resources.

AHRQ uses both the accrual basis and budgetary basis of accounting to record transactions. Under the accrual method of accounting, revenues are recognized when earned, and expenses are recognized when incurred, without regard to receipt or payment of cash. The budgetary accounting principles, on the other hand, are designed to recognize the obligation of funds according to legal requirements, which in many cases is prior to the occurrence of an accrual-based transaction. The recognition of budgetary accounting transactions is essential for compliance with legal constraints and controls over the use of Federal funds. AHRQ also uses the cash basis of accounting for some programs with an accrual adjustment made by recording year-end estimates of unpaid liabilities.

Entity and Non-Entity Assets

Entity assets are assets that the reporting entity has authority to use in its operations. The authority to use funds in an entity's operations means entity management has the authority to decide how funds are used, or management is legally obligated to use funds to meet entity obligations. Non-entity assets are held by the entity but are not available to the entity.

The financial statements do not report entity and non-entity assets separately on the face of the statement. The entity /non-entity, if any, would be detailed in the notes.

Fund Balance with Treasury

AHRQ maintains its available funds with the U.S. Department of the Treasury (Treasury). "Fund Balance with Treasury" includes appropriated, revolving, and trust funds available to pay current liabilities and finance authorized purchases, as well as funds restricted until future appropriations are received. Cash receipts and disbursements are processed by Treasury, and HHS' records are reconciled with those of Treasury on a regular basis. Note 2 provides additional information.

Investments

Trust fund balances are investments (plus the accrued interest on investments) held by Treasury. Federal law requires that trust fund investments that are not necessary to meet current expenditures be invested in "interest-bearing obligations of the United States or in obligations guaranteed as to both principal and interest by the United States."

Accounts Receivable, Net

Accounts Receivable consists of amounts owed to AHRQ by other Federal agencies and by the public. Intragovernmental accounts receivable arise generally from the provision of goods and services to other Federal agencies and are considered to be fully collectible. Amounts due from the public are presented net of an allowance for loss on uncollectible accounts. The allowance for loss is established based on past collection experience and/or an analysis of the outstanding balances. Accounts receivable also includes interest due to HHS that is directly attributable to delinquent accounts receivable. Note 3 provides additional information on Accounts Receivable.

Advances to Grantees/Accrued Grant Liability

Advances to Grantees are cash outlays made by AHRQ to its grantees. An accrued grant liability occurs when the year-end grant accrual for AHRQ exceeds advances to grantees outstanding at year-end. Progress payments on work in process are not included in grants. AHRQ grants programs are classified as "Programs Subject to the Expense Accrual." For programs subject to the accrual, grantees draw funds (recorded as Advances to Grantees in HHS' accounting systems) as bills or salary payments come due. The grantees report actual disbursements quarterly, and the amounts are recorded as an expense and a reduction to the advance balance in the accounting systems. At year-end, AHRQ uses actual grant payments when these data are available. When the data are not available, HHS employs a process to estimate the year-end grant accrual based on historical spending patterns to predict unreported grantee expenditures. The year-end accrual for these non-block grants equals the estimate of fourth quarter disbursements, plus an average of 2 weeks' expenditures for expenses incurred prior to cash drawdowns. Note 5 provides additional information as Advances to Grantees/Accrued Grant Liability.

General Property, Plant and Equipment, Net

General Property, Plant and Equipment (PP&E) consists of buildings, structures, and facilities used for general operations, land acquired for general operating purposes, vehicles, and construction in progress. Other property consists of internal use software. The basis for recording purchased PP&E is full cost, which includes all costs incurred to bring the PP&E to a form and location suitable for its intended use. The cost of PP&E acquired under a capital lease is the amount recognized as a liability for the capital lease at its inception. The cost of PP&E acquired through donation is the estimated fair value when acquired. The cost of PP&E transferred from other Federal entities is the net book value of the transferring entity. All PP&E with an initial acquisition cost of $25,000 or more and an estimated useful life of 2 years or greater are capitalized.

PP&E are depreciated using the straight-line method over the estimated useful life of the asset. Land and land rights, including permanent improvements, are not depreciated. Normal maintenance and repair costs are expensed as incurred.

The capitalization threshold for internal use software costs for appropriated fund accounts is $1,000,000 or above. The capitalization threshold for internal use software for revolving funds is $500,000. Costs below the threshold levels are expensed. The software is depreciated for a period of time consistent with the estimated useful life used for planning and acquisition purposes. Note 4 provides additional information on general purpose property, plant and equipment.

Liabilities

Liabilities are recognized as amounts of probable future outflows or other sacrifices of resources as a result of past transactions or events. Since AHRQ is a component of the U.S. Government, a sovereign entity, its liabilities cannot be liquidated without legislation that provides resources to do so. Payments of all liabilities other than contracts can be abrogated by the sovereign entity.

Liabilities Covered by Budgetary Resources are those liabilities funded by available budgetary resources including: (1) new budget authority, (2) spending authority from offsetting collections, (3) recoveries of unexpired budget authority, (4) unobligated balances of budgetary resources at the beginning of the year, and (5) permanent indefinite appropriation or borrowing authority.

Liabilities Not Covered by Budgetary Resources are incurred when funding has not yet been made available through congressional appropriations or current earnings. AHRQ recognizes liabilities for employee annual leave earned but not taken and amounts billed by the Department of Labor for Federal Employees Compensation Act (FECA) disability payments. Also included in this category is the actuarial FECA liability determined by Labor but not yet billed. For HHS revolving funds, all liabilities are funded as they occur.

Liabilities Covered by Budgetary Resources and Liabilities Not Covered by Budgetary Resources are combined on the balance sheet. Note 6 provides additional information.

Accounts Payable

Accounts Payable consist of amounts due for goods and services received, progress in contract performance, interest due on accounts payable, and other miscellaneous payables. Note 6 provides additional information.

Accrued Payroll and Benefits

Annual leave is accrued as it is earned by employees and is included in personnel compensation and benefit costs. An unfunded liability is recognized for earned but unused annual leave, since from a budgetary standpoint, this annual leave will be paid from future appropriations when the leave is used by employees, rather than from the amount that had been appropriated to AHRQ as of the date of the financial statements. The amount of accrued leave is based on the current pay of the employees. Sick leave and other types of leave are expensed when used, and no future liability is recognized for these amounts. Note 6 provides additional information.

Federal Employee and Veterans' Benefits

Federal Employee and Veterans' Benefits consist of the actuarial portions of future benefits earned by Federal employees and veterans but not yet due and payable. These costs include pensions, other retirement benefits, and other post-employment benefits. These benefits are normally administered by the Office of Personnel Management (OPM) and not by the Department of Health and Human Services or any of the individual operating divisions of the Department. Therefore, AHRQ does not recognize any liability in the balance sheet for pensions, other retirement benefits, and other post-employment benefits. HHS does, however, recognize the imputed cost and imputed financing related to these benefits in the Consolidated Statement of Net Cost and the Consolidated Statement of Changes in Net Position.

Revenue and Financing Sources

The United States Constitution prescribes that no money may be expended by a Federal agency unless and until funds have been made available by congressional appropriation. Thus, the existence of all financing sources is dependent upon congressional appropriation.

Appropriations. AHRQ's operating funds are appropriated by the Congress to the Department from the general receipts of the Treasury. These funds are made available to AHRQ for a specified time period, usually 1 fiscal year, multiple fiscal years, or indefinitely, depending upon the intended use of the funds. For example, funds for general operations are generally made available for 1 fiscal year, funds for long-term projects such as major construction will be available to the Department for the

expected life of the project, and funds used to establish revolving fund operations are generally available indefinitely (i.e., no year funds). The Statement of Budgetary Resources presents information about the resources appropriated to AHRQ.

Exchange and Non-Exchange Revenue. AHRQ revenue is classified as either exchange revenue or non-exchange revenue. Exchange revenues are those that derive from transactions in which both the government and the other party receive value, including reimbursements for services performed for other Federal agencies and the public and other sales of goods and services. These revenues are presented on AHRQ's Consolidated Statement of Net Cost and reduce the cost of operations borne by the taxpayer. Non-exchange revenues result from donations to the government and from the government's sovereign right to demand payment, including taxes. Non-exchange revenues are not considered to reduce the cost of AHRQ's operations and are reported on the Consolidated Statement of Changes in Net Position.

With minor exceptions, all receipts of revenues by Federal agencies are processed through the Department of the Treasury central accounting system. Regardless of whether they derive from exchange or non-exchange transactions, all receipts that are not earmarked by congressional appropriation for immediate Departmental use are deposited in the general or special funds of the Treasury. Amounts not retained for use by the Department are reported as transfers to other government agencies on the HHS Statement of Changes in Net Position.

Imputed Financing Sources. In certain instances, operating costs of HHS are paid out of funds appropriated to other Federal agencies. For example, by law the Office of Personnel Management pays certain costs of retirement programs, and certain legal judgments against HHS or its operating divisions are paid from the Judgment Fund maintained by Treasury. When costs that are identifiable to AHRQ and directly attributable to AHRQ's operations are paid by other agencies, AHRQ recognizes these amounts as operating expenses of HHS. In, addition, AHRQ recognizes an imputed financing source on the Consolidated Statement of Changes in Net Position to indicate the funding of agency operations by other Federal agencies.

Contingencies

A contingency is an existing condition, situation, or set of circumstances involving uncertainty as to possible gain or loss to AHRQ. The uncertainty will ultimately be resolved when one or more future events occur or fail to occur. With the exception of pending, threatened, or potential litigation, a contingent liability is recognized when a past transaction or event has occurred, a future outflow or other sacrifice of resources is more than likely than not, and the related future outflow or sacrifice of resources is likely, and the related future outflow or sacrifice of resources is measurable.

Use of Estimates in Preparing Financial Statements

Preparation of financial statements in accordance with Federal accounting standards requires AHRQ to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent liabilities as of the date of the financial statements. Estimates and assumptions also affect the revenues and expenses accrued and reported in the financial statements. Actual results may differ from those estimates.

Intragovernmental Relationships and Transactions

In the course of its operations, AHRQ has relationships and financial transactions with numerous Federal agencies. The more prominent of these is the National Institutes of Health.

Note 2. Fund Balance with Treasury

AHRQ's undisbursed account balances at September 30, 2003 and 2002 are listed below by fund type. Other Funds include balances in deposit, suspense, clearing, and related non-spending accounts.

A. Fund Balance:

	2003			2002		
	Entity Assets	**Non-Entity Assets**	**Total**	**Non-Entity Assets**	**Assets**	**Total**
Appropriated	152,325	–	152,325	357,439	–	357,439
Trust Funds	1,541	–	1,541	1,016	–	1,016
Total	**153,866**	**–**	**153,866**	**356,423**	**–**	**356,423**

B. Status of Fund Balance with Treasury:

	2003	**2002**
Unexpended Appropriations:		
Unobligated-Available	22,619	8,567
Unobligated-Unavailable	2,787	14,170
Obligated Balance not yet Disbursed	128,460	333,686
Total	**153,866**	**356,423**

Note 3. Accounts Receivable, Net

AHRQ's accounts receivable as of September 30, 2003 and 2002 are summarized below. AHRQ has no non-entity receivables.

	Accounts Receivable, Principal	Interest Receivable	Accounts Receivable, Gross	Allowance	Net, Receivables, Combined
2003					
Intergovernmental					
Entity	4,545	–	4,545	–	4,545
Non-Entity	–	–	–	–	–
Total, Intragovernmental	4,545	–	4,545	–	4,545
2002					
Intragovernmental					
Entity	800	–	800	–	800
Non-Entity	–	–	–	–	–
Total, Intragovernmental	800	–	800	–	800

Note 4. General Property, Plant, and Equipment, Net

The building occupied by AHRQ is provided by the General Services Administration (GSA). GSA charges AHRQ a Standard Level Users Charge (SLUC), which approximates commercial rental rates for similar properties. Major categories of AHRQ General Property, Plant and Equipment (PP&E) as of September 30, 2003 and 2002 are listed below.

					2003	2002
	Depreciation Method	Est. Useful Lives	Acquisition Cost	Accumulated Depreciation	Net Book Value	Net Book Value
Equipment	Straight Line	3-20 yrs	661	(336)	325	375

Note 5. Accrued Grant Liability

Grant advances are liquidated upon the grantee's reporting of expenditures on the quarterly SF-272 Report (Federal Cash Transaction Report). In many cases, HHS receives these reports several months after the grantee actually incurs the expense, resulting in an understated grant expense in the financial statements. To mitigate this, HHS developed department-wide procedures to estimate and accrue amounts due grantees for their expenses, both realized and accrued, through September 30, 2003 and 2002.

At fiscal year-end, when OPDIVs record the estimated accrual for amounts due to grantees for their expenses, if the amount of outstanding advances exceeds the amount of the accrual, the OPDIV reports an asset for "Advances to Grantees." Otherwise, the OPDIV reports a liability called "Accrued Grant Liability," equal to the amount that the accrual exceeds the outstanding advances. For additional information on this subject see Note 1 under "Advances to Grantees/Accrued Grant Liability."

	2003	2004
Grant Advances Outstanding before Grant Accrual	$32,475	$32,902
Less: Estimated Amount Due to Grantees	(47,183)	(40,126)
Net Grant Advances	$(14,708)	$(7,224)

Note 6. Other Liabilities

Deferred Revenue is for the provision of goods and services. AHRQ deferred revenue primarily relate to services agreed to in interagency agreements.

Workers' Compensation Benefits are the actuarial liability for future workers' compensation benefits that includes the expected liability for death, disability, and medical and miscellaneous costs for approved compensation cases. The liability utilizes historical benefit payment patterns related to a specific incurred period. Consistent with past practices, these projected annual benefit payments have been discounted to present value using the OMB's economic assumptions for 10-year Treasury notes and bonds. To provide more specifically for the effect of inflation on the liability for future workers' compensation benefits, wage inflation factors (cost of living adjustments or COLAs) and medical inflation factors (consumer price index medical or CPIMs) are applied to the calculations' projected future benefits. These factors are also used to adjust historical payments to current year dollars. The compensation COLAs and CPIMs used in projections are as follows:

FY	COLA	CPIM
2004	2.30%	3.21%
2005	2.00%	3.54%
2006	1.83%	3.64%
2007	1.97%	3.80%
2008+	2.17%	3.91%

The table below summarizes other liabilities and whether they are covered by budgetary resources.

	Intragovernmental Liabilities			With the Public		
	Covered by Budgetary Resources	Not Covered by Budgetary Resources	Total	Covered by Budgetary Resources	Not Covered by Budgetary Resources	Total
September 30, 2003						
Accounts Payable	2,544		2,544	10,738		10,738
Deferred Revenue	11,320		11,320			
Accrued Payroll and Leave	396		396	481	2,208	2,689
Workers' Compensation Benefits (Actuarial FECA Liability)					569	569
Total	**14,260**		**14,260**	**11,219**	**2,777**	**13,996**
September 30, 2002						
Accounts Payable	2,467		2,467	12,463		12,463
Deferred Revenue						
Accrued Payroll and Leave	359		359	1,435	2.010	3,445
Workers' Compensation Benefits (Actuarial FECA Liability)					516	516
Liability for Deposit Funds Collections				(679)		(679)
Total	**2,826**		**2,826**	**13,219**	**2,526**	**15,745**

Note 7. Obligations Related to Cancelled Appropriations

Payments may be required of up to 1 percent of current year appropriations for valid obligations incurred against prior year appropriations that have been cancelled. The total payments related to canceled appropriations are estimated to be $461 and $1,176 as of September 30, 2003 and 2002, respectively.

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