

AHRQ Research To Reduce Cost and Improve the Quality of Health Care

Agency for Healthcare Research and Quality • 2101 East Jefferson Street • Rockville, MD 20852



www.ahrq.gov

AHRQ is the lead agency charged with supporting research designed to improve the quality of health care, reduce its cost, address patient safety and medical errors, and broaden access to essential services. AHRQ sponsors and conducts research that provides evidence-based information on health care out-comes; quality; and cost, use, and access.

The information helps health care decisionmakers—patients and clinicians, health system leaders, and policymakers—make more informed decisions and improve the quality of health care services.



U.S. Department of Health
and Human Services
Public Health Service

For at least the past 10 years, AHRQ—and its predecessor Agency, AHCPR—has helped the health care system reduce cost and improve quality by answering critical questions regarding the delivery of health care services. Some examples of these questions and the AHRQ findings follow:

Question. Is capping the number of prescriptions for Medicaid beneficiaries a useful cost-containment strategy?

Answer. No

Background. The New Hampshire legislature limited Medicaid reimbursement to three prescriptions per month for an 11-month period. AHRQ research evaluated the impact of this Medicaid cost-containment initiative.

AHRQ's finding. Investigators estimated that statewide increases in utilization costs were 17 times greater than the savings in drug expenditures (e.g., hospitalizations increased by 35%; nursing home admissions also increased in association with the prescription cap).

Result: New Hampshire abolished the prescription cap, and another nine States have also changed their policies based on this research.

Question: Can Medicaid program expenditures for pharmaceuticals be reduced without harming the quality of care for children?

Answer. Yes

Background. Otitis media (middle ear infection) is the most frequent reason for administering antibiotics to children. In Colorado, low-cost antibiotics accounted for 21% of the antibiotic expenditures while high-cost antibiotics accounted for 76% of the antibiotic expenditures.

AHRQ Finding. AHRQ-supported researchers concluded that the use of less expensive antibiotics resulted in the same or lower rates of a second course of antibiotics to treat the infection. They concluded conservatively that substituting low-cost antibiotics for only half of the expensive antibiotic prescriptions would have saved Medicaid nearly \$400,000 for the State of Colorado. **Result:** This research has led to the development of guidelines by the American Academy of Pediatrics that recommend using less-expensive antibiotics and to a HEDIS quality measure.



(53%) for each person-year of enrollment, for an estimated savings of \$12.8 million. Furthermore, these savings were not reduced by an increase in the use of other medications, such as other classes of analgesics or anti-inflammatory drugs, or of other services, such as outpatient visits or inpatient admissions.

Question. Can we reduce the cost and improve the quality of care for AIDS patients?

Answer. Yes

Background. *Pneumocystis carinii* pneumonia is an opportunistic infection most often occurring in patients with AIDS. The research examined whether the administration of inexpensive prophylactic antibiotics prevented the development of this infection, and whether the treatment was cost effective.

AHRQ finding. AHRQ-funded investigators at Johns Hopkins University School of Medicine found that patients admitted to hospitals with pneumocystis pneumonia who did not receive prophylactic antibiotics accounted for 85% of the hospital days, 100% of the intensive care unit days, and 89% of the inpatient hospital charges. **Result:** Extrapolating the findings to all of Maryland, they estimated failure to receive prophylaxis resulted in 62 patient deaths and a cost of \$4.7 million to the State.

Question. Can we reduce the cost and improve the quality of care for HIV patients?

Answer. Yes

Background. Biomedical research is leading to the development of new and effective but more costly drugs for treating AIDS patients. Are the increased drug expenditures worthwhile in terms of their effects on quality and overall costs?

AHRQ Finding. HIV infected people taking highly active antiretroviral therapy had a 33% increase in pharmaceutical expenditures but a 43% decrease in hospital care expenditures.

Result: Overall, annual costs per patient were reduced from \$20,300 to \$18,300. If extrapolated to the approximately 335,000 adults receiving care for HIV infection in 1996, over \$500 million could be saved in HIV-related healthcare.

Question. Can State Medicaid programs reduce the cost and improve the quality of treating AIDS patients by broadening their use of home- and community-based services?

Answer. Yes

Background. More than half of the people living with AIDS use health care services provided by State Medicaid programs. Because of their condition, people with AIDS are at increased risk of hospitalization or nursing home placement. In the 1990s, in an attempt to reduce hospital costs, several Medicaid programs, including Florida, initiated waivers for home- and community-based services for people with AIDS.

AHRQ Finding. An AHRQ study of Florida's waiver program, Project AIDS Care, found that adult AIDS patients who did not participate in the waiver program had significantly higher

Question. Is a prior authorization program for selected classes of medications in a Medicaid program cost-effective?

Answer. Yes

Background. Prior authorization is a program that States use to control Medicaid prescription expenditures. The Tennessee Medicaid program implemented a prior authorization program for prescriptions of non-generic nonsteroidal anti-inflammatory drugs (NSAIDs) at a cost of \$75,000.

AHRQ Finding. There was a nationwide switch to generic drugs, and a reduction in overall NSAID use.

Result: There was a decrease in the amount Medicaid paid for NSAID prescriptions from \$22.41 to \$10.63

hospital costs than program participants, after controlling for age and ethnicity. Total monthly Medicaid expenditures for AIDS patients without waiver services were about 10% higher than those for patients with waiver services. Those without waiver services also incurred 335% higher inpatient costs but spent about 61% less per month on drugs than waiver program participants. Higher drug spending of waiver participants was only a fraction of inpatient costs of nonparticipants.

Question: Can the quality of care provided to patients in emergency rooms be improved while reducing unnecessary expenditures?

Answer: Yes

Background. Each year, tens of thousands of patients with chest pain go to an emergency department believing that they are having a heart attack. Often, these patients receive inappropriate treatment—they are sent home or hospitalized inappropriately or suffer because of delay in treatment due to an inconclusive electrocardiogram (EKG). A delayed or missed diagnosis can have serious implications for patient survival or impairment rates, hospital costs, and subsequent malpractice lawsuits.

AHRQ Finding. Increasingly, EKG machines are now equipped with special software developed by an AHRQ researcher that improves diagnosis by predicting the likelihood that chest pain is the result of a heart attack. The software could prevent 200,000 unnecessary hospitalizations and more than 100,000 coronary care unit admissions a year and save roughly

\$728 million a year in hospital costs if implemented in half of the hospitals nationally. **Result:** Soon-to-be-published research estimates that improved accuracy of diagnosis that results from use of this predictive tool could reduce malpractice costs nationally by \$1.2 billion per year.

Question. Can we reduce the risk of strokes for elderly patients with atrial fibrillation?

Answer: Yes

Background. Approximately 80,000 strokes occur in America per year that are attributable to atrial fibrillation (AF). While NIH research had developed a drug, warfarin, that lowered the risk of stroke in these patients, less than half of appropriate candidates for warfarin were receiving it.

AHRQ Finding. AHRQ-supported researchers concluded that warfarin was effective in daily practice, identified the reasons that physicians were reluctant to use warfarin, and developed a program of providing warfarin to AF patients. The use of this therapy has an expected annual net savings of \$1.45 million per 100,000 people aged 65 years or older, of whom 6,000 would be expected to have atrial fibrillation. **Result:** Using this knowledge, Medicare Peer Review Organizations implemented projects to increase the use of anticoagulation drugs, such as warfarin in 20 States. As a result, there was a 58% to 71% increase in the use of anticoagulation therapy, with a projection of 1,285 strokes prevented. The findings of this AHRQ-funded study were influential in the development of guidelines by the American College of Physicians,

American Heart Association, American College of Chest Physicians, and the Joint Council of Vascular Surgeons. In addition, based on this work, United HealthCare has included use of anticoagulation therapy for patients with atrial fibrillation in the profiling of its 262,000 physicians.

Question. Can we be more clinically and cost-effective in treating pneumonia patients?

Answer: Yes

Background. Approximately 600,000, or 15%, of the 4 million Americans who develop pneumonia each year are hospitalized. Because of the lack of





evidence-based admission criteria and the tendency to overestimate the risk of death, many low-risk patients who could be safely treated outside the hospital are admitted for inpatient care.

AHRQ Finding. An easy-to-use method developed by AHRQ-supported researchers accurately predicts which pneumonia patients can be safely treated at home. Home treatment costs 10 to 15 times less than hospital care for pneumonia. The findings from this study also suggest that hospitals could reduce pneumonia hospital stays in many cases by one day without adversely affecting patient health.

Result: Criteria were developed to assist physicians with determining when patients could be discharged safely.

Question. Can we safely reduce the current level of medical pre-operative testing before cataract surgery?

Answer. Yes

Background. In 1996, Medicare beneficiaries had about 1.5 million cataract operations. Because patients with cataracts tend to be elderly and to have serious coexisting illnesses, many doctors believe that a medical examination with laboratory testing must be performed before a patient can be considered eligible for surgery. Routine medical testing before cataract surgery is estimated to cost Medicare \$150 million each year.

AHRQ Finding. A recent AHRQ-funded study found that having patients undergo routine medical tests prior to having cataract surgery does not increase the safety of the surgery, and for the most part, is unnecessary. Medical testing should be ordered only when the history or a finding on physical examination indicates the need for a test, even if surgery had not been planned.

Question. Are carve-out programs for special health conditions, such as mental health/substance abuse (MHSA) problems, cost-effective?

Answer. Yes

Background. Health plans and insurers increasingly cover services, such as MHSA, through a separate contract (known as a “carve-out” program) with a specialty vendor. The vendor manages these services and is at partial or full risk for providing the services. The Massachusetts Group Insurance Commission (GIC) adopted a carve-out program to cover MHSA services. The

contract exposed the vendor to a limited amount of financial risk to avoid providing strong incentives to skimp on service provision but still gave the vendor the incentive to perform well and save the GIC a substantial amount of money.

AHRQ Finding. Findings from a study supported in part by AHRQ indicate that this carve-out resulted in a 54 percent decrease in total episode costs for individuals with unipolar depression and a 33 percent decrease for those with substance dependence. But the researcher noted the importance of two benefit design features – the addition of partial hospitalization services for MHSA conditions, which previously had not been covered, and the expansion of the outpatient MHSA benefit, which reduced copayments and removed the annual limits on use of outpatient services – that helped maintain quality care.



www.ahrq.gov

AHRQ Pub. No. 02-P024
April 2002