



# RESEARCH IN ACTION

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## Reducing Costs in the Health Care System: Learning From What Has Been Done

During the latter half of the 1990s, health care cost inflation slowed after several years of rapidly rising price increases. Many hoped that the various policies and programs implemented by government, employers, and insurers in the '90s to control costs would continue to moderate these increases for the foreseeable future. However, in the last several years, rising health care costs have again become an issue. In 2000, the average annual health insurance premium in the private sector rose to \$2,655 for single coverage and \$6,772 for family coverage, an increase of 33.3 percent and 36.7 percent, respectively, since 1996, according to new data from the Medical Expenditure Panel Survey,<sup>1</sup> conducted by the Agency for Healthcare Research and Quality (AHRQ). Dissatisfaction with the system is also rising. According to a recent Harris Poll survey, 56 percent of the public, 46 percent of physicians, 48 percent of employers, 50 percent of health plan managers, and 51 percent of hospital managers said that the health care system requires "radical change."<sup>2</sup> The survey report predicted that dissatisfaction with the health care system would increase over the next few years as a result of increased out-of-pocket costs, concerns about prescription drug prices, and a possible increase in the number of uninsured Americans.

Today's policymakers are searching for ways to decrease the current levels of growth without reducing access to needed health care services or creating undue burdens for providers. In some instances, they are revisiting past

strategies; in others, they are exploring new approaches that seem to hold promise. Before making decisions, today's policymakers could gain insights by studying the outcomes of evidence-based research efforts.

This synthesis is intended to provide some of those insights by examining strategies intended to affect costs and

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## Summary

### Strategies that reduce costs

- **Employer contribution methods.** Employer premium costs were lowered by an average of \$480 when employers offered employees more than two plans and made a fixed dollar contribution regardless of the plan chosen, compared to making a fixed dollar contribution and offering only two plans.
- **HMOs and competition.** HMOs reduced costs in highly competitive markets by substituting ambulatory care for hospital visits.
- **Managed care and a State mental health parity mandate.** Three years after an insurer introduced a managed behavioral health care plan, costs for mental health/substance abuse care dropped 39 percent. This step was a response to a State mental health parity mandate that was expected to lead to higher health care costs. The study did not measure any effects on the quality of care.

### Strategies that have mixed results

- **Flexible spending accounts (FSAs).** The tax exemption granted to individual users for these accounts saves money for taxpayers and is conservatively estimated to reduce Federal revenues by at least \$8 billion. FSAs currently encourage participants to spend money at year's end on medical services with relatively minor value in order to avoid losing the funds at the end of the year. Allowing a limited amount of the funds remaining in the accounts at year's end to be carried forward into the following year might eliminate this cost inefficiency.
- **Cost sharing.** Higher deductibles and copayments save money for insurers and third-party payers but lead to higher out-of-pocket consumer expenses. This burden falls most heavily on people with the lowest income, those with chronic health conditions, and those Medicare beneficiaries without employer-subsidized supplemental coverage or Medicaid.
- **Hospital mergers.** Savings from hospital mergers may be less than anticipated. One study found an average price reduction of 7 percent for consumers. However, a later study showed that the savings were considerably smaller, or even nonexistent, when the merging hospital was compared to rival hospitals competing in the same market.

investigating whether or not they save money. AHRQ-funded research has found that some approaches (specific employer contribution methods, competition among health maintenance organizations (HMOs), and behavioral managed care) save money, and others (cost sharing, flexible spending accounts, and hospital mergers) have mixed results. A unique contribution of AHRQ's research is its focus on the dynamic or interactive effects of cost-containment strategies; i.e., estimating the likely effects of efforts in one sector on the rest of the system. The synthesis also reviews some of the new research efforts underway.

## Background

In 2000, health care spending rose to \$1.3 trillion dollars, or an average of \$4,637 per person. As a percentage of the Gross Domestic Product (GDP), it grew from 13.1 percent

in 1999 to 13.2 percent in 2000.<sup>3</sup> National health expenditures are expected to reach \$2.8 trillion in 2011, with an average annual growth rate of 7.3 percent from 2001 to 2011. By growing 2.5 percent faster than the GDP, expenditures will consume approximately 17 percent of the GDP in 2011.<sup>4</sup>

In 2000, spending for health services increased at virtually identical rates in the public (6.9 percent) and private (7.0 percent) sectors. Spending on Medicare, the largest single public health care program, rose 5.6 percent in 2000, following much lower growth rates of 0.6 percent in 1998 and 1.5 percent in 1999.<sup>3</sup> For the private sector, the year 2000 marked the third straight year of significantly high growth.<sup>5</sup> During 2000, hospital spending growth was 5.1 percent, the first time since 1993 that hospital spending increased more than 4.0 percent.<sup>3</sup>

Growth rates are driven by factors such as increased use of health care, especially expensive new medical technologies, by all age groups; general price inflation; inflation in the prices of medical services beyond general price inflation; and aging of the population.<sup>6</sup> Other factors related to the organization and delivery of care have also played a role. For example, the recent movement from tightly managed care to looser versions of managed care has been a significant factor in rising costs. In an unprecedented decline, HMO enrollment fell from 29 percent to 23 percent of privately insured employees from 2000 to 2001 while the percentage of those employees enrolled in the looser versions of managed care rose proportionately.<sup>5</sup>

In efforts to restrain rising costs, various strategies have been used in recent years, including the formation of physician hospital organizations, the use of different provider capitation schemes, and negotiated discounts for private insurers. Recent cost-sharing strategies include various “tiered” copayment systems for prescription drug benefits and for hospital use. Policymakers have encouraged enrollment in managed care plans (Medicare + Choice), launched fraud and abuse investigations of the Medicare program, and allowed inpatient hospital contracting under Medicaid. Other efforts have been made to slow the rate of Medicare cost growth by slowing the increase in payments to health plans, hospitals, home care providers, and nursing home providers. In the private sector, employers have responded to rising cost pressures by encouraging employees to enroll in managed care plans and by restructuring their benefits packages and contribution formulas. Hospitals, physicians, and other providers have engaged in a variety of mergers and consolidations. And further changes will be forthcoming in both the public and private sectors as efforts to meet the conflicting needs to contain costs and preserve access continue.

## **Policies that made a difference in lowering costs**

### **Fixed dollar contributions lower employer health care costs**

Many economists and policymakers have argued that for employers to lower their health insurance costs, they should stimulate competition for enrollees among plans by contributing a fixed dollar amount toward premiums and offering employees multiple health plans. AHRQ

researchers examined the determinants of competition among health plans in the context of a model where health plans first compete to be selected by employers and then compete to be chosen by employees.<sup>7</sup> They show that focusing competition on the price-sensitive buyer—either the employer or the employee—leads to lower prices. While the model suggests this can be achieved either by offering very few plans or else by offering many plans, the empirical evidence suggests that premiums are lower with three or more plans and a fixed dollar contribution.

When employers made the same dollar contribution toward all plans and offered employees more than two plans, their premiums for single coverage were lowered by \$480 and their premiums for family coverage were lowered by \$791 when compared with premiums for employers making a fixed dollar contribution but offering only two plans. However, increasing the number of plans led to higher premiums if the employer paid the full premium cost. Under the employer-pays-all scenario, single and family premiums increased by \$441 and \$1,853, respectively, when employers offered three or more plans compared with offering two plans.<sup>7</sup>

These findings suggest that an employer’s choice of contribution methods affects the premiums charged by health plans. Premium differences are one of many factors employers need to consider when deciding on the number of plans to offer employees and how to structure employer contributions. The data analyzed for the study come from the 1996 Medical Expenditure Panel Survey Insurance Component.<sup>1</sup>

### **Competition among HMOs lowers consumer prices**

The more HMO competitors that an HMO faces in a given market, the more likely it is to engage in price competition. This process means lower premiums for consumers.

To find out the effects of market structure on consumer premiums and the utilization levels of inpatient and outpatient care, AHRQ-funded researchers compared data on premiums, hospital use, and ambulatory visits for over 3,000 group-model and independent practice association (IPA) model HMOs during the period 1989-95.<sup>8</sup> A group-model HMO is a prepaid health care system that contracts with one physician group to provide health services. It is a more tightly managed form of HMO than the IPA model. An IPA-model HMO is a prepaid health care system that contracts with individual physicians in independent

practices and/or with associations of independent physicians. Market structure is defined as a combination of the penetration rate (the percentage of the population in a given market enrolled in HMOs) and the number of HMOs operating in that market.

AHRQ research found that market structure had the following effects on premiums:

- Group-model HMOs in highly competitive markets (17 competitors and 45 percent HMO market penetration) had premiums that were 11 percent lower than those in the average HMO.
- Group-model HMOs in less competitive markets (5 competitors and 15 percent HMO market penetration) had premiums that were 3 percent higher than average premiums.
- The effects of market structure on premiums for IPA-model HMOs were similar but not as pronounced.<sup>8</sup>

Market structure also had the following effects on utilization levels of ambulatory visits and inpatient care:

- In markets with many competitors and with high HMO enrollment, group-model HMOs substituted ambulatory visits for hospital visits.
- As the number of HMO competitors increased, hospital use declined for both IPAs and group-model HMOs.
- The average number of ambulatory visits made by enrollees in IPA-model HMOs was not affected by market structure.<sup>8</sup>

One implication is that although HMOs practice price competition in high-competition markets, they seem to engage in a more costly (to consumers) rivalry to offer more benefits and services in low-competition markets. The study also suggested that HMOs reduce costs by substituting ambulatory care for hospital visits in more competitive markets. The study did not examine the potential effects on the quality of care.

A related AHRQ-funded study of 1,927 hospitals in 134 metropolitan areas shows that higher HMO market penetration is associated with lower risk-adjusted mortality rates for fee-for-service (FFS) Medicare enrollees. This spill-over effect on the quality of care received by those enrolled in FFS plans may be due to a positive effect of

HMOs on local practice styles or a preferential selection by HMOs for areas with better hospital care.<sup>9</sup>

### **Managed care mental health carve-out with parity mandate lowers cost**

The introduction of a State mental health parity mandate for severe mental disorders was expected to lead to significant increases in health care costs for a large employer group and its insurers. One insurer responded to this concern by introducing a managed behavioral health care carve-out. In a carve-out, an organization separate from the principal health insurer is selected to manage health care needs in a specific area (e.g., behavioral health) for the employees of the group.

To learn how the managed behavioral health care carve-out affected use and costs of care, researchers from AHRQ and the National Institute of Mental Health studied 75,000 enrollees over a 4-year period before and after the carve-out went into effect.<sup>10</sup>

After the carve-out had been in effect for 3 years:

- Per-member plan costs for mental health/substance abuse services declined by almost 40 percent.
- Per-member plan costs for children and adolescents declined even more steeply—by 64 percent.

Almost the entire drop in mental health/substance abuse costs was attributable to a decline in the number of inpatient hospital days for children and adolescents. The number of hospital admissions did not change significantly over the 4-year study period. However, treatment prevalence rose almost 50 percent because of the rise in the number of persons receiving outpatient treatment. Although more people were in treatment, the average number of visits per patient did not decline (Table 1).

The researchers concluded that the parity mandate did not lead to cost increases. The researchers also determined that the impact of the parity mandate on access was ambiguous: while treatment prevalence rose nearly 50 percent, groups not subject to the mandate experienced similar increases.

The study was not able to determine whether the significant drop in inpatient use among children and adolescents was due to the carve-out's curbing of inappropriate use or from restricting needed services.

**Table 1. Change in costs and use of services among insured people after enrollment in managed behavioral health carve-out**

Item	Year 1	Year 2	Year 3	Year 4	Difference between Year 1 and Year 4
Treatment prevalence	5.0%	5.6%	6.2%	7.3%	+46%
Change in plan costs	—	-25%	-13%	-7%	-39%
Admissions per 1,000	5.6	5.2	6.2	5.2	-6%
Mean length of stay in days	24.9	17.1	10.6	9.1	-66%
Any outpatient use	4.7%	5.4%	6.1%	7.0%	+49%
Mean visits per user	7.4	8.0	8.0	7.6	+3%

Source: Zuvekas SH, Regier DA, Rae DS, et al. The impacts of mental health parity and managed care in one large employer group. *Health Aff* 2002; 21(3):148-59.

## Policies that had mixed results

### Minor change to FSA exemption could improve cost efficiency

Flexible spending accounts (FSAs) for health care are a way to lessen the impact of cost sharing on individuals and families. Typically, employees with FSAs also have employer-sponsored health insurance policies. FSAs allow employees to pay for out-of-pocket health care expenses with pre-tax dollars. In a health care FSA, employees agree to payroll deductions to put pre-tax dollars into an account and then use the funds during the year for reimbursement of health care expenses. If the employee has not used the money by the end of the year, it is lost (the use-it-or-lose-it feature). FSAs allow employees to purchase qualified benefits (defined in Section 125 of the Internal Revenue Service Code), such as deductibles, copayments, and medical or dental expenses, on a before-tax basis.

The Federal and payroll tax exemptions allowable by FSAs may well cause an annual tax loss of at least \$8 billion since the tax exemption reduces the amount of taxes that would otherwise be collected. Health care FSAs have received little empirical or theoretical analysis thus far. As of 1995, 79 percent of employers offer such accounts and the number of employees taking advantage of these accounts was growing rapidly.<sup>11</sup>

A new AHRQ-funded study finds that the use-it-or-lose-it feature of FSAs encourages individuals to incur medical expenses with minimal value in order to avoid forfeiting the funds remaining in the account at the end of the year.<sup>11</sup> Removing this feature would eliminate a cost inefficiency that encourages participants to spend money at year's end on medical services that might have little value but add to increasing health care costs. For example, an employee might decide to buy an extra set of eyeglasses rather than losing funds remaining in the FSA account at year's end. Indeed, data from the study show that eye care expenditures spiked upward at year's end.

The researchers suggested that if the law allowed people to carry forward any funds remaining in an FSA at year's end, insurers might respond by dropping coverage for certain types of relatively predictable health care expenses, such as orthodontic care and eyewear. If insurers did not cover these items, then insurance premiums could be lower.

AHRQ-funded researchers studied the actual use of FSAs based on the records of a medium-sized insurer with 22,000 policyholders who were employees in 73 companies. In this group, 2,700 policyholders, or 12 percent, used an FSA account.<sup>11</sup>

### Facts about Flexible Spending Accounts

- FSAs for health care provide a tax exemption by allowing employees to avoid taxes on their out-of-pocket health care expenses.
- The entire amount withheld for the account is exempted from payroll, Federal, and State income taxes.
- Total out-of-pocket expenditures for Americans were estimated to be \$187 billion in 1999. If only 15 percent of out-of-pocket health care expenses were paid with money deposited in FSAs (assuming the average individual faces a 15 percent Federal tax rate plus a 15 percent payroll levy), the Federal and payroll tax exemptions would cause tax revenues to drop by over \$8 billion.

Source: Cardon JH, Showalter MH. An examination of flexible spending accounts. *J Health Econ* 2001; 20:935-54.

**Table 2. Proportion of Medicare beneficiaries' income spent on out-of-pocket health care expenditures by insurance type**

Insurance coverage	Out-of-pocket costs
Medicaid	8.4%
Medicare HMO	14.8%
Private HMO	15.7%
Employer sponsored	16.1%
Medicare only	23.0%
Self-purchased	25.5%

Note: HMO—health maintenance organization.

Source: Crystal S, Johnson RW, Harman J, et al. Out-of-pocket health care costs among older Americans. *J Gerontol* 2000; 55B(1):S51-62.

### Cost sharing hits vulnerable groups hardest

Cost sharing, having individuals pay a portion of their health care costs out-of-pocket, may contribute to controlling health care costs by making people more sensitive to the price of health care. However, it may impose disproportionate burdens on vulnerable groups such as the poor and those with multiple chronic conditions.

How much the individual consumer pays for his or her care is determined by how third-party payers (employers, insurers, and government) divide up payments for health care between themselves and consumers. “Cost sharing” refers to the split between what the individual consumer pays and what the third-party payer pays for health care. It includes deductibles, copayments, and cash outlays that individuals make for items not covered by health insurance.

A study by AHRQ-funded researchers shows the effects of current cost-sharing patterns on the out-of-pocket health care expenses of Medicare beneficiaries.<sup>12</sup> Using data drawn from the 1995 Medicare Current Beneficiary Survey (MCBS) of 8,000 seniors, the researchers found that out-of-pocket spending for health care averaged 19 percent of income for Medicare beneficiaries. The type of supplemental insurance coverage held by beneficiaries had a significant effect on the percentage of income paid out of pocket. This percentage ranged from 8.4 percent for those with both Medicare and Medicaid to 25.5 percent for those with a self-purchased supplemental plan (Table 2). More than half of out-of-pocket spending was for prescription drugs and dental services.

The researchers also reported that, despite Medicaid coverage for some, the 20 percent of Medicare beneficiaries with the lowest income spent almost a third (31.5 percent) of their income on health care, compared with 8.5 percent in the highest income category. Medicare beneficiaries in another vulnerable group, those in poor health, spent 28.5 percent of their income on health care, compared with 14.9 percent for those in excellent health<sup>a</sup> (Table 3).

<sup>a</sup>The MCBS asks respondents to assess their health status on a scale from poor to excellent.

**Table 3. Proportion of Medicare beneficiaries' income spent on out-of-pocket health care expenditures by self-reported health status**

Self-reported health status	Out-of-pocket costs
Excellent	14.9%
Very good	16.6%
Good	19.3%
Fair	23.3%
Poor	28.5%

**Source:** Crystal S, Johnson JW, Harman J, et al. Out-of-pocket health care costs among older Americans. *J Gerontol* 2000; 55B(1):S51-62.

A second study, based on data from AHRQ's Medical Expenditure Panel Survey, focused on out-of-pocket spending (deductibles, copayments and cash outlays) by people with and without chronic illnesses across the entire population (not just Medicare enrollees).<sup>13</sup> It found that the burden of cost sharing falls most heavily on those with multiple chronic health conditions and on Medicare beneficiaries who do not have employer-subsidized supplemental coverage or Medicaid.

The researchers analyzed spending by both individuals and families. They found that:

- For people age 65 and over, the highest average out-of-pocket spending category was prescription drugs (\$397), followed by dental services (\$145).
- For people under age 65, the highest average out-of-pocket spending category was for physician office visits (\$104).
- For people with three or more chronic conditions, average out-of-pocket spending on prescription drugs was \$667.
- Two-person families with an elderly head of household spent an average of \$812 out of pocket, compared with \$429 for their non-elderly counterparts.<sup>13</sup>

## Cost effect of mergers varies by competitiveness of market

Many hospital mergers have taken place in recent years. One of the most frequently mentioned reasons for mergers is eliminating the duplication of services. Mergers can lead to lower prices and result in savings for consumers. However, those concerned about antitrust implications worry that mergers can decrease consumer welfare by leading to higher prices and declining competition. Two closely related AHRQ-funded studies have extensively investigated the question of whether hospital mergers save money for consumers.

The first study investigated 122 hospital mergers that took place from 1986 to 1994.<sup>14</sup> It examined the effects of hospital mergers on price and costs in markets of varying hospital concentration. While consumers realized an average price reduction of 7 percent as a result of mergers, the price reduction was considerably less in highly concentrated markets. These findings suggest that a greater emphasis should be placed on antitrust scrutiny of mergers in areas where the market is dominated by a small number of competing hospitals.

The second study included 204 hospitals involved in mergers that took place from 1989 to 1997.<sup>15</sup> It refined the analysis of the first study by dividing nonmerger hospitals into rival and nonrival groups. It then compared consumer cost savings only between the merged hospitals and their immediate rival hospitals. This study found that savings were modest or nonexistent when merging hospitals were compared with rival nonmerging hospitals in the same markets.

## Ongoing research

The studies cited above are only a part of a much broader AHRQ research portfolio to inform policymakers on issues related to cost. Two major initiatives—the Medical Expenditure Panel Survey (MEPS) and the Healthcare Cost and Utilization Project (HCUP)—provide essential data that have been used across the country by researchers and policymakers in tracking health care use and costs and assessing trends over time.

**Medical Expenditure Panel Survey.** This ongoing survey continually provides policymakers, health care administrators, businesses, and others with timely comprehensive information about health care use and costs in the United States and improves the accuracy of their economic projections. MEPS collects data on the specific health services that Americans use, how frequently they use them, the cost of these services, and how they are paid for, as well as data on the cost, scope, and breadth of private health insurance held by and available to the U.S. population. MEPS is unparalleled for the degree of detail in its data, as well as its ability to link data on health services spending and health insurance to the demographic, employment, economic, health status, and other characteristics of survey respondents. Moreover, MEPS is the only national survey that provides a foundation for estimating the impact of changes in sources of payment and insurance coverage on different economic groups or special populations of interest, such as the poor, elderly, families, veterans, the uninsured, and racial and ethnic minorities. AHRQ, which conducts MEPS in conjunction with the National Center for Health Statistics, began fielding MEPS in March 1996.

**Healthcare Cost and Utilization Project** provides information on inpatient hospital charges at the national and State levels, including all inpatient records with charge data, clinical data, and demographic information from 80 percent of all hospital discharges in the United States. HCUP is a Federal-State-industry partnership that provides a geographically representative sample of hospital discharges across the United States. HCUP data help researchers, policymakers, and health care administrators answer questions about conditions treated and procedures performed in U.S. hospitals and ambulatory surgery centers for the population as a whole and for population subsets, such as children and the elderly. HCUP data provide information on reasons for hospitalization, how long people stay in the hospital, the procedures they undergo while hospitalized, and how specific conditions are treated in the hospital.

AHRQ is also currently funding research into a number of other areas on cost-related subjects.

**The costs of medical errors and complications;** internal AHRQ study. This study will examine how much more employers and patients pay for care when medical errors or complications are involved.

**Impact of payment policies on the cost, content, and quality of care;** University of Minnesota, Division of Health Services Research and Policy, Contract No. 290-00-0017. This study combines data from health plans to examine how economic incentives inherent in the relationship between health plans and health care providers (physicians and hospitals) influence the cost, quality, and type of services received by patients.

**Examination of potential cost-savings resulting from volume-outcome effects;** internal AHRQ study. This study will compare the costs in hospitals that perform a high number of coronary artery bypass grafts (CABGs) each year with the costs in hospitals that perform a low number of CABGs. It will also examine how the costs associated with hospital volume affect cost savings for employers and Medicare.

**Costs of care for very low birthweight babies;** RAND Corporation, R03 HS13429-01. This research will provide better information on the costs and cost-effectiveness of neonatal intensive care for infants with low birthweights. Very low birthweight infants (defined as infants with a birthweight of 1500 grams or less) are a vulnerable patient population. Infant mortality in the United States is concentrated among this population, who also are subject to high rates of disability and morbidity.

**Incidence of reduced use of prescribed medications by Medicare beneficiaries in response to out-of-pocket costs;** Center for Health Care Policy and Evaluation, Contract No. 290-00-0012. This study, using data from MEPS and the Medicare Current Beneficiary Survey, will examine the impact of out-of-pocket costs on the prescription-medication-taking behavior of Medicare + Choice beneficiaries.

**Out-of-pocket prescribed drug costs among elderly Medicare enrollees;** Rutgers University Institute for Health, Healthcare, and Aging Research, R03 HS13005-01. This study, using data from MEPS and the Medicare Current Beneficiary Survey, will examine the out-of-pocket burden of prescribed medication costs for the elderly enrolled in the Medicare program.



## Conclusion

Many strategies to contain costs have been tried in recent years. Some, such as competition among HMOs, managed care as a way to handle the cost implications of parity mandates, and certain employer contribution methods, have been at least partly successful. Others (FSAs, cost sharing, and hospital mergers) have had mixed results. In some cases, shifting economic conditions may have been responsible for the success or failure of different strategies. As newer strategies are brought into play, research will continue to evaluate their impact on costs, as well as outcomes and other aspects of care.

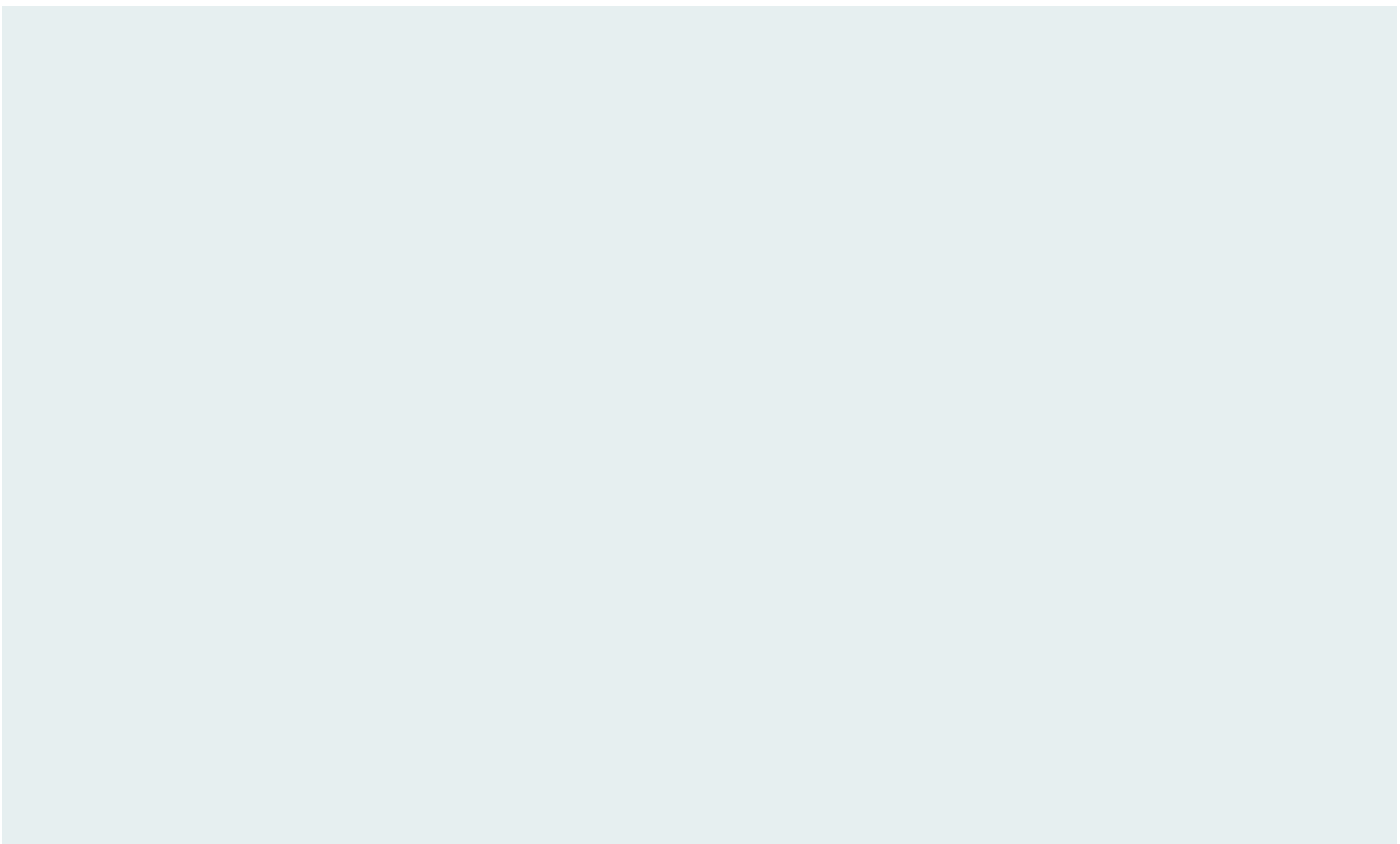
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*\*AHRQ-funded/sponsored research*

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