

The Effect of Premiums and Cost Sharing on Access and Outcomes for Low-Income Children

Congress has recently extended funding for the State Children's Health Insurance Program (CHIP) for two more years through the Medicare Access and CHIP Reauthorization Act of 2015 (P.L. 114-10).¹ By 2017, it will have to consider whether to once again extend funding for the program or permit current law to take effect, sending current CHIP enrollees to other sources of coverage.² One issue in the debate will be the level of family financial responsibility, including premiums or enrollment fees, deductibles, copayments, and coinsurance across sources of coverage. In weighing this issue, it is important to consider what we know about how premiums and cost sharing affect low-income children and families. This issue brief examines the literature on the effects of premiums and cost sharing on access and outcomes, particularly for low-income children and their families.

Over several decades, researchers have documented the effects of instituting or increasing premiums and cost sharing on use of services and outcomes under Medicaid, CHIP, and private insurance. These studies generally concur that:

- Instituting or increasing premiums leads to decreased enrollment among children, and that these effects are especially concentrated among lower-income children.
- Copayments and coinsurance decrease use of services and cause enrollees to delay care.
- Cost sharing that is broadly applied leads people to reduce use of both effective and less effective services.³

From a policy perspective, no study has demonstrated a level of cost sharing that encourages prudent use of services without impeding access to necessary care. As policymakers consider future options for low-income children's coverage, it is important to weigh the effects of premiums and cost sharing on this population.

Context

Cost sharing is used in insurance design for several purposes. It can lower overall spending by reducing use of services, and shift some of the costs of health care from payers, including state and federal government, to enrollees. It can also be designed to deter use of specific services and to steer enrollees towards more cost-effective or preferred services. Another rationale is to encourage personal responsibility in health care purchasing decisions (O'Brien et al. 2000). Cost sharing also may lead to decreased use of appropriate, medically necessary services. In contrast to cost sharing, premiums do not produce an incentive to seek out more efficient care once a person is enrolled. However, premium costs may discourage enrollment in coverage.

Definitions of Terms Used in this Paper

Premiums: Fees, generally payable on a monthly basis, that an enrollee must pay to remain insured.

Cost sharing: The portion of covered medical expenses that the insured person is responsible for, including deductibles, coinsurance, and copayments.

Deductible: A dollar amount in medical bills for covered services per benefit period (usually one year) that the enrollee must incur before the insurer will begin to pay for care.

Coinsurance: The percentage of a medical bill for covered services that the enrollee must pay after meeting the deductible, if applicable (e.g., 20 percent of a certain covered service).

Copayments: Set amounts that the enrollee must pay to a provider for a covered service (e.g. \$10 for an office visit, or \$5 per prescription).

Some services, such as preventive care, may be exempt from copayments and coinsurance, and may be exempt from the deductible.

Medicaid has historically imposed low or no cost sharing. Although some limited authority exists to charge small premiums in Medicaid, federal law generally prohibits premiums in Medicaid for children and individuals with income below 150 percent of the federal poverty level (FPL). Both Medicaid and separate CHIP programs must limit expenses for premiums, deductibles, and cost sharing to 5 percent of a family's income.⁴ Virtually all employer-sponsored insurance plans, Medicare, and health insurance exchange plans impose both premiums and cost sharing.

Low-income families spend a relatively high percentage of their income on medical care. Even when researchers modeled a scenario in which Medicaid and CHIP imposed no cost sharing or premiums, 12.7 percent of families with children in Medicaid or CHIP spent more than 10 percent of their income on health care services for all family members. Moreover, families below 100 percent FPL were more likely to have out-of-pocket costs and premiums exceeding 10 percent of family income than those at 200 percent FPL or above. When researchers modeled the effects of moderate premiums and cost sharing in CHIP and Medicaid and applied the 5 percent cap, 15.7 percent of all families with children in Medicaid or CHIP would still spend 10 percent or more of family income on cost sharing and premiums for all family members. Of families with children below 100 percent FPL, 21 percent would spend 10 percent or more of family income on cost sharing and premiums for all family members even with the 5 percent Medicaid and CHIP cap in place (however, under current law, most children under age 18 are exempt from premiums and cost sharing in Medicaid) (Selden et al. 2009).



Publicly insured children with special health care needs face greater out-of-pocket spending than healthy children. Their families spend more on premiums and medical care than other families; 17.3 percent of families with special needs children have a 10 percent annual burden compared to 10.5 percent in families without children with special health care needs (Selden et al. 2009).

Scope of Review

This review synthesizes studies on the effects of premiums and other cost sharing on low-income children's access to care and health outcomes. These studies use measures of utilization and health outcomes, which are key components of MACPAC's conceptual framework for access to care (MACPAC 2011). On issues where limited or no evidence regarding children exists, findings for adults are discussed.

It is important to draw a distinction between premiums and cost sharing when reviewing the literature. Premiums may affect a person's (or family's) decision about whether to participate in coverage. Cost sharing, such as deductibles, coinsurance, and copayments, is more likely to influence an insured person's decision to seek services.

The Effects of Premiums and Cost Sharing on Low-Income Families

Studies have shown that out-of-pocket costs reduce access to care, especially for those with low incomes or chronic illnesses. Increased premiums are linked to lower health insurance enrollment rates for children, especially those with low incomes. However, children with chronic illnesses are less likely than healthy children to disenroll due to premium increases.

Cost sharing at the point of service is associated with decreased access to specific services as well as adverse health outcomes for certain groups. When faced with cost sharing, people use fewer services. Those with lower incomes are more likely to decrease their use of services than those with higher incomes, and are more likely to delay care or borrow money from family and friends because of increased cost sharing. There is no evidence that increased cost sharing in healthy populations results in negative health effects. In populations with chronic illness and among older adults, cost sharing is associated with worse health outcomes.

The RAND Health Insurance Experiment, conducted largely during the 1970s, was a seminal investigation into the effects of cost sharing on service use and outcomes (discussed below).⁵ More recent studies have examined the effects of premiums or cost sharing on child or adult enrollment on coverage, use of services, and outcomes, focusing on different health conditions, such as cancer, and different access measures, such as enrollment and disenrollment or adherence to a prescription drug regimen. Below, we examine a sample of the literature on premiums and cost sharing and discuss how these mechanisms affect access and outcomes for low-income people.

Premiums

Instituting or increasing premiums is linked to decreased health insurance enrollment for children, especially those with the lowest incomes. A study of Wisconsin's Medicaid program found that when the program began charging \$10 monthly premiums, both child and adult enrollees were 12 to 15 percentage points more likely to exit the program. No similar effects were found when premiums increased from \$10 to higher amounts. These findings suggest that imposing any premium has a larger effect on enrollment than differences in the relative amounts of the premiums (Dague 2014).

In a study that modeled the effects of premiums on children in families with incomes from 100 to 300 percent FPL, higher premiums for public programs were linked to a reduced probability that children would be covered by public insurance, and an increased probability that they would be covered by private insurance or uninsured (Hadley et al. 2006).

In a study of the effects of higher CHIP premiums in Kansas, Kentucky, and New Hampshire, premium increases were associated with lower CHIP enrollment. Increases in premiums led to fewer new enrollments in Kansas and New Hampshire and faster disenrollment in Kentucky and New Hampshire.⁶ Researchers were able to analyze the effects by race and ethnicity for Kansas and Kentucky, and observed larger effects for non-white versus white children in Kentucky. In New Hampshire, stronger disenrollment effects were found among the lowest-income children, those with family incomes between 185 and 250 percent FPL (Kenney et al. 2006).

Premiums have a greater effect on lower-income children as compared to higher-income children. A study that simulated the effects of a \$10-per-month premium increase on children eligible for Medicaid or CHIP found that premium increases were linked to an estimated decrease in enrollment for all children, but more so for lower-income children. An increase of \$120 annually was associated, on average, with a 3.9 percentage point reduction in public coverage, a 2.3 percentage point increase in private coverage, and a 1.6 percentage point increase in uninsurance. However, when examined by income group, children between 101 and 150 percent FPL experienced a decrease in public coverage of 6.7 percentage points, with a 3.3 percentage point increase in uninsurance (as discussed above, under current law, most children under age 18 are exempt from premiums and cost sharing in Medicaid) (Abdus et al. 2014). Enrollment in public coverage for children above 150 percent FPL dropped by 1.6 percentage points, nearly offset by an increase in private coverage of 1.5 percentage points.⁷ The finding that families below 150 percent FPL are more sensitive to premiums than those above 150 percent FPL provided the rationale for MACPAC's March 2014 recommendation that CHIP premiums be eliminated for those under 150 percent FPL to better align with Medicaid policy and promote continuity and affordability of coverage (Abdus et al. 2014, MACPAC 2014).

A study of premium changes in Florida's CHIP program found that a temporary premium increase of \$5 per month (premiums rising from \$15 to \$20) for families between 101 and 150 percent FPL and a permanent premium increase of the same amount for families between 151 and 200 percent FPL affected length of program enrollment for families in both income groups (Herndon et al. 2008). Children in the lower-income group experienced a 61 percent decrease in number of months enrolled, while children in higher-income families experienced a 55 percent decrease.⁸

Adults respond similarly to increased premiums. A study of Oregon's Medicaid program found that when premiums increased and mandatory copayments were introduced for the expanded eligibility group of nondisabled adults earning less than 100 percent FPL, enrollment in the plan fell by 77 percent. In addition, individuals facing these higher costs were twice as likely to report an unmet need for care, and were more likely to report cost as the reason for this unmet need, than those enrolled in traditional Medicaid for whom costs had not been raised (Wright et al. 2010).

Some sick children are more likely to remain enrolled despite premium increases. In the investigation of CHIP premium increases in Florida discussed above, children who were healthy experienced greater reductions in enrollment after the premium increase when compared with sick children (Herndon et al. 2008). A subsequent study found that the introduction of premiums in Kentucky's CHIP program reduced the duration of CHIP coverage for the average child, and children with certain conditions were less likely to disenroll from CHIP than healthy children (Marton and Talbert 2010).⁹ Of those responding to a follow-up survey, 56 percent reported having found public or private insurance for their child after disenrolling from CHIP (Marton and Talbert 2010).

However, a recent study of Georgia's CHIP program, PeachCare for Kids, found that while sicker children had a lower baseline probability of exiting PeachCare than healthy children, premium increases of \$5, \$10, or \$15 per month had similar effects on the disenrollment rates of children rated low, medium, and high illness severity (Marton et al. 2014). And, a study of Alabama's CHIP program found that families of children with a chronic condition were more price sensitive than other families. The study found that premium increases of \$50 per year and copayment increases of about \$1 to \$3 reduced children's reenrollment by 6 to 8 percent, depending on the length of the time period observed for renewal. While families of children who had been hospitalized in the past year were less sensitive to premium increases, families of children with a chronic condition were more price sensitive than other families. However, because children with chronic conditions had a comparatively high baseline probability of renewal, they remained more likely than other children to renew coverage after the premium increase (Morrisey et al. 2012).

Cost sharing at the point of service

The literature indicates that cost sharing at the point of service can reduce the use of both effective and less effective services for low-income children as well as adults in all income groups. In addition, for families with low incomes and families that include a person with chronic illness, even nominal increases in cost sharing can significantly affect use of services and health outcomes and cause delays in care.

Cost sharing at the point of service can impede low-income children's access to care and result in delayed care.

Low-income children are likely to use fewer health services when copayments are introduced. A study of Alabama's CHIP program examined change in the use of services that were subject to copayments (inpatient care, emergency department visits, brand-name prescription drugs and generic prescription drugs, physician office visits, outpatient services, ambulance services, allergy treatments, and non-preventive dental services) and of services not subject to copayments (well-child visits, preventive dental services, and services to Native Americans). After copayment increases of about \$3 to \$5 per service, use of inpatient services, physician office visits, and brand-name drugs declined significantly.



There were no declines or only temporary declines in use of services that had no copayment changes. Well-child visits also declined, even though they were not subject to the new copayments, but the decline was only temporary. The authors suggest that because some enrollees may not have known of the copayment changes right away, responses should be measured over time (Sen et al. 2012).

In a study of low-income children with asthma, higher cost sharing was associated with delaying care and borrowing money to pay for care. Parents at or below 250 percent FPL were less likely to delay office visits or emergency department visits for their commercially insured children enrolled in lower cost-sharing plans than were parents of those enrolled in higher cost-sharing plans.¹⁰ Similarly, parents of children enrolled in Medicaid or CHIP, as well as those above 400 percent FPL at both high and low cost-sharing levels, were less likely to delay or avoid office visits for their children than those at or below 250 percent FPL with private insurance who had higher cost sharing. There was no significant difference between income and cost-sharing groups with respect to cost-related use of medication (switching to a generic drug or using less medication than prescribed).¹¹ Parents in families with incomes at or below 250 percent FPL with higher cost-sharing levels were more likely to report borrowing money to pay for a child's asthma care than those in the same income group who had lower cost sharing. Parents of children in CHIP and parents in families above 400 percent FPL with higher cost-sharing levels were less likely to report borrowing money (Fung et al. 2014).

People reduce use of both effective and less effective care in response to increased cost sharing. Cost sharing has been shown to reduce use of both effective and less effective care (Lohr et al. 1986). In the RAND experiment, researchers categorized major diagnostic categories (such as trauma, asthma, chest pain, and low back pain) into groups ranging from “highly effective treatment by medical care system” to “medical care rarely effective or self-care effective” (Lohr 1986). In response to cost sharing, poor children, as well adults in all income groups, reduced use of highly effective services as much as rarely effective services. However, children in families with average to above-average income lowered their use of rarely effective care but did not decrease use of highly effective care (Lohr et al. 1986).

The RAND study also found that enrollment in any cost-sharing plan was linked to reduced use of health care when compared to the free-care plan (Keeler 1992). Low- and higher-income people had similar reductions in use due to cost sharing, but this could be because the RAND experiment imposed income-based cost-sharing caps (Keeler 1992). Cost sharing did not have a statistically significant effect on use of dental care by those with low incomes compared to those with higher incomes (Manning et al. 1986). The RAND experiment did not find any evidence that increased cost sharing caused participants to shop more carefully for higher-value health care services. Rather, participants simply sought care for fewer episodes of illness. Once a person chose to seek treatment, the cost of an episode of care was the same in the free plan and the cost-sharing plan (Keeler 1992).

For most participants, using fewer services did not adversely affect health. The average participant with free care did benefit from slightly lower blood pressure and better corrected vision at the end of the experiment (Brook et al. 1984). Examining the results by income group, low-income participants with elevated health risks benefited from free care, but no benefit was found for high-income elevated risk individuals.¹² Low-income, high-risk participants enrolled in the free-care plan had a lower risk of dying at the end of the experiment, a measurement that researchers based on smoking habits, cholesterol level, and systolic blood pressure (Brook et al. 1984).¹³ These

RAND findings suggest that low-income, high-risk individuals are at a greater health risk when cost sharing is introduced than are healthy individuals.

There is less evidence on cost sharing and outcomes for children. Analysis of the experience of children who were age 0–13 at enrollment in the RAND study found that enrollment in a cost-sharing plan resulted in less use of medical services, although parents or other decision makers were less sensitive to cost sharing for children than for themselves (Valdez 1986). The analysis of health outcomes included measures of anemia, hay fever, fluid in the middle ear, hearing loss, visual acuity, parental worry about the child’s health as well as perceived physical limitation, mental health, and overall health (Valdez 1986). No statistically significant difference between the free and cost-sharing plans was found on any of the health measures, except dental outcomes.

Free care was associated with better dental health outcomes for children in the RAND experiment. RAND study participants age 6 to 34 had significantly fewer decayed teeth at exit from the free-care plan versus the cost-sharing plans. Children age 12 to 17 on the free-care plan also had significantly better periodontal health than children of the same age in cost-sharing plans.¹⁴ Family income was not associated with significant differences in dental outcomes (Bialit 1985).

Some studies show a link between cost sharing and adverse outcomes for older adults or chronically ill populations. The RAND study also found that adults with low incomes and chronic conditions benefitted somewhat from free care, but health benefits for other income groups were not found. (The study excluded adults over age 65 and those with disabilities, who are more likely to use services.) Other studies focused on older adults and those with chronic illnesses have found a relationship between cost sharing and poor health outcomes.

A study of Medicaid beneficiaries with cancer found that after copayments for prescription drugs in Georgia increased from \$0.50 to \$3.00, enrollees reduced their use of prescription drugs compared with those in Texas (where copayments did not increase) and South Carolina (where minimal or incremental copayment increases were implemented). Those with multiple other illnesses reduced drug use the most. At the same time, the proportion of enrollees with emergency department visits increased in Georgia as compared to Texas and South Carolina. Ultimately, over the 6 month period studied, the total Medicaid cost per enrollee was \$2,000 higher in Georgia (Subramanian 2011).

A study of welfare recipients and older adults in Canada found that after the introduction of cost sharing for prescription drugs, enrollees reduced their use of essential drugs.¹⁵ Serious adverse events and emergency department visits associated with the reduction in use of essential drugs increased in both groups. Prior to the policy change, those receiving welfare and low-income older adults had no cost sharing for medication, and other older adults were charged \$2 per prescription with a cap of \$100 per year (in Canadian dollars). Beginning in 1996, both groups faced 25 percent coinsurance. Those on welfare had a \$200 cap, and older adults had income-based caps of \$200, \$500, or \$750. A \$100 deductible was added a year later, and both the deductible and yearly cap were then prorated on a monthly basis. After the introduction of cost sharing, older adults reduced their use of essential drugs by 9.12 percent, and welfare recipients reduced their use by 14.42 percent. Participants also reduced their use of less essential drugs after the change, by 15.14 percent in the older adult group and by 22.39 percent in the welfare group (Tamblyn et al. 2001).

A study of Massachusetts families that included at least one member with a chronic condition found that those in high-deductible employer plans were more likely to report delaying or forgoing care for a child due to cost (17.4 percent versus 4.9 percent in traditional employer plans for families with incomes below 400 percent FPL).¹⁶ Families above 400 percent FPL in high-deductible plans were also more likely to delay or forgo care for a child than those in traditional plans (5.1 percent compared to 1.2 percent probability) (Gailbraith et al. 2012).

Other studies of adults have found that increased copayments have a small effect on use of services and no discernable effect on hospitalizations. A study of the Massachusetts Commonwealth Care program, which provided subsidized insurance to adults up to 300 percent FPL, found that modest increases in copayments slightly reduced demand for services, but found no evidence that reduced use of outpatient services led to increased use of hospital services, even for the sickest enrollees (Chandra et al. 2012). The study also found that those who were chronically ill or older adults were more sensitive to copayment increases than others.

Financial incentives can improve medication compliance in adults. Using claims data from 88 private health plans, researchers found that average compliance with cholesterol-lowering therapy fell by 5 percentage points with each \$10 increase in copayments. Using a base scenario of \$10 copayments for all patients, the authors then modeled the effects of setting copayments at zero for high- and medium-risk patients. This scenario increased compliance among high- and medium-risk patients, and reduced hospitalizations and emergency department admissions (Goldman et al. 2006). A similar study of employer plans measuring the effects of lowering copayments for certain drugs for chronic conditions also found significant effects on medication adherence in four out of the five medications studied (Chernew et al. 2008).

Limitations of the Literature

While researchers attempt to design studies that accurately describe and predict behavior and outcomes, there are limitations inherent in any design. Since the RAND Health Insurance Experiment was conducted in the 1970s, no studies have been conducted that randomly assigned participants to test and control groups to examine cost sharing. More recent studies have used both natural experiments and cross-sectional research designs. Natural experiments are preferable when a randomized experiment is not possible. Natural experiments consider behaviors when people are faced with a change in premiums or cost sharing that they cannot control, comparing their responses to those of a group with similar characteristics who experienced no change (Swartz 2010). Other studies use cross-sectional data from a single point in time. However, researchers cannot always account for other factors, such as health status, that might affect preferences for certain levels of cost sharing at a point in time (Swartz 2010).

It is also important to note how various studies measure change in use. Most studies report use in terms of units of a service, such as number of visits to a physician or number of prescriptions filled, and report changes compared to the control group's use. However, this type of measurement can be inaccurate when it does not take into account a person's new use relative to his or her previous use (Swartz 2010).

Additionally, the length of time over which results were measured may influence findings, especially for children, for whom measurable and significant changes in health outcomes may take years to materialize. However, most

studies only consider a period of months or perhaps a year, and thus may not capture the results that might take place over a longer time period. On the other hand, it may be difficult to draw inferences between a discrete event and the outcome over a longer time horizon.

Endnotes

¹ Low-income children eligible for CHIP-financed coverage are those under the age of 19 with no health insurance who would not have been eligible for Medicaid under the state rules in effect on March 31, 1997. About 8 million children were enrolled in CHIP in 2013 (MACPAC 2014, MACStats table 1).

² See MACPAC's March 2015 report to Congress.

³ Other reviews of the cost-sharing literature find similar themes and expand on the effects of premiums and cost sharing on different populations (Machledt and Perkins 2014, Swartz 2010, and Snyder and Rudowitz 2013).

⁴ Some states are also experimenting with different approaches to the use of premiums and cost sharing for Medicaid beneficiaries under Section 1115 waivers.

⁵ The RAND Health Insurance Experiment, conducted between 1971 and 1982, was a seminal study exploring the effects of cost sharing on access to health care and health outcomes. It was also unique in that it randomly assigned participants to different insurance plans and followed them over several years, rather than measuring people in the plans they had chosen for themselves. The study randomly assigned 2,750 families (more than 7,700 individuals) under the age of 65 from different areas in the United States to one of five types of health insurance plans. One type offered free care, and the others had varying levels of cost sharing, from 25 to 95 percent coinsurance. The fifth plan was an HMO in which participants also received free care. For families at lower incomes in cost-sharing plans, out-of-pocket spending was capped at 5, 10 or 15 percent of income. For all families on cost-sharing plans, out-of-pocket spending was capped at the specified percentages or \$1,000, whichever was less. Families participated for three to five years. RAND assessed health status before and after the experiment, and tracked service use and spending (RAND 2006). Adults could be no older than 61 at the start, so they would not qualify for Medicare before completing the experiment. Those who qualified for Medicare due to disability were also excluded (Lohr 1986).

⁶ However, disenrollments for failure to pay premiums in Kansas were not processed until the enrollee's usual recertification review, making it difficult to measure the effects in Kansas.

⁷ It is important to note that premiums, cost sharing, and benefits may be different in private versus public coverage.

⁸ When premiums returned to \$15 for children at 101 to 150 percent FPL, their enrollment length increased slightly, but remained about half of what it was before the increase. Similarly, the enrollment length for those in the 151 to 200 percent FPL group increased slightly after the initial drop, though their premium increase was permanent. However, it remained significantly below their enrollment length before the increase.

⁹ Children with asthma, diabetes, intellectual disabilities, major depression or bipolar disorder, anxiety, conduct disturbance, substance abuse, attention deficit disorder, or other mental condition were less likely to exit than those without these conditions.

¹⁰ Of families with higher cost sharing, 31.6 percent delayed or avoided an office visit for their child compared with 3.8 percent of those with lower cost sharing, and 19.4 percent of those with higher cost sharing delayed or avoided an emergency department visit compared with 1.2 percent of those with lower cost sharing.

¹¹ The authors suggest that the low rate of switching to generic prescription drugs could be due in part to the limited availability of generic asthma medications.

¹² High-risk individuals were defined as the least healthy 25 percent of participants, as measured by metrics of smoking, weight, cholesterol level, diastolic blood pressure, functional far vision, and risk of dying. Those who qualified for Medicare due to age or disability were excluded.

¹³ Researchers arbitrarily set the risk level for the average person at 1.0; those with low-income and elevated risk had a score of 2.1 at exit from cost-sharing plans, and 1.8 at exit from the free-care plan.

¹⁴ Researchers did not collect periodontal data for children under 12.

¹⁵ This study used the term “elderly” to refer to the group of adults that had a mean age of approximately 73 years. However, the study did not define the age range found in this group. The study used the term “welfare recipient” to categorize the non-elderly adult group receiving government assistance.

¹⁶ High-deductible health plans were defined as plans with annual deductibles of more than \$2,000 per family.

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