The Oregon Health Insurance Experiment: What's the Verdict for Medicaid?

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Study Overview

Objective. To examine the effect of enrollment in Medicaid on health, access to care, and financial outcomes.

Design. Randomized controlled experiment, consisting of a 2008 health insurance lottery to determine which eligible adult Oregon residents would have the opportunity to enroll in the Oregon Medicaid program. Roughly 2 years after the lottery was completed, those winning the lottery and controls who signed up but did not win were invited to participate in the outcomes study.

Setting and participants. The lottery arose because of limited availability of new spots in Oregon Health Plan Standard, one of Oregon's Medicaid programs that caters to adults without other specific qualifying conditions for Medicaid (eg, elderly, disabled, pregnant, child). The program had not enrolled any new participants since 2004, and they created the lottery in 2008 as a fair way to allocate new spots. Eligible participants in the lottery were between 19 and 64 years of age, a legal resident of Oregon, did not qualify for other public insurance, had been uninsured for the prior 6 months, had an income below 100% of federal poverty, and had fewer than $2000 in assets. About 30% of lottery winners ultimately enrolled in the Medicaid program; 40% of winners failed to complete an application, and 30% were not eligible for enrollment at the time of their application. Ultimately, winning the lottery was associated with a 24% (95% confidence interval [CI] 22%–26%) increased probability of enrollment in Medicaid during the study period (defined as March 2008 to the time of a participant's examination in late 2009 or 2010). This outcomes study focused for logistical reasons on the Portland area, and 10,405 individuals who won the lottery were invited to enroll as were 10,340 who did not win; 6387 and 5842 participants agreed to participate. The research team completed in-person interviews with study enrollees and collected blood spots an average of 25 months after the beginning of the lottery.

Because the eventual enrollees in Medicaid had different characteristics from those who were did not win the lottery, the researchers utilized adjustment strategies to capture the causal link between Medicaid enrollment and outcomes. Specifically, they used an instrumental variable approach, under the assumption that health outcomes could only be affected by actual enrollment in Medicaid. Because winning the lottery (the instrumental variable in this case) increased the probability of Medicaid enrollment by 24%, the effect

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of Medicaid enrollment was estimated to be 4 times that of the effect of winning the lottery.

Main outcome measures. Hemoglobin A1c, blood pressure, and cholesterol levels, depressive symptoms, self-reported health, health care utilization, medical diagnoses, and out-of-pocket spending for health services.

Main results. Among lottery winners and control study participants, 56% and 57% were women, 35% and 36% were 19 to 34 years of age, and 37% and 36% were 35 to 49 years of age. In both groups, 69% were non-Hispanic white, 11% non-Hispanic black, and 17% Hispanic. During the in-person assessments, 16.3% of control participants had elevated blood pressure; the modeled absolute effect of Medicaid coverage on elevated blood pressure was 1.3% lower (95% CI –7.2 to 4.5, $P = 0.65$). Among controls, 14.1% had high total cholesterol, and 5.1% had a HbA1c level ≥ 6.5 mg/dL, with the absolute effect of Medicaid estimated to be 2.4% (95% CI –7.8 to 2.9, $P = 0.37$) and 0.9% (95% CI –4.4% to 2.6%, $P = 0.61$) lower, respectively. Results were also nonsignificant when examining the effect of Medicaid on new diagnoses of hypertension, hyperlipidemia, and diabetes after the lottery and use of medications for each of these conditions. For depression, 30% of control participants screened positive, while Medicaid coverage lowered depression rates by 9.2 percentage points (95% CI –16.7 to –1.6, $P = 0.02$); Medicaid coverage also was associated with more diagnoses of depression and use of antidepressants after the lottery. 80.4% of control participants reported that their health was the same or better than the year prior, with 7.8% more reporting such with Medicaid coverage (95% CI 1.5–14.2%, $P = 0.02$). For financial outcomes, 58.8% of controls reported some out-of-pocket health spending with a mean of $553; 5.5% reporting catastrophic expenses, and 57% reporting having medical debt. The effect of Medicaid lowered these levels by 15.3%, $215, 4.5%, and 13.3% respectively. All of these values demonstrated a significant effect. Health care utilitization was higher with Medicaid enrollment, including for use of any prescription medications, office visits, and preventive services. Access to care also was improved, with a 23.8% higher rate of having a usual place of care and 11% increased report of receiving all of care needed in the prior 12 months. The cost of this increased health care utilization was $1171 (95% CI $199–$2144, $P = 0.02$) higher with Medicaid enrollment.

Conclusion. Medicaid enrollment, modeled in a sample that was offered enrollment upon winning a lottery, was associated with lower depressive symptoms, higher self-reported health, increased health care utilization and expenditures, and improved access to care. Medicaid enrollment did not improve blood pressure, cholesterol, or glucose.

Commentary

Medicaid has been the focus of intense partisan divides in the United States since its creation in the 1960s. The partisan debate over Medicaid has only increased with the passage of the Affordable Care Act in 2010. Under this health reform legislation, one of the major vehicles for expanding health insurance in the United States will be the 2014 expansion of Medicaid to eligible adults with incomes ≤ 138% of federal poverty (income up to $32,500 for a family of 4 according to 2013 federal poverty guidelines) [1,2]. Under most current state Medicaid programs, adults are not eligible for Medicaid unless they have an additional qualifying condition: elderly, disabled, pregnant, or dependent children. The Medicaid expansion is projected to lead to 21 million new enrollees by 2022 at a cost of roughly $1 trillion, with 95% of the costs of this expansion covered by the federal government. These enrollment and cost estimates could be much lower, depending on whether states choose to accept enrollment. In June 2012, the Supreme Court ruled that Medicaid expansion was optional and could not be coerced by the federal government [3]. As of March 2013, 27 states have indicated their support for Medicaid expansion while 17 have expressed opposition and another 7 have been equivocal [1].

A pivotal feature of support or opposition to Medicaid is its effect on health. Does Medicaid improve health or is it an expensive and inadequate source of health care? Few studies can effectively answer this question because of the complicated selection factors leading to eligibility and enrollment in Medicaid. For an observational study, it would be quite difficult to come up with a true control group of people without Medicaid who otherwise were eligible and could enroll. Until now. In 2008, Oregon opened enrollment to their specific Medicaid program that provides insurance to adults without any other qualifying conditions for Medicaid. Because of the anticipated high interest and only limited spots available (about 10,000), they conducted a series of lotteries to ensure that enrollment was fair. Researchers for this

study took this opportunity to explore a truly random allotment of Medicaid. They enrolled and conducted in-person interviews of subjects who won the lottery and those who failed to win; this latter group served as the control group. Because only 30% of lottery winners ultimately enrolled in Medicaid, the analysis accounted for this factor by adjusting results by a factor of 4, such that the effect of Medicaid was anticipated to be 4 times as large as the effect of simply winning the lottery.

The results provided fuel for both sides of the Medicaid argument. Medicaid enrollment appeared to improve self-reported health, especially mental health functioning, and decreased depressive symptoms. Other benefits included improved access to health care, more use of preventive services, lower out-of-pocket costs (by $215), and fewer catastrophic health expenses and medical debt. These access and cost findings, after a mean of 2 years after the lottery, were similar to findings 1 year after the lottery [4]. However, no effect was seen on blood pressure, cholesterol, and glucose. The study team specifically chose these outcomes because of their high prevalence in the US population and the ability to improve each of these factors within a short period of time with medications and lifestyle changes.

Several limitations were evident with this study. First, the intervention itself was somewhat diluted. In the control group, 18.5% were on Medicaid at some point during the study period (March 2008 through the time of the in-person interview) compared with 42.6% of the lottery winners. The total number of months of enrollment in Medicaid during the study period was 2.6 months for the control group and 6.8 for the lottery winners. And, at the time of their in-person assessment, 36% of the controls had some health insurance compared with 46% of the lottery winners. By using an instrumental variables approach, accounting for the fact that the probability of Medicaid enrollment increased by only 24% among lottery winners, the authors did analytically limit the effect of this dilution.

Second, the morbidity of the sample under study, assessed by study participant self-report, was relatively low. 18% of participants who ended up in the control group reported that they had hypertension pre-lottery, 13% reported they had high cholesterol, 7% diabetes, and 2% a heart attack. The highest prevalence of disease was depression, with 35% of controls reporting this diagnosis prior to the lottery. The pre-lottery prevalence of these conditions among the lottery winners was similar. This low prevalence substantially limited the power of this study to find an effect on most of the health outcomes. Authors conducted several additional analyses to increase their power, including examining the effect of Medicaid on older subjects and those who carried a pre-lottery diagnosis of hypertension, hyperlipidemia, diabetes, heart attack, or congestive heart failure [5]. No effect was seen in these groups or in an assessment of the Framingham Risk Score, another attempt to increase the power of the study to find an effect on objective health outcomes.

So, what's the verdict on Medicaid, understanding the caveats associated with this study? An accompanying editorial to the article cites 3 major purposes of health insurance: "to protect financial assets in the event of illness, to improve access to care, and to protect health" [6]. In the editorial, Kronick and Bindman judged 2 out of 3 goals met, with the third goal—protecting health—achieving mixed results. Financial assets were substantially protected, with catastrophic health costs reduced from 5.5% in the control group to an estimated 1% among Medicaid enrollees. 24% more were estimated to have a regular source of care with Medicaid enrollment, and 14%, 30%, and 15% more had a Pap smear, mammogram, and cholesterol measurement. For health outcomes, depressive symptoms declined and self-reported health improved, but objective measures of cardiovascular risk did not. In all, the verdict on Medicaid is fairly strong. As more adults enter Medicaid in 2014, we will find out more about the effects of this insurance.

Applications for Clinical Practice

Medicaid improved financial outcomes and access to care among adults. Medicaid also improved depressive symptoms but not blood pressure, cholesterol, or glucose levels. Physicians should be aware of these results as they plan for the influx of new Medicaid patients next year.

—Jason P. Block, MD, MPH

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