

Report from the States

# The Oregon Health Insurance Experiment: When Limited Policy Resources Provide Research Opportunities

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**Abstract** In 2008 Oregon allocated access to its Medicaid expansion program, Oregon Health Plan Standard, by drawing names from a waiting list by lottery. The lottery was chosen by policy makers and stakeholders as the preferred way to allocate limited resources. At the same time, it also gave rise to the Oregon Health Insurance Experiment: an unprecedented opportunity to do a randomized evaluation—the gold standard in medical and scientific research—of the impact of expanding Medicaid. In this article we provide historical context for Oregon’s decision to conduct a lottery, discuss the importance of randomized controlled designs for policy evaluation, and describe some of the practical challenges in successfully capitalizing on the research opportunity presented by the Oregon lottery through public-academic partnerships. Since policy makers will always face tough choices about how to distribute scarce resources, we urge thoughtful consideration of the opportunities to incorporate randomization

We would like to express appreciation to our study partners at the state of Oregon. Lawrence Brown provided helpful feedback during the early stages of this article. We gratefully acknowledge funding from the assistant secretary for planning and evaluation in the US Department of Health and Human Services, the California HealthCare Foundation, the John D. and Catherine T. MacArthur Foundation, the National Institute on Aging (P30AG012810, RC2AGO36631, and R01AG0345151), the Robert Wood Johnson Foundation, the Sloan Foundation, the Smith Richardson Foundation, and the US Social Security Administration (through grant 5 RRC 08098400–03–00 to the National Bureau of Economic Research as part of the SSA Retirement Research Consortium), and Centers for Medicare and Medicaid Services’ matching funds for this evaluation.

*Journal of Health Politics, Policy and Law*, Vol. 38, No. 6, December 2013  
DOI 10.1215/03616878-2373244 © 2013 by Duke University Press

that can substantially improve the evidence available to inform policy decisions without compromising policy goals.

## Introduction

In 2008, Oregon's decision to allocate access to public health insurance by lottery made national news (e.g., Lehmann 2008, which aired on National Public Radio). Media attention focused largely on the mechanism of using random chance to distribute a public good usually provided based on need. Oregon, having promoted transparent rationing decisions in health care for thirty years, argued it was a fair approach to sharing a limited resource.

Oregon's Medicaid lottery was born of policy necessity: the limited resources available to expand enrollment did not meet the demand for the program. However, unconventional as it was, Oregon's decision also provided researchers with a true experimental design that allowed for the first rigorously controlled study on the costs and benefits of expanding Medicaid to previously uninsured low-income adults (Allen et al. 2010: 1498–506). As Oregon's Medicaid lottery was unfolding, a group of researchers launched the Oregon Health Insurance Experiment (OHIE) to capitalize on this rare opportunity. The experiment was particularly timely, as states now weigh the choice of whether to expand Medicaid through the Affordable Care Act.

The Oregon experiment is a prime example of how policy implementation and research can work in tandem. Policy and program changes are often implemented in stages; if done thoughtfully, such phased rollouts can lend themselves to high-quality evidence to inform future policy. In previous work we have described the findings from the randomized evaluation to date, including the impact of Medicaid coverage on health care use, financial strain, self-reported health, depression, and physical health measures (Finkelstein et al. 2012: 1057–106; Baicker et al. 2013: 1713–22); as more findings become available they will be posted on our study website ([www.nber.org/oregon](http://www.nber.org/oregon)). In this article, we provide a case study of this potential alignment between policy and research, outlining the policy path that led to the Oregon Medicaid lottery and how the OHIE was able to leverage this opportunity to conduct a rare randomized trial in health policy research. We describe some of the challenges of doing gold-standard research in a turbulent policy environment and lessons learned from our experience.

## Background: The Path to Oregon's Medicaid Lottery

In the 1980s rising health care costs were straining state budgets; many states reduced their Medicaid spending by further restricting income eligibility thresholds and by choosing not to cover optional populations (Jacobs, Marmor, and Oberlander 1999: 161). Oregon took a different approach: cover more people, but do not cover things that evidence has shown to be ineffective or inefficient (Ham 1998: 1965–69). In short, the idea was to explicitly ration the *services* covered rather than implicitly ration the number of people (Brown 1991: 28–51).

In 1989, the Oregon legislature created a committee of stakeholders, primarily physicians, charged with creating a *prioritized list*: a rank-ordering of conditions and treatments based on a combination of community values and evidence-based cost-effectiveness (Diprete and Coffman 2007).<sup>1</sup> Determined by the state's budget, a line would be drawn on that list, with everything above the line being covered and everything below it not covered (Leichter 1999: 147). The prioritized list was never fully implemented, however: following modifications to the list and negotiations with the Centers for Medicare and Medicaid Services (CMS) centered on mandated benefits, Oregon's Medicaid program soon became a relatively fixed and generous benefit package. One estimate found that the list ultimately saved only 2 percent relative to status quo projections across its first five years (Jacobs, Marmor, and Oberlander 1999: 161). The thriving economy nonetheless allowed Oregon's Medicaid program to expand, with the uninsurance rate falling from 18 percent in 1993 to a low of 11 percent in 1996 (Ham 1998; Oregon Department of Human Services 2006).

By 2003, however, the economy had soured, and Oregon lawmakers were faced with a significant budget shortfall. Oregon's Medicaid program was split into two distinct programs: one for those who were financially and categorically eligible under federal guidelines (called OHP Plus), and one for Oregon's "expansion population" of primarily nondisabled, low-income (i.e., below the federal poverty line) adults (OHP Standard).<sup>2</sup> For those in the OHP Standard program, the legislature eliminated coverage of some categories of benefits (such as mental health and chemical

1. The law was passed in 1989, but not implemented until 1994 (Oregon Department of Human Services 2006).

2. Categorical eligibility groups include low-income children, pregnant women, and people who are blind or disabled.

dependency outpatient services) and imposed additional premium contributions and cost-sharing requirements, although some of these were later reversed.<sup>3</sup> These changes led to rapid attrition from OHP Standard, reducing the caseload by 46 percent in less than a year (Oberlander 2007).<sup>4</sup> Oregon closed to new enrollment in July 2004 (Oregon Department of Human Services 2006).

### Oregon's Medicaid Lottery

By 2007, membership in OHP Standard had dropped to nineteen thousand through attrition. Along with accumulated revenue from a new tax on managed care providers and hospitals (House Bill 3057, 74th Leg. [Oregon 2007]), this put the program in surplus. Oregon began negotiations with CMS about expanding OHP Standard. Initial thoughts were to expand to individuals in the greatest need, but CMS rejected this option (Yardley 2008). Oregon then proposed a first-come, first-served approach, but there was concern that this would disadvantage individuals in rural areas, those without computer or telephone access, and those experiencing homelessness. A member of the Oregon's Medicaid Advisory Committee suggested a lottery (MAC 2007: August 22), and state officials submitted the waiver request to CMS proposing a lottery as the mechanism for allocating access to the program (MAC 2007: October 24). Within a few months, federal permission was granted.

While the lottery was featured in national media for taking a controversial approach to rationing, the lottery itself did not cause a noticeable outcry in Oregon. The director of Oregon Health Action Campaign, a statewide advocacy organization, was quoted as saying, "This is such a wonderful opportunity. We've heard absolutely no complaints, just a lot of hope that they are the ones who will be selected" (Skidmore 2008). Indeed, many on the lottery list also felt that this was fair. One interviewee, for example, reported, "I don't know any other better way to do it unless you just say everybody universally has health care. Other than that, there's no

3. Other program changes eliminated coverage of durable medical equipment and non-emergent dental care. An administrative rule was imposed that automatically disenrolled members with late premium payments and disqualified them from the program for six months, but it was eventually repealed, and behavioral health benefits were later reinstated. Advocates also successfully sued the state to eliminate co-payments in the OHP Standard program.

4. Studies of this period also found that, relative to the OHP Plus population, those on OHP Standard experienced decreased access to care, lower utilization, and higher self-reported financial strain related to medical debt (Carlson, DeVoe, and Wright 2006: 391–98; Lowe, Fu, and Gallia 2010: 619–27; Wright et al. 2010: 2311–16).

real means test for determining a person's needs" (Allen et al., unpublished data). Advocacy groups joined with state officials to launch a massive public outreach campaign to get people signed up for the lottery; efforts included personalized outreach through community and provider networks and a broad media campaign. Between January 28 and February 29, 2008, almost ninety thousand Oregonians were put on the reservation list, waiting for a chance of coverage. During the next six months, the state drew about thirty-five thousand names from the list (Finkelstein et al. 2012: 1057–106).<sup>5</sup>

### **The Challenges of Mixing Research and Policy in Real Time**

Researchers in Oregon and across the country recognized the lottery as an unprecedented opportunity to apply a gold-standard research design to examine the costs and benefits of Medicaid expansions. State officials; researchers from Harvard, Massachusetts Institute of Technology (MIT), and the National Bureau of Economic Research in Cambridge, Massachusetts; and researchers from Oregon joined to form a research collaborative dedicated to taking full advantage of the opportunity. Over the next several years, we collected extensive data including about twenty-five thousand mail surveys, over twelve thousand in-person health screenings, in-depth qualitative interviews, and administrative data on hospitalizations, credit history, mortality, and emergency-department use.

Working in a dynamic policy environment posed particular challenges. First, the lottery launched shortly after being announced, giving researchers a very small window to seek funding, secure support, and begin collecting data. This rush limited the availability of prelottery baseline characteristics and our ability to plan fielding in advance, creating logistical challenges to realizing the potential benefits of a randomized design. Baseline data are not necessary to identify causal effects in a randomized design: since treatment and control groups are the same on average before the lottery by construction, differences observed between the groups after the lottery can be causally attributed to the Medicaid lottery itself. However, more time prior to the lottery would have allowed us to collect pre-randomization data that could have been used to improve statistical power and create analytic subgroups of interest, such as individuals with certain chronic illnesses at baseline.

5. Near the end of 2009, the state reopened the reservation list to new individuals and has kept it open. The state plans to draw names from the list by lottery until it is superseded by the expansion under the Affordable Care Act in 2014.

Second, Oregon reopened the lottery list and began conducting new draws while we were still in the field conducting in-person health screenings on thousands of participants from the original 2008 drawings. We worked closely with the state to accelerate our fielding efforts to account for the new lottery list, and we trained our interviewers to end the interview by helping uninsured participants to add themselves to the new lottery list. This preserved both our study and the important work the state was doing to expand coverage.

These examples highlight one of the key challenges of fielding research in a dynamic policy environment: finding a way to preserve the integrity of the research design without interfering with or slowing achievement of the state's policy goals. Oregon policy makers were managing a significant expansion, working to improve the application process, and eyeing future reform efforts; coordinating with researchers like us imposed additional strain on their scarce time. More important, getting more people covered as quickly as possible rightly took priority over the fielding of a study, but decisions made about how to accomplish that goal occasionally endangered the study's viability. The OHIE was able to continue only because Oregon officials worked to keep us informed of impending policy changes, allowing us time and flexibility to adjust our fielding strategies accordingly.

This active collaboration was facilitated in several ways that may inform future state-academic partnerships. First, the state had a culture of evidence-based health policy making and was already collaborating with local research institutions.<sup>6</sup> The study was aided by these established procedures for managing data-use agreements and financing. Some members of the team had preexisting relationships with state policy makers that facilitated rapid communication. Prompt acquisition of initial funding lent legitimacy to the ambitious effort, enabled investment in study infrastructure, and paved the way for additional grants.

Although the active partnership between Oregon and researchers that was crucial to the study clearly imposed some time costs on state officials, it also conveyed some tangible and intangible benefits to the state in return. An important component of the partnership was that academic researchers gave timely and tailored information to the state about questions related to the larger study objectives. Additional relationships were built between the state and researchers at Harvard, MIT, and the National Bureau of Economic Research that led to further collaborations and expanded the state's research

6. As an example, the state staffed the Oregon Health Research and Evaluation Collaborative. For more information see [www.ohrec.org](http://www.ohrec.org).

network. The study also received stimulus funding that created approximately seventy professional jobs in Oregon.<sup>7</sup> As states take the lead in implementing health system reforms, the OHIE may provide an example of the mutual benefit that research-policy partnerships can provide.

### **The Importance of the Randomized Study Design**

If the Oregon Health Insurance Experiment's fielding challenges highlight the struggles of conducting sound randomized trials in rapidly shifting policy environments, the study's results highlight how very much it is worth doing. The OHIE represents the first ever randomized evaluation of the impact of Medicaid coverage for the uninsured. Moreover, it is, to our knowledge, one of only three randomized evaluations of health insurance in the United States to date.<sup>8</sup>

Although there are many studies comparing health or health care use between the insured and uninsured, inferring the impact of health insurance from such comparisons is difficult. The insured and uninsured may differ in many ways—such as income, employment, or initial health—that may affect the outcomes being studied. This makes it difficult to discern the effects of insurance itself.

Random assignment of health insurance to some but not others avoids such confounding factors: those selected in the lottery are—by construction—on average the same *ex ante* as those not selected. Because of this, differences in subsequent outcomes can reasonably be attributed to changes in insurance coverage driven by the lottery, rather than differences in baseline health, income, social capital, or any other explanation. Using the experimental design afforded by the OHP lottery, we found causal evidence that, in the first one to two years, Medicaid coverage for previously uninsured low-income adults increased health care use (including hospitalizations, office visits, prescription drugs, and preventive care), almost eliminated catastrophic out-of-pocket medical spending, relieved financial strain related to medical debt, and improved self-reported health outcomes

7. American Recovery and Reinvestment Act of 2009.

8. The RAND Health Insurance Experiment from the 1970s continues to be one of the most influential studies in health services research and US health policy; it randomized the type of health insurance coverage across individuals to study the effects of different insurance arrangements, but did not have an uninsured arm (Newhouse et al. 1993). The Accelerated Benefits Demonstration Project, conducted around the same time as the Oregon Health Insurance Experiment, randomized new recipients of Social Security Disability Insurance (SSDI) to immediate Medicare eligibility and other services (Michalopoulos et al. 2011; Weathers and Stegman 2012).

and depression measures; we found no evidence that Medicaid reduced the prevalence of diabetes, high cholesterol, or high blood pressure (Finkelstein et al. 2012: 1057–106; Baicker et al. 2013: 1713–22).

The study also illustrated the potentially misleading results of observational study designs that compare those who are covered by Medicaid to the uninsured, rather than using randomization to isolate the effect of the insurance itself. For example, results from the randomized evaluation showed that Medicaid substantially improved self-reported health. However, if we analyzed the same data using observational methods rather than taking advantage of the randomization, results suggested that Medicaid actually worsens these same self-reported health measures (Finkelstein et al. 2012: online appendix table A27). These observational results do not reflect the causal impact of insurance; presumably, they reflect the fact that people in worse health are more likely to seek health insurance. Randomization that was originally implemented as a mechanism to allocate scarce resources fairly thus substantially improved the information available to policy makers.

## Discussion and Conclusions

Oregon has a long history of explicit and innovative consideration of how limited public resources should be allocated. Over the past twenty years, the state has tried controlling Medicaid spending by restricting *what* is covered (the “prioritized list”) to avoid restricting *who* is covered (through changing eligibility requirements and barriers like high premiums), with mixed success. This legacy of explicit decision making helped pave the way for the Oregon Medicaid lottery. Random allocation was chosen because it seemed like the most fair way to allocate coverage given limited resources, but it also enabled researchers to design and implement a gold-standard evaluation of the costs and benefits of Medicaid expansions.

Policy makers will always face tough choices about how to allocate scarce resources. Big changes in health care policy often take time to implement, and it may be difficult to “flip a switch” and instantly roll out large-scale transformations system-wide. As a result, many innovations in social programs are implemented in stages. These staged rollouts can be done in a haphazard way, or they can be thoughtfully implemented in a way that creates opportunities for high-quality research that can inform future decisions without compromising current policy goals. Randomization of timing or selection of initial sites or participants can be a fair approach to staged rollouts, help achieve policy priorities, and provide researchers the



opportunity to give policy makers the evidence they need to inform smart, evidence-driven policy design.

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