By Bill J. Wright, Ginny Garcia-Alexander, Margarette A. Weller, and Katherine Baicker

DOI: 10.1377/hlthaff.2016.1325
HEALTH AFFAIRS 36,
NO. 5 (2017): 838–845

Low-Cost Behavioral Nudges Increase Medicaid Take-Up Among Eligible Residents Of Oregon

Bill J. Wright is a research scientist at the Center for Outcomes Research and Education of Providence Health and Services, in Portland, Oregon.

Ginny Garcia-Alexander is an associate professor of sociology at Portland State University, in Oregon.

Margarette A. Weller is a project manager at the Center for Outcomes Research and Education of Providence Health and Services.

Katherine Baicker (Kbaicker@hsph.harvard.edu) is a professor of health economics in the Department of Health Policy and Management, Harvard T. H. Chan School of Public Health, in Boston, Massachusetts.

ABSTRACT Efforts to reduce the ranks of the uninsured hinge on take-up of available programs and subsidies, but take-up of even free insurance is often less than complete. The evidence of the effectiveness of policies aiming to increase take-up is limited. We used a randomized controlled design to evaluate the impact of improved communication and behaviorally informed "nudges" designed to increase Medicaid take-up among eligible populations. Fielding randomized interventions in two different study populations in Oregon, we found that even very low-cost interventions substantially increased enrollment. Effects were larger in a population whose members had already expressed interest in obtaining coverage, but the effects were more persistent in low-income populations whose members were already enrolled in other state assistance programs but had not expressed interest in health insurance. The effects were similar across different demographic groups. Our results suggest that improving the design of enrollment processes and using low-cost mass-outreach efforts have the potential to substantially increase insurance coverage of vulnerable populations.

Expanding health insurance coverage is a major goal of public policies such as the Affordable Care Act (ACA). The ACA relies on a combination of strategies to expand coverage, such as subsidizing private insurance purchases in the health insurance Marketplaces and expanding eligibility for Medicaid. Medicaid expansions have been estimated to have generated as much as half of the gains in coverage under the ACA.[1]

However, take-up of available health insurance benefits in the United States has always been much less than 100 percent.[2–8] Millions of Americans who are eligible for free or heavily subsidized insurance remain uninsured. Medicaid participation rates vary widely across states and population groups, ranging from nearly 90 percent of eligible adults in some states to less than half in others.[9–12] Even in states that expanded Medicaid under the ACA, more than 25 percent of poor adults remained uninsured in 2014.[13] Take-up among eligible high-need populations, such as children and pregnant women, has historically been under 35 percent, while more than 60 percent of all children who lacked insurance in a 2007 study were eligible for Medicaid or the Children's Health Insurance Program (CHIP).[14–18] While eligible but uninsured populations may be able to enroll in public insurance when they need care, they might have been unaware that they were eligible for benefits and forgone care while uninsured that would have improved their health outcomes.[8,19–23]

These patterns present a puzzle: Why do people eligible for free insurance remain uninsured? Behavioral economics may offer some insights. Research suggests a number of potential barriers to take-up, including the complexity of choosing and applying for benefits, potential stigma asso-

ciated with participation, lack of awareness of options, and a greater focus on avoiding present hassles than on mitigating future risks.[14,24–33]

These potential barriers suggest that targeted outreach that raises awareness and simplified enrollment processes might increase take-up. With the implementation of the ACA, a number of states have made efforts to increase enrollment rates among uninsured people who are eligible for Medicaid. Those efforts included mass-marketing strategies and messages targeted to communities such as Hispanics, African Americans, and young adults, who may have relatively few sources of information, language barriers, or limited health literacy and thus be harder to reach than other communities.[34–37] Some states have tried to increase enrollment by investing heavily in providing personalized one-on-one enrollment assistance through navigators, application counselors, and partnerships with effective community-based organizations and by establishing a more streamlined enrollment process with multiple application pathways to enrollment.[38–40]

While there is some evidence from before the advent of the ACA that such actions may increase take-up across a range of benefits, their effectiveness in increasing Medicaid enrollment in the modern context is limited, and interpretation is complicated by the difficulty of isolating the effect of the outreach and enrollment process from the many other confounding factors that drive differential take-up of available benefits.[8,29,41–45] The publicity surrounding the ACA and Marketplace open enrollment periods may have changed take-up behavior, as might the individual mandate (although it does not impose penalties for nonenrollment on most poor people). The states retain a great deal of flexibility not only in the choice of whether to expand, but also in the intensity of outreach and the complexity of the enrollment process.[46] Thus, there is likely to remain substantial variation in the take-up of benefits—and opportunity to increase take-up for those states for which it is a priority.

This study used a randomized controlled design to gauge the effectiveness of a low-cost, behaviorally informed intervention to increase take-up of Medicaid. In June 2013 Oregon held a "lottery" to allocate a limited number of Medicaid slots among eligible uninsured people on a waiting list. Then in September 2013, in conjunction with the open enrollment period in the months leading up to the January 2014 ACA expansion, Oregon launched a campaign to encourage low-income residents who were presumed eligible for Medicaid but had not enrolled to sign up for coverage under the ACA. We took advantage of these two opportunities to experimentally test the impact of targeted outreach efforts on Medicaid take-up in Oregon in advance of and in conjunction with the ACA. Assessments of the effectiveness of such enrollment tools, and how the effects may differ across populations and in different policy environments, can provide conceptual and practical guidance to states seeking to increase take-up of health insurance benefits.

Study Data And Methods

This article reports the results of two separate randomized controlled trials, in which we implemented enhanced communication and enrollment processes for a randomly selected subset of the study population. Protection of human subjects was overseen by Providence Health and Services' Institutional Review Board.

INTERVENTION AND STUDY POPULATION The intervention was deployed in two different populations in two different policy environments. In each experiment we identified a list of study subjects potentially eligible for Medicaid and then randomly assigned those subjects to receive either the state's standard outreach efforts (the control group) or our enhanced outreach protocols (the intervention groups, described below). Details of the intervention and the study samples are presented in the online Appendix.[47]

The intervention was designed to improve the effectiveness of materials that the intervention group received and to increase the intensity of contact with the members of that group.

The enhanced materials were designed to help overcome some of the behavioral barriers to take-up, such as procrastination, complexity, and lack of salience of future benefits. We redesigned the state's standard materials to make them easier to understand and to act on. For example, our materials simplified the description of the steps involved in enrollment and offered friendly assistance (including photographs of staff members), and they highlighted the urgency of completing the required steps in time to obtain coverage. Sample materials are provided in the Appendix.[47]

These behaviorally informed design elements were complemented by reminders that further nudged participants as deadlines approached. There was more frequent outreach that used varying modes of contact (including mail, telephone, and e-mail) and was better timed to focus attention on key deadlines. For a subset of the intervention group (the high-intensity group), we augmented this protocol with personalized outreach and enrollment assistance.

THE LOTTERY SAMPLE Long before passage of the ACA, Oregon had a Medicaid expansion pro-

gram (called Oregon Health Plan Standard) that covered low-income nondisabled adults. Before 2008 this program was closed to new enrollment, but from 2008 to 2013 the state allowed limited additional enrollment, allocating slots by lotteries among people who signed up for a reservation list. Those selected in the lottery had up to forty-five days to complete a Medicaid application; those applicants who were deemed eligible were then enrolled in the program. In 2008 those who were not selected had no opportunity to enroll in Medicaid, which formed the basis for the Oregon Health Insurance Experiment—described in detail elsewhere.[48–51]

We used participants in lottery draws from 2013 for our first experiment, randomly assigning those who were selected in the lottery to one of three groups. The first was a control group ($n = 291$), whose members received only the state's basic outreach efforts: a letter indicating selection in the lottery and a mailed application packet. The second was a low-intensity intervention group ($n = 304$), whose members received the above information plus a series of additional postcards, mailings, e-mails, address tracking and updates, and automated telephone outreach designed to encourage enrollment. These mass outreach efforts collectively cost an average of about $1.75 per person. The third was a high-intensity intervention group ($n = 288$), whose members received everything that members of the low-intensity group did plus personalized telephone and in-person outreach and enrollment help from trained application assistants. These additional contacts were more resource-intensive and individualized, and they collectively cost an average of about $28 per person.

THE PRESUMPTIVE ELIGIBILITY SAMPLE Oregon's Medicaid lottery ended before the ACA Medicaid expansion was implemented, but that expansion offered us an opportunity to deploy the intervention with a slightly different population. Oregon chose to expand Medicaid coverage to all poor adults under the ACA. In anticipation of this expansion, the state sought to reach out to likely eligible but unenrolled populations. One such group included people who were enrolled in other means-tested programs such as the Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) and those who had children enrolled in the state's Healthy Kids Medicaid program but who were not themselves enrolled in Medicaid. Enrollees in these other means-tested programs likely met Medicaid income eligibility requirements, so the state mailed these people a "fast-track" enrollment letter in the fall of 2013. The recipients had to sign and return the letter (or call a toll-free number) to be enrolled in Medicaid starting in January 2014, although they could still enroll using the letter as late as March 2014.

In our second experiment, we randomly assigned the people on the fast-track list to one of two study arms. The first was a control group ($n = 153{,}341$), whose members received only the state's regular outreach efforts, including the fast-track enrollment letter and exposure to the statewide media campaign to encourage Medicaid enrollment. The second was a low-intensity treatment group ($n = 5{,}674$), whose members received the above plus a series of additional targeted postcards, mailings, and automated telephone outreach to encourage enrollment. These additional efforts collectively cost an average of about $2.50 per person.

DATA AND ANALYTIC METHODS We matched our study sample to state Medicaid enrollment files to assess enrollment rates among treatment and control groups. Our key outcome was enrollment in Medicaid at regular time intervals after our interventions. Enrollment information came from state Medicaid enrollment records for the period 2013–15, which included the two years following each of our two phases. These data and the matching process are described in the Appendix,[47] which also presents demographic characteristics of enrollees.

Our primary specification was a simple comparison of enrollment rates between treatment and control groups for each experiment over time. For the lottery sample, we also estimated an equation to see if the high-intensity intervention produced a different effect on enrollment than the low-intensity intervention. The estimating equations are shown in the Appendix.[47]

Our randomization meant that the inclusion of covariates was unnecessary, although they might improve precision. Results including the covariates observed at baseline were quite similar to the main results presented here and are shown in the Appendix.[47] To assess the potentially differing impact of the intervention on priority subpopulations, we also estimated models with interaction terms that captured baseline characteristics (also shown in the Appendix).[47]

LIMITATIONS Our randomized controlled design yielded results that had strong internal validity and isolated the causal effect of the intervention. However, there were several limits to external validity that were inherent to our design. First, the state's use of a lottery (the setting for our first experiment) was an unusual policy environment. However, the presumptive eligibility list (the setting for our second experiment) was more representative of the policy environment in other states that expanded Medicaid using open enrollment periods.

Second, we assessed the effectiveness of en-

hanced outreach relative to standard practices, and those standard practices were idiosyncratic across states. Given the subtle nature of interventions such as enhanced communication materials, the particular characteristics of the outreach and the external environment are likely to affect the results. That said, the potential for low-cost improvements in outreach and enrollment processes to produce substantial changes in take-up behavior can be informative across settings.

Study Results

Basic demographic information on the study sample at baseline is presented in Exhibit 1. As would be expected with the randomized design, baseline characteristics were balanced across the study arms.

Exhibit 2 presents regression results showing enrollment for the control groups (constant term) and the incremental effects of the interventions at different points in time for both phases of the study. Our exploration of heterogeneous intervention effects for different subsets of the study population found no significant differences based on demographic characteristics such as age, sex, Spanish-language preference, rural residence, or previous experience with Medicaid (methods and selected results are shown in the Appendix).[47]

The lottery sample intervention resulted in a substantial short-term jump in Medicaid enrollment: 27 percent of those selected in the June 2013 lottery who received business-as-usual outreach materials (the control group) were enrolled in October 2013, compared with just under 41 percent of the low-intensity intervention group (adding the 14.3 percent coefficient estimate) and just over 41 percent of the high-intensity intervention group (adding the additional 0.5 percent coefficient estimate) (monthly results also shown graphically in Exhibit 3). Notably, there was no statistical or substantive difference in enrollment effect between the low-cost, low-intensity intervention and the high-intensity intervention, which led us to focus in the presumptive eligibility sample on a low-intensity intervention.

The short-term increase in enrollment for the intervention groups, compared to the control group, disappeared completely with the 2014 ACA expansion. By January 2014, with the expanded eligibility and concurrent mass-outreach efforts, enrollment rates in the lottery sample topped 60 percent, and there were no significant differences between treatment and control groups. (Although Exhibit 3 shows some visual separation between the high-intensity intervention group and the other two groups in late 2015, this difference was not significant. As shown in the Appendix,[47] the pooled estimate for the two lottery sample interventions was also nonsignificant, and was substantially smaller than the ef-

EXHIBIT 1

Selected characteristics of participants in the Oregon Medicaid take-up experiment, by experimental arm

		Intervention group		
	Control	Low intensity	High intensity	*p* value
LOTTERY SAMPLE (FIRST EXPERIMENT)				
Sample size	291	304	288	—[a]
Mean age (years)	42.8	41.3	41.3	0.231
Male	50.2%	47.0%	42.0%	0.139
English language preferred	95.2%	94.7%	96.2%	0.696
Residence in an urban ZIP code	53.6%	56.6%	56.3%	0.730
Global test for differences across all characteristics				0.397
PRESUMPTIVE ELIGIBILITY SAMPLE (SECOND EXPERIMENT)				
Sample size	153,341	5,674	—[a]	—[a]
Mean age (years)	35.4	35.3	—[a]	0.783
Male	43.6%	43.7%	—[a]	0.858
English language preferred	92.8%	92.9%	—[a]	0.773
Residence in an urban ZIP code	61.6%	61.2%	—[a]	0.584
Global test for differences across all characteristics				0.972

SOURCE Authors' analysis. **NOTES** The State of Oregon provided access to the lists of people who signed up for the June 2013 lottery (the first experiment) to become eligible for Medicaid and of people presumed eligible for Medicaid but not yet enrolled in September 2013 (the second experiment). These lists included names, addresses, and limited demographic information: date of birth, sex, and language preferred for written materials. Residence in an urban or rural ZIP code was determined using the 2010 census classification of ZIP codes. *p* values test balance across the groups (three groups for the first experiment and two for the second experiment). The Appendix presents additional details about the analysis presented here, as well as alternative specifications (see Note 47 in text). [a]Not applicable.

EXHIBIT 2

Effect of take-up intervention on Medicaid enrollment over time

	Enrolled on:			
	Oct 2013	Jan 2014	Sep 2014	Sep 2015
LOTTERY SAMPLE (FIRST EXPERIMENT)				
Constant (enrollment rate for control group)	0.265****	0.653****	0.674****	0.605****
Effect of intervention	0.143****	−0.018	−0.026	−0.023
Additional effect of high-intensity intervention	0.005	0.004	0.022	0.057
PRESUMPTIVE ELIGIBILITY SAMPLE (SECOND EXPERIMENT)				
Constant (enrollment rate for control group)	—[a]	0.320****	0.380****	0.415****
Effect of low-intensity intervention	—[a]	0.019***	0.035****	0.022***

SOURCE Authors' analysis. **NOTES** The exhibit shows regression coefficients from a linear probability model that assessed the effect of the randomized intervention on Medicaid enrollment in the months indicated. The numbers of people in each group are shown in Exhibit 1. The Appendix presents the estimating equation and data sources (see Note 47 in text). [a]Not applicable. ***$p < 0.01$ ****$p < 0.001$

fect in the presumptive eligibility sample at this point.)

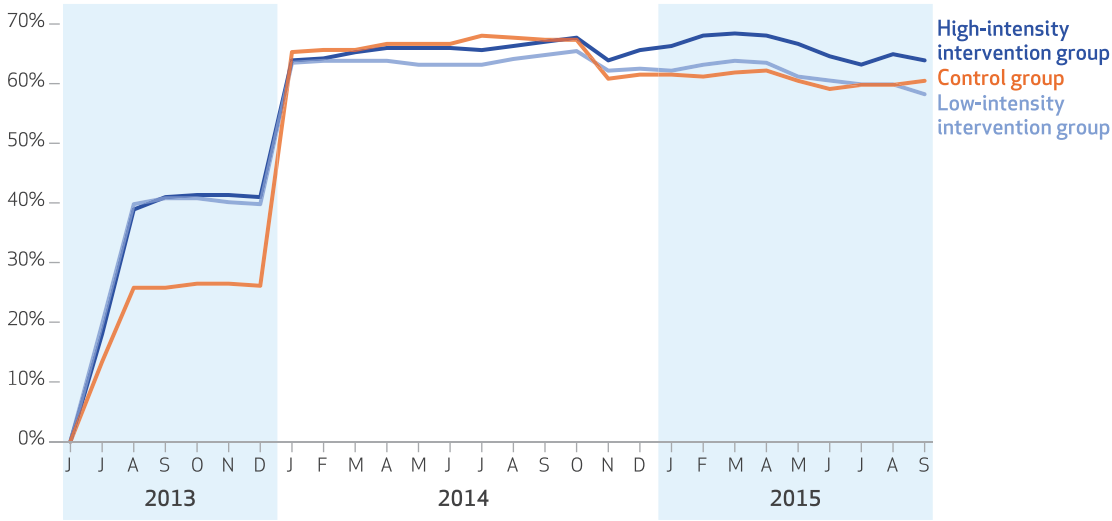
The results for the presumptive eligibility sample indicate a smaller but more persistent intervention effect: 38 percent of the control group was enrolled in September 2014, about twelve months after the intervention, compared with more than 41 percent of the intervention group (monthly results also shown graphically in Exhibit 4). This roughly 3-percentage-point or 10 percent increase appeared almost immediately after the enhanced outreach and remained intact as enrollment rates in both groups drifted up over time. It is worth noting the lower enrollment rate of this population overall, which is consistent with the fact that the lottery sample had signed up for a Medicaid lottery, indicating interest in obtaining coverage, while the presumptive eligibility sample was contacted in an unsolicited way. The effect narrowed by the end of 2015 but remained significant.

Discussion

Increasing health insurance coverage is the major goal of Medicaid expansions, yet millions of people who are eligible for coverage remain uninsured. We tested the effectiveness of low-cost behaviorally informed "nudges" to increase enrollment in targeted populations. Using a ran-

EXHIBIT 3

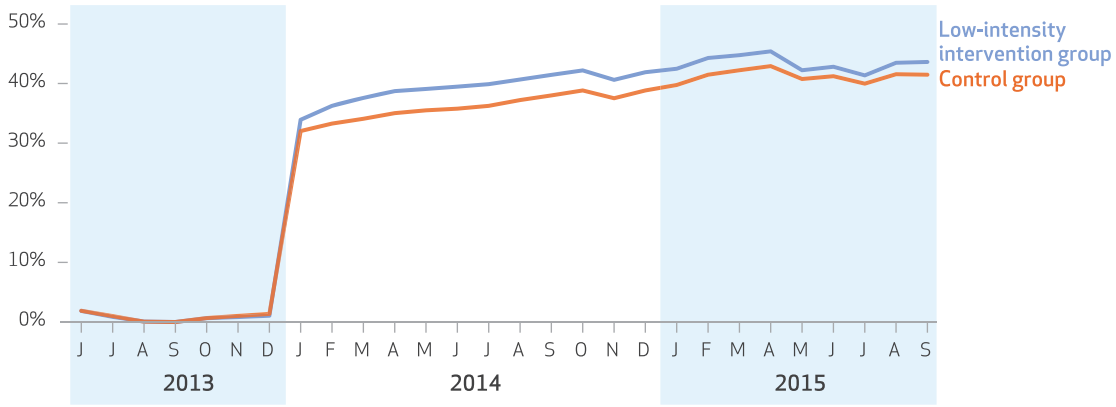
Percentages of people selected for Medicaid coverage in Oregon's June 2013 lottery who enrolled in Medicaid after the intervention, by experimental arm



SOURCE Authors' analysis. **NOTES** The numbers of people in each group are shown in Exhibit 1. The groups are described in the text. The figures depict Medicaid enrollment among intervention and control groups at each month, parallel to the results presented in Exhibit 2. The Appendix presents methods and data sources (see Note 47 in text).

EXHIBIT 4

Percentages of Oregon residents presumed to be eligible for Medicaid but not yet enrolled who enrolled in Medicaid after the intervention, by experimental arm



SOURCE Authors' analysis. **NOTES** The numbers of people in each group are shown in Exhibit 1. Both groups are described in the text. The figures depict Medicaid enrollment among intervention and control groups at each month, parallel to the results presented in Exhibit 2. The Appendix presents methods and data sources (see Note 47 in text).

domized controlled design, we showed that such nudges can substantially increase enrollment, although the magnitude and persistence of the effects varied across populations and settings.

For a population that had expressed interest in coverage, in a period in mid-2013 before the mass outreach associated with the ACA, an enhanced communication strategy increased enrollment by 50 percent relative to the control group. A low-intensity, low-cost intervention was just as effective as a higher-cost, individualized, more intensive one. After the period of mass outreach and repeated communications of late 2013, however, the control group caught up with the treatment groups, and the treatment effect had dissipated by 2014. For a different group of people who were presumed to be eligible for Medicaid but who had expressed no interest in obtaining insurance, our enhanced outreach around the advertising associated with the ACA produced a smaller but more durable 10 percent increase in enrollment relative to the control group.

These differences may be explained by some combination of the difference in study populations and policy environment. The lottery sample had expressed interest in Medicaid coverage and had a limited window of time in which to enroll. If they missed that window, however, they later experienced the broad outreach and advertising associated with the ACA expansion, along with potential changes in social norms driven by discussion of the mandate. The facts that they were particularly responsive to our enhanced communication and that those who initially remained unenrolled then caught up during the ACA open enrollment period suggest that this group's heightened interest and attention made them particularly responsive to outreach in general and that reducing barriers made a big difference in their success in enrolling. The presumptive eligibility sample may have paid less attention to insurance coverage, which could have made them harder to reach with the mass outreach efforts to which both study groups were exposed in 2014. Compared to the lottery sample, a smaller percentage of the presumptive eligibility sample responded to our enhanced communication, but enrollment rates remained higher for this intervention group than for the control group for at least eighteen months after the intervention—through another annual ACA enrollment period.

These results suggest that low-cost tools may be available to states that are as effective as some more resource-intensive tools. Intensive interventions are costly in terms of both human resources and expenditures, but they often produce only modest increases in take-up beyond those produced by low-intensity interventions. For example, the results of several studies suggest that individual assistance boosts take-up[43]—including the use of on-site case workers,[44] multilingual staff members,[8] or one-on-one counseling[45] to facilitate Medicaid application. These intensive interventions had estimated take-up effects of 2–14 percentage points. Our findings suggest that simply improving the design and implementation of standard outreach efforts produced durable increases in enrollment that were sometimes even larger than the increases from these more-intensive interventions. For the

presumptive eligibility sample, our intervention cost approximately $2.50 per person and increased enrollment during the next year by 2 percentage points, suggesting a cost per new enrollee of about $125 ($2.50/0.02).

Further research using this randomized controlled intervention will allow us to study the underlying health needs of the different populations, as well as how they use health care after they become insured. The next stages of the study will use Medicaid utilization records to assess the health characteristics of those induced to enroll by the intervention, along with how they use health care relative to people who had previously been insured. It may be that the intervention reaches people who have relatively high or low health needs and relatively high or low propensity to use care once insured. These explorations will give policy makers valuable additional information about the populations likely to be reached by enhanced enrollment outreach efforts and the subsequent effect of those efforts on health care use and spending.

Conclusion

Medicaid expansion is a key component of efforts to reduce both the ranks of the uninsured and disparities in access to care. The substantial gaps in take-up of available insurance pose a policy dilemma for states that wish to expand coverage. Our randomized controlled trial showed that a very low-cost intervention can substantially increase take-up, with effects that might be particularly durable in populations that are relatively hard to reach through standard efforts. Such interventions may be a valuable and cost-effective tool for those seeking to increase take-up for vulnerable populations. ■

The authors gratefully acknowledge generous funding from the Robert Wood Johnson Foundation. The authors thank Sarah Tran, Molly Frean, Kyle Jones, and Kathryn Clark for expert research assistance. Katherine Baicker serves on the Congressional Budget Office's Panel of Health Advisers, as a director of Eli Lilly, and as chair of the Group Insurance Commission of Massachusetts.

NOTES

1 Congressional Budget Office. Federal subsidies for health insurance coverage for people under age 65: 2016 to 2026 [Internet]. Washington (DC): CBO; 2016 Mar [cited 2017 Mar 21]. Available from: https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/51385-healthinsurancebaseline.pdf

2 Kenney G, Haley J. Why aren't more uninsured children enrolled in Medicaid or SCHIP? [Internet]. Washington (DC): Urban Institute; 2001 May [cited 2017 Mar 21]. Available from: http://webarchive.urban.org/UploadedPDF/310217_ANF_B35.pdf

3 Kincheloe J, Frates J, Brown ER. Determinants of children's participation in California's Medicaid and SCHIP programs. Health Serv Res. 2007;42(2):847–66.

4 Sommers BD. Enrolling eligible children in Medicaid and CHIP: a research update. Health Aff (Millwood). 2010;29(7):1350–5.

5 Stuber J, Bradley E. Barriers to Medicaid enrollment: who is at risk? Am J Public Health. 2005;95(2):292–8.

6 Summer L (Georgetown University Health Policy Institute; Washington, DC). Increasing participation in benefit programs for low-income seniors [Internet]. New York (NY): Commonwealth Fund; 2009 May [cited 2017 Mar 21]. Available from: http://www.commonwealthfund.org/~/media/files/publications/fund-report/2009/may/1266_summer_increasing_particip_benefit_progs_v3.pdf

7 Collins SR, Gunja MZ, Doty MM, Beutel S. Who are the remaining uninsured and why haven't they signed up for coverage? Findings from the Commonwealth Fund Affordable Care Act Tracking Survey, February–April 2016 [Internet]. New York (NY): Commonwealth Fund; 2016 Apr [cited 2017 Mar 21]. Available from: http://www.commonwealthfund.org/publications/issue-briefs/2016/aug/who-are-the-remaining-uninsured

8 Aizer A. Low take-up in Medicaid: does outreach matter and for whom? Am Econ Rev. 2003;93(2):238–41.

9 Selden TM, Hudson JL, Banthin JS. Tracking changes in eligibility and coverage among children, 1996–2002. Health Aff (Millwood). 2004;23(5):39–50.

10 Sommers BD, Epstein AM. Medicaid expansion—the soft underbelly of health care reform? N Engl J Med. 2010;363(22):2085–7.

11 Davidoff A, Yemane A, Adams E. Health coverage for low-income adults: eligibility and enrollment in Medicaid and State Programs, 2002 [Internet]. Washington (DC): Kaiser Commission on Medicaid and the Uninsured; 2005 Feb [cited 2017 Mar 21]. (Policy Brief). Available from: https://kaiserfamilyfoundation.files.wordpress.com/2013/01/health-coverage-for-low-income-adults-eligibility-and-enrollment-in-medicaid-and-state-programs-2002-policy-brief.pdf

12 Sommers BD, Tomasi MR, Swartz K, Epstein AM. Reasons for the wide variation in Medicaid participation rates among states hold lessons for coverage expansion in 2014. Health Aff (Millwood). 2012;31(5):909–19.

13 Courtemanche C, Marton J, Yelowitz A. Who gained insurance coverage in 2014, the first year of full ACA implementation? Health Econ. 2016;25(6):778–84.

14 Currie J, Gruber J. Health insurance eligibility, utilization of medical care, and child health. Q J Econ. 1996;111(2):431–66.

15 Cutler DM, Gruber J. Medicaid and private insurance: evidence and implications. Health Aff (Millwood). 1997;16(1):194–200.

16 Hudson JL, Selden TM. Children's eligibility and coverage: recent trends and a look ahead. Health Aff (Millwood). 2007;26(5):w618–29. DOI: 10.1377/hlthaff.26.5.w618.

17 Dubay L (Johns Hopkins Bloomberg School of Public Health; Baltimore, MD). Making sense of recent estimates of eligible but uninsured children [Internet]. Washington (DC): Kaiser Commission on Medicaid and the Uninsured; 2007 Aug [cited 2017 Mar 21]. (Policy Brief). Available from: https://kaiserfamilyfoundation.files.wordpress.com/2013/01/7685.pdf

18 Currie J, Gruber J. Saving babies: the

efficacy and cost of recent expansions of Medicaid eligibility for pregnant women. J Polit Econ. 1996;104(6):1263–96.
19 Kenney GM, Haley JM, Anderson N, Lynch V. Children eligible for Medicaid or CHIP: who remains uninsured, and why? Acad Pediatr. 2015;15(3, Suppl):S36–43.
20 Cutler DM, Gruber J. Does public insurance crowd out private insurance? Q J Econ. 1996;111(2): 391–430.
21 Marton J, Yelowitz A. Health insurance generosity and conditional coverage: evidence from Medicaid managed care in Kentucky. South Econ J. 2015;82(2):535–55.
22 Schoen C, DesRoches C. Uninsured and unstably insured: the importance of continuous insurance coverage. Health Serv Res. 2000;35(1 Pt 2):187–206.
23 Hadley J. Sicker and poorer—the consequences of being uninsured: a review of the research on the relationship between health insurance, medical care use, health, work, and income. Med Care Res Rev. 2003;60(2 Suppl):3S–75S; discussion 76S–112S.
24 Aizer A. Public health insurance, program take-up, and child health. Rev Econ Stat. 2007;89(3):400–15.
25 Iyengar SS, Lepper MR. When choice is demotivating: can one desire too much of a good thing? J Pers Soc Psychol. 2000;79(6):995–1006.
26 Allen H, Wright BJ, Harding K, Broffman L. The role of stigma in access to health care for the poor. Milbank Q. 2014;92(2):289–318.
27 Levinson A, Rahardja S. Medicaid stigma [Internet]. Washington (DC): Georgetown University; 2004 Jul [cited 2017 Mar 21]. Available from: http://units.georgetown.edu/economics/pdf/406.pdf
28 Kenney G, Haley J, Dubay L. How familiar are low-income parents with Medicaid and SCHIP? [Internet]. Washington (DC): Urban Institute; 2001 May [cited 2017 Mar 21]. Available from: http://webarchive.urban.org/UploadedPDF/310216_ANF_B34.pdf
29 Currie J. The take-up of social benefits. In: Auerbach AJ, Card D, Quigley JM, editors. Public policy and the income distribution. New York (NY): Russell Sage Foundation; 2006. p. 80–148.
30 O'Donoghue T, Rabin M. Doing it now or later. Am Econ Rev. 1999; 89(1):103–24.
31 Baicker K, Congdon WJ, Mullainathan S. Health insurance coverage and take-up: lessons from behavioral economics. Milbank Q. 2012;90(1):107–34.
32 Remler DK, Glied SA. What other programs can teach us: increasing participation in health insurance programs. Am J Public Health. 2003;93(1):67–74.
33 Desmond BS, Laux MA, Levin CC, Huang J, Williams BC. Reasons why individuals remain uninsured under the Affordable Care Act: experiences of patients at a student-run free clinic in Michigan, a Medicaid expansion state. J Community Health. 2016;41(2):417–23.
34 Artiga S, Rudowitz R, Tolbert J. Outreach and enrollment strategies for reaching the Medicaid eligible but uninsured population [Internet]. Menlo Park (CA): Henry J. Kaiser Family Foundation; 2016 Mar 2 [cited 2017 Mar 21]. (Issue Brief). Available from: http://kff.org/medicaid/issue-brief/outreach-and-enrollment-strategies-for-reaching-the-medicaid-eligible-but-uninsured-population/
35 Clemans-Cope L, Kenney GM, Buettgens M, Carroll C, Blavin F. The Affordable Care Act's coverage expansions will reduce differences in uninsurance rates by race and ethnicity. Health Aff (Millwood). 2012;31(5):920–30.
36 Long SK, Goin D. Large racial and ethnic differences in health insurance literacy signal need for targeted education and outreach [Internet]. Washington (DC): Urban Institute; 2014 Feb 6 [cited 2017 Mar 21]. (Policy Brief). Available from: http://hrms.urban.org/briefs/literacy-by-race.html
37 Brooks TA. Open enrollment, take two. Health Aff (Millwood). 2014; 33(6):927–30.
38 Goodell S. Health Policy Brief: Navigators and assisters in the third open enrollment period [Internet]. Health Affairs [serial on the Internet]. 2015 Sep 28 [cited 2017 Mar 21]. Available from: http://www.healthaffairs.org/healthpolicybriefs/brief.php?brief_id=145
39 UnitedHealth Center for Health Reform and Modernization. Successful Medicaid enrollment strategies to cover the uninsured [Internet]. Minnetonka (MN): UnitedHealth Group; 2015 Jun [cited 2017 Mar 21]. Available from: http://www.unitedhealthgroup.com/~/media/UHG/PDF/2015/UNH-Brief-Medicaid-Enrollment-Uninsured.ashx?la=en
40 Artiga S, Tolbert J, Rudowitz R. Year two of the ACA coverage expansions: on-the-ground experiences from five states [Internet]. Menlo Park (CA): Henry J. Kaiser Family Foundation; 2015 Jun 22 [cited 2017 Mar 21]. Available from: http://kff.org/health-reform/issue-brief/year-two-of-the-aca-coverage-expansions-on-the-ground-experiences-from-five-states/
41 Aizer A. Got health? Advertising, Medicaid and child health [Internet]. Providence (RI): Brown University; 2003 Oct 1 [cited 2017 Mar 21]. (Brown University Economics Working Paper No. 2003-20). Available for download from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=722507
42 Remler DK, Glied SA. What other programs can teach us: increasing participation in health insurance programs. Am J Public Health. 2003;93(1):67–74.
43 Summer L, Thompson J (Georgetown University Health Policy Institute; Washington, DC). Best practices to improve take-up rates in health insurance programs: final report [Internet]. Washington (DC): Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation; 2008 Aug 18 [cited 2017 Mar 21]. Available from:
44 Gordon JA, Emond JA, Camargo CA Jr. The State Children's Health Insurance Program: a multicenter trial of outreach through the emergency department. Am J Public Health. 2005;95(2):250–3.
45 Sieben I, Rosenberg TJ, Yoly B (Medical and Health Research Association of New York City, Inc.; New York, NY). The role of WIC centers and small businesses in enrolling uninsured children in Medicaid and Child Health Plus [Internet]. New York (NY): Commonwealth Fund; 2000 Mar [cited 2017 Mar 21]. Available from: http://www.commonwealthfund.org/~/media/files/publications/fund-report/2000/mar/the-role-of-wic-centers-and-small-businesses-in-enrolling-uninsured-children-in-medicaid-and-child-h/fr_mhra_372-pdf.pdf
46 Greer SL. The states' role under the Patient Protection and Affordable Care Act. J Health Polit Policy Law. 2011;36(3):469–73.
47 To access the Appendix, click on the Appendix link in the box to the right of the article online.
48 Finkelstein A, Taubman S, Wright B, Bernstein M, Gruber J, Newhouse JP, et al. The Oregon Health Insurance Experiment: evidence from the first year. Q J Econ. 2012;127(3): 1057–106.
49 Allen H, Baicker K, Finkelstein A, Taubman S, Wright BJ, Group OHS, Oregon Health Study Group. What the Oregon Health Study can tell us about expanding Medicaid. Health Aff (Millwood). 2010;29(8): 1498–506.
50 Baicker K, Taubman SL, Allen HL, Bernstein M, Gruber JH, Newhouse JP, et al. The Oregon experiment—effects of Medicaid on clinical outcomes. N Engl J Med. 2013; 368(18):1713–22.
51 Taubman SL, Allen HL, Wright BJ, Baicker K, Finkelstein AN. Medicaid increases emergency-department use: evidence from Oregon's Health Insurance Experiment. Science. 2014;343(6168):263–8.