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Personalized Telephone Outreach Increased Health Insurance Take-Up For Hard-To-Reach Populations, But Challenges Remain

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Abstract

We tested the impact of personalized telephone calls from service center representatives on health plan enrollment in California's Affordable Care Act Marketplace, Covered California, using a randomized controlled trial. The study sample included 79,522 consumers who had applied but not selected a plan. Receiving a call increased enrollment by 2.7 percentage points (22.5 percent) overall. Among subgroups, receiving a call significantly increased enrollment among consumers with income below 200 percent of the federal poverty level (4.0 percentage points or 47.6 percent for consumers with incomes below 150 percent of poverty and 4.0 percentage points or 36.4 percent for consumers with incomes of 150–199 of poverty), as well as those who were referred from Medicaid (2.9 percentage points or 53.7 percent), those ages 30–50 (2.4 percentage points or 23.3 percent) or older than age 50 (5.1 percentage points or 34.2 percent), those who were Hispanic (2.3 percentage points or 31.1 percent), and those whose preferred spoken language was Spanish (3.2 percentage points or 74.4 percent) or English (2.6 percentage points or 18.6 percent). The intervention provided a two-to-one return on investment. Yet absolute enrollment in the target population remained low; persistent enrollment barriers may have limited the intervention's impact. These findings inform implementation of the American Rescue Plan Act of 2021, which expands eligibility for subsidized coverage.

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The Affordable Care Act (ACA) has helped raise health insurance coverage rates in the US to record highs, in part by establishing regulated health insurance Marketplaces that provide new coverage options.[1–3] Yet important gaps in coverage remain; nationally, more than fourteen million people remained uninsured as of 2019 despite eligibility for Marketplace coverage.[4] Reducing barriers to Marketplace enrollment is a priority for policy makers, as evidenced by new efforts from state-based Marketplaces during the COVID-19 pandemic and new funding to expand Marketplace coverage subsidies under the American Rescue Plan Act of 2021.[5–7]

One potential barrier to enrollment in Marketplace coverage is the complexity of the plan selection process.[8–14] Selecting a plan can be made more difficult by limited awareness of the availability of subsidies, the complexity of income-based subsidies and contribution caps, a lack of understanding about insurance terminology (for example, deductible and copayment), the variability of plan architecture and provider networks, and administrative or time-related burdens.[15–18] These barriers can result in people remaining uninsured or choosing a suboptimal plan.[11,19,20]

Several prior interventions sought to improve health insurance decisions via “low-touch” outreach methods, such as presenting information in an automated online choice environment, in an advertisement, or by mail.[21–28] Although these approaches are effective for many consumers, they might not be sufficient to overcome certain barriers to obtaining coverage, such as gaps in health insurance literacy, computer literacy, or internet access.[8,11,12,26,29–33] Further, consumers in non-English-speaking communities may face language and informational barriers that limit the effectiveness of traditional passive outreach.[34] These concerns have led to increasing interest among policy makers, navigators, and consumer organizations in developing novel outreach methods to address diverse barriers to enrollment.[5,6]

This study evaluates the impacts of one such intervention—personalized, live outbound telephone calls from service center representatives—on enrollment in California’s ACA Marketplace, Covered California, which accounts for 13.5 percent of national ACA Marketplace enrollment.[35] The intervention targeted consumers who had initiated the enrollment process by submitting an application but had yet to select a plan.

Consumers apply for, shop for, and purchase Marketplace insurance plans during an open enrollment period at the end of the year for coverage that begins in the subsequent calendar year. Typically, consumers in California apply directly through CoveredCA.com or through insurance brokers, navigators, or others who are certified by the exchange. For the 2019 coverage year, 38 percent of enrollees were unassisted, and the remainder received assistance.[36]

Enrollees in the Medicaid program who become ineligible for Medicaid (for example, because of an increase in income) make up a substantial portion of potential enrollees in Covered California. In some cases, a social services office will apply to Covered California directly for these consumers. All households that are referred to Covered California in this way are sent a formal notice (letter) informing them that they are no longer eligible

for Medicaid but are newly eligible to enroll in a health insurance plan through Covered California. All applicants, including those referred from Medicaid, are given the contact information of the service center in case of any questions.

At the time of the study, households earning less than 400 percent of the federal poverty level (that is, less than $100,400 for a family of four)[37] were eligible to receive premium subsidies to defray the cost of purchasing coverage. To simplify plan comparisons, California has taken the step of standardizing all benefit designs, effectively resulting in a single benefit design for each level of coverage (or actuarial value).[38] On the nationwide Marketplace website, HealthCare.gov, which does not have standardized benefit designs, consumers had, on average, from thirty to forty-seven plan choices during 2016–17.[39]

Toward the end of the Covered California open enrollment period, tens of thousands of people begin but do not complete the enrollment process. Although many factors affect take-up of Marketplace coverage, information-related barriers and hassle costs may be important barriers to enrollment.

The intervention in this study provided personalized assistance to consumers with the goal of addressing these barriers. When a consumer was reached for a one-on-one telephone conversation, the service center representative had detailed information on the consumer's available options. Representatives were able to describe to consumers the subsidies and cost-sharing reduction options for which they were eligible, clarify the parameters of specific plans available to them (including the costs and benefits of each plan, provider networks, and quality ratings), and walk them through the enrollment process if desired. Assistance was available in Spanish and other languages. This intervention could address enrollment barriers such as lack of awareness of health insurance options, low health insurance literacy or computer literacy, preference for in-language assistance, and the time and cognitive costs of sifting through options.

Our study exploited random assignment to receive a personalized call from a service center representative during open enrollment. The number of consumers eligible to receive a call exceeded the capacity of the outbound call service center, and random assignment provided a fair way to select call recipients. The goal of the study was to assess the extent to which outbound calls increased enrollment, both overall and among subgroups by application source, income, language preference, race and ethnicity, and age.[40] We hypothesized that receiving a personalized telephone call would address enrollment barriers, thereby helping a diverse set of consumers complete the enrollment process.

Study Data And Methods

STUDY POPULATION AND INTERVENTION

During the 2019 open enrollment period, Covered California identified 79,522 people who had applied to obtain Covered California health insurance coverage for the 2019 coverage year but had neither selected and enrolled in a plan nor delegated their case to an insurance agent or navigator.

Households in the study population were randomly assigned to one of two groups at the outset of the intervention period: a treatment group that was assigned to receive a phone call (hereafter referred to as an “outbound call”) from a service center representative and a control group that was assigned to not receive an outbound call. Those in the control group, similar to any other consumers, could contact the Covered California service center by calling the publicly available number that had been provided to them.

Approximately 70 percent of households in the study sample were assigned to the treatment group (n = 55,519) and about 30 percent to the control group (n = 24,003). Randomization was conducted using the last digit of a system-generated case ID (1, 2, or 3 versus all other digits). This randomization scheme was chosen because Covered California wanted to reach as many consumers as possible before the open enrollment period ended, while also learning about the effects of telephone-based outreach at scale.

The intervention was conducted over the course of several weeks during the open enrollment period. Nine hundred four service center representatives reviewed prospective Covered California enrollees’ files to ensure that they were still eligible for the intervention—that is, that they were not Medicaid eligible and not already enrolled in Marketplace coverage. Because of constraints in service center capacity, this step was completed for only 39,309 of the 55,519 households. After review, service center representatives called the eligible households. If the representative and consumer were able to connect by telephone, the representative provided personalized information about Covered California plan options and provided live assistance in choosing a plan, as described above. If the call went to voicemail, the representative left a message instructing the recipient to call the service center hotline if they would like further assistance. In total, 27,123 households received an outbound call before the end of open enrollment, with about one-quarter (6,732) answering or returning the call. All 79,522 households randomly assigned to a study group were included in the analysis, following recommended practices for reporting randomized controlled trials.[41]

The preanalysis plan for this study was registered in the AEA RCT Registry (Trial No. AEARCTR-0006391). The data analysis project was approved by the State of California Health and Human Services Agency Institutional Review Board.

DATA SOURCE

We used administrative data from Covered California. These data provide information about each household’s take-up of insurance from the Covered California Marketplace, service center tracking information, and each household’s demographic composition and income information (before randomization).

OUTCOME

The outcome of interest was enrollment in Covered California health insurance, defined as selecting a plan before the end of the 2019 open enrollment period and paying at least one month’s premium.

STRATIFICATION VARIABLES

We stratified the data to test the impact of an outbound phone call on enrollment by application source (referral from the Medicaid eligibility system versus CoveredCA.com), by income group (less than 150 percent, 150–199 percent, 200–249 percent, 250–400 percent, or more than 400 percent of the federal poverty level), by English or Spanish spoken language preference, by race and ethnicity (non-Hispanic white, Hispanic, non-Hispanic Black, Asian, or other race or ethnicity), and by age (younger than 30, 30–50, or older than 50).

COVARIATES USED IN MULTIVARIABLE MODELING

Although not required to obtain unbiased treatment effects in models using randomized controlled trial data, we adjusted for prespecified covariates including county fixed effects, age of the household head, household income, preferred language, and race and ethnicity.

STATISTICAL ANALYSIS

We measured the effects of assignment to the treatment group (the “intent-to-treat” effect) using a regression model in which enrollment was modeled as a function of treatment assignment. Although the main specification included the prespecified covariates noted above, we also present estimates from unadjusted models.[42] Next, we employed a two-stage least squares strategy, using random assignment to the treatment group as an instrument for receiving an outbound call. The two-stage least squares model estimates the causal effect of receiving an outbound call from the service center among people who received an outbound call because of random assignment. Because treatment effects may differ for other groups of people, we interpreted the two-stage least squares estimates as a local average treatment effect for “compliers” to treatment—that is, people who received treatment only because of assignment to the treatment group.[43] We used robust standard errors to account for heteroscedasticity. We accounted for multiple hypothesis tests in the subgroups analysis, using Bonferroni-adjusted cutoffs for statistical significance. Additional details are in online appendix 1.[44]

SENSITIVITY ANALYSES

We conducted supplemental analyses to assess the validity of the findings. First, we sought to verify random assignment by comparing the treatment and control groups on observable variables and using a simulation analysis. See appendix 1 for details.[44] Next, we assessed the sensitivity of estimates to alternative model specifications, including the use of logit or probit models, dropping covariates, and including people with missing data on covariates.

RETURN ON INVESTMENT

We calculated the intervention’s return on investment from the Marketplace perspective by comparing the costs (financial outlays to support service center representatives’ time) and revenues (issuer user fees received by the Marketplace resulting from additional members recruited) attributable to the intervention. See appendix 2 for additional details.[44]

Limitations

The study had several limitations. First, because service center representatives did not reach every person in the treatment group, we could not estimate the causal effect on enrollment of having had a conversation with a representative (as opposed to having been called). Second, if the effect of an outbound call varied across individuals, the local average treatment effect we measured would not reflect the effect of an outbound call across the full population. In stead, it would reflect the treatment effect only in the population that met our inclusion criteria—that is, those who had applied for Marketplace coverage but not picked a plan—and that received an outbound call because of random assignment to the treatment group. Third, we could not observe coverage outcomes other than enrollment in Covered California insurance. Finally, the estimates were specific to the set of consumers we studied and might not generalize to the broader uninsured population or to consumers seeking other types of health insurance.

Study Results

BALANCE TESTS

Balance checks indicated that the randomization procedure successfully created comparable treatment and control groups. Exhibit 1 reports the mean baseline characteristics of consumers in the treatment and control groups. Characteristics were balanced overall across households in the treatment and control groups, according to an *F*-test ($p = 0{:}383$). *T*-test comparisons for each variable were also nonsignificant except for age; the age difference between the groups was small (mean age was 38.3 years in the treatment group versus 38.6 years in the control group). Findings from a simulation test supported the validity of the randomization; see exhibit S1 in appendix 3.44

ENROLLMENT IMPACTS

The intervention significantly increased take-up of Covered California insurance. By the end of the open enrollment period, 12 percent of the control group had enrolled in Covered California insurance. Assignment to the treatment group increased take-up by 1.3 percentage points ($p < 0{:}001$)—a 10.8 percent increase over the control-group rate.

Outbound calls were placed to 27,123 households in the treatment group (49 percent). Receiving an outbound call increased Marketplace health insurance take-up by 2.7 percentage points ($p < 0{:}001$) for consumers who received a call because of random assignment—a 22.5 percent increase over the control-group rate.

HETEROGENEITY ANALYSES

Exhibit 2 shows the unadjusted data from people in each subgroup who had been randomly assigned to the treatment and control groups. Data from the control group show that in the absence of intervention, take-up was highest among non-Hispanic White consumers and consumers who were not referred from the Medicaid system (19.2 percent and 22.8 percent, respectively) and was lowest among consumers who preferred Spanish and consumers referred by the Medicaid system (4.3 percent and 5.4 percent, respectively). These data also

show that despite higher enrollment rates in the treatment group for many subgroups, overall enrollment in the study population remained low.

Exhibit 3 depicts adjusted data for each subgroup for our main outcome of interest: the impact of receiving an outbound call from the service center on enrollment. Outbound calls had the largest absolute impact on enrollment for consumers older than age 50 (a 5.1-percentage-point increase, or a 34.2 percent increase, over the control group mean). Outbound calls increased enrollment by 2.9 percentage points (or 53.7 percent) among consumers whose applications were initiated by the Medicaid system, 4.0 percentage points (47.6 percent) among consumers with income less than 150 percent of the federal poverty level, 4.0 percentage points (36.4 percent) among consumers with incomes of 150–199 percent of the federal poverty level, 2.3 percentage points (31.1 percent) among Hispanic consumers, 2.6 percentage points (18.6 percent) among consumers who preferred spoken English, 3.2 percentage points (74.4 percent) among consumers who preferred spoken Spanish, and 2.4 percentage points (23.3 percent) among consumers ages 30–50. Because of the small sample sizes for non-Hispanic Black and Asian consumers, the study was not powered to detect effects of the size found in other subgroups.

The data above indicate which groups experienced any positive enrollment effects; when comparing the size of enrollment effects across groups, we did not detect differences by referral source, income, Spanish spoken language preference, race and ethnicity, or age.

SENSITIVITY ANALYSES

Findings were similar when we used alternative modeling approaches (that is, logit and probit models); when we dropped covariates in a prespecified order, first location fixed effects and then all covariates; and when we included people with missing data on covariates. See exhibit S2 in appendix 3.[44]

Return On Investment

The total intervention cost to Covered California was approximately $243,000, or approximately $224 per new member acquired. Our calculations suggested that the return on investment was 102 percent. See appendix 2 for details.[44]

Discussion

Personalized telephone calls from service center representatives increased take-up of Covered California health insurance. Receiving an outbound call from the service center because of random assignment increased enrollment by 2.7 percentage points—a 22.5 percent increase over the control-group rate. Enrollment impacts were statistically significant for lower-income households (below 200 percent of the federal poverty level) but not for higher-income households.

The intervention increased enrollment in Marketplace insurance among adults older than age fifty by 5.1 percentage points. This finding has important policy implications because older adults are more likely than younger adults to have chronic conditions that require ongoing

medical attention.[45,46] This finding also contrasts with findings from studies of computer- or mail-based information interventions, which showed impacts to be concentrated among younger and healthier populations.[21,22,29]

In the absence of intervention, enrollment in Marketplace insurance was particularly low (below 6 percent) among consumers who preferred spoken Spanish and among consumers disenrolled from Medicaid. This finding is consistent with prior data suggesting that people with low English proficiency disproportionately experience gaps in insurance and access to care[34,47] and that consumers disenrolled from Medicaid are at high risk of remaining uninsured and losing access to care.[48,49] Receipt of an outbound call increased Marketplace enrollment by 3.2 percentage points (74.4 percent) for consumers who preferred spoken Spanish and by 2.9 percentage points (53.7 percent) for consumers disenrolled from Medicaid.

Despite these increases, enrollment in Covered California insurance remained low for our study population. There are many reasons why the intervention might not have resulted in Marketplace enrollment for certain consumers. First, for the three-quarters of the treated group that likely only received a voicemail message, the intervention represented a modest nudge. Second, some consumers may perceive that their Marketplace coverage options are not a good value.[50] Also, some consumers may have taken up insurance elsewhere. A prior administrative survey of the population from which our study sample was drawn found that 19 percent of this group ultimately obtained Medicaid coverage and that 26 percent obtained employer-sponsored coverage.[51] The low postintervention enrollment rate may also indicate the persistence of enrollment frictions. Nonetheless, the reported treatment effects are larger than those generated by comparatively passive nudges for similar study samples.[22,24,26]

A longer service center representative intervention or one paired with passive nudges and reminders might generate further modest effects, given that some consumers may have lacked the time to talk with the representative. More far-reaching strategies that reduce frictions, such as automatic enrollment, may achieve much higher enrollment levels.[52]

In the absence of structural enrollment reforms such as auto-enrollment, our study indicates that personalized outbound call interventions may still induce modest but meaningful enrollment gains in certain populations while yielding a positive return on investment. We estimated that the intervention has yielded a positive expected return on investment for the state-based Marketplace of 102 percent, or roughly two to one. Our estimated cost per new member acquired, $224, is similar to Covered California's average lifetime commission per member for broker-assisted consumers; other reported acquisition costs in the individual market range from less than $100 to $1,000.[53,54]

Our findings inform current policy debates about how to invest in outreach to boost Marketplace enrollment. The Government Accountability Office has recommended enhancing the management of the consumer experience to improve the performance of the Marketplaces.[5] Furthermore, the American Rescue Plan Act of 2021 expanded eligibility for subsidized Marketplace coverage for households with incomes below 150 percent of poverty; our findings suggest that personalized outreach increases enrollment

in this income group. Similar to prior studies, we found that information interventions do not fully overcome barriers to enrollment for many consumers.[22,24,26,28,34] Nonetheless, informational interventions may induce modest gains in enrollment among certain segments of the population while yielding a positive return on investment.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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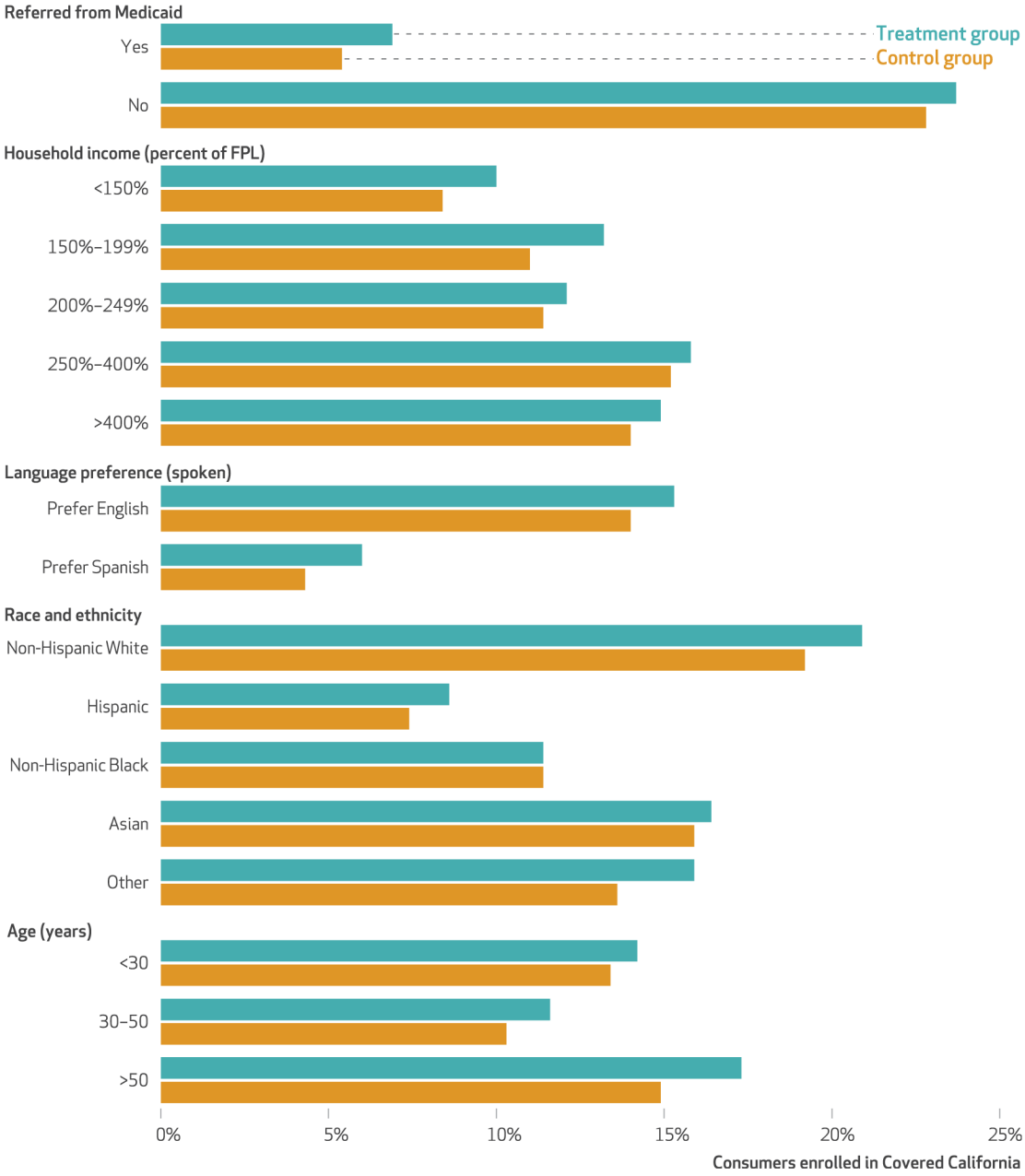

Exhibit 2. Enrollment in Covered California among consumers who were randomly assigned to treatment and control groups, by consumer characteristics (unadjusted data), 2018–19

SOURCE Authors' analysis of Covered California administrative data, 2018–19. **NOTES** The exhibit shows unadjusted data from people in each subgroup. Randomization into the treatment group significantly increased enrollment in Covered California among consumers whose applications were initiated by the Medicaid system, whose incomes were either less than 150 percent or 150–199 percent of the federal poverty level (FPL), who preferred spoken English or who preferred spoken Spanish, who identified as Hispanic, or who were ages 30–50 or older than age 50, based on *p* values lower than the Bonferroni threshold of 0.003.

EXHIBIT 1

Characteristics of consumers in the sample of prospective Covered California enrollees, 2018–19

Characteristics	Treatment group (*n* = 55,519)	Control group (*n* = 24,003)
Referred from Medicaid[a] (%)		
Yes	61.7	62.0
Household income as percent of FPL (%)		
<150%	13.2	13.2
150%–199%	30.6	30.8
200%–249%	19.4	19.1
250%–400%	17.7	17.6
>400%	18.5	18.7
Characteristics of head of household		
Sex (%)		
Female	36.9	37.0
Male	63.1	63.0
Age (mean years)	38.3	38.6
Language preference, spoken (%)		
Prefer English	76.4	76.2
Prefer Spanish	19.1	19.3
Race and ethnicity (%)		
Non-Hispanic white	23.4	23.6
Hispanic	48.2	48.1
Non-Hispanic Black	4.8	5.0
Asian	9.5	9.3
Any other group	13.5	13.5

SOURCE Authors' analysis of Covered California administrative data, 2018–19. **NOTES** There were no statistically significant differences between the treatment and control groups, with the exception of age ($p = 0.007$). The difference in age across the groups is small (mean age, 38.3 in the treatment group versus 38.6 in the control group). The pooled F-test p value was 0.383, indicating that groups were balanced overall.

[a]Consumers who had recently disenrolled from Medicaid and were referred to Covered California from the Medicaid eligibility system.

EXHIBIT 3

Enrollment in Covered California among consumers who did and did not receive an outbound call from service center representatives, by consumer characteristics (adjusted data), 2018–19

Subgroups	Sample sizes[a]	Control-group enrollment rate (%)	Enrollment increase due to outbound call (percentage points)	Change in enrollment[b] (%)
Referred from Medicaid[c]				
Yes	49,020	5.4	2.9****[d]	53.7
No	29,981	22.8	2.1	9.2
Household income as percent of FPL				
<150%	10,437	8.4	4.0****[d]	47.6
150%–199%	24,194	11.0	4.0****[d]	36.4
200%–249%	15,266	11.4	1.3	11.4
250%–400%	13,974	15.2	1.7	11.2
>400%	14,687	14.0	1.7	12.1
Language preference, spoken				
Prefer English	60,672	14.0	2.6****[d]	18.6
Prefer Spanish	15,210	4.3	3.2****[d]	74.4
Race and ethnicity				
Non-Hispanic White	18,611	19.2	3.4	17.7
Hispanic	38,277	7.4	2.3****[d]	31.1
Non-Hispanic Black	3,853	11.4	0.1	0.9
Asian	7,509	15.9	1.0	6.3
Other race and ethnicity	10,751	13.6	4.5	33.1
Age, years				
<30	22,461	13.4	1.7	12.7
30–50	42,406	10.3	2.4****[d]	23.3
>50	14,134	14.9	5.1****[d]	34.2

SOURCE Authors' analysis of Covered California administrative data, 2018–19. **NOTES** Data are adjusted for the covariates mentioned in the text. Significance is determined based on a threshold of $p < 0.003$ under the Bonferroni correction. We did not detect significant differences in the effect size across groups (p value > 0.10). FPL is federal poverty level.

[a]The sample sizes in each category vary and do not all sum to 79,522 (treatment plus control groups). This occurs because of missing data or because categories are not exhaustive (for example, some consumers prefer a spoken language other than English or Spanish).

[b]Percent change in enrollment among consumers receiving outbound calls.

[c]Consumers who had recently disenrolled from Medicaid and were referred to Covered California from the Medicaid eligibility system.

[d]Enrollment impact significantly different from zero (that is, *p* value below the Bonferroni threshold of 0.003).

**** $p < 0.001$.

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