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Small Cash Incentives Can Encourage Primary Care Visits By Low-Income People With New Health Care Coverage

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ABSTRACT In a randomized controlled trial, we studied low-income adults newly covered by a primary care program to determine whether a cash incentive could encourage them to make an initial visit to a primary care provider. Subjects were randomly assigned to one of four groups: three groups whose members received $10 to complete a baseline survey during an interview and who were randomized to incentives of $50, $25, or $0 to visit their assigned primary care provider within six months after enrolling in the study; and a nonincentivized control group not contacted by the research team. Subjects in the $50 and $25 incentive groups were more likely to see a primary care provider (77 percent and 74 percent, respectively), compared to subjects in the $0 incentive group (68 percent). The effects of the intervention were about twice as large when we compared the proportions of subjects in the $50 and $25 incentive groups who visited their providers and the proportion in the nonincentivized group (61 percent). Cash incentive programs may steer newly covered low-income patients toward primary care, which could result in improved health outcomes and lower costs.

Primary care is positively associated with primary and secondary prevention, chronic health condition management, and reduced health care costs.[1,2] Insurance provides access to primary care. However, the evidence on whether access alone reduces hospitalizations and emergency department (ED) use is mixed.[3,4] Previous research demonstrated that among people who obtain insurance coverage after histories of no or intermittent coverage, it may take two or more years to establish clinically appropriate care patterns.[5,6]

Health insurance and other coverage programs provide access to care but might not overtly encourage patients to seek primary care. A primary care visit within the first six months of enrollment could address long-ignored or emerging health care needs, and it provides an alternative to using the ED. An incentive program could encourage patients to see a physician within that time period, even when they believe themselves to be healthy, and having such a visit could improve health and lower future spending. Patients may view such a visit as unnecessary or daunting, particularly if they are unfamiliar with making appointments and communicating with physicians. Such a visit can also be time-consuming, if wait times to see a doctor are lengthy. Thus, only patients who prefer primary care to the ED and have a condition that can wait a couple of weeks for an appointment may seek primary care. Pursuing primary care on their own may also be less likely among people who do not routinely seek care in a physician's office. Such people may wait until they are sick to make an appointment or go to the ED.

A timely first primary care visit following enrollment may be critical in establishing a relationship with a physician before a health crisis,

screening for preventable conditions, and identifying and treating latent health problems—and thus avoiding subsequent conditions of greater severity. Such a visit may also help avoid preventable hospitalizations related to previously treated or untreated conditions. In the United States, preventable hospitalizations have annual costs of $30 billion,[7] and many such hospitalizations could be avoided if the underlying conditions were managed in the primary care setting.[8,9]

Timely use of primary care to improve health and reduce costs is therefore desirable in health care delivery, regardless of whether patients are in a safety-net system, receive care reimbursed by Medicaid, or are otherwise insured.

A cash incentive may generate a desired behavioral response for a relatively small price. Moreover, low-income populations may be more responsive to cash incentives, compared to other populations.[10] Previous studies have reported that low-income patients who gain cost-sharing responsibility for ED use reduce their ED visits for nonurgent care,[11,12] which suggests that these patients are responsive to financial incentives.

We compared the effects on initial primary care visits of three levels of cash incentives offered to low-income patients who had previously been uninsured and had newly been given low-cost or free health care in a state that did not relax its stringent criteria for Medicaid eligibility in response to the Affordable Care Act. All patients were assigned to a primary care provider when their coverage began.

Study Data And Methods

STUDY POPULATION Subjects were identified and enrolled in our study of cash incentives through a community-based primary care program established by the Virginia Commonwealth University Medical Center, a safety-net provider. The primary care program—known as Virginia Coordinated Care (VCC)—was designed to improve access to primary care for uninsured patients. To be eligible for VCC, patients must have household incomes below 100 percent of the federal poverty level, cannot have other sources of health care coverage, and must reside within thirty miles of the Virginia Commonwealth University Medical Center. As of July 2017, Virginia had not expanded eligibility for Medicaid to low-income childless adults and had stringent income thresholds for qualifying for Medicaid. VCC covers many low-income patients who do not qualify for Medicaid through having a dependent child.

Once enrolled in VCC, patients are assigned to a community-based primary care provider. Although some services require a copayment, most patients qualify for free visits to their primary care provider. Laboratory, diagnostic, and other outpatient services; ED visits; and inpatient stays are covered only if provided at the Virginia Commonwealth University Medical Center. Enrollees can purchase prescription medications for $4 at the center's pharmacy. Services provided outside of the office of the assigned primary care provider or the medical center are not covered.[6,13]

All of our study subjects were newly enrolled in VCC and met the following criteria: They had had no VCC coverage in the past twelve months or were reenrolling but had had no visit to a primary care provider or specialist in the previous nine months; were ages 21–64; spoke English; and resided in the community (instead of being homeless or living at a drug or alcohol rehabilitation facility, for example). In addition, to be included in the final sample, subjects had to have a phone number where they could be reached and to have remained continuously enrolled in VCC for a minimum of ninety days.

RANDOMIZATION PROCEDURES We randomly assigned patients to the four study groups—nonincentivized, or incentivized at the $0, $25, or $50 level. Our randomization procedure sought to ensure that the groups had equal proportions of subjects by sex, race, and five-year age ranges. Starting in August 2013 subjects were randomly assigned weekly to either the incentivized or the nonincentivized arm of the study, based on VCC enrollment data. These data contained patients' demographic information and enrollment histories and allowed us to identify subjects who met the inclusion and exclusion criteria.

The nonincentive arm comprised 470 subjects, of whom 55 were ineligible based on administrative records—which left 415 members in the untreated control group. Nonincentivized subjects were not contacted by study personnel. Their medical claim files were collected for a time period equivalent to those of subjects randomly assigned to the incentivized arm. Exposure to the experiment (the Hawthorne effect) had the potential to affect the behavior of the incentivized subjects, even those eventually randomly assigned to the $0 incentive group. For example, introducing the study to patients could sensitize them to primary care visits and their health conditions, teach them how to use VCC, or leave them to ask study coordinators to contact a VCC specialist who would help them navigate the program. The nonincentivized subject group allowed us to observe behavior in the absence of activities associated with the randomized controlled trial. It is possible that the cash incentives offered to the $0, $25, and $50 incentive groups had little effect on primary care visits, while the

information about providers that people gained by participating in the experiment had a large effect relative to the nonincentivized group—in which case the cash incentive effect would understate the effects of the overall intervention.

Subjects randomly assigned to the incentivized arm were contacted and, if they agreed to participate in the study, completed a baseline interview—after which they were randomly assigned to one of the three incentive groups. Therefore, responses to the interview were not influenced by group assignment.

Among subjects initially randomly assigned to the incentivized arm, 28 percent could not be contacted, 25 percent were ineligible, 13 percent declined to participate in the study, and 4 percent were not contacted because the study had reached its recruitment goals. Every effort was made to interview subjects who agreed to participate. However, 61 of those subjects did not complete the interview, and we were unable to contact them again. In addition, 2 subjects withdrew from the study immediately after the interview, and another 114 were ineligible based on information they supplied during the interview that contradicted administrative data. Overall, 1,228 subjects were randomly assigned to the incentive arm and completed the baseline interview. Of these subjects, 413 were assigned to the $0 incentive group, 407 to the $25 incentive group, and 408 to the $50 incentive group.

The online Appendix summarizes how the final sample was derived.[14] Random assignment continued until study enrollment goals were met. The study was designed to have at least 80 percent power with an alpha of 0.05 to detect a 10-percentage-point difference in visits to a primary care provider between any incentive group and the nonincentivized group. Enrollment was completed in October 2015, and the six-month follow-up of the sample concluded in April 2016.

THE INTERVENTION Subjects enrolled in the incentive groups ($50, $25, or $0) for our study were given $10 to complete a baseline survey during the interview. The interview was conducted by telephone, and the survey included questions about health status (such as chronic conditions) and care-seeking behavior (for example, frequency of ED visits within the past year). At the end of the interview, subjects were told the group to which they had been randomly assigned and given six months to see their primary care provider. Subjects were free to ask questions about VCC and their assigned provider, but this information was not part of the interviewers' standard script. No follow-up reminders to visit a primary care provider were sent.

The Affordable Care Act expanded the use of incentives to public insurance programs.

Institutional Review Boards at Virginia Commonwealth University and the University of Colorado approved the study protocol before we collected any data.

END POINTS AND ASSESSMENTS The primary end point was a claim for a visit to a primary care provider within six months of the date of study enrollment. If we did not receive a primary care provider claim, we assumed that the subject did not see such a provider. Many subjects in the incentivized arm called the study coordinators after seeing a primary care provider. In all cases, we verified that the visit had occurred. Because of the time delay between visit, claim submission, and verification, study subjects received their incentive check approximately six to eight weeks after a visit to a primary care provider. It might have been ideal for subjects to receive the incentive payment at the time of the visit.

CONTROL VARIABLES Variables common to the incentivized groups and the nonincentivized group were sex, age, race/ethnicity, and marital status, which were recorded in the VCC administrative data. Additional information on the education, employment status, monthly income, usual source of care, and health status of subjects enrolled in the incentivized groups was collected during the baseline interview. Health status was measured through an inventory of chronic conditions (hypertension, diabetes, anxiety, depression, arthritis, asthma, migraines, and drug or alcohol problems). We categorized these conditions as depression, anxiety, or both; drug or alcohol problems; and two or more other chronic conditions.

We also calculated respondents' composite scores on a subset of the Patient-Reported Outcomes Measurement Information System (PROMIS) domains (for example, depression, anxiety, social role, and pain interference with daily life). PROMIS is a set of person-centered measures that evaluates and monitors physical, mental, and social health in adults and children. It can be used with the general population and with people living with chronic conditions. Higher scores for the depression, anxiety, and pain interference domains indicate worse health

Even low-cost incentives may produce a desired health care behavior in low-income populations.

status, and a higher score for the social role domain indicates better health status.

In addition, we asked subjects about the number of their ED visits in the twelve months before enrollment in our study. Visits were categorized as 0 or 1, 2–5, or 6 or more.

ANALYSIS The four groups were descriptively analyzed using chi-square tests for categorical variables and *t*-tests for differences in means. The primary multivariate analysis used logistic regression with standard errors clustered at the physician level and fixed effects for physician assignment. We report odds ratios and indicate significance. Each incentive group was compared to the nonincentivized group. In addition, the $25 and $50 incentive groups were compared both separately and together to the $0 incentive group. Tests of significance were two-sided.

A handful of subjects were missing information on a few variables (no more than ten subjects for any given variable). We assumed that these data were missing at random, and we used multiple imputation methods with ten imputations to impute missing data in the logistic regressions. Results from the regressions using imputed data were compared with those obtained when subjects with missing data were dropped from the regressions. The findings were nearly identical.

Analyses were conducted using SAS, version 9.3, and Stata, version 14.0.

LIMITATIONS This study had limitations. First, the subjects, like all VCC participants, were free to seek care outside of the Virginia Commonwealth University Medical Center. We did not have claims for all of these visits. However, visits outside the medical center are likely to be minimal. Residence within thirty miles of the medical center is a requirement for VCC enrollment, which makes the center a convenient location for health care. Moreover, the center is the main safety-net provider in the region, and uninsured patients know that they can get free or low-cost care there.

Second, subjects who enrolled in the study may have been more inclined than those in the nonincentivized arm to see a primary care provider. To address this potential selection bias, we tracked visits to primary care providers among different cash incentive groups, including $0. The nonincentivized group had fewer visits compared to all three incentive groups, which is consistent not only with the hypothesis that the nonincentivized group may be less inclined to see a primary care provider but also with the intervention's having an effect even with a $0 incentive for visiting a primary care provider. The effects of the $25 and $50 incentives relative to that of the $0 incentive were not prone to bias from an underlying higher tendency to see a primary care provider since these subjects were exposed to the same study conditions and randomized following the baseline interview.

Other limitations included various challenges associated with engaging low-income uninsured adults in a research study. For example, 28 percent of the patients initially assigned to the incentivized arm could not be contacted. Thus, people enrolled in our study might not be entirely representative of the VCC population.

Last, Virginia Commonwealth University Medical Center is a safety-net provider that treats an urban and predominantly African American population. Our findings are likely generalizable to other urban safety-net centers but may have limited generalizability to rural and non-safety-net settings.

Study Results

SAMPLE CHARACTERISTICS Randomization worked well among the four study groups, although there were significant differences in marital status between the incentivized groups and the nonincentivized group (Exhibit 1). The average age across the groups was about forty-six years, and approximately two-thirds of each group was African American. Few subjects (less than 14 percent in any group) were married.

Subjects randomly assigned to the incentivized groups were more likely to visit a primary care provider than those in the nonincentivized group (Exhibit 1). Seventy-seven percent of the subjects in the $50 incentive group saw a provider in the first six months of enrollment in the study, compared to 61 percent in the nonincentivized group. Similarly, subjects randomly assigned to the $25 and $50 incentive groups were more likely to see a provider than subjects in the $0 incentive group (74 percent and 77 percent, respectively, versus 68 percent).

Across the three incentivized groups, subjects

EXHIBIT 1

Characteristics of incentivized and nonincentivized groups of low-income patients newly receiving health care coverage through Virginia Coordinated Care

			Incentive					
	Nonincentivized group		$0		$25		$50	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
PCP visit within first 6 months of study enrollment	255	61.4	280[a]	67.7	302[b,c]	74.2	313[c,d]	76.7
Mean age (years)	44.9	—[e]	45.9	—[e]	45.7	—[e]	45.5	—[e]
SEX								
Female	182	43.8	191	46.2	191	46.9	198	48.5
Male	233	56.1	222	53.7	216	53.0	210	51.4
RACE								
White	119	28.7	121	29.3	111	27.3	116	28.4
African American	266	64.1	274	66.3	280	68.8	274	67.2
Other	29	6.9	16	3.9	11	2.7	14	3.4
Missing	1	0.2	2	0.5	5	1.2	4	0.9
ETHNICITY								
Hispanic	11	2.7	9	2.2	8	2.0	13	3.2
Missing	5	1.2	0	0.0	0	0.0	0	0.0
MARITAL STATUS								
Married or partnered	45	10.8	56[c]	13.6	40[c,f]	9.8	49[g]	12.0
Missing	2	0.5	3	0.7	4	1.0	2	0.5

SOURCE Authors' analysis of data collected during trial enrollment. **NOTES** The nonincentivized group contained 415 people (25.2 percent of the study population); its members were not contacted by the research team. All of the incentivized groups received $10 to complete a baseline survey during an interview, in addition to incentives of $50 (408 people, or 24.8 percent of the study population), $25 (407 people, or 24.7 percent), or $0 (413 people, or 25.1 percent); percentages do not sum to 100 because of rounding. Tests of significance used chi-square tests for categorical variables and two-sample *t*-tests for continuous variables. PCP is primary care provider. [a]Significantly different from the nonincentivized group ($p < 0.05$). [b]Significantly different from the $0 incentive group ($p < 0.05$). [c]Significantly different from the nonincentivized group ($p < 0.01$). [d]Significantly different from the $0 incentive group ($p < 0.01$). [e]Not applicable. [f]Significantly different from the $0 incentive group ($p < 0.1$). [g]Significantly different from the nonincentivized group ($p < 0.1$).

were similar in income, employment status, smoking status, drug or alcohol problems, depression or anxiety, and the presence of two or more other chronic conditions (Exhibit 2). Fewer subjects in the $50 incentive group had attended college, compared to subjects in the $25 or $0 incentive group. PROMIS scores for social role were slightly lower for the $50 group, compared to the other two groups.

PRIMARY CARE VISITS Exhibit 3 reports the odds ratios from logistic regressions that estimated the effect of the $25 and $50 incentives, compared to the effect of the $0 incentive, on the likelihood of visiting a primary care provider within the first six months of enrollment in the study. Subjects randomly assigned to the $25 or $50 incentive groups (combined) were 50 percent more likely than subjects in the $0 incentive group to visit a primary care provider. Compared to subjects in the $0 incentive group, those in the $50 incentive group were 63 percent more likely to see a provider, and subjects in the $25 incentive group were 38 percent more likely.

When we included additional demographic and health status controls that were available only for the incentivized groups, the odds ratios were little changed. Based on all of the controls, age, being female, having two or more other chronic conditions, and reporting higher pain interference PROMIS scores were positively associated with seeing a primary care provider (last two columns of Exhibit 3). Notably, subjects who reported getting most of their care from the ED were less likely to see a primary care provider.

Exhibit 4 compares the incentivized groups to the nonincentivized group. Subjects randomly assigned to the incentivized arm of the study were more likely to see a primary care provider than those in the nonincentivized arm. Subjects randomly assigned to each of the incentivized groups were also more likely to see a provider than those in the nonincentivized group, with the difference significant for the $25 and $50 incentive groups. Older and female subjects were more likely to see a primary care provider, compared to younger and male subjects.

Discussion

We found that small cash incentives can encourage low-income people with newly obtained health care coverage to visit a primary care provider. Subjects were more responsive to higher incentives: Relative to the $0 incentive group,

EXHIBIT 2

Demographic characteristics, health status, and health-seeking behaviors in incentivized groups of low-income patients newly receiving health care coverage through Virginia Coordinated Care

	Incentive					
	$0		$25		$50	
Characteristic	Number	Percent	Number	Percent	Number	Percent
Education						
High school diploma or less	245	59.3	235	57.7	265	65.0
Some college	127	30.8	129	31.7	104	25.5
Bachelor's degree or more	33	8.0	40	9.8	38	9.3
Missing	8	1.9	3	0.7	1	0.2
Average monthly income						
Less than $1,500	379	91.8	376	92.4	386	94.6
$1,500–$2,000	23	5.5	15	3.7	15	3.7
$2,001 or more	9	2.2	14	3.4	6	1.5
Missing	2	0.5	2	0.5	1	0.2
Employed	112	27.1	119	29.2	99	24.3
Smoking status						
Smoker	203	49.2	190	46.7	212	52.0
Missing	0	0.0	0	0.0	2	0.5
Drug or alcohol use						
Drug or alcohol problems	67	16.2	58	14.3	52	12.7
Missing	2	0.5	1	0.2	3	0.7
Depression or anxiety	215	52.1	213	52.3	229	56.1
2 or more chronic conditions[a]	250	60.5	266	65.4	255	62.5
ED utilization						
Get most of care in the ED	154	37.3	138	33.9	165	40.4
Number of visits in 12 months before enrollment						*
0 or 1	234	56.7	228	56.0	192	47.1
2–5	145	35.1	146	35.9	182	44.6
6 or more	34	8.2	32	7.9	34	8.3
Missing	0	0.0	1	0.2	0	0.0
PROMIS score						
Anxiety	54.3	—[b]	53.4	—[b]	55.4	—[b]
Depression	54.1	—[b]	53.5	—[b]	55.3	—[b]
Social role	45.6	—[b]	45.9	—[b]	44.1*	—[b]
Pain interference	57.9	—[b]	58.9	—[b]	58.9	—[b]
Missing	9	2.2	14	3.4	21	5.1

SOURCE Authors' analysis of data collected during trial enrollment. **NOTES** All of the incentivized groups completed a baseline survey during an interview (for which they received $10), in addition to being in cash incentive groups of $50 (33.2 percent of the incentivized groups), $25 (33.1 percent), or $0 (33.6 percent); percentages do not sum to 100 because of rounding. Composite scores on a subset of the Patient-Reported Outcomes Measurement Information System (PROMIS) domains described in the text are shown as standardized *t*-scores. Higher scores for anxiety, depression, and pain interference indicate worse health; higher scores for social role indicate better health. Significance refers to the difference from the $0 incentive group. [a]Conditions other than depression, anxiety, and drug or alcohol problems. [b]Not applicable. *$p < 0.10$

the $25 and $50 incentive groups were 36 percent and 56 percent more likely to visit a provider.

Several studies have used financial incentives to encourage healthy behaviors such as getting vaccines, cancer screening, and pre- and postnatal care. Many of these studies were conducted in low-income populations and found incentives to be effective.[10] Incentives for healthy behaviors have been studied in other patient populations as well.[15] For example, one study found that modest incentives increased exercise among older adults.[16] In a study of statin use and adherence, patients who received incentives were more likely to be adherent, especially if they were already taking statins.[15] Another study demonstrated that financial incentives of $750 increased rates of long-term smoking cessation.[17] In general, the higher the incentive, the higher the success rate.[18]

Employers have long been interested in incentives to encourage healthy behaviors,[19] and the Affordable Care Act expanded the use of incentives to public insurance programs. For example, a ten-state Medicaid demonstration project used incentives to encourage weight loss, smoking cessation, wellness visits, and other healthy be-

EXHIBIT 3

Likelihood of a primary care provider visit within the first 6 months of study enrollment, by incentivized groups of low-income patients newly receiving health care coverage through Virginia Coordinated Care

	Covariates common to all groups		Covariates common only to incentivized groups	
	$25 and $50 groups combined	$25 or $50 group	$25 and $50 groups combined	$25 or $50 group
$25 and $50 groups combined	1.50***	—[a]	1.46***	—[a]
$25 group	—[a]	1.38**	—[a]	1.36*
$50 group	—[a]	1.63***	—[a]	1.56***
Age	1.02***	1.02***	1.02***	1.02***
Female	1.58***	1.58***	1.49***	1.49***
Nonwhite	1.13	1.13	1.20	1.21
Hispanic	1.67	1.66	1.78	1.76
Married or partnered	0.65***	0.64***	0.59***	0.59***
Education				
High school diploma or less	—[a]	—[a]	0.82	0.80
Some college	—[a]	—[a]	0.63*	0.63*
Bachelor's degree or more	—[a]	—[a]	Ref	Ref
Average monthly income				
Less than $1,500	—[a]	—[a]	1.67	1.66
$1,500–$2,000	—[a]	—[a]	2.97*	2.89*
$2,001 or more	—[a]	—[a]	Ref	Ref
Employed	—[a]	—[a]	0.97	0.98
Health conditions				
Smoker	—[a]	—[a]	1.02	1.03
Drug or alcohol problems	—[a]	—[a]	0.85	0.85
Depression or anxiety	—[a]	—[a]	1.01	1.01
2 or more chronic conditions[b]	—[a]	—[a]	1.25**	1.25**
PROMIS score				
Anxiety	—[a]	—[a]	0.99	0.99
Depression	—[a]	—[a]	0.99	0.99
Social role	—[a]	—[a]	0.99	0.99
Pain interference	—[a]	—[a]	1.02***	1.02***
Get most of care at the ED	—[a]	—[a]	0.73**	0.73**
ED utilization				
0 to 1	—[a]	—[a]	0.71	0.72
2 to 5	—[a]	—[a]	1.05	1.05
6 or more	—[a]	—[a]	Ref	Ref

SOURCE Authors' analysis of data collected during trial enrollment. **NOTES** The exhibit shows odds ratios estimated using logistic regressions with physician fixed effects. The $0 incentive group was the reference category for the other incentive groups. The sample size was reduced from 1,228 to 1,204 because we excluded 24 respondents who were the only patient assigned to a particular practice. Standard errors are clustered at the physician level. The "covariates common to all groups" columns exclude observations with missing variables. The "covariates common only to incentivized groups" columns use multiple imputation methods. Patient-Reported Outcomes Measurement Information System (PROMIS) scores are explained in the Notes to Exhibit 2. [a]Not applicable. [b]Conditions other than depression, anxiety, and drug or alcohol problems. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$

haviors.[20] Programs in these states reported mixed success.

Our study met the basic tenets of a simple incentive program:[10] It encouraged a one-time behavior; participants had adequate information (for example, assignment to a primary care provider and a full explanation of the study) to act upon the incentives; we paid subjects directly; and we set the $25 incentive amount to be just above the estimated cost of transportation to and from a primary care provider and the $50 incentive amount to cover transportation plus possible additional costs related to child care or a couple of hours of lost wages.

A significant strength of the study is the inclusion of a nonincentivized group, which improved the study's internal validity by helping gauge the possible influence of completing the survey and talking to subjects about the VCC program and their health status after they completed the usual VCC enrollment process. It is noteworthy that even the $0 incentive group

was more likely than the nonincentivized group to visit a primary care provider.

Our unique experiment demonstrated that even low-cost incentives may produce a desired health care behavior in low-income populations. Moreover, the findings suggest that interaction with a health care program coordinator who orients low-income enrollees to relevant program processes may also produce the desired result with no prospect of an incentive, as we found a modestly higher likelihood of visits to a primary care provider in the $0 incentive group, compared to the nonincentivized group.

The goal of the incentive program was not only to encourage visits to a primary care provider, but also to ultimately reduce hospitalizations and costs by treating health conditions before they become severe and to improve health status. We are collecting health care utilization data on the twelve and twenty-four months after enrollment in our study. These data will allow us to determine whether primary care visits reduced ED, inpatient, and outpatient utilization and their associated costs and improved patient self-reported health status.

EXHIBIT 4

Likelihood of a primary care provider visit within the first 6 months of study enrollment, by type of group, among low-income patients newly receiving health care coverage through Virginia Coordinated Care

	Incentivized versus nonincentivized study arm	Three incentivized groups versus nonincentivized group
Any incentivized group	1.61***	—[a]
$0 group	—[a]	1.24
$25 group	—[a]	1.71***
$50 group	—[a]	2.02***
Age	1.02***	1.02***
Female	1.52***	1.50***
Nonwhite	1.17	1.17
Hispanic	1.38	1.35
Married or partnered	0.73*	0.74*

SOURCE Authors' analysis of primary data collected during trial enrollment. **NOTES** The exhibit shows odds ratios estimated using logistic regressions with physician fixed effects. The sample size was reduced from 1,643 to 1,615 because we excluded 28 respondents who were the only patient assigned to a particular practice. Multiple imputation methods were used for observations with missing variables. Standard errors are clustered at the physician level. [a]Not applicable. *$p < 0.10$ ***$p < 0.01$

Conclusion

Cash incentives appear to be effective at increasing primary care use among low-income patients. If the use of primary care is shown to reduce overall health care use and improve health in this high-cost population, cash incentives may be a cost-effective way to steer low-income patients away from more expensive services and help them establish a relationship with a primary care provider. This approach may be particularly effective for people newly offered health care coverage, regardless of whether that coverage is through the safety net or insurance. Providing less expensive but improved quality of care by preventing avoidable hospitalizations and nonurgent ED visits remains a national priority. ■

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NOTES

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