

SPECIAL ARTICLE

# Appointment Availability after Increases in Medicaid Payments for Primary Care

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## ABSTRACT

### BACKGROUND

Providing increases in Medicaid reimbursements for primary care, a key provision of the Affordable Care Act (ACA), raised Medicaid payments to Medicare levels in 2013 and 2014 for selected services and providers. The federally funded increase in reimbursements was aimed at expanding access to primary care for the growing number of Medicaid enrollees. The reimbursement increase expired at the end of 2014 in most states before policymakers had much empirical evidence about its effects.

### METHODS

We measured the availability of and waiting times for appointments in 10 states during two periods: from November 2012 through March 2013 and from May 2014 through July 2014. Trained field staff posed as either Medicaid enrollees or privately insured enrollees seeking new-patient primary care appointments. We estimated state-level changes over time in a stable cohort of primary care practices that participated in Medicaid to assess whether willingness to provide appointments for new Medicaid enrollees was related to the size of increases in Medicaid reimbursements in each state.

### RESULTS

The availability of primary care appointments in the Medicaid group increased by 7.7 percentage points, from 58.7% to 66.4%, between the two time periods. The states with the largest increases in availability tended to be those with the largest increases in reimbursements, with an estimated increase of 1.25 percentage points in availability per 10% increase in Medicaid reimbursements ( $P=0.03$ ). No such association was observed in the private-insurance group. During the same periods, waiting times to a scheduled new-patient appointment remained stable over time in the two study groups.

### CONCLUSIONS

Our study provides early evidence that increased Medicaid reimbursement to primary care providers, as mandated in the ACA, was associated with improved appointment availability for Medicaid enrollees among participating providers without generating longer waiting times. (Funded by the Robert Wood Johnson Foundation.)

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A PRIMARY GOAL OF THE AFFORDABLE Care Act (ACA) was to improve access to quality health care for uninsured Americans, largely through public and private insurance expansions.<sup>1</sup> At the same time, the architects of the law recognized the need to increase the availability of primary care providers to meet the increased demand for health care. Provider access is of particular concern for the Medicaid program, which is set to absorb the bulk of newly insured persons in many states, because Medicaid typically reimburses providers at much lower payment rates than those of Medicare and commercial insurers for the same services. Lower payments have been cited as a critical barrier to access for primary care among Medicaid enrollees<sup>2-7</sup> and are associated with lower provider availability for Medicaid patients.<sup>5</sup> To address these concerns, the ACA included a 2-year federally financed increase in Medicaid reimbursement.<sup>8,9</sup>

The ACA directed Medicaid agencies in each state to raise Medicaid reimbursements up to Medicare rates for primary care services in 2013 and 2014.<sup>8,9</sup> The size of this increase varied widely according to state, since some states were already paying at least Medicare rates, whereas others were paying less than half those rates.<sup>10</sup> Providers who were eligible to receive increased reimbursements included family physicians, internists, pediatricians, and certain subspecialists who had a minimum of 60% Medicaid billings for primary care services during the previous year. Nurse practitioners and physician assistants working under the supervision of eligible physicians also qualified. Because federally qualified health centers receive payment on a facility basis rather than on the basis of specific physician services, such centers were excluded from the study.<sup>8,11</sup> The reimbursement increase applied both to providers who practiced in fee-for-service programs and to those in capitated Medicaid programs.<sup>8,12</sup>

The final federal regulations were released late (in November 2012),<sup>8,13</sup> and there were substantial challenges in translating fee-for-service Medicare rates to capitated Medicaid managed care settings.<sup>13,14</sup> As a result, it was well into 2013 before states had their plans approved by the Centers for Medicare and Medicaid Services.<sup>14,15</sup> All delayed reimbursements were paid retroactively to January 1, 2013.<sup>16</sup> These considerable implementation challenges, along with the temporary nature

of the policy, has left even supporters questioning the ultimate effect of the policy.<sup>14,17,18</sup>

In this study, we examined the association between the increase in Medicaid payments and appointment availability for Medicaid enrollees seeking new-patient primary care appointments at physician offices that participated in Medicaid. Our goal was to provide an empirical evaluation of the effectiveness of the policy, which can inform future state and federal legislative action with respect to reinstating these payment increases or allowing them to continue at lower levels in 2015.<sup>19</sup> We estimated appointment availability in late 2012 to early 2013 and again in mid-2014, using an audit design in which primary care offices would make real-world decisions in response to appointment requests by simulated patients who were randomly assigned an insurance type. We then compared state-level changes in appointment availability in the Medicaid group to the size of the payment increase in that state and used the private-insurance group as an experimental control.

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## METHODS

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### DATA COLLECTION

Trained field staff members, simulating patients seeking a new-patient appointment, called primary care offices in 10 states — Arkansas, Georgia, Illinois, Iowa, Massachusetts, Montana, New Jersey, Oregon, Pennsylvania, and Texas — during two time periods: from November 2012 through March 2013 and from May 2014 through July 2014. Offices receiving audit calls were selected at random, within insurance type and time period, from the constructed sample frame, which was defined as a physician office staffed with at least one primary care physician who treated adults and participated in at least one insurance plan included in the relevant insurance type.

We constructed a sample frame of confirmed qualified offices in three steps. First, we drew a sample of potentially qualified offices in 2012 from the SK&A Office-Based Physician Database,<sup>20</sup> a commercial database that is estimated to include nearly 90% of physician practices.<sup>21</sup> Second, we removed closed, out-of-scope, or unreachable practices identified by a preaudit survey of the potentially qualified offices that we conducted before both audit periods. Third, for each insurance group, we removed offices that did not par-

ticipate in that insurance type. We used the pre-audit survey, supplemented by online resources, to confirm insurance participation for both private insurance and Medicaid and to obtain the name of an insurance carrier accepted by each practice. Because all the selected states mandated managed care for adult Medicaid enrollees, the office had to participate in some form of Medicaid managed care (MMC), either capitated managed care or primary care case management (PCCM). The screening of offices and their inclusion in the sample frame are shown in Figure S1 in the Supplementary Appendix, available with the full text of this article at NEJM.org.

Offices were chosen randomly, within insurance type and time period, according to the proportion of the population with the relevant insurance type in the county. The 13 callers conducting the audit were selected on the basis of having voices that matched particular roles with respect to age, sex, and race or ethnic group. They were randomly assigned to a script requesting a new-patient appointment for either routine care or an urgent health care concern (e.g., “I think I might have high blood pressure”)<sup>21</sup> (Fig. S2 in the Supplementary Appendix). Since results did not differ substantially across clinical scenarios, they were combined in all analyses. Callers requested the earliest appointment with a specific physician in the office but would accept appointments with any other available provider, including a nurse practitioner or a physician assistant. The callers provided the type of insurance, along with the name of the plan identified during the preaudit survey, if they were asked or when they confirmed the appointment. All appointments were canceled before the call was ended or immediately thereafter.

We defined an appointment as being available if the patient was offered a specific date and time or was told that the specific appointment would be scheduled on receipt of an insurance number. Appointments were considered to be denied if the caller was told that there was no appointment available. In 11.4% of the calls (11.1% in the private-insurance group and 11.8% in the Medicaid group), we could not determine whether an appointment would be scheduled or denied, because of insurmountable scheduling barriers that were typically tied to a lack of a valid insurance number. We excluded these cases. Com-

pleted audit calls totaled 9737 during the first period and 4898 during the second period.

#### STUDY OVERSIGHT

The study was funded by the Robert Wood Johnson Foundation. The protocol was approved by the institutional review board at the University of Pennsylvania; the requirement for informed consent was waived, because we are studying the system, rather than the providers, and have protected the confidentiality of individual practices. All the authors vouch for the completeness and accuracy of the data and analyses presented. The manuscript was written, reviewed, modified, and approved in its final version by all the authors. The sponsor was not involved in the design or conduct of the study, the preparation of the manuscript, or the decision to submit the manuscript for publication.

#### OFFICE COHORT

We analyzed a stable cohort of offices — those that were eligible for audit calls during the two time periods — in order to isolate changes over time that were independent of a changing mix of physician offices. For this stable cohort, we excluded audit calls during the first period if practices became ineligible during the second period. In the Medicaid group, we also excluded audit calls to offices that changed Medicaid eligibility. Federally qualified health centers were excluded because the Medicaid reimbursement increase did not apply to those facilities.

#### STUDY OUTCOMES

Our primary outcome was the availability of appointments for new patients, according to state, insurance type, and audit period. As a secondary outcome, we estimated the median waiting time for appointments as the number of days between the call and the appointment date. For the estimates, we used weights representing the proportion of the population with each insurance type in the county in which the office was located. Weights were scaled so that each state contributed equally to an aggregate 10-state estimate.

#### STATISTICAL ANALYSIS

We assessed whether rates of appointment availability changed over time by testing whether the percentage-point change between the two audit

**Table 1. Call Characteristics, According to Time Period and Insurance Type.\***

Variable	Period 1 (2012–2013)		Period 2 (2014)	
	Medicaid	Private Insurance	Medicaid	Private Insurance
	<i>number of calls</i>			
All states	3319	4434	1923	2302
New Jersey	374	532	234	271
Pennsylvania	413	478	218	248
Illinois	468	543	217	249
Texas	355	561	205	263
Georgia	382	536	200	252
Arkansas	185	321	153	222
Massachusetts	512	679	197	217
Oregon	205	337	166	232
Iowa	340	350	250	245
Montana	85	97	83	103
Month of call				
January	1162	1467	0	0
February	560	751	0	0
March	86	177	0	0
April	0	4	0	0
May	0	0	496	1727
June	0	0	1246	556
July	0	0	181	19
November	513	707	0	0
December	998	1328	0	0
	<i>percentage of calls</i>			
Hypertension scenario	50.0	50.2	50.4	50.4
Female sex of caller	49.4	49.8	54.7	51.7
Race or ethnic group of caller†				
Black	38.3	37.8	40.6	42.2
Hispanic	24.5	22.6	12.2	14.8
White	37.1	39.5	47.2	43.1
Age of caller				
18–29 yr	22.3	21.2	24.1	24.7
30–44 yr	51.3	51.8	45.0	48.0
45–64 yr	26.3	26.9	30.9	27.3

\* Data are based on audit calls that were placed to a stable cohort of physician offices that were practicing adult primary care and participating in the insurance type during the two study periods.

† Race or ethnic group was self-reported.

periods in the private-insurance group and the Medicaid group was different from zero within each state and for the 10-state average. We then tested whether the change in the appointment-availability rate in the Medicaid group was significantly different from that in the private-insurance group. In all cases, we use t-tests with robust estimates of standard errors, clustered according to county. In our main analysis, we did not adjust for caller characteristics, since such adjustment had no influence on the results (Table S1 in the Supplementary Appendix). We used estimates of the increase in Medicaid reimbursement (according to state) that represent the average percentage increase in Medicaid reimbursement for the affected primary care services that was required to achieve parity with Medicare fees from 2012 through 2013. These estimates were based on a sample of the affected primary care services.<sup>10</sup> We categorized states as having a high increase in reimbursements or a low increase in reimbursements on the basis of whether the size of the increase was above or below the 10-state average. (See Table S2 in the Supplementary Appendix for details regarding Medicaid reimbursements for one example of affected service.)

We displayed the relationship between the change in appointment availability and the size of the reimbursement increase for each type of insurance in a scatter plot and summarized the observed pattern using a 10-observation linear regression of the state-level change in appointment availability on the state-level amount of the reimbursement increase. We also explored nonlinear associations using locally weighted scatterplot smoothing (LOWESS) and assessed the sensitivity of the estimated association to the removal of states with the highest leverage. We used a Pearson chi-square test for comparisons of median waiting times between the two insurance groups and over time.

## RESULTS

### CHARACTERISTICS OF CALLS

By design, the characteristics of the calls within each time period were balanced in terms of the mix of age group, sex, race or ethnic group, and hypertension scenario that was used. The audit calls were conducted by a significantly different demo-

graphic mix of callers between the two periods (Table 1). A total of 7753 calls were made during period 1, and 4225 calls during period 2, with at least 150 calls in every state except Montana.

**APPOINTMENT AVAILABILITY AND WAITING TIMES**

Appointment availability and median waiting times for all key groups are provided in Tables 2 and 3, respectively. States are ordered according to the size of the Medicaid reimbursement increase. Waiting times showed very little change over time, and the pattern of changes did not correspond to the changes in reimbursements. For appointment availability, however, we found changes that were associated with the size of the Medicaid reimbursement increase.

Although the appointment availability for private-insurance callers stayed approximately the same at 86%, the 10-state average of overall appointment availability for Medicaid callers increased from 58.7% before the reimbursement increase to 66.4% during the second period. Details regarding these changes, including differ-

ences between periods within the Medicaid group and the private-insurance group and between-group difference-in-differences, are provided in Table 4.

In the Medicaid group, the 10-state difference of 7.7 percentage points between periods was significant ( $P<0.001$ ). The states with the largest increases in Medicaid appointment availability also tended to be the states with the largest increases in Medicaid reimbursements: New Jersey, Pennsylvania, Illinois, and Texas. An exception was Montana, which had the smallest change in Medicaid reimbursements of the 10 states but still had an increase of 6.8 percentage points in Medicaid appointment availability. There was no corresponding pattern of change for private-insurance enrollees, although 2 states, Pennsylvania and Massachusetts, had increased appointment availability for private-insurance enrollees. The resulting overall net difference in the change in appointment availability for Medicaid enrollees, as compared with private insurance enrollees, was 8.3 percentage points for the 10 states ( $P<0.001$ ).

**Table 2. Availability of Appointments for New Patients, According to the State, Insurance Type, and Time Period.\***

State	Appointment Availability in Medicaid Group		Appointment Availability in Private-Insurance Group		Increase in Medicaid Reimbursement†
	Period 1	Period 2	Period 1	Period 2	
	<i>percent</i>				
All 10 states	58.7	66.4	86.1	85.5	57.0
States with larger increases in payments					
New Jersey	70.6	81.5	92.7	88.0	109.0
Pennsylvania	50.8	63.6	79.0	86.2	96.0
Illinois	47.4	65.7	90.7	89.8	93.0
Texas	63.5	75.4	90.4	87.6	66.0
States with smaller increases in payments					
Georgia	73.3	77.2	89.4	90.9	48.0
Arkansas	46.4	51.8	89.2	83.3	47.0
Massachusetts	55.0	59.2	69.0	77.6	47.0
Oregon	37.7	34.9	77.4	69.0	39.0
Iowa	67.9	73.8	89.2	90.4	34.0
Montana	74.5	81.3	93.7	92.1	7.0

\* States are ordered according to the amount of the increase in Medicaid reimbursement.

† The increase in Medicaid reimbursement is the average percentage increase in Medicaid reimbursement for the affected primary care services that was required to achieve parity with Medicare fees from 2012 through 2013. These estimates were based on a sample of the affected primary care services.

**Table 3. Waiting Times for Appointments for New Patients, According to the State, Insurance Type, and Time Period.\***

State	Medicaid Waiting Times		Private-Insurance Waiting Times	
	Period 1	Period 2	Period 1	Period 2
	median no. of calendar days			
All 10 states	6	6	6	6
States with larger increases in payments				
New Jersey	4	4	5	5
Pennsylvania	8	9	7	9
Illinois	5	4	5	5
Texas	5	4	5	5
States with smaller increases in payments				
Georgia	5	5	6	6
Arkansas	6	7	5	6
Massachusetts	16	10	13	11
Oregon	7	9	7	7
Iowa	5	7	6	5
Montana	7	7	8	6

\*  $P < 0.05$  for the comparison between period 1 and period 2 for the Medicaid groups in Iowa and Massachusetts and for the private-insurance groups in Arkansas, Montana, and Pennsylvania.

#### PATTERNS ACROSS STATES

The patterns across states are shown in Figure 1, where the differences in appointment availability are plotted against the Medicaid reimbursement increase in each state. In the Medicaid group, the estimated slope of this line is 0.125 ( $P = 0.03$ ), and in the private-insurance group, the slope is 0.017 ( $P = 0.78$ ). The positive Medicaid slope (Fig. 1A) implies that a 10% increase in Medicaid reimbursements, as compared with the Medicaid reimbursement at baseline, was associated with an increase in appointment availability of approximately 1.25 percentage points. (The effect of a 10% change in the reimbursement ratio is derived by multiplying the estimated 0.125 change in appointment availability for a 1% change in reimbursements by 10.) This finding was consistent with the pattern of findings in Table 4 and suggests a pattern of increasing Medicaid appointment availability with increasing reimbursement level, although the true relationship does not need to be linear, as indicated in Figure 1A. Whereas the linear relationship was not sensitive to the removal of states with the highest

leverage, the LOWESS version of Figure 1A suggests a possible threshold relationship (Fig. S3 in the Supplementary Appendix).

#### DISCUSSION

The mean increase of more than 50% in Medicaid reimbursement for primary care services was associated with an increase from 58.7% to 66.4% in the availability of new-patient appointments among participating primary care physician offices in the Medicaid group in the 10 study states. This increase in availability was positively related to the size of the increase in Medicaid reimbursements for primary care across the 10 states. In contrast, we did not see corresponding changes in the availability of new-patient appointments in the private-insurance group, which suggests that the changes in the availability of appointments for Medicaid enrollees were unlikely to have been driven by general changes in the health delivery system.

Increases in appointment availability were similar in states that expanded Medicaid coverage (e.g., New Jersey and Illinois) and those that did not (e.g., Pennsylvania and Texas). If increases in demand owing to these expansions challenged provider capacity, we might have expected smaller changes in appointment availability in New Jersey and Illinois, but such findings did not materialize. We also did not observe longer waiting times as a way to increase the availability of new-patient appointments.

Our finding that the increase in reimbursements was related to increased availability of appointments for Medicaid enrollees indicates that the policy probably had the intended effect, despite the many questions that have been raised about the limited duration of the policy, insufficient provider outreach and education, remaining payment gaps relative to private insurance, administrative complexities, and delays in implementation.<sup>13,14,17,22</sup> Although there is mixed evidence about whether the hike in Medicaid reimbursements increased the number of newly participating Medicaid providers,<sup>14,17</sup> we found strong evidence that providers who were already participating in a Medicaid plan in 2012 were more willing to schedule an appointment with a new Medicaid patient in 2014. Although our findings are consistent with the fact that currently participating providers are able to boost their panel of

**Table 4. Differences in Availability of Primary Care Appointments for New Patients after Increases in Medicaid Reimbursement, According to Insurance Status.\***

State	Difference in Medicaid Group	Difference in Private-Insurance Group <i>percentage points</i>	Difference between Medicaid Group and Private-Insurance Group
All 10 states	7.7±1.3†	-0.6±0.9	8.3±1.4†
States with larger increases in payments			
All 4 states	13.5±1.9†	-0.3±1.2	13.8±2.3†
New Jersey	10.8±2.6†	-4.7±2.0‡	15.5±3.3†
Pennsylvania	12.8±5.1†	7.2±2.7†	5.6±6.0
Illinois	18.3±3.2†	-0.9±1.6	19.2±3.3†
Texas	12.0±3.4†	-2.8±1.9	14.8±3.6†
States with smaller increases in payments			
All 6 states	3.9±1.6‡	-0.8±1.3	4.7±1.8†
Georgia	3.9±3.6	1.5±2.3	2.4±4.0
Arkansas	5.5±4.3	-5.9±2.1†	11.4±4.7‡
Massachusetts	4.2±4.5	8.6±3.0†	-4.4±2.7
Oregon	-2.9±3.7	-8.4±3.4‡	5.5±5.1
Iowa	5.9±3.6	1.2±1.7	4.7±3.0
Montana	6.8±2.6†	-1.7±3.3	8.5±3.7‡

\* Plus-minus values are means ±SE, clustered according to county.

† P<0.01.

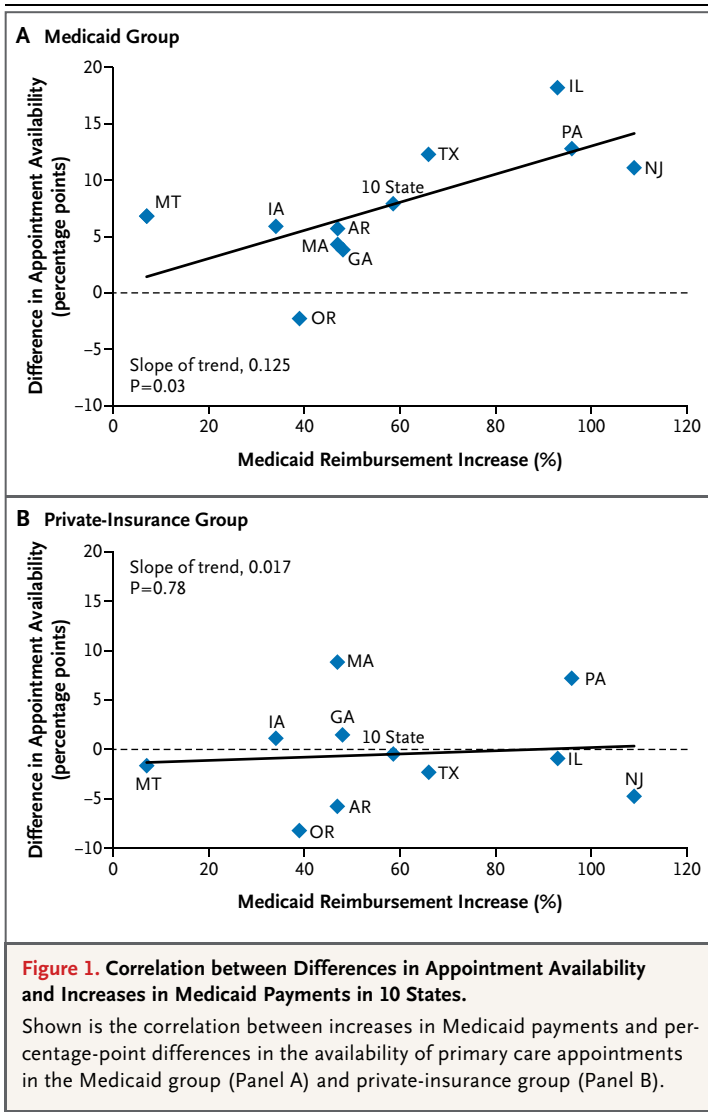
‡ P<0.05.

Medicaid patients at little cost, additional research is needed to identify whether states that elect to extend the Medicaid reimbursement hikes have increases in the number of participating providers.

Although the federal government declined to extend funding for the reimbursement increases, some states maintained higher reimbursements because they were willing to face the subsequent budgetary effects. Currently, only 15 states plan to continue the reimbursement increases.<sup>19</sup> Other research has shown that the average national Medicaid reimbursement to primary care physicians would fall by 43% in 2015 if all states let the payment increase expire, but the 24 states that are not planning to continue the payment increase would have an even larger 47% reduction.<sup>23</sup> Our analysis shows that opting not to extend the enhanced payments may significantly decrease the availability of primary care appointments for Medicaid enrollees, particularly in states that had low Medicaid reimbursements before the increase.

Our study has several important limitations. First, our audit methods focused on the avail-

ability of appointments among providers who already participated in a Medicaid plan and were not designed to examine changes in the number of providers participating in these networks. More rigorous research on this secondary effect is needed. Second, our focus was on a stable cohort of physician offices rather than a representative cohort in each period. We were limited by the fact that the second period did not include new offices that opened between the two periods. Third, the timing of data collection was not ideal. Half of the first period was during the first 3 months of 2013, when the reimbursement increase was theoretically in effect but not yet implemented. Thus, if practices were already reacting to the policy, we may have underestimated its effect. Data were collected in the fall or winter during the first period and during the spring or summer during the second period. Thus, if there were seasonal effects, we could not account for them. However, the absence of change in appointment availability in the private-insurance group suggests that seasonal effects do not



explain the increase in availability in the Medicaid group. Fourth, our study focused only on access for new adult patients — the group gaining eligibility under the insurance expansions in the ACA — and did not address appointment availability or waiting times for established patients, children, or the elderly. Finally, we examined the experiences in just 10 states, representing 27% of the national nonelderly population.<sup>21</sup> The inclusion of only a limited number of states, although these were selected to provide geographic and health system diversity,<sup>21</sup> could create idiosyncratic patterns that would limit the generalizability of our results to all states.

In conclusion, we found that the increases in Medicaid reimbursements mandated by the ACA were associated with significant increases in the availability of new-patient appointments for primary care for Medicaid enrollees across 10 states. Public perception has focused on whether the Medicaid payment hikes would increase the number of providers in private practice who participate in the Medicaid program. Our findings suggest that providing higher Medicaid payments is an effective strategy for ensuring access to enrollees among already participating primary care providers. Whether the costs and benefits of the policy warrant ongoing federal or state investment will need to be determined.

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Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

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