

Medicaid Expansion, Managed Care Plan Composition, and Enrollee Experience

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Medicaid managed care has become the dominant method of delivering health services for low-income Americans enrolled in the Medicaid program.¹ Forty states, including the District of Columbia, contract with comprehensive managed care organizations (MCOs) to facilitate access to care for some Medicaid enrollees, and the proportion of Medicaid enrollees in MCOs has grown from 3% in 1983 to 69% today.¹⁻⁴ Through state decisions to expand Medicaid eligibility under the Affordable Care Act (ACA), 16 million low-income Americans gained Medicaid coverage.⁵ Medicaid MCOs were responsible for facilitating access to care for nearly 80% of newly eligible beneficiaries following expansion.⁶⁻⁹ Some studies' findings suggest that, compared with those who were already enrolled in Medicaid, newly eligible adults were projected to have better self-reported health and might have different patterns of health care use that could affect plan quality measurement.^{10,11} Despite tremendous growth in enrollment, however, there is limited empirical evidence specifically evaluating changes in the composition of MCO enrollees associated with Medicaid expansion.

MCOs can influence access to and quality and experience of care for Medicaid enrollees through several mechanisms, including the development of provider networks, direct contact with beneficiaries, implementation of population health management strategies, and influencing physician behavior.¹² More states are adopting performance measures and developing reporting systems to hold Medicaid MCOs accountable for the quality of care delivered to enrollees.¹³ However, there is wide variation in how states are designing their quality reporting programs for Medicaid managed care. For example, some states (eg, Florida) use national quality benchmarks, whereas others use statewide (eg, Michigan) or regional (eg, Pennsylvania) benchmarks.¹⁴ Further, states are using Medicaid MCO quality data differently: Maryland and Utah use these data to generate state report cards that assist new Medicaid enrollees in MCO selection. Other states use performance data for bonus payments based on meeting or exceeding quality targets, withholding of capitation payments contingent on quality performance, and preferential autoassignment to new members.¹³

ABSTRACT

OBJECTIVES: To examine changes in plan composition and enrollee experience associated with Medicaid expansion among Medicaid managed care organization (MCO) enrollees.

STUDY DESIGN: Using 2012-2018 Adult Medicaid Consumer Assessment of Healthcare Providers and Systems surveys, we estimated changes in MCO enrollee characteristics and 4 outcomes: having access to needed care, having a personal doctor, having timely access to a checkup, and having timely access to specialty care.

METHODS: We estimated multivariable linear probability models comparing pre- vs postexpansion changes in expansion vs nonexpansion states. The postexpansion period was modeled as an event-study regression to account for changes over time. The coefficient of interest was a Medicaid expansion-by-year term.

RESULTS: Medicaid expansion was associated with statistically significant decreases in the proportion of female enrollees [-8.4 percentage points [PP]; $P < .01$] and increases in the proportion of enrollees who were aged 55 to 64 years [6.8 PP; $P < .01$] and were non-Hispanic White [4.4 PP; $P < .01$]. Relative to enrollees in nonexpansion states, MCO enrollees in expansion states were significantly less likely to report access to a personal doctor [-1.6 PP; 95% CI, -3.0 to -0.1 PP] and less likely to report timely access to specialty care [-2.1 PP; 95% CI, -3.4 to -0.8 PP; $P < .01$] in the first year after expansion. Differences were not statistically significant by the second year post expansion. There were not significant changes in the other 2 outcomes.

CONCLUSIONS: State policy makers may need to account for the role that Medicaid expansion may have in changing Medicaid MCO enrollee composition to prevent unfair penalization on performance metrics.

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Recent efforts to create a nationwide Medicaid managed care quality reporting program aim to facilitate cross-state or cross-MCO comparisons on performance measures. However, Medicaid expansion could substantially change MCO enrollee composition and lead to potentially unfair comparisons if newly eligible populations were fundamentally different from those eligible for Medicaid prior to expansion. An understanding how shifts in the enrollee composition of Medicaid MCOs may affect outcomes, such as enrollee experience metrics, is critical. We examine changes in Medicaid MCO composition associated with Medicaid expansion among nonelderly adult enrollees and estimate changes in 4 enrollee experience metrics.

METHODS

Data

Our analysis uses 2012-2018 National Committee on Quality Assurance (NCQA) Adult Medicaid Consumer Assessment of Healthcare Providers and Systems (CAHPS) data, which are enrollee-level surveys submitted by state Medicaid agencies and individual Medicaid MCOs. Developed by the Agency for Healthcare Research and Quality (AHRQ), CAHPS health plan surveys were first administered in 1997 and are used to collect standardized information about experiences with health plans and their services. Medicaid MCOs use CAHPS performance to assess satisfaction with care and adequacy of network capacity.¹ Sampling was limited to adults (18 years or older) who were continuously enrolled in a Medicaid MCO for the past 6 months and who reported that MCO as their primary coverage. Data were collected by a NCQA-certified third-party vendor. Samples must be large enough to yield at least 300 complete surveys per MCO per year, with a target response rate of 40%. In addition to enrollee-reported sociodemographic and health status information, the survey includes measures of access to care, timeliness of care, and satisfaction with care. To obtain MCO characteristics, including annual enrollment, we linked the survey data to publicly available Medicaid managed care enrollment reports, which are submitted annually to CMS.¹⁵

Study Sample

Our study sample consisted of nonelderly adult enrollees (aged 18-64 years), the age range targeted by Medicaid expansion, living in 37 states including the District of Columbia with comprehensive MCOs. We limited our sample to enrollees in comprehensive managed care plans and excluded those in prepaid inpatient health plans, prepaid ambulatory health plans, or limited benefit plans. Considering the different care needs of the dual-eligible population, we excluded enrollees in comprehensive Medicaid MCOs that, based on the Medicaid managed care enrollment reports, primarily

TAKEAWAY POINTS

More states are developing reporting systems to hold Medicaid managed care plans accountable for enrollee experience of care, but measured performance may be affected by shifts in the composition of Medicaid enrollees following coverage expansions to previously ineligible adults. This study found that Medicaid expansion was associated with substantial changes in enrollee characteristics. This change in population may influence performance on enrollee experience indicators.

- ▶ State policy makers may need to account for the implications of Medicaid expansion on changes in plan composition and measured performance on enrollee experience metrics.
- ▶ Comparison against national benchmarks may unfairly penalize plans in Medicaid expansion states.

served dual-eligible beneficiaries. More information about the construction of our study sample is available in the [eAppendix Figure](#) (eAppendix available at ajmc.com).

Measures

Our outcomes were 4 metrics of enrollee experience of care: whether a respondent answered that it was “always or usually” easy to get needed care, had a personal doctor, answered that they were “always or usually” able to get a checkup or routine care as soon as they needed to, and answered that they were “always or usually” able to see a specialist as soon as they needed to. Definitions built upon recent work using the Nationwide Adult Medicaid CAHPS data.¹⁶ Survey items and responses are available in [eAppendix Table 1](#).

Statistical Analysis

Our unit of analysis was the MCO enrollee. We first fitted linear probability models to examine changes in enrollee sociodemographic characteristics (eg, age, gender, race/ethnicity, educational attainment), self-reported health status, self-reported care needs, and number of outpatient visits by Medicaid expansion status. We fitted multivariable linear probability models to estimate changes in enrollee experience by state Medicaid expansion status. Adjusted models included an indicator for state Medicaid expansion status, the number of years after expansion, and their interaction. A state's postexpansion period was defined by its own implementation date, which for most states was January 1, 2014 ([eAppendix Table 2](#)), and each postexpansion year was compared with baseline preexpansion estimates. Covariates included enrollee age, gender, race/ethnicity, educational attainment, self-reported health status (excellent, very good, good, fair, poor), survey language (English vs Spanish or other), survey mode (mail vs telephone or internet), and whether they received assistance in completing the survey. Models include state, year, and MCO fixed effects, and standard errors were clustered at the state level. Because the number of survey responses submitted is not necessarily representative of an MCO's size, building upon prior work, we weighted analyses by the total MCO enrollment.¹⁷ We also present unadjusted estimates and estimates that use AHRQ's suggested CAHPS case-mix adjustment methodology (age, education, and general health status).¹⁸

Sensitivity Analyses

To assess the representativeness of our study sample, we compared the total number of enrollees for MCOs that submitted CAHPS data vs those that did not, and we compared number of MCOs and enrollees by state expansion status. We also included several sensitivity analyses: First, we pooled postexpansion period years rather than modeling the postexpansion period as a time series. Second, consistent with previous Medicaid expansion work, we excluded enrollees in early expanding states (eAppendix Table 2).¹⁹ Third, we recategorized the postexpansion year indicator for states that expanded midyear for the following year. Fourth, because MCOs did not submit data to NCQA consistently, we examined whether results differed when limiting the analysis to plans that submitted CAHPS data for all 7 years in our study period. Fifth, we respecified our 3 outcomes with Likert scales to only top-box responses: reporting it was “always” easy to get needed care, “always” being able to get a checkup or routine care as soon as they needed to, and “always” being able to see a specialist as soon as they needed to.

RESULTS

Our study sample consisted of 324,435 nonelderly Medicaid MCO enrollees. Response rates were available at the MCO level, and the mean MCO-level response rate was 24.4% (IQR, 21.1%-28.4%). In nonexpansion states, CAHPS data were reported by 27 MCOs in the preexpansion period (response rate, 26.9%) and 60 MCOs in the postexpansion period (response rate, 21.6%). In expansion states, data were reported by 87 MCOs in the preexpansion period (response rate, 29.5%) and 130 MCOs in the postexpansion period (response rate, 23.9%). Relative to enrollees living in nonexpansion states, there were significant decreases in the proportion of enrollees who were female (−8.4 percentage points [PP]; 95% CI, −9.3 to −7.6) and Hispanic/Latino (−4.0 PP; 95% CI, −4.7 to −3.4) and significant increases in the proportion of enrollees who were aged 55 to 64 years (6.8 PP; 95% CI, 6.1-7.6), were non-Hispanic White (4.4 PP; 95% CI, 3.5-5.3), and had a college degree or higher (2.4 PP; 95% CI, 1.9-2.8) (Table 1). Medicaid expansion was associated with significant decreases in the proportion of enrollees who reported having fair/poor health status (−2.3 PP; 95% CI, −4.4 to −0.1), needing care right away (−1.3 PP; 95% CI, −2.2 to −0.3), or receiving care 3 or more times for the same condition (−2.0 PP; 95% CI, −2.9 to −1.2).

Medicaid expansion was associated with significant differences in 2 of our 4 enrollee experience metrics in the first year of expansion (Table 2). Unadjusted rates and estimates using AHRQ’s case-mix methodology are presented in eAppendix Table 3, and unadjusted rates by state Medicaid expansion status for each outcome are presented in eAppendix Table 4. In unadjusted models, MCO enrollees in expansion states were significantly less likely to report “always or usually” having timely access to a checkup or routine care (−0.9 PP; 95% CI, −1.6 to −0.1) and having timely access to specialty

care (−1.9 PP; 95% CI, −3.2 to −0.7) in the first year of Medicaid expansion. In adjusted analyses, MCO enrollees in expansion states were significantly less likely to report having a personal doctor (−1.6 PP; 95% CI, −3.0 to −0.1) and having timely access to specialty care (−2.1 PP; 95% CI, −3.4 to −0.8) in the first year of Medicaid expansion compared with those outcomes among MCO enrollees prior to Medicaid expansion. In both models, differences were no longer statistically significant by the second year of Medicaid expansion onward. There were not statistically significant changes by state expansion status for our other 2 outcomes, getting needed care or timely access to checkup or routine care.

Sensitivity Analyses

The number of MCOs submitting CAHPS data increased during the study period, and MCOs that submitted CAHPS data were larger than those that did not (eAppendix Table 5). The number of MCOs submitting CAHPS data to NCQA increased in both nonexpansion and expansion states (eAppendix Table 6). Adjusted analyses were generally robust to alternative specifications (eAppendix Table 7). In some models, MCO enrollees in expansion states were significantly less likely to report timely access to checkup or routine care in the first postexpansion year. When limiting our sample to 50 MCOs that reported data for all 7 years in our study period, MCO enrollees in expansion states were significantly less likely to report having a personal doctor in the first year post expansion (−2.0 PP; 95% CI, −3.8 to −0.1), and changes in timely access to specialty care were not statistically significant (−1.9 PP; 95% CI, −4.2 to 0.2). Respecifying outcomes to use top-box scores, Medicaid expansion was associated with significant changes in “always” reporting timely access to checkup or routine care in the first 3 years post expansion, ranging between −2.2 PP (95% CI, −4.2 to −0.2) and −3.2 PP (95% CI, −4.7 to −1.7) (eAppendix Tables 8 and 9). There were not statistically significant changes in getting needed care or timely access to specialty appointment by state expansion status when using top-box responses.

DISCUSSION

This is the first study to examine changes in Medicaid MCO composition and enrollee experience associated with Medicaid expansion. Compared with trends in nonexpansion states, the composition of Medicaid MCOs in expansion states substantially changed in terms of sociodemographic characteristics, self-reported health status, and care needs. As such, the modest and temporary changes in 2 enrollee experience metrics are comparing different populations: those enrolled pre-ACA and a healthier population with higher educational attainment that enrolled following expansion. This study makes an important contribution to the literature, as there is limited national evidence available on enrollee experience among Medicaid MCO enrollees.^{20,21} Most multistate estimates predate the ACA,^{17,22,23} have been limited to 1 year of data,^{16,24} or have used MCO-level data that may mask enrollee-level differences.^{3,25}

TABLE 1. Medicaid Managed Care Nonelderly Enrollee Characteristics and Compositional Shifts, 2012-2018

Characteristic	Nonexpansion states		Expansion states		Compositional shift (95% CI) ^a
	2012-2013	2014-2018	Preexpansion	Post expansion	
MCOs in data set	27	60	87	130	-
Respondents	22,342	71,265	64,200	166,628	-
Response rate in %, mean (SD)	26.9 (6.0)	21.6 (6.2)	29.5 (6.4)	23.9 (5.6)	-
Age in years, %					
18-24	19.9	17.7	17.3	11.4	-3.7 [-4.4 to -1.6]**
25-34	21.2	20.0	22.5	18.2	-3.1 [-3.9 to -2.4]**
35-44	18.2	17.8	19.2	16.1	-2.8 [-3.5 to -2.2]**
45-54	19.8	18.9	21.0	22.9	2.8 [2.1-3.5]**
55-64	20.9	25.6	19.9	31.4	6.8 [6.1-7.6]**
Female, %	68.3	67.6	67.9	58.8	-8.4 [-9.3 to -7.6]**
Race/ethnicity, %					
White	49.6	46.2	48.4	49.4	4.4 [3.5-5.3]**
Black	29.5	27.7	20.7	19.2	0.2 [-0.6 to 1.0]
Hispanic/Latino	11.0	14.5	16.2	15.7	-4.0 [-4.7 to -3.4]**
Asian, Native Hawaiian, or Pacific Islander	1.4	1.8	4.1	5.0	0.5 [0.2-0.7]**
American Indian	0.5	0.6	0.8	0.7	-0.2 [-0.4 to -0.1]**
Other race or multiracial	1.1	1.3	1.8	2.1	0.1 [-0.2 to 0.3]
Highest education attained, %					
Not a high school graduate	29.2	25.5	24.3	19.9	-0.7 [-1.5 to 0.1]
High school graduate only	39.3	39.8	38.0	37.5	-0.1 [-1.8 to -0.1]*
Some college or 2-year degree	24.4	25.7	28.6	29.1	-0.9 [-1.7 to -0.1]*
College degree or higher	4.8	6.9	7.2	11.7	2.4 [1.9-2.8]**
Fair/poor self-reported health status, %	37.5	37.2	32.8	30.2	-2.3 [-3.2 to -1.5]*
Care needs in last 6 months, %					
Needed care right away	48.0	45.2	44.6	40.8	-1.3 [-2.2 to -0.3]**
Received care ≥3 times for same condition	38.0	38.2	34.6	32.8	-2.0 [-2.9 to -1.2]**
Take or need prescription medications	66.1	65.4	62.2	62.7	1.2 [0.3-2.0]*
No. of outpatient visits in last 6 months, %					
0	19.7	20.3	21.7	23.4	2.1 [1.4-2.9]**
1-4	57.4	58.1	57.8	58.3	-0.2 [-1.1 to 0.7]
5-9	16.0	15.0	14.0	12.1	-0.9 [-1.6 to -0.3]**
6 or more	6.8	6.7	6.3	5.2	-0.9 [-1.4 to -0.5]**

MCO, managed care organization.

P* < .05; *P* < .01.

^aCompositional shifts reflect percentage-point differences.

Changes in Medicaid MCO Composition

To date, there have been no estimates of changes in Medicaid MCO composition associated with Medicaid expansion. Compared with pre-ACA adult enrollees, low-income Americans who were newly eligible for Medicaid were more likely to be male,¹¹ be non-Hispanic White, have a college degree,¹¹ report better health status,^{10,26} and use less care.^{10,26,27} Medicaid expansion was associated with significant reductions in the proportion of Medicaid MCO enrollees who were Hispanic/Latino. Prior work indicated that uninsurance disparities narrowed for Hispanic/Latino adults, but there were substantially larger coverage gains among non-Hispanic White adults.^{28,29} Lower

rates of Medicaid enrollment following expansion among Hispanic/Latino individuals could be attributed to several factors, including limited access to Medicaid coverage based on immigration status, barriers to completing applications for Medicaid coverage, and concerns about immigration enforcement.^{29,30} Although many individuals eligible for Medicaid coverage do not enroll,^{31,32} our results are largely consistent with the anticipated changes in Medicaid enrollment. Failure to recognize that MCO case mix changed may lead to spurious conclusions about the effects of Medicaid expansion on enrollee experience of care, as our findings indicate that MCOs' enrollee compositions were fundamentally

TABLE 2. Changes in Measured Patient Experience by State Expansion Status^a

	Getting needed care ^b	Access to a personal doctor ^c	Timely access to checkup or routine care ^d	Timely access to specialty care ^e
Unweighted sample, n	237,610	315,515	319,962	132,794
Unadjusted				
Baseline	Ref	Ref	Ref	Ref
1 year post expansion	-0.5 [-2.5 to 1.6]	-1.6 [-3.3 to 0.1]	-0.9 [-1.6 to -0.1]*	-1.9 [-3.2 to -0.7]**
2 years post expansion	-0.2 [-2.5 to 2.2]	-0.9 [-2.6 to 0.9]	0.01 [-0.9 to 0.9]	-0.06 [-1.6 to 1.7]
3 years post expansion	-0.01 [-2.4 to 2.4]	-1.1 [-3.4 to 1.2]	-0.6 [-1.8 to 0.7]	-0.03 [-1.8 to 1.7]
4 years post expansion	0.7 [-1.7 to 3.1]	-1.0 [-3.7 to 1.8]	0.6 [-0.7 to 1.8]	0.5 [1.3-2.2]
5 years post expansion	0.3 [-2.5 to 3.0]	-2.0 [-6.5 to 2.5]	-0.2 [-2.0 to 1.6]	-0.7 [-3.0 to 1.6]
Adjusted				
Baseline	Ref	Ref	Ref	Ref
1 year post expansion	-0.3 [-1.3 to 0.7]	-1.6 [-3.0 to -0.1]*	-1.1 [-2.2 to 0.0]	-2.1 [-3.4 to -0.8]**
2 years post expansion	-0.7 [-2.0 to 0.5]	-1.0 [-2.3 to 0.3]	-0.3 [-1.4 to 0.8]	-0.7 [-2.6 to 1.2]
3 years post expansion	-0.4 [-2.0 to 1.2]	-1.2 [-2.9 to 0.5]	-0.8 [-1.7 to 0.2]	-0.7 [-2.4 to 1.0]
4 years post expansion	-0.03 [-1.9 to 1.8]	-0.9 [-2.7 to 0.9]	0.2 [-1.1 to 1.4]	-0.7 [-2.4 to 1.0]
5 years post expansion	0.04 [-1.9 to 1.9]	-1.9 [-4.0 to 0.2]	-0.3 [-1.2 to 0.7]	-1.9 [-4.5 to 0.7]

Ref, reference.

P* < .05; *P* < .01.

^aEstimates use linear probability models. Unadjusted models include indicators for state Medicaid expansion status, the number of years after expansion, and their interaction. Adjusted models add sociodemographic characteristics (age, gender, race/ethnicity, educational attainment), self-reported health status, and survey information (language, mode [mail vs telephone or internet], and whether they received assistance in completing the survey). Models include state, year, and managed care organization fixed effects. Standard errors are clustered at the state level.

^bSurvey item asked, "In the last 6 months, how often was it easy to get the care, tests, or treatment you needed?"

^cSurvey item asked, "A personal doctor is the one you would see if you need a checkup, want advice about a health problem, or get sick or hurt. Do you have a personal doctor?"

^dSurvey item asked, "In the last 6 months, how often did you get an appointment for a checkup or routine care at a doctor's office or clinic as soon as you needed?"

^eSurvey item asked, "Specialists are doctors like surgeons, heart doctors, allergy doctors, skin doctors, and other doctors who specialize in one area of health care. In the last 6 months, how often did you get an appointment to see a specialist as soon as you needed?"

different in 2014 than they would have been in the absence of Medicaid expansion.³³

Changes in Enrollee Experience in Medicaid MCOs

Consistent with prior work, our estimates suggest that Medicaid MCO enrollees are largely satisfied with their care.^{16,24} Prior MCO-level analyses suggested that Medicaid expansion did not have significant effects on measured clinical quality.³ Our analysis, which uses more granular enrollee-level data, suggests that Medicaid expansion was associated with modest, temporary reductions in enrollee experience of care in the first year of expansion. This change may be explained, in part or in full, by the substantial changes in MCO composition associated with Medicaid expansion. More specifically, our outcomes indicate that the study population in 2014 was less likely to have a personal doctor or timely access to specialty care than the study population in 2013; it is reasonable to assume that the new enrollees in 2014—who were in better overall health—had less need for primary care and less prior connection to the health care system, which could explain these findings. It is also plausible that other mechanisms concurrently contributed to these findings, including states' primary care workforce capacity, difficulties establishing primary care, network adequacy for specialty care, or the

volume of new enrollees with potentially substantial unmet health care and social needs.^{13,17,34-36} However, we are unable to empirically assess these mechanisms with the current data, and this warrants further investigation. These results should also be interpreted in the context of the broad research literature demonstrating that Medicaid expansion produced substantial benefits in access to care, having a personal doctor, and multiple health outcomes.³³

Implications for Policy and Practice

National efforts to rank, standardize measurement of, and publicly report MCO-level quality have generated concerns that MCOs in states that expanded Medicaid may be penalized for reporting quality among a newly eligible population with less connection to primary care and less need for health care.³ Our study demonstrates that a state's decision to expand Medicaid affects the composition of Medicaid MCO enrollees, and this change in population may influence an MCO's performance on enrollee experience metrics. These findings have important implications for Medicaid MCOs in the era of value-based payment,³⁷ increased reliance on performance measures for payment and delivery,¹ development of state Medicaid managed care quality rating systems,³⁸ and prioritization of enrollee satisfaction with care.³⁹ Currently, 85% of states with

Medicaid MCOs publicly report MCO-level performance, and 60% have pay-for-performance incentives or capitation-withhold arrangements.^{13,39} CMS plans to develop a managed care quality reporting system to facilitate comparisons across states.⁴⁰ Many states, as described in their Medicaid managed care quality strategies, are considering using national benchmarks to assess MCO performance. Policy makers and MCOs should build upon current robust performance measurement strategies in Medicaid managed care⁴¹ and consider accounting for a state's Medicaid expansion status, given the substantial changes in MCO enrollees. There may be value to collecting and using pathway-to-eligibility data for risk adjustment or stratification, which may allow states to more accurately compare whether MCOs are meeting their enrollees' needs and to identify targeted quality improvement interventions.

These findings may be important for the remaining 12 states that have not adopted Medicaid expansion but are perhaps considering doing so. In March 2021, the American Rescue Plan Act was passed, including additional federal funding for states that newly adopt Medicaid expansion.⁴² If states expand Medicaid and enroll the newly eligible in Medicaid MCOs, our findings suggest that there may be substantial shifts in MCO composition and temporary changes in enrollee experience. More broadly, these findings can inform state and MCO priorities in times with large increases in enrollment. Throughout the COVID-19 pandemic, rising unemployment, and subsequent loss of employer-sponsored coverage, Medicaid MCOs have played a central role in providing health insurance coverage and facilitating access to care to millions of Americans.^{43,44} It is expected that MCO performance will decline because of shifts in care delivery (eg, telehealth) and utilization (eg, reduced care seeking), leading states, MCOs, and providers to evaluate current managed care incentive arrangements tied to performance metrics.⁴⁵

Limitations

Our study has several limitations. First, CAHPS data are not longitudinal; rather, they are annual cross-sectional samples of enrollees. We are therefore unable to examine an individual's changes in experience over time. Second, the data do not include an indicator for pathway of eligibility for Medicaid enrollment, which limited our ability to identify new enrollees who qualified for coverage because of state expansion decisions. For this reason, we were unable to empirically estimate the effect of Medicaid expansion on quality of care. We attempted to address this by limiting our sample to nonelderly adults and excluding enrollees in MCOs that primarily serve dual-eligible beneficiaries. Third, we were unable to include other sociodemographic characteristics (eg, employment status), social risk factors (eg, housing instability),³⁵ and clinical covariates (eg, diagnosis of chronic conditions) because these items were not available in the survey. Fourth, not all MCOs report CAHPS data to NCQA, nor do MCOs consistently report CAHPS data across the study period. As a sensitivity analysis, we limited our sample to those that reported across all 7 years, and estimates were generally consistent. Fifth, sample selection was limited to individuals who

had continuous MCO enrollment for the past 6 months and may not reflect the experiences of individuals with intermittent enrollment; for example, recent estimates indicate that approximately 23.8% of nonelderly Medicaid enrollees in nonexpansion states and 13.7% in expansion states reported a disruption in coverage.⁴⁶ Relatedly, it is possible that our study sample is not representative of the population of nonelderly MCO enrollees; however, our study remains one of the few that uses enrollee-level data for multiple states. In 2018, our sample included approximately 66% of all MCOs nationwide. Sixth, although our response rates compare favorably with some surveys (eg, Health Reform Monitoring Survey or Gallup Healthways Well-Being Index), they are lower than most federal surveys.^{47,48} Seventh, enrollment numbers from Medicaid managed care enrollment reports are point-in-time, rather than total unique beneficiaries in 1 year. Eighth, because our study includes 4 outcomes, it is possible that significant associations are due to chance. If applying a post hoc Bonferroni correction for multiple comparisons, changes in access to a personal doctor would no longer be statistically significant in the first postexpansion year. Last, because of the shifts in Medicaid MCO enrollee composition, our study was not designed to assess the impact of expansion on enrollee experience of care.

CONCLUSIONS

State policy makers should recognize that decisions to expand Medicaid eligibility may change the composition of MCO enrollee populations, and this change in population may influence an MCO's performance on enrollee experience metrics. Particularly for states that compare an MCO's performance with national benchmarks, accounting for a state's decision to expand Medicaid may mitigate unfair reward or penalization. ■

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eAppendix Table 1. Outcome Measure Definitions

Outcome	CAHPS Question	Responses^a
Getting need care	In the last 6 months, how often was it easy to get the care, tests, or treatment you needed?	Never Sometimes Usually Always
Access to a personal doctor	A personal doctor is the one you would see if you need a check-up, want advice about a health problem, or get sick or hurt. Do you have a personal doctor?	Yes No
Timely access to checkup or routine care	In the last 6 months, how often did you get an appointment for a checkup or routine care at a doctor's office or clinic as soon as you needed?	Never Sometimes Usually Always
Timely access to specialty care	Specialists are doctors like surgeons, heart doctors, allergy doctors, skin doctors, and other doctors who specialize in one area of health care. In the last 6 months, how often did you get an appointment to see a specialist as soon as you needed?	Never Sometimes Usually Always

^a **Bold** indicates response used to define outcome.

eAppendix Table 2. Definitions of Expansion and Non-Expansion States and Post Period^a

State(s) ⁷	Date of ACA Medicaid Expansion	Year Considered Expanded
Arizona, Arkansas, California, Colorado, Connecticut, Delaware*, D.C. *, Hawaii, Illinois, Iowa, Kentucky, Maryland, Massachusetts*, Minnesota, Nevada, New Jersey, New Mexico, New York*, North Dakota, Ohio, Oregon, Rhode Island, Vermont*, Washington, West Virginia	January 1, 2014	2014
Michigan	April 1, 2014	2014
New Hampshire	August 15, 2014	2015
Pennsylvania	January 1, 2015	2015
Indiana	February 1, 2015	2015
Alaska	September 1, 2015	2016
Montana	January 1, 2016	2016
Louisiana	July 1, 2016	2017

^a *Indicate a state that adopted early Medicaid expansion (Wherry and Miller 2017). States that did not expand Medicaid during the study period: Alabama, Florida, Georgia, Idaho, Kansas, Maine, Mississippi, Missouri, Nebraska, North Carolina, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Wisconsin, Wyoming. While Maine technically applied retroactive Medicaid eligibility for

eAppendix Table 3. Unadjusted Rates and AHRQ-Adjusted Rates ^{a, b}

	Getting Needed Care		Access to a Personal Doctor		Timely Access to Checkup or Routine Care		Timely Access to Specialty Care	
	Unadjusted	AHRQ	Unadjusted	AHRQ	Unadjusted	AHRQ	Unadjusted	AHRQ
Baseline	82.9	82.1	82.5	82.5	85.7	79.2	79.6	85.0
1 Year Post-Expansion	83.5	82.0	81.4	81.1	85.6	77.9	79.0	84.5
2 Years Post-Expansion	83.6	83.0	81.3	81.8	85.4	78.5	78.6	85.1
3 Years Post-Expansion	84.6	84.2	81.7	81.6	86.2	80.1	80.2	85.8
4 Years Post-Expansion	84.9	84.1	81.1	81.1	86.2	79.4	80.2	85.7
5 Years Post-Expansion	85.0	84.0	80.3	79.4	85.8	79.4	80.1	84.9

^a AHRQ-adjusted rates use the Agency for Healthcare Research and Quality’s suggested case-mix adjustment methodology, which adjusts for age, education, and self-reported health status.

^b AHRQ, Agency for Healthcare Research and Quality

eAppendix Table 4. Unadjusted Rates by State Expansion Status

	Getting Needed Care		Access to a Personal Doctor		Timely Access to Checkup or Routine Care		Timely Access to Specialty Care	
	Non-Expansion	Expansion	Non-Expansion	Expansion	Non-Expansion	Expansion	Non-Expansion	Expansion
Baseline	82.8	83.8	81.0	83.1	82.6	83.0	80.5	79.2
1 Year Post-Expansion	83.5	83.7	81.0	81.6	83.6	83.5	81.3	78.1
2 Years Post-Expansion	83.6	83.2	80.4	81.7	83.4	83.6	79.4	78.2
3 Years Post-Expansion	84.8	84.5	81.0	82.1	84.4	84.7	81.0	79.7
4 Years Post-Expansion	83.6	84.7	80.4	81.5	84.2	85.3	80.7	80.0
5 Years Post-Expansion	84.9	84.0	80.2	80.3	84.6	85.2	81.5	79.5

eAppendix Table 5. Number of MCOs and Annual MCO Enrollment With and Without CAHPS

Data

Characteristics	No CAHPS Data	CAHPS Data
Number of MCOs		
2012	142	92
2013	144	101
2014	143	116
2015	115	134
2016	115	137
2017	119	134
2018	100	142
Median Annual MCO Enrollment (IQR)		
2012	53,753 (16,834, 142,769)	122,878 (51,482, 202,757)
2013	55,646 (15,605, 119,947)	118,012 (52,466, 218,213)
2014	68,459 (14,563, 150,738)	121,671 (57,886, 239,177)
2015	90,268 (26,689, 190,790)	153,159 (75,588, 262,239)
2016	98,985 (25,949, 203,278)	166,471 (76,036, 279,230)
2017	96,823 (26,120, 205,657)	167,330 (81,334, 296,714)
2018	89,855 (29,564, 213,466)	168,333 (82,218, 297,179)
Total Enrollees Nationwide, n (%)		
2012	15,030,872 (49.9%)	15,072,436 (50.1%)
2013	14,314,007 (45.8%)	16,953,249 (54.2%)
2014	17,414,472 (43.8%)	22,302,661 (56.2%)
2015	20,352,729 (43.4%)	26,544,324 (56.6%)
2016	20,944,584 (41.6%)	29,443,632 (58.4%)
2017	20,945,377 (40.8%)	30,380,955 (59.2%)
2018	17,378,066 (34.0%)	33,792,886 (66.0%)

eAppendix Table 6. Number of MCOs and Annual MCO Enrollment, by State Expansion Status (CAHPS Sample)

Characteristics	Non-Expansion	Expansion State
Number of MCOs		
2012	22	70
2013	28	73
2014	34	82
2015	40	94
2016	44	93
2017	42	92
2018	41	101
Median Annual MCO Enrollment (IQR)		
2012	165,095 (54,650, 220,835)	104,549 (48,314, 194,243)
2013	124,772 (52,147, 228,463)	118,021 (52,466, 217,621)
2014	108,467 (57,412, 296,655)	127,767 (58,285, 225,960)
2015	143,342 (72,082, 341,949)	153,159 (77,447, 239,968)
2016	134,692 (76,535, 344,201)	167,151 (76,036, 263,824)
2017	138,906 (81,284, 324,321)	169,523 (84,053, 284,238)
2018	149,500 (82,218, 294,419)	187,627 (82,622, 297,179)
Total Enrollees Nationwide, n		
2012	4,486,303	10,586,133
2013	5,033,723	11,919,526
2014	6,848,641	15,454,020
2015	8,871,899	17,672,425
2016	9,862,960	19,580,672
2017	9,392,239	20,988,716
2018	8,356,009	25,436,877

eAppendix Table 7. Sensitivity Analyses ^{a,b}

	Getting needed care	Access to a personal doctor	Timely access to checkup or routine care	Timely access to specialty care
<i>Pooled post period (Expansion*post)</i>	-0.6 (-1.7, 0.6)	-1.2 (-2.6, 0.2)	-0.5 (-1.2, 0.3)	-1.0 (-2.2, -0.03)*
<i>Excluding early expanders</i>				
Baseline	Ref	Ref	Ref	Ref
1 Year Post-Expansion	-0.5 (-1.7, 0.7)	-1.4 (-3.1, 0.2)	-1.6 (-2.7, -0.5)**	-2.3 (-3.6, -0.9)**
2 Years Post-Expansion	-0.9 (-2.3, 0.5)	-1.2 (-2.6, 0.2)	-0.6 (-1.8, 0.7)	-0.8 (-2.9, 1.3)
3 Years Post-Expansion	-0.5 (-2.3, 1.4)	-1.4 (-3.1, 0.4)	-1.0 (-2.0, 0.01)	-0.4 (-2.1, 1.2)
4 Years Post-Expansion	0.1 (-1.7, 2.0)	-1.0 (-2.8, 0.9)	0.3 (-1.0, 1.7)	-0.2 (-1.9, 1.5)
5 Years Post-Expansion	0.1 (-1.8, 2.0)	-1.7 (-3.8, 0.5)	-0.2 (-1.1, 0.8)	-1.9 (-4.7, 0.8)
<i>Recategorization of post-years for states expanding mid-year</i>				
Baseline	Ref	Ref	Ref	Ref
1 Year Post-Expansion	-0.5 (-1.5, 0.5)	-1.4 (-2.9, 0.2)	-1.2 (-2.3, -0.1)*	-2.0 (-3.3, -0.7)**
2 Years Post-Expansion	-1.1 (-2.4, 0.2)	-1.1 (-2.4, 0.3)	-0.4 (-1.6, 0.8)	-0.6 (-2.5, 1.3)
3 Years Post-Expansion	-0.7 (-2.4, 1.0)	-1.2 (-2.8, 0.5)	-0.9 (-1.9, 0.1)	-0.5 (-2.2, 1.2)
4 Years Post-Expansion	-0.1 (-2.0, 1.7)	-0.7 (-2.5, 1.1)	0.2 (-1.1, 1.5)	-0.7 (-2.4, 1.0)
5 Years Post-Expansion	-0.2 (-2.0, 1.6)	-1.9 (-3.9, 0.2)	-0.3 (-1.3, 0.6)	-1.8 (-4.4, 0.8)
<i>Limit analysis to MCOs with data all seven years (n=50)</i>				
Baseline	Ref	Ref	Ref	Ref
1 Year Post-Expansion	-0.3 (-2.1, 1.5)	-2.0 (-3.8, -0.1)*	-0.7 (-2.2, 0.8)	-1.9 (-3.9, 0.2)
2 Years Post-Expansion	0.2 (-1.7, 2.1)	-0.7 (-2.3, 0.8)	-0.01 (-1.3, 1.3)	0.2 (-2.4, 2.9)
3 Years Post-Expansion	-0.7 (-3.3, 1.8)	-2.0 (-4.2, 0.1)	-0.6 (-2.0, 0.9)	-0.2 (-2.4, 1.9)
4 Years Post-Expansion	-0.6 (-2.8, 1.7)	-1.4 (-3.6, 0.8)	0.3 (-1.0, 1.5)	0.8 (-2.3, 3.9)
5 Years Post-Expansion	0.1 (-2.5, 2.7)	-1.7 (-4.5, 1.2)	0.1 (-1.1, 1.3)	-1.7 (-4.2, 0.8)

^a Estimates use linear probability models. Models adjust for sociodemographic characteristics (age, gender, race/ethnicity, educational attainment), self-reported health status, survey information (language, mode [mail vs. telephone or internet], and whether they received assistance completing the survey). Models include state, year, and MCO fixed effects. Standard errors are clustered at the state level. Coefficients reflect the interaction of time and living in a Medicaid expansion state. ^b*p<0.05, **p<0.01.

eAppendix Table 8. Unadjusted Rates by State Expansion Status (Top Box Responses Only)

	Getting needed care ^a		Timely access to checkup or routine care ^b		Timely access to specialty care ^c	
	Non-Expansion	Expansion	Non-Expansion	Expansion	Non-Expansion	Expansion
Baseline	57.5	55.5	58.3	55.9	57.0	53.1
1 Year Post-Expansion	56.0	55.4	59.2	54.3	56.7	51.9
2 Years Post-Expansion	57.6	55.9	58.8	54.3	55.0	52.2
3 Years Post-Expansion	58.5	56.5	61.0	55.2	57.8	53.1
4 Years Post-Expansion	58.6	56.2	59.2	54.4	55.1	52.3
5 Years Post-Expansion	59.0	56.1	59.1	53.9	56.0	52.6

^a Outcome defined as responding “Always” to survey item that asked “In the last 6 months, how often was it easy to get the care, tests, or treatment you needed?” Outcome

^b Outcome defined as responding “Always” to survey item that “In the last 6 months, how often did you get an appointment for a check-up or routine care at a doctor’s office or clinic as soon as you needed?”

^c Outcome defined as responding “Always” to survey item that “Specialists are doctors like surgeons, heart doctors, allergy doctors, skin doctors, and other doctors who specialize in one area of health care. In the last 6 months, how often did you get an appointment to see a specialist as soon as you needed?”

eAppendix Table 9. Adjusted Changes in Measured Patient Experience (Top Box Responses Only) by State Expansion Status ^{a,b}

	Getting needed care ^c	Timely access to checkup or routine care ^d	Timely access to specialty care ^e
Baseline	Ref	Ref	Ref
1 Year Post-Expansion	-0.3 (-1.3, 0.7)	-2.7 (-4.7,-0.8)**	-1.1 (-3.3, 1.1)
2 Years Post-Expansion	0.0 (-2.1, 2.0)	-2.2 (-4.2,-0.2)*	0.6 (-2.0, 3.3)
3 Years Post-Expansion	-0.2 (-2.1, 1.6)	-3.2 (-4.7,-1.7)**	-1.1 (-3.0, 0.9)
4 Years Post-Expansion	0.0 (-1.9, 1.8)	-1.8 (-4.3, 0.8)	0.8 (-1.2, 2.8)
5 Years Post-Expansion	0.7 (-1.3, 2.7)	-1.7 (-4.3, 0.9)	0.6 (-2.3, 3.5)

^a Estimates use linear probability models. Models adjust for sociodemographic characteristics (age, gender, race/ethnicity, educational attainment), self-reported health status, survey information (language, mode [mail vs. telephone or internet], and whether they received assistance completing the survey. Models include state, year, and MCO fixed effects. Standard errors are clustered at the state level. Coefficients reflect the interaction of time and living in a Medicaid expansion state.

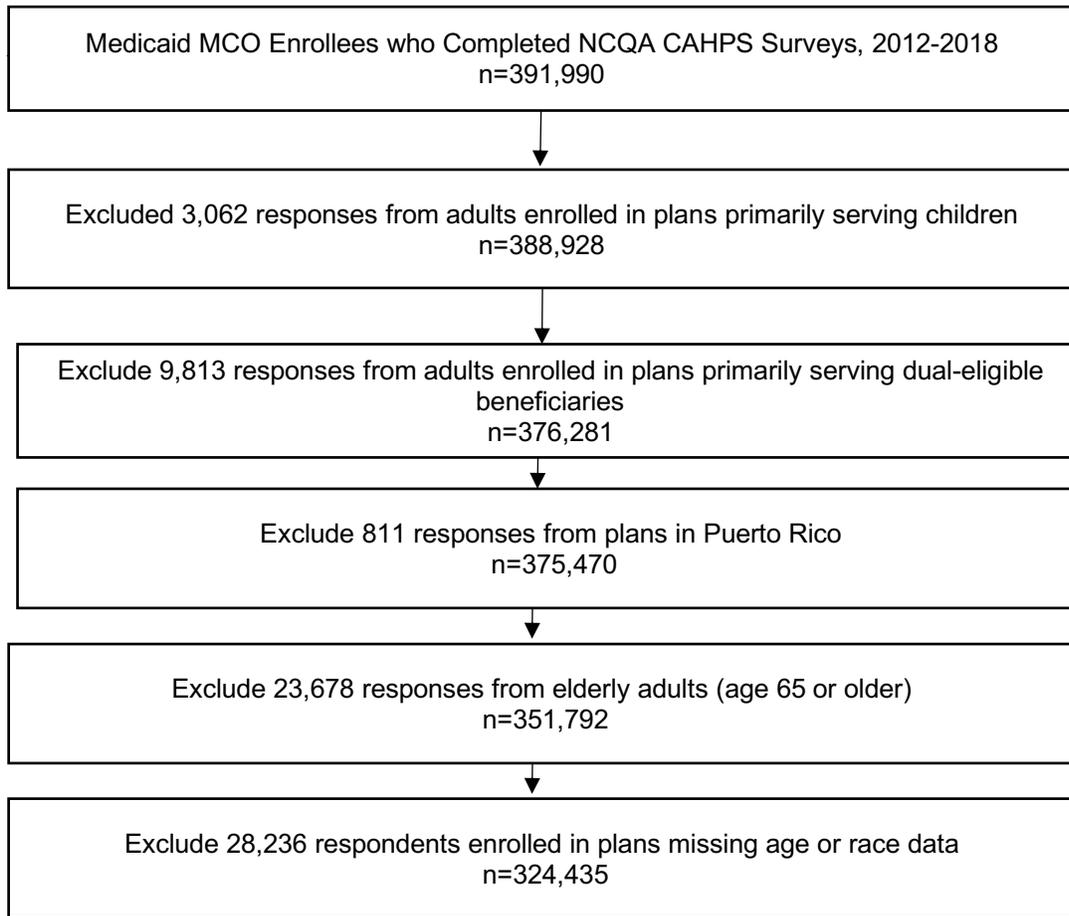
^b * $p < 0.05$, ** $p < 0.01$.

^c Outcome defined as responding “Always” to survey item that asked “In the last 6 months, how often was it easy to get the care, tests, or treatment you needed?” Outcome

^d Outcome defined as responding “Always” to survey item that “In the last 6 months, how often did you get an appointment for a check-up or routine care at a doctor’s office or clinic as soon as you needed?”

^e Outcome defined as responding “Always” to survey item that “Specialists are doctors like surgeons, heart doctors, allergy doctors, skin doctors, and other doctors who specialize in one area of health care. In the last 6 months, how often did you get an appointment to see a specialist as soon as you needed?”

eAppendix Figure. Inclusion and Exclusion Criteria of Study Sample^a



^a Counts represent unweighted sample.