THE HENRY J. KAISER FAMILY FOUNDATION

THE KAISER COMMISSION ON
Medicaid and the Uninsured

ISSUE BRIEF

Quality of Care in Community Health Centers and Factors Associated With Performance

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Executive Summary

Federally funded community health centers are a key source of comprehensive primary care for medically underserved communities, serving more than 20 million patients in 2011. The Affordable Care Act (ACA) expanded the health center program significantly to help meet the increased demand for health care that is expected as millions of the uninsured gain health coverage, beginning in 2014. Especially given health centers' growing role, evidence of the quality of care they provide is of keen interest. Most research shows high performance by health centers relative to various standards, but some gaps have also been found, and suitable benchmarks for assessing the quality of care provided by health centers, which serve a uniquely disadvantaged population, have been lacking.

Recently, the Kaiser Commission on Medicaid and the Uninsured (KCMU) partnered with the George Washington University to analyze health center performance relative to Medicaid managed care organizations (MCO), which also serve a low-income population, on important measures of quality of care – diabetes control, blood pressure control, and receipt of a Pap test in the past three years. The study also aimed to identify factors that differ significantly between high-performing and lower-performing health centers. Using data reported in the federal 2010 Uniform Data System (UDS) by health centers and the 2008 Healthcare Effectiveness Data and Information Set (HEDIS) for Medicaid MCOs, we defined health centers as "high-performing" if their rates exceeded the 75th percentile of Medicaid MCO HEDIS scores on all three of our quality measures. We defined health centers as "lower-performing" if their rates were below the mean Medicaid MCO HEDIS score on all three measures.

Key findings

» ***More than 1 in every 10 health centers was high-performing; few were lower-performing.*** In all, 12% of health centers (130) met our definition of high performance, ranking above three-quarters of Medicaid MCOs on all three of our quality measures. Fewer than 4% of health centers (41) met our definition of lower performance, lagging behind the average Medicaid MCO on all three measures.

- ***High-performing health centers reported a diabetes control rate of 79%, compared to the Medicaid MCO high-performance benchmark of 62%, and their rates were also roughly 10 percentage points above the Medicaid MCO high-performance benchmarks on the other two measures.*** However, the lower performers health centers lagged about 10 percentage points behind the average Medicaid MCO on the chronic care measures and much further behind on Pap testing.
- ***Most health centers met or exceeded the Medicaid MCO high-performance benchmarks for the two chronic care measures, but lagged behind the average Medicaid MCO on the Pap test measure.*** When health center performance is analyzed measure by measure, rather than on the basis of all three measures together, the data show that 80% of health centers exceeded the Medicaid MCO high-performance benchmark on diabetes control, and over half exceeded that standard on blood pressure control. However, 70% of health centers had Pap test rates below the mean Medicaid MCO score on this measure.
- ***High-performing health centers were concentrated in certain states, as were lower performers.*** Although the 130 high-performing health centers were located in 35 states, one-third of them were in California (24), New York (10), and Massachusetts (10)—states that are home to just 18% of all health centers. In these three states and eight others where high performers accounted for at least 1 in 5 of all health centers in the state, there were no lower-performing health centers. The 41 lower-performing health centers were sprinkled across 23 states, but nearly one-third were in three southern states – Louisiana (5), Texas (4), and Florida (4). Louisiana had, by far, the largest share of lower performers relative to its total number of health centers (23%), and it had no high performers. No significant difference in urban-rural location was found between high- and lower performers.
- ***Lower-performing health centers had a significantly higher uninsured rate than high performers, and an extremely high homeless rate.*** While both health center groups had high rates of uninsured patients, the rate was significantly higher among the lower performers – 50% versus 36%. The share of patients with Medicaid was roughly one-third in both groups, but lower-performing health centers had significantly smaller shares of patients with Medicare and privately insured patients. The homeless rate was 40% in lower-performing health centers – ten times the average rate in the high performers.
- ***Although total revenues per health center patient did not differ between high- and lower-performing health centers, both the Medicaid share of total revenues and Medicaid revenues per Medicaid patient were greater in the high-performing group.*** Medicaid provided over one-third of total revenues in high-performing health centers, but a quarter of total revenues in lower performers. Medicaid revenues per Medicaid patient were 30% higher in high-performing health centers – $652, compared to $496 in lower-performing health centers. The two health center groups were similar in their ratios of physicians and enabling services providers to patients.

Implications

Medicaid MCO high performance is a demanding benchmark to use for health centers, considering that all MCO patients are insured, whereas a large share of health center patients are uninsured, making timely preventive care and successful management of their chronic conditions harder to achieve. In this light, the finding that more than 1 in 10 health centers were consistently high-performing, and that most performed well relative to Medicaid MCOs in managing diabetes and high blood pressure, is notable. Focused study of high-performing health centers may inform current efforts to understand the foundations of high-performing systems of care more generally.

The very high uninsured and homeless rates associated with lower-performing health centers point to the possibility that the lower performance of these facilities reflects the challenging profile of their patients rather than the quality of care they provide. At the same time, the higher rates of private and Medicare coverage associated with high performers suggest that the ACA's coverage expansion could help usher improvements in health center performance. In any case, risk-adjusting quality measurement may help to ensure that health centers serving those who are most difficult to reach and treat are evaluated fairly.

Looking ahead, even highly effective health center strategies cannot fully overcome the pressures posed by systemic shortages of primary care providers and specialists in medically underserved communities and the burden of high uninsured rates and homeless rates in many health centers. Stable and adequate support for the health center program, as well as effective implementation of the expansion of Medicaid and federally subsidized private coverage under the ACA, will be vital to ensure that this mainstay of the primary care safety-net remains strong and resilient.

Introduction

Community health centers (CHCs) represent a key source of primary health care for medically underserved populations and communities. In 2011, 1,128 federally funded health centers operating in more than 8,500 communities furnished comprehensive primary health care to more than 20 million patients.[1] An additional 100 "look-alike" health centers that meet all federal health center requirements served an additional one million patients that year. Under the Affordable Care Act (ACA), both Medicaid and private coverage will expand to cover millions more Americans in 2014. To help meet the expected increased demand for care, the ACA provided a new $11 billion dedicated trust fund for expansion of the health centers program, and the law envisions that current health center capacity will increase to 40 million patients by 2019, roughly doubling.

Especially considering the growing role of health centers, evidence of the quality of care they provide is of keen interest. To build on the existing research on this issue, the Kaiser Commission on Medicaid and the Uninsured (KCMU) commissioned The George Washington University to analyze health center performance against common measures of quality in Medicaid managed care organizations (MCO), and to identify health center and other factors associated with health center quality performance. This brief presents the new analysis and considers its implications for public policy.

Background

Current evidence on health center quality

Research shows that, despite serving patients with a higher prevalence of chronic disease and socioeconomic disadvantages, health centers perform as well as or better than other settings (including private primary care physician practices) on diverse measures of access and quality, including rates of screening services and other preventive care, hospital admissions and emergency room visits for ambulatory care-sensitive conditions, and adherence to evidence-based clinical management of chronic conditions.[2] There is also evidence that health centers have a positive impact on racial/ethnic disparities in selected morbidity and mortality rates,[3] and on income-related disparities in the receipt of preventive care.[4] A recent study examined health center data on six measures of clinical quality and outcomes in the Uniform Data System (UDS), the federal reporting system in which all federally funded health centers must participate, and benchmarked the data to national average data from various population-based surveys.[5] The findings were mixed, with health centers meeting or surpassing national benchmarks on most measures, but falling short on others. The analysis indicated that, depending on the measure, certain patient, provider, and institutional characteristics were associated with better clinical performance.

A recent news story citing 2010 UDS data likewise reported that health center performance tends to exceed national benchmarks on some key measures of quality but to lag on others.[6] However, the UDS data reported were not adjusted to account for the higher rates of chronic disease and other risks among health center patients compared to the general population.[7] The more complex health and social needs of health center patients overall may bias assessments of health center quality performance downward compared to national average data on quality. Thus, national average data on quality have limitations as a benchmark for gauging health center performance.

A New Analysis of Health Center Quality

This study makes a new contribution to the research on the quality of health center care by comparing the care provided to health center patients to the care provided to a similar population rather than the population overall. Specifically, this analysis uses data on the quality of care delivered by Medicaid MCOs, which serve a more comparable low-income population, as a benchmark for assessing health center quality performance. Like health centers, Medicaid MCOs are required to report on quality. Medicaid MCOs use the Healthcare Effectiveness Data and Information Set (HEDIS) for Medicaid, developed by the National Committee for Quality Assurance (NCQA), to report on access and quality of care.* The use of performance data that, in both settings, are reported on a mandatory basis avoids the potential for bias inherent in analyses that rely on voluntarily reported data. In addition to benchmarking the quality of health center care to care provided to Medicaid beneficiaries in MCOs, this study identifies health centers with consistently high or consistently lower performance on a set of three quality measures, and examines health center factors and selected other variables that may help to explain the differences in their performance.

Data and methods. We set out to compare health centers and Medicaid MCOs on a common set of quality measures using the most current available data. The most current year for which UDS data were available was 2010; a total of 1,124 health centers were in operation that year. We matched the six quality measures included in the 2010 UDS dataset** to 2008 data on Medicaid HEDIS measures, the most current publically available data for Medicaid MCOs (Table 1). Because HEDIS did not include a measure for low birth weight corresponding to the UDS one, we eliminated this measure from our study.

Table 1: 2010 UDS Quality Measures and 2008 HEDIS Medicaid MCO Quality Measures

Quality Area	2010 UDS Measure	2008 Medicaid MCO HEDIS Measure
Control of diabetes	Share of patients with diabetes with HbA1c levels ‹7%, 7-9%, and ›9% or no test	Share of patients with diabetes with HbA1c ‹7% and ›9%
Control of hypertension	Share of patients with hypertension with blood pressure ‹140/90 mm Hg	Share of patients with hypertension with blood pressure ‹140/90 mm Hg
Women's health	Share of female patients age 24-64 who received Pap test within past 3 years	Share of female patients age 24-64 who received Pap test within past 3 years
Child health	Share of 2-year-olds who are fully immunized	Share of 2-year-olds who are fully immunized
Birth outcomes	Share of infants with low birth weight (1500-2499 grams) and very low birth weight (‹1500 grams)	No equivalent measure
Timely prenatal care	Share of pregnant women whose first prenatal visit occurred in first trimester	Share of pregnant women whose first prenatal visit occurred in first trimester

* For example, see p. A-1 in www.dhcs.ca.gov/dataandstats/reports/Documents/MMCD_Qual_Rpts/HEDIS_Reports/HEDIS2009.pdf

** http://bphc.hrsa.gov/healthcenterdatastatistics/reporting/2010manual.pdf

We classified health centers based on their performance relative to Medicaid MCOs, and also established definitions of "high-performing" and "lower-performing" health centers. A recent study of health center quality used the 75th percentile of health center performance rates on selected measures as the cut-off for separating "top performers" from "lower performers," and then examined health center characteristics associated with top performance.[8] That study also showed how performance rates among the top performers compared with national average data on the same measures drawn from various surveys. We adopted a similar but different approach. As already mentioned, rather than sorting health centers based on their performance relative to each other, we sorted them based on their performance relative to Medicaid MCOs. We identified the 75th percentile of Medicaid MCO scores on a quality measure as our benchmark for high performance by a health center on that measure. That is, we judged a health center rate exceeding this benchmark as high performance. We identified the mean Medicaid MCO score on a quality measure as our benchmark for lower performance by a health center on that measure; this benchmark serves to identify health centers that are providing care whose quality is not only relatively low in the health center context, but also below the average quality of Medicaid MCO care.

Many health centers had high performance on at least one of the quality measures but not all; similarly, many had lower performance on at least one but not all. However, we wished to sort health centers based on their overall quality performance. Therefore, we used the following definitions for our analytic purposes: we considered "high performers" to be only those health centers with *consistently high performance* across all three of our quality measures, and we considered "lower performers" to be only those health centers with *consistently lower performance* across all three measures.

We required health centers to have at least 70 patient records for each UDS measure in order to be included in our analytic sample. This 70-record threshold mirrors a requirement in the 2010 UDS manual that health centers electing to report on a sample of their patients, rather than on the entire patient population, report on a sample of exactly 70 patient charts. Nearly all of the 1,124 health centers operating in 2010 had at least 70 patient records for the diabetes control, hypertension control, and Pap test measures. However, a large number of health centers did not meet this threshold for the childhood immunization and prenatal care measures. As a result, the subsamples of high- and lower-performing health centers that we were able to generate when these two UDS measures were included were not sufficiently large for statistical analysis. Therefore, we excluded these two measures, and classified the health centers into high- and lower-performing groups based on their performance on the remaining three UDS quality measures: 1) diabetes control, defined as HbA1c levels at or below 9, for patients with diabetes;[†] 2) blood pressure control (<140/90mm Hg) for patients with hypertension; and 3) the share of women ages 24 to 64 who received a Pap test within the past three years. These three measures capture performance on two important dimensions of care provided by health centers – the management of chronic illness and primary prevention. Our analytic sample includes 1,072 health centers, or 95% of all 1,124 health centers.

Once high- and lower-performing health centers were identified, factors that other research suggests may underlie observed differences in health center quality performance were examined, and statistical tests (t-tests and Chi-square tests) were performed to assess whether group differences in these factors were significant.[9] [10] We tested differences between the two health center groups in health center size (number of patients), patient demographics and other characteristics, health center location, and staff resources. We also examined the relationship between various measures of health center revenues and health center quality performance.

[†] Although health centers reporting into the UDS report several different measures of diabetes control (HbA1c ‹7%, 7%-9%, and ›9%), the measure that HHS' Health Resources and Services Administration (HRSA) reports is the proportion of diabetic patients with HbA1c ≤9% – a measure of good diabetes control. To conform to HRSA's preferred use of a measure capturing positive performance on diabetes control, and consistent with the positive form of our other two quality measures, we used the converse of the HEDIS poor diabetes control measure (HbA1c › 9%) to establish the high performance threshold. This conversion had no impact on the analysis – the same health centers were identified as being high performers.

Key Findings

Overall

» ***More than 1 of every 10 health centers was high-performing relative to Medicaid MCOs, and few were lower-performing*** (Table 2). Of our analytic sample of 1,072 health centers, 12% (130) reported rates exceeding the MCO high-performance benchmark on all three quality measures. Fewer than 4% of health centers (41) reported rates below the MCO lower-performance benchmark on all three measures. The remaining health centers had high or lower performance on one or two but not all three measures consistently, or performance between the mean and 75th percentile of Medicaid MCO HEDIS scores, or a mix.

Table 2: Health Centers, by Performance Group

	Total Sample	High-performing	Lower-performing	All Others
N	1,072	130	41	901
%	100%	12.10%	3.80%	84%

NOTE: *High-performing* health centers exceed the 75th percentile of Medicaid MCO HEDIS scores on all three quality measures. *Lower-performing* health centers fall below the mean Medicaid MCO HEDIS score on all three measures.

» ***On average, the 130 high-performing health centers reported a diabetes control rate of 79%, compared to the Medicaid MCO high-performance benchmark score of 62%; high performers also surpassed the MCO benchmarks by roughly 10 percentage points on the other two measures*** (Table 3). High performers averaged 73% on blood pressure control (MCO high performance benchmark = 62%) and 81% on Pap testing (MCO high performance benchmark = 72%). However, the 41 lower-performing health centers lagged about 10 percentage points behind the average Medicaid MCO on both diabetes control (42% versus 52%) and blood pressure control (44% versus 53%), and much further behind on Pap testing (41% versus 65%).

It is notable that average performance by the *full* sample of 1,072 health centers (bottom row of Table 3) tracked with or exceeded the Medicaid MCO high-performance benchmark scores on the diabetes and blood pressure control measures; however, it was below mean Medicaid MCO performance on the Pap test measure.

Table 3: Average Health Center Performance Compared to Medicaid MCO Benchmark Scores

	Diabetes control	Blood pressure control	Pap test
75th percentile of Medicaid MCO HEDIS scores (High-performance benchmark)	62.3%	61.6%	72.4%
Average rate in **high-performing** health centers (N=130)	78.8%	73.2%	80.6%
Mean Medicaid MCO HEDIS score (Lower-performance benchmark)	52.3%	53.4%	64.8%
Average rate in **lower-performing** health centers (N=41)	41.7%	43.9%	40.6%
Average rate in **all** health centers (N=1,072)	71.0%	62.5%	54.1%

NOTE: *High-performing* health centers exceed the 75th percentile of Medicaid MCO HEDIS scores on all three quality measures. *Lower-performing* health centers fall below the mean Medicaid MCO HEDIS score on all three measures.

Further, while this analysis sorted health centers based on consistent high or lower performance on all three quality measures, data on the individual quality measures also provide important information about health center performance (see Appendix Table 1). These data show that, on the diabetes control measure, nearly 80% of all health centers exceeded the Medicaid MCO high-performance score, and over half exceeded the Medicaid MCO high-performance benchmark for blood pressure control. However, 70% of all health centers performed below the mean Medicaid MCO score on the Pap test measure.

State distribution of high- and lower-performing health centers (table 4)

» ***Most states had at least one high-performing health center.*** Thirty-five states (including DC) had at least one high performer. Twenty of these 35 states had no lower-performing health centers; the other 15 had at least one lower-performing health center. Eight states with at least one lower-performing health center had no high performers. The remaining eight states had neither any high performers nor any lower performers.

» ***High-performing health centers are concentrated in certain states***. Although the 130 high-performing health centers were located in 35 states,* one-third were in California (24), New York (10), and Massachusetts (10), where 18% of all 1,072 health centers were located. High-performing health centers accounted for a sizeable share of all the health centers in these three states (21%, 20%, and 29%, respectively). A handful of other states also had high-performing shares of 20% or so (Connecticut, DC, Hawaii, Michigan, and New Mexico). High performers made up an appreciably larger share of all health centers in three states – 33% in Colorado (5 of 15), 63% in New Hampshire (5 of 8), and 75% in North Dakota (3 of 4).

» ***Several of the states with the largest within-state shares of high performers had no lower-performing health centers.*** In 11 states, at least 20% and as many as 75% of all health centers in the state were high performers. Five of these states (Connecticut, DC, New Hampshire, New Mexico, and North Dakota) had no lower-performing health centers. In the other six, the share of lower performers ranged from about 3% (California, Massachusetts, and Michigan) to 6% to- 8% (Colorado, Hawaii, and New York).

» ***Although the 41 lower-performing health centers were distributed across 23 states,* nearly one-third were in Louisiana, Texas, and Florida.*** More than half the states (28) had no lower-performing health centers, and 16 of the 23 states that had any had only one. Louisiana had, by far, the largest share of lower-performing health centers relative to its total number (23%, or 5 of 22), and it had no high performers. Georgia and Idaho, the two states with the next-largest within-state shares of lower-performing health centers (10%-12%), also lacked any high performers.

Health center patient profile (table 5)

» ***High-performing health centers had larger shares of patients under age 18, elderly patients, and female patients, compared with lower-performing health centers.*** Almost one-third of patients in high-performing health centers were under age 18, compared to about one-quarter of patients in lower-performing health centers. High-performing health centers also had a significantly larger share of elderly patients (8% versus 4%) and female patients (60% versus 51%). No significant difference in average health center size (i.e., number of patients) was found between high and lower performers. Perhaps not surprisingly given health centers' statutory charge to serve low-income people and communities, high- and lower-performing health centers had similarly high shares of patients with low-income.

» ***Lower-performing health centers had a significantly higher uninsured rate than high performers, and an extremely high homeless rate.*** While both health center groups had high rates of uninsured patients, the rate was significantly higher among the lower performers – 50% versus 36%. The share of patients with Medicaid was roughly one-third in both groups, but lower-performing health centers had significantly smaller shares of patients with Medicare (5% versus 8%) as well as privately insured patients (9% versus 16%). The homeless rate was 40% in lower-performing health centers – ten times the average rate in the high performers.

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* And Puerto Rico.

Table 4: High-performing and lower-performing health centers, by state					
State	Total sample health centers in state	High-performing health centers		Low-performing health centers	
		N	Share of state total	*N*	Share of state total
AL	14	0	0.0%	1	7.1%
AK	17	1	5.9%	1	5.9%
AZ	16	1	6.3%	0	0.0%
AR	12	0	0.0%	0	0.0%
CA	114	24	21.1%	3	2.6%
CO	15	5	33.3%	1	6.7%
CT	13	3	23.1%	0	0.0%
DE	4	0	0.0%	0	0.0%
DC	5	1	20.0%	0	0.0%
FL	42	4	9.5%	4	9.5%
GA	26	0	0.0%	3	11.5%
HI	13	3	23.1%	1	7.7%
ID	10	0	0.0%	1	10.0%
IL	35	6	17.1%	1	2.9%
IN	18	2	11.1%	0	0.0%
IA	12	1	8.3%	0	0.0%
KS	12	0	0.0%	1	8.3%
KY	19	1	5.3%	0	0.0%
LA	22	0	0.0%	5	22.7%
ME	15	1	6.7%	0	0.0%
MD	15	0	0.0%	0	0.0%
MA	35	10	28.6%	1	2.9%
MI	29	6	20.7%	1	3.4%
MN	15	0	0.0%	1	6.7%
MS	21	3	14.3%	1	4.8%
MO	21	3	14.3%	0	0.0%
MT	11	0	0.0%	0	0.0%
NE	6	0	0.0%	0	0.0%
NV	2	0	0.0%	0	0.0%
NH	8	5	62.5%	0	0.0%
NJ	20	3	15.0%	1	5.0%
NM	15	3	20.0%	0	0.0%
NY	49	10	20.4%	3	6.1%
NC	25	1	4.0%	0	0.0%
ND	4	3	75.0%	0	0.0%
OH	32	0	0.0%	2	6.3%
OK	16	0	0.0%	0	0.0%
OR	25	0	0.0%	1	4.0%
PA	35	4	11.4%	1	2.9%
PR	19	5	26.3%	1	5.3%
RI	8	1	12.5%	0	0.0%
SC	20	2	10.0%	1	5.0%
SD	6	1	16.7%	0	0.0%
TN	23	2	8.7%	1	4.3%
TX	60	6	10.0%	4	6.7%
UT	10	1	10.0%	0	0.0%
VT	8	1	12.5%	0	0.0%
VA	25	2	8.0%	0	0.0%
WA	23	2	8.7%	0	0.0%
WV	28	2	7.1%	0	0.0%
WI	15	1	6.7%	0	0.0%
WY	3	0	0.0%	0	0.0%
U.S.	**1,072**	**130**	**12.1%**	**41**	**3.8%**

Table 5: Characteristics of high- and lower-performing health centers, 2010		
Health center profile	**High-performing health centers**	**Lower-performing health centers**
Total	130	41
Share of health centers in analytic sample (n=1,072)	12.1%	3.8%
Health center patient characteristics (all values are averages)		
Total patients	19,926	13,985
Age, sex, income		
<18 years old[a]	**30.7%**	**24.5%**
65+[a]	**8.0%**	**4.2%**
Female[a]	**59.8%**	**51.2%**
Low-income (<200%FPL)	93.4%	94.8%
Payer mix		
Uninsured[a]	35.8%	50.8%
Medicaid	37.8%	32.3%
Medicare[a]	7.9%	4.8%
Private[a]	15.5%	9.2%
Race/ethnicity		
Minority	55.2%	59.9%
Migrant	4.3%	4.7%
At least one chronic condition[b]	22.7%	22.8%
Homeless[a]	4.0%	37.2%
Health center location		
Rural location	39.2%	24.4%
HRSA region		
I (CT, ME, MA, NH, RI, VT)[a]	**16.2%**	**2.4%**
II (NJ, NY, PR, VI)	13.8%	12.2%
III (DE, DC, MD, PE, VA, WV)	6.9%	2.4%
IV (AL, GA, FL, KY, MS, NC, SC, TN)[a]	**7.7%**	**24.4%**
V (IL, IN, MI, MN, OH, WI)	13.8%	14.6%
VI (AR, LA, NM, OK, TX)[a]	**6.9%**	**22.0%**
VII (IA, MO, NE, KS)	3.1%	2.4%
VIII (CO, MT, ND, SD, UT, WY)	7.7%	2.4%
IX (AZ, CA, HI, NV, AS, FM, MH)	21.5%	9.8%
X (AK, ID, OR, WA)	2.3%	7.3%
Health center staff resources for patient care (all values are averages)		
Physician (FTE) per 10,000 patients	5.5	5.2
Enabling services providers (FTE) per 10,000 patients	8.3	8.5
Health center revenues (all values are averages)		
Total revenue per health center patient	$702	$732
Percent of total revenue from Medicaid[a]	**34.8%**	**24.6%**
Medicaid revenue per Medicaid patient[a]	**$652**	**$496**

[a] Difference is significant at the p<.05 level.
[b] Chronic conditions defined as primary diagnosis of diabetes, selected heart disease, hypertension, asthma, chronic bronchitis or emphysema, HIV, hepatitis B, or hepatitis C, as in Shi et al. 2012 (see Endnote 5).

» ***High- and lower-performing health centers did not differ in the share of their patients who were of racial/ethnic minorities or migrants.*** Racial/ethnic minority patients made up 55% of all patients in the high-performing health centers and about the same share (60%) in the lower performers. The share of patients who were migrants was around 5% in both groups.

» ***High- and lower-performing health centers had similar shares of patients with chronic conditions.*** In both groups of health centers, almost 1 in 4 patients (23%) had at least one chronic condition.

» ***The homeless rate among patients was exceedingly high in the lower-performing health centers.*** More than a third (37%) of patients in the lower-performing health centers were homeless, versus 4% of patients in the high-performing health centers.

Health center characteristics

» ***The geographic distribution of high- and lower-performing health centers was not uniform.*** High performers were significantly more likely than lower performers to be located in New England, while lower performers were significantly more likely to be located in in largely southern regions of the country. However, the two groups of health centers did not differ in terms of urban or rural location

» ***Health center staff resources for patient care did not differ between the two health center groups.*** High- and lower-performing health centers had virtually identical ratios of physician full-time equivalents-to-patients, and of enabling services providers-to-patients.

Health center revenues

» ***Total revenues per health center patient did not differ between high- and lower-performing health centers.*** Health centers in both groups had total revenues per patient of around $700, indicating no association between this factor and health center quality performance.

» ***However, the Medicaid share of total revenues, as well as Medicaid revenues per Medicaid patient, did differ significantly between the two groups.*** Medicaid revenues accounted for over one-third of total revenues in high-performing health centers, but for one-quarter of total revenues in lower performers. This is a notable result because Medicaid patients account for about the same proportion of all health center patients in both groups. The finding can be explained by the fact that Medicaid revenues per Medicaid patient were significantly (30%) higher in high-performing health centers – $652, compared to $496 in lower-performing health centers.

Discussion and Policy Implications

Using a multi-measure construct, this study finds that more than 1 in every 10 health centers is high-performing, achieving rates surpassing the performance of 75% of Medicaid MCOs on important measures of chronic care and women's preventive care, while fewer than 4% lag behind average Medicaid MCO performance on all three measures. Medicaid MCO high performance is a demanding standard to apply in defining high-performing health centers, considering that all Medicaid MCO patients are insured, whereas a very large share of health center patients – nearly 36% in high-performing health centers – are uninsured, and many are homeless. Given the extra barriers and challenges associated with caring for a population as disadvantaged as the health center population, the finding that high performers outnumber lower performers by more than 3 to 1 is quite remarkable; it suggests that the ACA's large investment in expanding the health center program to meet new demand for care as coverage expands holds substantial promise. Health centers will remain an important investment in caring for the millions of Americans who remain uninsured in the wake of health reform, either because they do not qualify for assistance or do not have access to affordable coverage.

High-performing health centers, which exist across the country, offer models of care delivery that bear close study, especially in the context of current efforts to understand the foundations of high-performing systems of care. Notably, the high performers are concentrated in a fairly small number of states, as are the lower-performing health centers, a finding that may point to the impact of state-level factors, such as demographic and other characteristics of the population, local economic conditions, and state policy choices, among others. This finding also may reflect the extent to which health centers in certain states do or do not work collaboratively to address challenges in performance improvement, for example, through clinical quality of care initiatives or strategies aimed at reducing disparities. The fact that certain states appear to have concentrations of high or lower performers suggests the need for more in-depth research to understand health center relationships with respect to clinical quality improvement as well as participation in broader state initiatives to improve quality performance

Several findings with policy implications stand out from our analysis of differences between high- and lower-performing health centers. First, and arguably most important, is the finding of significantly and markedly higher uninsured and homeless rates among patients in lower-performing health centers than in high performers. Fully half the patients in lower-performing health centers are uninsured and well over one-third are homeless. Very likely, the circumstances of these patients affect health centers' ability to achieve quality benchmarks. In short, the quality performance of these health centers may say more about the profile of their patients and the limited resources available to health centers with high proportions of uninsured patients with complex health needs than about the quality of the care provided to them. Risk-adjusting in quality measurement could help to ensure that health centers serving those who are most difficult to reach and care for are evaluated fairly. In addition, increased assistance targeted to uninsured and homeless patients, and increased resources for the health centers on which they depend, may be needed to improve quality performance.

Second, the higher rates of both private and Medicare coverage in high-performing health centers suggest that implementation of the ACA could help usher improvements in health center quality. The availability of subsidies to purchase insurance through the new Marketplaces or Exchanges will expand private coverage and reduce the number of uninsured Americans. Furthermore, health center participation in Medicare quality improvement efforts, including medical homes and ACO formation, could help drive enhanced performance in these arrangements. As the population ages and the number of Medicare patients served by health centers increases, the potential impact of such quality gains will increase.

Third, the finding of higher Medicaid revenues per Medicaid patient in high-performing health centers, and the larger role Medicaid plays in their total revenues as a result, highlights the importance of understanding how Medicaid revenues might influence health center quality. Definitively answering this complex question lies beyond the current analysis. But it is striking that, while total revenues per capita are comparable between high-performing and lower-performing health centers, the source of revenue appears to matter somehow. One hypothesis is that grant funds, which supply a much larger share of revenues in lower-performing health centers, whose share of uninsured patients is also greater, tend to be more tightly tied to particular uses and cannot be deployed for other activities without extensive grant modification. By contrast, Medicaid revenues offer health centers more flexibility in terms of investment in additional services or patient supports, such as home visiting or health education, as well as activities that may improve quality and lead to better patient outcomes. If this is the case, then, as uninsured health center patients gain Medicaid coverage, health center quality as well as revenues may be expected to increase.

Finally, although not the prime focus of this analysis, it is noteworthy that average performance among *all* health centers on the individual measures for diabetes and blood pressure control exceeded the MCO high-performance benchmarks for these measures. However, even as they achieved high performance on these two measures of management of chronic conditions, health centers overall fell well short of the MCO lower-performance benchmark

on the Pap test measure. A recent study examining family planning services in health centers found that Pap smear testing is reported by virtually all health centers,[11] but our findings suggest that the rate at which women actually receive testing merits closer attention as an important quality gap in preventive care

Looking ahead, it would be fruitful for future work to investigate systems and initiatives at individual health centers that other research indicates promote high performance, particularly for preventive cancer screening and care of chronic diseases.[12] Given the challenges to health center performance posed by the complex health and social needs of their patients, identification and diffusion of best practices is highly desirable. However, even highly effective strategies cannot fully overcome the pressures posed by systemic shortages of primary care providers and specialists in medically underserved communities and the burden of high uninsured rates and homeless rates in many health centers. Evidence from Massachusetts following a broad expansion of coverage under the state's own health reform plan suggests that, as Medicaid and private coverage expand under the ACA, health centers could see the share of their patients who are uninsured grow. Stable and adequate support for the health center program will be vital going forward, to ensure that this mainstay of the primary care safety-net remains strong and resilient.

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Appendix Table 1: Health center performance on individual quality measures, 2010			
	Diabetes control	Blood pressure control	Pap test
Number of health centers with at least 70 records	1,078	1,105	1,112
MCO high performance benchmark	62.3%	61.6%	72.4%
Average health center performance	71.0%	62.5%	54.1%
Share (N) of health centers exceeding *MCO high-performance score*	78.8% (849)	52.1% (576)	19.3% (215)
Share (N) of health centers trailing *MCO lower-performance score*	7.6% (82)	20.9% (231)	69.7% (775)

NOTE: The MCO high performance benchmark score is the 75th percentile of Medicaid MCO HEDIS scores on a given quality measure. The MCO lower-performance benchmark score is the mean Medicaid MCO HEDIS score on that measure.

Endnotes

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