



**U.S. Department of Health and Human Services**  
**Office of the Assistant Secretary for Planning and Evaluation**  
**Office of Behavioral Health, Disability, and Aging Policy**

**INTERIM COST AND QUALITY FINDINGS**  
**FROM THE NATIONAL EVALUATION**  
**OF THE CERTIFIED COMMUNITY**  
**BEHAVIORAL HEALTH CLINIC**  
**DEMONSTRATION**

**December 2021**

## **Office of the Assistant Secretary for Planning and Evaluation**

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# **INTERIM COST AND QUALITY FINDINGS FROM THE NATIONAL EVALUATION OF THE CERTIFIED COMMUNITY BEHAVIORAL HEALTH CLINIC DEMONSTRATION**

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## ACRONYMS

The following acronyms are mentioned in this report and/or appendices.

ACO	Accountable Care Organization
ADD	Follow-up Care for Children Prescribed ADHD Medication
ADHD	Attention Deficit Hyperactivity Disorder
AMA	American Medical Association
AMM	Antidepressant Medication Management
AOD	Alcohol or Other Drug
ASC	Unhealthy Alcohol Use--Screening and Brief Counseling
ASPE	HHS Office of the Assistant Secretary for Planning and Evaluation
BMI	Body Mass Index
BMI-SF	BMI Screening and Follow-up Plan
CARES	Coronavirus Aid, Relief, and Economic Security act
CCBHC	Certified Community Behavioral Health Clinic
CDF	Screening for Clinical Depression and Follow-Up Plan
CHIP	Children's Health Insurance Program
CMS	HHS Centers for Medicare & Medicaid Services
DCO	Designated Collaborating Organizations
DEP-REM	Depression Remission
DO	Doctor of Osteopathic Medicine
DY	Demonstration Year
ED	Emergency Department
EHR	Electronic Health Record
FFY	Federal Fiscal Year
FHQC	Federally Qualified Health Center
FUA	Follow-up after Emergency Department for Alcohol or Other Drug Dependence
FUH	Follow-up After Hospitalization
FUM	Follow-up after Emergency Department for Mental Health
HbA1c	Glycated Hemoglobin Test
HEDIS	Healthcare Effectiveness Data and Information Set
HHS	U.S. Department of Health and Human Services
HIT	Health Information Technology
I-EVAL	Initial Evaluation for New Clients Child/Adolescent and Adults
ICD	International Classification of Diseases
IET	Initiation and Engagement of Alcohol and other Drug Dependence Treatment
IPSD	Index Prescription Start Date



MD	Medical Doctor
MEI	Medicare Economic Index
MHSIP	Mental Health Statistics Improvement Program
MIPS	Merit-based Incentive Payment System
MNCM	Minnesota Community Measurement
NCQA	National Committee for Quality Assurance
NQF	National Quality Forum
OB/GYN	Obstetrics and Gynecology
PAMA	Protecting Access to Medicare Act
PCP	Primary Care Physician
PCPI	Physician Consortium for Performance Improvement
PCR	Plan All-Cause Readmission Rate
PHQ	Patient Health Questionnaire
PPS	Prospective Payment System
PTSD	Post-Traumatic Stress Disorder
QBP	Quality Bonus Payment
SAA	Adherence to Antipsychotic Medications for Individuals with Schizophrenia
SAMHSA	HHS Substance Abuse and Mental Health Services Administration
SED	Serious Emotional Disturbance
SMI	Serious Mental Illness
SRA	Suicide Risk Assessment
SSE	Diabetes Screening for Schizophrenia or Bipolar Patients Using Antipsychotic Medications
SUD	Substance use Disorder
TSC	Tobacco Use--Screening and Cessation Intervention
URS	Uniform Reporting System
VHA	Veterans Health Administration
WCC	Weight Assessment for Nutrition and Physical Activity for Children/Adolescents

## Executive Summary

Section 223 of the Protecting Access to Medicare Act (PAMA), enacted in April 2014, authorized the Certified Community Behavioral Health Clinic (CCBHC) demonstration to allow states to test new strategies for delivering and reimbursing services provided in community behavioral health clinics. The demonstration aims to improve the availability, quality, and outcomes of ambulatory services provided in community behavioral health clinics by establishing a standard definition and criteria for CCBHCs and developing new prospective payment systems (PPSs) that account for the total cost of providing comprehensive services to all individuals who seek care. The demonstration also aims to provide coordinated care that addresses both behavioral and physical health conditions. Historically, Medicaid has reimbursed community behavioral health clinics through negotiated fee-for-service or managed care rates, and some evidence suggests that these rates did not cover the full cost of clinic services.<sup>1</sup> The CCBHC demonstration addresses this problem by allowing states to develop a PPS that reimburses CCBHCs based on total cost of providing comprehensive services to all individuals who seek care, based on projected costs. States chose one of two PPS models developed by the U.S. Department of Health and Human Services (HHS) Centers for Medicare & Medicaid Services (CMS) (although states could exercise some flexibility in operationalizing the models):

- PPS-1 is similar to the PPS model that Federally Qualified Health Centers (FQHCs) use and provides CCBHCs with a fixed payment for each day that a Medicaid beneficiary receives demonstration services from the clinic (known as a “visit day”). The PPS-1 model includes a state option to provide quality bonus payments (QBPs) to CCBHCs that first meet the six core measures outlined by CMS and any additional state-specified performance requirements on quality measures.
- PPS-2 provides CCBHCs with a fixed payment for each month in which a Medicaid beneficiary receives demonstration services from the clinic (known as a “visit month”). PPS-2 rates have multiple categories--a standard rate and separate rates for special populations that the state defines. PPS-2 requires states to make QBPs based on meeting the six core quality measures and clinic performance, and outlier payments for costs above a specific threshold.

Basing payments on anticipated daily or monthly per-patient cost rather than the cost of specific services provided during a patient visit allow clinics flexibility in the services they provide and the staffing models they use to meet the needs of patients without requiring specific billable services to ensure financial sustainability. The PPS also financially incentivizes clinics to deliver high-quality care by rewarding performance on quality measures.

In October 2015, HHS awarded planning grants to 24 states to begin certifying community behavioral health clinics to become CCBHCs, develop their PPS, and plan for the implementation of the demonstration. To support the first phase of the demonstration, HHS developed criteria (as required by PAMA) for certifying CCBHCs in six important areas: (1) staffing; (2) availability and accessibility of services; (3) care coordination; (4) scope of services; (5) quality and reporting; and (6) organizational authority.<sup>2</sup> The criteria established a minimum threshold for the structures and processes that CCBHCs

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<sup>1</sup> Scharf, D.M., et al. (2015). Considerations for the design of payment systems and implementation of Certified Community Behavioral Health Centers. Santa Monica, CA: RAND.

<sup>2</sup> Substance Abuse and Mental Health Services Administration. “Criteria for the Demonstration Program to Improve Community Mental Health Centers and to Establish Certified Community Behavioral Health Clinics.” Rockville, MD: SAMHSA, 2016. Available at [https://www.samhsa.gov/sites/default/files/programs\\_campaigns/ccbhc-criteria.pdf](https://www.samhsa.gov/sites/default/files/programs_campaigns/ccbhc-criteria.pdf). Accessed July 26, 2019.

should have to provide high-quality care, although states may exercise some discretion in implementing the criteria to reflect their particular needs.

CCBHCs must provide coordinated care addressing both behavioral and physical health conditions and offer a comprehensive range of nine types of services<sup>3</sup> to all who seek help, including but not limited to those with serious mental illness (SMI), serious emotional disturbance (SED), and substance use disorder (SUD). Services must be person and family-centered, trauma-informed, and recovery-oriented. To ensure the availability of the full scope of these services, CCBHCs can partner with Designated Collaborating Organizations (DCOs) to provide selected services. DCOs are entities that are not directly supervised by a CCBHC but have a formal relationship with a CCBHC to provide specified services. CCBHCs that engage DCOs maintain clinical responsibility for services the DCO provides to CCBHC consumers. The CCBHCs pay DCOs for the contracted services, and those costs are included as CCBHC costs in the PPS rate calculation.

In December 2016, HHS selected eight of the 24 planning grant states to participate in the demonstration (Table ES.1), based on the ability of their CCBHCs to: (1) provide the complete scope of services described in the certification criteria; and (2) improve the availability of, access to, and engagement of clients with a range of services (including services provided through assisted outpatient treatment). Six states selected the PPS-1 model and two the PPS-2 model. In August 2020, CMS and HHS Substance Abuse and Mental Health Services Administration (SAMHSA) announced that Kentucky and Michigan would begin participation in the demonstration as a result of the Coronavirus Aid, Relief, and Economic Security (CARES) Act but these states are not included in this evaluation.

**Table ES.1. Number of CCBHCs per state, by PPS model**

PPS-1 State	Number of CCBHCs	PPS-2 State	Number of CCBHCs
Minnesota	6	New Jersey	7
Missouri	15	Oklahoma	3
Nevada	3		
New York	13		
Oregon	12		
Pennsylvania	7		
Total	56		10

## A. Focus of this report

In September 2016, the HHS Office of the Assistant Secretary for Planning and Evaluation (ASPE) contracted with Mathematica and its subcontractor, the RAND Corporation, to conduct a comprehensive national evaluation of the CCBHC demonstration. ASPE is overseeing the evaluation in collaboration with CMS. Working with these federal partners, Mathematica and RAND designed a mixed-methods evaluation to examine the implementation and outcomes of the demonstration and to provide information for HHS to include in mandated reports to Congress.

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<sup>3</sup> The nine types of services are: (1) crisis mental health services; (2) screening, assessment, and diagnosis; (3) patient-centered treatment planning; (4) outpatient mental health and substance use services; (5) outpatient clinic primary care screening and monitoring; (6) targeted case management; (7) psychiatric rehabilitation services; (8) peer support, counselor services, and family supports; and (9) intensive, community-based mental health care for members of the armed forces and veterans.

This report describes: (1) changes in CCBHC rates and costs from the first demonstration year (DY1) to the second (DY2); (2) performance on quality measures in DY1; and (3) the extent to which states provided QBPs to CCBHCs for DY1. Future updates and reports will present data on quality measure performance in DY2, examine changes over time in quality of care, and present findings on the impact of the demonstration on Medicaid service utilization and costs among beneficiaries who did and did not receive CCBHC services within states with sufficient data.

## B. CCBHC rates and costs<sup>4</sup>

***Changes in CCBHC costs from DY1 to DY2.*** Overall, total costs, visit days/months, and per visit day/month costs increased from DY1 to DY2, but results varied considerably within and across states. Data from the cost reports alone do not allow us to assess if the changes in total costs were driven by changes in per-person utilization.

- Total costs increased from DY1 to DY2 by an average of 13 percent across PPS-1 states (ranging from -0.7 percent to 24 percent). In Oklahoma (the only PPS-2 state for which DY2 cost reports were available), total costs increased by 38 percent from DY1 to DY2 and the per month costs increased 7.6 percent.
- Total visit days increased by an average of 8 percent across PPS-1 states (ranging from 0.5 percent to 11 percent). In Oklahoma, visit months increased by 32 percent.
- Across all CCBHCs in PPS-1 states for which we have cost report data, the average increase in per visit day cost was less than 5 percent, but changes varied within and across states.
  - Per visit day costs increased more than 5 percent for almost half of the CCBHCs in PPS-1 states included in the analysis (N = 23 of 50), decreased more than 5 percent for about a quarter (N = 14), and remained relatively stable for the remainder (N = 6).
  - In three PPS-1 states, per visit day costs increased by more than 5 percent for most of the CCBHCs, resulting in an overall average increase in per visit day costs across the CCBHCs. In contrast, in two PPS-1 states, more of the CCBHCs had at least a 5 percent decrease in per visit day costs, resulting in a small average decrease in per visit day costs state-wide.

### ***Alignment between rates and costs over time.***

As described in our previous report, *Preliminary Cost and Quality Findings from the National Evaluation of the Certified Community Behavioral Health Clinic Demonstration*,<sup>5</sup> the payment rates for CCBHCs in DY1 were on average higher than the actual DY1 per visit day or month costs. State officials had anticipated that rates would be higher than costs, given some uncertainty about the volume of clients that CCBHCs would serve and because they lacked historical data to inform setting the rates for some types of CCBHC services.

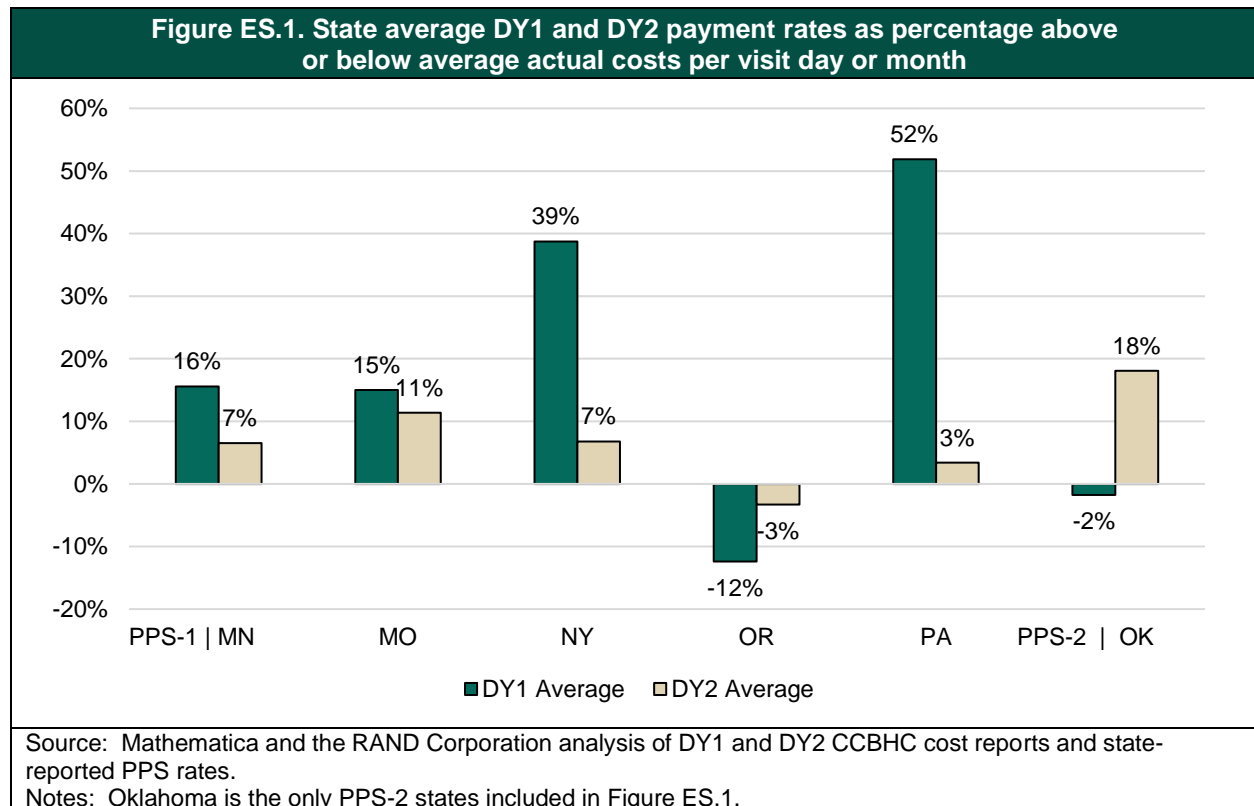
States had two options to change the PPS rates for some or all clinics in the state between DY1 and DY2: (1) re-basing the rates to reflect the actual costs reported for DY1; and (2) inflation adjusting the rates using the Medicare Economic Index (MEI). Six states (Minnesota, Nevada, New Jersey, New York,

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<sup>4</sup> Only ten of the 13 New York clinics and none of the Nevada clinics submitted DY2 cost reports in time for this analysis. New Jersey submitted cost reports for DY2, but the reports did not reflect actual demonstration costs and were therefore excluded from our analysis because they are not comparable with those of other states.

<sup>5</sup> Available at: <https://aspe.hhs.gov/basic-report/preliminary-cost-and-quality-findings-national-evaluation-certified-community-behavioral-health-clinic-demonstration> Accessed October 15, 2020.

Oklahoma and Pennsylvania) used information from the DY1 cost reports to re-base their PPS rates for DY2. Two states (Missouri and Oregon) did not re-base their rates. Officials in these two states made this decision because they were concerned that the DY1 costs might not be representative of the long-term costs of operating CCBHCs. These officials wanted to wait until at least two years of cost data were available before changing their rates; they reasoned that it may take more time to establish stable patterns of staffing and client care on which to base rates. All states, including those that did not re-base for DY2, adjusted DY2 PPS rates for inflation, using the MEI.



For the PPS-1 states, payment rates more closely reflected actual costs in DY2 than in DY1 (Figure ES.1), whereas in Oklahoma (a PPS-2 state), DY2 rates deviated from costs more than then did in DY1.

- In four PPS-1 states, payment rates, on average, exceeded costs in both demonstration years, but the difference between the rates and costs was smaller in DY2 than in DY1.
- In Oregon, the only state for which payment rates did not, on average, fully cover costs in DY1, the rates still did not fully cover costs in DY2, but the difference between the payment rate and actual costs was smaller in DY2 than DY1.
- Even in PPS-1 states that did not re-base DY2 rates using DY1 costs (Missouri and Oregon), payment rates matched costs in DY2 more closely than in DY1.
- The reason the gap between payment rates and costs increased from DY1 to DY2 in Oklahoma is not clear. PPS-2 costs might be more challenging to predict than PPS-1 costs due to substantially greater variation in per visit month costs than in per visit day costs. Moreover, states establish different PPS-2 rates for special populations and might have difficulty projecting the use of

CCBHC services by these special populations, both of which could influence year-to-year fluctuations in costs.

### C. Performance on quality measures in DY1

Performance on the quality measures in DY1 varied considerably across measures and states, with no clearly discernable patterns of consistently higher or lower performing states. For some but not all measures, benchmark data on measure performance from Medicaid or Medicare sources was available to provide context for interpreting CCBHC performance.

- Across CCBHCs, 32 percent of clients received follow-up care within 30 days after an emergency department visit for alcohol or other drug (AOD) dependence. This percentage is higher than performance among states reporting the same measure for the Medicaid Adult Core Set (20 percent) but indicates room for improvement.
- Similarly, performance of CCBHCs on measures of antidepressant medication management (AMM), depression remission (DEP-REM), and diabetes screening for adults prescribed antipsychotic medications (SSD) was relatively similar to available benchmarks while leaving room for improvement.
- Performance on measures of follow-up care for children with attention deficit hyperactivity disorder (ADHD) and follow-up after discharge from a hospitalization for mental illness among adults generally exceeded benchmarks.

Because this is the first time these measures have been applied in this context, results should not be interpreted as an assessment of success or failure of the demonstration in providing quality care. Available benchmarks reflect the performance of other types of entities serving different populations in different service settings. No quality measure performance data based on truly comparable populations is available. Future analyses will examine changes in measure performance from DY1 to DY2.

### D. Awarding of quality bonus payments

Seven of the eight demonstration states implemented QBP systems, including all PPS-2 states and all but one of the PPS-1 states (Oregon). All used state general revenues to fund the QBPs, but states varied with respect to total available funding (from about \$350,000 to about \$4.2 million) and amount distributed for QBPs.

- Four states distributed QBPs to a total of 26 of 31 participating CCBHCs.
- In two states, none of the 16 participating CCBHCs met the performance measure criteria to receive QBPs.
- One state had not finalized QBP award determinations at the time of this report.

CCBHCs' inexperience with the measures used to determine QBPs and the lack of historical data on which to base performance expectations may have contributed to some CCBHCs not receiving QBPs. Future analyses will examine whether and how states adjusted their QBP thresholds and the extent to which the number of CCBHCs receiving QBPs changed from DY1 to DY2.

## I. Background

### A. Description of the Certified Community Behavioral Health Clinic (CCBHC) demonstration

Section 223 of PAMA, enacted in April 2014, authorized the CCBHC demonstration to allow states to test new strategies for delivering and reimbursing services provided in community behavioral health clinics. The demonstration aimed to improve the availability, quality, and outcomes of ambulatory services provided in community behavioral health clinics by establishing a standard definition and criteria for CCBHCs and developing a new payment system that accounts for the total cost of providing comprehensive services to all individuals who seek care. The demonstration also aimed to provide coordinated care that addresses both behavioral and physical health conditions.

In October 2015, HHS awarded planning grants to 24 states to begin certifying community behavioral health clinics to become CCBHCs, develop new PPSs, and plan for the demonstration's implementation. To support the demonstration's first phase, HHS developed criteria (as required by PAMA) for certifying CCBHCs in six areas: (1) staffing; (2) availability and accessibility of services; (3) care coordination; (4) scope of services; (5) quality and reporting; and (6) organizational authority. The criteria established a minimum threshold for the structures and processes that CCBHCs should have to provide high-quality care, although states exercised some discretion in implementing the criteria to reflect their particular needs.

States used the planning grants to implement the criteria, develop PPS rates, and create the infrastructure to support the demonstration. CMS developed two PPS models that participating states could implement. The first model (PPS-1) is a daily rate, similar to the PPS model FHCs use. PPS-1 pays CCBHCs a fixed amount for each day that a Medicaid beneficiary receives CCBHC services. The payment is the same regardless of the type or volume of services the beneficiary receives on that day. States that adopted the PPS-1 model also had the option of including a QBP mechanism--a payment above the standard PPS rate based on performance on quality measures.

The second model (PPS-2) is a monthly rate that pays a fixed amount to the CCBHC for each month in which a beneficiary receives CCBHC services. The payment is the same regardless of the number of visits the beneficiary makes in a month (also known as a visit month) or the types or volume of services they receive. The PPS-2 model has multiple rate levels--a standard (base) rate and separate monthly rates for special populations defined by state-specified clinical conditions. CMS required that states implementing the PPS-2 model include a QBP mechanism and an outlier payment mechanism (a supplemental payment to cover extremely high cost clients). CMS required states to award bonus payments only after the six core measures were met but did give states flexibility to design the criteria and payment amounts for their QBP mechanisms and the thresholds and amounts for their outlier payments.

Both PPS models are "cost-based," meaning that the rates are intended to cover the expected costs of providing the full scope of services required in the CCBHC certification criteria. Prospective rates are based on historic and projected costs, which are reported in standardized cost reports. The rates are calculated by dividing the total cost of operating the clinic by the total number of visit days, for PPS-1, or visit months, for PPS-2. Basing payments on anticipated daily or monthly per-patient cost rather than the cost of specific services provided during a patient visit allow clinics flexibility in the services they provide and the staffing models they use to meet the needs of patients without requiring specific billable



services to ensure financial sustainability. CMS required that CCBHCs participating in the demonstration submit annual cost reports with details of their total operating costs. In addition, participating CCBHCs and states must submit to HHS performance data for 22 quality measures specified in the criteria. States could also elect to require CCBHCs to submit additional quality measures.

In December 2016, HHS selected 8 states to participate in the demonstration from among the 24 that had received planning grants. As required by PAMA, HHS selected the states based on the ability of their CCBHCs to: (1) provide the complete scope of services described in the certification criteria; and (2) improve the availability of, access to, and engagement with a range of services (including assisted outpatient treatment). HHS selected Minnesota, Missouri, Nevada, New Jersey, New York, Oklahoma, Oregon, and Pennsylvania to participate in the demonstration. Across the eight states, 66 CCBHCs participated in the demonstration; only two states elected the PPS-2 model (**Table I.1**).<sup>1</sup>

<b>Table I.1. Number of CCBHCs, demonstration start date, and PPS model, by state</b>			
<b>State</b>	<b>Number of CCBHCs</b>	<b>Demonstration start date</b>	<b>PPS</b>
Minnesota	6	July 1, 2017	PPS-1 <sup>b</sup>
Missouri	15	July 1, 2017	PPS-1 <sup>b</sup>
Nevada	3 <sup>a</sup>	July 1, 2017	PPS-1 <sup>b</sup>
New Jersey	7	July 1, 2017	PPS-2
New York	13	July 1, 2017	PPS-1 <sup>b</sup>
Oklahoma	3	April 1, 2017	PPS-2
Oregon	12	April 1, 2017	PPS-1
Pennsylvania	7	July 1, 2017	PPS-1 <sup>b</sup>

Source: Mathematica/RAND review of CCBHC demonstration applications and telephone consultations with state officials.

Notes: The initial demonstration end date was June 30, 2019, for all states, except Oklahoma and Oregon for which the initial end date was March 31, 2019. This evaluation covers the 2-year period for which the demonstration was initially authorized. In August 2020, CMS and SAMHSA announced that Kentucky and Michigan would begin participation in the demonstration as a result of the CARES Act; these additional states are not included in the evaluation or this report.

a. Nevada initially certified 4 clinics. However, in March 2018, 1 CCBHC withdrew from the demonstration after Nevada revoked its certification. The total number of CCBHCs in the table reflects the number of participating CCBHCs in August 2020.

b. PPS-1 with QBP (all PPS-2 states include QBPs).

The participating CCBHCs were required to provide coordinated care and offer a comprehensive range of nine types of services to all who seek help, including but not limited to those with SMI, SED, and SUD. Services were required to be person and family-centered, trauma-informed, and recovery-oriented, and to integrate physical and behavioral health care to serve the “whole person.” To ensure the availability of the full scope of these services, CCBHCs could partner with DCOs to provide selected services. DCOs are independent entities with which CCBHCs establish formal arrangements to provide specific types of care. Payments to DCOs are covered through the prospective payments to the CCBHCs. CCBHCs that engage DCOs maintain clinical responsibility for services provided by a DCO to CCBHC clients, and the CCBHC provides payment to the DCO.

<sup>1</sup> Since PAMA, additional legislative actions have extended the CCBHC demonstration and allowed for two additional states to participate. However, these legislative actions did not alter the original scope of this evaluation.



## B. Goals of the national evaluation

In September 2016, ASPE contracted with Mathematica and its subcontractor, the RAND Corporation, to conduct a comprehensive national evaluation of the CCBHC demonstration. ASPE is overseeing the evaluation in collaboration with CMS.

Working with these federal partners, Mathematica and RAND designed a mixed-methods evaluation to examine the implementation and outcomes of the demonstration and to provide information for HHS to include in its reports to Congress. Specifically, Section 223 of PAMA mandates that HHS submit annual reports to Congress that include: (1) an assessment of access to community-based mental health services under Medicaid in the area or areas of a state targeted by a demonstration program as compared to other areas of the state; (2) an assessment of the quality and scope of services provided by CCBHCs as compared to community-based mental health services provided in states not participating in a demonstration program and in areas of a demonstration state not participating in the demonstration; and (3) an assessment of the impact of the demonstration on the federal and state costs of a full range of mental health services (including inpatient, emergency, and ambulatory services).

In June 2019, Mathematica and RAND submitted a report to ASPE that described the implementation of the demonstration.<sup>2</sup> Then in August 2019, Mathematica and RAND submitted a report to ASPE that described the extent to which the PPS rates covered the costs of CCBHC services and reported on states' and CCBHCs' experiences with the quality measures (performance on quality measures was not available for the August 2019 report).<sup>3</sup>

Our analysis of interview data and cost reports from DY1 found that reporting costs was initially challenging for CCBHCs because this was not a common practice prior to the demonstration. However, preparations during the planning grant period and ongoing technical support provided by states contributed to successful cost-reporting in most states. Clinic costs, calculated on a per visit day basis for clinics in PPS-1 states and on a per visit month basis for clinics in PPS-2 states, varied within and across states. PPS rates, which states established from estimates based on pre-demonstration costs, were generally higher than actual costs in DY1. However, rates did not cover the full costs for some CCBHCs. The differences between the rates and costs were potentially attributable to clinics incurring costs that were higher or lower than anticipated, partly due to difficulty hiring or retaining staff and higher or lower-than-projected volume of visit days or months.

***Purpose of report.*** This report builds on our prior analyses to describe: (1) changes from DY1 to DY2 in CCBHC payment rates and costs, and the extent to which rates covered CCBHC costs in DY2; (2) performance on quality measures for DY1; and (3) the extent to which states provided QBPs to CCBHCs for DY1.

This report summarizes analyses comparing information from DY1 and DY2 cost reports, and reports costs overall and for the major cost components. As in our August 2019 report, we also compare the costs

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<sup>2</sup> Office of the Assistant Secretary for Planning and Evaluation. "Implementation Findings from the National Evaluation of the Certified Community Behavioral Health Clinic Demonstration." Washington, DC: HHS/ASPE; 2020. Available: <https://aspe.hhs.gov/report/implementation-findings-national-evaluation-certified-community-behavioral-health-clinic-demonstration>. Accessed October 15, 2020.

<sup>3</sup> Office of the Assistant Secretary for Planning and Evaluation. "Preliminary Cost and Quality Findings from the National Evaluation of the Certified Community Behavioral Health Clinic Demonstration." Washington, DC: HHS/ASPE. Available: <https://aspe.hhs.gov/basic-report/preliminary-cost-and-quality-findings-national-evaluation-certified-community-behavioral-health-clinic-demonstration>. Accessed October 15, 2020.

the clinics reported with the rates the states set. The second year of cost data allowed us to examine whether the rates and costs became better aligned over time. We would expect this to happen because states could use the DY1 cost data to assess the costs of care during the first year and re-base their DY2 rates.

Quality measure reports covering DY2 were not available at the time of writing this report because not all demonstration states had submitted them. We will update this report to summarize DY2 quality of care and compare quality between DY1 and DY2 when the data become available.

## II. Data Sources and Methods

Mathematica and RAND collected and analyzed the following data for this report: (1) interviews with state officials; (2) state reports of CCBHC PPS rates; (3) CCBHC DY1 and DY2 Cost Reports; and (4) CCBHC DY1 Quality Measure Reports. This chapter describes these data sources and our analytic methods.

### A. Interviews with state officials

We conducted three rounds of telephone interviews with state behavioral health and Medicaid officials involved in leading implementation of the demonstration in each state. We conducted the first and second rounds of interviews at two points in DY1--from September to October 2017 and from February to March 2018, respectively. We conducted the third round toward the end of DY2--from February to April 2019.

The first round of interviews gathered information about early implementation, decisions made during the demonstration planning phase, early successes and challenges in fulfilling the certification requirements and following the data collection and monitoring procedures, and anticipated challenges or barriers to successful implementation. The second round of interviews gathered information on interim successes and challenges since the time of the initial interview, success in implementing demonstration cost-reporting procedures and quality measures, and early experiences with the PPS systems and QBPs (if applicable). The third round of interviews collected information on the same categories covered in the second round of interviews, with an emphasis on any changes in implementation successes and challenges experienced in DY2.

Mathematica and RAND conducted a total of 29 interviews (ten during each of the first two rounds, and nine in the third). In the first two rounds of interviews, in six states, behavioral health and Medicaid officials participated in the interviews together to reduce scheduling burden and provide comprehensive answers; in two states, we conducted separate interviews with behavioral health and Medicaid officials. During the final round of interviews, behavioral health and Medicaid officials from only one state elected to participate in separate interviews. Each interview lasted about 60 minutes.

Two researchers conducted each interview, with one leading the interview and one taking notes. We asked interviewees' permission to audio-record the discussions to ensure the accuracy and completeness of interview notes. Following the interviews, we organized the interview information into categories defined by our evaluation questions. We summarized interviewees' responses for each state and then identified cross-state themes.

### B. Site visits

In February and March of 2019 (DY2), we conducted site visits to clinics in four demonstration states (Missouri, Oklahoma, Oregon, and Pennsylvania). In collaboration with our federal partners, we selected two CCBHCs within each state (three in Pennsylvania) to visit. The final group of CCBHCs we visited were diverse in terms of their urban-rural location, proximity to other CCBHCs, size and number of CCBHC service locations; implementation of intensive team-based supports, Assertive Community Treatment, and Medication-Assisted Treatment; and use of innovative strategies to engage clients, including the use of technologies.

During the site visits, we conducted in-depth discussions with clinic administrators and front-line clinical staff about how care has changed following implementation of the demonstration. Interview topics

included: successes and barriers related to CCBHC staffing, steps clinics have taken to improve access to care and expand their scope of services, the CCBHCs' experience with payments and the PPS, and quality and other reporting practices. We asked interviewees' permission to audio-record the discussions to facilitate our analysis. Following the interviews, we organized the interview information into categories defined by the CCBHC certification criteria and then identified cross-site and cross-state themes.

### C. State reports of PPS rates and quality bonus payments

State officials in seven of the eight demonstration states provided information on the DY1 and DY2 PPS rate paid to each clinic.<sup>4</sup> For PPS-1 states, we received information on the daily amounts paid to each CCBHC. For the PPS-2 states, we received information on the standard rates for each CCBHC, the rates paid for clients with more severe disorders, and the criteria used to define the categories of clients with higher severity disorders. CCBHC rates in the PPS-2 states can be compared with respect to their standard rates and with respect to their "blended" rate, which is an average across the payment categories weighted by the distribution of clients across the categories as reported in the cost reports.

State officials also provided information on their QBP systems, including the criteria used to determine eligibility for a payment, the number of CCBHCs that met the quality performance thresholds, the amount of any payments made to clinics, and the source of the funds used for the payments.

### D. CCBHC DY1 and DY2 cost reports

We obtained data on CCBHC costs during DY1 and DY2 from standardized cost reports that states submitted to CMS as part of the demonstration.<sup>5</sup> We received complete DY1 and DY2 cost reports for 56 CCBHCs for this analysis.<sup>6</sup> We reviewed the cost reports and communicated with state officials to obtain clarifying information as needed.

The cost reports include information on clinic operating costs and the total number of clinic visit days (PPS-1) or visit months (PPS-2) that occurred during the DY. Visit days are unique days on which a client received at least one service, and visit months are months in which a client received at least one service. The reports include all visit days or months for all clients, not only those covered under Medicaid or the PPS. The operating costs include both direct costs, such as labor and medical supplies, and indirect costs, such as rent payments. Many clinics reported anticipated costs in their DY1 cost reports, but very few reported anticipated costs in their DY2 cost reports. Anticipated costs included projected changes that clinics expected to occur in the upcoming year, such as costs of hiring new staff. During both years of

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<sup>4</sup> We did not receive DY2 rates from Nevada.

<sup>5</sup> Centers for Medicare & Medicaid Services. "Medicaid Cost Reports for Certified Community Behavioral Health Clinics." Baltimore, MD: CMS; 2016. Available: <https://www.medicare.gov/medicaid/financial-management/section-223-demonstration-program-improve-community-mental-health-services/index.html>. Accessed October 15, 2020. "Certified Community Behavioral Health Clinic Cost Report Instructions." Baltimore, MD: CMS; 2015. Available at <https://www.medicare.gov/medicaid/downloads/ccbhc-cost-report-instruction.pdf>. Accessed October 15, 2020.

<sup>6</sup> Of the 66 CCBHCs, none of the Nevada clinics submitted DY2 cost reports in time for this analysis. New Jersey submitted cost reports for DY2, but the reports did not reflect actual demonstration costs and were therefore excluded from our analysis because they are not comparable with other states. According to state officials in New Jersey, the state did not require CCBHCs to record the actual costs incurred during the demonstration, as in other states. Rather, the cost reports they submitted contained cost information from a one-year period prior to the demonstration and projected the additional costs for providing demonstration services.

our analysis, anticipated costs were excluded from our cost calculation, since we sought to calculate actual costs. To the extent that anticipated costs were included in rate-setting they are reflected only in the rates paid to clinics.

We conducted several types of analyses using the cost report data:

*Change in costs from DY1 to DY2.* To compare costs across demonstration years, we applied the MEI to the cost data to adjust for inflation over time. For the comparisons over time in this report, we inflated costs reported in DY1 and DY2 to constant 2020. To describe change from DY1 to DY2 in CCBHC costs, we examined the change in the total costs of clinic operations, the total number of visit days or months, and the per visit day or month costs. Costs were adjusted for inflation prior to comparing across years.

- **Total clinic cost** is the amount that clinics reported spending during each year of the demonstration. Our calculations do not include clinics reported anticipated costs; we only include clinics' actual costs. States usually included anticipated costs when setting rates, so anticipated costs are incorporated into the rates that were paid to clinics.
- **Total clinic visit days or months** is the total number of patient visit days for PPS-1 clinics and total number of patient visit months in PPS-2 clinics, as reported in the cost reports. Total visit days or months could change from DY1 to DY2 if the CCBHCs experience a change in the number of patients or in these patients' average visit day or month frequency.
- **Per visit day or month costs** were calculated by dividing the total costs by the number of visit days or months. Per visit day or month costs would change if there were changes in either the total costs or the number of visit days or months. For instance, if total costs increased while the number of visit days or months remained the same, the per visit day or month costs would increase.

*Change in allocation of costs.* Separate from change in total costs, spending by CCBHCs might change over time in the proportion allocated to different types of cost. We examined change with respect to four types of cost.

- **Labor costs** are costs incurred for staffing. In DY1, labor costs were by far the largest category of costs. As described below, we also examined change from DY1 to DY2 in the cost allocation across types of staff.
- **Other direct costs** are non-labor clinic expenditures directly traceable to the provision of health care. For example, medical supplies and equipment, transportation for health care staff, and education/training expenses (not including employee wages) are non-labor direct costs.
- **DCO costs** are payments by CCBHCs to their DCOs. We report DCO costs separately because the DCO mechanism is a unique feature of the CCBHC model meant to allow CCBHCs flexibility to contract out some services within the PPS mechanism DCO costs could cover a wide range of services, depending on the role the DCO played with an individual CCBHC. In DY1, DCO costs were a very small proportion (1 percent) of the total costs for the CCBHC demonstration, but for some CCBHCs, DCOs accounted for a larger proportion of overall costs. Among the 34 CCBHCs that had DCOs, the proportion of total costs in DY1 that were paid to DCOs ranged from 0.02 percent to 14.66 percent and averaged 2.34 percent. For this report, we examined whether that pattern continued in DY2.

- **Indirect costs** are the “overhead” costs incurred by clinics. These costs are not traceable to the specific provision of health care, they are for the general operation of the organization (which indirectly allows for the provision of health care). These costs include, for example, rent, insurance, property tax, and utilities to run the facility.

*Change in labor costs.* We examined labor costs in greater detail because they are the largest cost component. We developed staffing categories to facilitate consistent comparisons across the clinics and states because clinics and states made some modifications to staff types in the report form which required harmonization by the evaluation team to facilitate comparisons. The five-category classification of staff types are:

- Psychiatrist or Other MD/DO.
- Psychologist, Psychiatric Nurse, or Other Non-MD/DO Doctoral Degree.
- Licensed Clinician (Bachelors or Masters Level).
- Other Bachelors Level.
- Others (Usually) Without Bachelors Degree.

We applied these staff categories to both the DY1 and DY2 reports and examined change in the proportion of costs devoted to each category over time.

*Change in costs versus rates.* We examined how the PPS rates changed from DY1 to DY2 and calculated the difference between those rates and the per visit day or month costs described above. In DY1, we found that, on average, rates generally exceeded costs across states. We expected that the DY2 rates, informed by the DY1 cost reports, would be closer to the actual DY2 costs. To examine this, we compared the percentages by which the rates differ from the costs across the two demonstration years.

## E. CCBHC DY1 quality measure reports

We obtained data on CCBHC quality measure performance during DY1 from standardized quality measure reports that states submitted to the SAMHSA and ASPE. This report includes analysis of the 22 required quality measures from 62 of the 66 CCBHCs.<sup>7</sup>

Before analyzing the quality measures, we examined the comparability and completeness of the data across clinics and states. First, we reviewed information that clinics provided about modifications that they made to the measure specifications provided by SAMHSA (described in Chapter IV).<sup>8</sup> When the deviations were substantial, making comparison with other clinics or other states misleading, we excluded the measure reported from the analysis. When the reported modifications were minor (for example, some data for the measure were captured in an electronic health record (EHR) and others were captured by hand, but the clinic did not deviate from the measure specification), we included the data in the analysis. When necessary, we communicated with state officials to clarify the reported deviations from the measure specifications or gather additional information about the measure reporting process. Second, we established a minimum denominator size threshold to report state-wide performance on a measure, which

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<sup>7</sup> Nevada did not submit all measures in time for this report; therefore, we included the three CCBHCs in Nevada in the analysis of only five of the quality measures. New Jersey did not submit data for one of the CCBHCs for one required measure.

<sup>8</sup> Substance Abuse and Mental Health Services Administration. “The Metrics and Quality Measures for Behavioral Health Clinics Technical Specifications and Resource Manuals.” Rockville, MD: SAMHSA; 2016. Available: <https://www.samhsa.gov/section-223/quality-measures>. Accessed October 15, 2020.

required at least 30 clients in the denominator across all CCBHCs in the state. Given that some clinics had a small number of clients in the denominator for several of the measures, we aggregated measure performance to the state level. We also drew on any available published literature and publicly available performance data to contextualize performance on the measures.

### III. CCBHC Payment Rates and Costs of Care

Community mental health services have not historically been reimbursed through daily or monthly prospective payment mechanisms. PPS-1, the daily rate, and PPS-2, the monthly rate, were designed for the CCBHC demonstration to improve the alignment of financial incentives with provision of high-quality, patient-centered care. In contrast with fee-for-service systems, where each additional service brings an additional payment, these systems do not incentivize providing high volumes of care. Rather, the amount that clinics are paid is determined by the average cost of care, regardless of the quantity of services provided on a given day or in a given month. This means that clinics can exercise considerable flexibility in tailoring services to the needs of individual clients without being concerned about the financial impact of each service decision. While there is an incentive for clinics to see clients more frequently, particularly under PPS-1, this incentive only operates over the short term (that is, until the state re-bases rates using cost data). If a clinic has many visit days or months in one year, it will collect more reimbursement during that year.

CCBHC participation in the PPS also introduced some challenges. The clinics that became CCBHCs did not have experience in the type of cost-reporting required to establish the cost-based PPS rates. Similarly, the participating states did not have experience setting PPS rates for comprehensive community mental health services. Because of these challenges, our evaluation examines several research questions related to the process of reporting costs as well as the functioning of the payment systems over the course of the demonstration. In the prior report, we described the rates that CCBHCs were paid and the costs of providing care during DY1. In this report, we extend those analyses by describing change over time, from DY1 to DY2.

Change from DY1 to DY2 in the PPS rates and CCBHC costs are important to describe because they provide the first indications of how the financing mechanisms will function over the long run. During DY1, clinics developed new ways of organizing care that made use of the flexibility the new payment systems provided, and the states developed new systems for overseeing and administering the CCBHC model. During DY2, clinics and states were able to learn from their initial experiences and further adjust services and procedures to meet their goals. Some states, as we describe below, re-calculated their PPS rates for DY2 based on the DY1 cost reports. Our analysis of the DY2 cost reports describes these changes from DY1 to DY2 in the rates that CCBHCs were paid and in the costs of care in the CCBHCs. In addition, we examine whether the gap between rates and costs--which we presented in the prior report --has decreased, particularly in the states that re-calculated their rates based on the DY1 cost reports.

#### A. Changes in total costs, total visit days and months, and per visit day and month costs

This section summarizes changes from DY1 to DY2 in: (1) total visit days or months (depending on the state's PPS model); (2) per visit day or month costs; and (3) total CCBHC costs. It is important to interpret changes in these three values together, because changes in either the total number of visits or the per visit costs could impact total clinic costs.

We examined changes from DY1 to DY2 in two ways:

- **Average change in CCBHCs within states.** This is the average percentage change across all the clinics in the state; in this calculation, each CCBHC received equal weight regardless of its total costs or visit days or months



- **Aggregate change within states.** We calculated the aggregate change by summing the costs and visit days or months across all clinics in the state in each demonstration year; in this calculation, CCBHCs with higher costs and larger numbers of clients contributed more to the total.

**PPS-1 states.** The total number of visit days that PPS-1 clinics reported during DY2 was generally higher than the total for DY1 (**Table III.1**). Thirty-nine clinics experienced an increase of greater than 5 percent in the number of visit days or months and 14 clinics experienced a decrease of greater than 5 percent. The average change in visit days ranged from 3.2 percent to 14.4 percent across states and the aggregate change in visit days ranged from 0.5 percent to 12.6 percent across states. Across all states, there were 8.3 percent more visit days to PPS-1 clinics in DY2 than in DY1. It is important to note that the increase in the number of visit days does not necessarily mean that the clinics saw more clients during DY2 than in DY1, since they could have seen each client more frequently on average (the cost reports do not provide information on the number of unique clients represented by the visits in each year).

<b>State</b>	<b>Number of CCBHCs with &gt;5% visit days increase</b>	<b>Number of CCBHCs with &gt;5% visit days decrease</b>	<b>Average change across clinics</b>	<b>Aggregate change across clinics</b>
Minnesota	3	3	6.8%	0.5%
Missouri	12	3	9.6%	8.8%
New York	10	3	11.7%	12.6%
Oregon	9	3	14.4%	6.6%
Pennsylvania	5	2	3.2%	5.3%
All PPS-1 clinics	39	14	10.0%	8.3%

Source: Mathematica and the RAND Corporation analysis of DY1 and DY2 CCBHC cost reports.  
Notes: Average change across all clinics was calculated by averaging percentage change in visit days from DY1 to DY2 at the clinic level. Aggregate change was calculated by comparing the total visit days in DY1 and DY2 at the state or demonstration level. The analysis includes cost report data from 56 CCBHCs in PPS-1 states.

Changes in per visit day costs varied within and across states (**Table III.2**). Across states, 33 clinics experienced a greater than 5 percent increase in per visit day costs and 20 experienced a greater than 5 percent decrease in per visit day costs. However, in two states (Minnesota and Oregon) there were more CCBHCs with decreases than increases in per visit data cost, and these states also had small decreases in the average and aggregate per visit day costs. Across all states, there was a 6.8 percent average increase and a 4.9 percent aggregate increase in per visit day costs.

Table III.2. Change in total clinic per visit day costs from DY1 to DY2, PPS-1 states				
State	Number of CCBHCs with >5% per visit day cost increase	Number of CCBHCs with >5% per visit day cost decrease	Average change across all clinics	Aggregate change across all clinics
Minnesota	2	4	-1.9%	-1.2%
Missouri	11	4	5.2%	6.7%
New York	10	3	15.4%	11.7%
Oregon	9	3	-2.1%	-1.0%
Pennsylvania	5	2	16.9%	4.0%
All PPS-1 clinics	33	20	6.8%	4.9%

Source: Mathematica and the RAND Corporation analysis of DY1 and DY2 CCBHC cost reports.

Notes: The per visit day or month cost is the inflation-adjusted total CCBHC costs divided by the total number of visit days. The analysis includes cost report data from 56 CCBHCs in PPS-1 states.

Average change across all clinics was calculated by averaging percentage change in per visit day costs from DY1 to DY2 at the clinic level. Aggregate change was calculated by comparing per visit day costs in DY1 and DY2 at the state or demonstration level.

In each of the PPS-1 states most CCBHCs experienced an increase in total costs from DY1 to DY2 and few had a decrease in total costs (**Table III.3**). In several states, the average and aggregate change in costs were similar. However, in Minnesota there was a small average increase (1.0 percent) in costs, but a small decrease in aggregate costs (-0.7 percent), because the two largest PPS-1 clinics in the state had lower costs in DY2 relative to DY1 and contributed more to the difference in aggregate costs. Except for Minnesota, the average change in costs ranged from 6.0 percent to 25.0 percent across states and the aggregate change in costs ranged from 5.6 percent to 25.8 percent across states.

Table III.3. Change in total clinic costs from DY1 to DY2, PPS-1 states				
State	Number of CCBHCs with >5% cost increase	Number of CCBHCs with >5% cost decrease	Average change across all clinics	Aggregate change across all clinics
Minnesota	2	4	1.0%	-0.7%
Missouri	14	1	11.8%	16.1%
New York	11	2	25.0%	25.8%
Oregon	9	3	6.0%	5.6%
Pennsylvania	7	0	15.8%	9.5%
All PPS-1 clinics	43	10	6.8%	13.6%

Source: Mathematica and the RAND Corporation analysis of DY1 and DY2 CCBHC cost reports.

Notes: Costs adjusted for inflation to 2020 dollars using CMS' MEI. The analysis includes cost report data from 56 CCBHCs in PPS-1 states.

Average change across all clinics was calculated by averaging percentage change in costs from DY1 to DY2 at the clinic level. Aggregate change was calculated by comparing the total costs in DY1 and DY2 at the state or demonstration level.

To summarize, from DY1 to DY2 most CCBHCs in the PPS-1 states experienced an increase in both their total number of visit days and their costs per visit, resulting in an increase of 13 percent in the aggregate costs of care at CCBHCS across the entire demonstration.

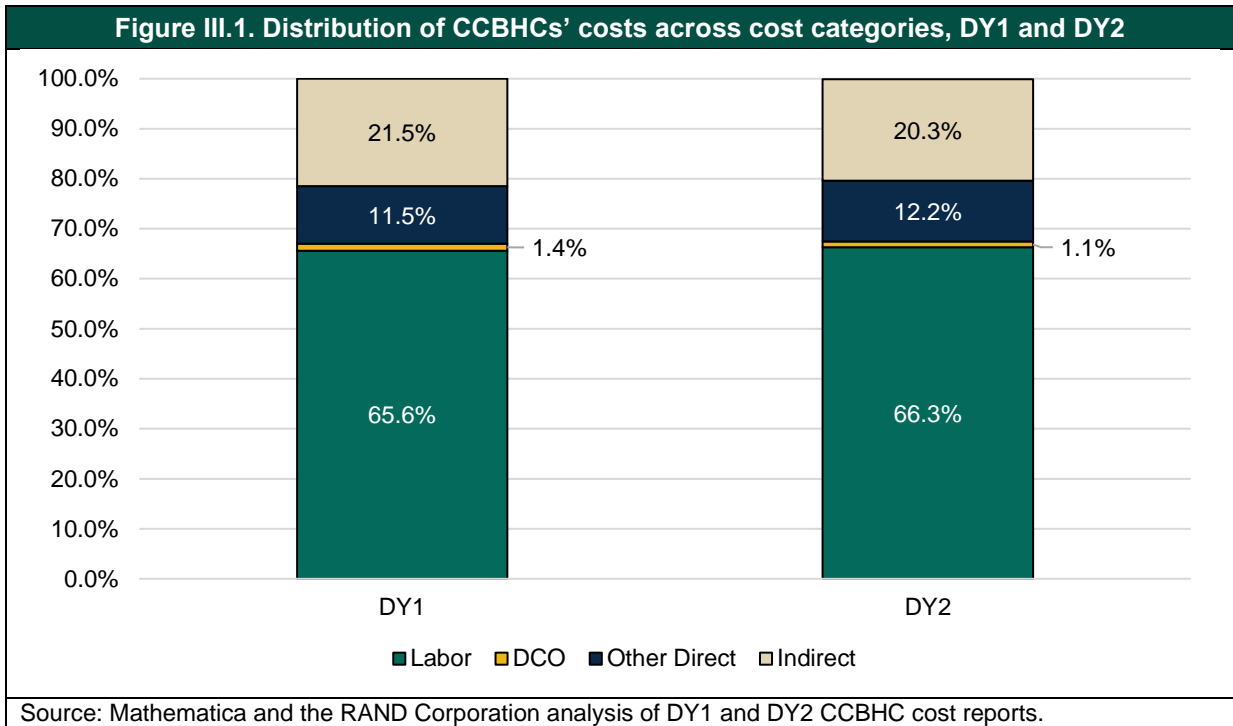
**PPS-2 states.** As noted above, we have DY2 cost report data for only one of the PPS-2 states, Oklahoma, in which there are only three CCBHCs. All three of the Oklahoma CCBHCs experienced an increase in total costs from DY1 to DY2 and total visit months (**Table III.4**). There was a 7.6 percent average increase in per visit month costs and a 2.1 percent aggregate increase in per visit month costs. As with the PPS-1 states, the CCBHCs in Oklahoma had increases in costs, number of visit months, and per visit month costs from DY1 to DY2.

<b>Table III.4. Change in total clinic costs, visit months, and cost per visit month from DY1 to DY2, Oklahoma</b>		
	<b>Average change across all clinics</b>	<b>Aggregate change across all clinics</b>
Change in total costs	38.3%	37.9%
Change in visit months	32.5%	35.1%
Change in per visit month costs	7.6%	2.1%
Source: Mathematica and the RAND Corporation analysis of DY1 and DY2 CCBHC cost reports. Notes: The analysis includes cost report data from 3 clinics in Oklahoma. The per visit month costs are the inflation-adjusted total CCBHC costs divided by the total number of visit months. Average change across all clinics was calculated by averaging percentage change from DY1 to DY2 at the clinic level. Aggregate change was calculated by comparing DY1 with DY2 at the state or demonstration level. The increase in total costs ranged from 31% to 43% across clinics. The increase in total visit months ranged from 19% to 47% across clinics.		

## B. Changes in cost components

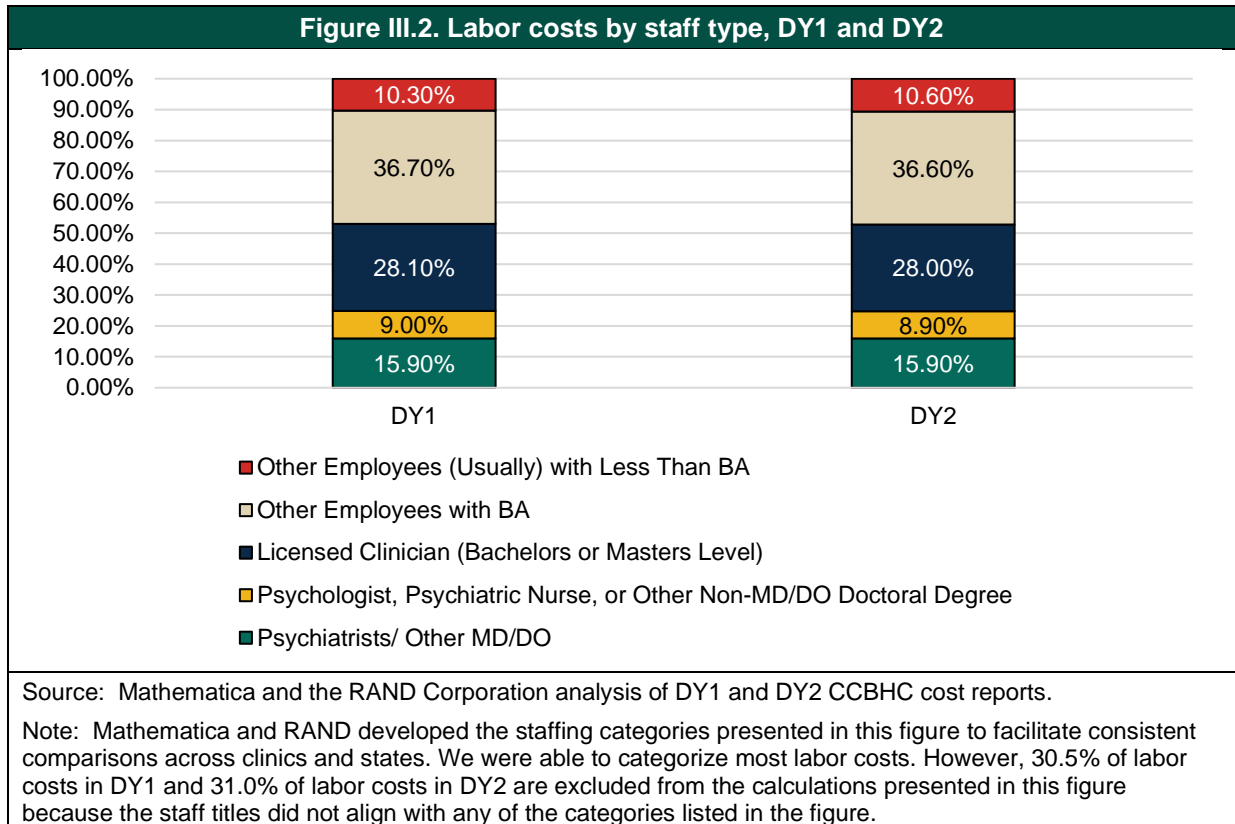
To investigate whether changes in costs were attributable to types of costs, we examined changes across a range of cost components. The distribution of costs across these components was remarkably stable across the demonstration years, with about two-thirds of CCBHC costs attributable to labor and less than one-quarter attributable to indirect costs (**Figure III.1**). As a result, it does not appear that the increase in overall costs from DY1 to DY2 was due to changes over time in any of these cost components.

**DCOs.** While only a small portion of costs were paid to DCOs, about 1 percent of total costs in both years, we provide some additional details of DCOs given their importance for the CCBHC model. As described in our past reports, CCBHCs provided most services directly rather than by contracting with a DCO. CCBHCs partnered with DCOs in five states (Missouri, New York, Oklahoma, Oregon, and Pennsylvania). These DCOs typically provided specialized services, such as crisis intervention. Among these states, the proportion of CCBHCs with DCO costs varied. For example, in Missouri, Pennsylvania, and New York, more than half of the CCBHCs had DCO costs in DY2 whereas only two of the 12 CCBHCs in Oregon had DCO costs. The number of CCBHCs that reported DCO costs from DY1 to DY2 decreased from 33 to 30 clinics.



Only about 1 percent of CCBHC costs were attributed to DCOs in both DY1 and DY2 (**Figure III.1**). Although the proportion of costs attributed to DCOs is small in the aggregate, there were some CCBHCs for which DCOs comprised a significant portion of total costs. In DY1, DCO costs exceeded 14 percent of the total costs for one clinic and 4 percent of total costs in an additional six clinics. For CCBHCs that had DCO costs in both demonstration years, DCO costs were relatively stable; ten CCBHCs experienced an increase of 5 percent or more in absolute DCO costs; seven experienced no increase or decrease greater than 5 percent, and only ten had a decrease of 5 percent or more in DCO costs.

**Labor costs.** The largest category of costs for CCBHCs is labor costs. To investigate whether changes in costs may have been due to changes specific to types of labor costs, we examined this category in more detail. The distribution of labor costs across staff types was consistent between DY1 and DY2 (**Figure III.2**). There were no meaningful differences in the distribution of labor costs across staff types, using the same five staff categories developed for our prior report.



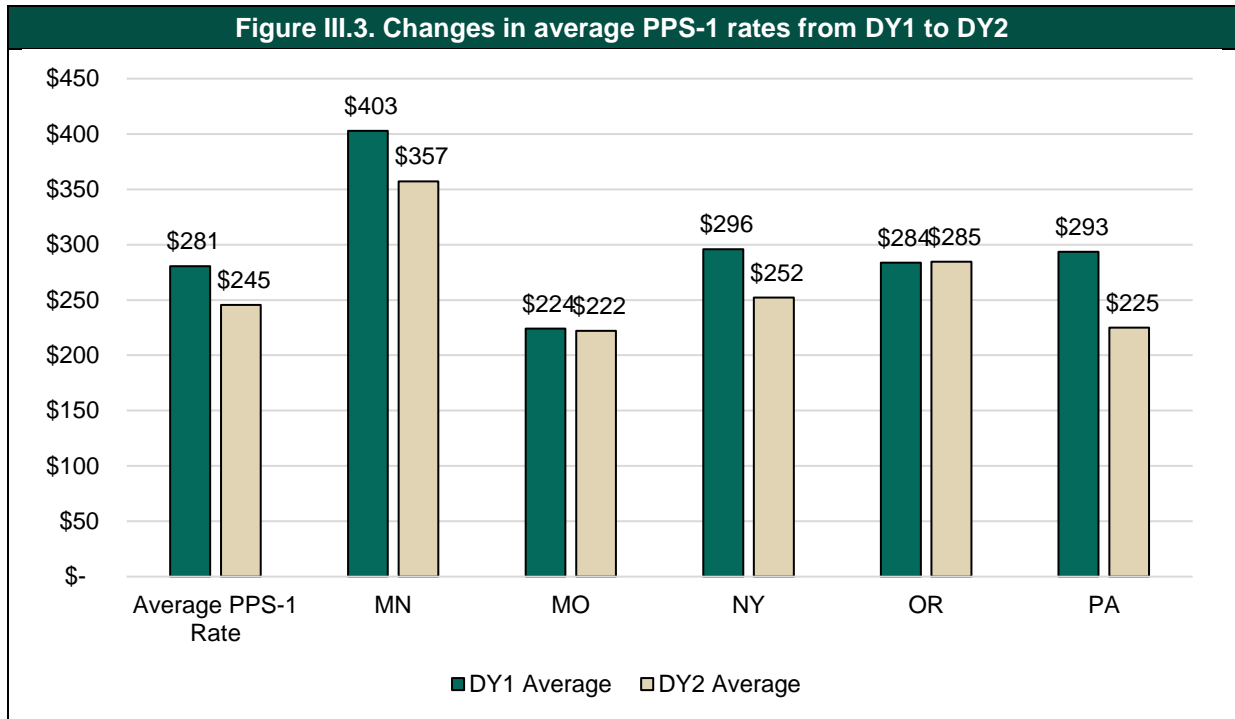
### C. Changes to PPS rates in DY2

As described in our prior report, the payment rates that CCBHCs received in DY1 were on average higher than the actual DY1 per visit day or month costs. State officials anticipated that rates would be higher than costs given some uncertainty about the volume of clients that CCBHCs would serve and the lack of historical data on the cost of some CCBHC services. States had the option to change their rates for DY2 through the process of re-basing (that is, re-calculating rates for DY2 based on the DY1 cost reports). Since the DY1 rates were based on pre-demonstration costs, re-basing, which uses actual CCBHC costs from DY1, should bring DY2 rates and costs into better alignment (although there still might be some differences in rates and costs due to yearly fluctuations in costs or client volume).

- Six states (Minnesota, Nevada, New Jersey, New York, Oklahoma, and Pennsylvania) used the DY1 cost reports to re-base their PPS rates for DY2.
- Two states (Missouri and Oregon) decided not to re-base their rates. State officials made this decision because they were concerned that the DY1 costs might not be representative of the long-term costs of operating CCBHCs. These states wanted to wait until at least two years of cost data were available before changing their rates; they reasoned that it may take more time to establish stable patterns of staffing and client care on which to base rates.
- All states used the MEI to adjust DY2 rates for inflation.

Among the PPS-1 states, the average rate either decreased or stayed about the same from DY1 to DY2 (Figure III.3).

- In the three states that re-based their rates based on the DY1 cost reports (Minnesota, New York, and Pennsylvania), the rates decreased on average.
- In the two states that did not re-base their rates based on the DY1 cost reports (Missouri and Oregon), the DY1 and DY2 rates changed by only a few dollars.

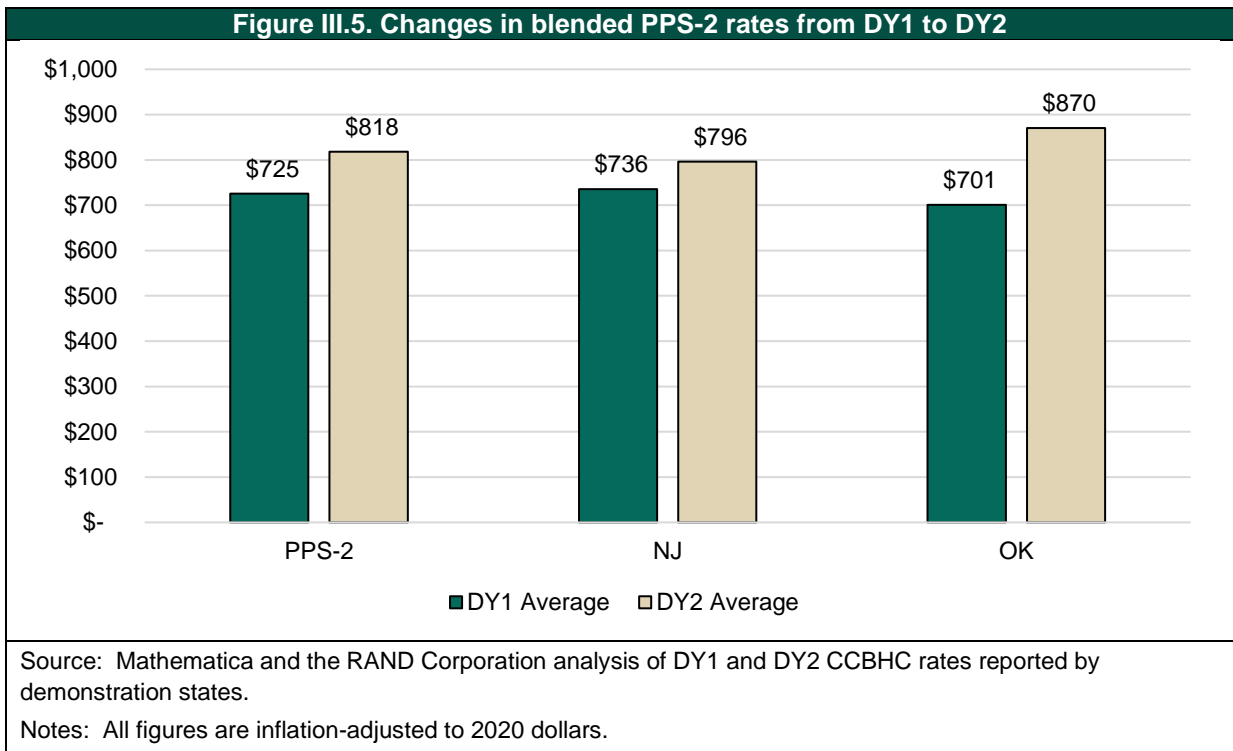
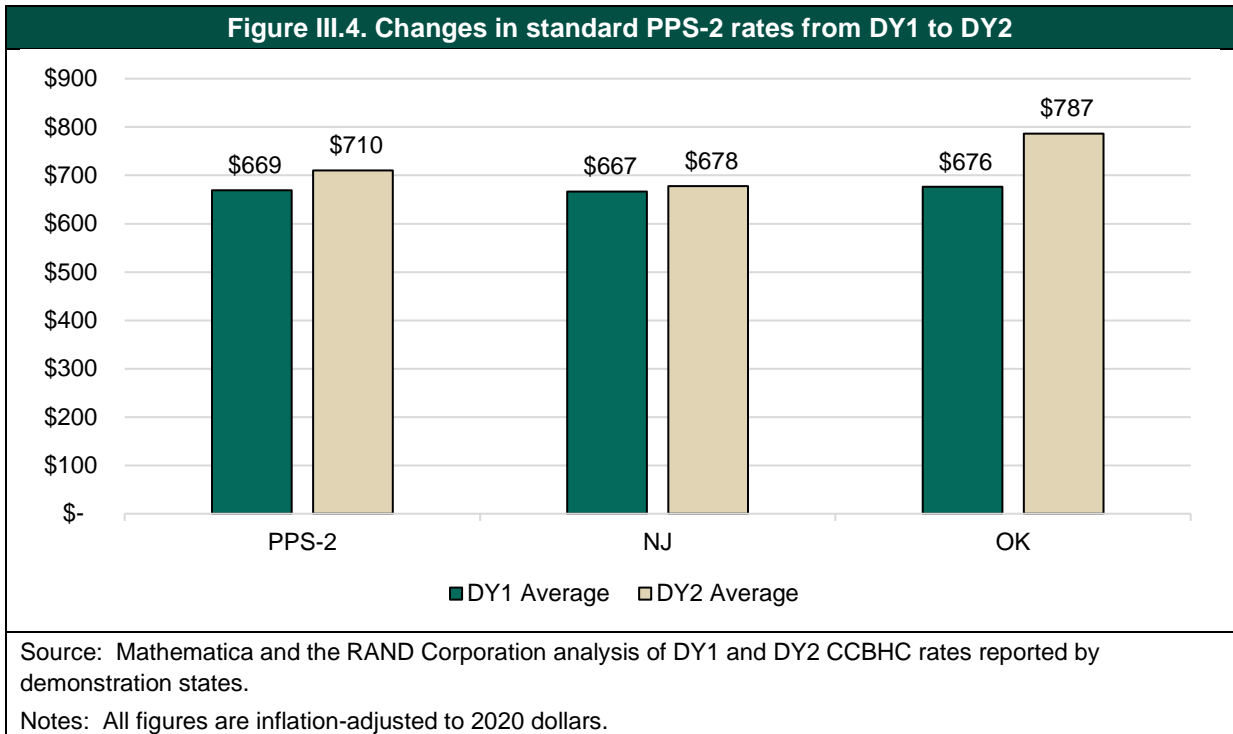


Source: Mathematica and the RAND Corporation analysis of DY1 and DY2 CCBHC rates reported by demonstration states.

Notes: All states except for Missouri and Oregon re-based their DY2 PPS rates based on the DY1 cost reports. All states also reported adjusting their DY2 PPS rates by inflation using the MEI. Missouri and Oregon inflated their DY1 rates by a set percentage across all clinics (1% and 1.4% of their DY1 rates, respectively). To facilitate comparisons of rates over time, we inflated the rates from each DY to 2020 dollars using the MEI. The differences between the percentages used by Missouri and Oregon to set their rates versus the percentage used in our calculation yielded small changes in the rates from DY1 to DY2. In Missouri, the 1% inflation rate used to set the DY2 rates was less than the 1.8% MEI increase during the same time period, resulting in a 0.8% real decrease in rates from DY1 to DY2.

Appendix A provides additional details on clinic-level changes in rates.

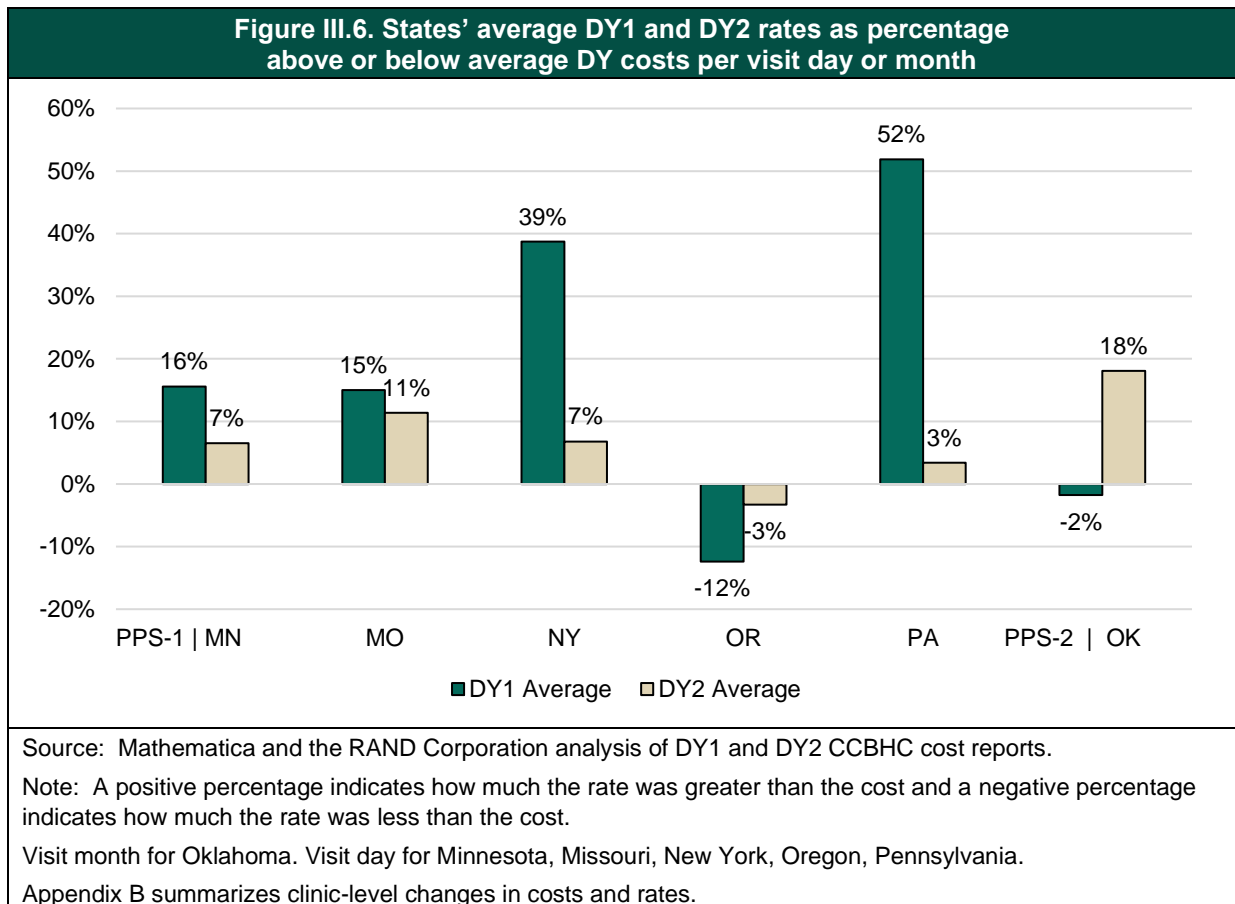
The average rate increased for both PPS-2 states (**Figure III.4 and Figure III.5**). The increase was particularly large in Oklahoma, where there was an increase of 16 percent in the standard rate and an increase of 23 percent in the blended rate from DY1 to DY2 after adjusting for inflation.



#### D. Convergence of costs and rates in DY1 and DY2

Among the PPS-1 states, the percentage differences between the rates and costs were less in DY2 than in DY1, indicating a move toward convergence of rates and costs over time (Figure III.6).

- For example, in Minnesota the rates were on average 16 percent higher than costs in DY1 but only 7 percent higher than costs in DY2. The most dramatic change was in Pennsylvania, where rates exceeded costs by 52 percent in DY1 but only 3 percent in DY2.
- In Oregon, the only state where rates were, on average, lower than costs in DY1, the rates remained, on average, lower than costs in DY2 (resulting in negative percentage differences in both years). However, the difference in DY2 was much smaller in magnitude relative to DY1.
- Missouri and Oregon experienced closer convergence of rates and costs from DY1 to DY2, despite not re-basing their DY2 rates based on the DY1 cost reports.



Change from DY1 to DY2 was different in Oklahoma, the only PPS-2 state for which we have complete cost and rate data. In DY1, rates exceeded costs by 5.9 percent and in DY2 rates exceeded costs by 18.1 percent. The reason for this increase in the gap between rates and costs is not clear. However, it should be noted that variation in per visit month costs is substantially larger than variation in visit day costs, making the PPS-2 costs more challenging to predict.

## E. Conclusion

Analysis of the cost reports from the second year of the demonstration indicate that, on average, the total number of visit days and months and the total costs of clinic operation increased from DY1. Cost per visit day and month also increased, but the increase in visit day and month costs were less than 5 percent of the DY1 costs, adjusting for inflation. These changes were distributed evenly across the major cost components, with no single component showing substantial increases or decreases over time. In the PPS-



1 states, costs aligned more closely with rates in DY2 than they did in DY1. In the one PPS-2 state for which we received DY2 cost reports, the costs did not align more closely with the rates in DY2 than they did in DY1, as the DY2 rates increased to a greater extent than the DY2 costs.

## IV. Performance on Quality Measures

Quality measure reporting provided clinics and state officials with standardized metrics to monitor the quality of care and inform quality improvement efforts. Quality measure reporting also has an important role in the context of the PPS. CCBHC payments were not linked to the provision of individual services. Rather, CCBHCs were paid the same amount regardless of the specific services they provided during the visit day or month. In this context, quality measurement provides a mechanism to ensure that quality of care does not suffer. Some states also used the quality measures to award QBPs to CCBHCs that met or exceeded state-specified performance thresholds.

Our prior report described operational issues related to calculating and reporting the required quality measures, such as the challenges that clinics encountered when collecting the clinical data used to calculate the quality measures. We found that during the planning grant period and DY1, states and clinics undertook various efforts, including training staff and upgrading EHR systems, to support reporting the quality measures. This report builds on those previous findings to describe performance on the measures in DY1. Measure performance from DY2 was not available in time for the submission of this report but will be included in the final evaluation report.

### A. Required quality measures

The CCBHC criteria specify the 22 quality measures that clinics and states were required to report for the demonstration. These measures assess performance across nine domains (**Table IV.1**). CCBHCs report on nine of the measures based on clinical data typically derived from EHRs or other electronic administrative sources. The states report on the other 13 measures based on Medicaid claims and encounter data and other data sources accessible to state administrators. Most of the required CCBHC-reported measures focus on processes within the clinic, such as whether screening and services were provided and time to initial evaluation; one measure, remission from depression, pertains to treatment outcomes. Most state-reported quality measures also focus on processes of care but tend to use data from multiple sources, such as follow-up after hospitalization (FUH), which requires data from inpatient and outpatient settings, or non-clinical data, such as client and family experiences of care, which are based on survey data. Two state measures--adherence to antipsychotic medications and housing status--pertain to treatment outcomes.

SAMHSA provided states and CCBHCs with the measure specifications for this demonstration. Several of these measures were originally developed for health plan or state-level reporting (for example, reporting by state Medicaid programs; see Table IV.1). SAMHSA adapted the measures for the demonstration to report performance for CCBHCs and the populations they serve.

Table IV.1. Required CCBHC- and state-reported quality measures				
Quality Measure Domains	Reported Measures	Clinic-reported or State-reported Measures	Potential Data Source(s)	Measure Steward <sup>a</sup>
Access to care/ timeliness of initial evaluation	Number/percent of new clients with initial evaluation provided within 10 business days, and mean number of days until initial evaluation for new clients (I-EVAL)	Clinic-reported	EHR, Electronic scheduler	SAMHSA
Depression screening and treatment	Child and adolescent major depressive disorder: Suicide risk assessment (SRA-BH-C)	Clinic-reported	EHR, Client records	AMA-PCPI
	Adult major depressive disorder: Suicide risk assessment (SRA-A)	Clinic-reported	EHR, Client records	AMA-PCPI
	Screening for clinical depression and follow-up plan (CDF-BH)	Clinic-reported	EHR, Client records	CMS
	Depression remission at 12 months (DEP-REM-12)	Clinic-reported	EHR, Client records, Client follow-up with standard measure (PHQ-9)	MNCM
Psychiatric medication management and adherence	Adherence to antipsychotic medications for individuals with schizophrenia (SAA-BH)	State-reported	Claims data/ encounter data	CMS
	Antidepressant medication management (AMM-BH)	State-reported	Claims data/ encounter data	NCQA
Follow-up and medication management for children with ADHD	Follow-up care for children prescribed ADHD medication (ADD-BH)	State-reported	Claims data/ encounter data	NCQA
Physical health care--weight and metabolic health screening	Adult BMI screening and follow-up (BMI-SF)	Clinic-reported	EHR, Client records	CMS
	Weight assessment for nutrition and physical activity for children/adolescents (WCC-BH)	Clinic-reported	EHR, Encounter data	NCQA
	Diabetes screening for people with schizophrenia or bipolar disorder who are using antipsychotic medications (SSD)	State-reported	Claims data/ encounter data	NCQA
Substance use screening and treatment	Tobacco use--screening and cessation intervention (TSC)	Clinic-reported	EHR, Encounter data	AMA-PCPI
	Unhealthy alcohol use--screening and brief counseling (ASC)	Clinic-reported	EHR, Client records	AMA-PCPI
	Initiation and engagement of AOD dependence treatment (IET-BH)	State-reported	EHR, Client records	NCQA

**Table IV.1 (continued)**

Quality Measure Domains	Reported Measures	Clinic-reported or State-reported Measures	Potential Data Source(s)	Measure Steward <sup>a</sup>
ED and hospital transitions	Follow-up after ED for mental health (FUM)	State-reported	Claims data/ encounter data	NCQA
	Follow-up after ED for alcohol or other dependence (FUA)	State-reported	Claims data/ encounter data	NCQA
	Follow-up after hospitalization for mental illness, ages 21+ (FUH-BH-A)	State-reported	Claims data/ encounter data	NCQA
	Follow-up after hospitalization for mental illness, ages 6-21 (FUH-BH-C)	State-reported	EHR, Client records, Client follow-up with standard measure (PHQ-9)	NCQA
	Plan all-cause readmission rate (PCR-BH)	State-reported	Claims data/ encounter data	NCQA
Client and family experience of care	Patient (adult) experience of care survey	State-reported	MHSIP Survey	SAMHSA
	Family experience of care survey	State-reported	MHSIP Survey	SAMHSA
Housing <sup>a</sup>	Housing status (residential status during the reporting period)	State-reported	URS	SAMHSA

Source: Substance Abuse and Mental Health Services Administration. “Criteria for the Demonstration Program to Improve Community Mental Health Centers and to Establish Certified Community Behavioral Health Clinics.” Rockville, MD: SAMHSA, 2016. Available at [https://www.samhsa.gov/sites/default/files/programs\\_campaigns/ccbhc-criteria.pdf](https://www.samhsa.gov/sites/default/files/programs_campaigns/ccbhc-criteria.pdf). Accessed July 26, 2019.

- a. Measure Steward is the organization that is responsible for maintaining documentation on the justification, evidence, specifications, use, and results of the measure.
- b. The Housing Status measure contained an error in the reporting form and only provided space for 1 set of numbers; thus, states were unable to report housing status at 2 time-points as intended in the technical specification. Five states reported housing status at 1 time-point during the entire reporting period; 1 state reported the combined total of housing status collected at 2 time-points during the reporting period; 1 state edited the form and reported housing status separately at 2 time-points; and 1 state did not complete this measure. Therefore, housing status among clients is reported separately from performance analysis and findings in this report. As such, we present data on housing status alongside caseload characteristics in Section B.

In addition to the required quality measures, states had the authority to require additional measures for participating CCBHCs, based upon state-specific areas of focus or identified needs of clients served by CCBHCs. Individual CCBHCs could also choose to collect data on additional measures based upon clinic-specific goals and areas of focus. Since states reported only on the required measures, we focus on those measures in this report.

## B. What were states' and CCBHCs' experiences in collecting and reporting data on the quality measures according to the prescribed specifications?

*CCBHCs encountered some early challenges to reporting the quality measures.* State officials reported very few issues with calculating the state-reported measures. Among the few states that reported challenges, these challenges were most related to acquiring data on client and family experience of care. In these states, officials attributed the difficulty acquiring such data to extracting information from existing data systems and low response rates. The remaining state-reported measures relied on claims and encounter data that states were accustomed to using for quality measure reporting, and all states had experience collecting data for similar measures to meet the SAMHSA Community Mental Health Block Grant reporting requirements.

In contrast, state officials and CCBHC staff indicated that many CCBHCs experienced early challenges with collecting data on the CCBHC-reported measures. In interviews with state officials during DY1, all states reported that CCBHCs experienced challenges with their EHR/health information technology (HIT) systems, particularly with respect to collecting and aggregating data needed to calculate and report quality measures (for example, querying databases to specify the correct numerators and denominators within a given timeframe; ensuring that fields were correctly specified in all records to allow for aggregate reports to be generated directly from the EHR/HIT system rather than having to transfer data to intermediate files to calculate the measures). Some clinics also made significant changes to their EHR or HIT systems to facilitate reporting, and these changes resulted in delays and other reporting challenges. For example, Pennsylvania officials noted that “some clinics went from paper records to a new EHR, other clinics were changing an EHR vendor, or staying with EHR but needing to modify the system to work for the CCBHC.” In interviews, several state officials noted that the measures and reporting processes were new to many CCBHCs. As one interviewee in the final round of telephone interviews stated, “This [the quality measure reporting] is all really brand new to most of the clinics.”

Challenges with respect to collecting and reporting specific CCBHC-reported quality measures were largely idiosyncratic across CCBHCs, with limited evidence suggesting that some quality measures were systematically more challenging than others. There were a few specific issues with measures:

- The standard reporting template that CCBHCs were to use to report the measures contained a formatting error for the Housing measure and did not require states to report housing status for CCBHC clients at two time-points as intended in the technical specification.
- States and CCBHCs reported that screening and follow-up for depression and suicidality was a challenge during DY1. These measures were the focus of states' technical assistance efforts to improve CCBHCs' capacity to collect and report the measures. In addition, data from CCBHC progress reports suggest that CCBHC-led staff trainings for risk assessment, suicide prevention, and suicide response increased from 2018 to 2019. Furthermore, some data suggest that challenges with collecting and reporting depression remission-related measures persisted into DY2. For example, in the final round of telephone interviews with state officials, interviewees from Minnesota and Oklahoma reported that CCBHCs in their states continued to experience some challenges with collecting information on depression remission. In narrative sections of clinic quality measure reports, this was attributed to challenges with extracting follow-up data from EHRs and/or uncertainty regarding operational definitions of remission based on specific screening tools (e.g., appropriate cut-off scores used to define remission on the depression screener).

***Few CCBHCs and states reported major deviations from the measure specifications.*** Based on the narrative information that states and CCBHCs submitted in the reporting templates, few clinics and states reported deviations from the measure specifications that were substantial enough to require us to exclude the clinic from our analysis of measure performance.<sup>9</sup> We excluded a clinic from our analysis of a specific measure when: (1) the timeframe of the measurement period did not align with the specification (this most often was the result of the clinics’ inability to capture pre-demonstration data for measures that include a look-back period or time window in the measure specification [e.g., past 30 days]); (2) the population included in the denominator did not align with the specification; or (3) the clinic did not fully implement the process of care at the beginning of the first year of the demonstration (for example, if a clinic did not record body mass index (BMI) until the second half of the measurement period) (**Table IV.2**). We included the data in the analysis when the modification to the measure specification was minor, but the clinic otherwise adhered to the specification (for example, the clinic calculated the measure using paper records or other workarounds to overcome limitations of EHRs). We do not report state-level performance on a measure when the aggregate state denominator in DY1 was less than 30 individuals. For example, for depression remission at 12 months, seven New Jersey clinics were excluded from analyses because the aggregate denominator size fell below our minimum threshold of 30 individuals. Finally, Nevada submitted five of the 22 required measures in DY1; therefore, Nevada is excluded from the analysis of 17 quality measures.

<b>Table IV.2. Quality measure data excluded from analysis due to deviation from measure specification</b>	
<b>Measures</b>	<b>Exclusions of quality measure data from analysis</b>
Initial evaluation for new clients (I-EVAL)	1 Minnesota clinic and 1 Pennsylvania clinic due to deviation from specification look-back period
Adult BMI screening and follow-up (BMI-SF)	1 Pennsylvania clinic due to deviation from specification look-back period
Weight assessment and counseling for nutrition and physical activity for children/adolescents (WCC-BH)	1 Nevada clinic and 1 Pennsylvania clinic due to deviation from specification in required data collection and look-back period
Tobacco use--screening and cessation intervention (TSC)	1 Pennsylvania clinic due to deviation from specification in required data collection and look-back period
Unhealthy alcohol use--screening and brief counseling (ASC)	2 Pennsylvania clinics due to deviation from specification in required data collection and look-back period
Screening for clinical depression and follow-up plan (CDF-BH)	1 Oregon clinic due to deviation from specification in required data collection
Source: DY1 CCBHC Quality Measure Reports.	

### C. What were the characteristics of CCBHC caseloads during DY1?

In this section, we describe the characteristics of clients served by CCBHCs based on the information included in the quality measure reporting template. These demographic characteristics may help to contextualize performance on the measures within each state.

***CCBHC caseloads varied across demonstration states.*** CCBHC quality measure performance in DY1 was based on data from 309,322 clients across all demonstration states and ranged from 4,324 clients in

<sup>9</sup> Section E of the Quality Measure Reports “Adherence to Measure Specification” asks “Did your calculation of the measure deviate from the measure specification in any way? If yes, explain how the calculation differed and why.” We reviewed responses to this question.

Nevada to 121,787 clients in Missouri (Table IV.3). It is important to note when interpreting the CCBHC-wide measure performance that Missouri accounted for over a third of all CCBHC clients represented in the measures. Appendix D includes additional data on CCBHC caseload characteristics of each state.

- Across states, 23 percent of CCBHC clients were children or adolescents. However, this ranged from 8 percent of the total DY1 caseload in Nevada to 27 percent of the state caseload in Minnesota (Table IV.3).
- Across states, 52 percent of CCBHC clients were female; this ranged from 42 percent in Nevada to 56 percent in New Jersey (Table IV.3).
- Across states, 11 percent of CCBHC clients were Hispanic or Latino (ranging from 5 percent in Minnesota and Missouri to 41 percent in Oklahoma) and 12 percent were African American (ranging from 3 percent in Oregon to 22 percent in Pennsylvania). However, Hispanic and Latino ethnicity was “unknown” for 15 percent of clients and race was “unknown” for 9 percent of clients (as summarized in Table IV.4, some states had higher rates of “unknown” race and/or ethnicity).
- Across states, 54 percent of CCBHC clients were Medicaid beneficiaries, 8 percent were enrolled in both Medicaid and Medicare (“dually eligible” beneficiaries), 16 percent were commercially insured, and 15 percent were uninsured (Table IV.5). However, there was considerable variation in insurance status across states. For example, Pennsylvania and New York had lower rates of uninsured clients (3 percent and 4 percent, respectively), whereas Oklahoma had a considerably higher rate of uninsured clients (36 percent).

**Table IV.3. Age and gender of clients receiving services from CCBHCs, DY1**

	Denominator	Child/ adolescent (ages 0-17)	Adult (ages 18+)	Female	Male
Total	309,322	23%	77%	52%	48%
MN	23,027	27%	73%	51%	49%
MO	121,787	24%	76%	53%	47%
NJ	17,851	19%	81%	56%	44%
NV	4,324	8%	92%	42%	57%
NY	49,903	22%	78%	48%	52%
OK	20,610	25%	75%	52%	48%
OR	52,911	24%	76%	52%	48%
PA	18,909	20%	80%	50%	50%

Source: DY1 Quality Measure Reports.

**Table IV.4. Ethnicity and race of clients receiving services from CCBHCs, DY1**

	Ethnicity				Race						
	Denominator	Hispanic or Latino	Not Hispanic or Latino	Unknown	White	Black or African American	American Indian/Alaskan Native	Asian	Native Hawaiian/Pacific Islander	More than one race	Unknown
Total	309,322	11%	74%	15%	71%	12%	2%	1%	<1%	5%	9%
MN	23,027	5%	64%	30%	69%	12%	2%	4%	<1%	5%	8%
MO	121,787	5%	75%	19%	80%	10%	1%	<1%	<1%	2%	6%
NJ	17,851	17%	67%	16%	55%	15%	0%	3%	<1%	6%	19%
NV	4,324	32%	60%	8%	45%	21%	1%	2%	1%	25%	5%
NY	49,903	17%	78%	4%	62%	21%	1%	1%	<1%	9%	6%
OK	20,610	41%	57%	2%	72%	13%	8%	1%	<1%	5%	1%
OR	52,911	8%	76%	16%	71%	3%	2%	1%	<1%	6%	16%
PA	18,909	9%	84%	6%	66%	22%	<1%	<1%	<1%	2%	9%

Source: DY1 Quality Measure Reports.

**Table IV.5. Insurance status of clients receiving services from CCBHCs, DY1**

	Denominator	Medicaid	CHIP	Medicare	Dually eligible	VHA/TRICARE	Commercially insured	Uninsured	Other
Total	309,322	54%	2%	5%	8%	1%	16%	15%	4%
MN	23,027	53%	0%	6%	5%	<1%	20%	5%	11%
MO	121,787	46%	1%	4%	10%	1%	17%	18%	2%
NJ	17,851	52%	1%	9%	7%	<1%	23%	5%	2%
NV	4,324	66%	0%	<1%	1%	<1%	6%	17%	9%
NY	49,903	62%	1%	4%	7%	<1%	19%	4%	2%
OK	20,610	41%	0%	4%	9%	<1%	9%	36%	1%
OR	52,911	62%	4%	3%	4%	1%	9%	14%	3%
PA	18,909	61%	<1%	5%	12%	<1%	15%	3%	5%

Source: DY1 Quality Measure Reports.



*States varied widely with respect to CCBHC client housing status.* In addition, as part of quality measure reporting requirements, states were to report on client housing status. Due to an error in the reporting form, states did not provide information on housing status as intended in the technical specification, which precludes examination of changes in housing status over time.<sup>10</sup> Overall, approximately 67 percent of CCBHC clients were living in a private residence but this varied across states (**Table IV.6**). For example, approximately 48 percent of clients in Minnesota were residing in a private residence, compared to approximately 93 percent of clients in New Jersey. Housing status was missing for 20 percent or more of clients in four states.

Table IV.6. Housing status among clients receiving services from CCBHCs, DY1								
	Denominator	Private residence	Foster home	Residential or institutional treatment	Jail (correctional facility)	Homeless (shelter)	Other	Not available
Total	231,862	67%	1%	3%	1%	3%	4%	21%
MN	35,803	48%	1%	1%	<1%	3%	3%	44%
MO	53,119	64%	1%	3%	<1%	3%	7%	21%
NJ	13,868	93%	0%	2%	0%	2%	1%	2%
NY	49,903	81%	<1%	4%	<1%	3%	3%	7%
OK	16,085	79%	2%	2%	1%	5%	8%	4%
OR	43,284	55%	3%	5%	1%	5%	3%	28%
PA	19,800	67%	<1%	5%	1%	1%	1%	24%

Source: DY1 Quality Measure Reports.

Notes: CCBHCs collected housing status among *all clients* regardless of insurance status. As a result, readers should not interpret the findings in this table to reflect the delivery of CCBHC services to Medicaid beneficiaries residing in jails or prisons or an Institution for Mental Diseases. States varied in their measurement periods for this measure. The earliest measurement period date was January 1, 2017, and the latest measurement period date was June 30, 2018. Data in the reporting form do not specify exactly when the data were collected. **Appendix D** includes details on within-state variability in CCBHC client housing characteristics.

#### D. How did CCBHCs perform on the quality measures during DY1?

In this section, we: (1) summarize CCBHC performance across the nine measurement domains; (2) describe variation in quality of care across states; and (3) to the extent possible, compare CCBHC performance to similar populations, settings, and/or national averages.<sup>11</sup> We aggregated measure performance across all clinics within each state and across all clinics in the demonstration. When possible

<sup>10</sup> The Housing Status measure fields in the reporting form had an error and only provided space for one set of numbers; thus, states were unable to report housing status at two time-points as intended in the technical specification. Five states reported housing status at one time-point during the reporting period; one state reported the combined total of housing status at two time-points during the reporting period; one state edited the form and reported housing status separately at two time-points; and one state did not complete this measure.

<sup>11</sup> Centers for Medicare & Medicaid Services. “2019 Annual Reporting on the Quality of Care for Adults in Medicaid (FFY 2018).” Baltimore, MD: CMS. Available: <https://www.medicare.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/adult-core-set/index.html>; and the “2019 Annual Reporting on the Quality of Care for Children in Medicaid (FFY 2018).” Available: <https://www.medicare.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/childrens-health-care-quality-measures/index.html>. We benchmarked CCBHC performance to FFY 2018 Medicaid Core Set measures because FFY 2018 most closely aligned with the DY1 time period of spring 2017 to spring 2018.

and appropriate, we offer potential explanations for measure performance based on the information collected from our interviews and site visits or from the clinic progress reports.

***Limits on the interpretation of measure performance.*** Where possible, we compared performance on the measures among CCBHC populations with performance on the same or similar measures from the following sources: (1) state-level Medicaid Core Set measures; (2) Medicare Merit-based Incentive Payment System (MIPS) measures; and (3) Minnesota Community Measurement (MNCM). While these sources may provide some context for interpreting performance on the measures among CCBHC populations, there are several limitations to these comparisons and readers should not necessarily interpret differences in CCBHC performance relative to these sources as evidence of CCBHC success or failure.

First, the populations reflected by the CCBHC measures often differ from the populations reflected in the comparison source. For example, our comparison for the depression remission measure includes a state-wide population of individuals who receive treatment in a wide range of specialty and primary care settings. The state-wide population may be more heterogeneous than the CCBHC population in initial depression severity and other characteristics that account for differences in measure performance. We do not have individual-level data to compare across client populations or to statistically adjust for differences in client populations. Likewise, MIPS measures are reported using clinician-reported data from providers who exceed certain criteria (“low-volume threshold”) with respect to Medicare-covered services that they provide and the number of Medicare patients that they serve.<sup>12</sup> However, Medicare beneficiaries (people age 65 or older; people under age 65 with certain disabilities; people with end-stage renal disease) may differ in key ways from CCBHC client populations. Such differences in the underlying populations represented by the measures may account for some differences in measure performance.

Second, states vary widely with respect to the measure denominators (sample sizes of eligible clients or visits on which performance is based). Although we do not report state performance on measures if the denominator size is less than 30 clients, precision in measure performance is likely lower for states with smaller denominators.

Finally, there are some differences between some CCBHC measure specifications and existing benchmarks. For example, following SAMHSA’s measure specifications, demonstration states reported the antidepressant medication management measure for two age groups: 18-64 and 65 and over. In contrast, the comparable Medicaid Core Set measure specifies a single age group (ages 18 and older) (AMM-BH). We combined rates across these age groups to facilitate comparisons to the Medicaid Core Set measures, but this comparison is imperfect. In addition, unlike Medicaid Core Set measures or other benchmarks, the CCBHC measure specifications did not change over time.<sup>13</sup> As such, some differences in performance could be attributable to a lack of alignment between the CCBHC and benchmark specifications. However, this issue would presumably apply across all states.

## **1. Access to care/timeliness of initial evaluation**

Timeliness of initial evaluation is a critical component of access to care. With respect to psychiatric evaluation, long wait times are associated with lower retention and lower client-reported satisfaction with

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<sup>12</sup>Available: <https://qpp.cms.gov/mips/overview>.

<sup>13</sup>Centers for Medicare & Medicaid Services. “Criteria for Using the Child and Adult Core Set Measures to Assess Trends in State Performance in Medicaid and the Children’s Health Insurance Program: Methods Brief.” Baltimore, MD: CMS; 2019. Retrieved from <https://www.medicaid.gov/medicaid/quality-of-care/downloads/performance-measurement/methods-brief.pdf>.

care, which can lead to poorer client engagement and client outcomes.<sup>14,15,16</sup> One study conducted in Ohio in which researchers--posing as parents--called randomly selected psychiatric offices to schedule appointments for a hypothetical adolescent client reported a median wait-time for an initial appointment was 50 days, with a range of 22-75 days.<sup>17</sup> This CCBHC-reported measure includes two components: (1) the percentage of new consumers provided an initial evaluation within ten business days of first contact with the clinic; and (2) the mean number of days until that initial evaluation for new consumers.

- Across states, about 70 percent of new CCBHC clients received an initial evaluation within ten days of first contact (child/adolescent clients: 69 percent; adult clients: 71 percent), ranging from 61 percent in Minnesota to 78 percent in Nevada (Table IV.7).
- Time to initial evaluation averaged about nine days for children/adolescents and 8.2 days for adults, with greater heterogeneity among adult clients (range: 4.3-20.3 days across states) versus children/adolescents (range: 6.8-11.0 days across states). Compared to other states, Nevada reported slightly shorter average wait-times for both child/adolescent (6.7 days) and adult clients (4.3 days). In contrast, Minnesota had slightly longer average wait-times for both client groups (child/adolescent: 10.0 days; adult: 20.3 days).
- We did not find national or state-level comparisons for these measures. However, overall, approximately 30 percent of new CCBHC clients did not receive an initial evaluation within ten days, indicating room for improvement.

State officials and clinics reported making changes to facilitate timely evaluations. Interviewees in five states reported that most or all CCBHCs had moved to open-access scheduling, which enables all clients to receive an appointment on the day they make the request.

State officials from Minnesota noted that CCBHCs originally intended to provide clients with an initial assessment within ten days and then conduct a more comprehensive assessment within 60 days. Minnesota state officials expected CCBHC clients to favor this approach, as it would allow time for providers and clients to build rapport before completing a full assessment that involved discussing sensitive topics. However, they discovered that clients strongly preferred to complete all the assessments at once, during an initial appointment. As one official stated, “trying to convince clients to come into the clinic for evaluation twice or more was a hard sell, particularly for clinics in remote areas where clients live far from their clinic. The clients wanted to come in for 2-3 hours and get it all done at once. This was a surprise.” Such client preferences for more comprehensive initial appointments contributed to scheduling challenges, which affected CCBHCs’ capacity to provide initial evaluations within the ten-day target window. In response to these findings, the state has since created a workgroup to explore ways to improve the assessment process to better meet clients’ preferences and needs while minimizing time to initial evaluation.

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<sup>14</sup> Redko, C., Rapp, R.C., & Carlson, R.G. (2006). Waiting time as a barrier to treatment entry: Perceptions of substance users. *Journal of Drug Issues*, 36(4), 831-852. doi.org/10.1177/002204260603600404.

<sup>15</sup> Ho, C.P., Zinski, A., Fogger, S.A., Peters, J.D., Westfall, A.O., Mugavero, M.J., Lawrence, S.T., et al. (2015). Factors associated with missed psychiatry visits in an urban HIV clinic. *AIDS and Behavior*, 19(8), 1423-1429.

<sup>16</sup> Beetham, T., Saloner, B., Wakeman, S.E., Gaye, M., & Barnett, M.L. (2019). Access to office-based buprenorphine treatment in areas with high rates of opioid-related mortality: An audit study. *Annals of Internal Medicine*, 171(1), 1-9.

<sup>17</sup> Steinman, K.J., Shoben, A.B., Dembe, A.E. et al. (2015). How long do adolescents wait for psychiatry appointments? *Community Mental Health Journal*, 51, 782-789. doi.org/10.1007/s10597-015-9897-x.

Table IV.7. Access to care/timeliness of initial evaluation: Measure performance						
	Initial Evaluation for New Clients Child/Adolescent (I-EVAL)			Initial Evaluation for New Clients Adult (I-EVAL)		
	Denominator	% within 10 days	Average # days	Denominator	% within 10 days	Average # days
Aggregate	18,662	69%	8.9	99,052	71%	8.2
MN	1,536	61%	10.0	10,923	40%	20.3
MO	6,830	69%	11.0	31,177	70%	10.1
NJ	1,702	68%	11.0	10,715	81%	7.5
NV	182	78%	6.8	1,596	89%	4.3
NY	3,236	71%	9.2	16,922	82%	5.9
OK	1,787	65%	7.9	10,684	71%	4.9
OR	2,660	67%	7.8	11,793	66%	8.0
PA	729	69%	7.5	5,242	72%	4.9

Source: DY1 CCBHC Quality Measure Reports.

Note: I-EVAL excludes 1 Minnesota clinic and 1 Pennsylvania clinic. Lower average number of days is better.

## 2. Depression and suicidality screening and follow-up

Depression is among the most prevalent mental health conditions among adolescents and adults<sup>18</sup> and is associated with a host of negative outcomes, including increased risk of suicide thoughts/ideation, suicide attempts, and death by suicide.<sup>19</sup> Numerous interventions have been shown to successfully treat depression, and screening for depression symptoms is critical for identifying individuals who may benefit from depression treatment, ensuring that individuals receive timely and appropriate care, and monitoring treatment response.<sup>20</sup> Similarly, assessment of suicide risk--particularly among high-risk groups, such as clients with major depressive disorder--is important for care planning and implementing targeted prevention strategies to reduce suicide.<sup>21,22</sup>

- Across states, CCBHCs reported they screened 51 percent of clients (adults and children/adolescents) for depression and, if the screening was positive, documented a follow-up plan (**Table IV.8**). This is notably higher than the MIPS 2018 Benchmark Rate for CDF-BH (28 percent),<sup>23</sup> although direct comparisons should be made with caution due to differences in client

<sup>18</sup> Substance Abuse and Mental Health Services Administration. “Key substance use and mental health indicators in the United States: Results from the 2019 National Survey on Drug Use and Health” (HHS Publication No. PEP20-07-01-001, NSDUH Series H-55). Rockville, MD: Center for Behavioral Health Statistics and Quality, SAMHSA; 2020. Available: <https://www.samhsa.gov/data/>. Accessed October 15, 2020.

<sup>19</sup> National Institute of Mental Health. “Suicide prevention.” Bethesda, MD: NIMH.

<https://www.nimh.nih.gov/health/topics/suicide-prevention/index.shtml>. Accessed October 15, 2020.

<sup>20</sup> American Psychiatric Association. “Practice guideline for the treatment of patients with major depressive disorder. 3rd ed.” Arlington VA: American Psychiatric Association; 2010.

<sup>21</sup> Velupillai S, Hadlaczky G, Baca-Garcia E, et al. Risk Assessment Tools and Data-Driven Approaches for Predicting and Preventing Suicidal Behavior. *Front Psychiatry*. 2019; 10: 36. doi:10.3389/fpsy.2019.00036.

<sup>22</sup> WHO. Preventing Suicide: A Global Imperative. (2014). Available: [https://www.who.int/mental\\_health/suicide-prevention/world\\_report\\_2014/en/](https://www.who.int/mental_health/suicide-prevention/world_report_2014/en/). Accessed October 15, 2015.

<sup>23</sup> Centers for Medicare & Medicaid Services. “Merit-based Incentive Payment System (MIPS) 2018 Quality Benchmarks within the CMS Quality Payment Program.” Baltimore, MD: CMS. Available: <https://qpp-cm-prod-content.s3.amazonaws.com/uploads/162/2018%20Quality%20Benchmarks.zip>. Accessed October 15, 2020.

populations. Performance on this measure varied considerably across states, ranging from 24 percent in Minnesota to 79 percent in Oklahoma.

- Across states, 7 percent of adults had evidence of depression remission (Patient Health Questionnaire [PHQ]-9 score of less than 5) within 12 months after their index visit (that is, the visit on which depression was first documented), ranging from 2 percent to 14 percent across states (**Table IV.8**). This average performance rate across states is the same as state-level data collected in Minnesota by MNCM (7 percent)<sup>24</sup> and similar to findings from populations enrolled in Accountable Care Organizations (ACOs) participating in the Medicare Share Savings Program (8.3 percent).<sup>25</sup> However, both of these comparisons are imperfect as they measure changes among state-wide or ACO populations rather than only individuals receiving care in community behavioral health centers. The low rates on this measure may reflect challenges collecting the 12-month follow-up data, as demonstrating improvement requires both keeping the client engaged in care and conducting the follow-up screening. Notably, Minnesota CCBCHs showed slightly higher performance on this measure (14 percent) compared to other states, which could be attributable to the state’s experience reporting this measure.

	<b>Depression Screening and Follow-up Plan (CDF-BH)</b>		<b>Depression Remission (DEP-REM-12)</b>	
	<b>Denominator</b>	<b>%</b>	<b>Denominator</b>	<b>%</b>
Aggregate	107,780	51%	15,983	7%
MN	12,602	24%	1,103	14%
MO	21,349	49%	3,841	7%
NJ	5,625	47%	--	--
NY	25,826	58%	3,579	10%
OK	11,295	79%	1,330	2%
OR	22,617	51%	5,360	8%
PA	8,466	35%	761	6%

Source: DY1 CCBHC Quality Measure Reports.

Notes: CDF-BH measures depression screening and follow-up among adults and children/adolescents. The measure does not capture different rates for adults versus children/adolescents. CDF-BH excludes 1 Oregon clinic. DEP-REM-12 excludes 7 New Jersey clinics. Nevada did not submit the CDF-BH and DEP-REM-12 measures in DY1.

- Across states, CCBHCs documented that they had conducted a suicide risk assessment (SRA) in 51 percent of visits with a child or adolescent with major depressive disorder. CCBHCs documented that they had conducted a SRA for 60 percent of adults with major depressive disorder during the visit in which they identified a new depressive episode (**Table IV.9**). Performance on these quality measures is higher than that observed in MIPS data for

<sup>24</sup> Minnesota Community Measurement 2018 Minnesota Health Care Quality Report. Retrieved from <https://mncm.org/wp-content/uploads/2020/01/2018-Health-Care-Quality-Report-Final.pdf>.

<sup>25</sup> Counts, N.Z., Wrenn, G., & Muhlestein, D. (2019). Accountable care organizations’ performance in depression: Lessons for value-based payment and behavioral health. *Journal of General Internal Medicine*, 34(12), 2898-2900. doi:10.1007/s11606-019-05047-x.

child/adolescent clients (MIPS 2019 Benchmark Rate for SRA-BH-C: 23 percent)<sup>26</sup> and slightly lower than rates for adult clients (MIPS 2018 Benchmark Rate for SRA-A: 66 percent). (The SRA measure is slightly different for the child/adolescent age group and for adults. For children/adolescents, the assessment is required at each visit if the patient has a diagnosis of depression. For adults, the assessment is required at each visit during which a *new* depressive episode is identified).

	Suicide Risk Assessment Child/Adolescent (SRA-BH-C)		Suicide Risk Assessment Adult (SRA-A)	
	Denominator	%	Denominator	%
Aggregate	56,864	51%	141,890	60%
MN	8,537	18%	22,529	48%
MO	14,495	75%	42,864	78%
NJ	4,394	82%	19,419	35%
NY	14,463	61%	7,271	86%
OK	911	50%	5,534	64%
OR	7,975	33%	26,009	45%
PA	6,089	36%	18,264	66%

Source: DY1 CCBHC Quality Measure Reports.  
Notes: Nevada did not submit the SRA-A and SRA-BH-C measures in DY1.

### 3. Psychiatric medication management and adherence

Adherence to an appropriately managed psychiatric medication regimen is associated with improved client outcomes.<sup>27,28,29</sup> For some people, medication non-adherence is a recurring issue, and it increases the risk for relapse and hospitalization.<sup>30</sup>

- Across states, 54 percent of adult CCBHC clients with major depression who received antidepressants continued their antidepressants for at least 12 weeks, and 40 percent continued for at least six months (**Table IV.10**). These rates were slightly higher than Medicaid Core Set measures in states where comparisons were available.

<sup>26</sup> Centers for Medicare & Medicaid Services. “Merit-based Incentive Payment System (MIPS) 2019 Quality Benchmarks within the CMS Quality Payment Program.” Baltimore, MD: CMS. Available: <https://qpp-cm-prod-content.s3.amazonaws.com/uploads/342/2019%20MIPS%20Quality%20Benchmarks.zip>. Accessed October 15, 2020. We used 2019 data because SRA-BH-C performance was not available for 2018.

<sup>27</sup> National Committee for Quality Assurance. “Adherence to antipsychotic medications for individuals with schizophrenia.” Washington, DC: NCQA. Available: <https://www.ncqa.org/hedis/measures/adherence-to-antipsychotic-medications-for-individuals-with-schizophrenia/>.

<sup>28</sup> Lacro, J.P., Dunn, L.B., Dolder, C.R., Leckband, S.G., & Jeste, D.V. (2002). Prevalence of and risk factors for medication nonadherence in patients with schizophrenia: A comprehensive review of recent literature. *Journal of Clinical Psychiatry*, 63(10), 892-909. doi.org/10.4088/JCP.v63n1007.

<sup>29</sup> Julius, R.J., Novitsky, M.A.Jr., & Dubin, W.R. (2009). Medication adherence: a review of the literature and implications for clinical practice. *Journal of Psychiatric Practice*, 15(1), 34-44. doi:10.1097/01.pra.0000344917.43780.77.

<sup>30</sup> Hassan, M., & Lage, M.J. (2009). Risk of rehospitalization among bipolar disorder patients who are nonadherent to antipsychotic therapy after hospital discharge. *American Journal of Health-System Pharmacy*, 66(4), 358-365.



- Across states, 53 percent of adult CCBHC clients with schizophrenia who received antipsychotic medications continued these medications for at least 80 percent of the days they were enrolled in Medicaid during the measurement year, which was below the Medicaid benchmark in all states where comparisons were available (Table IV.10).

Denominators were small for some measures and varied considerably across states. For example, for adherence to antipsychotic medications for adults with schizophrenia (SAA), the overall denominator accounts for approximately 4 percent of all CCBHC clients and approximately 5 percent of adult CCBHC clients in DY1. By comparison, based on national URS data from FY 2017 approximately 12 percent of adult community mental health care consumers had a diagnosis of schizophrenia or a related disorder.<sup>31</sup> Although we would have expected the denominator to be larger given that CCBHCs serve individuals with SMI, we do not have data (e.g., on consumer diagnoses) to explain this pattern of findings.

<b>Table IV.10. Psychiatric medication and adherence: measure performance</b>									
	<b>Adherence to Antipsychotic Medications for Clients with Schizophrenia Adult (SAA-BH)</b>			<b>Antidepressant Medication Management: Acute Phase Adult (AMM-BH Acute)</b>			<b>Antidepressant Medication Management: Continuation Phase Adult (AMM-BH Cont.)</b>		
	<b>Denominator</b>	<b>%</b>	<b>Core Set benchmark</b>	<b>Denominator</b>	<b>%</b>	<b>Core Set benchmark</b>	<b>Denominator</b>	<b>%</b>	<b>Core Set benchmark</b>
Aggregate	10,973	53%	59%	17,053	54%	50%	17,053	40%	34%
MN	735	60%	--	1,095	47%	53%	1,095	28%	39%
MO	4,477	67%	65%	9,533	67%	44%	9,533	60%	27%
NJ	123	49%	--	1,430	69%	--	1,430	50%	--
NY	1,930	52%	63%	2,643	55%	52%	2,643	41%	38%
OK	538	33%	--	446	44%	--	446	41%	--
OR	1,570	61%	--	942	49%	--	942	30%	--
PA	1,600	46%	69%	964	47%	51%	964	27%	37%

Source: DY1 CCBHC Quality Measure Reports.  
 Note: Nevada did not submit the SAA-BH and AMM-BH measures in DY1.  
 Benchmarks reported are from the 2019 Annual Reporting on the Quality of Care for Adults in Medicaid (FFY 2018), available at <https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/adult-core-set/index.html>. Benchmarks from this source are not available for all states, as reflected by blank cells in the table.

#### 4. Follow-up and medication management for children with ADHD

ADHD, characterized by hyperactivity, impulsiveness, and an inability to sustain attention or concentration,<sup>32</sup> is one of the most common mental health conditions among children and adolescents, affecting approximately 11 percent of United States children. Medication is an important and commonly implemented component of ADHD treatment, and follow-up care for children who are prescribed medication for ADHD is important for ensuring care is optimal.

<sup>31</sup> Substance Abuse and Mental Health Services Administration. Uniform Reporting System. Available: <https://www.samhsa.gov/data/data-we-collect/urs-uniform-reporting-system>.

<sup>32</sup> Visser, S.N., M.L. Danielson, R.H. Bitsko, J.R. Holbrook, M.D. Kogan, R.M. Ghandour, ... & S.J. Blumberg. 2014. Trends in the parent-report of health care provider-diagnosed and medicated attention-deficit/hyperactivity disorder: United States, 2003-2011. *Journal of the American Academy of Child & Adolescent Psychiatry*, 53(1), 34-46.

- Across states, 67 percent of children/adolescents with ADHD who received care from CCBHCs had a follow-up visit with a provider with prescribing authority after the initiation of an ADHD medication (initiation phase), and 85 percent met the initiation phase requirement and had at least two follow-up visits with any provider in the first nine months after initiating a new ADHD medication (continuation phase) (Table IV.11). These rates exceeded Medicaid Core Set benchmarks in states where comparisons were available, with one exception: performance on the initiation phase of the measure was lower than the benchmark in New Jersey.
- In most states, the state-level denominator for these measures ranged from 80 to 359 children/adolescents (the denominator was substantially larger in Missouri). The overall sample (N = 3,029) of children/adolescents included in the denominator for the measure represented 4 percent of all child/adolescent clients in DY1, and Missouri accounted for over half of the denominator. We would have expected the denominator to represent a larger proportion of children/adolescents given the prevalence of ADHD in this population: approximately 8 percent of children ages 2-17 in the United States had a current diagnosis of ADHD based on data from the 2016 National Survey of Children’s Health.<sup>33</sup> However, various measure inclusion and exclusion criteria could have reduced the number of children/adolescents included in the measure (e.g., due to inclusion of only individuals with “new” prescription events within the CCBHC) or other factors could have contributed to the denominator size.

**Table IV.11. Follow-up care for children prescribed ADHD medication: Measure performance**

	Follow-up Care for Children Prescribed ADHD Medication: Initiation (ADD-BH Int.)			Follow-up Care for Children Prescribed ADHD Medication: Continuation (ADD-BH Cont.)		
	Denominator	%	Core Set benchmark	Denominator	%	Core Set benchmark
Aggregate	3,023	67%	49%	1,109	85%	59%
MN	190	77%	--	93	83%	--
MO	1,605	62%	--	638	83%	--
NJ	359	15%	33%	35	97%	36%
NY	349	75%	58%	128	77%	66%
OK	80	80%	65%	40	78%	64%
OR	244	83%	64%	104	90%	75%
PA	196	79%	42%	71	89%	49%

Source: DY1 Quality Measure Reports.

Note: Nevada did not submit the ADD-BH measure in DY1. Denominators for the continuation measure reflect the subset of individuals who initiated treatment at the CCBHC; this subset is therefore systematically smaller than initiation denominators. Benchmarks reported are from the 2019 Annual Reporting on the Quality of Care for Children in Medicaid (FFY 2018), available at <https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/childrens-health-care-quality-measures/index.html>.

<sup>33</sup> Melissa L. Danielson, Rebecca H. Bitsko, Reem M. Ghandour, Joseph R. Holbrook, Michael D. Kogan & Stephen J. Blumberg. Prevalence of Parent-Reported ADHD Diagnosis and Associated Treatment Among U.S. Children and Adolescents, 2016, *Journal of Clinical Child & Adolescent Psychology*, 2018; 47: 2, 199-212



## 5. Physical health care--weight and metabolic health screening

Obesity and metabolic conditions such as diabetes are important risk factors for morbidity and mortality and are common side effects of psychiatric medications.<sup>34</sup> Among individuals with diabetes, those diagnosed with schizophrenia or bipolar disorder have a 50 percent higher risk of death than those without SMI.<sup>35</sup> BMI is the measure most commonly used to identify the proportion of a population that is overweight and obese. Careful monitoring of BMI can help health care providers identify adults who are at risk, provide focused advice and services to help them reach and maintain a healthier weight,<sup>36</sup> and adjust psychiatric medications that might be contributing to the problem. Diabetes screening is important for anyone with schizophrenia or bipolar disorder, and the added risk of metabolic conditions resulting from the use of antipsychotic medications contributes to the need to screen people with schizophrenia for diabetes.<sup>37</sup>

- Across states, CCBHCs documented BMI screening and follow-up (if BMI was outside of normal parameters) for 50 percent of adult clients (**Table IV.12**), which was slightly higher compared to the MIPS 2018 benchmark rate of 45 percent (however, comparisons to MIPS should be made with caution due to differences in client populations).<sup>38</sup> State-level performance ranged from 34 percent to 65 percent across states.
- Across states, CCBHCs documented BMI percentile for 53 percent of child/adolescent clients. State-level performance ranged from 30 percent to 85 percent across states. State-level performance was lower than the Medicaid Core Set measure performance for all states where comparisons were available with the exception of Oklahoma (however, it is unclear why the Medicaid Core Set performance in Oklahoma is substantially lower than other states).
- Across states, 67 percent of CCBHC clients with schizophrenia or bipolar disorder who received antipsychotic medications had a claim or encounter that indicated the receipt of diabetes screening during the year. State-level performance ranged from 68 percent to 82 percent across states. State-level performance was lower than the Medicaid Core Set measure performance for all states where comparisons were available, except for New York, which was within one percentage point of the Medicare Core Set measure.

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<sup>34</sup> McEvoy, J. P., Meyer, J. M., Goff, D. C., Nasrallah, H. A., Davis, S. M., Sullivan, L., ... & Lieberman, J. A. (2005). Prevalence of the metabolic syndrome in patients with schizophrenia: Baseline results from the Clinical antipsychotic Trials of Intervention Effectiveness (CATIE) schizophrenia trial and comparison with national estimates from NHANES III. *Schizophrenia Research*, 80(1), 19-32.

<sup>35</sup> Vinogradova, Y., Coupland, C., Hippisley-Cox, J., Whyte, S., & Penny, C. (2010). Effects of severe mental illness on survival of people with diabetes. *British Journal of Psychiatry*, 197(4), 272-277. doi:10.1192/bjp.bp.109.074674.

<sup>36</sup> National Committee for Quality Assurance. "Adult BMI Assessment." Available: <https://www.ncqa.org/hedis/measures/adult-bmi-assessment/>.

<sup>37</sup> National Committee for Quality Assurance. "HEDIS 2016: Healthcare Effectiveness Data and Information Set. Vol. 1." Washington, DC: NCQA; 2015.

<sup>38</sup> Centers for Medicare & Medicaid Services. "Merit-based Incentive Payment System (MIPS) 2018 Quality Benchmarks within the CMS Quality Payment Program." Baltimore, MD: CMS. Available: <https://qpp-cm-prod-content.s3.amazonaws.com/uploads/162/2018%20Quality%20Benchmarks.zip>. Accessed October 15, 2020.

Table IV.12. Weight and metabolic health screening: measure performance								
	BMI Screening and Follow-up Plan Adult (BMI-SF)		Weight Assessment and Counseling Child/Adolescent (WCC-BH)			Diabetes Screening for Clients with Schizophrenia or Bipolar Taking Antipsychotic Medications (SSD)		
	Denominator	%	Denominator	%	Core Set benchmark	Denominator	%	Core Set benchmark
Aggregate	144,951	50%	44,567	53%	57%	18,851	67%	80%
MN	11,559	34%	5,769	30%	--	1,223	77%	--
MO	31,404	49%	8,869	85%	--	8,434	74%	84%
NJ	9,795	48%	3,093	49%	78%	977	68%	--
NV <sup>a</sup>	410	51%	44	32%	40%	--	--	79%
NY	38,232	57%	8,704	61%	84%	3,635	79%	80%
OK	15,237	65%	5,014	54%	5% <sup>b</sup>	647	72%	--
OR	27,226	42%	10,123	54%	--	2,220	80%	--
PA	11,088	52%	2,951	59%	78%	1,715	82%	88%

Source: DY1 Quality Measure Reports.

Notes: BMI-SF excludes 1 Pennsylvania clinic; WCC-BH excludes 1 Nevada clinic and 1 Pennsylvania clinic. Nevada did not submit the SSD measure in DY1. Benchmarks reported are from the 2019 Annual Reporting on the Quality of Care for Adults in Medicaid (FFY 2018), available at <https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/adult-core-set/index.html> and the 2019 Annual Reporting on the Quality of Care for Children in Medicaid (FFY 2018) <https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/childrens-health-care-quality-measures/index.html>. The Core Set uses a different BMI screening measure that is not comparable to the CCBHC quality measure; therefore, we do not include it in the table.

a. Nevada clinics noted challenges collecting clients' weight, and multiple clinics did not start collecting weight until the end of the measurement period.

b. Oklahoma benchmark as reported in the 2019 Annual Reporting on the Quality of Care for Adults in Medicaid (FFY 2018), Table WCC-CH, Page 1. Available: <https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/childrens-health-care-quality-measures/index.html>.

**6. Substance use screening and treatment**

Substance use exacts an immense human and economic toll and disproportionately affects individuals with mental health conditions. Less than 20 percent of individuals with SUD report receiving some form of treatment in the past year according to analysis of National Survey on Drug Use and Health data.<sup>39</sup> In addition, tobacco use is disproportionately high among individuals with SMI, which may contribute to tobacco-related physical health disparities for these individuals relative to the general population.<sup>40</sup> Similarly, alcohol use is associated with increased all-cause mortality and a range of negative health and

<sup>39</sup> Ali, M.M., Teich, J.L., & Mutter, R. (2015). The role of perceived need and health insurance in substance use treatment: Implications for the Affordable Care Act. *Journal of Substance Abuse Treatment*, 54: 14-20.

<sup>40</sup> Kalkhoran, S., A.N. Thorndike, N.A. Rigotti, V. Fung, & T.P. Baggett (2019). Cigarette smoking and quitting-related factors among US adult health center patients with serious mental illness. *Journal of General Internal Medicine*, 34(6): 986-991.

psychosocial outcomes. Work done by National Committee for Quality Assurance (NCQA) has shown low screening and follow-up rates for substance use.<sup>41</sup>

- Across states, 62 percent of adult CCBHC clients received tobacco use screening and cessation intervention (TSC; when tobacco use was present) during the past 24 months (Table IV.13). Results ranged from 51 percent to 70 percent across states. CCBHC performance on this measure was lower when compared with MIPS data (89 percent for TSC).
- Across states, 62 percent of adult CCBHC clients received screening for unhealthy alcohol use screening and brief counseling (when screen was positive) in the past 24 months. Performance ranged from 42 percent to 84 percent across states. Some states performed better than the MIPS average of 64 percent on this measure, whereas other states fell below that average (Table IV.13).

<b>Table IV.13. Substance use screening: Measure performance</b>				
	<b>Tobacco Use Screening and Cessation Intervention (TSC)</b>		<b>Unhealthy Alcohol Use Screening and Brief Counseling (ASC)</b>	
	<b>Denominator</b>	<b>%</b>	<b>Denominator</b>	<b>%</b>
Aggregate	162,647	62%	144,360	62%
MN	11,015	55%	9,605	51%
MO	46,383	51%	37,596	54%
NJ	9,744	70%	10,080	76%
NV <sup>a</sup>	409	63%	353	84%
NY	38,752	69%	29,671	69%
OK	15,333	70%	15,333	65%
OR	30,476	69%	28,100	58%
PA	10,535	54%	13,622	42%

Source: DY1 Quality Measure Reports.

Notes: SC excludes 1 Pennsylvania clinic; ASC excludes 2 Pennsylvania clinics.

a. Nevada clinics reported low denominators on these measures, less than 10% of the clients across the Nevada CCBHCs. However, no deviation from measure specification or explanation for low denominators was provided in the reporting form on these measures.

- Across states, 40 percent of adult CCBHC clients received treatment for an AOD use disorder within 14 days of the initial diagnosis (initiation), which ranged from 16 percent to 54 percent across states; 12 percent met criteria for initiation and also received at least two other AOD services within 30 days of the initiation visit (engagement), which ranged from 4 percent to 39 percent across states (Table IV.14).
- Performance on the initiation and engagement components of this measure met or exceeded Medicaid Core Set measure performance in states where comparison data were available (except for Pennsylvania).

<sup>41</sup> National Committee for Quality Assurance. “Unhealthy alcohol use screening and follow-up.” Available: <https://www.ncqa.org/hedis/reports-and-research/hedis-measure-unhealthy-alcohol-use-screening-and-follow-up/>. Accessed October 15, 2020.

**Table IV.14. Initiation and engagement for AOD use: Measure performance**

	Initiation of Alcohol and Other Drug Dependence Treatment (IET-BH Int.)			Engagement of Alcohol and Other Drug Dependence Treatment (IET-BH Eng.)		
	Denominator	%	Core Set benchmark	Denominator	%	Core Set benchmark
Aggregate	15,483	40%	39%	15,483	24%	12%
MN	2,412	39%	--	2,412	14%	--
MO	2,276	51%	40%	2,276	39%	11%
NJ	2,615	36%	--	2,615	31%	--
NY	6,081	54%	42%	6,081	33%	16%
OK <sup>a</sup>	41	39%	36%	41	34%	5%
OR	988	46%	39%	988	15%	15%
PA	1,070	16%	31%	1,070	4%	22%

Source: DY1 Quality Measure Reports.

Notes: Nevada did not submit the IET-BH measure in DY1. Benchmarks reported are from the 2019 Annual Reporting on the Quality of Care for Adults in Medicaid (FFY 2018), available at <https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/adult-core-set/index.html>.

a. Oklahoma included a note in the reporting form regarding the low denominators on this measure and stated, “The requirement that the client have a 60-day enrollment period with the CCBHC before the AOD diagnosis excludes many clients who are being diagnosed early in their treatment at the CCBHC.”

State denominators varied considerably for these measures. For example, for Initiation of Alcohol and Other Drug Dependence Treatment, denominators ranged from 41 in Oklahoma to 6,081 in New York (Table IV.14). The reasons for these differences are unclear: although states varied with respect to, for example, proportion of CCBHCs that specialized in substance use treatment services prior to the demonstration, all CCBHCs provided substance use treatment services during DY1 and no data are available to explain why CCBHCs in some states (e.g., Oklahoma) may have seen fewer clients with AOD dependence problems compared to CCBHCs in other states. Moreover, on this measure, the aggregate denominator (15,483) represents approximately 7 percent of all adult CCBHC clients. This rate is notably lower than, for example, rates of adults served through state mental health authorities who have co-occurring mental health and AOD use disorders (national average of 24.5 percent based on 2017 URS data).<sup>42</sup>

**7. Emergency department and hospital transitions**

Providing follow-up care for people with mental health conditions following presentation to an emergency department is linked to fewer repeat emergency department visits, improved treatment outcomes and psychosocial functioning, and increased compliance with follow-up instructions.<sup>43</sup> Timely follow-up care for individuals with AOD dependence who were seen in the emergency department is

<sup>42</sup> Substance Abuse and Mental Health Services Administration. Uniform Reporting System. Available: <https://www.samhsa.gov/data/report/2017-uniform-reporting-system-urs-output-tables?page=0>. Accessed October 15, 2020.

<sup>43</sup> National Committee for Quality Assurance. “Follow-up after emergency department visit for mental illness.” Available: <https://www.ncqa.org/hedis/measures/follow-up-after-emergency-department-visit-for-mental-illness/>. Accessed October 15, 2020.

associated with reductions in substance use, future emergency department use, hospital admissions, and bed days.<sup>44</sup> In addition, individuals hospitalized for mental health issues are vulnerable after discharge, and follow-up care by trained mental health clinicians is critical for their health and well-being.<sup>45</sup> Moreover, follow-up care after hospitalization can reduce the likelihood of subsequent readmission.<sup>46,47</sup>

- Across states, 71 percent of CCBHC clients received follow-up care within 30 days after an emergency department visit for a mental health condition and 32 percent received follow-up care within 7 days of emergency department visits for AOD dependence, exceeding available benchmarks for these quality measures (**Table IV.15**). However, DY1 performance rates on these measures indicate room for improvement, particularly with respect to follow-up rates for AOD dependence.
- Performance across states varied considerably; however, among states for which state-specific benchmarks were available, performance typically exceeded benchmarks. Oklahoma had lower rates of follow-up after emergency department use visits for AOD dependence (12 percent) compared to most other states (excluding New Jersey). Although state-specific benchmarks were not available, New Jersey showed low rates for post-emergency department follow-up for both mental health conditions (23 percent) and AOD use (6 percent).
- States varied widely with respect to denominators for follow-up after emergency department use for mental health conditions and AOD use. For example, for follow-up after emergency department use for mental health conditions, denominators ranged from 44 in Pennsylvania (0.2 percent of clients who received services from CCBHCs in DY1) to 2,496 (5 percent of clients who received services from CCBHCs in DY1). Although reasons for such variability are unclear, possible explanations include: (1) variation among states' client populations (e.g., base rates of SMI or AOD dependence); (2) challenges with data access or aggregation may have reduced capacity to identify and follow up with people who visited an emergency department for a mental health or AOD issue in some states; or (3) differences in state-led and CCBHC-led prevention and intervention efforts to reduce use of emergency departments for mental health and substance use issues. Unfortunately, data--including CCBHC client diagnoses--are not available to better contextualize or interpret these findings.

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<sup>44</sup> National Committee for Quality Assurance. "Follow-up after emergency department visit for alcohol or drug use." Available: <https://www.ncqa.org/hedis/measures/follow-up-after-emergency-department-visit-for-alcohol-and-other-drug-abuse-or-dependence/>. Accessed October 15, 2020.

<sup>45</sup> National Committee for Quality Assurance. "Follow-up after hospitalization for mental illness." Available: <https://www.ncqa.org/hedis/measures/follow-up-after-hospitalization-for-mental-illness/>. Accessed October 15, 2020.

<sup>46</sup> Morris, D.W., Ghose, S., Williams, E., Brown, K., & Khan, F. (2018). Evaluating psychiatric readmissions in the emergency department of a large public hospital. *Neuropsychiatric Disease and Treatment*, 14, 671-679. doi.org/10.2147/NDT.S143004.

<sup>47</sup> Nelson, E.A., Maruish, M.E., & Axler, J.L. (2000). Effects of discharge planning and compliance with outpatient appointments on readmission rates. *Psychiatric Services*, 51(7), 885-889.

Table IV.15. Follow-up after ED visits: Measure performance						
	Follow-up after ED for Mental Health: 30-day (FUM 30-day)			Follow-up after ED for AOD Dependence: 30-day (FUA 30-day)		
	Denominator	%	Core Set benchmark	Denominator	%	Core Set benchmark
Aggregate	16,488	71%	54%	6,287	32%	20%
MN	2,441	79%	65%	1,037	43%	28%
MO	5,066	69%	57%	1,562	33%	5%
NJ	1,816	23%	--	562	6%	--
NY	2,496	89%	71%	1,719	56%	27%
OK	348	82%	50%	42	12%	44%
OR	1,781	84%	59%	823	33%	--
PA	44	68%	50%	542	38%	23%

Source: DY1 Quality Measure Reports.

Notes: Nevada did not submit the FUA and FUM measures in DY1. Benchmarks reported are from the 2019 Annual Reporting on the Quality of Care for Adults in Medicaid (FFY 2018), available at <https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/adult-core-set/index.html>.

- Across states, rates of follow-up after hospitalization for mental health treatment were 67 percent for adults and 68 percent for child/adolescent clients and exceeded benchmarks for these quality measures (**Table IV.16**). The overall rate of all-cause readmission (i.e., proportion of individuals hospitalized who had a subsequent readmission to hospital within 30 days) was 18 percent, similar to the benchmark for this quality measure (17 percent).<sup>48</sup>
- Performance across states on these quality measures (**Table IV.16**) varied widely, particularly for follow-up after hospitalization for mental health for adults (which ranged from 23 percent to 94 percent). Similar to patterns observed for emergency department transitions, New Jersey showed lower performance on two of these quality measures compared to other states. Although Pennsylvania had lower performance on the follow-up measures, it had the best (lowest) rate of all-cause readmissions among the states. Other states’ performance exceeded available state-specific benchmarks for the follow-up measures, but the relationship between state readmission rates and benchmarks varied.

<sup>48</sup> CCBHC measure specifications did not require risk adjustment of the PCR-BH measure. The Medicaid Core Set benchmarks for this measure were also not risk adjusted in FFY 2018.



**Table IV.16. Follow-up after hospitalization and readmission: Measure performance**

	Follow-up after Hospitalization for Mental Health Adult (FUH-BH-A 30-day)			Follow-up after Hospitalization for Mental Health Child/Adolescent (FUH-BH-C 30-day)			Plan All-Cause Readmission (PCR-BH)		
	Denom-inator	%	Core Set benchmark	Denom-inator	%	Core Set benchmark	Denom-inator	%	Core Set benchmark
Aggregate	12,333	67%	58%	5,632	68%	65%	31,339	18%	17%
MN	1,271	73%	63%	668	74%	70%	3,048	22%	17%
MO	3,565	74%	38%	3,146	76%	56%	13,144	26%	22%
NJ	323	23%	--	77	21%	32%	1,397	20%	15%
NY	1,437	82%	61%	372	87%	85%	7,043	24%	--
OK	190	94%	39%	288	91%	51%	417	10%	29%
OR	670	87% <sup>a</sup>	85% <sup>a</sup>	148	82% <sup>a</sup>	81% <sup>a</sup>	2,843	15%	--
PA	4,877	27%	56%	933	37%	74%	3,447	8%	13%

Source: DY1 Quality Measure Reports.

Notes: Lower Rate of Readmission is better for PCR-BH measure. Nevada did not submit the FUH-BH-A, FUH-BH-C, and PCR-BH measures in DY1.

a. Oregon benchmark data are only available for 7-day readmission, thus the Oregon measure presented in this table is for 7-day instead of 30-day readmission. Benchmarks reported are from the 2019 Annual Reporting on the Quality of Care for Adults in Medicaid (FFY 2018), available at <https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/adult-core-set/index.html> and the 2019 Annual Reporting on the Quality of Care for Children in Medicaid (FFY 2018) <https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/childrens-health-care-quality-measures/index.html>.

## 8. Client/family experiences

Client and family-reported experiences with care are key indicators of quality of care and important factors in ensuring client-centered care.<sup>49</sup> CCBHCs reported on a range of client experience measures, including access, quality and appropriateness of care, perceived outcomes of care, participation in treatment planning, and overall satisfaction.

CCBHCs used various approaches to collect client experience information from their clients. For example, some CCBHCs obtained client-reported experience data from all or nearly all of their clients while other CCBHCs obtained client experience data by surveying a random sample of their clients. The latter approach contributed to low denominators, or sample sizes, for these CCBHCs.

- Across states, performance on these quality measures was relatively high, ranging from 69 percent to 93 percent for aggregate performance, with rates of more than 80 percent for eight of the ten quality measures (**Tables IV.17-IV.20**). Although aggregate/national benchmarks are not available, state performance approached or exceeded available state-level benchmarks for many quality measures. However, performance on some measures showed room for improvement (e.g.,

<sup>49</sup> Centers for Medicare & Medicaid Services. “Hospital Compare: What is the patient experience of care survey?” Baltimore, MD: CMS. Available: <https://www.medicare.gov/HomeHealthCompare/Data/HHCAHPS-Overview.html>. Accessed October 15, 2020.

for adults reporting positively on outcomes, approximately 30 percent of respondents indicated non-positive perceptions of care).

- Performance across states on these measures varied. For example, for adults reporting positively on outcomes, state-level rates ranged from 37 percent in Oregon to 90 percent in Pennsylvania. Some of this variability may be due to differences in the methods used to obtain client feedback (i.e., clinics could choose to collect data themselves or contract it out, use a random sample or convenience sample, administer surveys on-site or by phone or mail).
- Denominators were low, differed across measures, and varied widely across states. For example, for the Adults Reporting Positively on Access measure, the total denominator was 13,313, which is about 4 percent of the total DY1 CCBHC client population and about 6 percent of DY1 CCBHC adult clients (**Table IV.17**). Denominators for this quality measure also varied across states that provided data, ranging from 265 clients in who contributed data in Oklahoma to 4,918 clients in Missouri (**Table IV.17**).

	<b>Adults Reporting Positively on Access</b>			<b>Adults Reporting Positively on Quality and Appropriateness</b>			<b>Adults Reporting Positively on Outcomes</b>		
	<b>Denom- inator</b>	<b>%</b>	<b>Core Set benchmark</b>	<b>Denom- inator</b>	<b>%</b>	<b>Core Set benchmark</b>	<b>Denom- inator</b>	<b>%</b>	<b>Core Set benchmark</b>
Aggregate	13,313	84%		13,569	88%		12,976	70%	
MN	1,602	81%	81%	1,620	84%	84%	1,610	76%	76%
MO	4,918	87%	88%	4,869	91%	90%	4,744	69%	67%
NJ	2,225	83%	97%	2,580	85%	98%	2,249	69%	93%
NY	2,942	84%	--	2,908	91%	--	2,794	72%	--
OK	265	86%	86%	262	88%	87%	258	64%	63%
OR	779	67%	73%	748	68%	78%	745	37%	50%
PA	582	91%	95%	582	90%	96%	576	90%	83%

Source: DY1 Quality Measure Reports.

Notes: Nevada did not submit these measures in DY1. Benchmarks reported are from the Annual Report URS Tables, available at <https://www.samhsa.gov/data/data-we-collect/urs-uniform-reporting-system>.



<b>Table IV.18. Client experience of care: Measure performance</b>						
	<b>Adults Reporting Positively on Participation in Treatment Planning</b>			<b>Adults Reporting Positively on General Satisfaction with Services</b>		
	<b>Denominator</b>	<b>%</b>	<b>Core Set benchmark</b>	<b>Denominator</b>	<b>%</b>	<b>Core Set benchmark</b>
Aggregate	12,158	82%		12,735	89%	
MN	1,619	87%	81%	1,622	91%	91%
MO	4,703	85%	83%	4,922	92%	92%
NJ	1,446	81%	91%	1,617	87%	97%
NY	2,822	80%	--	2,964	90%	--
OK	262	90%	89%	267	92%	90%
OR	726	65%	66%	771	69%	80%
PA	580	86%	88%	572	87%	88%

Source: DY1 Quality Measure Reports.

Notes: Nevada did not submit these measures in DY1. Benchmarks reported are from the Annual Report URS Tables, available at <https://www.samhsa.gov/data/data-we-collect/urs-uniform-reporting-system>.

<b>Table IV.19. Family experience of care: Measure performance</b>									
	<b>Family Members Reporting Positively on Access</b>			<b>Family Members Reporting High Cultural Sensitivity of Staff</b>			<b>Family Members Reporting Positively on Outcomes</b>		
	<b>Denom- inator</b>	<b>%</b>	<b>Core Set benchmark</b>	<b>Denom- inator</b>	<b>%</b>	<b>Core Set benchmark</b>	<b>Denom- inator</b>	<b>%</b>	<b>Core Set benchmark</b>
Aggregate	7,097	83%		7,174	93%		7,150	69%	
MN	862	79%	82%	865	90%	92%	851	80%	66%
MO	3,950	83%	87%	3,995	94%	95%	3,991	66%	65%
NJ	339	69%	81%	361	79%	85%	386	65%	58%
NY	781	97%	--	785	100%	--	753	86%	--
OK	202	94%	94%	201	97%	95%	200	60%	91%
OR	724	75%	75%	725	88%	92%	729	59%	65%
PA	239	87%	90%	242	95%	95%	240	84%	81%

Source: DY1 Quality Measure Reports.

Notes: Nevada did not submit these measures in DY1. Benchmarks reported are from the Annual Report URS Tables, available at <https://www.samhsa.gov/data/data-we-collect/urs-uniform-reporting-system>.

Table IV.20. Family experience of care: Measure performance						
	Family Members Reporting Positively on Participation in Treatment Planning			Family Members Reporting Positively on General Satisfaction for Children		
	Denominator	%	Core Set benchmark	Denominator	%	Core Set benchmark
Aggregate	7142	90%		7168	86%	
MN	857	90%	87%	866	91%	82%
MO	3,984	91%	93%	3,995	87%	88%
NJ	355	76%	84%	386	76%	74%
NY	774	99%	--	753	97%	--
OK	202	94%	95%	201	93%	65%
OR	729	79%	83%	726	66%	75%
PA	241	87%	94%	241	85%	90%

Source: DY1 Quality Measure Reports.

Notes: Nevada did not submit these measures in DY1. Benchmarks reported are from the Annual Report URS Tables, available at <https://www.samhsa.gov/data/data-we-collect/urs-uniform-reporting-system>.

## E. What measures and thresholds did states use to award QBPs in DY1?

CMS required the use of six specific quality measures to award bonus payments to CCBHCs (two of the CCBHC-reported measures and four of the state-reported measures; **Table IV.21**). In addition to these six measures, CMS allowed states to use up to five additional measures to award bonus payments. For all measures, CMS allowed states to define the performance threshold used to determine whether a CCBHC would receive the bonus payment.

In DY1, all demonstration states except Oregon offered QBPs. States used different measures to decide whether CCBHCs would receive bonus payments:

- Missouri, New Jersey, Oklahoma, and Pennsylvania used the six CMS-required measures to award bonus payments.
- Minnesota, Nevada, and New York used the optional measure for Plan All-Cause Readmission Rate (PCR-AD) to award bonus payments in addition to the six CMS-required measures. Minnesota used the optional measure for Screening for Clinical Depression and Follow-Up Plan (CDF-A) to determine if CCBHCs would receive bonus payments. New York used two state-specific measures calculated using state data on suicide attempts and deaths from suicide. Nevada used performance on the PCR-AD measure to make bonus payments.

<b>Table IV.21. Quality measures used to determine QBPs in DY1</b>		
<b>CCBHC-reported measures</b>	<b>Required or optional for determining QBPs<sup>a</sup></b>	<b>States with QBPs that used the measure to determine QBPs<sup>b</sup></b>
Child and adolescent major depressive disorder: Suicide Risk Assessment (SRA-BH-C)	Required	All
Adult major depressive disorder: Suicide Risk Assessment (SRA-BH-A; NQF-0104)	Required	All
Screening for Clinical Depression and Follow-Up Plan (CDF-A)	Optional	MN
Depression Remission at 12 months (DCP-REM-12; NQF-0710)	Optional	None
<b>State-reported measures</b>		
Adherence to Antipsychotic Medications for Individuals with Schizophrenia (SAA-BH)	Required	All
Follow-Up After Hospitalization for Mental Illness, ages 21+ (adult) (FUH-BH-A)	Required	All
Follow-Up After Hospitalization for Mental Illness, ages 6-21 (child/adolescent) (FUH-BH-C)	Required	All
Initiation and Engagement of AOD Dependence Treatment (IET-BH)	Required	All
Plan All-Cause Readmission Rate (PCR-AD)	Optional	MN, NV, NY
Follow-up Care for Children Prescribed ADHD Medication (ADD-C)	Optional	None
Antidepressant Medication Management (AMM-A)	Optional	None
<p>Source: "Appendix III--Section 223 Demonstration Programs to Improve Community Mental Health Services Prospective Payment System (PPS) Guidance." Available at <a href="https://www.samhsa.gov/sites/default/files/grants/pdf/sm-16-001.pdf#page=94">https://www.samhsa.gov/sites/default/files/grants/pdf/sm-16-001.pdf#page=94</a>. Accessed July 26, 2019. Data from interviews with state Medicaid and behavioral health agency officials conducted by Mathematica and the RAND Corporation, February 2019.</p> <p>a. As required in the CCBHC certification criteria.</p> <p>b. All demonstration states except Oregon offered QBPs to CCBHCs.</p>		

Except for New Jersey, all the states providing QBPs in DY1 planned to equally consider performance on all the measures they selected to determine whether to award a QBP. Other features of states' QBP thresholds and determination processes varied:

- Minnesota did not set performance thresholds before the demonstration began. Rather, the state identified minimum performance thresholds during DY1 for each of its selected measures. Due to the absence of state-specific historical performance data and comparable regional or national benchmark data on the adult and child SRA measures (SRA-BH-A and SRA-BH-C), Minnesota used data from the initial six months of the demonstration to help determine the minimum performance level for these measures.
- Missouri used state-wide Missouri Department of Mental Health averages from the year before the demonstration as the minimum performance threshold, if such data were available by the end of the first quarter of DY1. If data were not available, Missouri substituted published national rates for the most recent time period available. Payments were triggered for DY1 if a clinic performed above the threshold, or showed improvement from its own prior year rate to DY1.

- Nevada clinics were eligible to receive QBPs if they submitted data on all measures in DY1. The state used performance on the DY1 measures to establish a benchmark by which to assess progress and make DY2 QBPs. In DY2, Nevada clinics must submit data on all measures to earn a portion of the bonus payment and also meet the performance thresholds to earn the remaining portion of the bonus payment. The DY2 performance thresholds require CCBHCs to either meet state-specified improvement goals for each measure or improve on the measures from DY1 to DY2 by at least a 10 percent reduction in the gap between DY1 performance and the improvement goal. Four of the state-specified improvement goals are based on HEDIS National Medicaid averages.
- New Jersey used HEDIS National Medicaid averages, where available, as the performance thresholds. If an appropriate national average was not available, New Jersey created a sliding scale based on CCBHC data, with the lowest-scoring CCBHC receiving no payment and the highest-scoring CCBHC receiving maximum payment for that measure. At the time of the last interview with New Jersey state officials, they had not completed the QBP determination processes for DY1.
- New York established performance thresholds for each measure using existing data from providers and/or Medicaid claims. The state used a similar process to establish thresholds for DY2 using DY1 data. New York CCBHCs are eligible for QBPs if they meet performance thresholds for all nine of the state's selected measures. The thresholds range from 0 percent improvement (maintaining the minimum performance threshold level) to 10 percent improvement.
- Oklahoma collected and analyzed data from the initial six months of the demonstration to establish minimum performance thresholds for DY1 for each required measure. To earn the QBP, each provider must meet the benchmarks for the second six-month period. For the third six-month payment period, providers must meet the benchmarks plus an additional 3 percent. For the final and fourth six-month period, providers must meet the benchmarks plus an additional 5 percent.
- Pennsylvania used data from the year before the demonstration to determine DY1 performance thresholds for four of the six required measures. Because prior data did not exist for the SRA-BH-A and SRA-BH-C measures, the state used data from the initial six months of the demonstration to determine DY1 thresholds for these measures. DY1 data will be used to determine the DY2 thresholds for all required measures. The state required CCBHCs to improve on each measure by at least 1 percent each year to be eligible for the bonus payment for that measure. Payments could be higher for improvement greater than 1 percent. For example, 1 percent above threshold on the SRA-BH-A measure would earn 10 percent of the payment tied to that measure, whereas 10 percent above the threshold would earn 100 percent of the payment tied to that measure.

## F. How many clinics received QBPs during DY1?

All seven states that offered bonus payments planned to cover the state share of the costs using state general revenue funds. Across states, the amount of funding allocated for bonus payments and the amount distributed in DY1 varied (**Table IV.22**). Four states (Minnesota, Missouri, Nevada, and Pennsylvania) distributed bonus payments to 26 CCBHCs in DY1 (a total of 54 CCBHCs were eligible for QBPs across seven states). At the time of this report, states had not made determinations for DY2 bonus payments.

- In Missouri and Nevada, all CCBHCs received bonus payments in DY1. Missouri modified the amount of QBPs from 1 percent of total payments for the year to 5 percent of Medicaid claims for the year, and therefore distributed more funds than initially planned.
- In Minnesota and Pennsylvania, only a subset of CCBHCs received bonus payments in DY1 (two out of six CCBHCs in Minnesota and six out of seven CCBHCs in Pennsylvania).
- New Jersey had not completed the determinations to award bonus payments as of the time of this report.
- None of the CCBHCs in New York and Oklahoma met their state’s measure performance thresholds to receive bonus payments.

**Table IV.22. QBPs amounts planned and distributed**

<b>State (Number of Clinics)</b>	<b>Amount state initially estimated for QBPs per DY</b>	<b>DY1 QBPs distributed</b>
Minnesota (6)	5% of total payments, or approximately \$2.5 million	2 of 6 CCBHCs received QBP. Total bonus payments: \$740,049.
Missouri (15)	1% of total payments, or approximately \$4.2 million	15 of 15 CCBHCs received QBP. Total bonus payments: \$17,210,855 (5% of Medicaid claims).
Nevada (3)	10% of DY1 payments and 15% of DY2 payments, or approximately \$1.5 million	3 of 3 CCBHCs received QBP. Total bonus payments: 10% of DY1 payments (assumed). <sup>a</sup>
New Jersey (7)	Approximately \$350,000	State had not yet made final decisions about awarding of QBPs at time of report.
New York (13)	Approximately \$2 million	No payments distributed; thresholds not met.
Oklahoma (3)	1% of total payments, or approximately \$1 million	No payments distributed; thresholds not met.
Pennsylvania (7)	3% of total payments, or approximately \$2.1 million	6 of 7 CCBHCs received QBP. Total bonus payments: \$568,000.

Source: State CCBHC Demonstration Applications, Part 3, and Mathematica and RAND interviews with state Medicaid and behavioral health officials.

Note: Missouri did not report why the bonus payment amount increased from 1% to 5% of total payments but did confirm the amount distributed in DY1.

a. Nevada reported that bonus payments were distributed in DY1, but did not confirm the exact, final bonus payment

## V. Conclusions and Next Steps

The findings in this report provide insights into the implementation of CCBHCs in the demonstration states. The PPS and quality reporting components of the demonstration enable states and clinics to implement more flexible and sophisticated strategies to incentivize the delivery of high-quality care in community behavioral health clinics. The cost reports provide a more accurate accounting of the costs of providing comprehensive ambulatory behavioral health services than had been available in most states before the demonstration. The CCBHC rate-setting process and cost data could help to inform how other states or managed care plans approach setting rates and monitoring costs for similar initiatives. In addition, clinics' and states' experiences with and performance on the quality measures may be informative to select quality measures and set performance targets for future initiatives. Our previous reports, described how CCBHCs and states used the quality measure data for quality improvement. Below we summarize the main finding from this report.

**Collection of cost data.** For all but one state, CCBHCs were successful in reporting on their costs during both demonstration years. To accomplish the reporting, states and clinics made significant investments in technical assistance and changes to administrative policies and procedures. One state chose to allow the CCBHCs to report on prior year costs, rather than costs during the demonstration. While there are still some minor cost-reporting inconsistencies across states (such as inconsistent categories of staff for reporting labor costs), these issues would not be a problem for monitoring costs and setting rates within states.<sup>50</sup>

**CCBHC costs and rate-setting.** There was wide variation within and across states in CCBHC rates and in the extent to which rates covered costs for individual clinics. States anticipated that the rate-setting process would be challenging due to the lack of historical data on the costs of some required CCBHC services. The DY1 rates were, on average, higher than the DY1 costs in five of the six states for which cost data were available. However, the rate-setting process was designed to be self-correcting. Re-basing the rates, (that is, using the cost reports for one year to set the rates for the next year rates), would bring the rates closer to costs. This is in fact what we observed for the PPS-1 states, where the gaps between rates and costs were smaller in DY2 than they were in DY1. However, we found that the gap between rates and costs increased between DY1 and DY2 in Oklahoma, the only PPS-2 state for which we have two years of cost and rate data. These findings should be interpreted within the limitations of data currently available. First, we did not have access to data that would enable us to evaluate the processes through which states set or adjusted rates. Second, some states did not adjust their rates during the demonstration but may use the two years of cost reports to adjust rates for subsequent years.

**Quality measure reporting.** In our prior report, we described the many challenges CCBHCs faced in collecting and reporting on the required quality measures. In qualitative interviews, clinic staff members described how they sometimes collected data for these measures on paper forms and calculated the measures by hand while their EHR systems were being updated. Although we do not have external validation of the quality measure reports, CCBHCs and states largely reported overcoming early challenges and successfully submitted reports on the quality measures for DY1. Some of the clinics reported minor modifications to the measure specifications.

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<sup>50</sup> Moreover, since licensing rules for clinical staff vary across states, requiring consistency in labor categories may not be advisable.

***Quality measure performance.*** Performance on the quality measures varied considerably across CCBHCs and across states, with no discernable patterns of consistently higher or lower performance in certain states. Denominators also varied widely across states for some quality measures, and in some cases were lower than might be anticipated for this consumer population. This may have been partly a function of the denominator inclusion and exclusion criteria or could serve as a signal that some consumers were erroneously omitted from the measure. However, we have no data to validate states' reports.

Overall, the quality of care provided to CCBHC clients was comparable to benchmarks when available. In some domains, CCBHC clients received higher quality of care, on average, relative to benchmarks (e.g., follow-up care within 30 days after an emergency department visit for AOD dependence and follow-up after discharge from a hospitalization for mental illness among adults). There was, however, room for improvement across many of the measures. As described in Chapter IV, the quality measures reported during DY1 provide a baseline for understanding quality of care provided to CCBHC clients but should not be interpreted as the effect of the demonstration on quality of care. In addition, due to limited availability of appropriate national and/or state-level benchmarks, direct comparisons to existing data to assess CCBHC performance should be made with caution. Variation in quality measure performance might indicate a potential for improvement by clinics with low performance during DY1. We will use the DY2 quality measure data to assess changes over time within and across CCBHCs.

***Quality bonus payments.*** All demonstration states, except one, implemented QBP systems. The fact that states implemented these systems indicates that states are interested in using financial incentives to promote quality of behavioral health care. Four states distributed bonus payments to 26 of 31 eligible CCBHCs for meeting the quality measure performance thresholds in those states. In two states, none of the 16 eligible CCBHCs met the performance thresholds; and in one state, award determinations were not complete as of the time of this report. CCBHCs' inexperience with the measures used to determine QBPs and the lack of historical data on which to base performance expectations may have contributed to some CCBHCs not receiving QBPs. As CCBHCs gain experience with these measures, states may have better information to establish QBP performance thresholds or restructure their QBP systems. Future initiatives might also consider incorporating alternative measures into QBP systems.

***Future evaluation activities.*** We will submit a final evaluation report in May 2021 that summarizes the major implementation, costs, and quality of care findings, including changes in quality measure performance across the two demonstration years. The report will also summarize findings on the impact of the demonstration on service utilization and costs using Medicaid claims and encounter data from selected states. The impact analysis will examine service utilization trends among Medicaid beneficiaries who received CCBHC services relative to within-state comparison groups.

## **APPENDIX A**

### **PPS-1 and PPS-2 Clinic-Level Change in Rates for DY1 and DY2**



The tables below show the visit day rates for each clinic in the PPS-1 states.

<b>Table A.1. Changes in Minnesota CCBHC rates from DY1 to DY2</b>			
	<b>Rate</b>		
	<b>DY1</b>	<b>DY2</b>	<b>Change</b>
MN Clinic 1	\$277	\$165	\$(112)
MN Clinic 2	\$269	\$274	\$5
MN Clinic 3	\$321	\$290	\$(31)
MN Clinic 4	\$709	\$664	\$(45)
MN Clinic 5	\$478	\$414	\$(64)
MN Clinic 6	\$363	\$336	\$(27)
Average across clinics	\$403	\$357	\$(46)

Source: Mathematica and the RAND Corporation analysis of state-reported CCBHC rates.  
 Note: Adjusted to 2020 dollars.

<b>Table A.2. Changes in Missouri CCBHC rates from DY1 to DY2</b>			
	<b>Rate</b>		
	<b>DY1</b>	<b>DY2</b>	<b>Change</b>
MO Clinic 1	\$248	\$246	\$(2)
MO Clinic 2	\$262	\$260	\$(2)
MO Clinic 3	\$231	\$229	\$(2)
MO Clinic 4	\$268	\$266	\$(2)
MO Clinic 5	\$190	\$189	\$(2)
MO Clinic 6	\$222	\$220	\$(2)
MO Clinic 7	\$190	\$188	\$(2)
MO Clinic 8	\$241	\$239	\$(2)
MO Clinic 9	\$176	\$174	\$(1)
MO Clinic 10	\$234	\$232	\$(2)
MO Clinic 11	\$201	\$200	\$(2)
MO Clinic 12	\$194	\$192	\$(2)
MO Clinic 13	\$244	\$242	\$(2)
MO Clinic 14	\$268	\$265	\$(2)
MO Clinic 15	\$190	\$189	\$(2)
Average across clinics	\$224	\$222	\$(2)

Source: Mathematica and the RAND Corporation analysis of state-reported CCBHC rates.  
 Note: Adjusted to 2020 dollars.

**Table A.3. Changes in New York CCBHC rates from DY1 to DY2**

	Rate		
	DY1	DY2	Change
NY Clinic 1	\$280	\$220	\$(59)
NY Clinic 2	\$344	\$240	\$(105)
NY Clinic 3	\$324	\$316	\$(8)
NY Clinic 4	\$259	\$224	\$(36)
NY Clinic 5	\$259	\$255	\$(4)
NY Clinic 6	\$219	\$211	\$(8)
NY Clinic 7	\$310	\$267	\$(44)
NY Clinic 8	\$312	\$235	\$(76)
NY Clinic 9	\$398	\$283	\$(115)
NY Clinic 10	\$183	\$210	\$27
NY Clinic 11	\$334	\$324	\$(10)
NY Clinic 12	\$221	\$221	\$(0)
NY Clinic 13	\$404	\$272	\$(132)
Average across clinics	\$296	\$252	\$(44)

Source: Mathematica and the RAND Corporation analysis of state-reported CCBHC rates.  
Note: Adjusted to 2020 dollars.

**Table A.4. Changes in Oregon CCBHC rates from DY1 to DY2**

	Rate		
	DY1	DY2	Change
OR Clinic 1	\$272	\$274	\$3
OR Clinic 2	\$286	\$287	\$0
OR Clinic 3	\$286	\$302	\$16
OR Clinic 4	\$324	\$324	\$(1)
OR Clinic 5	\$340	\$344	\$3
OR Clinic 6	\$197	\$196	\$(1)
OR Clinic 7	\$341	\$340	\$(2)
OR Clinic 8	\$297	\$297	\$(0)
OR Clinic 9	\$335	\$333	\$(2)
OR Clinic 10	\$208	\$210	\$2
OR Clinic 11	\$284	\$281	\$(3)
OR Clinic 12	\$231	\$229	\$(2)
Average across clinics	\$284	\$285	\$1

Source: Mathematica and the RAND Corporation analysis of state-reported CCBHC rates.  
Note: Adjusted to 2020 dollars.

<b>Table A.5. Changes in Pennsylvania CCBHC rates from DY1 to DY2</b>			
	<b>Rate</b>		
	<b>DY1</b>	<b>DY2</b>	<b>Change</b>
PA Clinic 1	\$337	\$234	\$(103)
PA Clinic 2	\$419	\$236	\$(183)
PA Clinic 3	\$184	\$250	\$67
PA Clinic 4	\$324	\$153	\$(172)
PA Clinic 5	\$161	\$217	\$57
PA Clinic 6	\$215	\$189	\$(26)
PA Clinic 7	\$415	\$296	\$(119)
Average across clinics	\$293	\$225	\$(68)

Source: Mathematica and the RAND Corporation analysis of state-reported CCBHC rates.  
Note: Adjusted to 2020 dollars.

<b>Table A.6. Nevada CCBHC rates, DY1</b>	
	<b>Rate</b>
	<b>DY1</b>
NV Clinic 1	\$193
NV Clinic 2	\$209
NV Clinic 3	\$228
Average across clinics	\$210

Source: Mathematica and the RAND Corporation analysis of state-reported CCBHC rates.  
Notes: Nevada did not submit DY2 rate information.  
Adjusted to 2020 dollars.

The tables below show the visit month rates for each clinic in the two PPS-2 states, New Jersey and Oklahoma. We calculated the blended rates as weighted averages of the standard population and special population rates, with rates drawn from the proportion of visit months within each category.

New Jersey set rates for its standard population and for its SMI population by calculating the weighted average of the costs for each population based on data from two years before DY1. Then the state blended the remaining three populations’ cost and visit month data to create a single DY1 rate for the remaining three special populations. Using similar methods in DY2, New Jersey relied on data from two years before DY2. The state used the MEI adjustment contained in the DY1 cost reports (cost reports containing historical data from two years before DY1) to create DY1 rates, then used the MEI adjustments in the “DY2 cost reports” (cost reports containing historical data from two years before DY2), and then inflated these an additional 3 percent to create DY2 rates.

**Table A.7. Changes in New Jersey CCBHC blended rates from DY1 to DY2**

	Blended Rate		
	DY1	DY2	Change
NJ Clinic 1	\$1,001	\$930	(\$71)
NJ Clinic 2	\$654	\$691	\$36
NJ Clinic 3	\$676	\$814	\$137
NJ Clinic 4	\$742	\$724	(\$18)
NJ Clinic 5	\$682	\$803	\$121
NJ Clinic 6	\$787	\$958	\$172
NJ Clinic 7	\$608	\$651	\$44
Average across NJ clinics	\$736	\$796	\$60

Source: Mathematica and the RAND Corporation analysis of state-reported CCBHC rates.

Note: Adjusted to 2020 dollars.

**Table A.8. Changes in New Jersey CCBHC population-specific rates from DY1 to DY2**

	Standard Population Rate			Serious Mental Illness (SMI) Rate			Substance Use Disorder (SUD) Rate			Post-Traumatic Stress Disorder (PTSD) Rate			Severe Emotional Disorder (SED) Rate		
	DY1	DY2	Change	DY1	DY2	Change	DY1	DY2	Change	DY1	DY2	Change	DY1	DY2	Change
NJ Clinic 1	\$1027	\$851	\$(175)	\$845	\$903	\$59	\$935	\$1,021	\$86	\$935	\$1,021	\$86	\$935	\$1,021	\$86
NJ Clinic 2	\$516	\$626	\$110	\$830	\$736	\$(95)	\$827	\$775	\$(51)	\$758	\$719	\$(39)	\$689	\$719	\$29
NJ Clinic 3	\$630	\$504	\$(126)	\$632	\$955	\$322	\$667	\$1,062	\$395	\$670	\$1,062	\$392	\$685	\$1,062	\$378
NJ Clinic 4	\$626	\$606	\$(20)	\$750	\$756	\$6	\$751	\$774	\$23	\$615	\$636	\$21	\$488	\$636	\$149
NJ Clinic 5	\$460	\$636	\$176	\$789	\$870	\$80	\$863	\$1,186	\$323	\$661	\$780	\$119	\$661	\$780	\$119
NJ Clinic 6	\$633	\$846	\$213	\$804	\$973	\$169	\$800	\$900	\$99	\$888	\$973	\$85	\$888	\$973	\$85
NJ Clinic 7	\$497	\$495	\$(2)	\$582	\$656	\$74	\$722	\$915	\$193	\$722	\$685	\$(37)	\$722	\$621	\$(101)
Average across NJ clinics	\$627	\$652	\$25	\$748	\$835	\$88	\$795	\$948	\$153	\$750	\$840	\$90	\$724	\$830	\$106

Source: Mathematica and the RAND Corporation analysis of state-reported CCBHC rates.

Notes: Regarding the state's PPS-2 Special populations, New Jersey used primary diagnosis (International Classification of Diseases [ICD]-9 and ICD-10 codes) from historical claims data to categorize individuals receiving CCBHC services into special populations: SMI, SUD, PTSD, and SED. The New Jersey CCBHC Cost Report Instructions Appendices includes a complete list of the ICD-9 and ICD-10 diagnosis codes the state used to identify these populations.

Oklahoma set rates for its standard population, as well as five special populations.

<b>Table A.9. Changes in Oklahoma CCBHC blended rates from DY1 to DY2</b>			
	<b>Blended Rate</b>		
	<b>DY1</b>	<b>DY2</b>	<b>Change</b>
OK Clinic 1	\$777	\$1,245	\$468
OK Clinic 2	\$566	\$612	\$46
OK Clinic 3	\$759	\$754	(\$5)
Average across Oklahoma clinics	\$701	\$870	\$169

Source: Mathematica and the RAND Corporation analysis of state-reported CCBHC rates.  
 Note: Adjusted to 2020 dollars.

<b>Table A.10. Changes in Oklahoma CCBHC population-specific rates from DY1 to DY2</b>															
	<b>Standard Population Rate</b>			<b>Special 1</b>			<b>Special 2</b>			<b>Special 3</b>			<b>Special 5</b>		
	<b>DY1</b>	<b>DY2</b>	<b>Change</b>	<b>DY1</b>	<b>DY2</b>	<b>Change</b>	<b>DY1</b>	<b>DY2</b>	<b>Change</b>	<b>DY1</b>	<b>DY2</b>	<b>Change</b>	<b>DY1</b>	<b>DY2</b>	<b>Change</b>
OK Clinic 1	\$686	\$1,022	\$337	\$1,022	\$1,526	\$504	\$1,187	\$1,770	\$583	\$686	\$1,022	\$337	\$817	\$1,209	\$391
OK Clinic 2	\$533	\$572	\$39	\$691	\$897	\$206	\$984	\$889	\$(96)	\$533	\$572	\$39	\$690	\$897	\$206
OK Clinic 3	\$690	\$677	\$(13)	\$1,264	\$929	\$(335)	\$1,233	\$1,275	\$42	\$690	\$677	\$(13)	\$983	\$1,506	\$523
Average across Oklahoma clinics	\$636	\$757	\$121	\$993	\$1,117	\$125	\$1,135	\$1,311	\$177	\$636	\$757	\$121	\$830	\$1,204	\$374

Source: Mathematica and the RAND Corporation analysis of state-reported CCBHC rates.

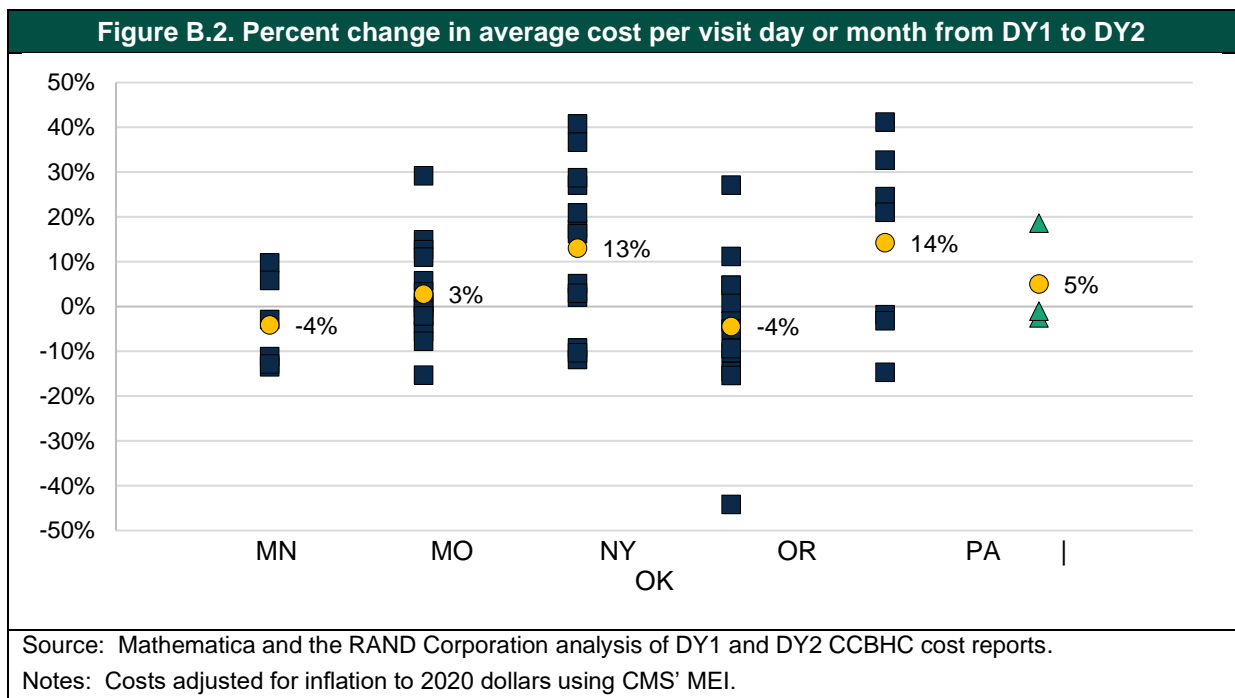
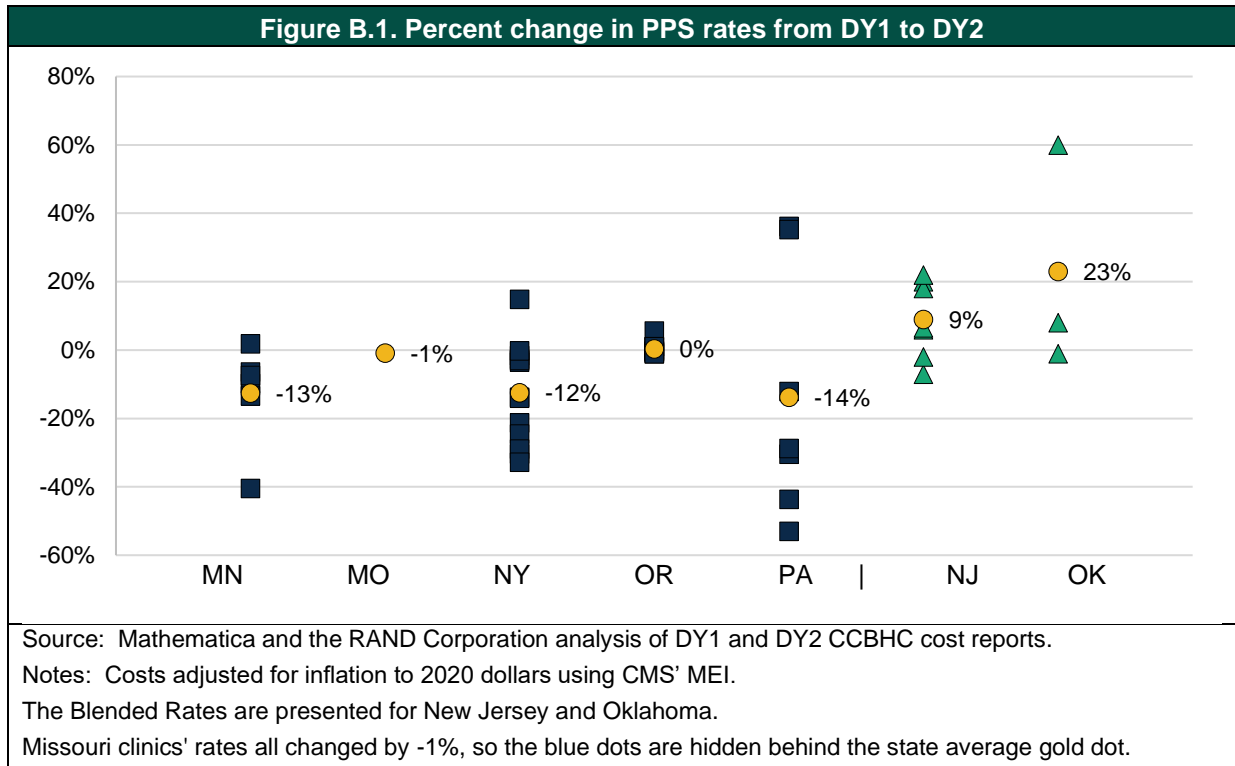
Notes: Regarding the state's PPS-2 Special populations, Oklahoma categorized individuals receiving CCBHC services into special populations: Special population 1 (High-Risk SMI), Special population 2 (High-Risk SED), Special population 3 (Adults with significant SUD), Special population 4 (Adolescents with significant SUD), and Special population 5 (Chronic homelessness or first psychotic episode for children and adults). The Oklahoma CCBHC Demonstration Application, Attachment 2: Target Medicaid Population(s) lists the criteria for inclusion into the special populations.

The Special Population 4 (Adolescents with significant SUD) Rate was only used by 1 of the Oklahoma clinics in DY2 at an amount \$695 lower than in DY1. Because only 1 clinic used this rate, it is excluded from the table.

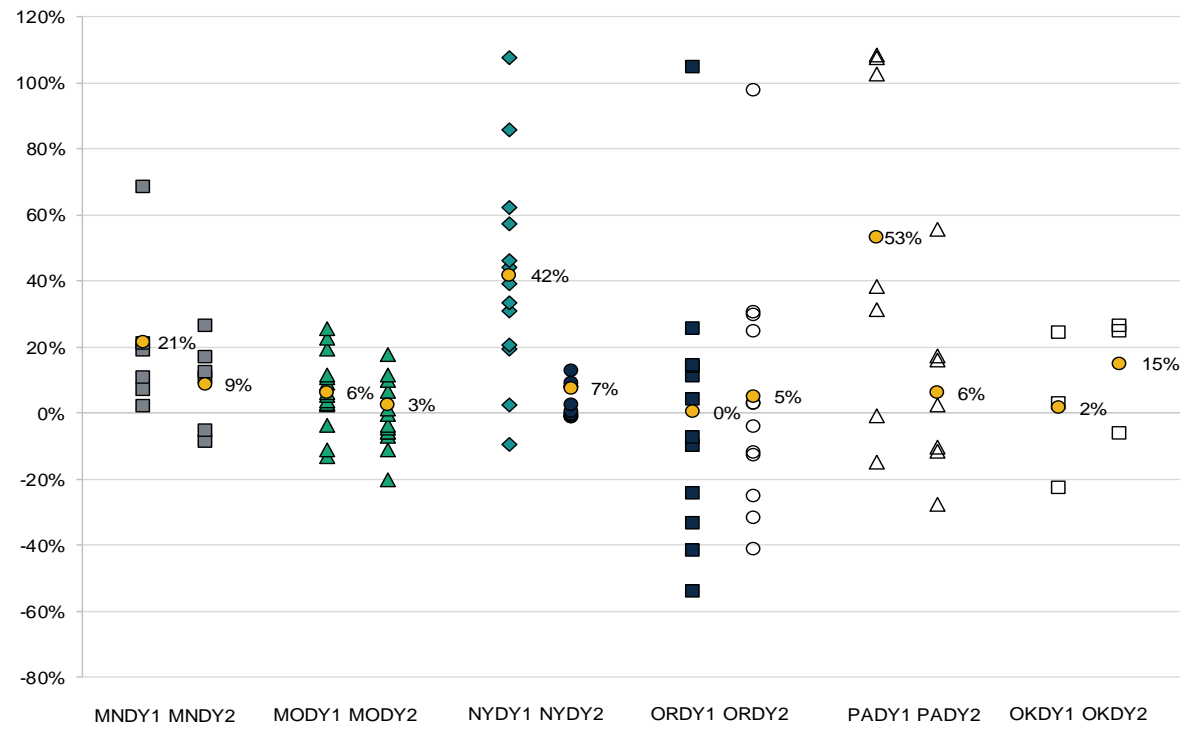
## **APPENDIX B**

### **Clinic-Level Changes in Rates, Costs, and Ratios of Rates to Costs for DY1 and DY2**

This appendix provides clinic-level information on changes from DY1 to DY2 in the PPS rates and per visit day or month costs.



**Figure B.3. Percent that rates were higher or lower than costs per visit day or month in DY1 and DY2**



Source: Mathematica and the RAND Corporation analysis of DY1 and DY2 CCBHC cost reports.

Notes: Costs adjusted for inflation to 2020 dollars using CMS' MEI.



## **APPENDIX C**

### **Quality Measure Numerator and Denominator Definitions**

**Table C.1. Quality measure numerator and denominator definitions**

Measure	Clinic-reported or state-reported measures	Numerator specification	Denominator specification
Initial Evaluation for New Clients Child/Adolescent & Adults (I-EVAL)	Clinic-reported	<p>Metric 1. The number of consumers in the eligible population who received an initial evaluation within 10 business days of the first contact with the provider entity during the measurement year.</p> <p>Metric 2. The total number of days between first contact and initial evaluation for all members of the eligible population seen at the provider entity during the measurement year.</p>	<p>Metric 1. The number of new consumers who contacted the provider entity seeking services during the measurement year.</p> <p>Metric 2. The number of new consumers who contacted the provider entity seeking services during the measurement year.</p>
Screening for Clinical Depression and Follow-up Plan Child/Adolescent & Adults (CDF-BH)	Clinic-reported	The number of consumers who were screened for clinical depression using a standardized tool AND, if positive, a follow-up plan is documented on the date of the positive screen using 1 of the codes in source measure.	The number of consumers with an outpatient visit during the measurement year with an eligible encounter code.
Depression Remission (DEP-REM-12)	Clinic-reported	The number of consumers in the eligible population who achieved remission with a PHQ-9 result less than 5, 12 months ( $\pm$ 30 days) after an index visit.	The number of consumers seen at the provider entity at least once during the measurement year who have a diagnosis of Major Depression or Dysthymia during an outpatient encounter during the measurement year, AND who have an index date PHQ-9 score greater than 9 documented during the 12-month identification period.
Suicide Risk Assessment Child/Adolescent (SRA-BH-C)	Clinic-reported	The number of consumer visits with an assessment for suicide risk.	All consumer visits for those consumers 6-17 years of age with a diagnosis of Major Depressive Disorder.
Suicide Risk Assessment Adult (SRA-A)	Clinic-reported	The number of consumer visits with a SRA completed during the visit in which a new diagnosis or recurrent episode was identified.	All consumer visits for those consumers aged 18 years and older with a diagnosis of Major Depressive Disorder.

**Table C.1 (continued)**

Measure	Clinic-reported or state-reported measures	Numerator specification	Denominator specification
Follow-up Care for Children Prescribed ADHD Medication (ADD-BH)	State-reported	<p>Initiation Phase: An outpatient, intensive outpatient, or partial hospitalization follow-up visit with a practitioner with prescribing authority, within 30 days after the Index Prescription Start Date (IPSD).</p> <p>Continuation Phase: Numerator compliant for Rate 1 Initiation Phase, and at least 2 follow-up visits with any practitioner, from 31-300 days (9 months) after the IPSD.</p>	The number of consumers age 6-12 newly prescribed ADHD medication during the 12-month Intake Period. Children must be continuously enrolled for 120 days (4 months) prior to the IPSD through 30 days (1 month) after the IPSD.
Adherence to Antipsychotic Medications for Patients with Schizophrenia Adult (SAA-BH)	State-reported	The number of consumers who achieved a proportion of days covered of at least 80% for their antipsychotic medications during the measurement year.	The number of consumers age 19-64 seen at the provider entity at least once during the measurement year with schizophrenia, excluding those diagnosed with dementia or do not have antipsychotic medications.
Antidepressant Medication Management: Adult (AMM-BH)	State-reported	<p>Acute Phase: The number of clients with at least 84 days (12 weeks) of continuous treatment with antidepressant medication.</p> <p>Continuation Phase: The number of consumers with at least 180 days (6 months) of continuous treatment with antidepressant medication.</p>	The number of consumers age 18+ seen at the provider entity at least once during the measurement year who were treated with antidepressant medication and had a diagnosis of Major Depression. Identify those that are continuously enrolled for 105 days prior to the IPSD to 231 days after the IPSD.
BMI Screening and Follow-up Plan Adult (BMI-SF)	Clinic-reported	The number of consumers in the eligible population with a documented BMI during the encounter or during the previous 6 months AND, when the BMI is outside of normal parameters, a follow-up plan is documented during the encounter or during the previous 6 months of the current encounter.	The number of consumers age 18+ seen at the provider entity at least once during the measurement year with an eligible encounter code, excluding consumers who receive palliative care, pregnant, refuse measurement, urgent medical situation, or other reason documented that measurement is inappropriate.
Weight Assessment for Nutrition and Physical Activity for Children/Adolescents (WCC)	Clinic-reported	The number of consumers age 3-17 with a BMI percentile documented during the measurement year.	The number of consumers age 3-17 seen at the provider entity at least once during the measurement year who had an outpatient visit with a PCP or OB/GYN practitioner during the measurement year, excluding consumers who are pregnant.

**Table C.1 (continued)**

Measure	Clinic-reported or state-reported measures	Numerator specification	Denominator specification
Diabetes Screening for Schizophrenia or Bipolar Patients Using Antipsychotic Medications (SSD)	State-reported	The number of consumers who had 1 or more diabetes screenings (a glucose test or an HbA1c) performed during the measurement year, as identified by claim/encounter or automated laboratory data.	The number of consumers age 18-64 with schizophrenia or bipolar disorder, who were dispensed an antipsychotic medication and had a diabetes screening test during the measurement year, excluding consumers with diabetes already identified.
Tobacco use--screening and cessation intervention (TSC)	Clinic-reported	The number of clients who were screened for tobacco use at least once within 24 months AND who received tobacco cessation intervention if identified as a tobacco user.	The number of clients age 18+ seen at the provider entity at least once during the measurement year with an eligible encounter code.
Unhealthy alcohol use--screening and brief counseling (ASC)	Clinic-reported	The number of clients who were screened at least once within the last 24 months for unhealthy alcohol use using a systematic screening method AND who received brief counseling if identified as an unhealthy alcohol user.	The number of clients age 18+ seen at the provider entity at least once during the measurement year with an eligible encounter code or had 1 preventive care visit.
Initiation and engagement of AOD dependence treatment (IET-BH)	State-reported	<p>Initiation Phase: The number of consumers received treatment initiation through an inpatient AOD admission, outpatient visit, intensive outpatient encounter, or partial hospitalization within 14 days of the diagnosis.</p> <p>Engagement Phase: The number of consumers received treatment initiation through an inpatient AOD admission, outpatient visit, intensive outpatient encounter, or partial hospitalization within 14 days of the diagnosis, AND had 2 or more additional services with a diagnosis of AOD within 30 days of the initiation visit.</p>	The number of consumers with a new episode of AOD during the Intake period. States report separate rates for 3 age groups: 13-17, 18-64, and 65 and older.
Follow-up after ED for Mental Health: 30-day (FUM 30-day)	State-reported	30-day: An outpatient visit, intensive outpatient encounter or partial hospitalization, with any practitioner, with a primary diagnosis of a mental health disorder within 30 days after the ED visit.	The number of ED visits by consumers seen at the provider entity during the measurement year who had an ED visit with a primary diagnosis of mental illness on or between the first day of the measurement year and the last day of the measurement year (less 30 days).

**Table C.1 (continued)**

Measure	Clinic-reported or state-reported measures	Numerator specification	Denominator specification
Follow-up after ED for Alcohol or Other Drug Dependence: 30-day (FUA 30-day)	State-reported	30-day: An outpatient visit, intensive outpatient encounter or partial hospitalization, with any practitioner, with a primary diagnosis of AOD within 30 days after the ED visit.	The number of ED visits by consumers seen at the provider entity during the measurement year who had an ED visit with a primary diagnosis of AOD on or between the first day of the measurement year and the last day of the measurement year (less 30 days).
Follow-up after Hospitalization for Mental Health Adult (FUH-BH-A 30-day)	State-reported	30-day: An outpatient visit, intensive outpatient visit, or partial hospitalization with a mental health practitioner within 30 days after discharge.	The number of eligible discharges for consumers age 21+ who were hospitalized for treatment of selected mental illness diagnoses and who had an outpatient visit, an intensive outpatient encounter, or partial hospitalization with a mental health practitioner.
Follow-up after Hospitalization for Mental Health Child/Adolescent (FUH-BH-C 30-day)	State-reported	30-day: An outpatient visit, intensive outpatient visit, or partial hospitalization with a mental health practitioner within 30 days after discharge.	The number of eligible discharges for consumers age 6-21 who were hospitalized for treatment of selected mental illness diagnoses and who had an outpatient visit, an intensive outpatient encounter, or partial hospitalization with a mental health practitioner.
Plan All-Cause Readmission (PCR-BH)	State-reported	At least 1 acute readmission for any diagnosis within 30 days of the Index Discharge Date.	The number of eligible discharges.
Patient experience of care survey	State-reported	The number of consumers who selected positive answer options on the survey.	The number of consumers who responded to the survey.
Family experience of care survey	State-reported	The number of family members who selected positive answer options on the survey.	The number of family members who responded to the survey.
Housing Status	State-reported	The number of consumers in each living situation based on their most recent assessment or on the most recent available information on record during the measurement period.	The number of consumers seen in the measurement year.

Source: The Metrics and Quality Measures for Behavioral Health Clinics Technical Specifications and Resource Manuals available at <https://www.samhsa.gov/section-223/quality-measures>.

## **APPENDIX D**

### **Quality Measure Report Caseload Characteristics of CCBHC Populations in DY1**

**Table D.1. Age and gender of clients receiving services from CCBHC, DY1**

	Denominator	Child/Adolescent (ages 0-17)			Adult (ages 18 +)			Female			Male		
		Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.
Total	309,322	23%	0%	58%	77%	42%	100%	52%	35%	61%	48%	39%	65%
MN	23,027	27%	2%	58%	73%	42%	98%	51%	47%	54%	49%	46%	53%
MO	121,787	24%	10%	28%	76%	72%	90%	53%	44%	59%	47%	41%	56%
NJ	17,851	19%	<1%	38%	81%	62%	99%	56%	53%	61%	44%	39%	47%
NV	4,324	8%	7%	8%	92%	92%	93%	42%	42%	50%	57%	50%	58%
NY	49,903	22%	0%	47%	78%	53%	100%	48%	37%	55%	52%	45%	63%
OK	20,610	25%	12%	31%	75%	69%	88%	52%	50%	54%	48%	46%	50%
OR	52,911	24%	5%	40%	76%	60%	95%	52%	47%	55%	48%	44%	52%
PA	18,909	20%	9%	36%	80%	64%	91%	50%	35%	58%	50%	42%	65%

Source: DY1 Quality Measure Reports.

Avg. = average percentage across CCBHCs; Min. = lowest percentage for a CCBHC; Max. = highest percentage for a CCBHC.

**Table D.2. Ethnicity of clients receiving services from CCBHC, DY1**

	Denominator	Hispanic or Latino			Not Hispanic or Latino			Unknown		
		Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.
Total	309,322	11%	1%	92%	74%	1%	99%	15%	0%	84%
MN	23,027	5%	1%	11%	64%	15%	92%	30%	1%	84%
MO	121,787	5%	1%	75%	75%	1%	99%	19%	0%	47%
NJ	17,851	17%	6%	35%	67%	36%	88%	16%	0%	46%
NV	4,324	32%	5%	33%	60%	58%	87%	8%	8%	9%
NY	49,903	17%	2%	69%	78%	25%	95%	4%	0%	9%
OK	20,610	41%	7%	92%	57%	3%	93%	2%	0%	5%
OR	52,911	8%	2%	21%	76%	43%	96%	16%	0%	48%
PA	18,909	9%	1%	39%	84%	34%	99%	6%	0%	64%

Source: DY1 Quality Measure Reports.

Avg. = average percentage across CCBHCs; Min. = lowest percentage for a CCBHC; Max. = highest percentage for a CCBHC.

**Table D.3. Race of clients receiving services from CCBHC, DY1**

	Denom- inator	White			Black or African American			American Indian/ Alaskan Native			Asian			Native Hawaiian/ Pacific Islander			More than One Race			Unknown		
		Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.
Total	309,322	71%	4%	99%	12%	<1%	69%	2%	0%	<1%	1%	0%	41%	<1%	0%	1%	5%	0%	59%	9%	0%	59%
MN	23,027	69%	26%	89%	12%	1%	30%	2%	<1%	6%	4%	<1%	41%	<1%	0%	<1%	5%	4%	7%	8%	2%	13%
MO	121,787	80%	20%	94%	10%	1%	69%	1%	<1%	1%	<1%	0%	1%	<1%	0%	1%	2%	<1%	38%	6%	0%	28%
NJ	17,851	55%	20%	83%	15%	5%	37%	<1%	0%	<1%	3%	<1%	7%	<1%	0%	1%	6%	6%	39%	19%	6%	39%
NV	4,324	45%	44%	64%	21%	1%	22%	1%	0%	4%	2%	0%	2%	1%	0%	1%	25%	6%	26%	5%	5%	5%
NY	49,903	62%	4%	94%	21%	2%	66%	1%	0%	2%	1%	0%	5%	<1%	0%	1%	9%	0%	37%	6%	0%	37%
OK	20,610	72%	69%	74%	13%	2%	23%	8%	7%	10%	1%	<1%	1%	<1%	0%	0%	5%	0%	2%	1%	0%	2%
OR	52,911	71%	39%	90%	3%	1%	11%	2%	<1%	7%	1%	0%	2%	<1%	0%	1%	6%	2%	53%	16%	2%	53%
PA	18,909	66%	16%	99%	22%	<1%	64%	<1%	0%	<1%	<1%	<1%	1%	<1%	0%	0%	2%	0%	59%	9%	0%	59%

Source: DY1 Quality Measure Reports.

Avg. = average percentage across CCBHCs; Min. = lowest percentage for a CCBHC; Max. = highest percentage for a CCBHC.

**Table D.4. Insurance status of clients receiving services from CCBHC, DY1**

	Denom- inator	Medicaid			CHIP			Medicare			Dually Eligible			VHA/TRICARE			Commercially Insured			Uninsured			Other		
		Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.
Total	309,322	53%	23%	99%	2%	0%	24%	4%	0%	16%	8%	0%	23%	1%	0%	2%	16%	0%	38%	14%	0%	49%	2%	0%	43%
MN	23,027	53%	28%	74%	0%	0%	0%	6%	1%	10%	5%	0%	19%	<1%	0%	1%	20%	9%	26%	5%	0%	18%	11%	0%	43%
MO	121,787	46%	23%	94%	1%	0%	24%	4%	0%	16%	10%	2%	23%	1%	0%	2%	17%	0%	36%	18%	1%	49%	2%	0%	28%
NJ	17,851	52%	39%	79%	1%	0%	4%	9%	0%	13%	7%	0%	17%	<1%	0%	1%	23%	1%	37%	5%	0%	8%	2%	0%	12%
NV	4,324	66%	64%	99%	0%	0%	0%	<1%	0%	0%	1%	0%	1%	<1%	0%	0%	6%	6%	9%	17%	0%	18%	9%	0%	10%
NY	49,903	62%	40%	92%	1%	0%	13%	4%	0%	12%	7%	3%	16%	<1%	0%	1%	19%	1%	31%	4%	0%	12%	2%	0%	5%
OK	20,610	41%	36%	44%	0%	0%	0%	4%	3%	5%	9%	9%	9%	<1%	0%	1%	9%	6%	13%	36%	32%	47%	1%	0%	2%
OR	52,911	62%	28%	84%	4%	0%	9%	3%	0%	9%	4%	1%	15%	1%	0%	1%	9%	2%	26%	14%	0%	27%	3%	0%	17%
PA	18,909	61%	43%	83%	<1%	0%	0%	5%	0%	7%	12%	0%	21%	<1%	0%	1%	15%	2%	38%	3%	0%	6%	5%	0%	23%

Source: DY1 Quality Measure Reports.

Avg. = average percentage across CCBHCs; Min. = lowest percentage for a CCBHC; Max. = highest percentage for a CCBHC.



**Table D.5. Housing status of clients receiving services from CCBHC, DY1**

	Denominator	Private Residence			Foster Home			Residential or Institutional Treatment			Jail (Correctional facility)			Homeless			Other			Not Available		
		Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.
Total	231,862	67%	29%	97%	1%	0%	5%	3%	0%	34%	1%	0%	7%	3%	0%	13%	4%	0%	16%	21%	0%	69%
MN	35,803	48%	29%	72%	1%	1%	3%	1%	0%	4%	>1%	0%	1%	3%	0%	10%	3%	0%	4%	44%	19%	69%
MO	53,119	64%	39%	82%	1%	0%	3%	3%	1%	7%	>1%	0%	2%	3%	0%	10%	7%	1%	11%	21%	2%	46%
NJ	13,868	93%	81%	97%	0%	0%	0%	2%	0%	6%	0%	0%	0%	2%	0%	9%	1%	0%	4%	2%	0%	16%
NV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NY	49,903	81%	56%	94%	>1%	0%	2%	4%	0%	34%	>1%	0%	3%	3%	0%	12%	3%	0%	7%	7%	0%	20%
OK	16,085	79%	61%	87%	2%	1%	3%	2%	0%	4%	1%	0%	1%	5%	2%	13%	8%	3%	16%	4%	1%	9%
OR	43,284	55%	30%	75%	3%	1%	5%	5%	1%	7%	1%	0%	1%	5%	2%	10%	3%	1%	10%	28%	7%	63%
PA	19,800	67%	41%	95%	>1%	0%	1%	5%	1%	9%	1%	0%	7%	1%	0%	4%	1%	0%	3%	24%	0%	53%

Source: DY1 Quality Measure Reports.

Notes: Housing status among clients was collected during DY1; the earliest measurement period date was January 1, 2017 and the latest measurement period date was June 30, 2018. Data in the reporting form do not specify exactly when collection occurred.

Avg. = average percentage across CCBHCs; Min. = lowest percentage for a CCBHC; Max. = highest percentage for a CCBHC.