

Washington Rural Health Access Preservation pilot

Final status report

Engrossed Substitute House Bill 2450; Section 2(2)(b)(ii)(D); Chapter 31; Laws of 2016

Substitute House Bill 1520; Section 1(2)(b)(iii)(E); Chapter 198, Laws of 2017

June 15, 2022

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Executive summary

This report is the final report for the Washington Rural Health Access Preservation (WRHAP) pilot, as directed by the Legislature:

Consistent with requirements of ESHB 2450 (2016); Section 2(2)(b)(ii)(D) and SHB 1520 (2017); Sec 1(2)(b)(iii)(E), (D) The department of health, health care authority, and Washington state hospital association will report interim progress to the legislature no later than December 1, 2018, and will report on the results of the pilot no later than six months following the conclusion of the pilot. The reports will describe any policy changes identified during the course of the pilot that would support small critical access hospitals.

This final report evaluates the effectiveness of the WRHAP program based on claims data review (or appropriate phrase (something on delay/timing of information to inform performance analysis)). This evaluation reviewed two main performance areas focused on preserving and strengthening primary care and emergency services to determine:

- 1) Whether behavioral health screening, referral, and treatment in rural health clinics and improved patient care coordination resulted in lower utilization of Emergency Department (ED) and inpatient services.
- 2) Whether the WRHAP program resulted in fewer return visits and reduced potentially avoidable ED visits for non-acute conditions.

This evaluation examined whether the WRHAP case group experienced different changes in measures relative to the control group.

From 2018 to 2020, a decrease in overall use and potentially avoidable ED rate was observed, but it was not statistically significant. From 2018 to 2019, WRHAP CAHs experienced improvement for five of the eight measures, while the control group CAHs and RHCs also experienced improvement for five of the eight measures. From 2019 to 2020, WRHAP CAHs experienced improvement for six of the eight measures, while the control group CAHs and RHCs experienced improvement for seven of the eight measures. For some measures, there were large changes in the rates from 2019 to 2020, which likely come from the effects of COVID-19.

There were not any statistically significant findings from data analysis for this project. There are numerous possible reasons for this, including the sample size, project duration, COVID-19 effects, and confounding variables. For example, the small inpatient volumes at the CAHs and RHCs made a rigorous evaluation of only inpatient services unworkable, which is why the evaluation scope was expanded. The project only included three years of data in the analysis: 2018, 2019, and 2020. This did not allow for a substantial sample size to accumulate for the purposes of this analysis. Another possible factor that may have confounded the results of this analysis is the effects of the COVID-19 pandemic. The scope and intensity of the pandemic's impacts remain unknown, though it is widely understood that COVID-19 had observable effects on health status and health care utilization. Confounding variables represent the final factor related to the lack of statistically significant data in this evaluation. All rates in this report are general data for the entire case cohort and the entire control cohort. Significant differences may be present if analyses were performed focusing on age, gender, or location.

Because this evaluation yielded no statistically significant results in the comparison of included CAHs and non-included CAHs and RHCs, there are no conclusions about the intervention's effectiveness based on the results of group or measure comparisons from this report.

HCA has continued to engage rural providers, payers, associations, Accountable Communities of Health, and others to address the sustainability of rural health systems. HCA has also continued exploring options with the Center for Medicare & Medicaid Innovation (CMMI).

In 2020, HCA applied for and received a CMMI grant called the Community Health Access and Rural Transformation (CHART) Model. Like WRHAP, CHART is a pilot program. CHART aims to sustain access to high-quality care at lower costs in North Central Washington, by bringing together rural health systems, health plans, and community stakeholders to design a rural health system that meets the community's needs.

The CHART Model embodies the importance of engagement with the community and hospitals learned from WRHAP and provides a new value-based sustainable funding mechanism across multiple payers that incentivizes improvements in health outcomes and population health for rural hospitals in North Central Washington.

WRHAP hospitals plan to continue the core activities of the pilot, despite the lack of ongoing funding. These continuing activities include depression screening with a documented follow up plan—to move hospitals towards behavioral health integration; anti-depressant medication management—to improve newly diagnosed patients' adherence to treatment; care coordination –contacting and following up with patients upon discharge from the emergency department (ED); and preventive care – reducing the number of patients seen in the ED for diagnoses that are treatable in lower levels of care. Through the CHART Model and other programs that support rural health transformation, our state will continue to support and strengthen CAHs.

WRHAP background

In 2015, the Department of Health (DOH) and Washington State Hospital Association (WSHA) formed the Washington Rural Health Access Preservation (WRHAP) pilot to develop an alternative payment model for 13 of Washington's smallest, most isolated and financially distressed critical access hospitals (CAHs). CAHs have struggled to provide access to essential services, including emergency and primary care services because of limited and unsustainable funding.

Following the passage of House Bill (HB) 1520 (2017), HCA worked with DOH, WSHA, and the 13 CAHs participating in WRHAP to design how the pilot's funding could support readiness for a new payment methodology that met the legislative requirements. The implementation design focused on areas that contributed to preserving and strengthening primary care and emergency services through the following processes:

- Building capacity for behavioral health services or care coordination services
- Linking quality performance to the implementation of those services

Each participating hospital had the option to focus on one of the two performance areas, behavioral health or care coordination, aimed at strengthening their capacity and readiness for value-based care.

- For those that elected to establish behavioral health services, supplemental funding was linked to the hospital's performance on the clinical quality measure of depression screening.
- For those that elected to establish care coordination services, supplemental funding was linked to the hospital's performance on the clinical quality measure of follow-up after an ED visit or hospital discharge.
- The depression measure remained unchanged throughout the program. The ED care coordination measure required modifications to better align with best practices such as defining a "patient contact" and providing details on special exclusions, such as minors seen for contraception or mental health reasons.

The Washington State Legislature appropriated \$6.1 million in state and federal funds to help these 13 CAHs transition to a new payment model from June 2018 to December 2020. In accordance with the Code of Federal Regulations (CFR) §438.6(c)(1)(i) and (ii), the state required some managed care organizations (MCOs), prepaid inpatient health plan (PIHPs), and prepaid ambulatory health plans (PAHPs) to implement value-based purchasing (VBP) models for provider reimbursement.

These VBP models paid for performance arrangements, which recognize value or outcomes for patients over volume of services. VBP funds were tied to quality improvement metrics that were implemented over a three-year period, from June 2018 to December 2020.

HCA contracted with WSHA to manage the pilot implementation and provide routine updates on WRHAP progress. WSHA published their report in 2021 of their involvement, which is included in the appendix of this report. This final report from HCA provides an evaluation of the WRHAP pilot to the Washington State Legislature and Office of Financial Management (OFM).

Federal match and “pass-through” payments

HCA began communicating with the Centers for Medicare & Medicaid Services (CMS) in 2017 to evaluate ways to obtain federal matching funds under the Medicaid program, and to explore the requirement that HCA encourage additional payers to use the adopted payment methodology.

The Legislature provided \$2.1 million in bridge payments to build capacity for value-based payment and systems transformations for WRHAP hospitals for the 2018 and 2019 fiscal years. The Legislature assumed this \$2.1 million in funding would be matched by state and federal dollars.

The funding was implemented through HCA’s Apple Health contract with Medicaid MCOs and structured to ensure the funds met federal guidelines for Medicaid-matching dollars. Payments for the WRHAP hospitals were approved as “pass-through” payments.¹ Payments came from HCA, through contracted MCOs, to WRHAP hospitals, with payments to WRHAP hospitals based on their reported performance.

Washington State did not receive final CMS approval until June 27, 2018.² Because WRHAP implementation was delayed, the Legislature’s 2018 budget shifted implementation and payments to the 2019 fiscal year.

Contract with WSHA

Based on the CMS approval letter, necessary Apple Health contract amendments took place in July 2018. HCA executed a contract with WSHA on June 18, 2018, to provide technical assistance and oversight support to WRHAP hospitals. WSHA and the hospitals submitted quarterly progress reports to HCA.

WSHA’s planning and implementation support included technical assistance in:

- Staff hiring and training
- Billing process review and reimbursement review
- Alignment with other practice transformation supports and initiatives, such as transformation through Accountable Communities of Health under the Medicaid Transformation Project waiver
- Technical assistance with a “change of scope” (CIS) filing as allowed under federal law and Washington’s Medicaid State Plan

These supports helped WRHAP hospitals to successfully establish new service lines to support greater access to primary care. Notably, CIS strengthened reimbursement to the affiliated rural health clinics (RHCs) owned by the WRHAP hospitals. Fiscal modeling of 2015 hospital cost data under WRHAP demonstrated that all WRHAP-owned RHCs experienced significant losses, and on average, clinic revenues covered only about two-thirds of costs. As allowed under federal law, this filing for CIS increased service capacity for WRHAP-owned RHCs and may contribute to longer-term sustainability.

In 2019, state budget spending authority extended the WRHAP program. A portion of the funding was tied to two new quality health outcome measures: anti-depressant medication management and

¹ “Pass-through payments” are additional dollars paid on top of Medicaid’s standard rates.

² The CMS approval process for HCA’s alternative payment methodology for the pilot was lengthy because it relies on pass-through payments, which CMS is phasing out.

potentially avoidable ED use. All participating hospitals selected at least one of the new metrics to implement, in addition to their previously selected process measure.

WSHA provided a status report to HCA on June 30, 2020. This report summarized WRHAP engagement, technical assistance, and other implementation management assistance provided to pilot participants between July and December 2019. The report also outlined WSHA's plans for data collection and analysis and implementation management for January through June 2020.

WSHA survey and focus group

In February 2021, WSHA conducted a survey and focus group to evaluate the quality components of the WRHAP program.

The survey was designed to evaluate program success from the perspective of CAH clinical staff. A total of nine staff members, one staff member per hospital, responded to the survey. Overall, responses from the survey were positive. Clinical staff believed the program successfully implemented quality improvements and expressed optimism for the long-term benefits of the program for patients and the community.

A focus group was convened with 11 of the 13 executive leaders of WRHAP hospitals. Each executive engaged in one-hour interviews which were designed to gain insights and perspectives on the overall program successes, gaps in sustainability, and strategic visions for ongoing transformation. Hospital executive leaders emphasized the importance of hospital collaboration with outside stakeholders as a key driver of program progress on quality improvement activities.

Payments to WRHAP hospitals were based on deliverables and reporting of participant performance. Installments were distributed at regular intervals based on performance against targets set by HCA. Under the Apple Health contract language, each MCO reported to HCA on the WRHAP pilot hospital's performance and showed proof of payment.

WSHA delivered a [final program report](#) to HCA in August 2021 that summarized activities and trends throughout the WRHAP implementation period. WSHA's report highlighted WRHAP program and service strengths and identified remaining challenges in sustaining access to improved care coordination and behavioral health care within the participating WRHAP hospitals. The report provided considerations and recommendations for future rural transformation initiatives.

The WSHA report was included, along with an interim final report from HCA to the Washington State Legislature and OFM, in January 2022. This final report provides HCA's formal evaluation of the WRHAP program's performance to supplement along with WSHA's final program report.

Evaluation rationale

Rural infrastructure

Washington's rural health care delivery system consists of an interconnected set of providers operating under the public hospital districts (PHDs). Under Washington State law, hospital districts are authorized to operate hospitals and deliver necessary health services to ensure population health. These districts manage all health care provisions in their communities. PHDs own and operate all 13 CAHs under WRHAP and their associated RHCs.

CAHs

The 13 CAHs participating in WRHAP are the smallest hospitals in the state, with Medicaid inpatient service volumes, annual patient counts, ranging between zero (Garfield County Memorial Hospital and East Adams Rural Health Care) and 380 (Mid Valley Hospital) in 2018. A significant number of these CAHs tend to have either zero or small numbers (less than (<) 10) of yearly inpatient stays billed to Medicaid. Most of these hospitals' patient encounters occur through outpatient ED services.

Table 1: CAHs participating in WRHAP

CAHs participating in WRHAP	Number of associated RHCs	Medicaid outpatient ED volume (Nov. 2017-Dec. 2018)	Medicaid potentially avoidable ER visits (Nov. 2017-Dec. 2018)	Medicaid inpatient volume (2018 ³)
Cascade Medical Center	1	817	19%	<10
Columbia Basin Hospital	1	2,008	16%	14
Dayton/Columbia County Health	2	559	13%	13
East Adams Rural Health Care	2	274	10%	0
Ferry County Memorial	2	579	15%	14
Forks Community Hospital	2	2,197	17%	58
Garfield Co. Public	1	220	15%	0
Mid-Valley	1	3,560	16%	380
Morton General	2	1,208	16%	22
Odessa Memorial	1	814	NA	<10
Willapa Harbor	1	5,712	19%	22
North Valley	0	1,605	14%	124
Three Rivers	0	5,379	20%	20

³ For more information on Medicaid inpatient volumes, please see ARM dashboard suite for [inpatient facility data](#).

The small inpatient volumes do not provide a large enough sample size for statistical analysis. Given the small inpatient service volumes and greater focus on outpatient services through the EDs or RHCs, the evaluation scope was widened to include global ED-focused measures, such as All-Cause ED utilization and Potentially Avoidable ED Visits. This was in addition to global inpatient utilization measures, such as Healthcare Effectiveness Data and Information Set (HEDIS) Acute Hospital Inpatient Utilization and Plan All-Cause Hospital Readmission measures.

RHCs associated with CAHs

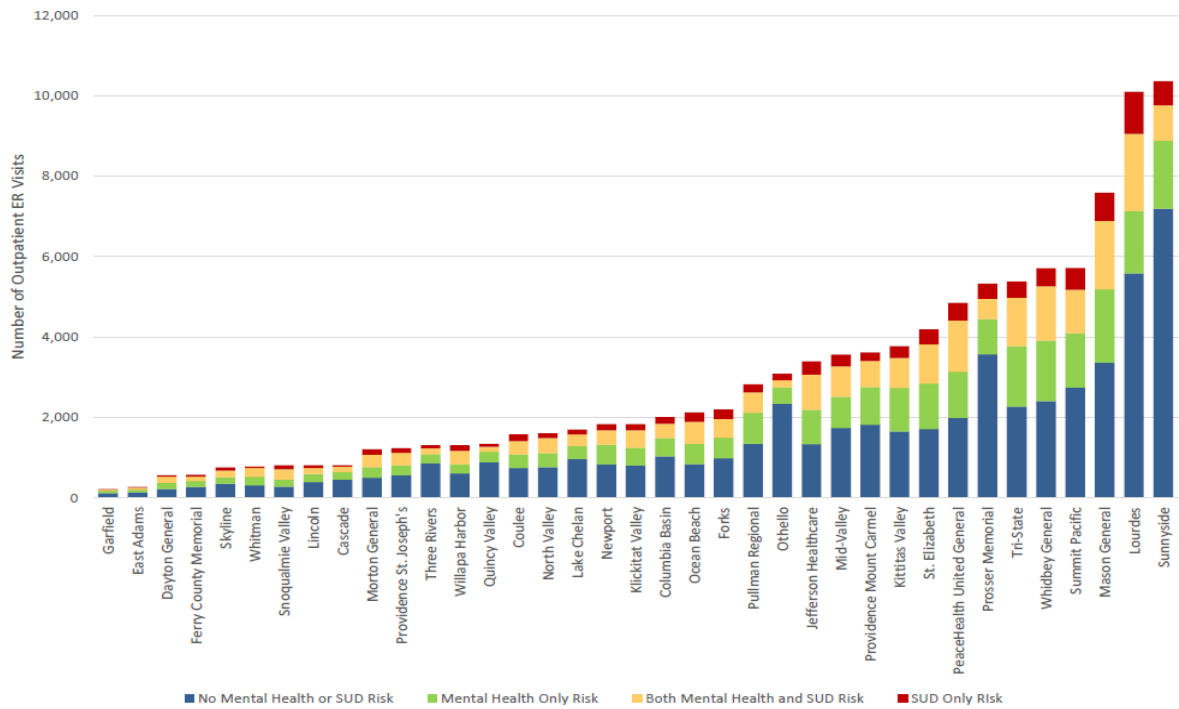
In 11 out of 13 hospital districts, CAHs coexist with RHCs under the same management and are embedded in all health care provision in their service areas, including behavioral health. RHCs and CAHs continue to make investments to strengthen behavioral health services and patient care coordination, with the goal of reducing the utilization of hospital-based ED and inpatient services. Because of these circumstances, the evaluation includes measures, such as anti-depressant medication management rates, that capture outcomes at the RHC-level.

Behavioral health-related utilization of hospital ED and inpatient services

Prior studies performed by HCA's data team indicated nearly half of overall ED use involved Apple Health clients with a prior history of behavioral health disorders, including mental health and substance use disorders. This pattern exists in most CAHs. (See Figure 1 below).

It is also true that patients with unmet behavioral health needs tend to use hospital ED and inpatient services primarily for non-behavioral health-related reasons, such as aches and pains or for injuries that are captured as medical, rather than behavioral health. Only five to 10 percent of all facility-based service utilization is primarily from behavioral health-related diagnoses. However, when accounting for behavioral health and patient care coordination, a decline in the overall and potentially avoidable ED use was expected in the results.

Figure 1: CAH's annual outpatient ED utilization counts of medicaid recipients by mental health and substance use diagnosis history



Evaluation design

Reason for the evaluation design

Given Washington’s health care delivery infrastructure and the impact of untreated behavioral health needs, this evaluation focused on the linkages between behavioral health treatment need, care coordination, and overall service utilization with community-, clinic-, and hospital-level measures.

The theory was that strengthening behavioral health screening, referral, and treatment in rural health clinics and providing better patient coordination would result in lower utilization of ED and inpatient services. The WRHAP program was also intended to prevent return visits and reduce potentially avoidable use of EDs for non-acute conditions.

Evaluation scope and primary data sources

The evaluation focused on the health care services provided for Medicaid clients using administrative Medicaid client and billing data.

Methodology

This evaluation implemented pre-, post-, and control group comparisons to allow for calculations of statistically significant differences between cases as a whole and controls for: measures at baseline (2018) compared to measures after one year of implementation (2019), measures after one year of implementation (2019) compared to measures after two years of implementation (2020), and for measures at baseline (2018) compared to measures after two years of implementation (2020).

Table 2: non-participating CAHs and RHCs as controls

C A H	Number of associated RHCs	Medicaid outpatient ED volume (Nov. 2017-Dec. 2018)	Medicaid potentially avoidable ER visits (Nov. 2017-Dec. 2018)	Medicaid inpatient volume (2018 ^{Error!} <small>Bookmark not defined.</small>)
P e a c e h e a l t h P e a c e l s l a	0	804	12%	<10

C A H	Number of associated RHCs	Medicaid outpatient ED volume (Nov. 2017-Dec. 2018)	Medicaid potentially avoidable ER visits (Nov. 2017-Dec. 2018)	Medicaid inpatient volume (2018 ^{Error!} <small>Bookmark not defined.</small>)
n d P e a c e h e a l t h U n i t e d G e n e r a l	0	4,848	16%	<10
P r o v i d e n c e S t J o s e p h	0	1,235	17%	<10

C A H	Number of associated RHCs	Medicaid outpatient ED volume (Nov. 2017-Dec. 2018)	Medicaid potentially avoidable ER visits (Nov. 2017-Dec. 2018)	Medicaid inpatient volume (2018 ^{Error!} <small>Bookmark not defined.</small>)
S u m m i t P a c i f i c	3	5,721	17%	31
L a k e C h e l a n	1	1,695	17%	0
W h i t m a n	0	778	13%	<10
C o u l e e	2	1,575	18%	200
L i n c o l n	3	814	19%	32
Q u	1	1,341	16%	<10

CAH	Number of associated RHCs	Medicaid outpatient ED volume (Nov. 2017-Dec. 2018)	Medicaid potentially avoidable ER visits (Nov. 2017-Dec. 2018)	Medicaid inpatient volume (2018 ^{Error!} Bookmark not defined.)
incidentally				
N 1		1,832	17%	<10
newport				
K 1		1,834	17%	<10
clerkitat				
valley				

Evaluation measures and results

Table 11 in the Appendix lists all data included in the analysis (except for Potentially Avoidable ER Visits), including yearly CAH/RHC patient volumes and measure rates. The data analyzed is for calendar years 2018, 2019, and 2020.

Statistical significance ($p \leq 0.05$) was tested for the differences in the case group and control group's values for the seven measures between 2018 data and 2019 data, as well as between 2018 data and 2020 data. No statistical significance was found for any comparison. Table 14 in the Appendix displays the results of this testing.

Mental Health Treatment Penetration

Definition: percentage of Medicaid beneficiaries aged six and older with a mental health service need identified within the past two years, who received at least one qualifying service during the measurement year

Table 3: Mental Health Treatment Penetration measure

	2018	2019	2020
WRHAP Cases	48.9%	50.9%	48.8%
Controls	52.0%	53.5%	52.1%

Rate indicator: higher is better

Comparison of baseline (2018) to after one year of intervention (2019):

- For the participating CAHs, mental health treatment penetration increased from 48.9 percent to 50.9 percent, with nine of 13 CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, mental health treatment penetration increased from 52.0 percent to 53.5 percent, with eight of 11 experiencing an increase.
- The average rate increased for both the case and control groups.

Comparison after one year of intervention (2019) to after two years of intervention (2020):

For the participating CAHs, mental health treatment penetration decreased from 50.9 percent to 48.8 percent, with 10 of 13 CAHs experiencing a decrease.

- For the non-participating CAHs and RHCs, mental health treatment penetration decreased from 53.5 percent to 52.1 percent, with seven of 11 experiencing a decrease.
- The average rate decreased for both the case and control groups.

Comparison of baseline (2018) to after two years of intervention (2020):

- For the participating CAHs, mental health treatment penetration decreased from 48.9 percent to 48.8 percent, with six of 13 CAHs experiencing a decrease.
- For the non-participating CAHs and RHCs, mental health treatment penetration increased from 52.0 percent to 52.1 percent, with five of 11 experiencing an increase.
- The average rate decreased for the case group and increased for the control group.

Substance Use Disorder Treatment Penetration

Definition: percentage of Medicaid beneficiaries aged 12 and older with a substance use disorder treatment need identified within the past two years, who received at least one qualifying substance use disorder treatment during the measurement year

Table 4: Substance Use Disorder Treatment Penetration measure

	2018	2019	2020
Cases	21.6%	28.2%	26.6%
Controls	31.5%	35.1%	34.6%

Rate indicator: higher is better

Comparison of baseline (2018) to after one year of intervention (2019):

- For the participating CAHs, substance use disorder treatment penetration increased from 21.6 percent to 28.2 percent, with 12 of 13 CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, substance use disorder treatment penetration increased from 31.5 percent to 35.2 percent, with eight of 11 experiencing an increase.
- The average rate increased for both the case and control groups.

Comparison after one year of intervention (2019) to after two years of intervention (2020):

- For the participating CAHs, substance use disorder treatment penetration decreased from 28.2 percent to 26.6 percent, with eight of 13 CAHs experiencing a decrease.
- For the non-participating CAHs and RHCs, substance use disorder treatment penetration decreased from 35.1 percent to 34.6 percent, with six of 11 experiencing a decrease.
- The average rate decreased for both the case and control groups.

Comparison of baseline (2018) to after two years of intervention (2020):

- For the participating CAHs, substance use disorder treatment penetration increased from 21.6 percent to 26.6 percent, with 11 of 13 CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, substance use disorder treatment penetration increased from 31.5 percent to 34.6 percent, with nine of 11 experiencing an increase.
- The average rate increased for both the case and control groups.

Continuity of Pharmacotherapy for Opioid Use Disorder

Definition: percentage of Medicaid beneficiaries aged 18 years and older with pharmacotherapy for opioid use disorder (OUD) who have at least 180 days of continuous treatment

Table 5: Continuity of Pharmacotherapy for OUD measure

	2018	2019	2020
Cases	29.5%	45.2%	45.4%
Controls	38.3%	48.0%	50.6%

Rate indicator: higher is better

Comparison of baseline (2018) to after one year of intervention (2019):

- For the participating CAHs, continuity of pharmacotherapy for OUD increased from 29.5 percent to 45.2 percent, with all (13 of 13) CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, continuity of pharmacotherapy for OUD increased from 38.3 percent to 48.0 percent, with nine of 11 experiencing an increase.
- The average rate increased overall for both the case and control groups.

Comparison after one year of intervention (2019) to after two years of intervention (2020):

- For the participating CAHs, continuity of pharmacotherapy for OUD increased from 45.2 percent to 45.4 percent, with nine of 13 CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, continuity of pharmacotherapy for OUD increased from 48.0 percent to 50.6 percent, with eight of 11 experiencing an increase.
- The average rate increased overall for both the case and control groups.

Comparison of baseline (2018) to after two years of intervention (2020):

- For the participating CAHs, continuity of pharmacotherapy for OUD increased from 29.5 percent to 45.4 percent, with all (13 of 13) CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, continuity of pharmacotherapy for OUD increased from 38.3 percent to 50.6 percent, with nine of 11 experiencing an increase.
- The average rate increased overall for both the case and control groups.

Acute Phase Antidepressant Medication Management

Definition: percentage of Medicaid beneficiaries aged 18 years and older who were treated with antidepressant medication, had a diagnosis of major depression, and who remained on an antidepressant medication treatment for at least 84 days (12 weeks)

Table 6: Acute Phase Antidepressant Medication Management measure

	2018	2019	2020
Cases	52.2%	51.4%	54.2%
Controls	46.0%	53.3%	56.1%

Rate indicator: higher is better

Comparison of baseline (2018) to after one year of intervention (2019):

- For the participating CAHs, acute phase antidepressant medication management decreased from 52.2 percent to 51.4 percent, with four of 13 CAHs experiencing a decrease.
- For the non-participating CAHs and RHCs, acute phase antidepressant medication management increased from 46.0 percent to 53.3 percent, with eight of 11 experiencing an increase.
- The average rate decreased for the case group and increased for the control group.

Comparison after one year of intervention (2019) to after two years of intervention (2020):

- For the participating CAHs, acute phase antidepressant medication management decreased from 51.4 percent to 54.2 percent, with six of 13 CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, acute phase antidepressant medication management increased from 53.3 percent to 56.1 percent, with seven of 11 experiencing an increase.
- The average rate decreased for the case group and increased for the control group.

Comparison of baseline (2018) to after two years of intervention (2020):

- For the participating CAHs, acute phase antidepressant medication management increased from 52.2 percent to 54.2 percent, with nine of 13 CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, acute phase antidepressant medication management increased from 46.0 percent to 56.1 percent, with nine of 11 experiencing an increase.
- The average rate increased overall for both the case and control groups.

Continuation Phase Antidepressant Medication Management

Definition: the percentage of Medicaid beneficiaries aged 18 years and older who were treated with antidepressant medication, had a diagnosis of major depression, and who remained on an antidepressant medication treatment for at least 180 days (six months)

Table 7: Continuation Phase Antidepressant Medication Management measure

	2018	2019	2020
Cases	38.0%	38.5%	42.5%
Controls	30.3%	36.3%	42.5%

Rate indicator: higher is better

Comparison of baseline (2018) to after one year of intervention (2019):

- For the participating CAHs, continuous phase antidepressant medication management increased from 38.0 percent to 38.5 percent, with seven of 13 CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, continuous phase antidepressant medication management increased from 30.3 percent to 36.3 percent, with eight of 11 experiencing an increase.
- The average rate increased for both the case and control groups.

Comparison after one year of intervention (2019) to after two years of intervention (2020):

- For the participating CAHs, continuous phase antidepressant medication management increased from 38.5 percent to 42.5 percent, with nine of 13 CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, continuous phase antidepressant medication management increased from 36.3 percent to 42.5 percent, with eight of 11 experiencing an increase.
- The average rate increased for both the case and control groups.

Comparison of baseline (2018) to after two years of intervention (2020):

- For the participating CAHs, continuous phase antidepressant medication management increased from 38.0 percent to 42.5 percent, with nine of 13 CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, continuous phase antidepressant medication management increased from 30.3 percent to 42.5 percent, with 10 of 11 experiencing an increase.
- The average rate increased for both the case and control groups.

All-Cause Emergency Department Hospitalization Rate

Definition: rate of Medicaid beneficiary visits to an emergency department, including visits related to mental health and substance use disorder. Metric is expressed as a rate per 1,000 denominator member months in the measurement year.

Table 8: All-Cause Emergency Department Hospitalization Rate measure

	2018	2019	2020
Cases	124	129	108
Controls	128	132	120

Rate indicator: lower is better

Comparison of baseline (2018) to after one year of intervention (2019):

- For the participating CAHs, all-cause emergency department hospitalization rate increased from 124 to 129 per 1,000 members, with eight of 13 CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, all-cause emergency department hospitalization increased from 128 to 132 per 1,000 members, with eight of 11 experiencing an increase.
- The average rate increased for both the case and control groups.

Comparison after one year of intervention (2019) to after two years of intervention (2020):

- For the participating CAHs, all-cause emergency department hospitalization decreased from 129 to 108 per 1,000 members, with all (13 of 13) CAHs experiencing a decrease.
- For the non-participating CAHs and RHCs, all-cause emergency department hospitalization decreased from 132 to 120 per 1,000 members, with eight of 11 experiencing a decrease.
- The average rate decreased for both the case and control groups.

Comparison of baseline (2018) to after two years of intervention (2020):

- For the participating CAHs, all-cause emergency department hospitalization decreased from 124 to 108 per 1,000 members, with 12 of 13 CAHs experiencing a decrease.
- For the non-participating CAHs and RHCs, all-cause emergency department hospitalization decreased from 128 to 120 per 1,000 members, with eight of 11 experiencing a decrease.
- The average rate decreased for both the case and control groups.

Acute Hospital Inpatient Utilization Rate

Definition: for Medicaid beneficiaries 18 years of age and older, the rate of acute inpatient discharges per 1,000 members during the measurement year

Table 9: Acute Hospital Inpatient Utilization Rate measure

	2018	2019	2020
Cases	123	130	103
Controls	119	123	112

Rate indicator: lower is better

Comparison of baseline (2018) to after one year of intervention (2019):

- For the participating CAHs, acute hospital inpatient utilization rate increased from 123 to 130 per 1,000 members, with nine of 13 CAHs experiencing an increase.
- For the non-participating CAHs and RHCs, acute hospital inpatient utilization rate increased from 119 to 123 per 1,000 members, with eight of 11 experiencing an increase.
- The average rate increased for both the case and control groups.

Comparison after one year of intervention (2019) to after two years of intervention (2020):

- For the participating CAHs, acute hospital inpatient utilization rate penetration decreased from 130 to 103 per 1,000 members, with three of 13 CAHs experiencing a decrease.
- For the non-participating CAHs and RHCs, acute hospital inpatient utilization rate decreased from 123 to 112 per 1,000 members, with four of 11 experiencing a decrease.
- The average rate decreased for both the case and control groups.

Comparison of baseline (2018) to after two years of intervention (2020):

- For the participating CAHs, acute hospital inpatient utilization rate decreased from 123 to 103 per 1,000 members, with seven of 13 CAHs experiencing a decrease.
- For the non-participating CAHs and RHCs, acute hospital inpatient utilization rate decreased from 119 to 112 per 1,000 members, with five of 11 experiencing a decrease.
- The average rate decreased for both the case and control groups.

Potentially Avoidable Emergency Room Visits

Definition: this measure identifies the percentage of all emergency room (ER) visits during the measurement year that were potentially avoidable.

Table 10: Potentially Avoidable ER Visits measure

	2018	2019	2020
Cases	16.4%	14.9%	11.9%
Controls	16.2%	16.5%	13.3%

Rate indicator: lower is better

Full data for this measure is listed in Tables 11 and 12 in the Appendix.

Comparison of baseline (2018) to after one year of intervention (2019):

- For the participating CAHs, the percentage of potentially avoidable ER visits decreased from 16.4 percent to 14.9 percent.
- For the non-participating CAHs and RHCs, the percentage of potentially avoidable ER visits increased from 16.2 percent to 16.5 percent.
- The average rate decreased for the case group and decreased for the control group.

Comparison after one year of intervention (2019) to after two years of intervention (2020):

- For the participating CAHs, the percentage of potentially avoidable ER visits decreased from 14.9 percent to 11.9 percent.
- For the non-participating CAHs and RHCs, the percentage of potentially avoidable ER visits decreased from 16.5 percent to 13.3 percent.
- The average rate decreased for both the case and control groups.

Comparison of baseline (2018) to after two years of intervention (2020):

- For the participating CAHs, the percentage of potentially avoidable ER visits decreased from 16.4 percent to 11.9 percent.
- For the non-participating CAHs and RHCs, the percentage of potentially avoidable ER visits decreased from 16.2 percent to 13.3 percent.
- The average rate decreased for both the case and control groups.

Discussion

Prior studies performed by the HCA analytics team indicate nearly half of overall ED use involved Medicaid clients with a prior history of behavioral health disorders, including mental health and substance use disorders. This is a pattern prevalent in most CAHs. With the increased emphasis in WRHAP on behavioral health and patient coordination, a decline in overall use and potentially avoidable ED use was expected to be observed in the results.

From 2018 to 2020, a decrease in overall use and potentially avoidable ED rate was observed, but it was not statistically significant. Additional context and discussion on this measure and others are needed.

Results from 2018 to 2019

For the comparison of measurements from 2018 to those from 2019, CAHs experienced improvement for five of the eight measures, while the control group CAHs and RHCs also experienced improvement for five of the eight measures. Since none of the analysis was of statistical significance, we conclude there was not a major difference in performance between the case group and the control group. Generally, where there was improvement in the case group, there was also improvement in the control group.

Results from 2019 to 2020

For the comparison of measurements from 2019 to those of 2020, the case group CAHs experienced improvement for six of the eight measures, while the control group CAHs and RHCs experienced improvement for seven of the eight measures. Since none of the analysis was of statistical significance, we conclude there was not a major difference in performance between the the case group and the control group. Generally, where there was improvement in the case group, there was also improvement in the control group.

For some measures, there were large changes in the rates from 2019 to 2020, which likely come from the effects of COVID-19. For example, acute hospital inpatient utilization rate decreased, for the case group and control group. Hospitals were less likely to admit patients for conditions that sometimes warrant inpatient admission during the pandemic compared to during non-pandemic conditions, so the results may not be indicative of project success.

The rates for substance use disorder treatment penetration decreased for both the case group and the control group, which may be explained by the fact that people were less likely to utilize health care during the pandemic if their ailment was not related to COVID-19. This result doesn't necessarily indicate project failure. COVID-19 confuses these results, preventing proper evaluation of the project for the given data, time duration, and context.

For the comparison of measurements from 2019 to those of 2020, the case group CAHs experienced improvement for seven of the eight measures, while the control group CAHs and RHCs experienced improvement for eight of the eight measures. Since none of the analysis was of statistical significance, we conclude there was not a major difference in performance between the case and control groups. Generally, where there was improvement in the case group, there was also improvement in the control group.

Limitations

There were not any statistically significant findings from data analysis for this project; however, there are numerous possible reasons for this, including the sample size, project duration, COVID-19 effects, and confounding variables.

The small inpatient volumes at the CAHs and RHCs made a rigorous evaluation of only inpatient services unworkable, which is why the evaluation scope was expanded. However, it may be that the sample size of patients served by these CAHs and RHCs is not large enough to allow for statistical significance, even when some outpatient services are included.

The limited project duration also complicates the findings of this evaluation. This evaluation included three years of data in the analysis: 2018, 2019, and 2020. This did not allow for a substantial sample size to accumulate for the purposes of this analysis. Including only a baseline year and two years of post-implementation data did not allow sufficient time for the effects of the implementation to develop. The interventions in this project may require more time for their effects to be noticeable in the tracked measures.

Another possible factor that may have confounded the results of this analysis is the effects of the COVID-19 pandemic. The scope and intensity of the pandemic's impacts remain unknown, though it is widely understood that COVID-19 had observable effects on health status and health care utilization.

Confounding variables represent the final factor related to the lack of statistically significant data in this evaluation. All rates in this report are general data for the entire case cohort and the entire control cohort. Significant differences may be present if analyses were performed focusing on age, gender, or location.

Conclusion

Because this evaluation yielded no statistically significant results in the comparison of included CAHs (participating in WRHAP), and non-included CAHs and RHCs, there are no conclusions about the intervention's effectiveness based on the results of group or measure comparisons from this report.

WRHAP hospitals plan to continue the core activities of the pilot, despite the lack of ongoing funding, to maintain the momentum gained over the last few years of implementation. These continuing activities include depression screening with a documented follow up plan—to move hospitals towards behavioral health integration; anti-depressant medication management—to improve newly diagnosed patients' adherence to treatment; care coordination –contacting and following up with patients upon discharge from the emergency department (ED); and preventive care – reducing the number of patients seen in the ED for diagnoses that are treatable in lower levels of care.

Through the CHART Model and other programs that support rural health transformation, our state can continue to support and strengthen CAHs. CHART presents an opportunity to demonstrate in a four-county region the success of an aligned alternative payment model which includes Medicare, Medicaid, and some commercial payers, encompassing a greater volume of patients than was captured by the WRHAP pilot.

Appendix

Table 11: metrics and corresponding data for calendar year (CY) 2018, 2019, and 2020 of CAHs and RHCs included in analysis

Key for Metrics:

- SUPPL-MH-B: mental health treatment penetration
- SUPPL-OD: continuity of pharmacotherapy for OUD
- SUPPL-SUD: substance use disorder treatment penetration
- AMM_acute: acute phase antidepressant medication management
- AMM_continuation: continuous phase antidepressant medication management
- ED: all-cause emergency department hospitalization rate
- AHU: acute hospital inpatient utilization rate penetration

*CACO refers to whether the CAH is a case (selected for intervention) or a control (not selected for intervention), “1” means case and “0” means control; if the numerator is less than 10 for a metric, both the numerator and denominator are suppressed.

Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
SUPPL-MH-B	Coulee Medical Center	0	456	550	530	985	1075	1055	0.46294416 2	0.51162790 7	0.502369668
SUPPL-MH-B	Klickitat Valley Health	0	577	709	790	1087	1368	1506	0.53081876 7	0.51827485 4	0.524568393
SUPPL-MH-B	Lake Chelan Community Hospital	0	495	433	366	865	855	773	0.57225433 5	0.50643274 9	0.473479948
SUPPL-MH-B	Lincoln Hospital	0	431	471	658	915	941	1294	0.47103825 1	0.50053135	0.508500773
SUPPL-MH-B	Newport Hospital and Health Services	0	711	914	754	1553	1804	1584	0.45782356 7	0.50665188 5	0.476010101

Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
SUPPL-MH-B	Peacehealth Peace Island	0	286	629	343	483	1081	585	0.59213250 5	0.58186864	0.586324786
SUPPL-MH-B	Peacehealth United General	0	1434	1492	1393	2622	2662	2550	0.54691075 5	0.56048084 1	0.54627451
SUPPL-MH-B	Providence St Joseph	0	589	665	752	1130	1195	1388	0.52123893 8	0.55648535 6	0.541786744
SUPPL-MH-B	Quincy Valley Medical Center	0	93	211	205	180	382	367	0.51666666 7	0.55235602 1	0.558583106
SUPPL-MH-B	Summit Pacific	0	2623	2958	2620	4943	5235	5194	0.53064940 3	0.56504298	0.504428186
SUPPL-MH-B	Whitman Hospital and Medical Center	0	378	553	664	731	1047	1296	0.51709986 3	0.52817574	0.512345679
SUPPL-MH-B	Arbor Health Morton	1	448	540	487	1068	1133	1159	0.41947565 5	0.47661076 8	0.420189819
SUPPL-MH-B	Cascade Medical Center	1	367	521	368	584	854	685	0.62842465 8	0.61007025 8	0.537226277
SUPPL-MH-B	Columbia Basin Hospital	1	556	632	648	1221	1260	1230	0.45536445 5	0.50158730 2	0.526829268
SUPPL-MH-B	Dayton/Columbi a County Health	1	400	394	364	695	715	729	0.57553956 8	0.55104895 1	0.499314129
SUPPL-MH-B	East Adams Rural Health Care	1	122	139	158	241	271	313	0.50622406 6	0.51291512 9	0.504792332
SUPPL-MH-B	Ferry County Memorial	1	220	224	224	461	469	474	0.47722342 7	0.47761194	0.47257384
SUPPL-MH-B	Forks Community Hospital	1	450	546	542	897	928	965	0.50167224 1	0.58836206 9	0.561658031

Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
SUPPL-MH-B	Garfield County Memorial Hospital	1	79	73	73	175	150	154	0.451428571	0.486666667	0.474025974
SUPPL-MH-B	Mid Valley Hospital	1	977	1067	1057	2100	2317	2222	0.465238095	0.460509279	0.47569757
SUPPL-MH-B	North Valley Hospital	1	425	457	421	1010	1054	1027	0.420792079	0.433586338	0.40993184
SUPPL-MH-B	Odessa Memorial Healthcare Center	1	62	66	71	113	114	142	0.548672566	0.578947368	0.5
SUPPL-MH-B	Three Rivers	1	312	279	296	691	660	623	0.451519537	0.422727273	0.475120385
SUPPL-MH-B	Willapa Harbor Hospital	1	370	450	540	809	879	1108	0.457354759	0.511945392	0.487364621
SUPPL-OD	Coulee Medical Center	0	33	77	85	111	157	161	0.297297297	0.49044586	0.527950311
SUPPL-OD	Klickitat Valley Health	0	44	95	115	157	229	230	0.280254777	0.414847162	0.5
SUPPL-OD	Lake Chelan Community Hospital	0	59	54	47	126	120	112	0.468253968	0.45	0.419642857
SUPPL-OD	Lincoln Hospital	0	36	33	70	114	108	183	0.315789474	0.305555556	0.382513661
SUPPL-OD	Newport Hospital and Health Services	0	89	148	105	210	285	250	0.423809524	0.519298246	0.42
SUPPL-OD	Peacehealth Peace Island	0	25	150	51	55	220	74	0.454545455	0.681818182	0.689189189
SUPPL-OD	Peacehealth United General	0	295	392	391	623	681	697	0.473515249	0.575624082	0.56097561

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Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
SUPPL-ODD	Providence St Joseph	0	72	76	123	175	174	232	0.411428571	0.436781609	0.530172414
SUPPL-ODD	Quincy Valley Medical Center	0	<10	18	19	<50	39	37	0.4375	0.461538462	0.513513514
SUPPL-ODD	Summit Pacific	0	495	717	811	978	1200	1268	0.506134969	0.5975	0.639589905
SUPPL-ODD	Whitman Hospital and Medical Center	0	12	37	45	82	107	117	0.146341463	0.345794393	0.384615385
SUPPL-ODD	Arbor Health Morton	1	29	44	63	83	126	151	0.349397599	0.349206349	0.417218543
SUPPL-ODD	Cascade Medical Center	1	22	104	59	51	145	103	0.431372549	0.717241379	0.572815534
SUPPL-ODD	Columbia Basin Hospital	1	23	44	51	128	128	150	0.1796875	0.34375	0.34
SUPPL-ODD	Dayton/Columbia County Health	1	26	51	51	103	109	105	0.252427184	0.467889908	0.485714286
SUPPL-ODD	East Adams Rural Health Care	1	<10	16	12	<50	32	29	0.275862069	0.5	0.413793103
SUPPL-ODD	Ferry County Memorial	1	19	24	39	65	67	71	0.292307692	0.358208955	0.549295775
SUPPL-ODD	Forks Community Hospital	1	85	91	93	213	205	190	0.399061033	0.443902439	0.489473684
SUPPL-ODD	Garfield County Memorial Hospital	1	<10	<10	13	<50	<50	23	0.263157895	0.315789474	0.565217391
SUPPL-ODD	Mid Valley Hospital	1	69	128	151	260	307	323	0.265384615	0.416938111	0.467492261

Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
SUPPL-ODD	North Valley Hospital	1	42	40	37	116	113	102	0.362068966	0.353982301	0.362745098
SUPPL-ODD	Odessa Memorial Healthcare Center	1	<10	10	<10	<50	14	<50	0.125	0.714285714	0.2
SUPPL-ODD	Three Rivers	1	15	24	30	75	73	71	0.2	0.328767123	0.422535211
SUPPL-ODD	Willapa Harbor Hospital	1	57	73	108	128	128	175	0.4453125	0.5703125	0.617142857
SUPPL-SUD	Coulee Medical Center	0	110	148	149	414	471	428	0.265700483	0.314225053	0.348130841
SUPPL-SUD	Klickitat Valley Health	0	135	175	195	462	577	600	0.292207792	0.303292894	0.325
SUPPL-SUD	Lake Chelan Community Hospital	0	127	111	88	310	310	285	0.409677419	0.358064516	0.30877193
SUPPL-SUD	Lincoln Hospital	0	72	78	132	254	264	439	0.283464567	0.295454545	0.300683371
SUPPL-SUD	Newport Hospital and Health Services	0	151	260	204	618	787	699	0.24433657	0.330368488	0.291845494
SUPPL-SUD	Peacehealth Peace Island	0	62	208	80	186	450	180	0.333333333	0.462222222	0.444444444
SUPPL-SUD	Peacehealth United General	0	527	632	638	1320	1337	1352	0.399242424	0.472700075	0.471893491
SUPPL-SUD	Providence St Joseph	0	129	118	186	424	419	539	0.304245283	0.281622912	0.345083488
SUPPL-SUD	Quincy Valley Medical Center	0	22	45	38	64	137	154	0.34375	0.328467153	0.246753247

Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
SUPPL-SUD	Summit Pacific	0	823	1027	1146	2009	2261	2371	0.40965654 6	0.45422379 5	0.483340363
SUPPL-SUD	Whitman Hospital and Medical Center	0	38	70	76	218	270	319	0.17431192 7	0.25925925 9	0.238244514
SUPPL-SUD	Arbor Health Morton	1	85	91	121	560	683	704	0.15178571 4	0.13323572 5	0.171875
SUPPL-SUD	Cascade Medical Center	1	49	142	97	179	362	285	0.27374301 7	0.39226519 3	0.340350877
SUPPL-SUD	Columbia Basin Hospital	1	76	108	106	470	470	489	0.16170212 8	0.22978723 4	0.216768916
SUPPL-SUD	Dayton/Columbi a County Health	1	61	85	88	273	280	277	0.22344322 3	0.30357142 9	0.317689531
SUPPL-SUD	East Adams Rural Health Care	1	14	27	24	80	89	96	0.175	0.30337078 7	0.25
SUPPL-SUD	Ferry County Memorial	1	39	50	52	183	183	180	0.21311475 4	0.27322404 4	0.288888889
SUPPL-SUD	Forks Community Hospital	1	168	193	169	454	479	476	0.37004405 3	0.40292275 6	0.355042017
SUPPL-SUD	Garfield County Memorial Hospital	1	11	14	17	50	56	68	0.22	0.25	0.25
SUPPL-SUD	Mid Valley Hospital	1	183	276	270	861	952	941	0.21254355 4	0.28991596 6	0.286928799
SUPPL-SUD	North Valley Hospital	1	64	71	63	458	474	484	0.13973799 1	0.14978903	0.130165289
SUPPL-SUD	Odessa Memorial	1	<10	10	<10	<50	28	<50	0.16129032 3	0.35714285 7	0.2

Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
	Healthcare Center										
SUPPL-SUD	Three Rivers	1	38	46	44	206	198	189	0.184466019	0.232323232	0.232804233
SUPPL-SUD	Willapa Harbor Hospital	1	114	131	186	348	379	443	0.327586207	0.345646438	0.41986456
AMM_acute	Coulee Medical Center	0	19	28	29	45	49	57	0.422222222	0.571428571	0.50877193
AMM_acute	Klickitat Valley Health	0	43	44	54	75	75	88	0.573333333	0.586666666	0.613636364
AMM_acute	Lake Chelan Community Hospital	0	22	15	22	49	42	40	0.448979592	0.357142857	0.55
AMM_acute	Lincoln Hospital	0	16	30	47	38	57	86	0.421052632	0.526315789	0.546511628
AMM_acute	Newport Hospital and Health Services	0	41	55	44	96	105	85	0.427083333	0.523809524	0.517647059
AMM_acute	Peacehealth Peace Island	0	<10	48	15	<50	74	24	0.363636364	0.648648649	0.625
AMM_acute	Peacehealth United General	0	87	94	95	167	191	187	0.520958084	0.492146597	0.50802139
AMM_acute	Providence St Joseph	0	30	39	49	68	80	84	0.441176471	0.4875	0.583333333
AMM_acute	Quincy Valley Medical Center	0	<10	12	<10	<50	25	<50	0.222222222	0.48	0.5
AMM_acute	Summit Pacific	0	146	194	183	295	367	342	0.494915254	0.528610354	0.535087719
AMM_acute	Whitman Hospital and Medical Center	0	23	21	33	32	32	48	0.71875	0.65625	0.6875

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Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
AMM_acute	Arbor Health Morton	1	34	32	31	70	62	55	0.485714286	0.516129032	0.563636364
AMM_acute	Cascade Medical Center	1	20	35	16	36	58	34	0.555555556	0.603448276	0.470588235
AMM_acute	Columbia Basin Hospital	1	36	46	34	84	70	66	0.428571429	0.657142857	0.515151515
AMM_acute	Dayton/Columbia County Health	1	12	29	15	28	47	27	0.428571429	0.617021277	0.555555556
AMM_acute	East Adams Rural Health Care	1	<10	<10	12	<50	<50	25	0.538461538	0.466666667	0.48
AMM_acute	Ferry County Memorial	1	16	14	<10	34	27	<50	0.470588235	0.518518519	0.428571429
AMM_acute	Forks Community Hospital	1	25	23	26	53	55	42	0.471698113	0.418181818	0.619047619
AMM_acute	Garfield County Memorial Hospital	1	<10	<10	<10	<50	<50	<50	0.666666667	0.4	1
AMM_acute	Mid Valley Hospital	1	46	73	59	107	146	118	0.429906542	0.5	0.5
AMM_acute	North Valley Hospital	1	18	23	29	49	52	55	0.367346939	0.442307692	0.527272727
AMM_acute	Odessa Memorial Healthcare Center	1	<10	<10	<10	<50	<50	<50	1	0.5	0.25
AMM_acute	Three Rivers	1	12	19	17	27	40	28	0.444444444	0.475	0.607142857
AMM_acute	Willapa Harbor Hospital	1	15	21	33	30	37	63	0.5	0.567567568	0.523809524

Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
AMM_continuation	Coulee Medical Center	0	13	16	19	45	49	57	0.288888889	0.326530612	0.333333333
AMM_continuation	Klickitat Valley Health	0	29	34	45	75	75	88	0.386666667	0.453333333	0.511363636
AMM_continuation	Lake Chelan Community Hospital	0	13	10	17	49	42	40	0.265306122	0.238095238	0.425
AMM_continuation	Lincoln Hospital	0	13	19	38	38	57	86	0.342105263	0.333333333	0.441860465
AMM_continuation	Newport Hospital and Health Services	0	23	39	31	96	105	85	0.239583333	0.371428571	0.364705882
AMM_continuation	Peacehealth Peace Island	0	<10	36	11	<50	74	24	0.090909091	0.486486486	0.458333333
AMM_continuation	Peacehealth United General	0	57	66	64	167	191	187	0.341317365	0.345549738	0.342245989
AMM_continuation	Providence St Joseph	0	22	26	34	68	80	84	0.323529412	0.325	0.404761905
AMM_continuation	Quincy Valley Medical Center	0	<10	<10	<10	<50	<50	<50	0.111111111	0.28	0.428571429
AMM_continuation	Summit Pacific	0	95	133	136	295	367	342	0.322033898	0.36239782	0.397660819
AMM_continuation	Whitman Hospital and Medical Center	0	20	15	27	32	32	48	0.625	0.46875	0.5625
AMM_continuation	Arbor Health Morton	1	22	27	24	70	62	55	0.314285714	0.435483871	0.436363636
AMM_continuation	Cascade Medical Center	1	19	26	19	36	58	34	0.527777778	0.448275862	0.558823529
AMM_continuation	Columbia Basin Hospital	1	25	33	21	84	70	66	0.297619048	0.471428571	0.318181818

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Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
AMM_continuation	Dayton/Columbia County Health	1	<10	18	<10	<50	47	<50	0.285714286	0.382978723	0.296296296
AMM_continuation	East Adams Rural Health Care	1	<10	<10	<10	<50	<50	<50	0.461538462	0.333333333	0.36
AMM_continuation	Ferry County Memorial	1	11	7	6	34	27	21	0.323529412	0.259259259	0.285714286
AMM_continuation	Forks Community Hospital	1	13	16	17	53	55	42	0.245283019	0.290909091	0.404761905
AMM_continuation	Garfield County Memorial Hospital	1	<10	<10	<10	<50	<50	<50	0.666666667	0.6	0.75
AMM_continuation	Mid Valley Hospital	1	32	47	41	107	146	118	0.299065421	0.321917808	0.347457627
AMM_continuation	North Valley Hospital	1	13	16	26	49	52	55	0.265306122	0.307692308	0.472727273
AMM_continuation	Odessa Memorial Healthcare Center	1	<10	<10	<10	<50	<50	<50	0.666666667	0.5	0.5
AMM_continuation	Three Rivers	1	<10	10	13	<50	40	28	0.259259259	0.25	0.464285714
AMM_continuation	Willapa Harbor Hospital	1	10	15	21	30	37	63	0.333333333	0.405405405	0.333333333
ED	Coulee Medical Center	0	5508	6142	4036	49594	51794	47638	0.111061822	0.118585164	0.084722281
ED	Klickitat Valley Health	0	7238	8286	7702	45872	52866	56736	0.157786885	0.156735898	0.135751551

Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
ED	Lake Chelan Community Hospital	0	5846	5618	4624	43244	43092	36802	0.135186384	0.130372227	0.125645345
ED	Lincoln Hospital	0	3722	3970	6278	44046	44580	53860	0.084502565	0.089053387	0.116561456
ED	Newport Hospital and Health Services	0	6886	8508	6262	69358	78060	68746	0.099281986	0.108993082	0.091088936
ED	Peacehealth Peace Island	0	2254	5502	1934	23154	44170	24852	0.097348194	0.124564184	0.077820699
ED	Peacehealth United General	0	19008	20124	15946	97866	96922	85166	0.194224756	0.207630878	0.187234342
ED	Providence St Joseph	0	6770	6856	8868	48918	48836	54778	0.138394865	0.140388238	0.16188981
ED	Quincy Valley Medical Center	0	1648	3700	2942	12054	25152	18884	0.136718102	0.147105598	0.155793264
ED	Summit Pacific	0	27186	28874	24692	232756	232328	212800	0.116800426	0.124281189	0.116033835
ED	Whitman Hospital and Medical Center	0	3478	4102	3548	25486	39406	50034	0.13646708	0.104095823	0.07091178
ED	Arbor Health Morton	1	5160	5886	5216	39140	41970	41976	0.13183444	0.140243031	0.124261483
ED	Cascade Medical Center	1	2924	4372	3092	27650	36748	30018	0.105750452	0.118972461	0.103004864
ED	Columbia Basin Hospital	1	7336	7270	5868	55750	55742	49806	0.131587444	0.130422303	0.11781713
ED	Dayton/Columbia County Health	1	2714	2970	2406	26460	27046	26180	0.102569917	0.109812911	0.091902215

Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
ED	East Adams Rural Health Care	1	1318	1566	1434	10526	10116	11776	0.125213756	0.15480427	0.121773098
ED	Ferry County Memorial	1	1838	2034	1836	19172	19388	19726	0.095868976	0.104910254	0.093075129
ED	Forks Community Hospital	1	6316	5794	4294	43080	42720	40470	0.146610956	0.135627341	0.106103286
ED	Garfield County Memorial Hospital	1	1030	876	858	6696	5840	5866	0.153823178	0.15	0.146266621
ED	Mid Valley Hospital	1	12204	13476	11080	99630	106320	97294	0.122493225	0.126749436	0.113881637
ED	North Valley Hospital	1	5106	5710	5234	45716	45850	43654	0.111689562	0.124536532	0.119897375
ED	Odessa Memorial Healthcare Center	1	650	610	404	4682	4686	4732	0.13882956	0.130174989	0.085376162
ED	Three Rivers	1	4798	4620	3106	41426	40546	32386	0.115820982	0.113944655	0.095905638
ED	Willapa Harbor Hospital	1	4798	4998	4520	36482	36582	50018	0.131516912	0.136624569	0.090367468
AHU	Coulee Medical Center	0	126	101	102	1076	1144	1149	117.1003717	88.28671329	88.77284595
AHU	Klickitat Valley Health	0	155	201	249	1216	1438	1662	127.4671053	139.7774687	149.8194946
AHU	Lake Chelan Community Hospital	0	89	90	65	830	838	834	107.2289157	107.398568	77.93764988

Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
AHU	Lincoln Hospital	0	123	113	197	986	995	1383	124.7464503	113.5678392	142.4439624
AHU	Newport Hospital and Health Services	0	127	193	99	1679	1933	1822	75.64026206	99.84480083	54.33589462
AHU	Peacehealth Peace Island	0	40	184	45	532	1154	642	75.18796992	159.4454073	70.09345794
AHU	Peacehealth United General	0	427	465	500	2713	2586	2601	157.3903428	179.8143852	192.2337562
AHU	Providence St Joseph	0	176	164	232	1274	1331	1646	138.1475667	123.2156273	140.9477521
AHU	Quincy Valley Medical Center	0	23	41	46	184	379	355	125	108.1794195	129.5774648
AHU	Summit Pacific	0	542	490	492	5528	5407	5717	98.04630974	90.62326614	86.05912192
AHU	Whitman Hospital and Medical Center	0	125	144	131	731	992	1303	170.9986323	145.1612903	100.5372218
AHU	Arbor Health Morton	1	142	167	177	1095	1193	1257	129.6803653	139.9832355	140.8114558
AHU	Cascade Medical Center	1	60	123	55	628	891	761	95.54140127	138.047138	72.27332457
AHU	Columbia Basin Hospital	1	159	148	125	1256	1256	1291	126.5923567	117.8343949	96.82416731
AHU	Dayton/Columbia County Health	1	67	87	101	666	677	731	100.6006006	128.5081241	138.1668947
AHU	East Adams Rural Health Care	1	26	44	45	258	261	322	100.7751938	168.5823755	139.7515528
AHU	Ferry County Memorial	1	56	40	40	534	541	573	104.8689139	73.93715342	69.80802792

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Metric	CAH	CAC O	2018 yes	2019 yes	2020 yes	2018 total	2019 total	2020 total	2018	2019	2020
AHU	Forks Community Hospital	1	83	77	114	1036	1035	1066	80.1158301 2	74.3961352 7	106.9418386
AHU	Garfield County Memorial Hospital	1	19	15	14	156	146	159	121.794871 8	102.739726	88.05031447
AHU	Mid Valley Hospital	1	322	303	295	2448	2605	2635	131.535947 7	116.314779 3	111.9544592
AHU	North Valley Hospital	1	138	136	136	1199	1164	1225	115.095913 3	116.838488	111.0204082
AHU	Odessa Memorial Healthcare Center	1	21	27	<10	120	111	<150	175	243.243243 2	69.76744186
AHU	Three Rivers	1	135	85	75	695	642	708	194.244604 3	132.398753 9	105.9322034
AHU	Willapa Harbor Hospital	1	118	134	121	941	949	1323	125.398512 2	141.201264 5	91.45880574

Table 12: Potentially Avoidable Emergency Room Visits

Hospital	CY 2018	CY 2019	CY 2020
Arbor Health Morton	200	221	128
Cascade Medical Center	151	81	58
Columbia Basin Hospital	311	296	220
Coulee Medical Center	290	355	149
Dayton/Columbia County Health	72	107	55
East Adams Rural Health Care	33	37	30
Ferry County Memorial	86	88	71
Forks Community Hospital	371	369	210
Garfield County Memorial Hospital	38	29	41
Klickitat Valley Health	308	255	148
Lake Chelan Community Hospital	295	314	190
Lincoln Hospital	145	124	110
Mid Valley Hospital	573	471	333
Newport Hospital and Health Services	305	376	221
North Valley Hospital	235	249	208
Odessa Memorial Healthcare Center	21	25	11
Peacehealth Peace Island	95	96	60
Peacehealth United General	760	745	409
Providence St Joseph	209	214	162
Quincy Valley Medical Center	228	183	82
Summit Pacific	924	1,100	997
Three Rivers	283	257	84
Whitman Hospital and Medical Center	107	91	48
Willapa Harbor Hospital	242	249	143
Total	6,282	6,332	4,168

Table 13: Total Emergency Room Visits

Hospital	CY 2018	CY 2019	CY 2020
Arbor Health Morton	1,246	1,488	1,321
Cascade Medical Center	829	801	751
Columbia Basin Hospital	2,029	2,076	1,627
Coulee Medical Center	1,597	1,771	1,129
Dayton/Columbia County Health	550	618	470
East Adams Rural Health Care	295	322	281
Ferry County Memorial	581	622	583
Forks Community Hospital	2,184	1,990	1,432
Garfield County Memorial Hospital	233	206	215
Klickitat Valley Health	1,827	1,631	1,318
Lake Chelan Community Hospital	1,727	1,787	1,375
Lincoln Hospital	820	738	815
Mid Valley Hospital	3,559	3,769	3,084
Newport Hospital and Health Services	1,867	2,084	1,846
North Valley Hospital	1,644	1,766	1,586
Odessa Memorial Healthcare Center	124	151	105
Peacehealth Peace Island	787	751	668
Peacehealth United General	4,824	4,879	3,687
Providence St Joseph	1,249	1,145	1,399
Quincy Valley Medical Center	1,381	1,279	915
Summit Pacific	5,732	6,516	5,677
Three Rivers	1,347	1,493	901
Whitman Hospital and Medical Center	777	723	605
Willapa Harbor Hospital	1,288	1,389	1,004
Total	38,497	39,995	32,794

Table 14: results from difference-difference linear model testing for statistical significance

*P-value<.05 is statistically significant

Metric	P-value comparing 2019 to 2018	P-value comparing 2020 to 2018
SUPPL-MH-B	0.771107	0.893464
SUPPL-ODD	0.270382	0.355299
SUPPL-SUD	0.221466	0.411233
AMM_acute	0.237221	0.327238
AMM_continuation	0.2784	0.129109
ED	0.869911	0.397488
AHU	0.803096	0.438701
AvoidED	0.170524	0.828430