

Welcome to the 2017 Blueprint Spoke Regional Profile of the Vermont Hub & Spoke Program, which provides Medication Assisted Treatment (MAT) to Vermonters with opioid use disorder (OUD). The Blueprint for Health, in partnership with the Vermont Department of Health's Division of Alcohol and Drug Abuse Programs, offers this statewide view of the Program.

The Hub & Spoke Program is a systematic treatment response to the opioid epidemic in Vermont. This program enhances the provision of MAT by adding new health care staff to both Hub-designated providers and the Spokes to provide Health Home (HH) services. These new staff link OUD treatment with Blueprint primary care practices and Community Health Teams to provide care that is evidence based and integrated.

Blueprint Spoke Regional Profiles are based on data from Vermont's all-payer claims data base (VHCURES) and the Vermont Clinical Registry. The population in this profile is Medicaid beneficiaries, including those with dual Medicare and Medicaid eligibility, ages 18-64 years with OUD who received the majority of their MAT treatment in a Spoke in 2017.

The measure results in the profile have not been risk adjusted unless specifically noted. Results with fewer than eleven members are not reported, consistent with Medicare guidelines.

This profile is intended to be read with the related methods documentation.

Demographics & Health Status

	Spoke	Hub	Non-MAT OUD	Medicaid Statewide
Distinct Members	3,690	3,395	2,062	98,498
Average Members	3,540	3,214	1,853	89,362
Average Age (In Years)	35.0	35.6	37.1	38.8
% Dual Eligible	9.3	10.0	15.1	12.9
% Female	52.6	49.7	47.6	53.6
% Maternity	13.8	10.0	8.0	8.8
% CRG Significant Chronic	49.5	40.1	41.0	27.0
% Hepatitis C	12.8	18.5	11.5	2.3
% Asthma	18.6	17.7	18.8	12.6
% Mental Health (Non-Substance Use)	64.9	56.1	63.2	35.7
% Depression	31.8	29.9	34.3	16.6
% ADHD	13.8	14.0	9.4	4.0
% Other Substance Use	40.8	39.5	45.0	11.0
% Current Year Pain	24.3	22.3	34.5	18.5
% Incarcerated	13.5	19.8	19.1	3.4
% Both Hub and Spoke	8.3	9.4	0.0	0.6

Table 1: This table provides comparative information on the demographics and health status of all Medicaid members of the Spoke program. For comparison, it also includes demographic and health status information for Medicaid beneficiaries with OUD who did not receive treatment in either a Hub or Spoke in 2017. For context, the table also provides demographic information for the general Medicaid population statewide.

Average Members serves as this table's denominator and adjusts for partial lengths of Medicaid enrollment during the reporting period. Average membership is calculated as the proportion of the measurement period that an individual was covered by Medicaid.

Current year pain was identified using a Blueprint-developed algorithm that considers a member's chronic pain diagnoses, musculoskeletal and migraine conditions associated with pain, and prescriptions used to treat pain (e.g., nonsteroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, opiates) in the reporting period. More detail on this measure is included in the profile documentation.

The Health Status (CRG) measure aggregates 3M™ Clinical Risk Grouper (CRG) classifications for the reporting period for the purpose of generating adjusted rates. Aggregated risk classification groups include: Healthy, Acute (e.g., ear, nose, throat infection) or Minor Chronic (e.g., minor chronic joint pain), Moderate Chronic (e.g., diabetes), Significant Chronic (e.g., diabetes and congestive heart failure), and Cancer (e.g., breast cancer, colorectal cancer) or Catastrophic (e.g., HIV, muscular dystrophy, cystic fibrosis). Since most members with OUD fall into the chronic category with a detail CRG indicating OUD, we distinguish the less healthy population as having a CRG aggregate category of Significant Chronic or higher.

Total Expenditures per Capita

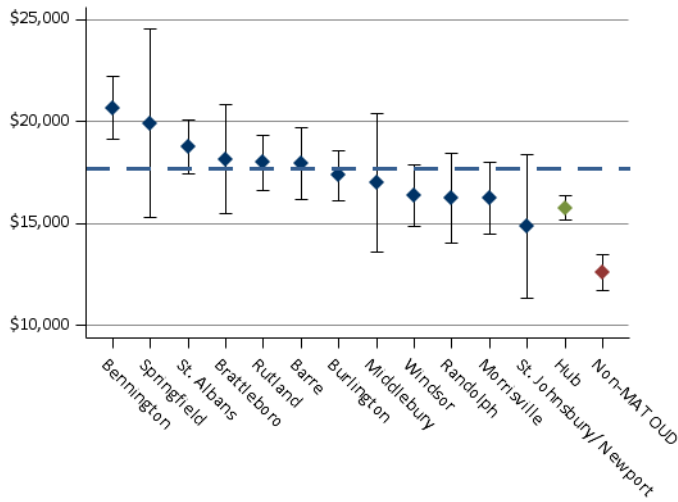


Figure 1: Presents annual crude rates, including 95% confidence intervals, with expenditures capped statewide for outlier patients. Expenditures include all health care claims paid by Medicaid as well as dually eligible members' claims paid by Medicare. The blue dashed line indicates the Spoke statewide average.

Total Expenditures, Risk-Adjusted Across Spoke Regions

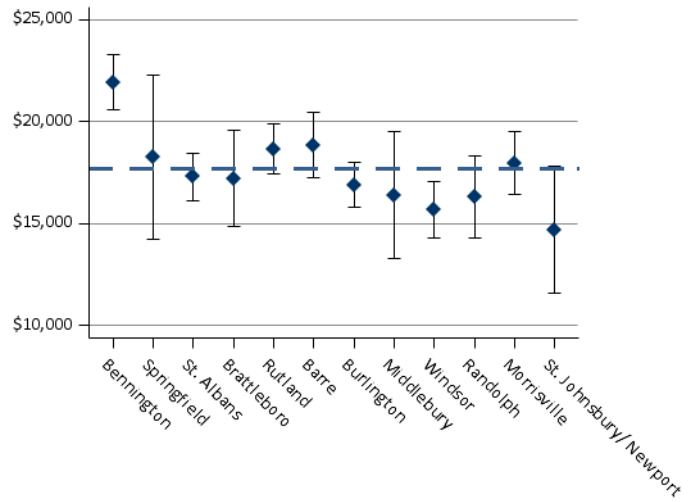


Figure 2: Presents annual risk-adjusted rates, including 95% confidence intervals, with expenditures capped statewide for outlier patients. Expenditures include all health care claims paid by Medicaid as well as dually eligible members' claims paid by Medicare. The blue dashed line indicates the Spoke statewide average.

Total OUD Treatment & Other Healthcare Expenditures (PMPY)

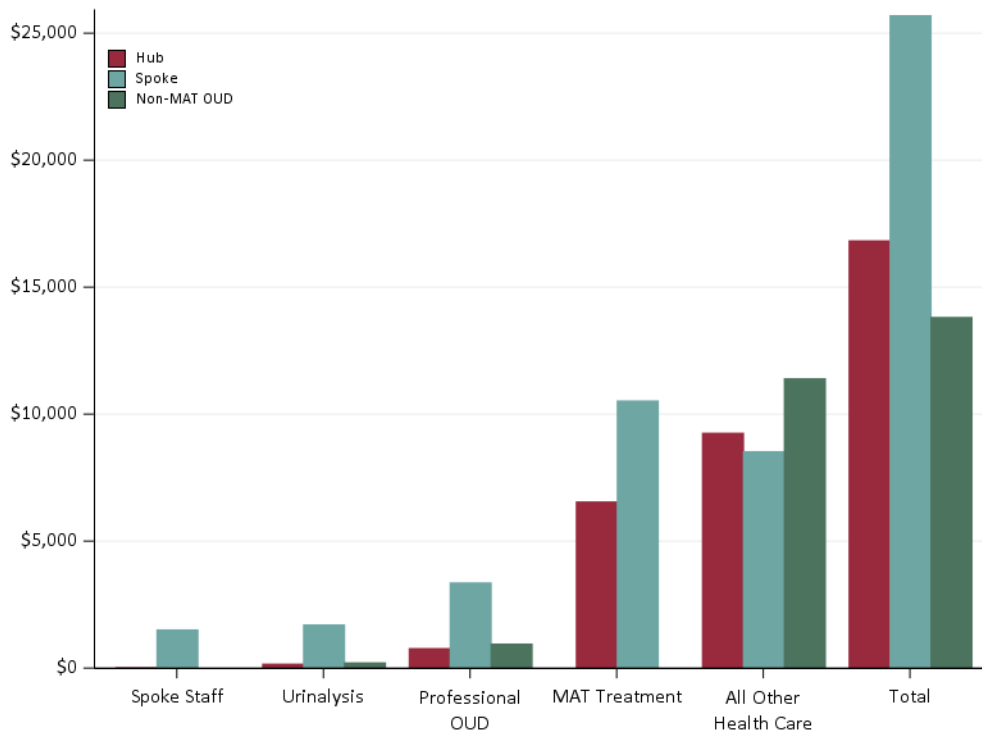


Figure 3: Presents annual crude rates for Medication Assisted Treatment (MAT) expenditures (e.g. Spoke Staff, MAT Treatment), urinalysis expenditures, professional opioid use disorder (OUD) expenditures, and non-MAT expenditures with expenditures capped statewide for outlier patients.

Total OUD Expenditures by Treatment Category (PMPY)

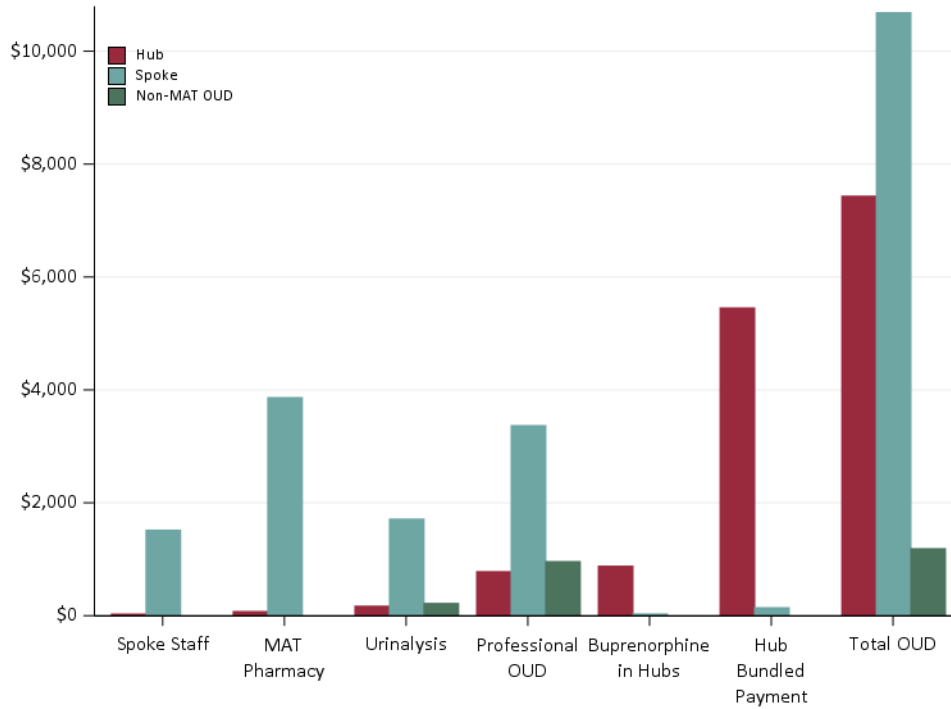


Figure 4: Presents annual crude rates for the major components of Medication Assisted Treatment (MAT) expenditures as well as urinalysis expenditures with expenditures capped statewide for outlier patients.

All Other Health Care Expenditures by Major Category (PMPY)

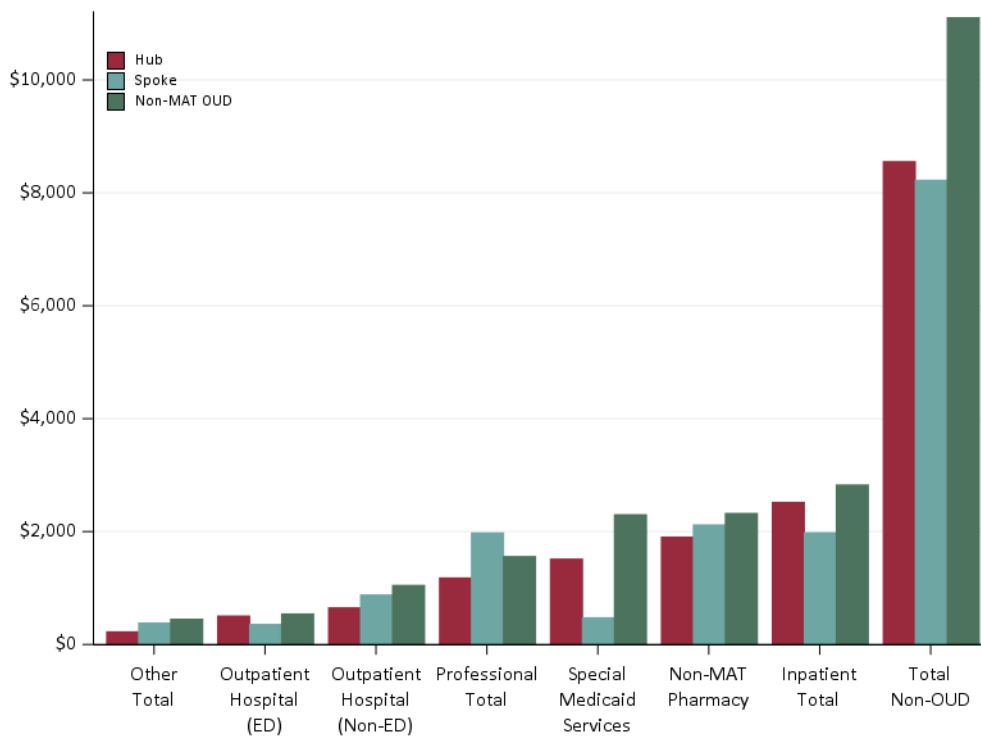


Figure 5: Presents annual crude rates for the major expenditure categories for health and OUD care with expenditures capped statewide for outlier patients. Special Medicaid Services are services that commercial insurance often does not cover (e.g., transportation, special school services, residential treatment, etc.) and are reported separately.

Inpatient Discharges*

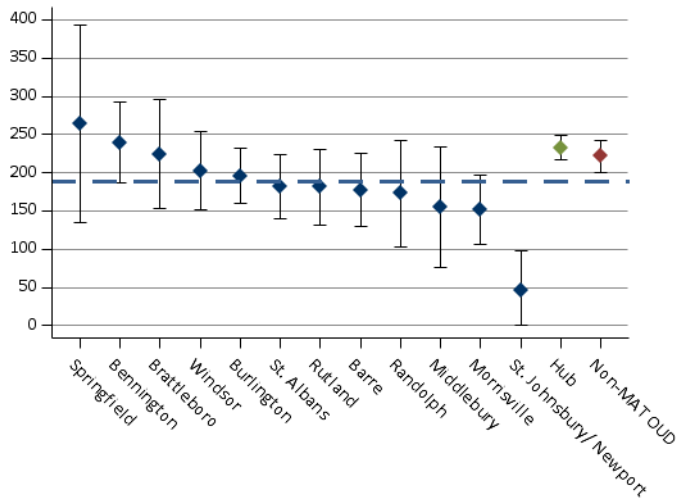


Figure 6: Presents annual crude rates, including 95% confidence intervals, of inpatient discharges per 1,000 members. The blue dashed line indicates the Spoke statewide average.

Inpatient Discharges, Risk-Adjusted Across Spoke Regions

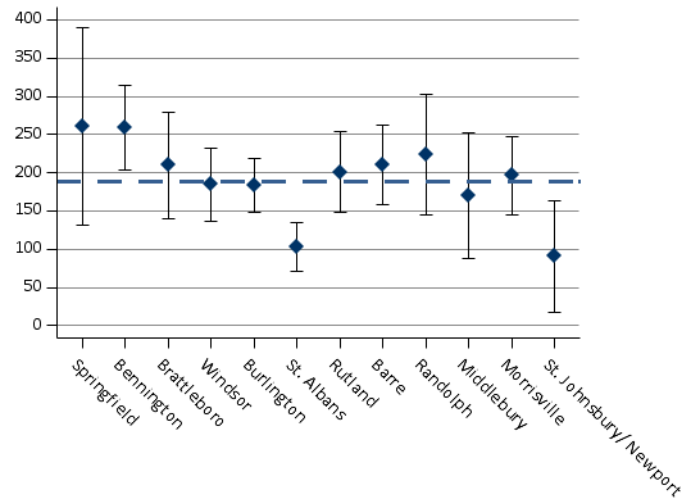


Figure 7: Presents annual risk-adjusted rates, including 95% confidence intervals, of inpatient discharges per 1,000 members. The blue dashed line indicates the Spoke statewide average.

Outpatient ED Visits*

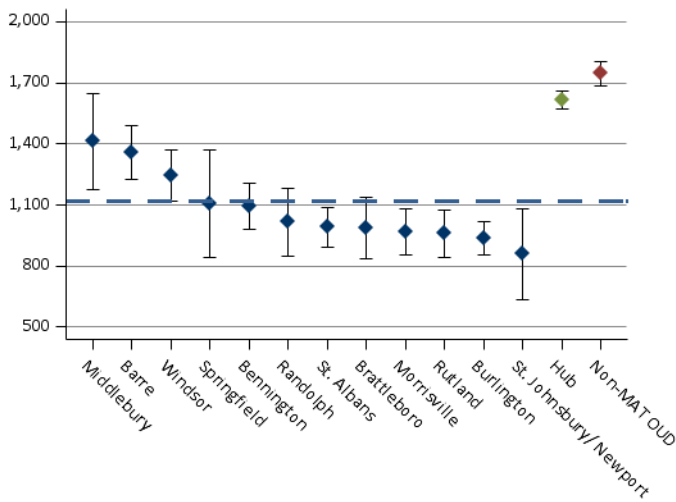


Figure 8: Presents annual crude rates, including 95% confidence intervals, of outpatient emergency department (ED) visits per 1,000 members. The blue dashed line indicates the Spoke statewide average.

Outpatient ED Visits, Risk-Adjusted Across Spoke Regions

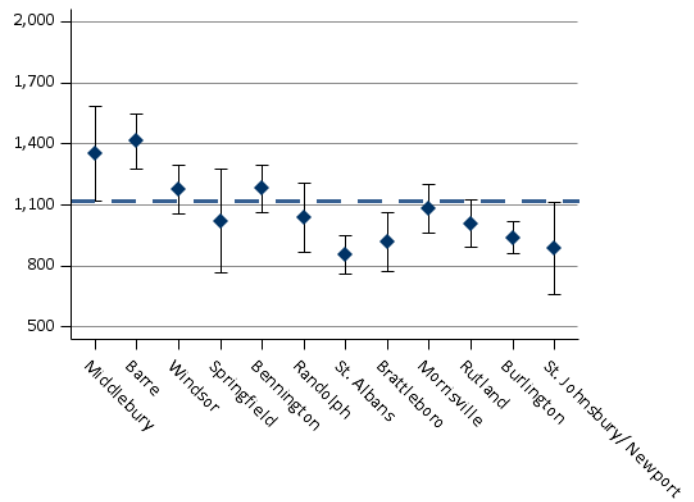


Figure 9: Presents annual risk-adjusted rates, including 95% confidence intervals, of outpatient emergency department (ED) visits per 1,000 members. The blue dashed line indicates the Spoke statewide average.

*These measures are included in the Centers for Medicare & Medicaid Services Health Home reporting.

Advanced Imaging (MRIs, CT Scans)

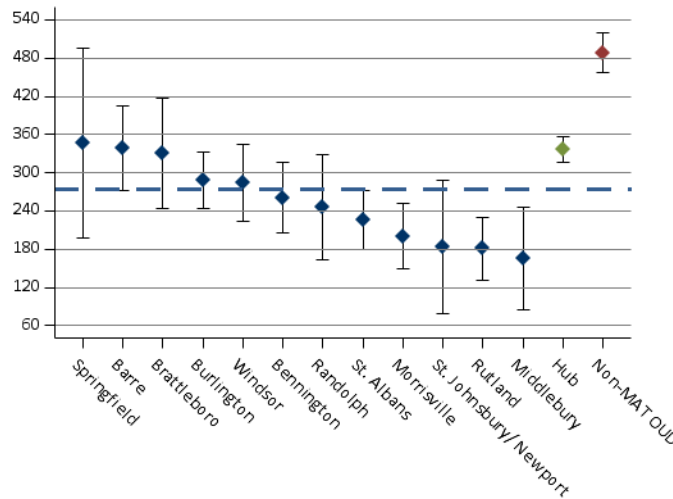


Figure 10: Presents annual crude rates, including 95% confidence intervals, of advanced imaging diagnostic tests (i.e., magnetic resonance imagings (MRIs) and computed tomography (CT) scans) per 1,000 members. The blue dashed line indicates the statewide Spoke average.

Focus: Members Who Utilized Both Hub and Spoke Services in 2017

Grouped by Where They Received a Plurality of Care

Metric	Attributed to Hub	Attributed to Spoke	Overall
Average members	302	298	600
Annual expenditures per capita	\$22468 (\$20205, \$24732)	\$24413 (\$22239, \$26587)	\$23434 (\$21866, \$25001)
Inpatient hospitalizations per 1,000 members	628 (539, 717.8)	490 (411, 569.6)	560 (500, 619.6)
Inpatient days per 1,000 members	4045 (3818, 4272)	3142 (2941, 3343)	3597 (3445, 3749)
Outpatient ED visits per 1,000 members	1707 (1560, 1854)	1323 (1192, 1453)	1516 (1418, 1615)
Primary care visits per 1,000 members	7565 (7255, 7875)	9060 (8718, 9401)	8307 (8076, 8537)

Table 2: Presents annual crude expenditures and utilization rates, including 95% confidence intervals, of members who had at least one Hub visit and at least one Spoke visit in the measurement year. Members were attributed to either a Hub or a Spoke based on the plurality of care and are included in the statewide Hub and Spoke rates throughout the profiles. Please refer to the supporting documentation for more detail on the attribution methodology.

Adult Body Mass Index Assessment*

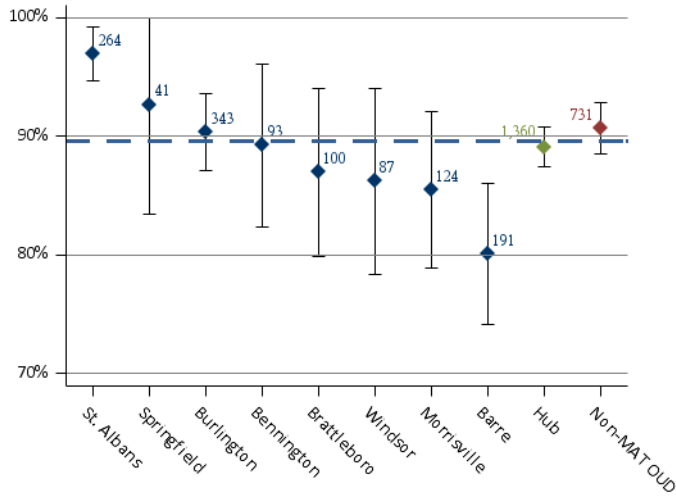


Figure 11: Presents the proportion, including 95% confidence intervals, of continuously enrolled members with an outpatient visit whose body mass index (BMI) was documented during the measurement year or the year prior. This figure includes only practices providing clinical data to the Vermont Clinical Registry. Hubs do not report to the Clinical Registry. The blue dashed line indicates the Spoke statewide average. The data label represents individuals for whom data was available (denominator).

Screening for Clinical Depression*

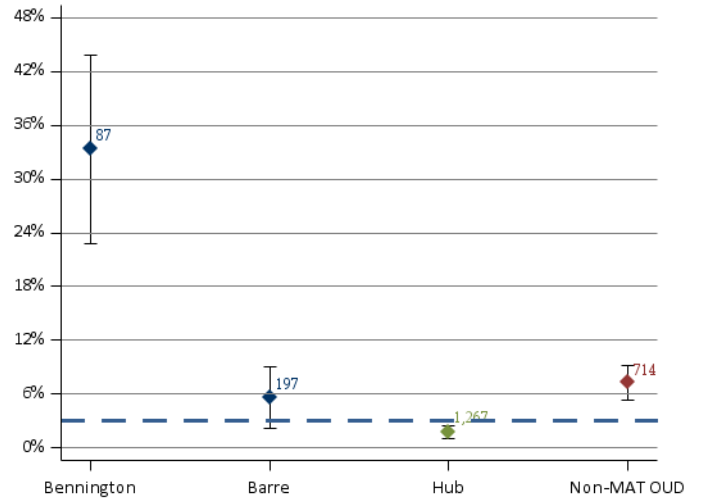


Figure 12: Presents the proportion, including 95% confidence intervals, of continuously enrolled members that were screened for clinical depression on the date of encounter using an age-appropriate standardized depression screening tool. This figure includes only practices providing clinical data to the Vermont Clinical Registry. Hubs do not report to the Clinical Registry. The blue dashed line indicates the Spoke statewide average. The data label represents individuals for whom data was available (denominator).

Controlling High Blood Pressure*

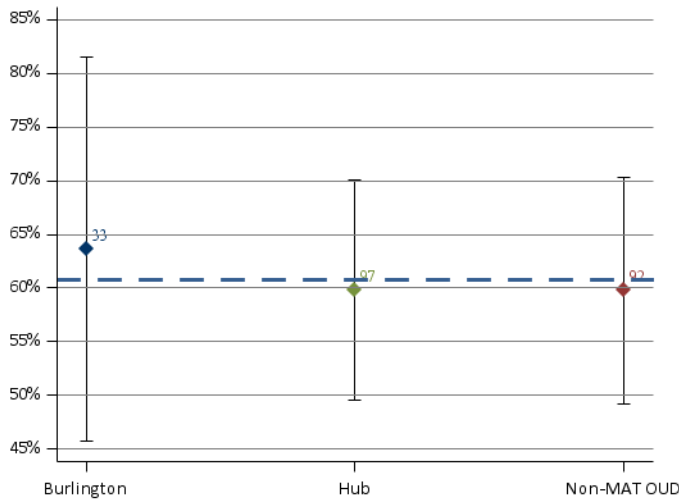


Figure 13: Presents the proportion, including 95% confidence intervals, of continuously enrolled members with hypertension that had controlled blood pressure (<140/90 mmHg) during the measurement year. This figure includes only practices providing clinical data to the Vermont Clinical Registry. Hubs do not report to the Clinical Registry. The blue dashed line indicates the Spoke statewide average. The data label represents individuals for whom data was available (denominator).

Tobacco Use Screening & Cessation*

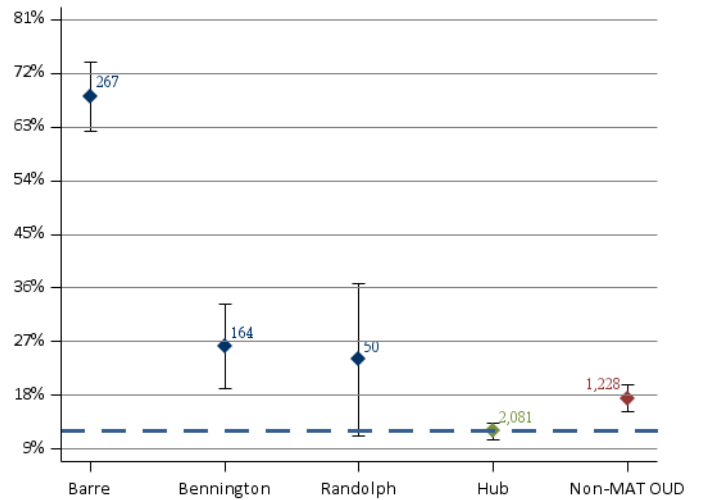


Figure 14: Presents the proportion, including 95% confidence intervals, of continuously enrolled members that were screened for tobacco use one or more times within a two-year lookback period and that received cessation counseling intervention. This figure includes only practices providing clinical data to the Vermont Clinical Registry. Hubs do not report to the Clinical Registry. The blue dashed line indicates the Spoke statewide average. The data label represents individuals for whom data was available (denominator).

*These measures are included in the Centers for Medicare & Medicaid Services Health Home reporting.

Breast Cancer Screening*

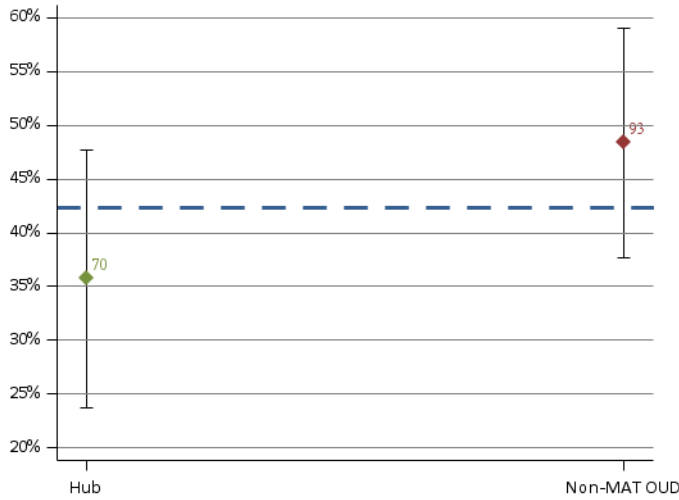


Figure 15: Presents the proportion, including 95% confidence intervals, of continuously enrolled female members, ages 52–64 years, that had a mammogram to screen for breast cancer during the measurement year or year prior to the measurement year. The blue dashed line indicates the Spoke statewide average. The data label represents individuals for whom data was available (denominator).

Cervical Cancer Screening*

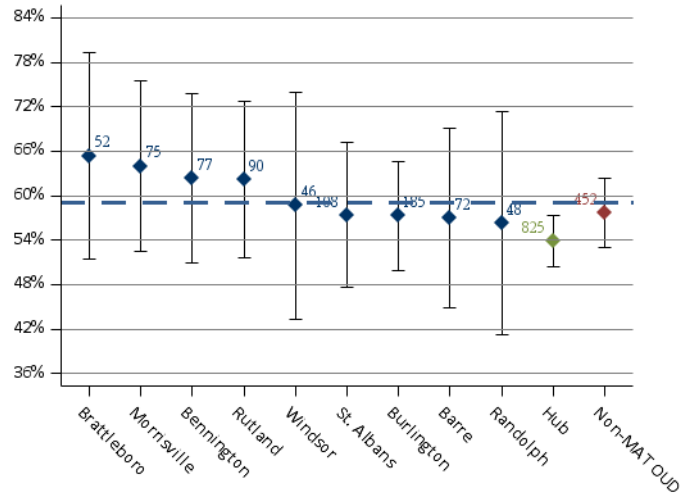


Figure 16: Presents the proportion, including 95% confidence intervals, of continuously enrolled female members, either (a) ages 21–64 that received a Papanicolaou (Pap) test to screen for cervical cancer during the measurement year or the two years prior or (b) ages 30–64 years who received a Pap test during the measurement year or four years prior. The blue dashed line indicates the Spoke statewide average. The data label represents individuals for whom data was available (denominator).

Follow-Up After Hospitalization for Mental Illness*

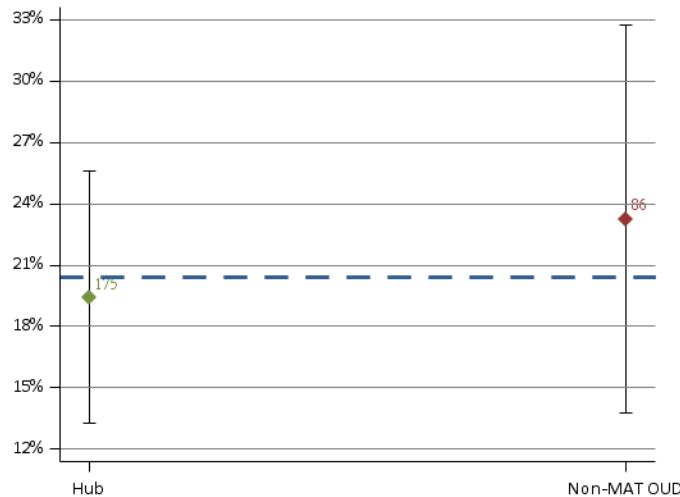


Figure 17: Presents the proportion, including 95% confidence intervals, of continuously enrolled members, hospitalized for mental illness with an intensive outpatient encounter or partial hospitalization with a mental health practitioner and a follow-up visit within seven days of discharge. The blue dashed line indicates the Spoke statewide average. The data label represents individuals for whom data was available (denominator). Note: If follow-up was provided at a Hub or by Spoke staff, no separate claim would be generated to be counted in this measure.

*These measures are included in the Centers for Medicare & Medicaid Services Health Home reporting.

The following tables provide greater detail on the annual crude rates presented in the preceding figures.

Table 3: Expenditure Measures (Crude Rates)

Measure	Spoke			Hub			Non-MAT OUD		
	Rate per Capita	95% LCL	95% UCL	Rate per Capita	95% LCL	95% UCL	Rate per Capita	95% LCL	95% UCL
Total	\$17,725	\$17,236	\$18,213	\$15,779	\$15,190	\$16,369	\$12,603	\$11,737	\$13,469
Total Excluding Special Medicaid Services	\$15,201	\$14,802	\$15,600	\$8,112	\$7,630	\$8,594	\$9,584	\$8,888	\$10,281
Inpatient Total	\$1,989	\$1,745	\$2,234	\$2,528	\$2,230	\$2,825	\$2,836	\$2,394	\$3,278
Inpatient Mental Health	\$460	\$353	\$567	\$1,118	\$913	\$1,323	\$975	\$739	\$1,211
Inpatient Maternity	\$338	\$278	\$398	\$205	\$158	\$251	\$169	\$114	\$225
Inpatient Surgical	\$753	\$553	\$952	\$616	\$454	\$778	\$884	\$633	\$1,136
Inpatient Medical	\$490	\$390	\$590	\$598	\$487	\$708	\$814	\$603	\$1,026
Outpatient Total	\$1,260	\$1,188	\$1,332	\$1,194	\$1,123	\$1,265	\$1,623	\$1,499	\$1,746
Outpatient Hospital Mental Health	\$301	\$273	\$330	\$135	\$121	\$149	\$152	\$127	\$177
Outpatient Hospital ED	\$367	\$341	\$392	\$515	\$482	\$548	\$551	\$505	\$597
Outpatient Hospital Surgery	\$151	\$125	\$178	\$178	\$148	\$207	\$311	\$255	\$367
Outpatient Hospital Radiology	\$72	\$60	\$84	\$92	\$67	\$117	\$178	\$131	\$224
Outpatient Hospital Laboratory	\$147	\$135	\$158	\$126	\$114	\$137	\$165	\$149	\$181
Outpatient Hospital Pharmacy	\$24	\$10	\$39	\$12	\$6	\$18	\$37	\$17	\$57
Outpatient Hospital Other	\$132	\$114	\$149	\$117	\$101	\$133	\$189	\$162	\$217
Professional Non-Mental Health Total	\$907	\$866	\$947	\$849	\$805	\$892	\$1,131	\$1,063	\$1,199
Professional Physician Total	\$630	\$598	\$662	\$525	\$492	\$558	\$716	\$665	\$766
Professional Physician Inpatient	\$181	\$158	\$204	\$154	\$132	\$177	\$188	\$155	\$221
Professional Physician Outpatient Facility	\$85	\$77	\$93	\$78	\$70	\$85	\$143	\$128	\$158
Professional Physician Office Visit	\$285	\$271	\$299	\$172	\$162	\$183	\$267	\$247	\$287
Professional Non-Physician	\$274	\$259	\$290	\$314	\$296	\$332	\$410	\$382	\$439
Professional Mental Health Provider	\$1,729	\$1,676	\$1,781	\$495	\$462	\$528	\$628	\$580	\$676
Pharmacy Total	\$5,982	\$5,825	\$6,139	\$1,995	\$1,839	\$2,152	\$2,333	\$2,092	\$2,575
Pharmacy Psych Medication	\$700	\$641	\$760	\$530	\$480	\$581	\$527	\$453	\$601
Other Total	\$3,136	\$3,010	\$3,261	\$652	\$583	\$720	\$982	\$860	\$1,103
Special Medicaid Services	\$2,343	\$2,173	\$2,513	\$7,422	\$7,226	\$7,618	\$2,808	\$2,474	\$3,141
Mental Health Substance Combined*	\$3,173	\$3,054	\$3,293	\$1,895	\$1,749	\$2,041	\$1,994	\$1,807	\$2,181

* The *Mental Health Substance Combined* measure is the sum of all expenditures associated with medical and pharmacy services for mental health / substance abuse.

Table 4: MAT Expenditure Measures (Crude Rates)

Measure	Spoke			Hub			Non-MAT OUD		
	Rate per Capita	95% LCL	95% UCL	Rate per Capita	95% LCL	95% UCL	Rate per Capita	95% LCL	95% UCL
Hub Bundled Payment	\$152	\$131	\$173	\$5,463	\$5,376	\$5,549	\$0	\$0	\$0
MAT Pharmacy	\$3,875	\$3,800	\$3,950	\$84	\$71	\$97	\$0	\$0	\$0
Professional OUD	\$3,377	\$3,274	\$3,481	\$790	\$714	\$866	\$969	\$866	\$1,072
Buprenorphine Dispensed in Hub	\$42	\$33	\$50	\$888	\$830	\$946	\$0	\$0	\$0
Spoke Staff	\$1,526	\$1,507	\$1,545	\$39	\$34	\$44	\$0	\$0	\$0
Urinalysis	\$1,723	\$1,651	\$1,794	\$179	\$154	\$204	\$228	\$191	\$266

Table 5: Utilization Measures (Crude Rates)

Measure	Spoke			Hub			Non-MAT OUD		
	Rate per 1,000	95% LCL	95% UCL	Rate per 1,000	95% LCL	95% UCL	Rate per 1,000	95% LCL	95% UCL
Inpatient Discharges	213.6	198.3	228.8	281.0	262.6	299.3	274.7	250.9	298.6
Inpatient Days	1,190.1	1,154.2	1,226.1	1,763.5	1,717.6	1,809.4	1,695.4	1,636.1	1,754.7
Outpatient ED Visits	842.4	812.1	872.6	1,181.7	1,144.1	1,219.3	1,214.5	1,164.3	1,264.6
Outpatient Potentially Avoidable ED Visits	134.7	122.7	146.8	204.4	188.8	220.0	208.3	187.6	229.1
Non-Hospital Outpatient Visits	18,519.5	18,377.7	18,661.3	5,297.9	5,218.4	5,377.5	7,497.8	7,373.2	7,622.5
Primary Care Encounters	7,728.5	7,637.0	7,820.1	5,419.9	5,339.4	5,500.4	4,539.9	4,442.9	4,637.0
Medical Specialist Encounters	977.1	944.6	1,009.7	1,715.0	1,669.7	1,760.2	900.9	857.6	944.1
Surgical Specialist Encounters	1,626.0	1,584.0	1,668.0	588.3	561.8	614.9	858.8	816.6	901.0
Standard Imaging	690.4	663.0	717.8	789.0	758.3	819.7	1,105.4	1,057.6	1,153.3
Advanced Imaging	274.6	257.3	291.8	336.3	316.3	356.4	488.5	456.7	520.3
Echography	478.0	455.2	500.7	431.8	409.1	454.6	443.1	412.8	473.5
Colonoscopy	9.9	6.6	13.2	13.4	9.4	17.4	28.1	20.4	35.7
PQI 5: COPD Admissions	17.5	8.7	26.2						
PQI 8: Heart Failure Admissions									
PQI 92: Composite (Chronic)	8.8	5.7	11.9	8.6	5.4	11.8	8.1	4.0	12.2
Ambulatory Care ED Visits - HH	1,116.9	1,082.1	1,151.8	1,613.2	1,569.3	1,657.1	1,747.8	1,687.6	1,808.0
Inpatient Utilization - HH	188.4	174.1	202.7	233.0	216.3	249.7	221.3	199.9	242.7
Short-Term Nursing Facility Admissions-HH							7.6	3.6	11.5
Long-Term Nursing Facility Admissions-HH									

Table 6: Effective & Preventive Care Measures

Measure	Spoke				Hub				Non-MAT OUD			
	N	Rate	95% LCL	95% UCL	N	Rate	95% LCL	95% UCL	N	Rate	95% LCL	95% UCL
Breast Cancer Screening - HH	78	42%	31%	54%	70	36%	24%	48%	93	48%	38%	59%
Cervical Cancer Screening - HH	973	59%	56%	62%	825	54%	50%	57%	452	58%	53%	62%
Follow-up After Hospitalization for Mental Illness (7 Day) - HH	93	20%	12%	29%	175	19%	13%	26%	86	23%	14%	33%
Controlling High Blood Pressure - HH	140	61%	52%	69%	97	60%	50%	70%	92	60%	49%	70%
Adult Body Mass Index Assessment - HH	1,543	90%	88%	91%	1,360	89%	87%	91%	731	91%	89%	93%
Screening for Clinical Depression - HH	1,520	3%	2%	4%	1,267	2%	1%	2%	714	7%	5%	9%
Tobacco Use Screening & Cessation - HH	2,355	12%	11%	13%	2,081	12%	11%	13%	1,228	18%	15%	20%

Table 7: Plan All-Cause Readmissions

Measure	Spoke				Hub				Non-MAT OUD			
	N	Observed / Expected Ratio	LCL	UCL	N	Observed / Expected Ratio	LCL	UCL	N	Observed / Expected Ratio	LCL	UCL
PCR	338	0.62	0.40	0.85	369	1.18	0.97	1.38	194	1.21	0.91	1.52

Hub Case Load Growth

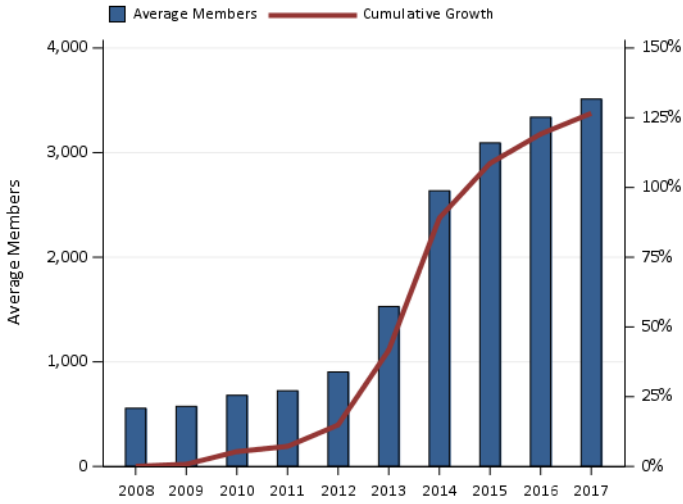


Figure 18: Presents the total members per year receiving at least one Hub medical claim within the reporting period and the percent cumulative growth relative to 2008.

Spoke Case Load Growth

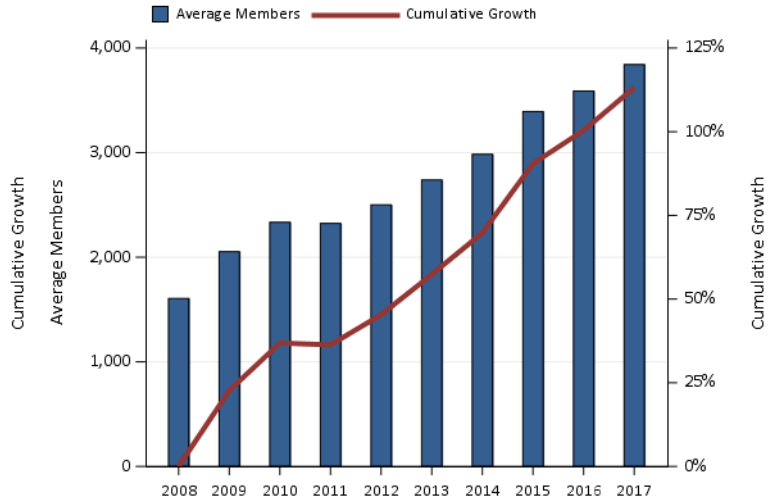


Figure 19: Presents the total members per year receiving at least one prescription for buprenorphine as identified in the pharmacy claims within the reporting period and the percent cumulative growth relative to 2008.

MAT Case Load Growth

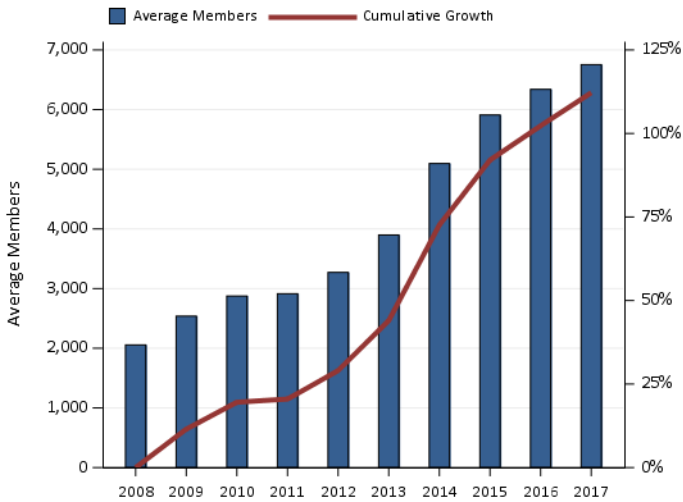


Figure 20: Presents the total average members per year receiving at least one prescription for buprenorphine as identified in the pharmacy claims or at least one hub treatment medical claim within the measurement year and the percent cumulative growth since 2008.

Medicaid Enrollment & MAT Treatment

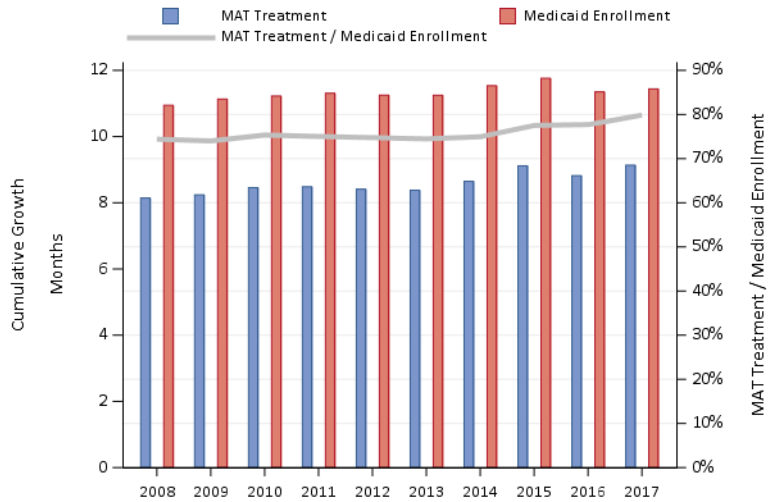


Figure 21: Presents the average number of Medicaid enrollment months among MAT participants, the average number of MAT treatment months, and the percent of Medicaid enrollment months in which the member received treatment. MAT participation and Medicaid enrollment remained stable from 2008–2017 despite enhancements and changes made to the MAT program.

Percentage of Vermont Residence Receiving Medication Assisted Treatment (State Fiscal Year 2017)

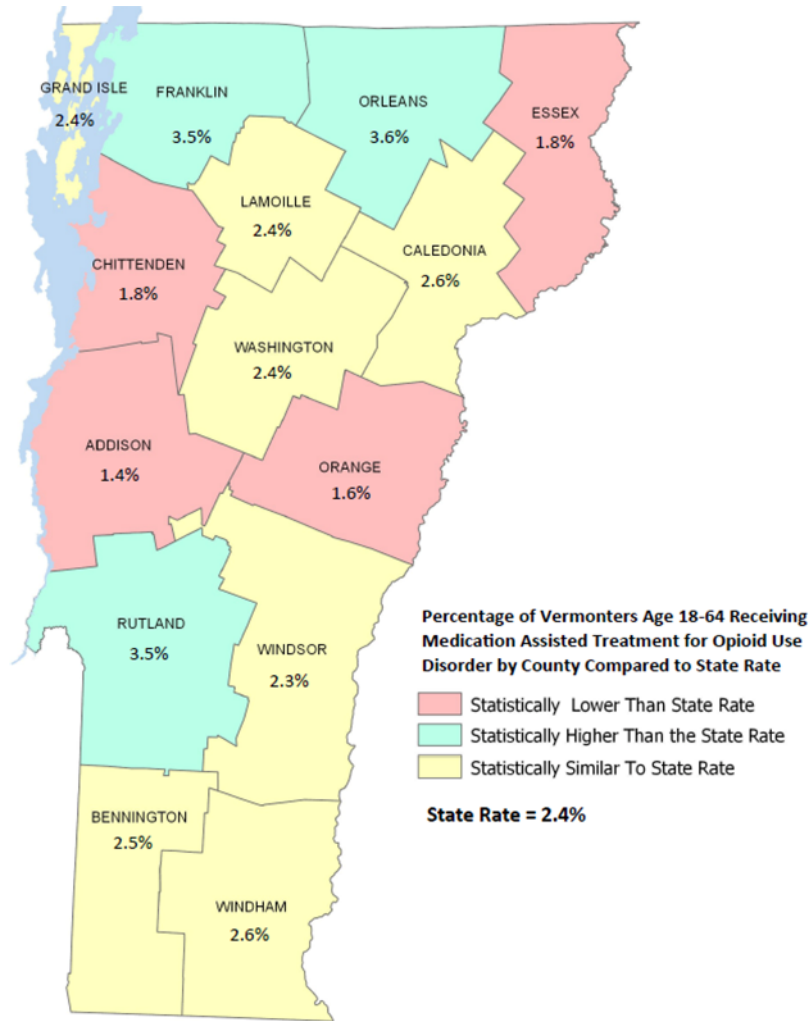


Figure 22: Presents the percentage of residents receiving MAT for OUD within each county. Shading indicates whether the rate of MAT participation was statistically higher, lower, or similar to the statewide average. This figure and calculations are produced by the Vermont Department of Health and is a non-claims measure of statewide access to treatment.