

Welcome to the *2016 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 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.

The *Spoke Regional Profiles* provide comparative measurement to inform quality improvement at local and statewide levels. *Spokes* are organized through the Blueprint for Health's statewide network of Patient-Centered Medical Homes and Community Health Teams. As part of the Blueprint, the *Spoke Regional Profiles* provide comparative measurement to inform quality improvement at local and statewide levels.

*Blueprint Spoke Regional Profiles* are based on data from Vermont's all-payer claims database (VHCURES) and the Vermont Clinical Registry. The population in this profile is Medicaid beneficiaries 18-64 years with OUD who received treatment in a Spoke in 2016. *Spoke* practices have been combined to the Blueprint Hospital Service Area level.

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

**Demographics & Health Status**

	Spoke	Non-MAT Opioid Addicted	Medicaid Statewide
Average Members	2,539	1,578	71,001
Average Age	33.4	34.7	37.3
% Female	54.2	46.7	56.6
% Maternity	16.6	7.6	9.1
% with Selected Chronic Conditions	50.4	52.9	33.5
% CRG Significant Chronic	55.9	44.4	23.6
% Depression	35.3	38.3	16.0
% Hepatitis C	14.0	12.3	2.2
% ADD	15.9	14.1	5.0
% Asthma	18.8	17.8	11.5
% Mental Health (Non-Substance Use)	66.8	67.1	33.7
% Other Substance Use	47.4	48.7	8.3
% Tobacco Dependence	48.9	48.3	15.2
% Concurrent Pain	26.3	31.9	16.7

**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 2016. For context, the table also provides for the general Medicaid population statewide.

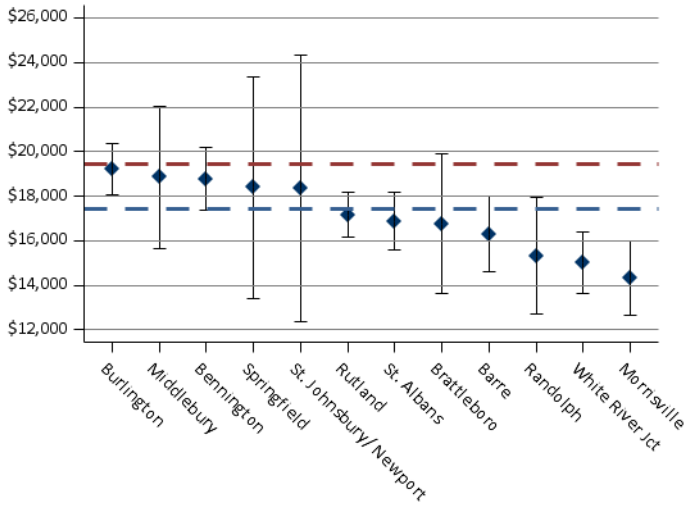
*Average Members* serves as this table's denominator and adjusts for partial lengths of Medicaid enrollment during the year. Average membership is calculated as the proportion of the measurement year that an individual is covered by Medicaid. Denominator populations vary across the three MAT profiles due to differences in attribution (please see the attribution section of related methods documentation).\*

The Selected Chronic Conditions measure indicates the proportion of members identified through the claims data as having one or more of seven selected chronic conditions: asthma, chronic obstructive pulmonary disease, congestive heart failure, coronary heart disease, hypertension, diabetes, and depression. Additional chronic conditions were included as separate lines in this table because they were prominent in this cohort.

The Health Status (CRG) measure aggregates 3M™ Clinical Risk Grouper (CRG) classifications for the year 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 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.

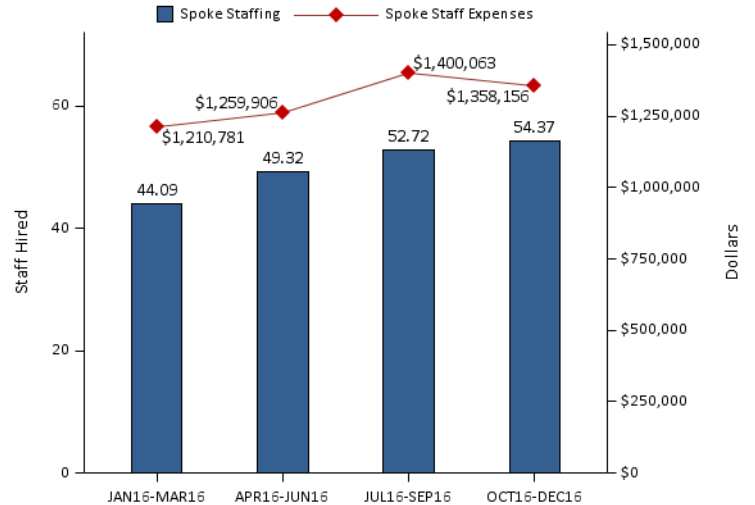
\*This profile is intended to be read with the related methods documentation.

**Total Expenditures per Capita**



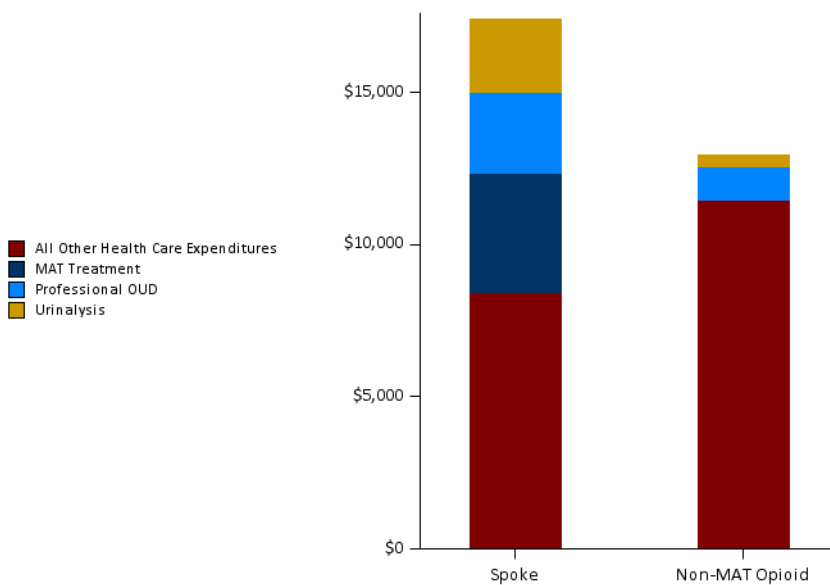
**Figure 1:** Presents annual crude rates, including 95% confidence intervals, with expenditures capped statewide for outlier patients. Expenditures include all health care claims paid by Medicaid. The blue dashed line indicates the Spoke statewide average. The red line indicates the Spoke statewide average plus non-claims expenditures for Spoke staff per capita (see Figure 2).

**Total Spoke Staff Expenditures**



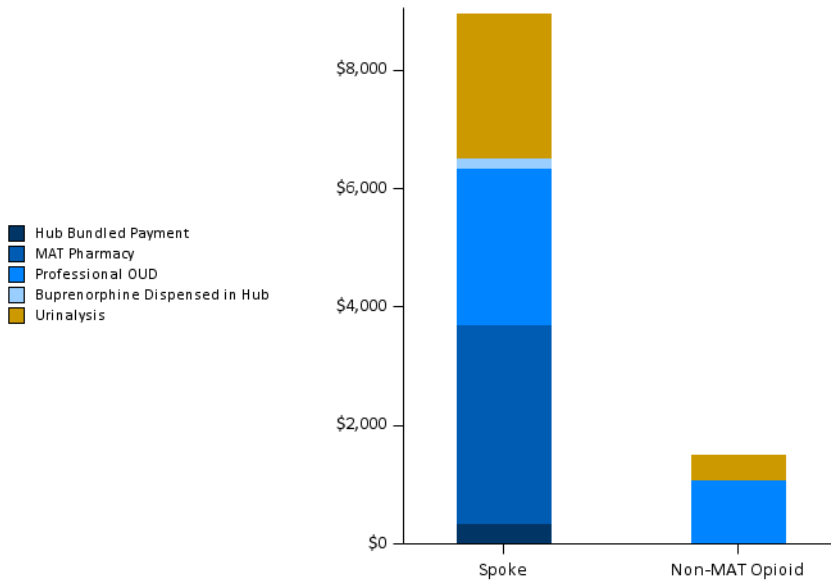
**Figure 2:** Presents trends for Spoke staffing expenditures and spoke staffing counts for each quarter within the measurement year.

**Total MAT & Non-MAT Expenditures**



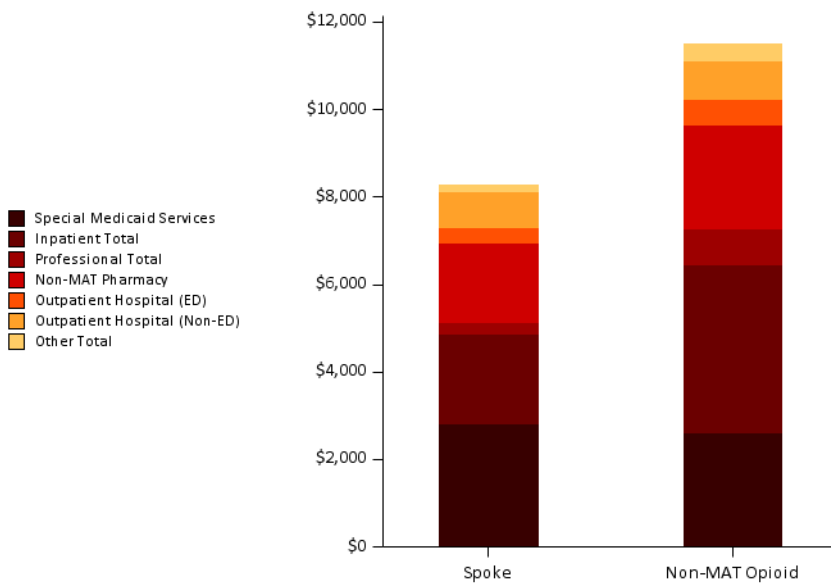
**Figure 3:** Presents annual crude rates for Medication Assisted Treatment (MAT) expenditures, Non-MAT expenditures, Professional Opioid Use Disorder (OUD) expenditures, and Urinalysis expenditures with expenditures capped statewide for outlier patients.

**Total MAT Expenditures per Capita by Treatment Category**



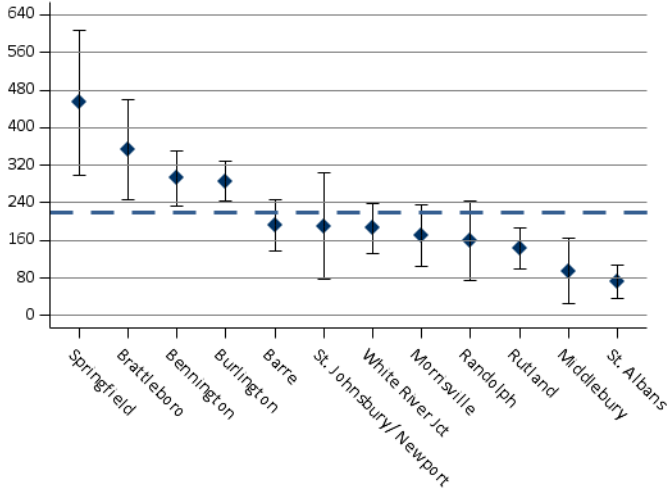
*Figure 4: Presents annual crude rates for the major components of Medication Assisted Treatment (MAT) expenditures as well as Urinalysis expenditures with expenditures capped statewide for outlier patients.*

**All Other Health Care Expenditures per Capita by Major Category**



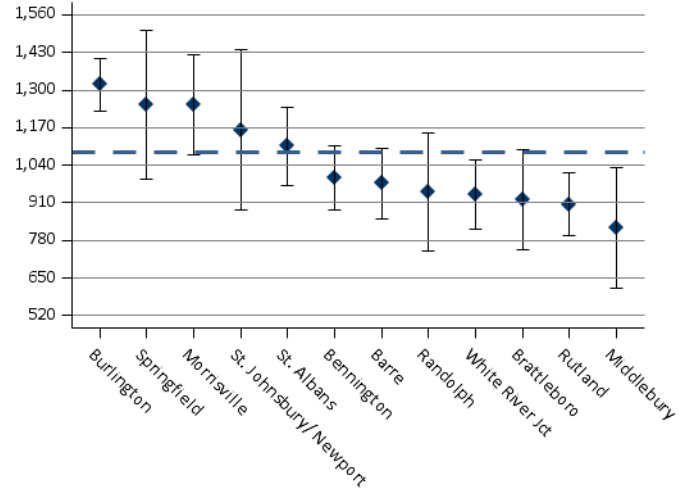
*Figure 5: Presents annual crude rates for the major expenditure categories for health and OUD care with expenditures capped statewide for outlier patients. Special Medicaid Services are services that commercial insurance often does not cover (e.g. transportation, special school services, residential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

**Inpatient Discharges\***



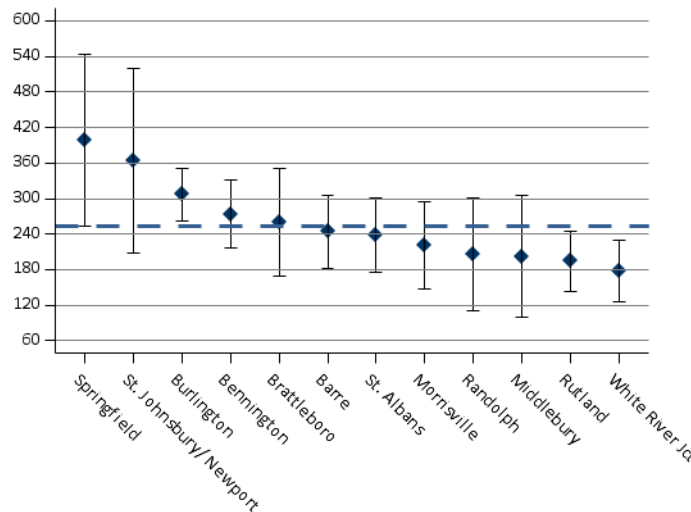
**Figure 6:** Presents annual crude rates, including 95% confidence intervals, of inpatient discharges per 1,000 members. The blue dashed line indicates the statewide Spoke average.

**Outpatient ED Visits\***



**Figure 7:** Presents annual crude rates, including 95% confidence intervals, of outpatient emergency department (ED) visits per 1,000 members. The blue dashed line indicates the statewide Spoke average.

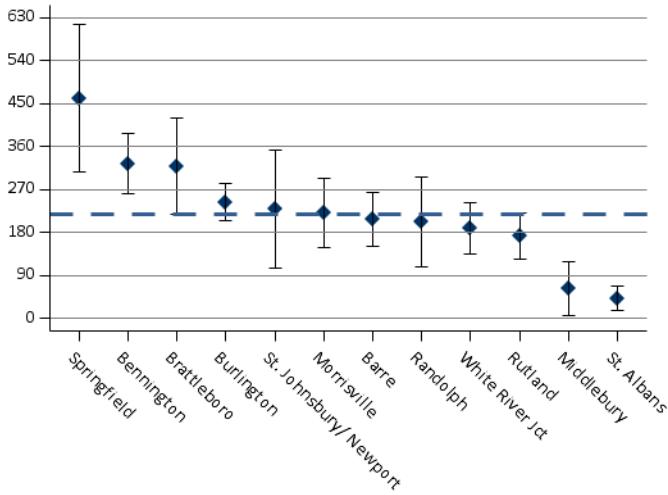
**Advanced Imaging (MRIs, CT Scans)**



**Figure 8:** 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.

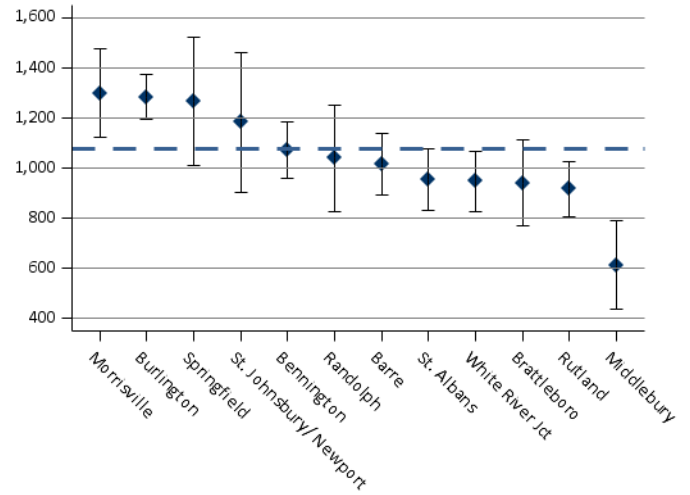
\*These measures are included in the Center for Medicare & Medicaid Services Health Home reporting.

**Risk-Adjusted Inpatient Discharges**



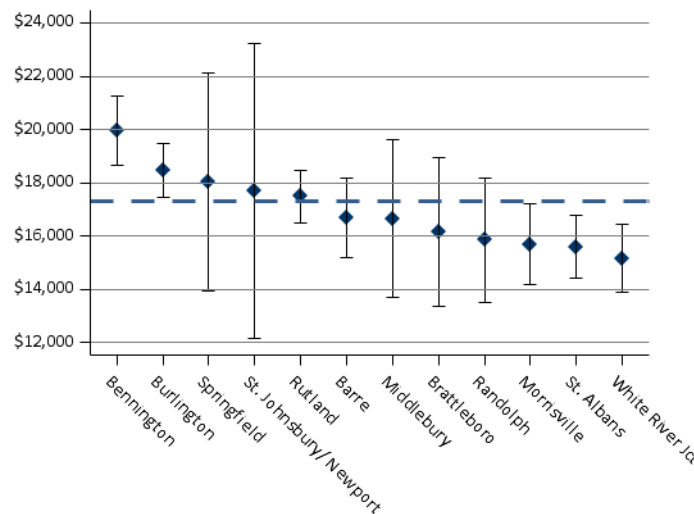
**Figure 9:** Presents annual risk-adjusted rates, including 95% confidence intervals, of inpatient discharges per 1,000 members. The blue dashed line indicates the Spoke statewide average.

**Risk-Adjusted Outpatient ED Visits**



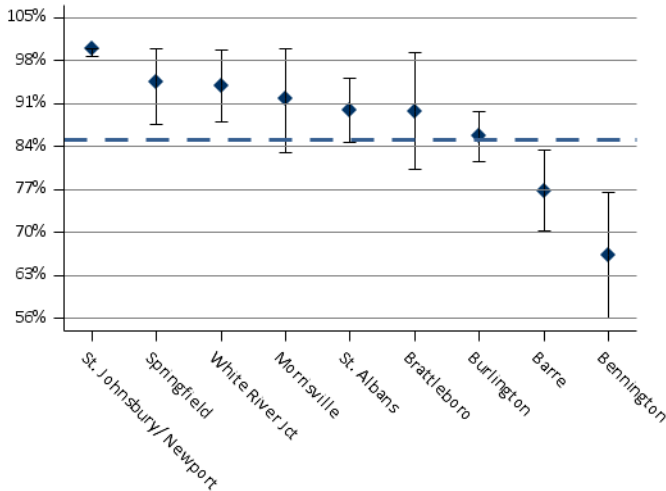
**Figure 10:** Presents annual risk-adjusted rates, including 95% confidence intervals, of outpatient emergency department (ED) visits per 1,000 members. The blue dashed line indicates the Spoke statewide average.

**Risk-Adjusted Total Expenditures per Capita**



**Figure 11:** 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. The blue dashed line indicates the Spoke statewide average.

**Adult Body Mass Index Assessment\***



**Figure 12:** 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. The blue dashed line indicates the Spoke statewide average.

**Screening for Clinical Depression\***

*Too few records in clinical registry*

**Figure 13:** 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. The blue dashed line indicates the Spoke statewide average.

**Controlling High Blood Pressure\***

*Too few records in clinical registry*

**Figure 14:** 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. The blue dashed line indicates the Spoke statewide average.

**Tobacco Use Screening\***

*Too few records in clinical registry*

**Figure 15:** 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. The blue dashed line indicates the Spoke statewide average.

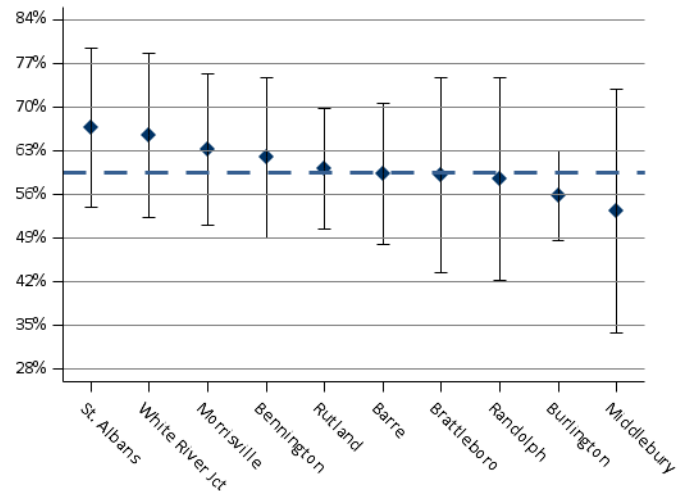
\*These measures are included in the Center for Medicare & Medicaid Services Health Home reporting.

**Breast Cancer Screening\***

*Too few women served in this age range*

**Figure 16:** Presents the proportion, including 95% confidence intervals, of continuously enrolled female members, ages 52–64 years, who 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.

**Cervical Cancer Screening\***



**Figure 17:** Presents the proportion, including 95% confidence intervals, of continuously enrolled female members either (a) ages 21–64 years who received one or more Papanicolaou (Pap) tests to screen for cervical cancer during the measurement year or two years prior to the measurement year or (b) ages 30–64 years who received one or more Pap tests to screen for cervical cancer during the measurement year or four years prior to the

**Follow-Up After Hospitalization for Mental Illness\***

*Too few index events*

**Figure 18:** Presents the proportion, including 95% confidence intervals, of continuously enrolled members, ages 18 years and older, 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. 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 Center for Medicare & Medicaid Services Health Home reporting.

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

**Table 2. Expenditure Measures (Crude)**

Measure	Spoke			Non-MAT Opioid Addicted			Statewide Medicaid		
	Rate per Capita	95% LCL	95% UCL	Rate per Capita	95% LCL	95% UCL	Rate per Capita	95% LCL	95% UCL
Total	\$17,402	\$16,879	\$17,924	\$12,984	\$12,133	\$13,835	\$7,316	\$7,219	\$7,413
Inpatient Total	\$2,063	\$1,769	\$2,356	\$3,844	\$3,300	\$4,388	\$1,144	\$1,103	\$1,185
Inpatient Mental Health	\$587	\$441	\$733	\$1,288	\$1,028	\$1,548	\$198	\$181	\$214
Inpatient Maternity	\$463	\$380	\$545	\$171	\$106	\$236	\$224	\$214	\$234
Inpatient Surgical	\$723	\$479	\$967	\$1,193	\$845	\$1,541	\$431	\$400	\$462
Inpatient Medical	\$344	\$252	\$435	\$1,197	\$930	\$1,464	\$307	\$288	\$325
Outpatient Total	\$1,186	\$1,121	\$1,252	\$1,479	\$1,373	\$1,586	\$1,034	\$1,019	\$1,048
Outpatient Hospital Mental Health	\$226	\$208	\$243	\$133	\$116	\$150	\$42	\$41	\$44
Outpatient Hospital ED	\$365	\$337	\$393	\$578	\$528	\$627	\$262	\$258	\$267
Outpatient Hospital Surgery	\$149	\$121	\$178	\$229	\$186	\$273	\$253	\$246	\$261
Outpatient Hospital Radiology	\$68	\$53	\$84	\$124	\$96	\$152	\$154	\$146	\$162
Outpatient Hospital Laboratory	\$184	\$169	\$200	\$158	\$141	\$174	\$125	\$123	\$127
Outpatient Hospital Pharmacy	\$23	\$9	\$36	\$16	\$8	\$24	\$26	\$23	\$29
Outpatient Hospital Other	\$163	\$148	\$178	\$206	\$181	\$230	\$178	\$174	\$181
Professional Non-Mental Health Total	\$966	\$920	\$1,012	\$1,199	\$1,125	\$1,273	\$906	\$898	\$915
Professional Physician Total	\$668	\$631	\$704	\$772	\$715	\$828	\$528	\$522	\$534
Professional Physician Inpatient	\$184	\$158	\$210	\$255	\$212	\$298	\$108	\$104	\$111
Professional Physician Outpatient Facility	\$126	\$116	\$136	\$141	\$128	\$155	\$132	\$130	\$134
Professional Physician Office Visit	\$274	\$259	\$290	\$239	\$221	\$258	\$211	\$209	\$214
Professional Non-Physician	\$300	\$281	\$318	\$428	\$398	\$458	\$374	\$370	\$378
Professional Mental Health Provider	\$2,058	\$1,983	\$2,133	\$700	\$647	\$753	\$376	\$369	\$382
Pharmacy Total	\$5,149	\$4,973	\$5,324	\$2,392	\$2,158	\$2,626	\$1,573	\$1,545	\$1,601
Pharmacy Psych Medication	\$681	\$611	\$751	\$513	\$439	\$588	\$294	\$286	\$303
Other Total	\$2,587	\$2,476	\$2,698	\$784	\$697	\$870	\$266	\$258	\$274
Special Medicaid Services	\$3,176	\$2,972	\$3,379	\$2,626	\$2,335	\$2,917	\$1,783	\$1,730	\$1,836
Mental Health Substance Combined*	\$3,464	\$3,318	\$3,610	\$2,310	\$2,092	\$2,528	\$872	\$854	\$890

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

**Table 3. MAT Expenditure Measures (Crude)**

Measure	Spoke			Non-MAT Opioid Addicted			Statewide Medicaid		
	Rate per Capita	95% LCL	95% UCL	Rate per Capita	95% LCL	95% UCL	Rate per Capita	95% LCL	95% UCL
Hub Bundled Payment	\$353	\$313	\$394	\$0	\$0	\$0	\$147	\$141	\$152
MAT Pharmacy	\$3,361	\$3,275	\$3,448	\$0	\$0	\$0	\$146	\$140	\$151
Professional OUD	\$2,642	\$2,525	\$2,760	\$1,082	\$966	\$1,199	\$149	\$143	\$156
Buprenorphine Dispensed in Hub	\$166	\$140	\$193	\$0	\$0	\$0	\$31	\$29	\$34
Urinalysis	\$2,423	\$2,317	\$2,530	\$405	\$353	\$457	\$128	\$122	\$133



**Table 4. Utilization Measures (Crude)**

Measure	Spoke			Non-MAT Opioid Addicted			Statewide Medicaid		
	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	218.2	200.0	236.4	388.4	357.7	419.2	113.2	110.7	115.7
Inpatient Days	1,219.7	1,176.8	1,262.7	2,462.5	2,385.1	2,539.9	553.3	547.8	558.8
Outpatient ED Visits	956.3	918.2	994.3	1,438.5	1,379.3	1,497.6	664.5	658.5	670.5
Outpatient Potentially Avoidable ED Visits	157.9	142.5	173.4	258.5	233.5	283.6	124.0	121.4	126.6
Non-Hospital Outpatient Visits	24,102.4	23,911.4	24,293.4	10,584.4	10,423.8	10,744.9	8,026.8	8,006.0	8,047.7
Primary Care Encounters	10,197.4	10,073.2	10,321.6	4,997.8	4,887.5	5,108.1	3,630.6	3,616.6	3,644.6
Medical Specialist Encounters	854.6	818.7	890.6	958.8	910.4	1,007.1	794.9	788.4	801.5
Surgical Specialist Encounters	1,593.9	1,544.8	1,643.0	761.7	718.6	804.7	835.6	828.9	842.3
Standard Imaging	701.0	668.5	733.6	1,211.6	1,157.3	1,265.9	773.5	767.0	779.9
Advanced Imaging	254.4	234.8	274.0	549.4	512.8	586.0	267.5	263.7	271.3
Echography	548.6	519.8	577.4	495.5	460.8	530.3	376.4	371.9	380.9
Colonoscopy	12.6	8.2	17.0	23.4	15.9	31.0	31.1	29.8	32.4
PQI 5: COPD Admissions	14.9	3.9	26.0	45.4	25.5	65.3	5.5	4.6	6.3
PQI 92: Composite (Chronic)	7.8	4.4	11.3	22.9	15.4	30.4	5.4	4.9	5.9
PQI 8: Heart Failure Admissions	0.4	0.0	1.2	3.8	0.8	6.9	0.9	0.7	1.1
Ambulatory Care ED Visits - HH	1,084.2	1,043.7	1,124.8	1,645.7	1,582.4	1,709.0	721.6	715.4	727.9
Inpatient Utilization - HH	220.2	201.9	238.4	405.6	374.1	437.0	103.8	101.4	106.1
Short Term Nursing Facility Admissions - HH							1.6	1.3	1.9
Long Term Nursing Facility Admissions - HH							0.2	0.1	0.3

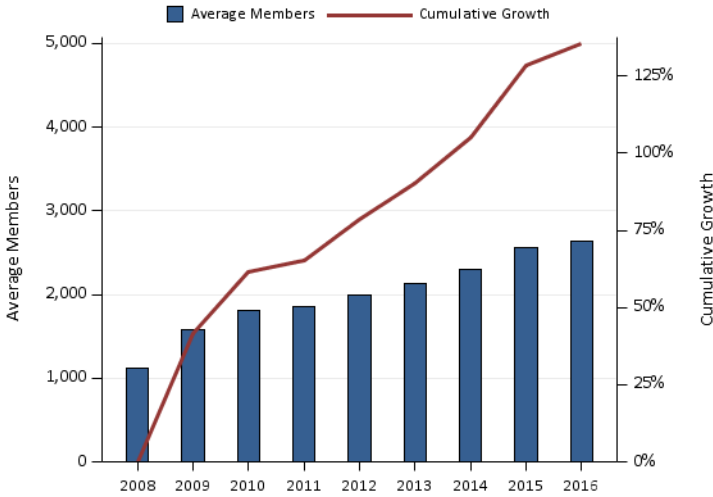
**Table 5. Effective & Preventive Care Measures**

Measure	Spoke				Non-MAT Opioid Addicted				Statewide Medicaid			
	N	Rate	95% LCL	95% UCL	N	Rate	95% LCL	95% UCL	N	Rate	95% LCL	95% UCL
Breast Cancer Screening (BCS), 52-64 Years - HH					42	43%	27%	59%	4,178	60%	58%	61%
Cervical Cancer Screening (CCS) - HH	799	59%	56%	63%	407	53%	48%	58%	20,270	57%	57%	58%
Follow-up After Hospitalization for Mental Illness (7 Day) - HH	73	26%	15%	37%	115	31%	22%	40%	719	34%	31%	38%
Controlling High Blood Pressure - HH	69	61%	49%	73%	63	56%	42%	69%	3,104	60%	58%	62%
Adult Body Mass Index Assessment - HH	1,010	85%	83%	87%	529	88%	86%	91%	23,107	86%	85%	86%
Screening for Clinical Depression - HH									943	2%	1%	3%
Tobacco Use Screening - HH	76	32%	20%	43%	42	29%	14%	43%	4,296	26%	24%	27%

**Table 6. Plan All-Cause Readmissions**

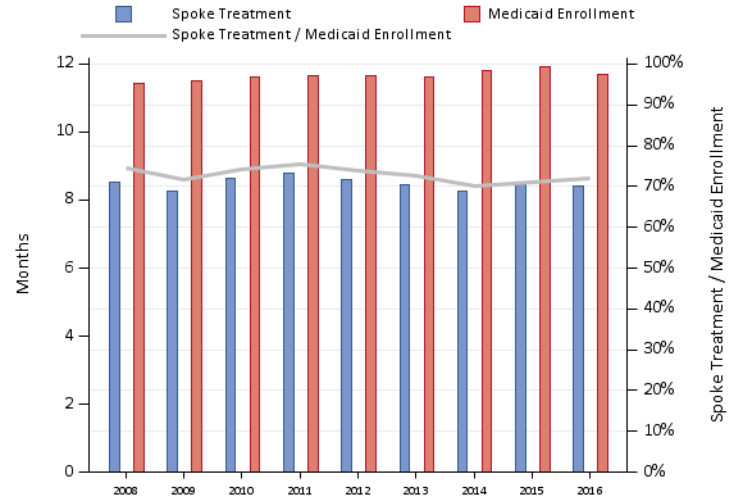
Measure	Spoke				Non-MAT Opioid Addicted				Statewide Medicaid			
	N	Observed / Expected Ratio	LCL	UCL	N	Observed / Expected Ratio	LCL	UCL	N	Observed / Expected Ratio	LCL	UCL
PCR	303	0.96	0.74	1.19	383	1.32	1.11	1.53	4,655	0.94	0.87	1.01

**Spoke Case Load Growth**



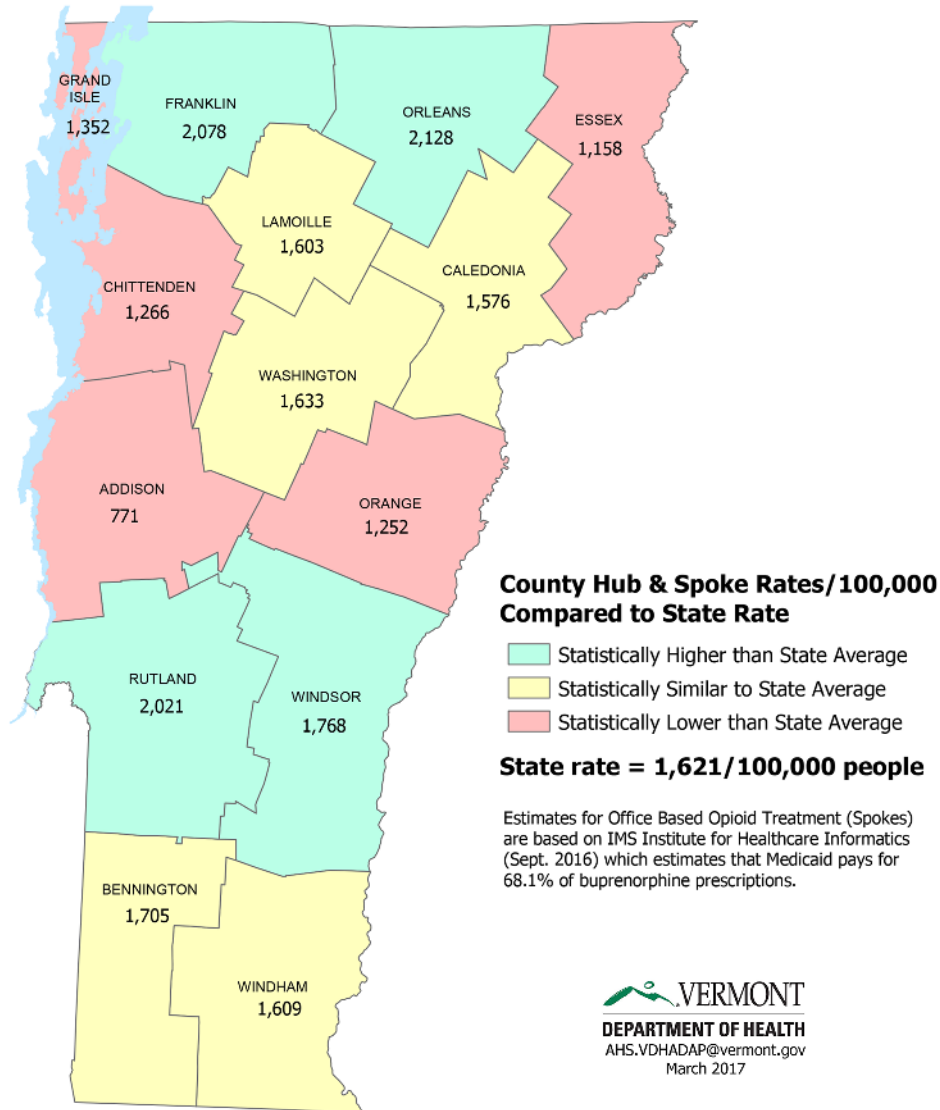
**Figure 19:** Presents the total average members per year receiving at least one prescription for buprenorphine as identified in the pharmacy claims within the measurement year and the percent cumulative growth since 2008.

**Medicaid Enrollment & MAT Treatment**



**Figure 20:** Presents the average number of Medicaid enrollment months among Spoke participants, the average number of Spoke treatment months, and the percent of Medicaid enrollment months that member received treatment. Spoke participation and Medicaid enrollment remained stable from 2008–2016 despite enhancements and changes made to the Spoke program.

**SFY2016 MAT Rate per 100,000 People**



**Figure 21:** Presents the rate of Hub & Spoke participation per 100,000 people 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.