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Vermont: A Health-Focused Landscape Analysis

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TABLE OF CONTENTS

INTRODUCTION

The Northern Border Regional Commission (https://www.nbrc.gov/) is a Federal-State partnership formed by Congress in 2008. Its purpose is to fund economic and community development projects in economically distressed and (primarily) rural counties located in four northeastern border states: Maine, New Hampshire, New York, and Vermont.

Counties within the Northern Border Regional Commission Region (NBRC) are categorized annually as "distressed" (have high rates of poverty, unemployment, and outmigration with severe and persistent economic distress and underdevelopment), "transitional" (have recently experienced high rates of poverty, unemployment, and outmigration, with economic distress and underdevelopment), or "attainment counties" (neither distressed nor transitional) (Figure 1).

Figure 1. Fiscal Year 2021 categories of distress within the Northern Border Regional Commission region: Maine, New Hampshire, Vermont, and New York

Distressed county
Transitional county
Attainment county
Not in NBRC region

Data source: Northern Border Regional Commission. *NBRC Annual Economic & Demographic Research for Fiscal Year 2021: To Determine Categories of Distress within the Northern Boarder Regional Commission Service Area.* March 2021.
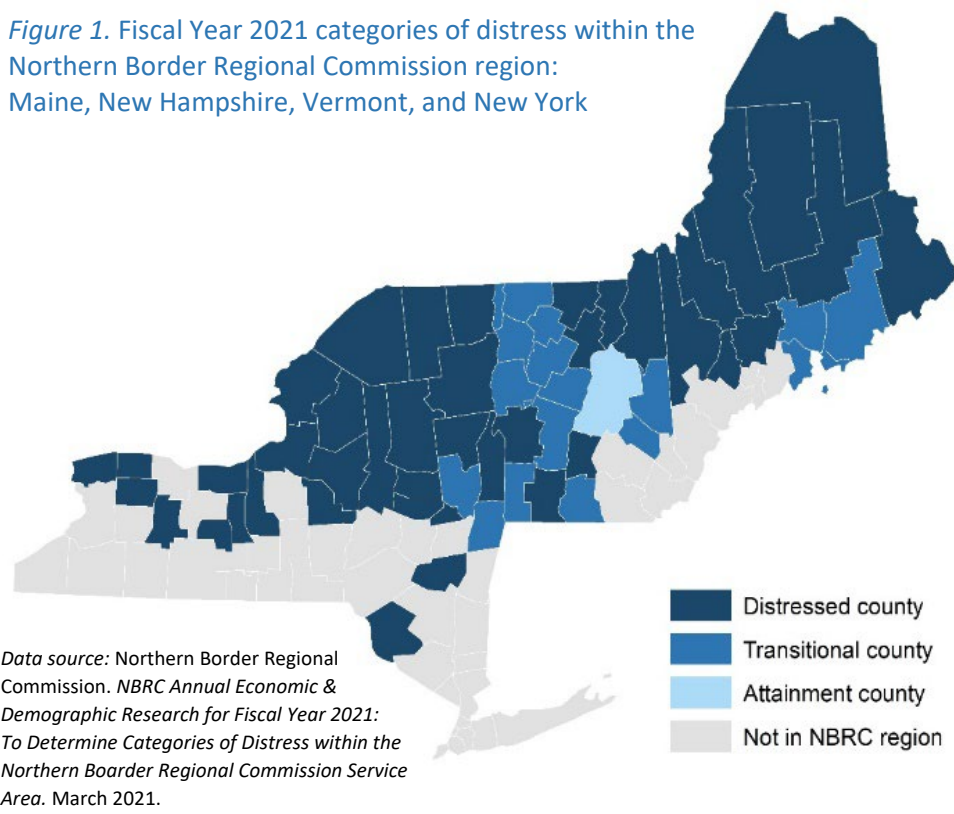
Counties designated as distressed and transitional are eligible for Northern Border Regional Commission awards, with a 20% match required for distressed counties and a 50% match required for transitional counties. Counties designated as attainment counties are not eligible for awards, but projects might be eligible if they are located within sub-county areas designated as isolated areas of distress, are part of a multi-county or multi-state project, or if the project is of significant benefit to distressed or transitional counties outside that county. Annual appropriation is divided equally among Maine, New Hampshire, New York, and Vermont.

Since 2010, the Northern Border Regional Commission has provided more than $90 million in funding for economic and infrastructure development projects in Maine, New Hampshire, New York, and Vermont. In addition, the Commission has leveraged matched funds from the federal government and state governments.

The 2021 Federal Appropriations package included an increase in funding for the Northern Border Regional Commission (from $25 million to $30 million) and a temporary waiver of the matching funds requirement for grantees. To be eligible for grant consideration, projects must fall within specific categories. One category is "basic health care and other public services to assist economically distressed areas."

In order to inform the distribution of Northern Border Regional Commission funds, the Maine Rural Health Research Center conducted a landscape analysis of population health and healthcare access for each state and for the region overall.

The measures presented in this chartbook may assist in the planning and selection of high impact projects for rural counties in greatest need of economic and infrastructure development investments to improve population health and healthcare access in Vermont.

KEY TAKEAWAYS

The analyses in this chartbook identify strengths and assets of the state of Vermont, as well as opportunities for improvement, across a comprehensive set of population health and health care access measures. These data are intended to inform strategic initiatives to support health and health care in the state, particularly in rural counties and counties in the Northern Border region. Key findings include:

Most counties in Vermont face shortages of primary care, mental health, and/or dental health professionals.

- Twelve Vermont counties are designated partial primary care health professional shortage areas, 10 are designated partial mental health professional shortage areas, and 11 are designated partial dental health professional shortage areas (*see page 13*).
- Two Vermont counties (Grand Isle and Windham) have no health professional shortage areas in any of the domains.

Most Vermont counties perform well on access to health care and population health measures.

- Ranked alongside the 102 counties in the Northern Border region states of Maine, New Hampshire, and New York, Vermont counties perform well on measures of insurance coverage (*see page 5*).
- Vermont performed better than the US average on health outcomes measures related to life expectancy and quality of life (*see page 6*).

Rates of injury-related death are highest in Caledonia, Essex, Grand Isle, and Windham Counties.

- Caledonia, Essex, Grand Isle, and Windham Counties have higher rates of injury deaths than most other counties in the Northern Border region (*see page 9*).
- Overall, Vermont's drug poisoning mortality rate was 24.4 per 100,000—higher than the US rate. Windham County had the highest rate of drug poisoning mortality in the state (32.2 per 100,000 population) (*see page 17*).

Vermont performs well on measures of community safety and physical environment.

- Vermont counties generally have lower rates of violent crime and severe housing problems, higher rates of homeownership, and lower levels of air pollution than other counties in the Northern Border region (*see page 8*).

SECTION I. Demographic Characteristics

| Geography | Population | Rurality | Age | | Sex | Race/ethnicity[1] | | | | | | Language |
| | | Living in a rural area | Below 18 years of age | Age 65 and older | Female | Non-Hispanic white | Non-Hispanic Black | Hispanic | American Indian & Alaska Native | Asian | Native Hawaiian/ Other Pacific Islander | Not proficient in English |
	(N)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
United States	328,239,523	19.3%	22.3%	16.5%	50.8%	60.1%	12.5%	18.5%	1.3%	5.9%	0.2%	4.3%
Vermont	623,989	61.1%	18.3%	20.0%	50.6%	92.6%	1.3%	2.0%	0.4%	1.9%	<0.1%	0.6%
Addison County†	36,777	78.4%	16.5%	20.7%	50.1%	92.6%	1.2%	2.3%	0.3%	1.8%	<0.1%	0.3%
Bennington County†	35,470	64.5%	18.6%	23.4%	51.3%	93.7%	1.2%	2.2%	0.3%	1.1%	0.1%	0.1%
Caledonia County*	29,993	74.4%	19.1%	22.1%	50.1%	94.7%	0.8%	1.7%	0.5%	0.9%	<0.1%	0.3%
Chittenden County†	163,774	26.0%	17.4%	15.6%	51.1%	88.3%	2.4%	2.5%	0.2%	4.6%	<0.1%	1.6%
Essex County*	6,163	100.0%	17.1%	26.5%	49.7%	95.1%	0.6%	1.5%	0.6%	0.7%	<0.1%	0.4%
Franklin County†	49,402	71.7%	21.9%	16.7%	50.2%	93.5%	0.7%	1.7%	1.0%	0.8%	<0.1%	0.2%
Grand Isle County†	7,235	100.0%	18.0%	21.5%	49.4%	92.3%	0.8%	2.1%	1.5%	0.6%	0.1%	0.2%
Lamoille County†	25,362	100.0%	20.2%	17.9%	50.0%	94.3%	1.1%	1.8%	0.4%	0.7%	<0.1%	0.1%
Orange County†	28,892	97.2%	18.1%	22.0%	49.8%	95.6%	0.6%	1.4%	0.4%	0.6%	<0.1%	0.2%
Orleans County*	27,037	85.3%	19.4%	23.3%	49.9%	94.7%	0.8%	1.7%	0.6%	0.5%	<0.1%	0.4%
Rutland County*	58,191	61.0%	17.6%	22.7%	50.5%	95.1%	0.6%	1.6%	0.3%	1.0%	<0.1%	0.2%
Washington County†	58,409	52.8%	18.5%	20.2%	50.3%	94.1%	0.9%	2.0%	0.3%	1.0%	<0.1%	0.3%
Windham County*	42,222	68.2%	17.6%	23.9%	51.1%	92.7%	1.4%	2.4%	0.3%	1.2%	0.1%	0.3%
Windsor County†	55,062	75.6%	17.9%	24.2%	51.0%	94.3%	0.9%	1.8%	0.3%	1.0%	<0.1%	0.3%

Data sources: Census Population Estimates, 2010 and 2019; American Community Survey, 2015-2019 5-year estimates.
Note: Rural counties are in bold font. * = NBRC distressed county; † = NBRC transitional county, ‡ = NBRC attainment county.
[1]Race/ethnicity data may not sum to 100% due to missing data.

SECTION II. Socioeconomic Characteristics

Geography	Employment			Income				Social support	Education	
	Employed full time, ages 16 to 64 (%)	Unemployed, ages 16 and older seeking work (%)	Employed in healthcare and social assistance (%)	Median household income ($)	Population in poverty (%)	Children in poverty (%)	Children eligible for free or reduced-price lunch (%)	Children in single-parent households (%)	High school graduation rate (%)	Adults with some college completion (%)
United States	66.4%	3.7%	15.8%	65,712	12.3%	16.8%	52.2%	25.5%	85.0%	66.1%
Vermont	62.2%	2.4%	19.0%	63,293	10.1%	10.8%	36.4%	21.2%	85.5%	68.7%
Addison County†	58.5%	2.3%	16.3%	73,574	7.9%	9.3%	30.9%	14.2%	88.9%	68.7%
Bennington County†	60.5%	2.9%	22.6%	56,948	10.0%	13.4%	64.2%	26.9%	80.2%	62.8%
Caledonia County*	60.1%	3.0%	20.4%	50,942	12.3%	14.6%	50.9%	18.3%	88.1%	59.2%
Chittenden County†	59.7%	1.8%	18.4%	76,483	10.5%	8.1%	24.8%	21.3%	86.7%	80.9%
Essex County*	62.3%	3.2%	15.1%	45,796	14.8%	19.2%	57.6%	18.8%	NA	47.4%
Franklin County†	68.1%	2.3%	19.9%	65,056	9.6%	11.1%	37.9%	17.2%	85.2%	60.6%
Grand Isle County†	63.8%	2.9%	8.2%	68,364	8.1%	11.1%	36.6%	18.6%	NA	68.5%
Lamoille County†	62.1%	3.1%	16.1%	60,555	9.1%	11.0%	37.9%	24.8%	85.0%	70.6%
Orange County†	65.3%	2.4%	28.9%	59,758	9.4%	11.2%	43.7%	20.3%	87.4%	58.5%
Orleans County*	62.5%	4.2%	19.0%	48,826	12.7%	17.7%	56.7%	22.7%	80.9%	51.6%
Rutland County*	67.2%	2.8%	19.9%	51,903	10.8%	11.8%	38.9%	18.2%	87.7%	62.9%
Washington County†	63.5%	2.3%	17.7%	65,879	8.4%	9.3%	29.1%	27.2%	87.1%	70.0%
Windham County*	58.5%	2.6%	16.7%	52,068	11.6%	13.1%	42.6%	24.9%	79.0%	60.3%
Windsor County†	64.2%	2.1%	22.4%	61,843	9.2%	9.6%	34.8%	19.3%	83.8%	69.8%

Data sources: American Community Survey, 2015-2019 5-year estimates; Bureau of Labor Statistics, 2019; Business Dynamics Statistics, Center for Economic Studies, US Census Bureau, 2018; Small Area Income and Poverty Estimates, 2019; National Center for Education Statistics, 2018-2019; EDFacts, 2017-2018.

Note: Rural counties are in bold font. * = NBRC distressed county; † = NBRC transitional county, ‡ = NBRC attainment county. NA = not available.

SECTION III. Access to Healthcare

Geography	Access to care							Quality of care			County performance indicator
	Uninsured among ages 0-64 (%)	Uninsured among adults ages 18-64 (%)	Uninsured among children ages 0-18 (%)	Ratio of population to primary care physicians (N:1)	Ratio of population to primary care providers other than physicians (N:1)	Ratio of population to dentists (N:1)	Ratio of population to mental health providers (N:1)	Preventable hospital stays per 100,000 Medicare enrollees (N)	Mammography screening among female Medicare enrollees ages 65-74 (%)	Flu vaccinations among fee-for-service Medicare enrollees (%)	
United States	10.4%	12.4%	5.2%	1,319	942	1,405	383	4,236	42.0%	48.0%	
Vermont	4.9%	5.9%	1.5%	892	818	1,365	208	3,256	45.0%	49.0%	
Addison County†	4.7%	5.7%	1.6%	880	1,186	1,936	331	2,389	43.0%	57.0%	☑
Bennington County†	5.5%	6.8%	1.7%	963	806	1,043	209	4,404	48.0%	50.0%	☑
Caledonia County*	5.2%	6.5%	1.4%	1,263	789	1,304	273	2,733	42.0%	38.0%	☑
Chittenden County†	4.3%	5.2%	1.4%	550	645	1,017	153	2,152	46.0%	59.0%	☑
Essex County*	6.0%	7.2%	2.0%	6,250	1,541	2,054	2,054	4,806	39.0%	40.0%	⚠
Franklin County†	4.6%	5.8%	1.3%	1,830	898	2,058	386	4,508	45.0%	45.0%	☑
Grand Isle County†	4.8%	5.7%	1.9%	1,773	3,618	7,235	3,618	2,953	46.0%	49.0%	⚠
Lamoille County†	5.4%	6.6%	1.9%	1,100	975	1,951	208	3,357	44.0%	58.0%	☑
Orange County†	5.1%	6.1%	1.7%	1,208	1,111	3,210	292	3,957	45.0%	44.0%	☑
Orleans County*	5.7%	7.0%	1.8%	1,416	1,802	1,931	370	3,797	45.0%	31.0%	⚠
Rutland County*	5.0%	6.1%	1.4%	1,333	766	1,323	313	3,748	44.0%	47.0%	☑
Washington County†	4.4%	5.3%	1.6%	938	847	1,168	182	2,963	47.0%	56.0%	☑
Windham County*	5.1%	6.1%	1.6%	1,018	898	1,508	135	3,181	47.0%	40.0%	☑
Windsor County†	5.4%	6.5%	1.8%	1,024	725	1,619	187	3,316	48.0%	40.0%	☑

Data sources: Small Area Health Insurance Estimates, 2018; Area Health Resource File, American Medical Association, 2018; Center for Medicare & Medicaid Services, National Provider Identification, 2020; Area Health Resource File, National Provider Identification, 2019; Mapping Medicare Disparities Tool, 2018.

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Performance indicator key: ☑ = county is in bottom 10% of all counties for fewer than 2 measures; ⚠ = county is in bottom 10% of all counties for 2-3 measures; 🚫 = county is in bottom 10% of all counties for 4 or more measures.

SECTION IV. Health Outcomes

Geography	Length of life			Quality of life			County performance indicator
	Life expectancy (years)	Premature age-adjusted mortality (deaths among residents under age 75 per 100,000 population)	Child mortality (number of deaths among children under age 18 per 100,000 population)	Frequent physical distress (% of adults)	Frequent mental distress (% of adults)	Diabetes prevalence (% of adults aged 20+)	
United States	79.2	339.2	49.1	11.4%	12.7%	10.5%	
Vermont	79.8	302.2	37.4	11.0%	12.6%	8.8%	
Addison County†	81.7	227.3	NA	10.5%	13.3%	8.1%	☑
Bennington County†	77.8	368.0	NA	11.5%	14.3%	10.9%	☑
Caledonia County*	78.7	345.4	NA	11.9%	14.8%	9.2%	☑
Chittenden County†	81.8	249.6	36.9	10.5%	12.4%	6.7%	☑
Essex County*	78.1	423.5	NA	13.9%	16.4%	13.0%	⚠
Franklin County†	78.6	332.3	29.6	11.4%	14.3%	10.9%	☑
Grand Isle County†	79.9	281.5	NA	10.8%	13.1%	9.8%	☑
Lamoille County†	80.7	272.7	NA	11.7%	14.2%	8.2%	☑
Orange County†	79.7	291.2	60.7	12.1%	14.3%	10.0%	☑
Orleans County*	78.5	351.4	NA	12.8%	15.3%	9.8%	☑
Rutland County*	77.4	374.9	43.0	12.3%	14.9%	10.8%	☑
Washington County†	80.3	273.8	45.3	10.9%	13.5%	7.9%	☑
Windham County*	78.6	356.0	45.6	12.1%	13.9%	8.2%	☑
Windsor County†	79.9	311.1	NA	11.1%	14.1%	9.8%	☑

Data sources: National Center for Health Statistics-Mortality Files, 2016-2019; Behavioral Risk Factor Surveillance System, 2018; United States Diabetes Surveillance System, 2017.

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Performance indicator key: ☑ = county is in bottom 10% of all counties for fewer than 2 measures; ⚠ = county is in bottom 10% of all counties for 2-3 measures; 🚫 = county is in bottom 10% of all counties for 4 or more measures.

SECTION V. Health Behaviors and Access

Geography	Tobacco use	Food access, physical activity, and obesity				Alcohol use		Sexual health		County performance indicator
	Adult smoking (%)	Adult obesity (%)	Food environment index[1]	Physical inactivity[2] (%)	Access to exercise opportunities[3] (%)	Excessive drinking[4] (%)	Alcohol-impaired driving deaths (as % of driving deaths) (%)	Sexually transmitted infections (Chlamydia cases per 100,000 population)	Teen births (# per 1,000 female population ages 15-19)	
United States	16.6%	29.7%	7.8	22.7%	84.2%	19.2%	27.0%	539.9	20.9	
Vermont	14.7%	27.0%	8.7	18.4%	75.8%	20.5%	34.3%	274.5	11.1	
Addison County†	14.2%	25.6%	8.9	19.6%	72.5%	21.6%	30.8%	198.5	7.9	☑
Bennington County†	16.7%	29.9%	8.1	19.8%	100.0%	20.3%	35.3%	230.4	16.6	☑
Caledonia County*	19.0%	29.9%	8.3	23.3%	60.4%	21.8%	52.9%	301.7	11.5	☑
Chittenden County†	12.5%	22.4%	8.6	13.6%	87.5%	19.4%	26.5%	364.0	5.0	☑
Essex County*	20.7%	30.2%	7.1	27.6%	43.6%	20.6%	33.3%	160.5	13.3	⚠
Franklin County†	17.0%	34.9%	8.9	26.1%	48.8%	19.2%	53.1%	289.6	19.6	⚠
Grand Isle County†	15.1%	30.1%	9.1	21.7%	62.4%	24.1%	25.0%	171.5	14.5	☑
Lamoille County†	17.1%	23.6%	8.6	18.5%	68.2%	23.4%	42.9%	276.3	12.8	☑
Orange County†	17.2%	28.8%	8.4	18.0%	51.7%	20.3%	28.6%	207.1	10.7	☑
Orleans County*	21.2%	32.1%	7.8	24.7%	50.6%	22.0%	33.3%	286.9	23.6	⚠
Rutland County*	17.5%	33.1%	8.2	22.0%	84.7%	21.0%	37.5%	199.7	12.8	☑
Washington County†	14.7%	22.2%	8.3	15.9%	83.0%	24.3%	19.0%	329.4	12.1	☑
Windham County*	16.5%	25.3%	8.0	17.0%	69.6%	20.7%	28.1%	219.3	18.1	☑
Windsor County†	15.8%	27.8%	8.5	17.2%	81.9%	23.3%	29.7%	181.5	12.5	☑

Data sources: Behavioral Risk Factor Surveillance System, 2018; United States Diabetes Surveillance System, 2017; United States Department of Agriculture Food Environment Atlas, 2015 and Map the Meal Gap from Feeding America, 2018; Business Analyst, Delorme map data, ESRI, & US Census Tigerline Files, 2010 and 2019; Fatality Analysis Reporting System, 2015-2019; National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, 2018; National Center for Health Statistics - Natality files, 2013-2019.

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[1]The food environment index is a measure of food security and access to healthy food and ranges from 0 (worst) to 10 (best). [2]Physical inactivity is a measure of the percentage of adults reporting no leisure-time physical activity in the past month. [3]Access to exercise opportunities is a measure of the percentage of individuals in a county who live reasonably close to a location for physical activity (a census block within a half mile of a park, an urban census block within one mile of a recreational facility, or a rural census block within three miles of a recreational facility). [4]Excessive drinking is a measure of the percentage of a county's adult population that reports binge or heavy drinking in the past 30 days.

Performance indicator key: ☑ = county is in bottom 10% of all counties for fewer than 2 measures; ⚠ = county is in bottom 10% of all counties for 2-3 measures; ⃠ = county is in bottom 10% of all counties for 4 or more measures.

SECTION VI. Community Safety and Physical Environment

Geography	Community safety	Housing		Environmental quality	County performance indicator
	Violent crime (# of offenses per 100,000 population)	Severe housing problems (% of households)	Homeownership (% of occupied units owned)	Air pollution - particulate (micrograms per cubic meter)	
United States	386.5	17.5%	64.0%	7.2	
Vermont	128.8	17.0%	70.8%	5.4	
Addison County†	78.6	14.9%	76.0%	5.4	☑
Bennington County†	155.6	15.4%	74.0%	5.0	☑
Caledonia County*	113.3	15.4%	73.1%	5.0	☑
Chittenden County†	129.8	17.7%	62.4%	5.5	☑
Essex County*	16.3	16.0%	81.2%	5.2	☑
Franklin County†	139.8	14.6%	75.4%	5.6	☑
Grand Isle County†	43.4	16.8%	84.0%	5.7	☑
Lamoille County†	53.5	18.8%	73.2%	4.6	☑
Orange County†	19.1	16.2%	80.5%	5.3	☑
Orleans County*	138.5	18.5%	78.2%	5.4	☑
Rutland County*	161.7	18.6%	71.4%	6.4	☑
Washington County†	101.3	15.9%	70.4%	5.0	☑
Windham County*	167.1	20.2%	67.3%	5.9	☑
Windsor County†	90.7	15.8%	73.8%	5.9	☑

Data sources: Uniform Crime Reporting – Federal Bureau of Investigation, 2014 and 2016; Comprehensive Housing Affordability Strategy (CHAS) data, 2013-2017; American Community Survey, 2015-2019 5-year estimates; Environmental Public Health Tracking Network, 2016.

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SECTION VII. Death Rates per 100,000 Population, Cause Specific

| Geography | Length of life | Injury-related deaths | Injury-related death subcategories | | | | County performance indicator |
	Premature death (years of potential life lost before age 75, # per 100,000)	All injury deaths (# per 100,000)	Suicide deaths (# per 100,000)	Firearm deaths (# per 100,000)	Drug overdose deaths (# per 100,000)	Motor vehicle crash deaths (# per 100,000)	
United States	6,906.6	72.3	13.8	11.9	21.2	11.4	
Vermont	6,277.2	85.6	17.0	11.7	22.4	9.6	
Addison County†	4,388.4	64.5	10.1	7.0	NA	8.5	☑
Bennington County†	7,768.0	90.4	18.3	12.8	26.2	9.9	☑
Caledonia County*	7,564.6	106.2	33.5	19.8	29.8	10.3	⚠
Chittenden County†	4,993.6	67.2	12.0	7.5	15.9	4.8	☑
Essex County*	9,189.6	122.7	NA	NA	NA	27.7	⚠
Franklin County†	6,742.8	83.1	18.5	10.6	23.7	13.4	☑
Grand Isle County†	6,549.5	105.4	20.6	NA	NA	NA	☑
Lamoille County†	5,276.3	66.4	16.0	10.3	14.5	9.6	☑
Orange County†	6,024.9	89.2	16.8	15.2	17.3	10.9	☑
Orleans County*	7,101.0	102.4	14.7	14.1	17.3	14.8	☑
Rutland County*	8,213.2	101.4	20.7	13.9	28.4	10.3	☑
Washington County†	5,765.1	79.8	14.4	14.4	21.2	8.5	☑
Windham County*	8,536.4	113.4	25.7	12.1	51.6	13.2	🚫
Windsor County†	6,730.1	101.2	21.1	13.4	29.0	12.1	☑

Data source: National Center for Health Statistics – Mortality Files, 2013-2019.

Note: Rural counties are in bold font. * = NBRC distressed county; † = NBRC transitional county; ‡ = NBRC attainment county. If a cell is highlighted in light blue, the county in that row is in the bottom 10% of all counties in NBRC states (ME, NH, NY, VT) for that measure. NA = Not available.

Performance indicator key: ☑ = county is in bottom 10% of all counties for fewer than 2 measures; ⚠ = county is in bottom 10% of all counties for 2-3 measures; 🚫 = county is in bottom 10% of all counties for 4 or more measures.

SECTION VIII. Top Five Causes of Death

Geography	Top five causes of death (Age-adjusted rate of death per 100,000 population)					County performance indicator
	Heart disease	Cancer	Accidents (unintentional injuries)	Chronic lower respiratory diseases	Stroke (cerebrovascular diseases)	
United States	164.8	152.3	47.5	40.2	37.3	
Vermont	153.1	158.7	55.9	40.6	30.7	
Addison County†	154.0	140.4	44.0	40.3	33.8	☑
Bennington County†	175.5	168.8	57.0	56.6	30.7	☑
Caledonia County*	171.5	157.3	60.4	35.7	32.8	☑
Chittenden County†	123.3	148.3	46.2	30.5	26.8	☑
Essex County*	143.3	191.4	88.6	65.3	22.1	⚠
Franklin County†	181.9	175.2	61.5	46.9	30.2	☑
Grand Isle County†	117.8	180.9	63.8	36.2	33.3	☑
Lamoille County†	140.4	163.5	39.5	34.4	31.4	☑
Orange County†	165.5	158.3	61.1	33.8	35.2	☑
Orleans County*	173.9	161.4	69.3	42.1	31.4	☑
Rutland County*	177.4	181.3	66.6	50.2	35.2	☑
Washington County†	156.4	152.4	51.8	42.8	24.9	☑
Windham County*	152.5	162.4	76.1	47.1	31.4	☑
Windsor County†	144.1	147.7	64.4	34.7	35.5	☑

Data source: National Center for Health Statistics – Mortality Files, 2015-2019.

Note: Rural counties are in bold font. * = NBRC distressed county; † = NBRC transitional county; ‡ = NBRC attainment county. If a cell is highlighted in light blue, the county in that row is in the bottom 10% of all counties in NBRC states (ME, NH, NY, VT) for that measure.

Performance indicator key: ☑ = county is in bottom 10% of all counties for fewer than 2 measures; ⚠ = county is in bottom 10% of all counties for 2-3 measures; 🚫 = county is in bottom 10% of all counties for 4 or more measures.

10

SECTION IX. Internet Access

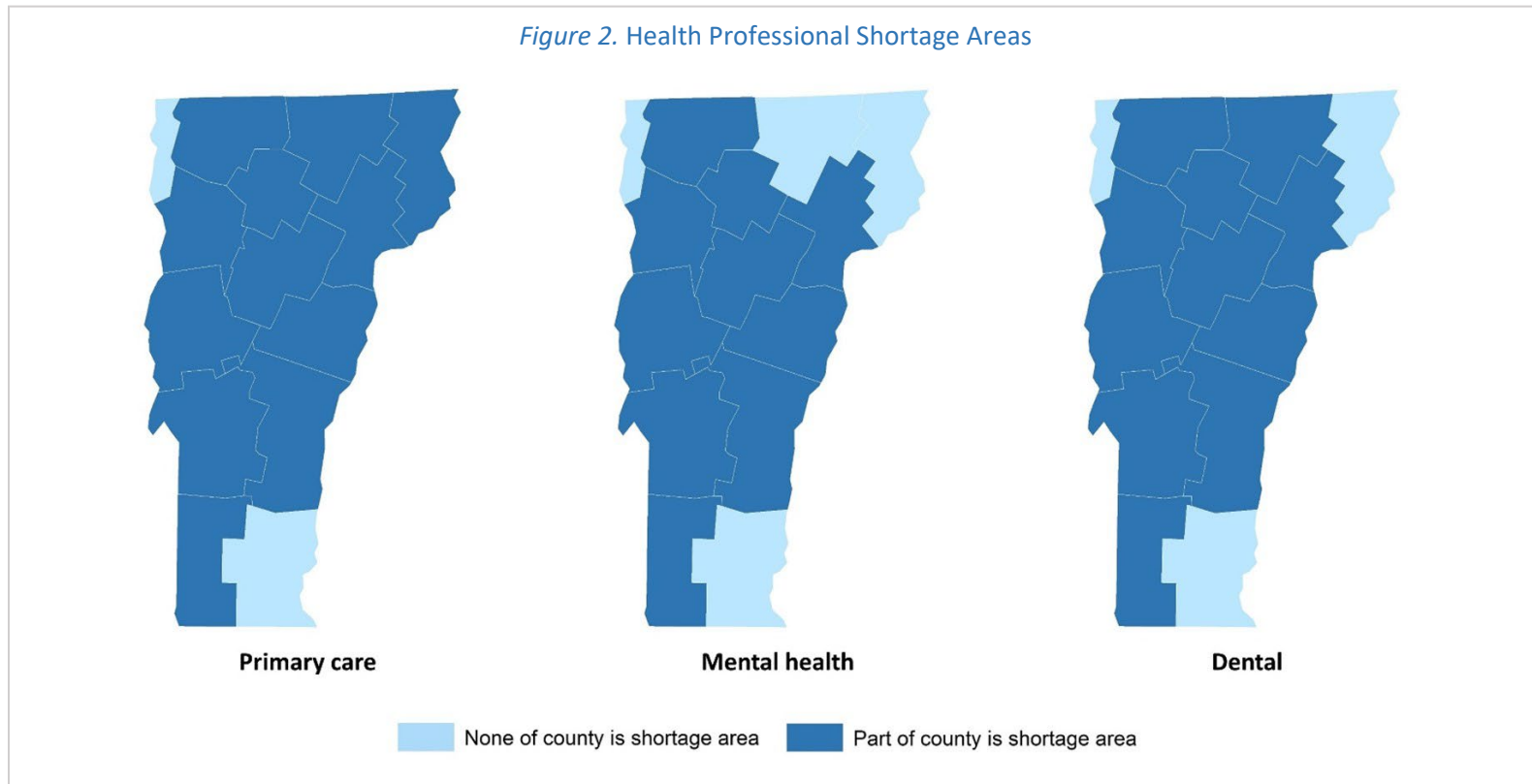| Geography	Household access to the internet			Household access to broadband	County performance indicator
	Access with an internet subscription (%)	Access without an internet subscription[1] (%)	No internet access (%)	Access with broadband of any type (%)	
United States	86.6%	2.5%	10.9%	86.4%	
Vermont	82.2%	4.7%	13.1%	81.5%	
Addison County†	84.4%	3.2%	12.4%	83.5%	☑
Bennington County†	82.1%	4.6%	13.3%	81.1%	☑
Caledonia County*	76.7%	4.6%	18.7%	75.6%	☑
Chittenden County†	85.8%	5.0%	9.2%	85.4%	☑
Essex County*	72.6%	3.2%	24.2%	70.9%	⚠
Franklin County†	82.5%	3.2%	14.3%	81.7%	☑
Grand Isle County†	85.3%	3.3%	11.4%	84.2%	☑
Lamoille County†	83.6%	5.0%	11.4%	82.5%	☑
Orange County†	80.9%	2.4%	16.7%	79.1%	☑
Orleans County*	77.4%	3.4%	19.2%	76.3%	☑
Rutland County*	80.6%	3.0%	16.4%	80.1%	☑
Washington County†	83.8%	3.8%	12.4%	83.3%	☑
Windham County*	74.3%	12.6%	13.0%	73.5%	☑
Windsor County†	83.4%	4.4%	12.2%	82.9%	☑

Data source: American Community Survey, 2015-2019 5-year estimates.

Note: Rural counties are in bold font. * = NBRC distressed county; † = NBRC transitional county; ‡ = NBRC attainment county. If a cell is highlighted in light blue, the county in that row is in the bottom 10% of all counties in NBRC states (ME, NH, NY, VT) for that measure. For this table, only two measures ("No internet access" and "Access with broadband of any type") were used to assess the bottom 10% of all counties in NBRC states. The "Household access to the internet" measures sum to 100%.

[1]Respondents reported accessing the internet without paying a cell phone company or internet service provider.

Performance indicator key: ☑ = county is in bottom 10% of all counties for fewer than 2 measures; ⚠ = county is in bottom 10% of all counties for 2-3 measures; ⊘ = county is in bottom 10% of all counties for 4 or more measures.

SECTION X. Summary of Health Measures

County	Access to healthcare	Health outcomes	Health behaviors and access	Community safety and physical environment	Death rates per 100,000 population	Top five causes of death	Internet access
Addison County†	☑	☑	☑	☑	☑	☑	☑
Bennington County†	☑	☑	☑	☑	☑	☑	☑
Caledonia County*	☑	☑	☑	☑	⚠	☑	☑
Chittenden County†	☑	☑	☑	☑	☑	☑	☑
Essex County*	⚠	⚠	⚠	☑	⚠	⚠	⚠
Franklin County†	☑	☑	⚠	☑	☑	☑	☑
Grand Isle County†	⚠	☑	☑	☑	☑	☑	☑
Lamoille County†	☑	☑	☑	☑	☑	☑	☑
Orange County†	☑	☑	☑	☑	☑	☑	☑
Orleans County*	⚠	☑	⚠	☑	☑	☑	☑
Rutland County*	☑	☑	☑	☑	☑	☑	☑
Washington County†	☑	☑	☑	☑	☑	☑	☑
Windham County*	☑	☑	☑	☑	🚫	☑	☑
Windsor County†	☑	☑	☑	☑	☑	☑	☑

Note: Rural counties are in bold font; * = NBRC distressed county; † = NBRC transitional county; ‡ = NBRC attainment county.

Performance indicator key: ☑ = county is in bottom 10% of all counties for fewer than 2 measures; ⚠ = county is in bottom 10% of all counties for 2-3 measures; 🚫 = county is in bottom 10% of all counties for 4 or more measures.

SECTION XI. Health Professional Shortage Areas

Health Professional Shortage Areas reflect areas and populations that experience a shortage of health professionals in three domains: primary care, mental health, and dental health. At the county level, Health Professional Shortage Areas indicate whether all, part ("partial"), or none of the county is a shortage area. The Health Resources & Services Administration designates these areas on an annual basis.

- Twelve Vermont counties are designated *partial* primary care professional shortage areas and two counties (Grand Isle and Windham) have no primary care health professional shortage areas (Figure 2, left).

- Ten counties in Vermont are designated *partial* mental health professional shortage areas, while in four counties there are no designated mental health professional shortage areas (Figure 2, middle).

- Eleven Vermont counties are designated *partial* dental health professional shortage areas and three counties have no dental health professional shortage areas (Figure 2, right).

Figure 2. Health Professional Shortage Areas

Primary care   Mental health   Dental

None of county is shortage area   Part of county is shortage area

Data source: Health Resources & Services Administration, Area Health Resources Files, 2020-2021. *Note:* For a map of the state with county names, see Appendix I.

SECTION XII. Rural Health Clinics

Rural Health Clinics provide primary care services and preventative services in underserved rural communities. Centers for Medicare & Medicaid Services (CMS) certified Rural Health Clinics must be located in a rural underserved area, have a team of physician and non-physician clinicians, and provide outpatient primary care services and basic laboratory services. Rural Health Clinics receive enhanced reimbursement for Medicare and Medicaid services.

As of March 2021, Vermont had 10 Rural Health Clinic locations:

- 8 Rural Health Clinics are hospital based

- Clinician full-time equivalents (FTE):

    - 1 FTE is equal to a single person working 40 hours a week

    - Clinicians: physicians, physician assistants, and nurse practitioners

    - Vermont Rural Health Clinics range from 1.3 to 12.0 clinician FTEs

Data source: Centers for Medicare & Medicaid Services (CMS), Provider of Services file, March 2021.
Note: For a map of the state with county names, see Appendix I.

Figure 3. Rural Health Clinic locations and clinician staffing levels

Full-time clinicians

- 1 - 5
- 6 - 10
- 11 - 12
- NBRC county

SECTION XIII. Federally Qualified Health Centers

Federally Qualified Health Centers (FQHCs) are community health centers that provide primary care to underserved populations. Health centers can receive federal grant funding through Section 330 of the Public Health Service Act. Health centers that are look-alikes meet the Health Resources & Services Administration's health center requirements, serve similar populations, but do not receive federal grant funding. The Centers for Medicare & Medicaid Services certify participants in the Health Center program as FQHCs for payment purposes.

As of June 2021, there were 89 FQHCs in Vermont, including:

- No FQHC look-alikes
- 22 FQHC school clinics
- 1 FQHC nursing home clinic
- 66 other FQHC service delivery clinics

Data source: Health Resources & Services Administration, June 2021.
Note: For a map of the state with county names, see Appendix I.

Figure 4. Federally Qualified Health Centers and look-alikes
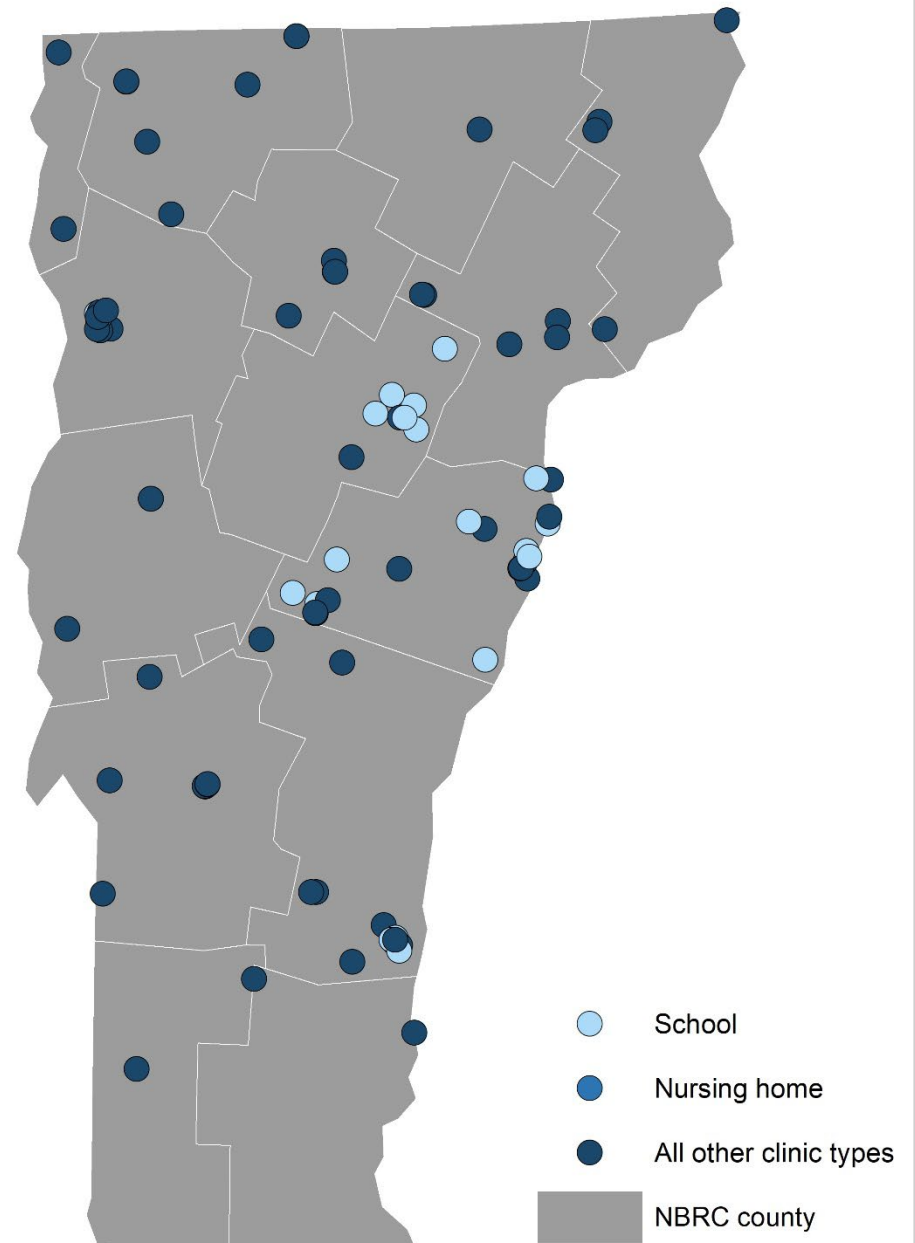
Legend:
- School
- Nursing home
- All other clinic types
- NBRC county

SECTION XIV. Hospitals

There are 14 general acute hospitals total in **Vermont**.[1] One hospital is in an urban area and 13 are in rural areas.[2] Of the rural hospitals, eight are Critical Access Hospitals, which is a designation given to eligible rural hospitals by the Centers for Medicare & Medicaid Services. Eligible hospitals must have 25 or fewer acute care inpatient beds, provide 24/7 emergency care, and generally must be located more than 35 miles from another hospital.

Figure 5. Hospital locations

Legend:
- ✚ Rural hospital
- ✚ Urban hospital
- ◯ Critical Access Hospital
- ▨ NBRC county
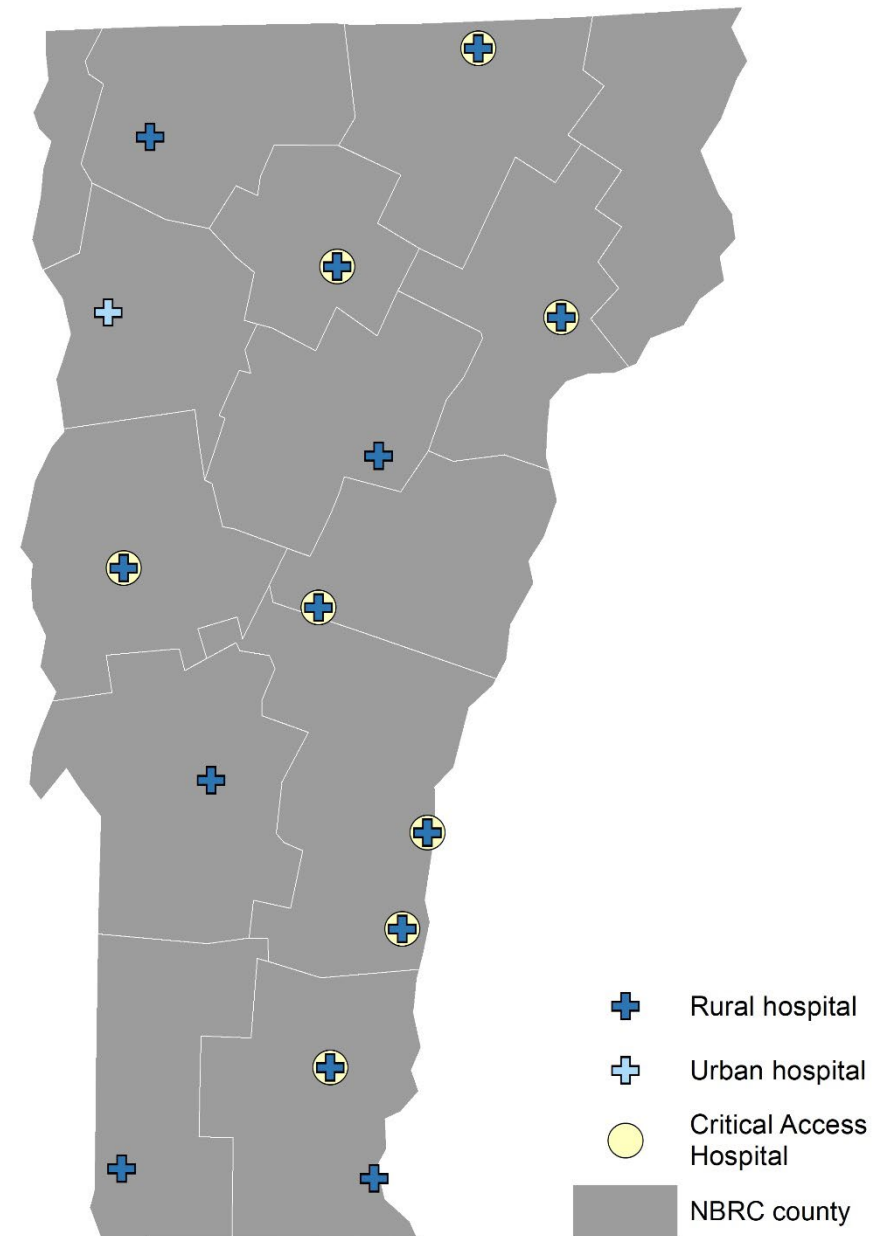
Data sources: Health Resources & Services Administration, June 2021.
Note: For a map of the state with county names, see Appendix I.

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[1] Includes short-term and Critical Access Hospitals; specialty hospitals (e.g., children's, psychiatric, rehabilitation, transplant, Veterans Affairs) are not captured.
[2] As defined by the Federal Office of Rural Health Policy, 2020.

SECTION XV. Drug Poisoning Mortality

Vermont's 2018 drug poisoning mortality rate was 24.4 per 100,000, higher than the US rate of 20.6 per 100,000, but lower than the Northern Border states New Hampshire and Maine. [3]

County-level model-based estimates of drug poisoning mortality: [4]

- Lowest in Chittenden County (13.8 per 100,000)

- Highest in Windham County (32.2 per 100,000)

Data source: National Center for Health Statistics (NCHS), Drug Poisoning Mortality in the United States, 1999-2018. September 2020.
Note: For a map of the state with county names, see Appendix I.

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[3] Drug poisoning deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug-poisoning deaths with the following underlying causes of death are included in the rate: unintentional, suicide, homicide, or undetermined intent. Drug-poisoning deaths include overdose deaths from all types of medications and drugs.
[4] Model-based death rates are smoothed, county-level crude death rates. These estimates borrow strength across counties to provide stable estimates where data are sparse due to small population sizes. For more information, see the NCHS documentation: https://www.cdc.gov/nchs/data-visualization/drug-poisoning-mortality/.

Figure 6. Model-based drug poisoning mortality per 100,000 population, 2018

	13.8 - 14.6
	14.7 - 17.7
	17.8 - 21.3
	21.4 - 29.6
	29.7 - 32.2
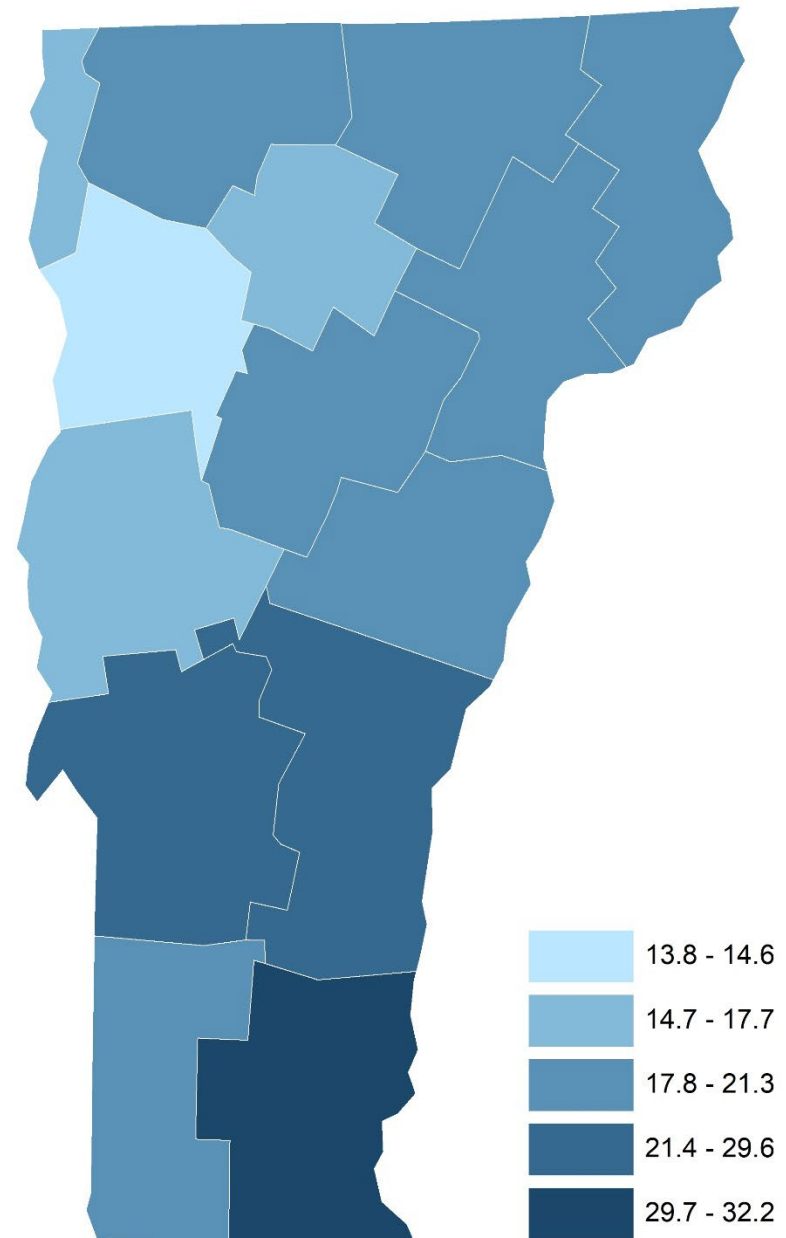
SECTION XVI. Substance Use Treatment

As of August 2021, there were 39 substance use treatment facilities in Vermont and 224 licensed buprenorphine practitioners. Two counties (Essex and Grand Isle) had no substance use treatment facilities, and three counties (Addison, Lamoille, and Orleans) had one facility each. Grand Isle County had no licensed buprenorphine practitioners, while Essex, Orleans, and Lamoille counties in Northern Vermont all had fewer than 10 practitioners.

Figure 7. Substance use treatment facilities

▲ Substance use treatment facility

NBRC county

Figure 8. Buprenorphine practitioners per county

● Buprenorphine practitioners

NBRC county
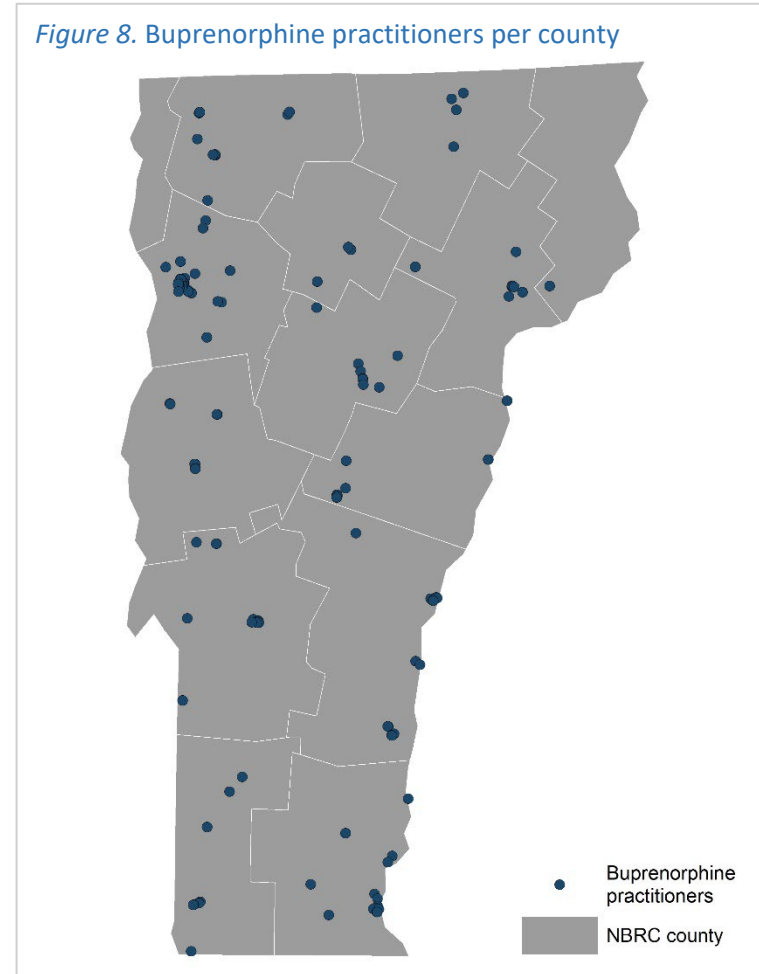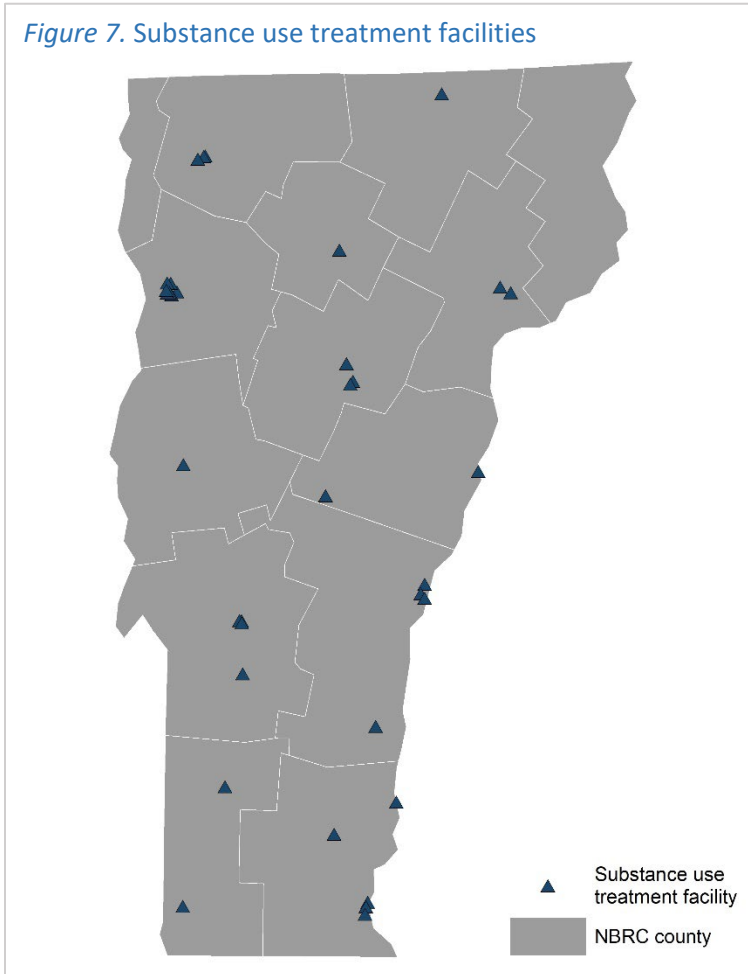
Data source: Substance Abuse and Mental Health Services Administration, Behavioral Health Treatment Services Locator, 2021.
Note: For a map of the state with county names, see Appendix I.

METHODS NOTE

This chartbook compiled the most recent publicly available data at the county-level and state-level for Vermont.

We used 2021 published county- and state-level health-related measures, aggregated by the County Health Rankings (Robert Wood Johnson Foundation), along with the additional data sources (see Appendix II. Data Sources for specific data sources). All data sources are publicly available and free of charge.

Rural status of hospitals was based on the definition used by the Federal Office of Rural Health Policy (FORHP). FORHP defines an area as rural if it is not part of a Metropolitan Statistical Area. FORHP considers census tracts (which can be inside Metropolitan counties) with a Rural-Urban Commuting Area code of 4 or greater as rural as well as tracts with RUCA codes 2 or 3 that are at least 400 square miles in area with a population density of no more than 35 people per square mile. [5]

We used the 2013 Rural-Urban Continuum Codes to label counties as metropolitan "urban" (codes 1-3) or nonmetropolitan "rural" (codes 4-9) in this chartbook's data tables. [6]

To label counties according to the current Northern Border Regional Commission categories (distressed, transitional, attainment counties with an isolated area(s) of distress, attainment counties without an isolated area of distress) we used the March 2021 report, "NBRC Annual Economic & Demographic Research for Fiscal Year 2021: To Determine Categories of Distress within the Northern Boarder Regional Commission Service Areas."

We identified counties that ranked near the bottom (worst performing) for each health-related measure examined using all 102 counties in Maine, New Hampshire, New York, and Vermont for comparison. We assigned the following county performance indicators based on the number of times each county fell into the bottom 10th percentile ranking for each health-related topic:

☑ = county is in bottom 10% of all counties for fewer than 2 measures

⚠ = county is in bottom 10% of all counties for 2-3 measures

🚫 = county is in bottom 10% of all counties for 4 or more measures

We used ArcGIS to map locations of facilities within each state. NBRC state and county shapefiles were sourced from the US Census Bureau. [7]

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[5] Health Resources & Services Administration (2021, January). "Defining Rural Population." Retrieved July 9, 2021, from https://www.hrsa.gov/rural-health/about-us/definition/index.html.
[6] USDA United States Department of Agriculture Economic Research Service (2003). Rural Urban Continuum Codes (RUCC. Retrieved September 16. 2021, from https://www.ers.usda.gov/data-products/rural-urban-continuum-codes/.
[7] US Census Bureau (2018). Cartographic Boundary Files – Shapefile. Retrieved June 7, 2021, from https://www.census.gov/geographies/mapping-files/time-series/geo/carto-boundary-file.html.

APPENDIX I. Vermont County Map
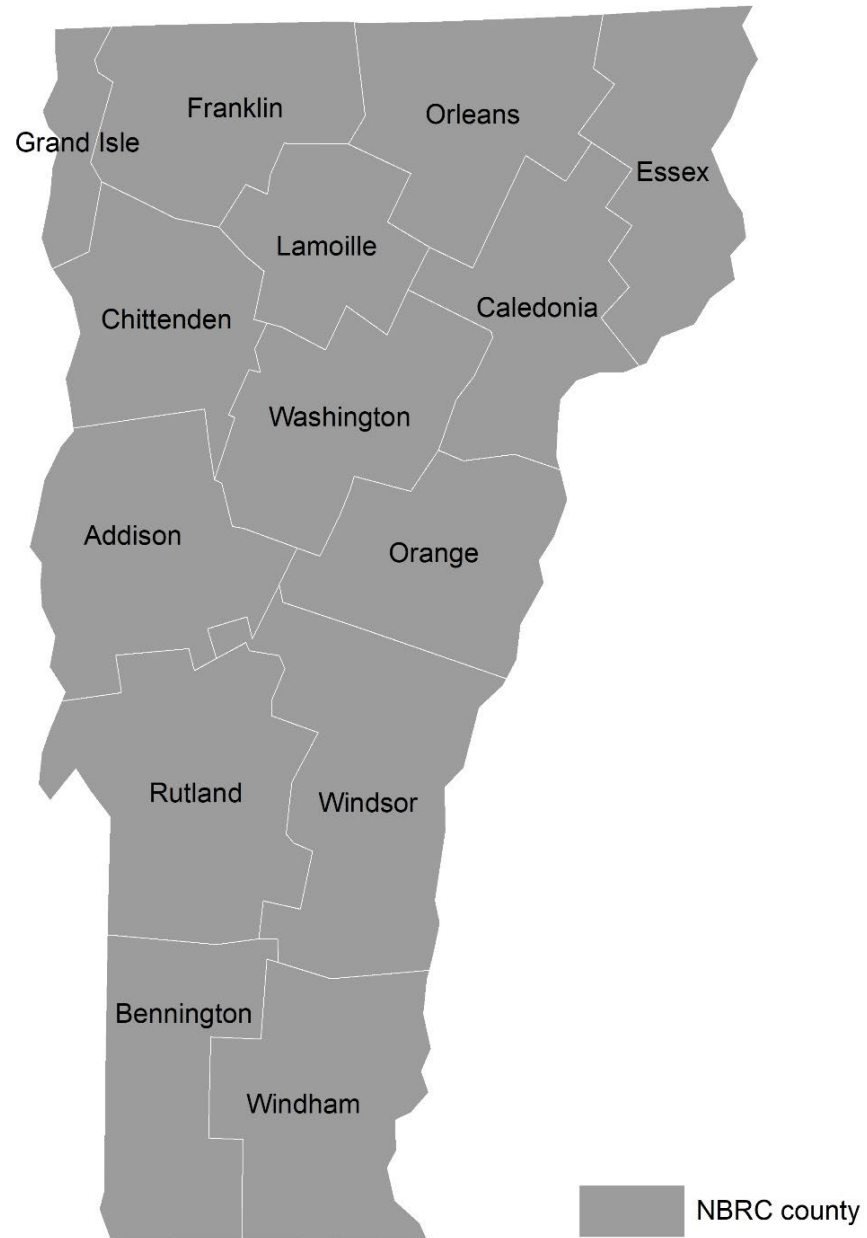
APPENDIX II. Data Sources

American Community Survey, US Census Bureau

- ➤ Adults with some college completion: Percentage of adults ages 25-44 with some post-secondary education, 2015-2019 5-year estimates
- ➤ Children in single-parent households: Percentage of children that live in a household headed by single parent, 2015-2019 5-year estimates
- ➤ Employed full time: Population 16 to 64 years old who worked full-time, year-round, 2015-2019 5-year estimates
- ➤ Homeownership: Percentage of occupied housing units that are owned, 2015-2019 5-year estimates
- ➤ Households with an internet subscription: Percentage of households with an internet subscription, 2015-2019 5-year estimates
- ➤ Households with broadband of any type: Percentage of households with broadband of any type, 2015-2019 5-year estimates
- ➤ Internet access without a subscription: Percentage of households with internet access without a subscription, 2015-2019 5-year estimates
- ➤ No internet access: Percentage of households with no internet access, 2015-2019 5-year estimates
- ➤ % Not proficient in English: 2015-2019 5-year estimates

Area Health Resource File, American Medical Association

- ➤ Ratio of population to primary care physicians: Ratio of population to primary care physicians, 2018

Area Health Resources Files, County Level Data

- ➤ Health Professional Shortage Areas, 2020-2021

Area Health Resource File, National Provider Identification file

- ➤ Ratio of population to dentists: Ratio of population to dentists, 2019

Behavioral Risk Factor Surveillance System

- ➤ Adult smoking: Percentage of adults who are current smokers, 2018
- ➤ Excessive drinking: Percentage of adults reporting binge or heavy drinking, 2018
- ➤ Frequent mental distress: Percentage of adults reporting 14 or more days of poor mental health per month, 2018
- ➤ Frequent physical distress: Percentage of adults reporting 14 or more days of poor physical health per month, 2018

Bureau of Labor Statistics

- ➤ Unemployed: Percentage of population ages 16 and older unemployed but seeking work, 2019

Business Analyst, Delorme map data, ESRI, & US Census Tigerline Files

- ➤ Access to exercise opportunities: Percentage of population with adequate access to locations for physical activity, 2010 and 2019

Business Dynamics Statistics, Center for Economic Studies, US Census Bureau

- ➤ Employment in health care and social assistance: Percentage of workforce employed in the healthcare and social assistance sector, 2018

Census Population Estimates

➢ Age: Percentage of population age 65 and older, 2019
➢ Age: Percentage of population below 18 years of age, 2019
➢ Living in a rural area: Percentage of population living in a rural area, 2010
➢ Population: Total population, 2019
➢ Race/ethnicity: Percentage of population that is American Indian and Alaska Native, 2019
➢ Race/ethnicity: Percentage of population that is Asian, 2019
➢ Race/ethnicity: Percentage of population that is Hispanic, 2019
➢ Race/ethnicity: Percentage of population that is Native Hawaiian/Other Pacific Islander, 2019
➢ Race/ethnicity: Percentage of population that is non-Hispanic Black, 2019
➢ Race/ethnicity: Percentage of population that is non-Hispanic white, 2019
➢ Sex: Percentage of population that is female, 2019

Centers for Medicare & Medicaid Services, National Provider Identification

➢ Ratio of population to mental health providers: Ratio of population to mental health providers, 2020
➢ Ratio of population to primary care providers other than physicians: Ratio of population to primary care providers other than physicians, 2020

Centers for Medicare & Medicaid Services (CMS), Provider of Services file

➢ Rural Health Clinic clinician staffing, March 2021
➢ Rural Health Clinic locations, March 2021
➢ Rural Health Clinic physician staffing, March 2021

Comprehensive Housing Affordability Strategy (CHAS) data

➢ Severe Housing problems: Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, lack of kitchen facilities, or lack of plumbing facilities, 2013-2017

ED Facts

➢ High school graduation rate: Percentage of ninth-grade cohort that graduates in four years, 2017-2018

Environmental Public Health Tracking Network

➢ Air pollution-particulate: Average daily density of fine particulate matter in micrograms per cubic meter (PM2.5), 2016

Fatality Analysis Reporting System

➢ Alcohol-impaired driving deaths: Percentage of driving deaths with alcohol involvement, 2015-2019

Health Resources & Services Administration

➢ Federally Qualified Health Center locations and designations, June 2021
➢ Hospital locations, June 2021

Mapping Medicare Disparities Tool

➢ Flu vaccinations among fee-for-service Medicare enrollees: Percentage of fee-for-service Medicare enrollees that had an annual flu vaccination, 2018

➢ Mammography screening among female Medicare enrollee ages 65-74: Percentage of female Medicare enrollees ages 65-74 that received an annual mammography screening, 2018

➢ Preventable hospital stays per 100,000 Medicare enrollees: Rate of hospital stays for ambulatory-care sensitive conditions per 100,000 Medicare enrollees, 2018

National Center for Education Statistics

➢ Children eligible for free or reduced-price lunch: Percentage of children enrolled in public schools that are eligible for free or reduced-price lunch, 2018-2019

National Center for Health Statistics – Drug Poisoning Mortality in the United States, 1999-2018

➢ Age-adjusted drug poisoning mortality per 100,000 population, 2018

➢ County-level model-based drug poisoning mortality per 100,000 population, 2018

National Center for Health Statistics – Mortality Files

➢ Accidents (unintentional injury): Age-adjusted rate of death per 100,000 population, 2015-2019

➢ Cancer: Age-adjusted rate of death per 100,000 population, 2015-2019

➢ Child mortality: Number of deaths among children under age 18 per 100,000 population, 2016-2019

➢ Chronic lower respiratory diseases: Age-adjusted rate of death per 100,000 population, 2015-2019

➢ Drug overdose deaths: Number of drug poisoning deaths per 100,000 population, 2017-2019

➢ Firearm deaths: Number of deaths due to firearms per 100,000 population, 2015-2019

➢ Heart disease: Age-adjusted rate of death per 100,000 population, 2015-2019

➢ Injury deaths: Number of deaths due to injury per 100,000 population, 2015-2019

➢ Life expectancy: Average number of years a person can expect to live, 2017-2019

➢ Motor vehicle crash deaths: Number of motor vehicle crash deaths per 100,000 population, 2013-2019

➢ Premature death: Years of potential life lost before age 75 per 100,000 population (age-adjusted), 2017-2019

➢ Stroke (cerebrovascular diseases): Age-adjusted rate of death per 100,000 population, 2015-2019

➢ Suicide deaths: Number of deaths due to suicide per 100,000 population, 2015-2019

National Center for Health Statistics - Natality files

➢ Teen births: Number of births per 1,000 female population ages 15-19, 2013-2019

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention

➢ Sexually transmitted infections: Number of newly diagnosed chlamydia cases per 100,000 population, 2018

Substance Abuse and Mental Health Services Administration, Behavioral Health Treatment Services Locator

➢ Substance use treatment facilities, 2021
➢ Buprenorphine practitioners per county, 2021

Small Area Income and Poverty Estimates

➢ Children in poverty: Percentage of people under age 18 in poverty, 2019
➢ Median household income: The income where half of households in a county earn more and half of households earn less, 2019

Small Area Health Insurance Estimates

➢ Uninsured, ages 0-64: Percentage of population under age 65 without health insurance, 2018
➢ Uninsured adults, age <65: Percentage of adults under age 65 without health insurance, 2018
➢ Uninsured children: Percentage of children under age 19 without health insurance, 2018

Uniform Crime Reporting – Federal Bureau of Investigation

➢ Violent crime: Number of reported violent crime offenses per 100,000 population, 2014 and 2016

United States Department of Agriculture Food Environment Atlas and Map the Meal Gap from Feeding America

➢ Food environment index: Index of factors that contribute to a healthy food environment, from 0 (worst) to 10 (best), 2015 and 2018

United States Diabetes Surveillance System

➢ Adult obesity: Percentage of the population aged 20 and older that reports a body mass index (BMI) of greater than or equal to 30kg/m^2, 2017
➢ Diabetes prevalence: Percentage of adults aged 20 and above with diagnosed diabetes, 2017
➢ Physical inactivity: Percentage of adults aged 20 and older reporting no leisure-time physical activity, 2017

APPENDIX III. Additional Resources

➤ Creating Cross-Sector Action and Accountability for Health in Vermont: Guidance from a Rural State, 2018 – The purpose of this guide is to offer strategies and resources for state government officials working toward a health in all policies approach. The guide was created by the Vermont Department of Health under a Building a Culture of Health grant funded by the Robert Wood Johnson Foundation and has a particular focus on the health of rural communities.

➤ Rural Health Services Task Force: Report and Recommendations, 2020 – A report of the Rural Health Services Task Force, created under Act 26 of 2019 by the Vermont Legislature. The report identifies barriers to health and healthcare access for rural Vermonters, and offers recommendations and strategies to improve rural health delivery, the healthcare workforce, revenue stability, care management, and telehealth.

➤ Vermont Baseline Needs Assessment: Rural and Non-Rural Practitioners, 2021 – This report, a product of the University of Vermont's Center on Rural Addiction, presents the results of an online survey of healthcare practitioners and community stakeholders. The purpose of the needs assessment is to identify current and future needs and barriers to treatment for rural residents with substance use disorder. The assessment also evaluated the impact of the COVID-19 pandemic on access to substance use treatment in the state.

FUNDING ACKNOWLEDGEMENT