

The Burden of Asthma among the Medicaid Insured in Vermont

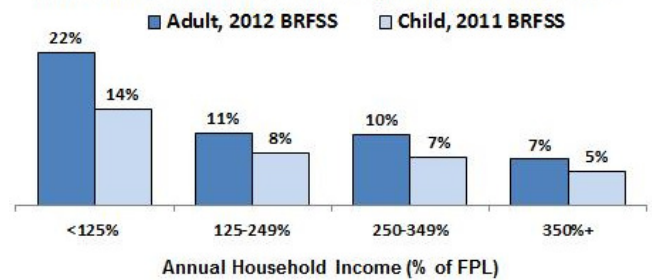
Introduction

Asthma is a chronic respiratory disease that causes inflammation of the airway and difficulty in breathing. Asthma affects a greater proportion of the lower income population and they are generally at a higher risk for asthma exacerbations. This data brief examines asthma prevalence, asthma control and severity, emergency department (ED) visits, hospitalizations, and the cost of hospital-related asthma care within Vermont's Medicaid insured population.

Prevalence of Asthma in Vermont

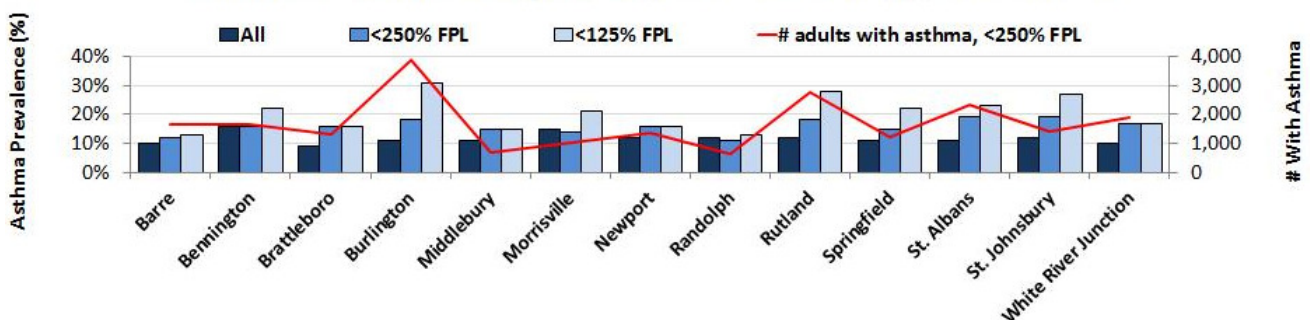
The prevalence of current asthma among all Vermont adults is 11%, the third highest prevalence in the U.S.¹ In Vermont, asthma affects approximately 54,000 adults and 10,000 children. According to the latest data, Vermont adults with a household income closer to the federal poverty level (FPL) had a significantly higher prevalence of current asthma as compared to higher income groups. Those living under 125% FPL had an asthma prevalence of 22%, more than twice that of those with higher income. Asthma prevalence in Vermont youth followed a similar trend with household income level.

Current Asthma Prevalence by Household Income



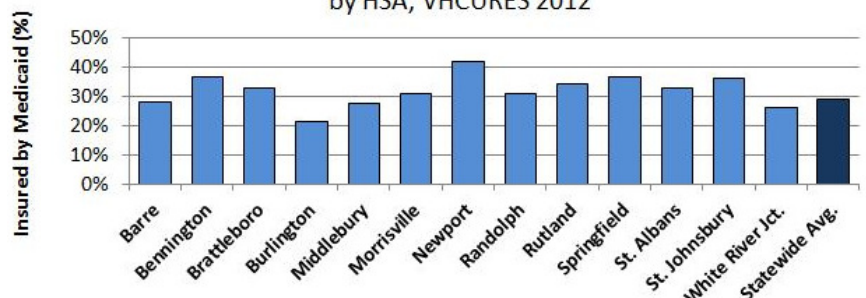
Asthma prevalence varied across the state's Hospital Service Areas (HSA), ranging from 9% to 16% for Vermonters less than 65 years of age. Regional variations in prevalence were more pronounced when looking at subsets of the population. Among those living under 250% FPL, a proxy for those eligible for Medicaid, asthma prevalence ranged from 11-19% across the state's HSAs and from 13-31% among those living under 125% FPL. Among adults with household income <125% FPL, asthma prevalence was highest in the Burlington, Rutland and St. Johnsbury HSAs. Four HSAs accounted for half of the total number of Medicaid eligible adults with asthma. An estimated 3,800 Medicaid eligible adults with asthma reside within the Burlington HSA, 2,800 in the Rutland HSA, 2,200 in the St. Albans HSA, and 1,900 in the White River Junction HSA.¹

Current Asthma Prevalence by HSA for Adults < 65 Years of Age, BRFSS 2011-2012



In 2012, 29% of Vermonters under 65 years of age were enrolled in Medicaid and ranged from 21% in the Burlington HSA to 42% in the Newport HSA.³ Approximately half of all Vermonters with asthma (children & adults) are Medicaid eligible.¹

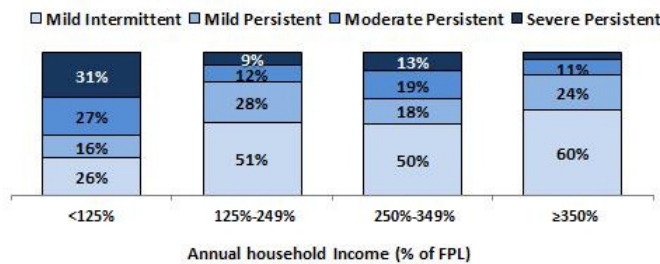
Percentage of Vermonters <65 Insured by Medicaid by HSA, VHCURES 2012



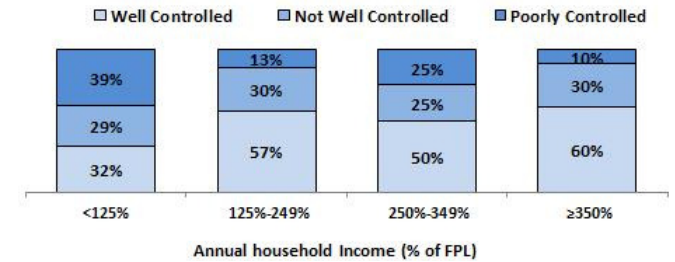
Asthma Control and Severity

Asthma control and severity varied based on one's proximity to the FPL.² Vermonters with an annual household income below 125% FPL were less likely to have well controlled asthma and more likely to have poorly controlled asthma than those in higher income groups. Those living under 125% FPL had 4-fold higher odds of having uncontrolled asthma in comparison to higher income groups. Vermonters with current asthma and household income less than 125% FPL were significantly more likely to have more severe asthma compared to those with household incomes between 125% and 249% FPL and those above 350% FPL. Those below 125% FPL were less likely to have mild intermittent asthma than those with higher household income. Among Vermont adults with asthma living under 250% FPL, 9% report having ever attended a course to learn how to manage their asthma and 29% have received an Asthma Action Plan from a medical provider.²

Asthma severity by annual household income among adult Vermonters with current asthma, ACBS 2008-2010



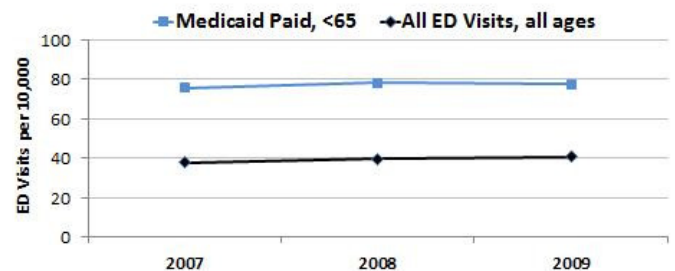
Asthma control by annual household income among adult Vermonters with current asthma, ACBS 2008-2010



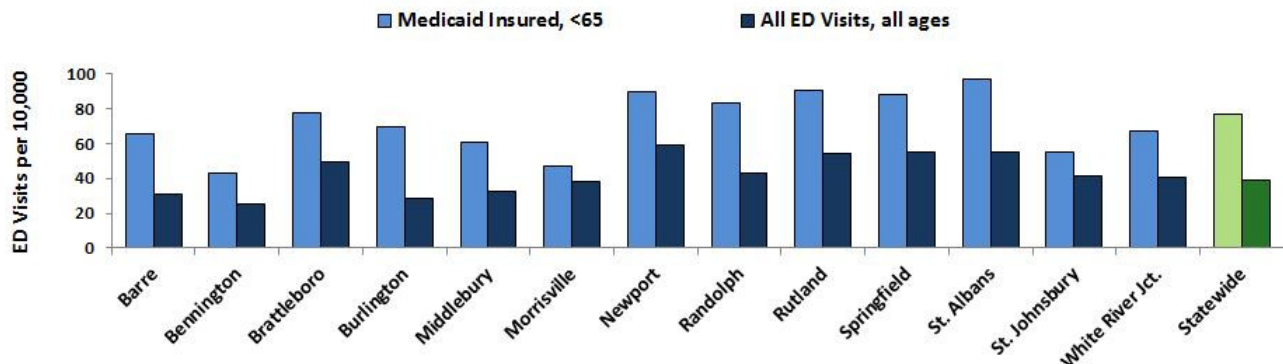
Emergency Department Visits for Asthma

In 2009, there were 1,053 emergency visits with a primary diagnosis of asthma among those insured by Medicaid.⁴ This is a rate of 77.5 ED visits per 10,000 Medicaid insured people and almost twice the statewide rate of 40.6 for all Vermonters.^{3,4} The rate of ED visits for asthma among the Medicaid insured was higher than the rate for all ED visits within each HSA.

Emergency Department Visits
Primary Diagnosis Asthma, Vermont Residents, VUHDDS



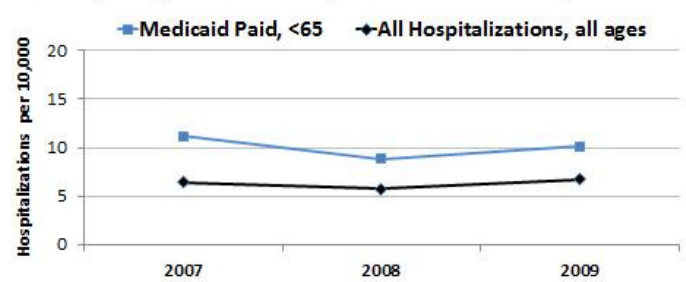
Emergency Department Visits by HSA, Primary Diagnosis Asthma, VUHDDS 2007-2009



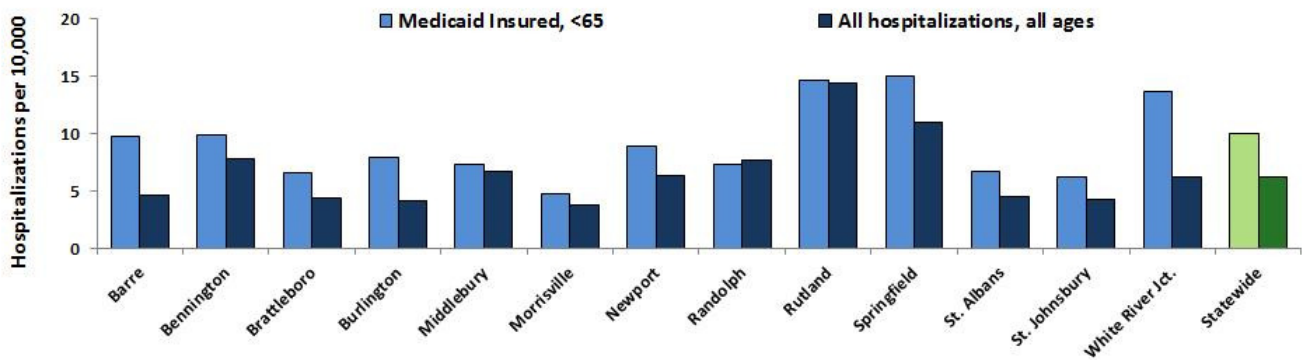
Hospitalizations for Asthma

In 2009, 138 Medicaid insured Vermonters were discharged from the hospital with a primary diagnosis of asthma (10.2 per 10,000 Medicaid enrollees).⁴ The rate of asthma hospitalizations among the Medicaid insured was 1.5 times greater than the statewide rate of 6.7 per 10,000 Vermonters.^{3,4} In Rutland and Randolph HSAs, hospitalization rates for asthma were similar between those insured by Medicaid and all types of payment, while the rates among the Medicaid insured were greater than the overall rates in the remaining HSAs.

Inpatient Discharges
Primary Diagnosis Asthma, Vermont Residents, VUHDDS



Inpatient Discharges by HSA, Primary Diagnosis Asthma, VUHDDS 2007-2009

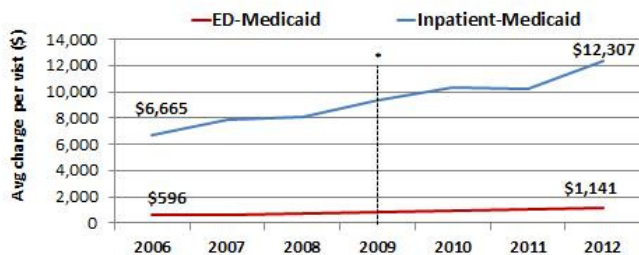


Charges Related to Poor Asthma Management among Medicaid Insured Vermonters

The average charge for an ED visit with a primary diagnosis of asthma among the Medicaid insured was approximately \$600 in 2006; the average cost has been increasing steadily and was \$1,100 in 2012.⁴ The average charge for a hospitalization with a primary diagnosis of asthma among the Medicaid insured was \$6,700 in 2006 and with steady annual increases this was \$12,300 in 2012. Average charges for Medicaid-paid ED and hospitalizations for a primary diagnosis of asthma were 4-21% less than the average charge for all payers and increased at similar rates. The total charges for asthma services to the Medicaid insured has increased annually since 2006. In 2009 \$2.2 million was charged for asthma care among the Medicaid insured; this included \$905,000 for ED visits and \$1.3 million for hospitalizations.

Average Charge per Visit

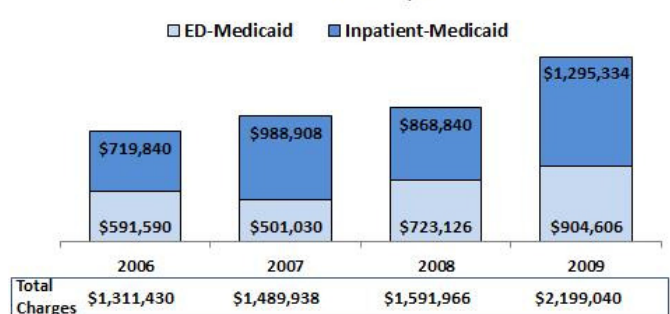
Primary Diagnosis Asthma, VT Medicaid Insured, VUHDDS



* 2010-2012 averages do not contain data from VT residents treated in New Hampshire Hospitals

Total Charges for Primary Diagnosis of Asthma

VT Medicaid Insured, VUHDDS



Summary

Not only do Vermonters living in households with low income have a higher prevalence of asthma than those in higher income groups, they have more severe asthma and poorer control. These differences may contribute to the increased rate of ED use and hospitalizations for asthma observed within the Medicaid-insured population as compared to statewide rates for all payers. As the cost of healthcare for asthma continues to steadily rise, implementation of the NHLBI guidelines for asthma care, along with strategies to improve asthma control and decrease exacerbations, represent areas of opportunity to lessen the burden of asthma among the Medicaid insured in Vermont. These guidelines include the regular delivery of asthma education to patients and use of the evidence-based Asthma Action Plan.

Data Sources

- ¹ Behavioral Risk Factor Surveillance System (BRFSS), 2011-2012.
- ² Vermont Asthma Call Back Survey (ACBS), 2008-2010.
- ³ Vermont Healthcare Claims Uniform Reporting and Evaluation System (VHCURES), 2012.
- ⁴ Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2007-2009.

For More Information

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Vermont Asthma Program:

<http://healthvermont.gov/prevent/asthma/index.aspx>

Physician's Reference Guide to Managing and Diagnosing
Asthma:

http://www.nhlbi.nih.gov/guidelines/asthma/asthma_grg.pdf

This publication was supported by grant CDC-RFA-EH14-1404 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

Appendix 1. Adult Asthma Prevalence and Medicaid Coverage by Hospital Service Area

Hospital Service Area	Adult Asthma Prevalence (%) ¹			Adults with Asthma (n) ¹	Vermonters insured by Medicaid (%) ³
	All incomes	<250% FPL	<125% FPL	<250% FPL	
	<65 y	<65 y	<65 y	<65 y	<65 y
Barre	10%	12%	13%	1,676	28%
Bennington	16%	16%	22%	1,649	37%
Brattleboro	9%	16%	16%	1,294	33%
Burlington	11%	18%	31%	3,883	21%
Middlebury	11%	15%	15%	706	28%
Morrisville	15%	14%	21%	1,048	31%
Newport	12%	16%	16%	1,375	42%
Randolph	12%	11%	13%	662	31%
Rutland	12%	18%	28%	2,782	34%
Springfield	11%	15%	22%	1,233	37%
St. Albans	11%	19%	23%	2,322	33%
St. Johnsbury	12%	19%	27%	1,431	36%
White River Junc.	10%	17%	17%	1,909	26%
Statewide Avg.	12%	16%	22%	21,969	29%

Appendix 2. Rate of Emergency Department Visits and Hospitalizations for Asthma by Hospital Service Area

Hospital Service Area	ED Visits for Asthma (rate/10,000) ⁴		Hospitalizations for Asthma (rate/10,000) ⁴	
	Medicaid Paid	All Payers	Medicaid Paid	All Payers
	<65 y	All ages	<65 y	All ages
Barre	65.7	31.3	9.8	4.7
Bennington	43.1	25.6	10.0	7.9
Brattleboro	77.4	49.1	6.6	4.4
Burlington	69.4	28.5	8.0	4.2
Middlebury	60.4	32.8	7.3	6.7
Morrisville	47.3	38.3	4.7	3.8
Newport	89.3	59.0	9.0	6.4
Randolph	83.6	42.9	7.4	7.7
Rutland	90.5	54.1	14.7	14.4
Springfield	88.3	54.9	15.0	11.0
St. Albans	96.8	55.4	6.7	4.6
St. Johnsbury	55.3	41.8	6.2	4.3
White River Junc.	67.6	40.4	13.7	6.3
Statewide Avg.	77.0	39.3	10.0	6.3