VERMONT
DEPARTMENT OF HEALTH

Burden of Uncontrolled Asthma Among Vermonters Insured by Medicaid

March 2023

Uncontrolled asthma is associated with a lower quality of life and higher costs to individuals and health care systems. Promoting good asthma control and preventing costly adverse events such as emergency visits is a major goal of the Vermont Asthma Program and involves working with diverse partners to expand best practices such as addressing over-reliance on rescue inhalers.

Approximately 19% of Vermonters insured by Medicaid have asthma, compared to 12% of the general Vermont population, a significant difference (BRFSS 2019). Because those insured by Medicaid are more likely to have asthma, this data brief examines indications of poor control among this population to help focus activities to better support these Vermonters carrying a disproportionately high asthma burden.

KEY POINTS

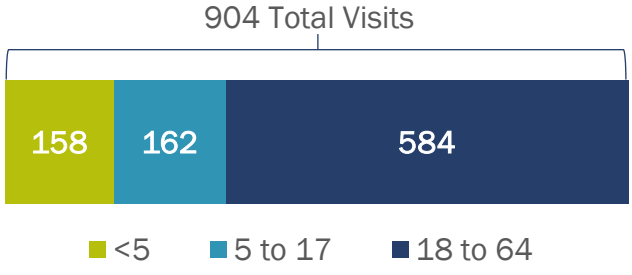
- **Children under the age of 5 have higher rates of ED visits than other age groups.**
- **The rates of ED visits for asthma vary widely between Vermont's counties.**
- **A third of minors and half of adults insured by Medicaid with persistent asthma fill rescue-inhalers more than controller-inhalers.**

Emergency Department Visits for Asthma

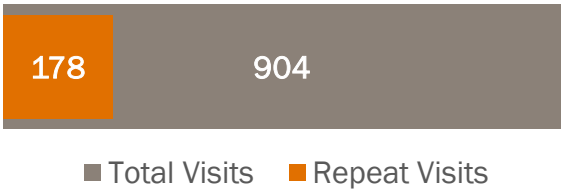
In 2019, there were 15,708 total encounters with a primary diagnosis of asthma in any setting,[1] including inpatient and outpatient encounters such as routine, specialty and urgent care visits. Of these encounters, 904 were for an Emergency Department (ED) visit that did not result in a hospitalization. These ED visits therefore made up 5.8% of asthma encounters.

Of these 904 visits, 158 (17%) were by children under the age of 5, 162 (18%) were by youth ages 5 to 17, and 584 (65%) were by adults ages 18 to 64.[2] Out of the entire 904, 178 (20%) were repeat visits.[3]

More adults than children visited the ED for asthma.



20% of ED visits for asthma were repeat visits.



[1] For the purposes of this analysis, an ED encounter/visit for asthma includes all services/procedures provided to a single individual beginning on the same service date billed to Medicaid for which asthma (J45) was coded as the primary diagnosis in 2019. See Methodology section at end for more details.

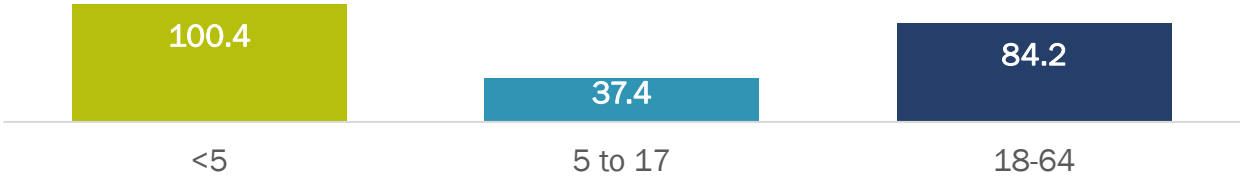
[2] Adults 65+ were not included in this analysis according to methodology suggested by CDC due to (1) common mis classification of asthma with other respiratory diseases and (2) the impact of Medicare penetration in this population.

[3] A repeat visit is defined as any visit after the first visit in calendar year 2019 for the same individual.

In total, 726 unique individuals visited the ED for a primary diagnosis of asthma. The average number of visits for individuals who had at least one visit was 1.25, and the number of visits per person ranged from 1 to 11.

The rate of ED visits with a primary diagnosis of asthma in 2019 was 70.4 per 10,000 average annual enrollments.[4] The rate of ED visits for children under the age of 5 was 100.4 per 10,000 average annual enrollments, significantly higher than that for youths ages 5 to 17 and adults ages 18 to 64. The rate of ED visits for youths ages 5 to 17 (37.4) is lower than both other groups.

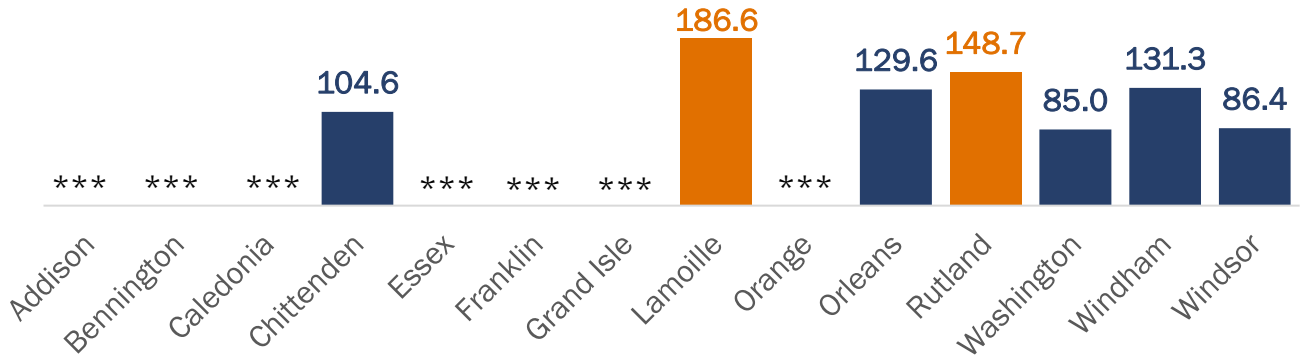
Rate of ED Visits with a Primary Diagnosis of Asthma



The rate of ED visits for asthma varies widely based on the county in which Medicaid members live. Among children under the age of 5, who generally have the highest rate of ED visits for asthma, Lamoille and Rutland counties have the highest rate of ED visits.

Lamoille and Rutland Counties have the highest rate of ED visits for asthma among children under the age of 5.

Rate of ED Visits for a Primary Diagnosis of Asthma by County of Residence per 10,000 Annual Enrollments



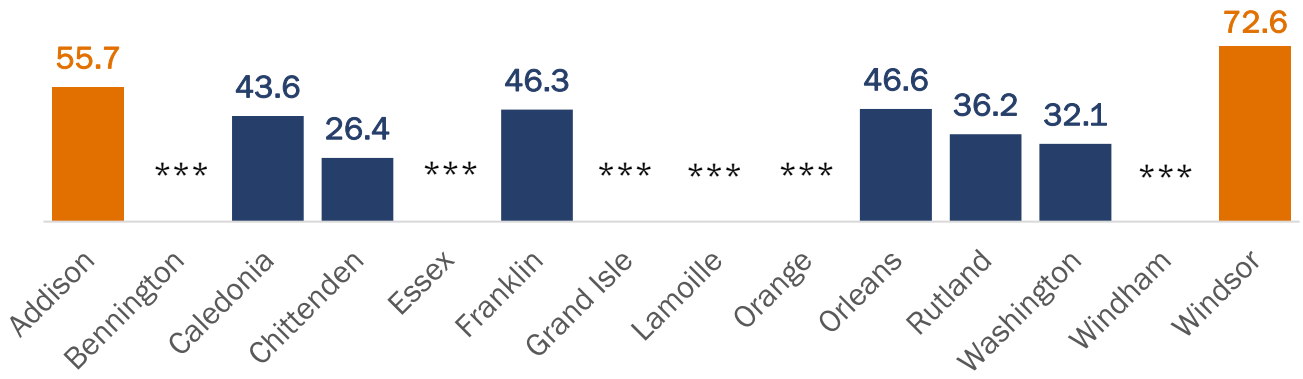
*** Number of visits is too small (<11) to report

[4] Average annual enrollment was calculated by summing the number of months each member was enrolled in Medicaid in calendar year 2019 and then dividing by twelve. One individual who is enrolled in Medicaid for the entire year creates one average annual enrollment.

Among youth ages 5 to 17, those in Addison and Windsor Counties have the highest rates of ED visits. Windsor County's rate is higher than the statewide rate.

Windsor and Addison Counties had the highest rate of ED visits for asthma among youths ages 5 to 17.

Rate of ED Visits for a Primary Diagnosis of Asthma by County of Residence per 10,000 Annual Enrollments



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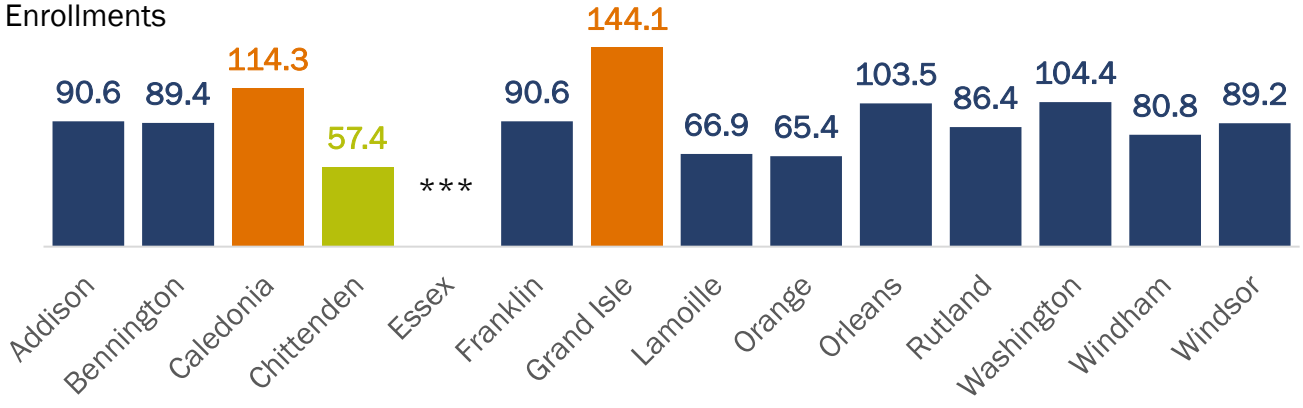
Among adults, Grand Isle and Caledonia Counties have the highest rate of ED visits for asthma at 144.1 and 114.3 per 10,000 annual enrollments respectively. Chittenden County has a significantly lower ED rate than the state rate.

Grand Isle and Caledonia Counties have the highest rate of ED visits for asthma among adults.

Rate of ED Visits for a Primary Diagnosis of Asthma by County of Residence per 10,000 Annual Enrollments



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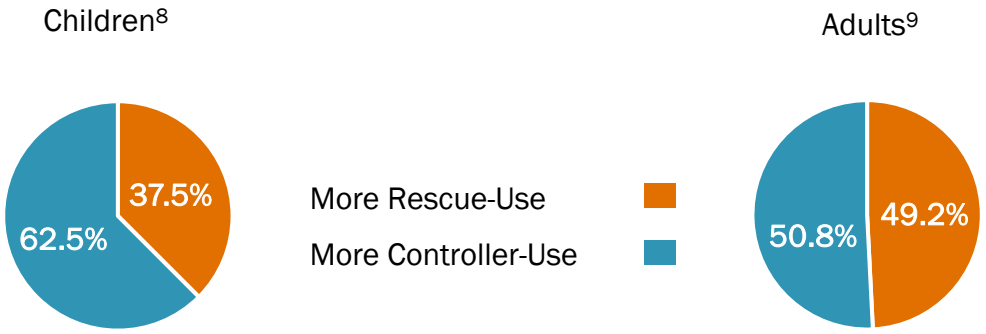
Reliance on Rescue Inhalers

The ratio of individuals who were dispensed more rescue inhalers than controller inhalers is a proxy measure of asthma control.[5] More frequent use of rescue inhalers often indicates worse asthma control and has been shown to be a predictor of ED visits and hospitalizations.[6] Among Vermonters with persistent asthma insured by Medicaid, 37.5% of children and 49.2% of adults were dispensed rescue inhalers more than controller inhalers in 2019, suggesting more than a third of children and about half of adults with asthma may be burdened by preventable uncontrolled asthma.[7]

More than a third of children and almost half of adults with persistent asthma use rescue inhalers more than controller inhalers.[6]



Key Takeaways

Since uncontrolled asthma that results in emergency visits and over-reliance on rescue inhalers are both largely preventable, many of the 904 ED visits in 2019 for asthma could have been averted if those insured by Medicaid with the greatest burden had been identified and supported through interventions such as asthma self-management education, demonstration and monitoring of proper medication use, review and possible increase in prescriptions for controller medications, and delivery of and/or referrals to flu vaccinations, secondhand smoke exposure screenings and treatment, and smoking or vaping cessation counseling.[10]

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[5] This measure assesses the percentage of members 5–64 years of age who were identified as having persistent asthma and had a ratio of controller medications to total asthma medications of 0.50 or greater during the measurement year. Individuals are excluded from the analysis if they did not have any asthma medication dispensed in the past year or if they have a diagnosis of any of the following conditions: emphysema, COPD, obstructive chronic bronchitis, chronic respiratory conditions due to fumes/vapors, cystic fibrosis, or acute respiratory failure. One medication unit equals one inhaler canister, one injection, one infusion or a 30-day or less supply of an oral medication

[6] https://www.cms.gov/mmrr/Downloads/MMRR2013_003_04_a05.pdf

[7] Over-use of rescue inhalers could be a result of prescribing patterns, patient medication adherence (over-reliance on rescue versus prescribed controller meds) and/or inadequate treatment plans. Rescue inhalers are also recommended for those with exercise-induced asthma to be used 20 minutes before exertion.

[8] https://embed.clearimpact.com/Measure/Embed?id=100110454

[9] https://embed.clearimpact.com/Measure/Embed?id=100110733

[10] See 2020 NIHBLI Asthma Guidelines as well for updates to recommendations on inhaler use and formulas.

Asthma Control Among Vermonters Insured by Medicaid

Uncontrolled asthma places a high burden on individuals and is associated with a greater risk of costly medical bills, stressful emergency disruptions, missed school/workdays, lower activity levels and an overall reduced quality of life. It is often an indication of unmet health and social needs, difficulty accessing appropriate preventive care and/or provider prescribing practice not fully reflective of national asthma best practice standards of care. Barriers include costs to medications, lack of education about medications, low use of asthma action plans, and the need for supplementary/intensive AS-ME for uncontrolled patients. Understanding the distribution and some manifestations of uncontrolled asthma among Vermonters insured by Medicaid can help identify strategies to improve and sustain asthma control that address barriers to care and overutilization of the emergency health care system to relieve the burden on this under-resourced population.

Methodology

Data source: Data on medical encounters among Vermonters insured by Medicaid was calculated from Vermont's All-Payer claims database, the Vermont Health Care Uniform Reporting and Evaluation System, maintained by the Green Mountain Care Board.

An encounter was included in this analysis if the ICD-10 code for the primary diagnosis was for asthma (J45), the encounter had been flagged as occurring at an emergency room, the claim was not denied, the first service date was in 2019, the encounter happened at a Vermont hospital, the individual was under the age of 65 and the individual was enrolled in Medicaid at the time of the encounter, based on guidance from the CDC on using Medicaid data for asthma surveillance. Analysis was performed on extract 3004.

All analyses, conclusions, and recommendations provided here are solely those of the VDH and not necessarily those of the GMCB.

For more information: Lauren Ressue, lauren.ressue@vermont.gov