

## BACKGROUND

Asthma is a lung disease characterized by wheezing, breathlessness, chest tightness, and coughing. The cause of asthma is unclear, but likely triggers include pollen, animal dander, mold, cockroaches, dust mites, tobacco smoke, and certain foods and medications. Asthma has no cure, but it can be controlled by taking medicine and avoiding the triggers. This factsheet presents an overview of asthma-related emergency department (ED) visits in Pennsylvania (PA) from 2011 to 2021, and asthma prevention and management efforts in the state. The data were collected through the PA syndromic surveillance system based on chief complaints referencing asthma. Asthma-related visits per 10,000 total ED visits (i.e., proportions) were calculated.

## WHO DOES THE ISSUE IMPACT?

Asthma can affect people of all ages. From 2011 to 2021, approximately 28,000 asthma ED visits occurred annually in PA. On average, the proportion of asthma ED visits over total ED visits was 56 per 10,000, ranging from 43 to 65 per 10,000 ED visits per year. The proportion of asthma ED visits dropped from 62 per 10,000 ED visits in 2011 to 56 per 10,000 ED visits in 2019, equivalent to a 10% decrease. The proportion further dropped to 44 per 10,000 ED visits in 2021 and 43 per 10,000 ED visits in 2021, likely a reflection of the impact on healthcare-seeking behaviors during the COVID-19 pandemic. The proportion of asthma ED visits differed slightly by gender (57 in females vs. 55 in males per 10,000 ED visits per year).

By age, the proportion of asthma ED visits was higher among children less than 18 years of age than among adults aged 18 years or older (110 vs. 46 per 10,000 ED visits per year). The proportion fluctuated less among adults than among children from 2011 to 2021. Asthma ED visits among adults also appeared to be less affected by the COVID-19 pandemic in 2020 than asthma ED visits among children (see Figure 1 for details).

Among adults, the proportion of asthma ED visits was highest among individuals aged 18 to 34 years (69 per 10,000 ED visits per year), followed by those aged 35 to 64 years (51 per 10,000 ED visits per year). Adults aged 65 years or older had the lowest proportion of asthma ED visits (11 per 10,000 ED visits per year).

Among children less than 18 years of age, boys generally had a higher proportion of asthma ED visits than girls (126 vs. 92 per 10,000 ED visits per year). In addition, the proportion of asthma ED visits was highest among those aged five to nine years (172 per 10,000 ED visits per year), followed by those aged 10 to 14 years (124 per 10,000 ED visits per year) and those less than five years of age (82 per 10,000 ED visits per year). Those aged 15 to 17 years had the lowest proportion of asthma ED visits (77 per 10,000 ED visits per year) among children.

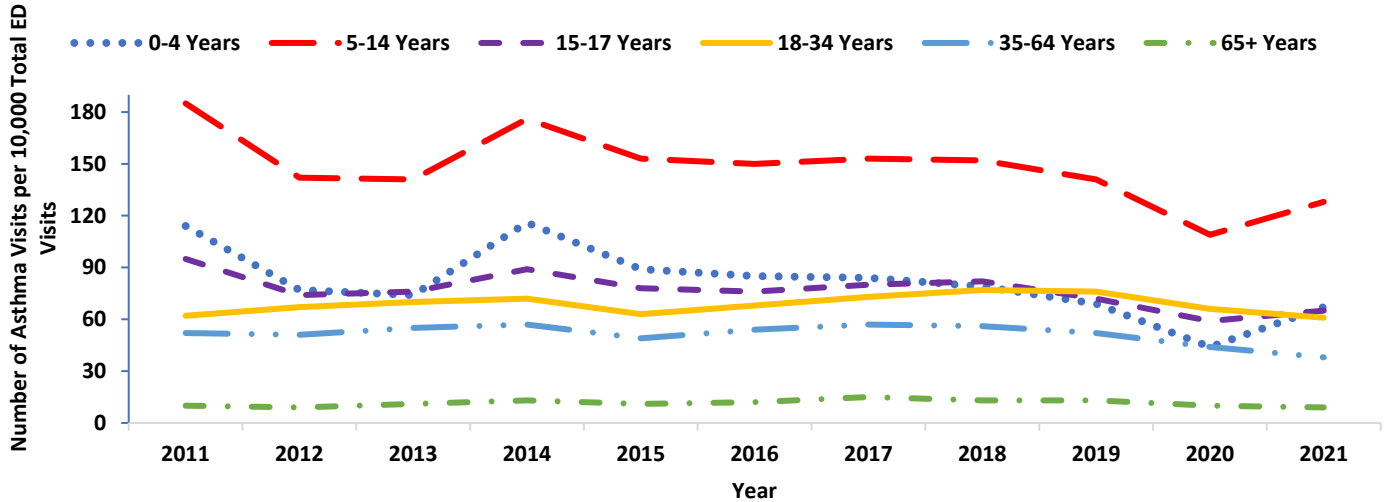
Geographically, the proportion of asthma ED visits varied by patient residence county in PA (see the map for details), with the highest proportion in Berks County (137 per 10,000 ED visits per year) and the lowest in Somerset County (6 per 10,000 ED visits per year). The top five counties with the highest asthma ED visits were Berks (137 per 10,000 visits per year), Philadelphia (112 per 10,000 visits per year), Monroe (108 per 10,000 visits per year), Pike (93 per 10,000 visits per year), and Lehigh (91 per 10,000 visits per year). The top five counties with the lowest asthma ED visits were Somerset (6 per 10,000 visits per year), Cameron (8 per 10,000 visits per year), Sullivan (8 per 10,000 visits per year), Clarion (10 per 10,000 visits per year), and Wyoming (11 per 10,000 visits per year). Compared to rural counties, asthma ED visits were substantially higher in urban counties (67 vs. 28 per 10,000 visits per year).

By seasonality, the proportion of asthma ED visits was highest in the fourth quarter (65 per 10,000 ED visits per year), followed by the first quarter (58 per 10,000 ED visits per year) and the second quarter (54 per 10,000 ED visits per year). The third quarter had the lowest proportion of asthma ED visits (47 per 10,000 ED visits per year). These results showed that the proportion of asthma ED visits was higher in the colder season than in the warmer season.

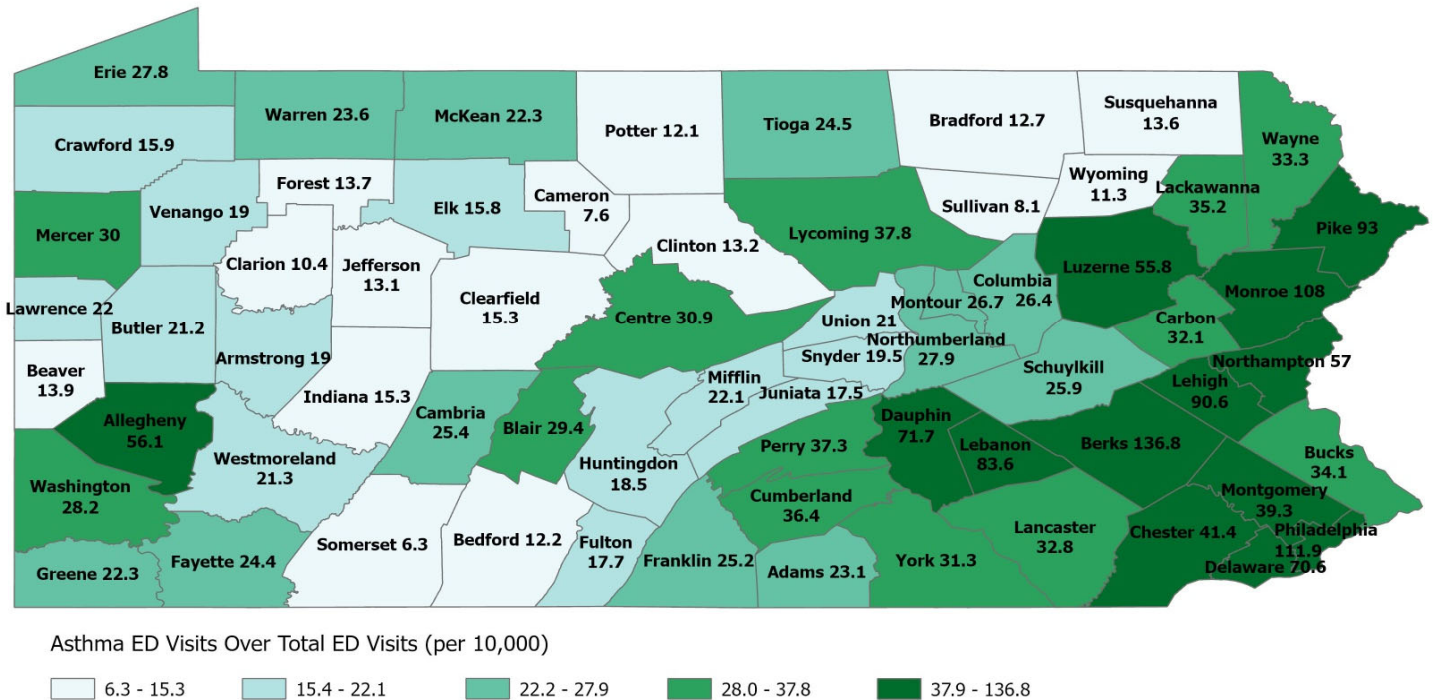
Caution is necessary in the interpretation of the above data. First, data reflect visits rather than individuals and persons may have multiple ED visits, for a variety of reasons, over time. Second, asthma ED visits were identified based on the presence of specific references to asthma in the text as the reason for the ED visit, which means it does not identify all definite ED visits due to asthma and therefore does not represent the absolute burden of asthma ED visits in a population. Furthermore, there could be important differences in the level of details provided in the chief complaint text, which can vary by each hospital ED. Lastly, while approximately 99% of all hospital EDs in PA currently provide data to the PA Department of Health, the number of participating January 20, 2023

hospitals was not static from 2011-2021, which could have impacted the geographic representation of asthma ED visits during this time.

**Figure 1. Asthma ED Visits Over Total ED Visits (per 10,000) by Age Group in Pennsylvania, 2011 - 2021**



**Map: Asthma ED Visits Over Total ED Visits (per 10,000) by County in Pennsylvania. 2011-2021**



## WHAT ARE WE DOING?

The PA Department of Health, through a cooperative agreement with the Centers for Disease Control and Prevention (CDC), is working “to improve the reach, quality, effectiveness, and sustainability of asthma control services and to reduce asthma morbidity, mortality and disparities by implementing evidence-based strategies across multiple sectors.” The two main approaches of this work are 1) enhancing infrastructure and 2) leveraging partnerships to expand the six **EXHALE** strategies: **E**ducation on asthma self-management; **EX**tinguishing smoking and exposure to second-hand smoke; **H**ome visits for trigger reduction and asthma self-

management education (AS-ME); Achievement of guidelines-based medical management; Linkages and coordination of care; and Environmental policies or best practices to reduce indoor and outdoor asthma triggers. In collaboration with multiple partners, the Department of Health is supporting asthma home visiting, asthma self-management education in schools and community locations, smoking cessation and outreach, quality improvement initiatives for physician practices and health systems, and policy education and outreach campaigns on topics such as second-hand smoke, school stock inhalers, and air quality. The Department of Health also facilitates the PA Asthma Partnership and the development and implementation of the statewide Asthma Strategic Plan, which includes asthma surveillance.

## WHAT CAN YOU DO?<sup>1</sup>

- Take your medication exactly as prescribed by your doctor. Take your long-term control medicine even when you don't have symptoms.
- Avoid things that can trigger an attack.
- You can inhale some medicines and take other medicines as needed. Asthma medicines come in two types—quick-relief and long-term control. Quick-relief medicines control the symptoms of an asthma attack. If you need to use your quick-relief medicines more and more, visit your doctor to see if you need a different medicine. Long-term control medicines help you have fewer and milder attacks, but they don't help you while you are having an asthma attack.
- Asthma medicines can have side effects, but most side effects are mild and go away quickly. Ask your doctor about the potential side effects of your medicines.
- Discuss with your doctor and make your own asthma action plan. Decide who should have a copy of your plan and where it should be kept.

## RESOURCES FOR MORE INFORMATION

- Pennsylvania Department of Health Asthma Control Program:  
<https://www.health.pa.gov/topics/programs/Asthma/Pages/Asthma.aspx>
- The Centers for Disease Control and Prevention Asthma Program:  
<https://www.cdc.gov/asthma/default.htm>

**If you have any questions, contact us at [RA-DHPAAsthma@pa.gov](mailto:RA-DHPAAsthma@pa.gov).**

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<sup>1</sup> The Centers for Disease Control and Prevention. (2019, September 6). *Learn how to control asthma*. <https://www.cdc.gov/asthma/faqs.htm>  
January 20, 2023