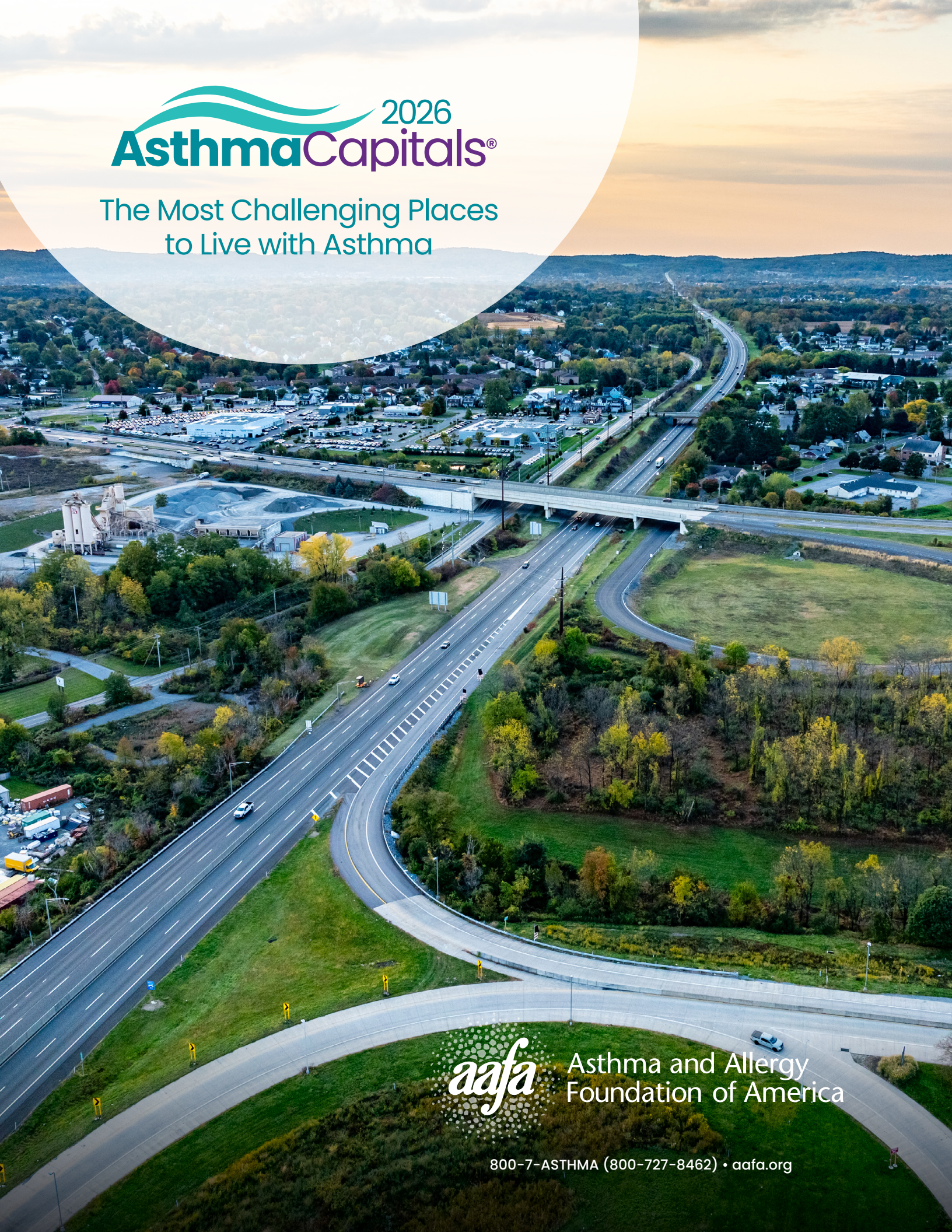




2026 AsthmaCapitals®

The Most Challenging Places
to Live with Asthma



Asthma and Allergy
Foundation of America

800-7-ASTHMA (800-727-8462) • aaafa.org

2026 Asthma Capitals®

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About This Report

AAFA publishes the Asthma Capitals report to raise awareness about the nationwide impacts of asthma. The report analyzes asthma data across the United States and ranks cities by the most critical of health outcomes – asthma prevalence, emergency department visits due to asthma attacks, and asthma-related mortality. The outcomes are not weighted equally. The report also examines asthma risk factors that influence the outcomes.

AAFA only evaluates the top 100 populated places (based on metropolitan statistical areas or MSAs) in the contiguous (“lower 48”) states for this report. MSAs are cities and their surrounding areas (like suburbs and nearby rural areas). The report does not reflect:

- Cities and areas not in the top 100 list by population size
- Completely rural areas that are not located within a metropolitan statistical area
- Anchorage, Alaska, Honolulu, Hawaii, San Juan, Puerto Rico, Navajo Nation Reservation, or Cherokee Nation Reservation due to lack of matching data with other cities, counties, states

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About the Asthma and Allergy Foundation of America (AAFA)

Founded in 1953, AAFA is the oldest and largest non-profit patient organization dedicated to saving lives and improving the quality of life for people affected by asthma and allergic diseases through support, advocacy, education, and research. AAFA offers extensive support for individuals and families affected by asthma and allergic diseases, such as food allergies and atopic dermatitis (eczema). Through its online patient support communities, network of regional chapters, and collaborations with community-based groups, AAFA empowers patients and their families by providing practical, evidence-based information and community programs and services. AAFA is the first asthma and allergy patient advocacy group certified to meet the standards of excellence set by the National Health Council. For more information, visit aafa.org.

Introduction

All city councils and state legislatures vote on a budget. Few realize that those decisions – about health care spending, housing standards, air quality permits, school funding, social support programs, and public health investment – are also asthma policy. Asthma outcomes are not simply a matter of individual health and responsibility, they are a direct reflection of how cities and states choose to fund, regulate, and prioritize.

Asthma remains one of the most common chronic diseases in the United States, affecting nearly 28 million people. With the right care and environment, people can manage and control their asthma well. But for millions of others, poor housing conditions, lack of access to specialists, unaffordable treatments, and dwindling safety nets turn a manageable condition into repeated emergency department (ED) visits, or, in the worst cases, death.

AAFA's Asthma Capitals® report ranks 100 most populated metropolitan areas in the contiguous U.S. based on three outcomes factors: **asthma rates, ED visits for asthma, and deaths due to asthma**. The report also examines risk factors that contribute to these outcomes: poverty, indoor and outdoor air quality, access to specialist medical care, pollen allergy, tobacco policies, respiratory illness vaccination rates, and the rate of uninsured residents. These factors are within the reach of city and state policy and help explain why some communities carry heavier asthma burden than others.

The data in this report does not include information from Alaska, Hawaii, Puerto Rico, or tribal nations. The residents of these areas are greatly affected by asthma, and more comparable data is needed to fully capture that impact.

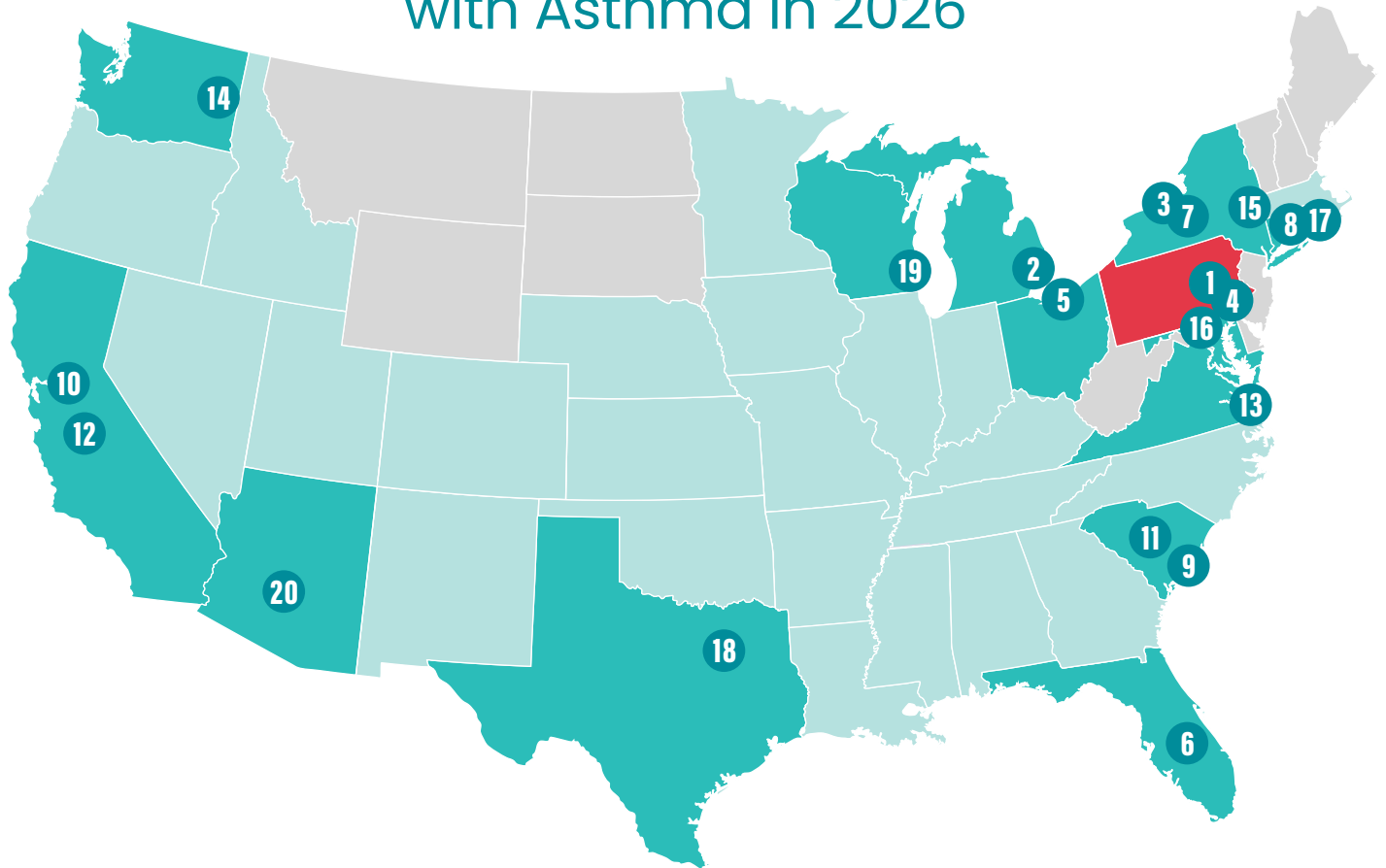
This year, Allentown, Pennsylvania, returns to the top as the most challenging city to live with asthma. Allentown has high asthma prevalence and the highest rates of ED visits of all cities analyzed for the report. This year's findings highlight the ongoing influence of environmental and social conditions— from longer pollen seasons to barriers in health care access — that affect how well people can control their asthma. A city's position on this list can move as a result of local decisions:

- **Investment in healthier housing and school environments** – enforcing and funding mold remediation, pest control, and proper air ventilation and filtration
- **Stronger air quality standards and enforcement** to address outdoor asthma triggers such as transportation/traffic, industrial pollution, and wildfire smoke
- **Expanding health care access and coverage** to ensure residents can see a specialist, manage asthma before it becomes an emergency, and get preventive care like vaccines
- **Supporting tobacco cessation programs** and expanding **smoke-free policies** to cover vaping
- **Addressing root causes of poverty and financing social safety net programs** – because when people can't afford their housing and food, the first thing sacrificed is their health

Where someone lives should not determine whether they can breathe easily. City and state leaders have more influence over that outcome than almost anyone else. Community advocates can use this report to make the case for change directly to the people with the power to fund it. Health care professionals and public health agencies can use the data to target prevention and treatment programs where they're needed most. And media outlets can use the findings to hold local leaders accountable to explain to residents why their city ranks how it does.

This report provides the evidence needed for action.

Map of the Top 20 (Out of 100) Most Challenging Places to Live with Asthma in 2026



These are the top 20 (out of 100) Asthma Capitals® for 2026 based on estimated asthma prevalence, emergency department visits due to asthma, and asthma-related fatalities. The burden of asthma falls heavily in Northeastern states. The full list of top 100 cities can be found on [page 6](#) in this report.

- | | |
|---------------------|------------------------|
| 1. Allentown, PA | 11. Columbia, SC |
| 2. Detroit, MI | 12. Fresno, CA |
| 3. Rochester, NY | 13. Virginia Beach, VA |
| 4. Philadelphia, PA | 14. Spokane, WA |
| 5. Cleveland, OH | 15. Albany, NY |
| 6. Lakeland, FL | 16. Baltimore, MD |
| 7. Syracuse, NY | 17. Providence, RI |
| 8. Hartford, CT | 18. Dallas, TX |
| 9. Charleston, SC | 19. Milwaukee, WI |
| 10. Sacramento, CA | 20. Phoenix, AZ |

2026 Asthma Capitals®

Overall Rankings ■ **Worse Than Average** ▲ **Average** ● **Better Than Average**

(Factors are not weighted equally. Total scores are rounded for the purposes of this chart.)

2026 Overall Ranking	Overall	Metropolitan Area	Total Score (Avg. 59.55)	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ED Visits for Asthma
1	■	Allentown, PA	100.00	■	▲	■
2	■	Detroit, MI	96.43	■	■	▲
3	■	Rochester, NY	94.77	■	▲	▲
4	■	Philadelphia, PA	87.52	■	■	▲
5	■	Cleveland, OH	85.72	■	■	■
6	■	Lakeland, FL	84.63	■	▲	■
7	■	Syracuse, NY	81.73	■	■	▲
8	■	Hartford, CT	79.11	■	■	●
9	■	Charleston, SC	78.14	■	▲	■
10	■	Sacramento, CA	77.88	■	▲	■
11	■	Columbia, SC	77.84	■	▲	■
12	■	Fresno, CA	77.11	■	■	▲
13	■	Virginia Beach, VA	76.08	▲	●	■
14	■	Spokane, WA	75.71	■	▲	▲
15	■	Albany, NY	75.17	■	▲	●
16	■	Baltimore, MD	73.96	▲	■	▲
17	■	Providence, RI	73.82	■	▲	▲
18	■	Dallas, TX	73.02	■	▲	■
19	■	Milwaukee, WI	72.77	▲	■	■
20	■	Phoenix, AZ	71.70	■	▲	▲
21	■	Tucson, AZ	71.65	▲	■	▲
22	■	Poughkeepsie, NY	69.81	■	▲	▲
23	▲	Cincinnati, OH	68.54	▲	▲	■
24	▲	Washington, DC	67.73	▲	■	▲
25	▲	Omaha, NE	67.56	■	▲	▲
26	▲	New York, NY	67.43	▲	■	▲
27	▲	Richmond, VA	67.37	▲	■	▲
28	▲	St. Louis, MO	66.57	▲	■	▲
29	▲	Chattanooga, TN	66.55	●	■	■
30	▲	San Francisco, CA	66.26	▲	▲	▲
31	▲	Stockton, CA	66.08	▲	▲	■
32	▲	Harrisburg, PA	65.53	■	▲	●

Overall Rankings ■ Worse Than Average ▲ Average ● Better Than Average

(Factors are not weighted equally. Total scores are rounded for the purposes of this chart.)

2026 Overall Ranking	Overall	Metropolitan Area	Total Score (Avg. 59.55)	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ED Visits for Asthma
33	▲	Bridgeport, CT	65.52	■	▲	▲
34	▲	Los Angeles, CA	65.39	■	▲	▲
35	▲	Greenville, SC	65.22	■	●	▲
36	▲	Jackson, MS	64.86	▲	■	▲
37	▲	Columbus, OH	64.13	▲	●	■
38	▲	Albuquerque, NM	63.89	▲	▲	▲
39	▲	Miami, FL	63.62	▲	▲	▲
40	▲	Oklahoma City, OK	63.51	●	■	■
41	▲	Dayton, OH	63.31	▲	▲	■
42	▲	Orlando, FL	63.06	■	●	▲
43	▲	Worcester, MA	63.00	■	▲	●
44	▲	Atlanta, GA	62.05	▲	▲	▲
45	▲	Indianapolis, IN	61.36	▲	▲	▲
46	▲	Las Vegas, NV	60.24	▲	▲	▲
47	▲	New Orleans, LA	60.04	▲	▲	▲
48	▲	Toledo, OH	59.54	▲	▲	■
49	▲	Riverside, CA	59.20	▲	▲	▲
50	▲	San Diego, CA	58.81	▲	●	▲
51	▲	Reno, NV	58.18	▲	▲	▲
52	▲	Seattle, WA	57.47	▲	▲	▲
53	▲	Greensboro, NC	57.34	●	▲	■
54	▲	Minneapolis, MN	56.97	▲	▲	▲
55	▲	Akron, OH	56.11	●	▲	■
56	▲	San Jose, CA	55.20	▲	●	▲
57	▲	Nashville, TN	55.16	▲	▲	●
58	▲	Chicago, IL	54.00	▲	▲	▲
59	▲	Raleigh, NC	53.99	●	●	■
60	▲	New Haven, CT	53.91	▲	■	●
61	▲	Memphis, TN	53.90	●	■	▲
62	▲	Tulsa, OK	53.57	▲	▲	▲
63	▲	Louisville, KY	53.47	▲	●	▲
64	▲	Palm Bay, FL	53.39	■	●	●
65	▲	Baton Rouge, LA	53.20	▲	●	▲
66	▲	Oxnard, CA	52.62	▲	●	▲

Overall Rankings ■ Worse Than Average ▲ Average ● Better Than Average

(Factors are not weighted equally. Total scores are rounded for the purposes of this chart.)

2026 Overall Ranking	Overall	Metropolitan Area	Total Score (Avg. 59.55)	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ED Visits for Asthma
67	▲	Wichita, KS	50.86	●	▲	▲
68	▲	Pittsburgh, PA	50.77	▲	▲	●
69	▲	Denver, CO	50.61	▲	●	●
70	▲	El Paso, TX	50.45	▲	●	▲
71	▲	Portland, OR	50.32	●	■	●
72	▲	Bakersfield, CA	50.27	▲	▲	●
73	▲	Buffalo, NY	50.04	●	▲	▲
74	▲	San Antonio, TX	49.66	▲	▲	▲
75	●	Boston, MA	49.27	●	▲	▲
76	●	Daytona Beach, FL	48.54	▲	▲	●
77	●	Charlotte, NC	48.04	▲	▲	●
78	●	Austin, TX	47.71	▲	●	●
79	●	McAllen, TX	47.42	▲	●	●
80	●	Ogden, UT	47.03	▲	▲	●
81	●	Jacksonville, FL	46.90	●	▲	▲
82	●	Kansas City, MO	46.30	●	▲	●
83	●	Augusta, GA	46.24	●	▲	▲
84	●	Durham, NC	45.43	●	▲	▲
85	●	Grand Rapids, MI	45.14	●	●	▲
86	●	Birmingham, AL	45.12	●	▲	▲
87	●	Winston-Salem, NC	44.77	●	▲	▲
88	●	Sarasota, FL	44.62	●	▲	●
89	●	Tampa, FL	44.32	▲	●	●
90	●	Colorado Springs, CO	42.47	●	▲	●
91	●	Madison, WI	42.39	●	●	▲
92	●	Little Rock, AR	42.22	●	▲	▲
93	●	Salt Lake City, UT	42.20	●	▲	▲
94	●	Boise, ID	38.72	●	●	●
95	●	Houston, TX	38.25	●	●	●
96	●	Des Moines, IA	38.23	●	●	▲
97	●	Fayetteville, AR	37.45	●	●	▲
98	●	Cape Coral, FL	37.35	●	●	●
99	●	Knoxville, TN	34.92	●	●	●
100	●	Provo, UT	31.47	●	●	●

Regional Rankings

(Factors are not weighted equally. Total scores are rounded for the purposes of this chart.)

■ Worse Than Average

▲ Average

● Better Than Average

NORTHEAST						
2026 Regional Rankings	Overall	Metropolitan Area	Total Score	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ED Visits for Asthma
1	■	Allentown, PA	100.00	■	▲	■
2	■	Rochester, NY	94.77	■	▲	▲
3	■	Philadelphia, PA	87.52	■	■	▲
4	■	Syracuse, NY	81.73	■	■	▲
5	■	Hartford, CT	79.11	■	■	●
SOUTH						
2026 Regional Rankings	Overall	Metropolitan Area	Total Score	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ED Visits for Asthma
1	■	Lakeland, FL	84.63	■	▲	■
2	■	Charleston, SC	78.14	■	▲	■
3	■	Columbia, SC	77.84	■	▲	■
4	■	Virginia Beach, VA	76.08	▲	●	■
5	■	Baltimore, MD	73.96	▲	■	▲
MIDWEST						
2026 Regional Rankings	Overall	Metropolitan Area	Total Score	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ED Visits for Asthma
1	■	Detroit, MI	96.43	■	■	▲
2	■	Cleveland, OH	85.72	■	■	■
3	■	Milwaukee, WI	72.77	▲	■	■
4	▲	Cincinnati, OH	68.54	▲	▲	■
5	▲	Omaha, NE	67.56	■	▲	▲
WEST						
2026 Regional Rankings	Overall	Metropolitan Area	Total Score	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ED Visits for Asthma
1	■	Sacramento, CA	77.88	■	▲	■
2	■	Fresno, CA	77.11	■	■	▲
3	■	Spokane, WA	75.71	■	▲	▲
4	■	Phoenix, AZ	71.70	■	▲	▲
5	■	Tucson, AZ	71.65	▲	■	▲

Asthma Health Outcomes

AAFA ranks cities based on 3 health outcomes: asthma prevalence (how many people have asthma), asthma-related emergency department (ED) visits, and asthma-related mortality (death) rates. The outcomes are not weighted equally.

Estimated Asthma Prevalence

Nearly 28 million people living in the United States have asthma.¹² This equals about 8 out of 100 people. Prevalence rates differ significantly by socioeconomic status, race, ethnicity, age and sex.

The cities with the highest estimated asthma prevalence[†] are:

Asthma Prevalence Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	Rochester, NY	3
2	Detroit, MI	2
3	Albany, NY	15
4	Hartford, CT	8
5	Syracuse, NY	7
6	Philadelphia, PA	4
7	Cleveland, OH	5
8	Fresno, CA	12
9	Allentown, PA	1
10	Charleston, SC	9

†For each city included in the 2026 Asthma Capitals, AAFA obtained an estimated asthma prevalence for its respective MSA. For this report, asthma prevalence is estimated using claims data for individuals who sought asthma care at any point in the 2025 calendar year. While this is not an exact measure of prevalence, it helps provide data that can be compared from city to city. Other prevalence estimates, such as those from the CDC, use self-reported data through surveys.

Emergency Department Visits

Asthma can trigger severe symptoms that require a visit to the ED. Increased ED visits are a sign of poor asthma control. Nationally, asthma accounts for nearly 1 million emergency department visits each year.³ **The cities with the highest asthma-related ED visits[†] are:**

Emergency Department Visits Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	Allentown, PA	1
2	Virginia Beach, VA	13
3	Lakeland, FL	6
4	Chattanooga, TN	29
5	Oklahoma City, OK	40
6	Columbia, SC	11
7	Raleigh, NC	59
8	Columbus, OH	37
9	Stockton, CA	31
10	Greensboro, NC	53

†For each city included in the 2026 Asthma Capitals, AAFA obtained the total number of ED visits where an asthma ICD-10 code was included in a diagnosis field, for the respective census-designated metropolitan statistical area, or MSA, for calendar year 2025. Analysis included estimating the ED rate per 10,000 asthma patients.

Asthma-Related Mortality

On average, 9 to 11 people in the U.S. die from asthma each day. Nationally, there were 3,279 deaths attributed to asthma in 2024.⁴ There hasn't been meaningful improvement in these numbers in the last decade. In 2020, deaths due to asthma rose for the first time in 20 years.⁵ This increase may have been due to the COVID-19 pandemic (before vaccination was available).

The cities with the most asthma-related deaths[†] are:

Asthma-Related Deaths Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	Baltimore, MD	16
2	St. Louis, MO	28
3	Jackson, MS	36
4	Syracuse, NY	7
5	Richmond, VA	27
6	New York, NY	26
7	Philadelphia, PA	4
8	Milwaukee, WI	19
9	Chattanooga, TN	29
10	Memphis, TN	61



[†]For each city included in the 2026 Asthma Capitals, AAFA obtained the estimated asthma-related crude death rate per 100,000 people for its respective county from 2020–2024 (most recent available data).

Asthma-related deaths are preventable. To reduce asthma deaths, people need:

- Wealth and income above the Federal Poverty Level
- Affordable asthma medicines
- Regular vaccinations to protect against respiratory infections
- Good air quality indoors (at home, school, work) and outdoors
- Insurance coverage for health care and additional asthma support tools such as asthma self-management education, home assessments and remediation, and tobacco cessation
- Immediate access to the treatments prescribed by their clinicians without insurance delays such as step therapy or prior authorization
- Nearby hospitals and emergency or urgent care services that recognize and treat asthma emergencies
- Health care teams that prioritize reducing asthma mortality disparities among patients



Risk Factors That Can Worsen Asthma or Influence Asthma Rates

A risk factor is any attribute, characteristic, or exposure of an individual that increases the likelihood of developing a disease, like asthma. While the risk factors outlined in this report are not calculated as part of the overall ranking, they are important to address as they contribute to rates of asthma prevalence, emergency department visits, and deaths.

These are some of the top risk factors for asthma:

- Poverty
- Lack of health insurance
- Lack of access to specialists
- Exposure to air pollution
- Smoking (cigarettes, cigars, vapes)
- Pollen allergy
- Respiratory infections (flu, colds, RSV, COVID-19, and others)

Risk Factor: Poverty

Socioeconomic status plays a major role in the development of asthma and a person's ability to manage it. Persons living below 100% of the Federal Poverty Level are more likely to have asthma than people living at any percentage above the poverty level.⁶ **These cities have the highest rates of poverty†:**

Poverty Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	McAllen, TX	79
2	Baton Rouge, LA	65
3	Jackson, MS*	36
4	Detroit, MI	2
5	St. Louis, MO*	28
6	New Orleans, LA	47
7	Philadelphia, PA*	4
8	Augusta, GA	83
9	Memphis, TN*	61
10	Bakersfield, CA	72

†For each city included in the 2026 Asthma Capitals, AAFA obtained the poverty rate for its respective county. The estimates range from 7.1% to 24.2%.

***Four of the cities with the top poverty rates also have the top asthma death rates.**

Risk Factor: Lack of Health Insurance

Access to health care plays an important role in managing asthma symptoms, preventing exacerbations, and promoting better quality of life. For people managing a chronic condition like asthma that requires medicine year-round, having insurance is often a big help. However, insurance itself can also be costly. These costs may vary depending on employment status and whether the job offers health insurance as a benefit and pays any of the costs. Other options include marketplace health insurance and government-sponsored insurance, like Medicare or Medicaid.

These cities have the highest number of uninsured residents†:

Lack of Insurance Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	McAllen, TX	79
2	El Paso, TX	70
3	Dallas, TX	18
4	Houston, TX	95
5	San Antonio, TX	74
6	Cape Coral, FL	98
7	Oklahoma City, OK	40
8	Miami, FL	39
9	Lakeland, FL	6
10	Tulsa, OK	62

The states with the highest uninsured rates are states that did not expand Medicaid under the Affordable Care Act. Upcoming changes in coverage of public insurance may impact health insurance rates in other states starting this year. For more information, see Access to Insurance Coverage on [page 32](#).

†For each city included in the 2026 Asthma Capitals, AAFA obtained the uninsured rate for its respective county. The estimates range from 3.2% to 27.5%.

Risk Factor: Lack of Access to Specialists

Successful asthma management requires coordination of care between the person with asthma and their health care team. In addition to primary care, a person with persistent asthma might need to be in the care of a specialist who has more experience treating moderate-to-severe asthma, uncontrolled asthma, allergic asthma, or other asthma subtypes. Pulmonologists, allergists, and immunologists, for example, can provide specialized care for people with asthma.

These cities have the fewest asthma specialists per asthma patient†:

Fewest Specialists Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	Fresno, CA	12
2	Poughkeepsie, NY	22
3	Lakeland, FL	6
4	Bakersfield, CA	72
5	Provo, UT	100
6	Palm Bay, FL	64
7	Riverside, CA	49
8	Spokane, WA	14
9	Ogden, UT	80
10	Sacramento, CA	10

†For each city included in the 2026 Asthma Capitals, AAFA obtained data on specialists per 10,000 asthma patients.

Risk Factor: Exposure to Air Pollution

Poor air quality can negatively affect everyone's health. The people at highest risk from exposure are children, older adults, people with lung or heart disease, are pregnant, have lower incomes, or who live or work outside. Outdoor air pollution is a significant asthma trigger.⁷ It also causes increased rates of emergency room visits, hospital admissions, and school absenteeism related to asthma. Air pollution includes gases, smoke from fires, volcanic ash, dust particles, emissions from transportation and industry, and other substances that can harm the lungs. **The American Lung Association's 2026 State of the Air Report gave 18 cities an F rating for high ozone days and particle pollution (down from 21 cities the year prior)[†]:**

Metropolitan Area	Overall Asthma Capital National Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
Detroit, MI	2	Albuquerque, NM	38
Philadelphia, PA	4	Indianapolis, IN	45
Cleveland, OH	5	Riverside, CA	49
Sacramento, CA	10	Seattle, WA	52
Fresno, CA	12	Pittsburgh, PA	68
Milwaukee, WI	19	Bakersfield, CA	72
Phoenix, AZ	20	San Antonio, TX	74
Harrisburg, PA	32	Madison, WI	91
Los Angeles, CA	34	Salt Lake City, UT	93

[†]For each city included in the 2026 Asthma Capitals report, AAFA obtained the grades for high ozone days and particle pollution for the respective county. Grades were averaged to produce an overall grade, ranging from A to F.

Indoor air can be up to 5 times more polluted than outdoor air.⁸ Buildings can trap harmful air pollution and other asthma triggers inside. Due to limited data at the MSA level, AAFA's Asthma Capitals® report does not rank cities based on indoor air quality or housing quality as a risk factor for asthma. But this is a critical area to address in housing policy, building maintenance, school environmental policies, and workplace accommodations.

Repeals, Delays, and Lack of Air Pollution Enforcement May Worsen Asthma Nationwide

Since 2025, federal agencies have deregulated environmental protections and standards that reduced air pollution and protected human health. Some of the rules that have been repealed, changed, or delayed include:

- Power plant standards
- Vehicle emissions standards
- Energy efficiency standards for appliances and buildings
- Gas pipeline safety
- Oil and gas methane emissions
- Tire manufacturing hazardous air pollution
- Mercury and air toxics standards

These changes remove mandates requiring continuous emissions monitoring and increase limits for particulate matter. The consequences are grave. The Institute for Policy Integrity (New York School of Law) estimates these rollbacks will annually cause⁹:

- **7,461 new cases of childhood asthma**
- 139,415 missed workdays
- 320,260 missed school days
- 3,922 hospital and ED admissions

Risk Factor: Smoking Cigarettes, Cigars, and Vapes

Tobacco smoke and e-cigarette aerosol can be especially harmful to people who have asthma. About 19 out of 100 adults with asthma smoke tobacco products.¹⁰ Smoking is not only harmful to the person doing the smoking but also to people nearby who inhale secondhand smoke or come into contact with thirdhand smoke. People with asthma are at greater risk of harm from tobacco products. Children who live with smokers have more frequent asthma attacks. More than 40% of children who go to the emergency department for asthma live with smokers.¹¹ **These cities do the least to protect their residents and visitors from tobacco smoke and have fewer smoke-free laws†, comparatively:**

Metropolitan Area	Overall Asthma Capital National Ranking
Oklahoma City, OK	40
Tulsa, OK	62
Chattanooga, TN	29
Memphis, TN	61
Harrisburg, PA	32
Knoxville, TN	99
Nashville, TN	57
Virginia Beach, VA	13

Virginia Beach is new to the top 20 Asthma Capitals® this year. Exposure to tobacco smoke and e-cigarette aerosols is a completely preventable risk factor for asthma that Virginia Beach could address by adding and expanding smoke-free laws and ordinances.

†For each city included in the 2026 Asthma Capitals, AAFA obtained data on whether there was a 100% smoking ban for cars with minors, non-hospitality workplaces, restaurants, bars, and multi-unit housing.

Risk Factor: Pollen Allergy

In the U.S., about 25 out of 100 adults and 21 out of 100 children have seasonal allergies such as pollen allergy.^{12,13} Pollen is a common allergen that can worsen allergic asthma (asthma triggered by allergens). **These cities have the highest pollen scores†:**

Pollen Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	San Diego, CA	50
2	San Francisco, CA	30
3	Provo, UT	100
4	Boise, ID	94
5	Spokane, WA	14
6	Minneapolis, MN	54
7	Salt Lake City, UT	93
8	Rochester, NY	3
9	Ogden, UT	80
10	Denver, CO	69

AAFA also releases an annual Allergy Capitals® report using data from tree, grass, and weed pollen counts in cities across the country. Visit allergycapitals.org to learn how your city ranks and what to do if you live in an Allergy Capital and have pollen allergies. In 2026, **Rochester, NY, and Spokane, WA, are both top Allergy Capitals and Asthma Capitals.**

†For each city included in the 2026 Asthma Capitals, AAFA obtained daily pollen counts for each growth form (tree, grass, and weed) for the most recent calendar year (2025). Data were obtained from Pollen Sense, LLC Automated Particulate Sensors (APS). These sensors automatically image particulate matter collected from ambient air and use a neural network algorithm to identify individual pollen species and calculate daily pollen counts. Using these daily pollen counts, AAFA calculated the number of days each MSA had within the “high” or “very high” levels for each growth.

Risk Factor: Respiratory Infections and Lower Vaccination Rates

Respiratory infections (also called respiratory illnesses) are caused by viruses or bacteria that make you sick. Respiratory infections are a significant asthma trigger, and lead to more asthma flare-ups, emergency department visits, hospital stays, and deaths. Vaccines can help protect against some respiratory infections and reduce the risk of serious illness and death. They also can help stop the spread of respiratory infections to others.

Seasonal vaccines, like those for flu and COVID-19, are available each year to help protect against the most current strains of these illnesses. **These cities have the lowest vaccination rates for flu and COVID-19 for the 2025–2026 viral season†:**

Lowest Flu and COVID-19 Vaccination Rates Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	Bakersfield, CA	72
2	Lakeland, FL	6
3	Miami, FL	39
4	Jacksonville, FL	81
5	McAllen, TX	79
6	Orlando, FL	42
7	Jackson, MS	36
8	Fresno, CA	12
9	Baton Rouge, LA	65
10	Augusta, GA	83

†For each city included in the 2026 Asthma Capitals, AAFA obtained the total number billed flu and COVID-19 vaccinations for the respective census-designated metropolitan statistical area, or MSA, from August 2025–June 2026 (when vaccines were available for the 2025–2026 viral season).

In addition to seasonal vaccines for respiratory infections, the FDA approved a vaccine for respiratory syncytial virus (RSV) that became available in August 2023 to protect infants and babies, adults with asthma or other risk factors, and all adults over age 60. The vaccine can help prevent lower respiratory tract disease that is caused by the RSV virus. **These cities have the lowest vaccination rates for RSV to date†:**

Lowest RSV Vaccination Rates Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	New York, NY	26
2	Riverside, CA	49
3	Orlando, FL	42
4	Virginia Beach, VA	13
5	Miami, FL	39
6	Sacramento, CA	10
7	Bridgeport, CT	33
8	Kansas City, MO	82
9	Atlanta, GA	44
10	Houston, TX	95

†For each city included in the 2026 Asthma Capitals, AAFA obtained the total number billed RSV vaccinations for the respective census-designated metropolitan statistical area, or MSA, since August 2023 (when the RSV became commercially available in the United States).

For more information on the risk of respiratory infections for people with asthma, see [page 17](#).



The Influence of Time and Place on Asthma: ASTHMA PEAK SEASON

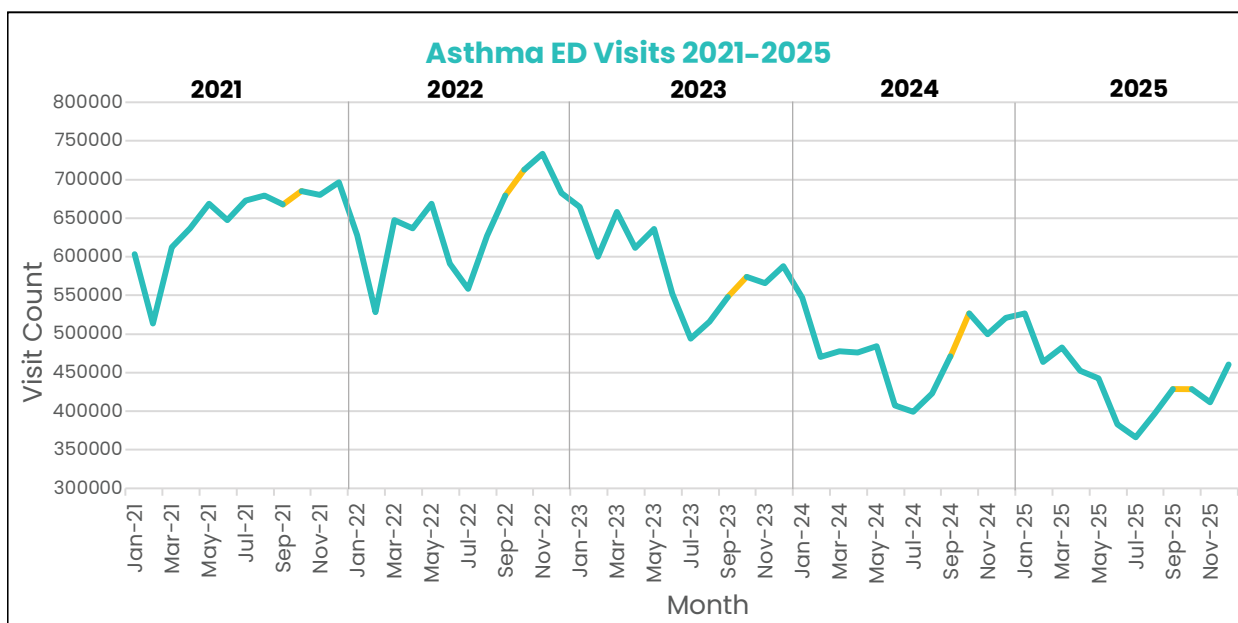
Historically, September has been called the peak month for asthma emergency department (ED) visits, and the third week of September has been called 'Asthma Peak Week.' But AAFA's recent data analysis of claims data from the Komodo Healthcare Map shows true asthma "peaks" can happen in other months, especially during the winter. While peaks can change based on time and place, September is an important time to raise awareness around asthma because it is when asthma attacks, ED visits, and hospitalizations start to climb – especially in children.

Why? Because many asthma triggers converge at the same time:

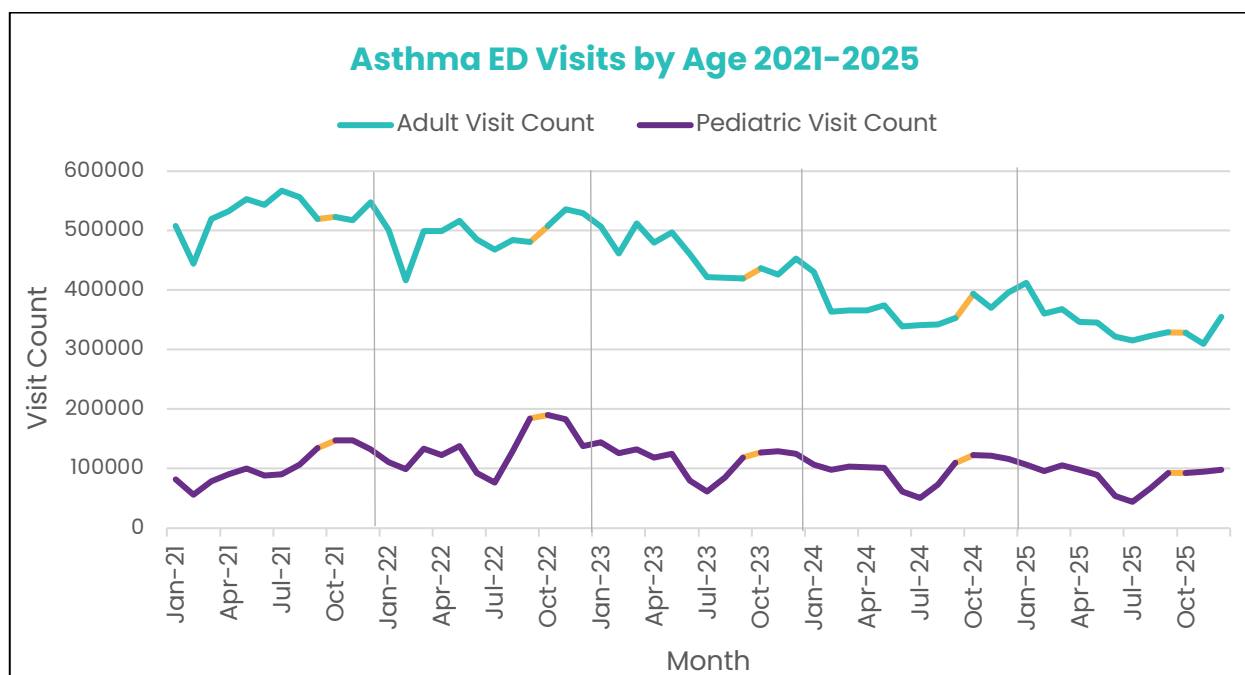
- **Back-to-school illnesses:** Crowded indoor spaces like schools increase the spread of respiratory infections like flu, COVID-19, RSV, and colds. Children often bring these illnesses home, spreading the illnesses to their families and older adults.
- **Poor indoor air quality in schools:** Many school buildings have poor ventilation, air pollution from nearby vehicle traffic and chemical irritants from cleaning products, mold problems, and airborne allergens (grass, weed, tree pollen; dust mites; animal dander).
- **Ragweed pollen:** The most common fall allergen peaks in September. For people with allergic asthma, exposure to ragweed pollen can trigger asthma symptoms.
- **Outdoor mold growth:** Decomposing plant matter, fall rains, and lingering humidity create perfect conditions for mold. Mold spores irritate airways and can worsen asthma and allergies.
- **Indoor mold growth:** Air conditioning can reduce mold growth because it dehumidifies the air. As the outdoor temperatures start to drop, people stop using air conditioning. This can affect indoor air circulation, ventilation, and humidity levels.
- **Variable extreme weather:** Sudden temperature changes, lingering heat and humidity, thunderstorms, and wildfire smoke all add to the burden on lungs.



Analysis of medical claims data for emergency department (ED) visits for asthma from 2021-2025 shows that asthma ED visits often begin to increase around September (shown as yellow segments in the chart below) but continue to rise well into the winter. The fewest asthma emergencies happen during the summer months.



While overall peaks for asthma ED visits vary, analysis of ED visits by age shows that asthma emergencies in children tend to peak around September to October. This aligns with what has historically been known around asthma peak month: in addition to exposure to asthma triggers like weed pollen and mold, September can be especially tough for kids who are exposed to back-to-school illnesses and poor indoor air quality in schools.



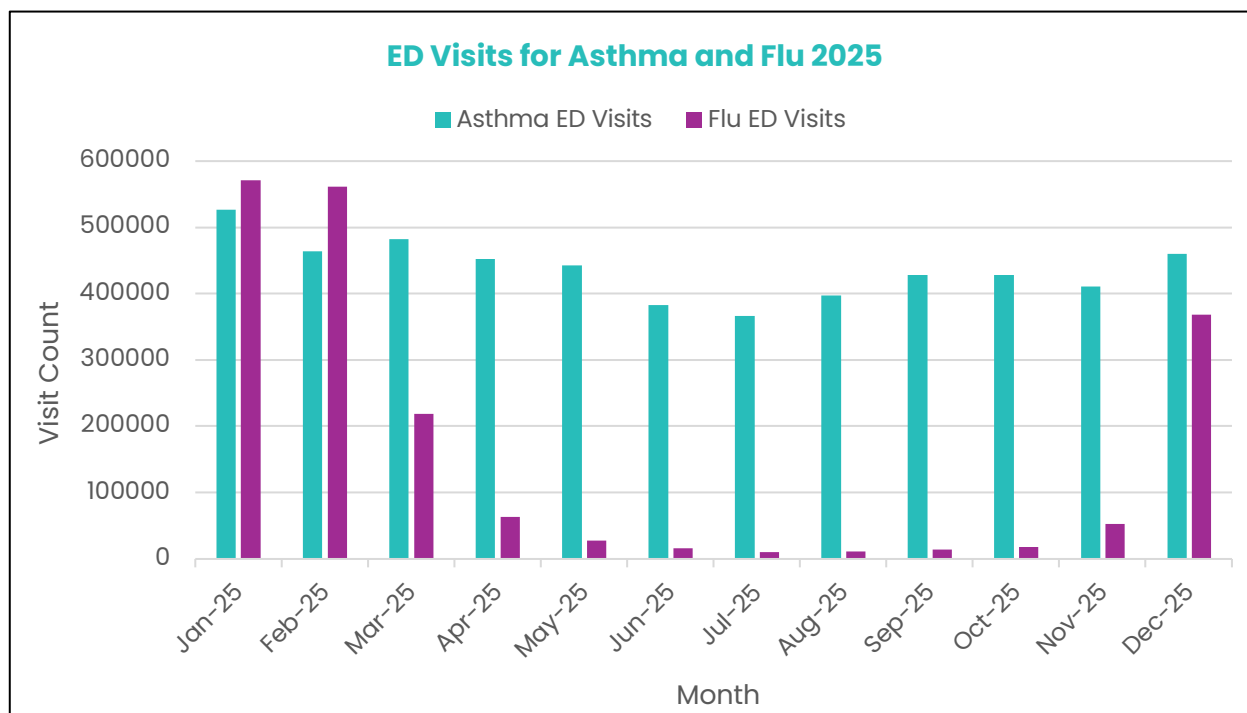
Asthma Trends Coincide with Respiratory Infection Trends

Respiratory infections, like the flu, colds, RSV, or COVID-19 are common asthma triggers and a well-established trigger for asthma exacerbations. People with asthma are at higher risk for developing serious complications, like pneumonia or even death from respiratory infections.¹⁴ For people living with asthma, respiratory infections frequently cause increased emergency department visits, hospitalizations, and missed school and workdays. Respiratory infections can also make it difficult to manage or control asthma, especially for older adults or people with moderate to severe asthma.

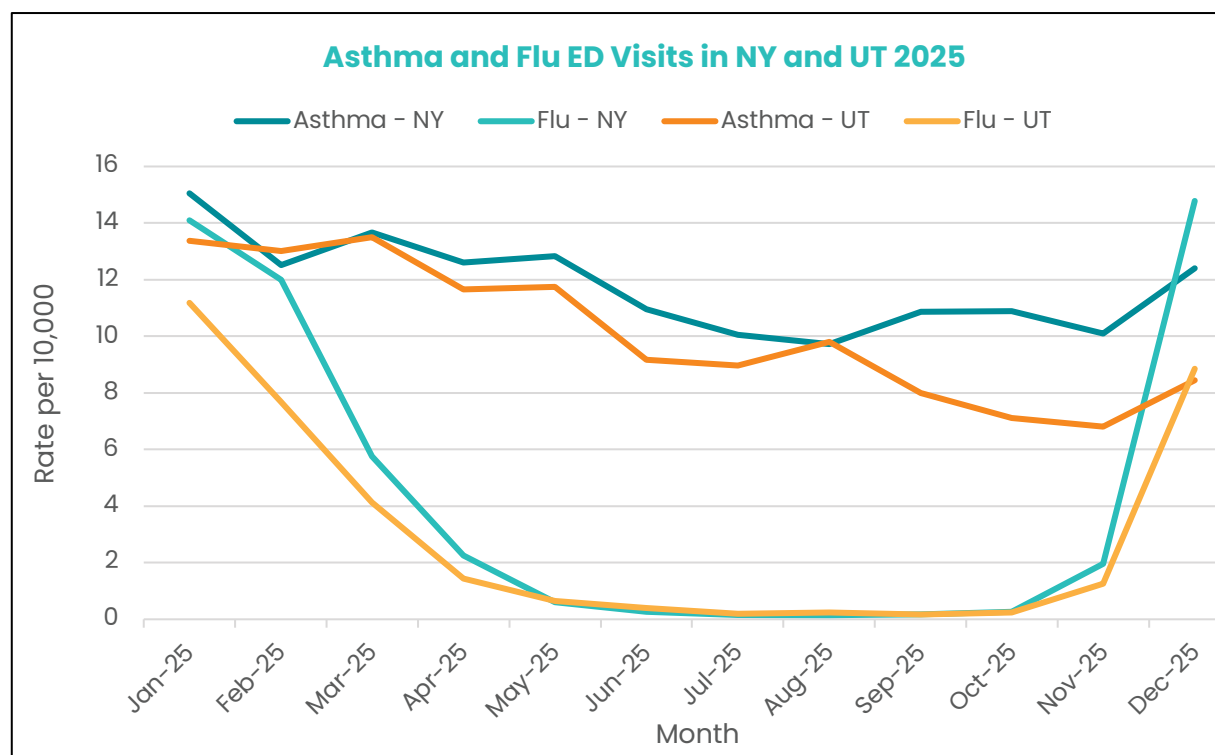
Pediatric asthma-related ED admissions start to rise in September and continue to spike in alignment with respiratory virus season. This pattern is associated with the return of kids going back to school in August and September, where close contact and crowded classrooms facilitate the transmission of respiratory infections. The overlap of school and onset of respiratory infection season contributes to the rise in asthma exacerbations in the fall and winter, leading to an increase in emergency department utilization and school absenteeism.

Older adults have a higher risk of death from asthma as well as respiratory infections. Older adults have weakening immune systems that make them more susceptible to serious complications.

Analyses of medical claims data for asthma and flu ED visits in 2025 show the months with the most asthma ED visits (January, February, March, and December) are also the months with the most flu ED visits.



The relationship between ED visits for asthma and respiratory infections is also apparent across locations. The chart below looks at medical claims data for asthma and flu ED visits in New York, the state with the most cities in the top 20 Asthma Capitals, and Utah, a state with multiple cities in the bottom 20 Asthma Capitals. In both states, asthma ED rates tend to rise with increasing flu ED rates. However, both asthma and flu rates in Utah (orange lines) are notably lower than asthma and flu rates in New York (teal lines) throughout 2025.



Preventing Respiratory Infections Is an Effective Asthma Cost Reduction Strategy

Practicing healthy behaviors, community education, and building support through advocacy and policy on the impact of respiratory infections is crucial in reducing complications from asthma, hospitalizations, and lowering the economic burden respiratory infections place on the health care system and its communities.

Continued support for preventive services such as vaccination programs and school policies that allow students to stay home when they are sick can work in tandem to bring education and health to the forefront.

Vaccines

Vaccines work to prevent illness by teaching the immune system how to recognize and prevent serious diseases like the flu, pneumonia, pertussis, COVID-19, or RSV. The impact of vaccines is far reaching. Immunizations prevent millions of deaths each year. They have eradicated diseases and reduce the effects of severe diseases, especially for people living with chronic conditions like asthma. To some people, vaccines can mean the difference between life and death. They work

to protect our communities, people who may be immunocompromised, and people who cannot be vaccinated (such as babies under 6 months old). Vaccines are safe and have been rigorously tested for many years.

Vaccines Are Cost Effective

There are both direct and indirect advantages of vaccines. Vaccines not only prevent illness from infectious diseases like the flu or COVID-19, but they also reduce the rate of complications and severe effects these illnesses may have on people living with chronic conditions such as asthma. Vaccines indirectly reduce the high cost and burden of care on our health care system by decreasing the number of respiratory illness cases, hospitalizations, emergency department visits, and deaths across all age groups.¹⁵

Research shows us vaccines have been proven to significantly reduce the disease burden of those living with asthma, while also improving patient outcomes. They are proven cost-effective strategies by reducing associated health care costs by working to reduce costly out of pocket medical expenses for patients and caregivers in addition to wages lost from missed workdays and school absenteeism.^{16,17}

Average cost public clinics pay for 1 flu shot ¹⁸	Average out of pocket cost for patients for 1 flu shot ¹⁹	Average combined cost of ED + hospital inpatient stay for flu ²⁰	Average length of hospital stay for flu-related admissions ²⁰	Total cost of health care losses for flu ²¹
\$1.39	\$30 – \$140	\$12,896	3–4 days	\$28.9 billion

People Need Easier Access to Vaccines

Communities face barriers when trying to prioritize their health. Vaccine access, economic, and social factors continue to remain barriers to preventative care. Many communities, particularly those located in rural areas, may lack physical access to health services, or the ability to travel to clinics to receive care. People in hourly jobs may not be able to take time off work for separate vaccination appointments. Mistrust remains a well-documented reason why some people do not get vaccinated or are hesitant to getting their children vaccinated. There are also education and economic factors that contribute to the challenge of preventive care.

When policymakers support programming that provides low-cost, easy-to-obtain vaccines, they support reducing financial burden on families, lowering health care costs, and keeping people healthy for their jobs and school. Partnering with organizations and programs that can bring access to immunizations to the home or community such as mobile clinics or home visiting programs can help increase vaccine uptake and increase access to vaccines.²²

Vaccines Are Key to Asthma Control

When people with asthma get sick, they have a higher chance of having an asthma attack, having complications, or needing hospital care.

- **Flu:** People with asthma are more likely to have severe complications (e.g. pneumonia or death) from the flu. **AAFA recommends all people ages 6 months and older get a flu vaccine.**
- **COVID-19:** Unvaccinated people with asthma have increased odds of having severe asthma flares and developing long COVID. **AAFA recommends all people ages 6 months and older get a COVID-19 vaccine.**
- **Respiratory syncytial virus (RSV):** Children who get RSV when they are younger are at a higher risk of developing pneumonia and asthma. Adults with asthma and all older adults who get sick with RSV have a high risk of severe illness and complications. An RSV vaccine is available for some adults. An RSV immunization medicine is available for babies and toddlers. **AAFA recommends RSV vaccination for babies (including during weeks 32–36 of pregnancy), adults ages 18–59 with a risk factor such as asthma, and all people 60 years and older.**
- **Pneumococcal disease:** For people with asthma, pneumonia can be very serious. **AAFA recommends adults who are 19–49 years old with asthma, and any adults aged 50 and over get the pneumococcal vaccine.**

For more information about vaccine recommendations for individuals and families with asthma and allergies, visit: aafa.org/vaccine



SPOTLIGHT: Uncontrolled Asthma Drain on Individuals and Communities

Breathing is the single most important function to sustain life. When a person struggles to breathe, it affects their overall health, their ability to work or do daily activities, and their mental health. Asthma is a chronic condition that when untreated or undertreated, can lead to permanent lung damage or even death.

According to the Global Initiative for Asthma, asthma control is defined by symptom control and risk factors for future poor outcomes. Assessment of symptom control looks at how often in the past month a person has daytime and nighttime symptoms, how often they use asthma medications, and if their daily activities have been limited due to asthma. Risk factors also need to be evaluated because even if a person has few asthma symptoms, their risk of future exacerbations is increased if they have comorbidities, trigger exposures (like respiratory infections, smoking, and air pollution), low lung function, socioeconomic problems, or issues with their medications.²³

While asthma is a disease that can be controlled with treatment, the factors outlined in this report can make it exceptionally difficult for an individual to control on their own.

Uncontrolled asthma leads to significant health care and personal costs. People with poorly controlled asthma:		
Visit the emergency department 2 times as much ²⁴ 	Report that asthma limits their everyday tasks and affects their personal relationships and emotional health ²⁴ 	Miss more days of work and school and have more days of difficulty performing tasks at work and school ²⁴ 
Researchers estimate that from 2019–2038, the cost of uncontrolled asthma will be nearly \$964 billion. ²⁵		

Asthma Self-Management Education

Asthma self-management education (AS-ME) plays a critical role in the reduction of emergency department visits, hospitalizations, and health care costs related to asthma. AS-ME programs usually involve various approaches to asthma management, such as reducing exposure to triggers, proper medication use, home environmental trigger reduction, and how to prevent and treat asthma exacerbations.

AS-ME programs can:

- ✓ Improve medication adherence
- ✓ Reduce missed school and workdays due to asthma
- ✓ Lower health care costs
- ✓ Lower emergency department visits and hospitalizations related to asthma

Asthma Action Plans

AS-ME should include a written **Asthma Action Plan**. They can reduce the risk of hospitalization by half, reduce emergency department visits, reduce unplanned doctor's visits, improve asthma outcomes, and quality of life.²⁶ This plan provides patients with information and instructions from their doctor on how to manage their asthma. It includes:

- Medicines
- Recognizing when symptoms get worse
- What to do in an emergency

According to studies, only around 52% of children usually receive Asthma Action Plans.²⁷ Around 12.7% receive AS-ME, and only 34% of families have been advised to change their home environment.²⁸

ASTHMA ACTION PLAN Asthma and Allergy Foundation of America

Name: _____ Date: _____

Doctor: _____ Medical Record #: _____

Doctor's Office #: _____ Night/Weekend: _____

Emergency Contact: _____

Doctor's Signature: _____

Personal Best Peak Flow: _____

Good Use these daily controller medications. **GREEN** means Go Zone! Use preventive medications.

CAUTION Continue with green zone medicine and add. **YELLOW** means Caution Zone! Add quick-relief medications.

DANGER Take these medicines and call your doctor now. **RED** means Danger Zone! Get help from a doctor.

GET HELP FROM A DOCTOR NOW! Your doctor will want to see you right away. It's important! If you cannot contact your doctor, go directly to the emergency room. **DO NOT WAIT.** Make an appointment with your asthma care provider within two days of an ARI visit or hospitalization.

Inhaler Technique

Up to 92% of people with asthma use their devices incorrectly.²⁹ Various factors can cause the medicine to land in the mouth instead of the lungs. Factors that affect inhaler use are:

- Not having this addressed during medical appointments or pharmacy education
- Improper timing of medicine actuation with inhalation
- Not having enough breath control to fully inhale (especially in older adults)
- Lack of access to spacers/valved holding chambers – despite improving delivery of the inhaled medicine into the lungs, these are not automatically included with metered dose inhalers and must be prescribed and filled/purchased separately



Home Visits, Assessments, and Trigger Remediation

Environmental control in the home – the practice of identifying and reducing asthma triggers and allergens – is a core pillar of asthma management. People spend up to 90% of their time indoors. One-third of life is spent sleeping. Bedrooms can be full of asthma triggers including dust mites, mold, animal dander, scents, and chemicals. When exposure to asthma triggers is reduced – especially in the bedroom – asthma is easier to control.

Asthma home visit programs that include AS-ME, home assessments, and multicomponent trigger remediation can have a significant impact on a home's indoor air quality and asthma outcomes. Many people – particularly children and groups at higher risk of poor asthma outcomes – can benefit from a home visit program that assesses asthma triggers and ways to remove, reduce, or remediate them.^{30,31}

This has been evident through AAFA's Health Equity Advancement and Leadership (HEAL) program. The HEAL program supports local organizations that work to improve asthma outcomes in communities facing the highest burden of asthma and allergic diseases. Many of these programs serve their local communities through providing asthma education, home visits (in-person and virtual), assessments, and interventions that help reduce exposure to asthma and allergy triggers. Although the program is ongoing, success is already being seen. Data has shown measurable improvements in asthma control, daily functioning, and quality of life.³²

Reimbursements

Access can be a barrier to AS-ME. Even though AS-ME has been shown to improve asthma outcomes and reduce health care costs, reimbursement and coverage is lacking. Most state Medicaid programs cover some form of AS-ME, but coverage is not consistent. Private insurance coverage for AS-ME also varies. Coverage may depend on factors like the setting (whether provided during an in-office appointment versus at home or in a group setting) or on who is providing the education (your doctor versus a certified asthma educator or respiratory therapist).



Community and Social Factors that Affect Asthma Control

An individual can do all they can to control asthma, but ultimately the ability to control asthma is influenced by external factors outside of an individual's control. For example, exposure to air pollution can happen both indoors and outdoors. Indoor air can be up to 5 times more polluted than outdoor air. Buildings can trap harmful air pollution and other asthma triggers inside. This is a critical area to address in housing policy, building maintenance, school environmental policies, and workplace accommodations to improve asthma outcomes.

Standard Asthma Risk Factors

Certain risk factors can contribute to rates of asthma prevalence, emergency department visits, and deaths. Some of the top risk factors for asthma are:

- Poverty
- Lack of health insurance
- Lack of access to specialists or medicine
- Exposure to air pollution
- Respiratory infections
- Pollen allergy
- Confirmed food allergy
- Pregnancy
- Overreliance on quick-relief medicines
- Smoking (cigarettes, cigars, vapes)

Unpredictable Nature of Asthma

An individual's asthma education and treatment cannot always prevent the effects of external factors outside their control. Factors such as wildfire smoke, pollution, and heat islands caused by urbanization and industry expansion, societal changes and exposures, and primary access to insurance through employment can make asthma control unpredictable. For example, AI and data centers are quickly becoming threats to asthma management. AI tools are believed to have increased health insurance claim denials as much as 16 times higher.³³ During emergency use, backup diesel generators



at data centers emit 200–600 times more nitrogen oxide pollutants than natural gas plants and form heat islands in a 6-mile radius.^{34,35,36,37} Data centers are predicted to cause significant health damage and raise health costs in their surrounding areas.

Health in All Policies

Root causes of uncontrolled asthma include poverty, environmental elements (such as air pollution, pollen, and extreme temperatures), lack of asthma education, and access to appropriate health care.

A “health in all policies” approach is one solution for uncontrolled asthma. This is a holistic approach to improving health by acknowledging the health implications of policy decisions in all sectors.³⁸ While policies that directly relate to health care are essential to improving asthma outcomes, they are not enough.

Many social and structural drivers of health fall outside traditional health care. Promising policy solutions require partnerships across many sectors, including health, education, labor, housing, social services, and city planning. Adopting this approach allows for solutions that address the complex and interconnected factors perpetuating poor asthma health.

SPOTLIGHT: The Transition to Lower Climate Impact Propellants for Inhalers

Managing asthma well depends on more than just the medicines themselves. It also depends on the systems and supply chains that make sure people can actually get those medicines. Most asthma inhalers are metered-dose inhalers, which use compressed gas propellants to deliver medicine to the lungs. These propellants are also powerful greenhouse gases.

Regulators in many countries are moving away from current inhaler propellants and choosing more climate-friendly alternatives. This shift is coming to the U.S. as well, and it will change how inhalers are made, approved, priced, and covered.

Switching to cleaner propellants is a win for the environment. But it also brings up important questions about cost and access that payers, policymakers, and community organizations need to start thinking about now.

What Is a Propellant?

Inhaled asthma medicines reach the lungs in several ways:

- Dry powder inhalers (DPIs) use a person's own breath to pull in the medicine.
- Soft mist inhalers (SMIs) release a slow-moving spray.
- Metered-dose inhalers (MDIs) use pressurized canisters with a liquefied gas, called a propellant, to deliver a measured dose of medicine.

The propellant in an MDI is an important non-active ingredient. It affects how quickly the spray comes out, the size of the medicine particles, how far they reach in the lungs, and how consistent each dose is.

Most inhalers today use hydrofluoroalkanes (HFAs) as propellants. The most common, HFA-134a, has a global warming potential (GWP) about 1,400 to 1,500 times higher than carbon dioxide over 100 years.³⁹ A high GWP does not mean a gas is toxic or unsafe to inhale. It means that when the gas is released into the air, which happens every time an inhaler is used, it contributes disproportionately to global warming.



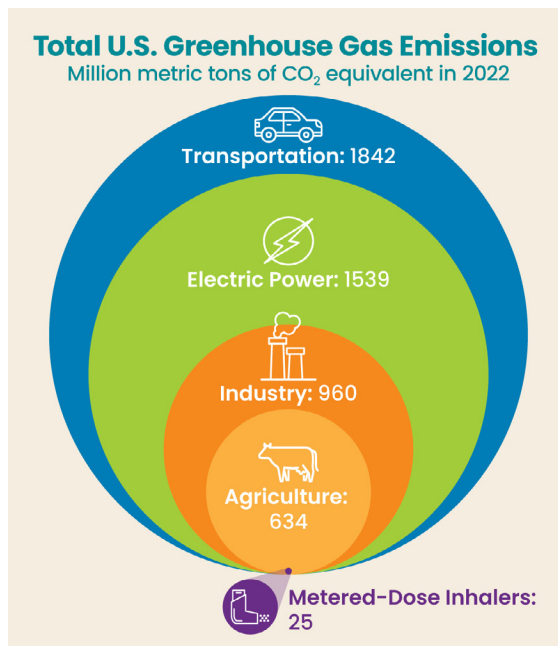
Emissions of Current Propellants

Metered-dose inhalers account for roughly 87% of all inhaler use in North America, one of the highest rates of any region in the world.⁴⁰ Researchers estimate that inhalers used for asthma and chronic obstructive pulmonary disease (COPD) in the U.S. generated approximately 24.9 million metric tons of carbon dioxide equivalent emissions between 2014 and 2024.⁴¹

These numbers are important, but they need context. Two points are worth keeping in mind:

Emissions from life-saving asthma inhalers represent only a small portion of the overall climate and air pollution burden. Industrial, transportation, and energy emissions remain far larger levers, and they also directly worsen asthma by causing poor air quality.⁴²

Well-controlled asthma is itself a climate intervention. Poorly controlled asthma generates roughly three times the overall carbon footprint of well-controlled asthma.⁴³ That difference is driven by what poor control leads to: when asthma is not well managed, it often leads to uncontrolled symptoms, higher usage of “rescue” MDIs, more emergency department visits and hospital stays, and unplanned ambulance rides. Each of these has a much bigger climate impact than routine, well-managed care.^{44,45}



A Disruptive and Costly Transition

This is not the first time the U.S. has transitioned inhaler propellants. Until the early 2000s, inhalers used chlorofluorocarbons (CFCs) as propellants. When CFCs were identified as a primary cause of ozone layer depletion, 197 countries adopted the Montreal Protocol in 1987, a global treaty that phased out the production and use of ozone-depleting substances.

Medical inhalers received a temporary exemption because no suitable alternative existed. That exemption ended and in 2008, the FDA required manufacturers to reformulate their products with HFAs.⁴⁶ The transition was disruptive. Patients encountered unfamiliar devices, some reported that the new inhalers felt different or ineffective, and reformulated products entered the market as brand-name drugs after generic versions of the older formulations had been available.

HFAs addressed the ozone problem. They did not solve the climate problem. HFAs do not deplete ozone, but they are powerful greenhouse gases, which is why they are now being addressed under a separate international agreement. The Kigali Amendment to the Montreal Protocol, agreed to in 2016 and in force since 2019, commits participating countries to a legally binding phase-down of HFAs. The U.S. ratified it in 2022.⁴⁷

The shift from CFCs to HFAs taught an important lesson: if inhaler reformulation focuses only on the chemistry, patients end up dealing with the disruption later. Planning with patients in mind means including affordability, device familiarization, and access protections from the beginning, not after the transition has started.

The Next Generation of Propellants

Researchers and manufacturers are developing two candidates for next-generation propellants with substantially lower, or near-zero, global warming potential (GWP): HFO-1234ze(E) and HFA-152a.⁴⁸

Switching to a new propellant is not as simple as swapping one ingredient for another. The propellant affects how the spray works, including its speed, the size of the particles, and the consistency of each dose. Reformulating an inhaler often means redesigning both the medicine and the device, and then testing to make sure the medicine still reaches the lungs as intended.

Once an inhaler is reformulated with a new propellant, it is considered a new product under the law. That means it needs new approval from the FDA before people with asthma or COPD can use it.

Developing and getting approval for a metered-dose inhaler with a new propellant can take 6-10 years for each product. This means the transition will happen one inhaler at a time, as each is reformulated and reviewed by the FDA. The full switch to new propellants in the U.S. is expected to take years as there is no set date, currently.

The Global Picture

The European Union (EU) is ahead of the U.S. in this transition. The EU's F-gas Regulation, updated in 2024, removed a long-standing exemption that had protected medical inhalers from propellant phase-down rules.⁴⁹ Europe has already approved its first reformulated low-GWP inhaler, and European regulators have published detailed guidance on the data manufacturers must provide to demonstrate that a reformulated product performs the same as the existing version.^{50,51}

Europe's leadership in this transition matters for the U.S. too. Each year, about 349 million inhalers are made in the EU, and most are shipped to other countries.⁴⁰ When European rules change what gets made in those factories, decisions impact supply chains that the U.S. relies on.

In the U.S., no FDA-approved inhaler currently uses a next-generation, low-GWP propellant. The FDA has been working with device manufacturers to define an approval pathway for reformulated products.⁵²



Cost and Access

It can take 6–10 years to reformulate an inhaler and get FDA approval. Reformulation also restarts the patent clock, which delays when a generic version can come to market. Every manufacturer will have to make this switch, since the current propellants are being phased out. For patients, this could mean that an inhaler that is affordable now might only be a more expensive brand-name product for years after reformulation.

Faster approval pathways for generics and careful planning by payers could help close the gap between when a new inhaler comes out and when an affordable generic follows. Research shows that sudden changes in which inhalers are available can lead to more emergency department visits and hospital stays. That makes planning for this transition a clinical issue, not just a financial one.

A Regulatory Complication: PFAS

Another regulatory issue may affect how quickly the transition to the next-generation propellants happens. The propellants used in today's inhalers are considered per- and polyfluoroalkyl substances (PFAS). One of the two main candidates for the next generation of propellants is also a PFAS.

PFAS are a large group of fluorinated chemicals that are getting more attention from regulators. They are sometimes called "forever chemicals" because they do not break down easily in the environment. PFAS are found in many everyday and industrial products, like non-stick pans, food packaging, firefighting foam, stain-resistant fabrics, medical devices, and dental floss. In inhalers, fluorinated materials are used as a protective lining inside the canister.

In the U.S., PFAS regulation is a patchwork of state, not federal, action. Federal rulemaking has been limited while individual states have moved ahead with their own PFAS restrictions and reporting requirements. Most of these state laws exempt FDA-regulated drugs and medical devices. This keeps the domestic picture relatively stable for now, though those exemptions are written into individual state statutes and could be revisited.

That stability is not guaranteed. In 2024, AAFA wrote to the Maine Chamber of Commerce after an early, narrowly written state PFAS law almost unintentionally banned inhalers. This shows how environmental policies, even when well-meaning, can harm patients if they do not consider medical needs.⁵³

In Europe, a proposed PFAS restriction under the EU's REACH framework does not include a blanket medical exemption. The restriction could impact one of the two leading candidates for next-generation propellants because it is a PFAS. If only one of the two next-generation propellants stays viable, the entire European respiratory market could become dependent on a single supply source.⁵⁴

Medical societies and patient groups are urging regulators to balance patient safety concerns with environmental goals.

What Different Stakeholders Can Do to Ensure a Safer, Less Costly Transition

AAFA is working with manufacturers, payers, and government leaders to make sure affordability and access stay at the center of this transition, not as an afterthought.

Here's how different stakeholders can help get it right:

- **Manufacturers:** Move quickly to develop affordable, low-emission inhalers, and treat this as more than just a box to check. Give clinicians and payers enough advance notice about reformulation timelines so they can prepare. Build easy-to-use take-back or recycling programs for inhaler canisters as new products become available.
- **Payers and pharmacy benefit managers:** Plan your formularies before reformulation happens, not after. Avoid making coverage changes that push patients off treatments already working for them.
- **Policymakers:** Back faster approval pathways for generics, monitor pricing during the transition, and review state PFAS laws to make sure medical exemptions remain practical. Invest in and standardize inhaler recycling programs. Right now, most patients do not know where to recycle an inhaler, and most pharmacies and take-back programs do not accept them.
- **Regulators:** Keep working with international partners so approval requirements remain coordinated and do not disrupt global supply chains.
- **Health systems and health care clinicians:** Remember that better asthma control is the most effective climate action in respiratory care. Prioritize patient education that can support better asthma management, such as effective inhaler technique.
- **Patient organizations:** Help patients and caregivers understand what is changing and why, so that confusion or cost does not become the reason someone stops their treatment.

Getting the best result will take all of these groups working together to lower emissions and protect access at the same time. To be successful, this transition needs real coordination, with patients' needs at the center.



Policy Barriers to Asthma Care and Treatment

Managing asthma requires access to effective treatment and consistent medical care, but many people cannot get the care they need. Where someone lives, the type of insurance they have, and the administrative rules that shape their coverage all affect how well their asthma is managed. When care is out of reach, the consequences compound: delayed treatment, preventable emergency care, and unnecessary hospitalizations. Children lose learning time when they miss school, and adults risk job stability and financial strain when they miss work.

Access-related barriers contribute to significant differences in asthma outcomes that are captured in AAFA's Asthma Capitals® report.

In 2026, several of these barriers are converging. The two coverage pathways that cover millions of people with asthma—Medicaid and the Affordable Care Act (ACA) marketplace—are both facing challenges that will lead to loss of coverage. At the same time, the systems that govern access to advanced asthma treatments and the infrastructure that tracks asthma burden nationally are under increased strain.

Access to Insurance Coverage

Insurance status is one of the strongest predictors of consistent access to asthma care. People without insurance, or with limited coverage, often face steep costs for office visits, emergency care, and medications. People with insurance often confront high deductibles and copays. Asthma medications, particularly newer, more targeted options, add another expense: people may ration inhalers, delay refills, or skip doses, and some families choose between asthma medicine and other household expenses.

These pressures show up directly in outcomes. Poorly controlled asthma leads to one million emergency department (ED) visits each year in the U.S.³ A CDC-authored study estimated that asthma cost the U.S. \$81.9 billion annually in 2013, including \$50.3 billion in medical costs.⁵⁵ Adjusted for inflation, AAFA estimates that the economic cost of asthma will be at least \$118 billion in 2026.

Changes to both Medicaid and the ACA marketplace coverage are unfolding at the same time, creating a coverage “cliff,” in which affordable coverage can become unavailable or substantially more expensive rather than changing gradually. These overlapping changes have real consequences for people with asthma, who depend on both pathways more heavily than the general population. Together, they will leave a larger share of people with asthma facing higher costs, thinner coverage, or no coverage at a time when consistent access to care is critical.

The Medicaid Side of the Cliff

Medicaid is central to how people with asthma get care. Nearly half of children with asthma in the U.S. depend on Medicaid or the Children's Health Insurance Program for coverage. Medicaid also provides coverage for millions of low-income adults, children, older adults, and people with disabilities and helps pay for the hospitals, physicians, and community health centers that deliver care in communities nationwide. When coverage narrows, the need for care doesn't disappear. People may delay routine care or medications and rely more heavily on emergency or urgent care, the most expensive and least prevention-focused parts of the system.

H.R. 1, the budget reconciliation law enacted in 2025, made the largest cuts to Medicaid in the program's history. Two provisions are driving most of the change for people with asthma on Medicaid as states begin implementing them in 2026 and 2027:

- **Work requirements*** — certain adult enrollees must report at least 80 hours a month of work, school, or other qualifying activity (like volunteering or job training) to keep their coverage. States must be in compliance by December 31, 2026. Some states, including Nebraska and Montana, are already enforcing it ahead of that deadline.^{56,57}
- **Eligibility verification** — shifts from annual to 6-month reviews, with the first renewals under the new cycle beginning January 2027.

Together, these changes mean more paperwork, more frequent proof of eligibility, and more points at which someone can lose coverage through a processing error or administrative burden rather than a change in circumstances.

Estimates of how many people will lose their coverage vary by source and have shifted as implementation begins. Independent estimates project 5–10 million people losing Medicaid coverage by 2028,⁵⁸ depending on how aggressively individual states work to mitigate the administrative burden the new rules create. The statute alone doesn't determine the outcome; how individual states handle renewals, exemptions, and outreach will have a major impact on how many people actually lose coverage.

Whether someone loses coverage due to these changes will depend on people being able to successfully navigate the process of proving they still qualify for coverage they already have. Arkansas piloted a similar work-requirement policy in 2018, and researchers who studied its first two years found that most of the coverage loss came from people failing to complete or submit the required paperwork, not from being found ineligible.⁵⁹ That experience provides an important warning for the national rollout: coverage losses can be driven by administrative friction and reporting requirements, not simply by people failing to meet the underlying eligibility criteria.

The net effect will likely be a meaningful rise in the number of uninsured people with asthma. Lack of insurance is one of the risk factors AAFA identifies in the Asthma Capitals report as a driver of poor asthma outcomes.

While some people who lose Medicaid coverage may return, these gaps in coverage can have real effects, like people ending up in emergency departments because they could not get their controller medications during a break in coverage. Even if the gap is temporary, it still matters, especially for a disease like asthma that can go from controlled to requiring hospitalization in just a few days.

* Work requirements will not apply in Alabama, Florida, Kansas, Mississippi, South Carolina, Texas, and Wyoming because these states have not expanded Medicaid to cover more low-income adults and do not have a relevant federal agreement (waiver) that applies work requirements to any part of their Medicaid population.

The Marketplace Side of the Cliff

Medicaid isn't the only coverage pathway under pressure in 2026. The ACA marketplace is undergoing a separate set of changes that are affecting a different population of enrollees.

The ACA's enhanced premium tax credits, which started in 2021 and were extended through 2025 by the Inflation Reduction Act, expired at the end of 2025. These tax credits worked like a discount (subsidy), capping what people paid for a marketplace health plan at a set share of their income. Without them, subsidized marketplace enrollees saw their annual premiums increase significantly in 2026.

The effect on enrollment has been substantial. Effectuated marketplace enrollment fell for the first time in 7 years, declining to 19.2 million people in 2026 from 21.8 million in 2025.⁶⁰ On average, net premium payments increased by 58% for people who signed up for 2026 coverage. Average deductibles rose 37%, to a record \$3,786, as more enrollees shifted into higher-deductible bronze plans to manage their premiums.⁶¹ A complete picture of the decline is still emerging, as coverage terminations for nonpayment continue to accumulate through the year.

The drop is concentrated just above the income threshold where subsidies disappear entirely. People with incomes above the subsidy cliff made up just 7% of 2025 enrollment but nearly half (48%) of the decline in plan selections from 2025 to 2026.⁶¹ Enrollment fell in nearly every state, but the steepest declines were in Ohio, Oklahoma, Arizona, South Carolina, and Indiana. New Mexico was the only state where enrollment grew, aided by a state program that fully replaced the expired federal subsidies.⁶⁰

For those who kept their coverage, the cost pressure shifted from the premium to the deductible. People who stayed enrolled are now more exposed to the cost of an actual asthma exacerbation, an ED visit, or a specialist appointment before their coverage fully kicks in.

Access to Medicines

Insurance coverage is not the only system under strain. Insurance coverage determines whether someone can get in the door. Whether they can get the asthma medication they need once in the door increasingly depends on a drug-access system that is also fragmenting.

There's no cure for asthma, but there are treatments that substantially reduce its burden. Asthma is a highly heterogeneous disease, meaning triggers, symptoms, and effective treatments vary widely from person to person. This makes getting the right medication to the right person, without unnecessary delay, especially important. Delayed care can lead to severe or irreversible outcomes, including long-term lung damage, reduced lung function, and worsening of symptoms and quality of life.

Drug Pricing and Coverage Policies

Because each state Medicaid program and individual health plan sets its own coverage rules, access to the same medication varies widely across the country. A person in one state may face multiple rounds of denial before getting approved for a biologic; a person with the same condition in another state may get approved quickly.

In 2026, access to asthma drugs is shaped by several layers of federal and state policy:

- Medicare Drug Price Negotiation Program — administered by the Centers for Medicare & Medicaid Services (CMS), sets federal negotiated prices for select high-cost drugs.
- State Prescription Drug Affordability Boards (PDABs) — can cap what payers and patients pay for a drug within a given state.
- State Medicaid Drug Utilization Review (DUR) boards and Pharmacy and Therapeutics (P&T) committees — review drug utilization and make coverage and formulary recommendations to help determine which drugs a state's Medicaid program covers and what utilization-management conditions apply.
- Insurers and Pharmacy Benefit Managers (PBMs) — influence formulary placement, preferred-drug status, cost sharing, and utilization-management requirements such as prior authorization and step therapy.

Because these policies operate at different levels, access to the same asthma medicine often varies based on insurance type, state, and plan design rather than clinical need alone.

AAFA is engaging policymakers across these channels in 2026 by:

- Participating in CMS's patient-focused roundtables as part of the Medicare Drug Price Negotiation Program, and submitting formal comments urging CMS to ensure negotiated savings translate into lower out-of-pocket costs for patients.
- Submitting comments and testifying before state PDABs, emphasizing that any price-setting action must include sufficient oversight and guardrails so that affordability measures do not unintentionally reduce patient access to asthma treatments.
- Advocating that state DUR boards and P&T committees place asthma treatments, including immunomodulator biologics, on preferred drug lists without step therapy or prior authorization requirements.

Utilization Management and Administrative Barriers

In this patchwork system, prior authorization and step therapy are significant obstacles between getting a prescription and actually filling it. These tools are meant to be clinical checks, but they often become roadblocks, especially for doctors who do not have enough staff to manage the paperwork.

Delays or denials can force patients to try less-effective treatments before getting the one their doctor recommends. This can make asthma care riskier and, over time, more expensive.

One study of patients starting biologic therapy for severe asthma found that the average time from prescription to first dose was 46 days, with prior authorization approval alone taking an average of 23 days.⁶² During this waiting period, 47% of patients had an asthma exacerbation that required oral corticosteroids, and three were hospitalized for asthma.⁶²

Most of the time, these delays do not stop inappropriate prescriptions. Instead, they add weeks of clinical risk. While tools like prior authorization and step therapy may have a place in a complicated drug-pricing system, they should not limit patient access for reasons that are not related to clinical need.

Public Health Infrastructure and Asthma Surveillance

Understanding how access to asthma care is changing requires reliable surveillance systems that can track coverage, treatment, and outcomes. As insurance coverage shifts, medication access becomes more complicated, and asthma disparities persist, policymakers need timely information to identify where the burden is greatest and whether interventions are reaching the people who need them. That work depends in part on federal public health and research infrastructure that supports consistent asthma surveillance across the country.

The CDC's National Asthma Control Program (NACP) is the only federal program dedicated specifically to asthma prevention and surveillance. The program supports states and communities in tracking asthma prevalence, identifying disparities, developing interventions, and evaluating progress. Its work provides much of the foundation for state-level asthma data used to identify communities with greater disease burden and target public health resources and advocacy—including in reports like AAFA's Asthma Capitals.

This infrastructure is facing increased pressure. Changes to how federal research and public health funding decisions are made could affect which programs receive support, how funding is distributed, and whether data collection and surveillance efforts can be sustained over time.

Asthma surveillance and research infrastructure is the foundation for understanding whether the changes described in the Asthma Capitals report are improving or worsening access and outcomes. Without consistent data, policymakers, researchers, and public health leaders have less ability to identify emerging problems, direct resources, or evaluate whether interventions are working.

In a year when Medicaid and ACA marketplace coverage are changing at the same time that access to asthma medicines is being shaped by an increasingly complex set of federal and state policies, maintaining that infrastructure is essential to ensuring that changes in asthma outcomes can be measured and addressed.

What Decisionmakers Can Do to Ensure Affordable Access to Asthma Care and Treatments

- **Congress:** pass the Safe Step Act (H.R. 5509/S.2903) to require group health plans to provide a clear and timely exceptions process for step therapy protocols; advance PBM reform to increase transparency into how PBMs operate, reduce conflicts of interest, and ensure rebate savings reach patients; conduct appropriate oversight of H.R. 1 implementation and the impact it will have on asthma patients; fund the NACP at a level sufficient to expand to all 50 states and territories.
- **CMS:** finalize its proposal extending electronic prior authorization to drugs under both the medical and pharmacy benefit, to reduce delay across the board. Specific asks include requiring clear, timely denial communications that support fast appeals and resubmissions; ensuring implementation protects continuity of care; making prior authorization data public and meaningful to stakeholders; and preventing pharmacy benefit manager involvement from undermining existing patient protections.
- **Payers and pharmacy benefit managers:** ensure formulary placement and tiering for asthma medications reflect clinical evidence; limit step therapy and prior authorization requirements to evidence-based treatment guidelines and provide a clear, timely exceptions process for when they are used.
- **Researchers, public health leaders, and funders:** sustain and protect the public health infrastructure that supports asthma surveillance and identifies where disparities are the greatest.

AAFA-Funded Programs Support High Risk Populations in Asthma Capitals®

The Asthma Capitals report acknowledges that where a person lives can significantly impact their health. Social, economic, and environmental disadvantages play a role in determining asthma outcomes. Many of the top Asthma Capitals are also facing major challenges and inequities that lead to health disparities.

In 2020, AAFA detailed wide gaps in asthma prevalence, access to care, and health outcomes, and offered strategies to address racial and ethnic inequities in asthma.⁶³ Since 2022, AAFA has invested in local communities through its **Health Equity Advancement and Leadership (HEAL)** initiative. HEAL is designed to reduce asthma deaths and illness among high-risk populations by pairing AAFA's national leadership with the knowledge and action of local communities. HEAL strengthens AAFA's commitment to narrowing health gaps in the places that carry the highest burden of asthma.

Though each program site is conducting different interventions, the programs feature similar components that are proven to improve asthma outcomes and health: care coordination and support; asthma self-management education; environmental home assessment and tools; general health and wellness; and other tools and resource connections.

AAFA's 2022–2026 HEAL Sites and Collaborations:



To learn more about AAFA's HEAL sites, visit aafa.org/healthequity.

AAFA's HEAL initiative is made possible through the generous financial support of the **American College of Allergy, Asthma & Immunology (ACAAI), Amgen, AstraZeneca, Chiesi, Genentech, Novartis, Sanofi, Regeneron, and Viatris**. We are deeply grateful for their commitment to advancing health equity and improving asthma outcomes for communities that are most impacted.



Jarnae Murray and her son

The Power of Community

Jarnae Murray is a community health worker (CHW) supporting families managing asthma in Dallas and Perry counties, Alabama, and a mom to a young child with asthma. Just weeks before she joined AAFA's HEAL program, her son had his first asthma attack. The training that followed helped her identify triggers in her own home, including scented candles and strong cleaning products, giving her a firsthand understanding she now brings to her work with families.

That shared experience builds trust. "Families thought we were connected to a doctor's office," Jarnae recalls. "They were afraid to let us in." Over time, families opened up, sharing concerns like mold in the home or a child needing a new mattress. The HEAL program offered resources to help in addition to Jarnae's expertise. Word spread, referrals grew, and the program now has a waiting list for its next year.

Impact, Both Ways

HEAL helped Jarnae manage her own family's asthma while giving her work she didn't expect to find so fulfilling. "People say 'thank you' a lot to me," she says. "That goes a long way — just knowing I'm doing something good and impacting somebody's life."

Impact

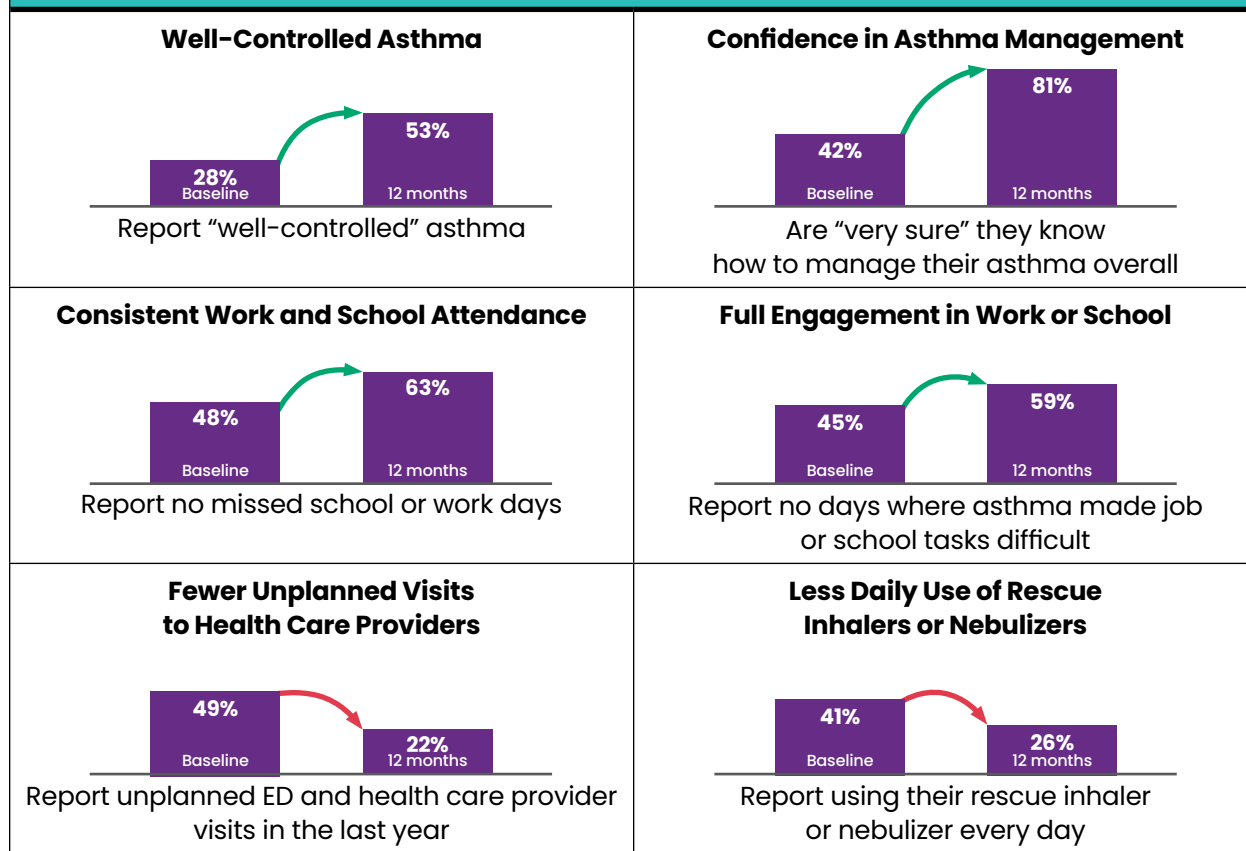
Though the HEAL interventions are ongoing, enrollment and evaluation data to date show that HEAL is reaching and serving people experiencing a disproportionate burden of asthma. HEAL intentionally supports populations most affected by asthma disparities—including Black and Hispanic communities, as well as those who have low incomes or rely on Medicaid. Current HEAL site participant data highlights this focus:

- 52% identify as Black or African American; 34% as Hispanic or Latinx
- 69% identify as women
- 55% report an annual household income of less than \$25,000
- 61% receive Medicaid
- 21% receive Medicare

Across all HEAL sites, program participants complete a voluntary self-reported survey at baseline, and then again once they had been in the program for 3 months, 6 months, and 12 months. The survey collects data including:

- Asthma severity and control
- Quality of life
- Asthma care experience (health care team, treatments, etc.)
- Asthma management self-confidence
- Social determinants of household health needs (transportation, safe housing, etc.)

After one year HEAL participants report measurable improvements in asthma control, daily functioning, and quality of life.
Key self-reported outcomes include*:



*Data as of July 29, 2026; n=174 participants who completed both the baseline and 12-month survey

Validated assessments confirm these self-reported improvements. Using the Asthma Impairment and Risk Questionnaire (AIRQ™), participants’ average scores improved from 4.2 at baseline to 2.5 at 12 months, showing a clear shift toward better asthma control.

AIRQ: Validated Tool for Asthma Control



Average baseline score: **4.2**
 Average 12-month score: **2.5**

*Data as of July 29, 2026; n=174 participants who completed both the baseline and 12-month survey

HEAL provides measurable health equity benefits—improving asthma control, restoring productivity, and helping more people with asthma live healthier, fuller lives.

Fostering Asthma & Allergy Friendly® Spaces From the Classroom to the Community

AAFA's Asthma Capitals® identifies the environmental and community factors that make living with asthma more challenging. Addressing the challenges these factors create takes more than health systems and policymakers — it also takes the companies whose everyday products can ease that burden. That's the premise behind the **Asthma & Allergy Friendly®** Certification Program, created by AAFA and Allergy Standards Limited (ASL) to give families confidence in products tested and proven to reduce asthma and allergy triggers.



Beyond manufacturing products, many of the companies behind Certified products also invest in programs and community initiatives that support people living with asthma. This year's partnerships show what that commitment looks like in practice: cleaner air in under-resourced classrooms, practical tools in the hands of community health workers, relief for households rebuilding after wildfire and warehouse fire disasters, and healthier flooring across entire school districts — proof that corporate giving, done well, can meaningfully improve outcomes for the community.

Certified for the Classroom: Why Indoor Air Quality in Schools Matters

More than 55 million children and 7 million adults spend their days inside American school buildings, and students log roughly 1,000 hours a year in the classroom. According to the U.S. Environmental Protection Agency (EPA), half of the nation's schools have poor indoor air quality, exposing students (and teachers) to dust, mold, volatile organic compounds, and other triggers that can worsen asthma and allergies, drive absenteeism, and impede concentration. In fact, asthma is a leading cause of missed school days, responsible for more than 13 million school absences each year.⁶⁴ Research suggests improving indoor air quality can boost cognitive performance by as much as 61%, underscoring how much is at stake for student wellbeing and academic outcomes alike. 3M Filtrete, Alen, and Tarkett are tackling this challenge this year directly in classrooms and communities.



Kids in Need Foundation staff distribute 3M-donated Filtrete™ Air Filters to Minnesota schools.

3M Filtrete™: Bringing Cleaner Air to Under-Resourced Classrooms

A donation from 3M is helping teachers and students in Minnesota reduce their exposure to indoor allergens. The company gave 5,600 Filtrete™ Air Filters to the Kids in Need Foundation, providing local schools with a practical tool for reducing allergens and improving indoor air quality.

"For many under-resourced classrooms, creating a healthy learning environment can be challenging due to limited resources and the

impact of allergens and air quality on students and educators," said Colleen Gray, Vice President of Mission Impact at the Kids in Need Foundation. "Through the donation of Filtrete™ Air Filters, the Kids in Need Foundation was able to provide Minnesota classrooms with a simple but meaningful tool to support cleaner air, reduce allergens, and create healthier spaces where students can learn and teachers can thrive."

Headquartered in the Greater Minneapolis–St. Paul area (2026 Asthma Capital rank: 54), 3M's donation reflects its broader commitment to supporting healthier indoor environments through both community initiatives and science-backed innovation.

Alen: Certified Air Purifiers at Scale in America's Classrooms

For Alen, improving indoor air quality in schools is core to the company's mission of helping people improve the air quality wherever they spend their time. Alen air purifiers are currently used in 90,000 classrooms across 3,000 schools, helping to support cleaner indoor air at scale — reducing airborne particles that affect student health and concentration.

"Improving indoor air quality is one of the most effective ways to support consistent school attendance," said Warburg Lee, Founder and CEO of Alen. "Fewer sick days mean fewer disruptions to learning and better outcomes for students and families alike."

Paul Miller, Director of Product and Engineering at Alen, adds: "We talk a lot about student performance, but it starts with presence. Cleaner air helps children stay healthier, which means more days in school and fewer missed lessons."

Tarkett: Flooring That Lays the Foundation for Healthier Learning

When Cypress–Fairbanks ISD — the third-largest school district in Texas — renovated Roy J. Sprague Middle School, healthier indoor air was part of the plan.



Roy J. Sprague Middle School, with Asthma & Allergy Friendly Certified flooring from Tarkett® Powerbond® RS

"Flooring is essentially a reservoir of everything in the air, so it needs to be something that can be cleaned easily and doesn't hold onto contaminants," said Sylvia Fitzwater, Interior Designer at Arcadis. "I have to consider indoor air quality when selecting flooring because it impacts the students' health, it impacts everyone who walks into that building."

That thinking led the team to Tarkett® Powerbond® RS hybrid carpet — the world's first soft-surface flooring to earn **Asthma & Allergy Friendly** Certification — for the school's entry, corridors, classrooms, and library.

"Our school buildings become core memories of our youth," Fitzwater said. "For a lot of people, it's a home away from home."

Sprague is one of the growing number of schools and public spaces where designers have used Tarkett's Certified flooring.

Knauf: Sponsoring Community Health Education in Chicago for a Second Year

For the second year running, Knauf North America sponsored the Chicago Asthma Consortium's Community Health Worker Educational Forum, held May 21, 2026, at Sinai Chicago's Glasser Auditorium. The forum brought together community health workers and asthma educators from across the city for training, networking, and collaborative outreach — equipping the people on the front lines of asthma care with practical tools to bring back to their communities.

As part of the day, attendees packed 300 **Asthma & Allergy Friendly** resource tote bags, filled with educational materials from AAFA and product contributions from Certified partners. The bags were distributed to schools, clinics, churches, and community centers across Chicago, putting trusted resources directly into the hands of the families and frontline workers who need them most.

"We are proud to support the Chicago Asthma Consortium and the important work they do," said Tim Cofran, Director of Marketing & Brand at Knauf. Continuing that partnership for a second year reflects how seriously Knauf takes its role in the community and equipping community health workers with practical resources. It is part of the company's broader effort to reach the more than 106 million people in the U.S. living with asthma and/or allergies by getting trusted tools directly into underserved communities.



Knauf team members help pack 300 resource bags at the Chicago Asthma Consortium Event



From left to right: Melissa Budisch, Grace Wambach, Tim Cofran, Leah McInerney, Rachelle Paul-Brutus, Teagan McKittrick, Sanaz Eftekhari

Rabbit Air: Delivering Clean Air Where It's Needed Most in Los Angeles

In June 2026, Rabbit Air partnered with Watts Healthcare Corporation to support underserved families in South Los Angeles, donating 25 air purifiers to the organization's Asthma Remediation Program. Watts Healthcare provides vital home-based support to local children and adults, using in-home evaluations and education to identify environmental triggers. The donated units equip these households with reliable high-efficiency particulate air (HEPA)-filtered air purifiers that trap airborne particles and pollutants, helping families maintain cleaner indoor air.

The donation builds on Rabbit Air's long-standing commitment to AAFA's Health Equity Advancement and Leadership (HEAL) program. Most recently, the company fulfilled an order of 300 air purifiers for Breathe Southern California, providing a free upgrade to its MinusA2 model to assist residents affected by the warehouse fire in Boyle Heights — helping ensure families displaced or impacted by the disaster had access to cleaner air during their recovery.



A Watts Healthcare Corporation team member helps load Certified Rabbit Air purifiers destined for families in the South Los Angeles Asthma Remediation Program

"Supporting communities affected by wildfires, warehouse fires, or simply a lack of access to clean air is central to who we are," said Tamina O'Brien, senior team member at Rabbit Air. "Whether it's through Watts Healthcare in South LA or our continued work with Breathe Southern California, we're proud to keep showing up for the neighborhoods that need us most."

Headquartered in the Greater Los Angeles area (2026 Asthma Capital rank: 34), Rabbit Air continues to respond directly to the region's most pressing air quality challenges, strengthening ties with community organizations to help bring cleaner air to families and communities.

Kleenex® Air Filters: Bringing a Year of Clean Air to 200 Families



Linda and Jasmine delivering Certified Asthma & Allergy Friendly® Kleenex® Elite Allergen Air Filters to households served by AAFA's Health Equity Advancement and Leadership (HEAL) program in Alabama

During National Asthma and Allergy Awareness Month, Kleenex® Air Filters donated a year's supply of its Certified Elite Allergen MERV-13 furnace filters to 200 families, delivered through partnerships with AAFA's Health Equity Advancement and Leadership (HEAL) program, the Chicago Asthma Consortium, and Habitat for Humanity ReStores nationwide.

The donations reached families in Chicago, Illinois; Detroit, Michigan; Allentown, Pennsylvania; Boise, Idaho; Tulsa, Oklahoma; Provo, Utah; and Auburn, Alabama — communities recognized among AAFA's most challenging places to live with asthma and allergies. Since earning **Asthma & Allergy Friendly** Certification in 2024 for its Elite Allergen Air Filters (MERV 12 and MERV 13), Kleenex has committed to helping protect homes and families with cleaner air, particularly those facing higher environmental risks.

"Access to clean indoor air is important no matter where you live," said Sharnell Weathersby, Senior Brand Manager, Kleenex® Air Filters. "We are honored to support the goals of Habitat for Humanity and HEAL by providing air filters that help promote clean indoor air quality for homes."

Rachelle Paul-Brutus, Executive Director of the Chicago Asthma Consortium, added: "Improving access to better indoor air quality is essential for protecting the health and well-being of local families with respiratory conditions like asthma to create lasting positive change within the community."

Thank You to This Year's Certified Partners

A special thank you to all of the partners who donated Certified **Asthma & Allergy Friendly** products in support of the asthma and allergy community this year, including through the 2026 American Academy of Allergy, Asthma & Immunology (AAAAI) Annual Meeting in Philadelphia and the Chicago Asthma Consortium's Community Health Worker Forum: 3M Filtrete, Alen®, Allied Home, Benjamin Moore, Blueair, Kleenex, Knauf North America, Lanco Paints, Live Comfortably, LG Electronics North America, Manson Insulation, Mohawk Industries, National Allergy, Purfect Palz, Rabbit Air, Renegade Brands, SIJO, Tarkett, Tarkett Home, Trane, and True Value Company.

AAFA also thanks our **Asthma & Allergy Friendly** Certification Program partners for their generous product donations that support families participating in AAFA's HEAL programs:

- **Kleenex** – 200 home air filters
- **Pegasus Home Fashions** – 230+ pillow sets
- **Rabbit Air** – 300+ air cleaners
- **Renegade Brands** – 930+ bottles of detergent

About the Asthma & Allergy Friendly® Certification Program

The **Asthma & Allergy Friendly** Certification Program is a unique, groundbreaking collaboration between the Asthma and Allergy Foundation of America (AAFA) and Allergy Standards Limited (ASL). The program tests and certifies products against strict standards to prove their suitability for people with asthma and allergies. Products passing these tests earn the **Asthma & Allergy Friendly** Certification Mark. The Certification Program works with retailers and manufacturers to offer consumers products for a healthier home.

Certified products include air cleaners, air filters, paints, bedding, flooring, vacuum cleaners, laundry appliances and detergent, cleaning products, and more. Visit aafa.org/certified for more information.



Methodology

The 2026 Asthma Capitals® research and ranking is reported by the Asthma and Allergy Foundation of America (AAFA). The ranking is based on analysis of data from the 100 most-populated Metropolitan Statistical Areas (MSAs) in the contiguous 48 states as determined by the most recent U.S. Census Bureau population estimates (2024). The three (3) individual factors analyzed for the 2026 rankings are: estimated asthma prevalence; crude death rate from asthma; and emergency department visits due to asthma. Weights are applied to each factor and factors are not weighted equally. Total scores are calculated as a composite of all 3 factors, and cities are ranked from highest total score (city rank #1) to lowest total score (city rank #100).

Estimated Asthma Prevalence

For each MSA, AAFA estimated asthma prevalence using claims data for individuals who sought asthma care at any point in the 2025 calendar year. Data were obtained from the Komodo Healthcare Map® for the most recent calendar year (2025).

Crude Death Rate From Asthma

For each city, AAFA obtained the estimated asthma-related crude death rate per 100,000 people for the respective county using asthma ICD-10 codes as the underlying cause of death. Data were obtained from the CDC's WONDER Online Database for the most recent 5-year period (2020–2024).

Emergency Department Visits Due to Asthma

For each MSA, AAFA obtained the total number of emergency department visits using claims data where an asthma ICD-10 code was included as a diagnosis. Data were obtained from the Komodo Healthcare Map for the most recent calendar year (2025). Emergency department visits were calculated per 10,000 asthma patients using prevalence estimates.

Risk Factors

Data on the following asthma-related risk factors were obtained and analyzed; however, these data did NOT factor into the scores or rankings. Data are from the most recently available calendar year.

- Poverty rate – For each city, AAFA obtained the estimated population living in poverty for the respective county. Data were obtained from the United States Census Bureau Small Area Income and Poverty Estimates (2024).
- Uninsured rate – For each city, AAFA obtained the estimated population without health insurance for the respective county. Data were obtained from the United States Census Bureau Small Area Health Insurance Estimates (2023).
- Access to specialists – For each MSA, AAFA obtained the number of asthma specialists per patient prevalence. Data were obtained from the Komodo Healthcare Map for the most recent calendar year (2025).
- Annual air quality – For each city, AAFA obtained pollution levels and number of unhealthy outdoor ozone days, scored on a scale of A (best) to F (worst) for the respective county. Data were obtained from the American Lung Association 2026 State of the Air Report, which analyzed air quality monitoring data from 2022–2024.
- Seasonal respiratory infection vaccination – For each MSA, AAFA obtained estimated billed vaccination rates for COVID-19 and flu for the most recent viral season (2025–2026) and for all-time RSV. Data were obtained for COVID-19 and flu vaccination from Komodo Health® from August 1, 2025–June 30, 2026, to account for the full period of seasonal vaccine availability. Data were obtained from Komodo Healthcare Map for RSV vaccination from August 1, 2023–June 30, 2026, to account for vaccination rates since commercial availability.

- Emergency department visits due to flu – For each MSA, AAFA obtained the total number of emergency department visits using claims data where an ICD-10 code for flu was included as a diagnosis. Data were obtained from the Komodo Healthcare Map for the most recent calendar year (2025).
- Public smoking laws – For each city, AAFA obtained the number of “100% smoke-free” public smoking bans as of July 1, 2026. Data were obtained from the American Nonsmokers’ Rights Foundation.
- Pollen allergy – For each MSA, AAFA obtained daily pollen counts for each growth form (tree, grass, and weed). Data were obtained from Pollen Sense, LLC Automated Particulate Sensors (APS) for the most recent calendar year (2025).

Limitations

Data presented in this report have limitations that AAFA would like to acknowledge. Asthma data that are comparable to other states are limited in Alaska and Hawaii as well as U.S. territories and tribal nations; therefore, these locations are not included in this report.

Additionally, calculations for estimated prevalence are based on health care claims data, which may exclude people with asthma who do not seek health care. While claims data do not provide an exact measure of prevalence, they provide data that can be compared from city to city. These prevalence estimates are also used in the calculations for ED visits per 10,000 asthma population and asthma specialists per patient population.

Additionally, claims data were used to calculate vaccination rates for COVID-19, flu, and RSV. These data reflect vaccinations that were billed and therefore may not account for vaccinations provided through retail pharmacy cash or vaccine-only programs, employer and school clinics, or health-department events, which frequently produce no adjudicated claim.

RSV vaccination rates were also calculated against the total population of the respective MSA, rather than against the population that is eligible to receive the vaccine. Therefore, MSAs with lower proportions of older adults, pregnant people, and adults with risk factors may naturally have lower RSV vaccination rates.

Finally, due to data limitations, asthma mortality data in this report is analyzed at the county level, and for the past 5 years, which differs from the analysis of the other two factors used in the rankings.

AI Use Disclosure

No artificial intelligence (AI) was used in the writing or design of this report. However, data sources for this report use AI for data analysis and reporting. Pollen Sense, LLC uses machine learning classification to identify and categorize pollen types to produce the daily mean pollen counts used in this report’s analysis. Additionally, flu and COVID-19 vaccination counts and rates were produced by Komodo Health’s health care analytics artificial intelligence agent.

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References

1. National Center for Health Statistics. (2025). *2024 NHIS Adult Summary Health Statistics*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. <https://data.cdc.gov/d/25m4-6qqq>
2. National Center for Health Statistics. (2025). *2024 NHIS Child Summary Health Statistics*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. <https://data.cdc.gov/d/wxz7-ekz9>
3. Agency for Healthcare Research and Quality. (2023). *Healthcare Cost and Utilization Project (2020)*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. https://www.cdc.gov/asthma/healthcare-use/2020/table_a.html
4. National Center for Health Statistics. *National Vital Statistics System: Mortality (2018–2024)*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. <https://wonder.cdc.gov/ucd-icd10-expanded.html>
5. CDC National Asthma Control Program (NACP). (2023). *Asthma Surveillance in the United States, 2001–2021*. National Center for Environmental Health, Centers for Disease Control and Prevention. <https://www.cdc.gov/asthma/asthma-prevalence-us-2023-508.pdf>
6. Centers for Disease Control and Prevention. (2026). *Most Recent I Asthma Data—Prevalence*. U.S. Department of Health and Human Services. <https://www.cdc.gov/asthma-data/about/most-recent-asthma-data.html>
7. Zhou, X., Sampath, V., & Nadeau, K. C. (2024). Effect of air pollution on asthma. *Annals of Allergy, Asthma, & Immunology*, 132(4), 426–432. <https://doi.org/10.1016/j.anai.2024.01.017>
8. United States Environmental Protection Agency. (2026). *The inside story: A guide to indoor air quality*. <https://www.epa.gov/indoor-air-quality-iaq/inside-story-guide-indoor-air-quality>
9. Institute for Policy Integrity. (2026). *Tracking the Damages of Regulatory Rollbacks: The Economic and Public Health Costs of the Trump Administration’s Environmental Deregulation*. New York University School of Law. <https://policyintegrity.org/tracking-regulatory-rollbacks>
10. Agaku, I. (2026). Tobacco Product Use among U.S. Adults, 2023–2024. *NEJM Evidence*, 5(4). <https://doi.org/10.1056/evidpha2500339>
11. Patra, K. (2017). *Tobacco and Children with Asthma*. American Academy of Pediatrics. <https://www.healthychildren.org/English/health-issues/conditions/tobacco/Pages/Tobacco-and-Children-with-Asthma.aspx>
12. Bottoms-McClain, L., Giri, A., & Ng, A. (2026). *Diagnosed Allergic Conditions Among Adults: United States, 2024*. Centers for Disease Control and Prevention, National Center for Health Statistics. <https://doi.org/10.15620/cdc/174634>
13. Ng, A., Giri, A., & Bottoms-McClain, L. (2026). *Diagnosed Allergic Conditions Among Children Ages 0–17 Years: United States, 2024*. Centers for Disease Control and Prevention, National Center for Health Statistics. <https://doi.org/10.15620/cdc/174635>
14. Grayson, M. (2024). *Respiratory Infections*. Asthma and Allergy Foundation of America. <https://aafa.org/asthma/asthma-triggers-causes/respiratory-infections-flu-cold-asthma/>
15. Prosser, L. A., Wallace, M., Rose, A. M., Kerra Mercon, Janusz, C. B., Gebremariam, A., Hutton, D. W., Leidner, A. J., Zhou, F., Ortega-Sanchez, I. R., Moulia, D., Link-Gelles, R., Saydah, S., Shah, M., & Pike, J. (2025). Cost-effectiveness of 2023–2024 COVID-19 vaccination in US adults. *JAMA Network Open*, 8(8), e2523688–e2523688. <https://doi.org/10.1001/jamanetworkopen.2025.23688>
16. Zhou, F., Jatlaoui, T. C., Leidner, A. J., Carter, R. J., Dong, X., Santoli, J. M., Stokley, S., Daskalakis, D. C., & Peacock, G. (2024). Health and Economic Benefits of Routine Childhood Immunizations in the Era of the Vaccines for Children Program — United States, 1994–2023. *MMWR Morbidity and Mortality Weekly Report*, 73(31), 682–685. <https://doi.org/10.15585/mmwr.mm7331a2>
17. Taaffe, J., Goldin, S., Lambach, P., & Sparrow, E. (2025). Global production capacity of seasonal and pandemic influenza vaccines in 2023. *Vaccine*, 51, 126839. <https://doi.org/10.1016/j.vaccine.2025.126839>

18. Centers for Disease Control and Prevention. (2026). *Adult Influenza Vaccine Price List*. U.S. Department of Health and Human Services. <https://www.cdc.gov/vaccines-for-children/media/pdfs/2026/07/Adult-Influenza-Vaccine-Price-List-08-03-26.pdf>
19. Delfino, D. (2025). *How Much Does a Flu Shot Cost Without Insurance?* GoodRx. <https://www.goodrx.com/conditions/flu-vaccination/flu-shot-cost-without-insurance>
20. Hu, T., Miles, A. C., Pond, T., Constantina Boikos, Maleki, F., Alfred, T., Santiago M.C Lopez, & McGrath, L. (2024). Economic burden and secondary complications of influenza-related hospitalization among adults in the US: a retrospective cohort study. *Journal of Medical Economics*, 1–20. <https://doi.org/10.1080/13696998.2024.2314429>
21. Popovian, R., & Winegarden, W. (2025). *Influenza's economic burden and the impact of adult vaccination* [Preprint]. medRxiv. <https://doi.org/10.64898/2025.12.23.25342685>
22. Centers for Disease Control and Prevention. (2024). *Ensuring Vaccine Access for All People*. U.S. Department of Health and Human Services. <https://www.cdc.gov/vaccines/basics/vaccine-equity.html>
23. Global Initiative for Asthma. (2025). *Global Strategy for Asthma Management and Prevention*. https://ginasthma.org/wp-content/uploads/2025/11/GINA-2025-Update-25_11_08-WMS.pdf
24. Asthma and Allergy Foundation of America. (2017). *My Life with Asthma Survey Overview*. <https://aafa.org/wp-content/uploads/2022/08/my-life-with-asthma-in-2017-survey-findings-report.pdf>
25. Yaghoubi, M., Adibi, A., Safari, A., FitzGerald, J. M., & Sadatsafavi, M. (2019). The Projected Economic and Health Burden of Uncontrolled Asthma in the United States. *American Journal of Respiratory and Critical Care Medicine*, 200(9), 1102–1112. <https://doi.org/10.1164/rccm.201901-0016oc>
26. Pinnock H. (2015). Supported self-management for asthma. *Breathe*, 11(2), 98–109. <https://doi.org/10.1183/20734735.015614>
27. Simon, A. E., & Akinbami, L. J. (2016). Asthma Action Plan Receipt among Children with Asthma 2–17 Years of Age, United States, 2002–2013. *The Journal of Pediatrics*, 171, 283–9.e1. <https://doi.org/10.1016/j.jpeds.2016.01.004>
28. Pattath, P., Cornwell, C. R., Sircar, K., & Qin, X. (2023). Assessing asthma self-management education among US children with current asthma, Asthma Call-back Survey (ACBS) 2015–2017. *Journal of Asthma*, 60(10), 1918–1925. <https://doi.org/10.1080/02770903.2023.2200842>
29. Bonds, R., Asawa, A. and Ghazi, A. (2015). Misuse of medical devices: a persistent problem in self-management of asthma and allergic disease. *Annals of Allergy, Asthma & Immunology*, 114(1), pp.74–76.e2. <https://doi.org/10.1016/j.anai.2014.10.016>
30. Marshall, E. T., Guo, J., Flood, E., Sandel, M. T., Sadof, M. D., & Zotter, J. M. (2020). Home Visits for Children With Asthma Reduce Medicaid Costs. *Preventing Chronic Disease*, 17. <https://doi.org/10.5888/pcd17.190288>
31. The Community Guide. (2025). *Asthma: Home-Based Multi-Trigger, Multicomponent Environmental Interventions Children and Adolescents with Asthma*. <https://www.thecommunityguide.org/findings/asthma-home-based-multi-trigger-multicomponent-environmental-interventions-children-adolescents-asthma.html>
32. Asthma and Allergy Foundation of America (2025). *Health Equity*. <https://aafa.org/programs/health-equity/>
33. Lubell, J. (2025). *How AI is leading to more prior authorization denials*. American Medical Association. <https://www.ama-assn.org/practice-management/prior-authorization/how-ai-leading-more-prior-authorization-denials>
34. Nutt, D. (2025). *'Roadmap' shows the environmental impact of AI data center boom*. Cornell Chronicle. <https://news.cornell.edu/stories/2025/11/roadmap-shows-environmental-impact-ai-data-center-boom>
35. Paddison, L. (2026). *Scientists have found an alarming environmental impact of vast data centers*. CNN. <https://www.cnn.com/2026/03/30/climate/data-centers-are-having-an-underreported>
36. Rogelberg, S. (2026). *Data centers are so hot their 'heat island' effect is raising temperatures up to 6 miles away and impacting 343 million people worldwide, study finds*. Fortune. <https://fortune.com/2026/04/01/ai-data-centers-heat-island-hyperscalers/>

37. Marinoni, A., Lio, P., Cambria, E., Dal, Z. L., Lin, W., Mura, M. D., Chanussot, J., Ragusa, E., Mengaldo, G., Tso, C. Y., Zhu, Y., & Horton, B. (2026). *The data heat island effect. Quantifying the impact of AI data centers in a warming world* [Preprint]. arXiv. <https://arxiv.org/abs/2603.20897>
38. World Health Organization. (2018). *Promoting Health in All Policies and intersectoral action capacities*. <https://www.who.int/activities/promoting-health-in-all-policies-and-intersectoral-action-capacities>
39. Forster, P., Storelvmo, T., Armour, K., Collins, W., Dufresne, J.-L., Frame, D., Lunt, D., Mauritsen, T., Palmer, M., Watanabe, M., Wild, M., & Zhang, H. (2023). The Earth's energy budget, climate feedbacks, and climate sensitivity. In *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (pp. 923–1054). Cambridge University Press. <https://doi.org/10.1017/9781009157896.009>
40. Kocks, J. W. H., Harrison, T., Bell, J. P., et al. (2026). Global pMDI use and the potential impact of European PFAS legislation on access to these essential inhaled medications. *Pulmonary Therapy*, 12, 653–666. <https://doi.org/10.1007/s41030-026-00362-1>
41. Feldman, W. B., Han, J., Raymakers, A. J. N., Furie, G. L., & Chesebro, B. B. (2025). Inhaler-related greenhouse gas emissions in the US: A serial cross-sectional analysis. *JAMA*, 334(18), 1638–1649. <https://doi.org/10.1001/jama.2025.16524>
42. Asthma and Allergy Foundation of America. (2025, October 9). *AAFA responds to study on inhalers and greenhouse gas emissions and their effect on climate*. <https://aafa.org/aaafa-responds-to-study-on-inhalers-and-greenhouse-gas-emissions-and-their-effect-on-climate/>
43. Wilkinson, A. J. K., Maslova, E., Janson, C., Radhakrishnan, V., Quint, J. K., Budgen, N., Tran, T. N., Xu, Y., Menzies-Gow, A., & Bell, J. P. (2024). Greenhouse gas emissions associated with suboptimal asthma care in the UK: The SABINA healthCARE-Based environmental cost of treatment (CARBON) study. *Thorax*, 79(5), 412–421. <https://doi.org/10.1136/thorax-2023-220259>
44. Busby, J., Khezrian, M., Patel, S., Tran, T. N., Rhodes, K., & Heaney, L. G. (2025). Exploring the carbon footprint of severe asthma and change after biologic therapy initiation: An analysis of Northern Irish data. *ERJ Open Research*, 11(3), 01009–2024. <https://doi.org/10.1183/23120541.01009-2024>
45. Gupta, S., Couillard, S., Digby, G., Tse, S. M., Green, S., & Penz, E. (2023). Canadian Thoracic Society position statement on climate change and choice of inhalers for patients with respiratory disease. *Canadian Journal of Respiratory, Critical Care, and Sleep Medicine*, 7(5), 232–239. <https://doi.org/10.1080/24745332.2023.2254283>
46. United Nations Environment Programme. (1987). *The Montreal Protocol on Substances that Deplete the Ozone Layer*. <https://ozone.unep.org/treaties/montreal-protocol>
47. United Nations Environment Programme. (2016). The Kigali Amendment (2016): The amendment to the Montreal Protocol agreed by the Twenty-Eighth Meeting of the Parties. <https://ozone.unep.org/treaties/montreal-protocol/amendments/kigali-amendment-2016-amendment-montreal-protocol-agreed>
48. Buttini, F., Glieda, S., Sonvico, F., & Lewis, D. A. (2023). Metered dose inhalers in the transition to low GWP propellants: What we know and what is missing to make it happen. *Expert Opinion on Drug Delivery*, 20(8), 1131–1143. <https://doi.org/10.1080/17425247.2023.2264184>
49. Regulation (EU) 2024/573. *Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 on fluorinated greenhouse gases*. European Parliament, Council of the European Union. <https://eur-lex.europa.eu/eli/reg/2024/573/oj>
50. Vincenzi, C., Klebl, C., Saucés, T., Abed, I., & Jekerle, V. (2026). A regulatory perspective on the first approved EU application to reformulate an inhaled medicine with a gas propellant with reduced global warming potential. *British Journal of Clinical Pharmacology*. Advance online publication. <https://doi.org/10.1002/bcp.70686>
51. Committee for Medicinal Products for Human Use. (2023). *Questions and answers on data requirements when replacing hydrofluorocarbons as propellants in oral pressurised metered dose inhalers*. European Medicines Agency. https://www.ema.europa.eu/en/documents/scientific-guideline/questions-answers-data-requirements-when-replacing-hydrofluorocarbons-propellants-oral-pressurised_en.pdf

52. Ferrao, J., Williams, G., Deraime, G., Bueno, L.C., & Alix, E. (2023). *Performance of low-GWP propellants in pMDIs: Filling and dose evaluation*. Aptar Pharma. <https://aptar.com/en-us/resources/performance-of-low-gwp-propellants-in-pmdis-filling-and-dose-evaluation>
53. Mendez, K., & Asthma and Allergy Foundation of America. (2024, March 8). *Letter to Patrick Woodcock, Maine Chamber of Commerce, regarding PFAS legislation*. <https://aafa.org/wp-content/uploads/2024/05/aafa-letter-maine-chamber-of-commerce-pfas-8-march-2024.pdf>
54. European Federation of Allergy and Airways Diseases Patients' Associations. (2023, September 25). *Response to ECHA consultation on PFAS restriction*. https://www.efanet.org/images/2023/EFA_response_to_ECHA_Consultation_on_PFAS_FINAL.pdf
55. Nurmagambetov, T., Kuwahara, R., & Garbe, P. (2018). The Economic Burden of Asthma in the United States, 2008–2013. *Annals of the American Thoracic Society*, 15(3), 348–356. <https://doi.org/10.1513/annalsats.201703-259oc>
56. Erzouki, F. (2026, July 13). *Timing of state implementation of H.R. 1's Medicaid policies, including those taking coverage away for not meeting work requirements*. Center on Budget and Policy Priorities. <https://www.cbpp.org/research/health/how-states-will-implement-hr-1s-medicaid-policies-including-those-taking-coverage>
57. KFF. (2026, August 3). *Tracking implementation of the 2025 reconciliation law: Medicaid work requirements data and policies*. <https://www.kff.org/medicaid/medicaid-work-requirements-tracker-state-national-data-and-policies>
58. Buettgens, M., Karpman, M., Haley, J. M., Carter, J., & Kenney, G. M. (2026, March 25). *Projected reductions in Medicaid expansion enrollment under OBBA's work requirements and six-month redeterminations: National and state estimates for 2028*. Urban Institute. <https://www.urban.org/research/publication/projected-reductions-medicaid-expansion-enrollment-under-obbbas-work>
59. Sommers, B. D., Chen, L., Blendon, R. J., Orav, E. J., & Epstein, A. M. (2020). Medicaid work requirements in Arkansas: Two-year impacts on coverage, employment, and affordability of care. *Health Affairs*, 39(9), 1522–1530. <https://doi.org/10.1377/hlthaff.2020.00538>
60. Lo, J., McGough, M., & Cox, C. (2026, July 28). *How has ACA Marketplace enrollment changed across states in 2026?* KFF. <https://www.kff.org/affordable-care-act/how-has-aca-marketplace-enrollment-changed-across-states-in-2026>
61. McGough, M., Ortaliza, J., Lo, J., & Cox, C. (2026, May 19). *What we know so far about 2026 ACA Marketplace enrollment, premiums, and deductibles*. KFF. <https://www.kff.org/affordable-care-act/what-we-know-so-far-about-2026-aca-marketplace-enrollment-premiums-and-deductibles/>
62. Dudiak, G. J., Popyack, J., Grimm, C., Tyson, S., Solic, J., & Ishmael, F. T. (2021). Prior authorization delays biologic initiation and is associated with a risk of asthma exacerbations. *Allergy and Asthma Proceedings*, 42(1), 65–71. <https://doi.org/10.2500/aap.2021.42.200101>
63. Asthma and Allergy Foundation of America. (2020). *Asthma Disparities in America: A Roadmap to Reducing Burden on Racial and Ethnic Minorities*. <https://aafa.org/asthma-allergy-research/our-research/asthma-disparities-burden-on-minorities/>
64. Centers for Disease Control and Prevention. (2015). *Asthma-related missed school days among children aged 5–17 years*. U.S. Department of Health and Human Services. https://www.cdc.gov/asthma/asthma_stats/missing_days.htm

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