



AsthmaCAPITALS 2019

The Most Challenging Places
to Live With **ASTHMA**



Asthma and Allergy
Foundation of America

Working Together to Reduce the Impact of Asthma in Communities Nationwide

A Message From AAFA

Ten people die every day from asthma. That is 10 too many. Most asthma-related deaths are preventable with proper management, access to adequate medical care, housing improvements and better air quality. Asthma is one of the most prevalent chronic diseases in our nation.

The Asthma and Allergy Foundation of America (AAFA) publishes the Asthma Capitals™ report each year to raise awareness about the nationwide impacts of asthma and to help people who live in Asthma Capitals recognize, prevent and manage asthma symptoms. The report analyzes data from across the continental United States and ranks the 100 largest cities where it is challenging to live with asthma.

The report ranks cities by the most critical of health outcomes – asthma prevalence, emergency department visits due to asthma attacks and asthma mortality. The report also identifies risk factors that influence the health outcomes.

AAFA will use this report to identify communities where disparities in outcomes exist – especially in underserved communities. We will support programs and policies that improve conditions and promote health equity among low-income or minority populations. We also encourage others to use this report to help bring progress to the communities that need it most.

We remain committed to helping reduce asthma rates, asthma deaths and the burden of this disease on people and communities. However, a single person or organization cannot tackle the burden of asthma alone. It will take multiple stakeholders working harmoniously with a shared goal to improve outcomes.

At the end of this year's report, we've offered some steps that can be taken by patients, caregivers, health officials, legislators, insurers and pharmaceutical companies to help address the burden of asthma.

Working together, we can improve communities, make a difference to reduce unnecessary loss of life, and improve the quality of life for children and adults with asthma.

Sincerely,

Kenneth Mendez, President and CEO
Melanie Carver, Vice President of Community Health and Services



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Background and Introduction

Breathing is life's most basic, essential function. For most, it happens naturally without a second thought. But for the more than 26 million people in the United States with asthma, breathing is not something they take for granted.

Many factors come together to increase the risk for someone to be diagnosed with asthma. Genetics, respiratory infections, tobacco smoke and more all play a part. But can your location increase your risk? Can the city you live in create challenges that make asthma harder to control?

AAFA's 2019 Asthma Capitals™ report looks at factors in cities across the continental U.S. that contribute to asthma rates and management. **We ranked the cities based on these health outcomes: prevalence, emergency department visits and mortality. We also looked at risk factors that contribute to these outcomes. Risk factors include: poverty, air quality, access to specialists, pollen counts, medicine use, tobacco policies and the rate of uninsured residents.**

In this report, we review these outcomes and risk factors. We also highlight two regions with a surprising number of cities in the top 20 Asthma Capitals™ – the Northeast Mid-Atlantic Belt and the Ohio Valley Belt.

As we encourage proper asthma education and treatment, we also need to look at other ways to improve quality of life for Americans with asthma. This can only happen through a combined effort from researchers, health care providers, federal and state policy makers and local stakeholders to improve our communities.

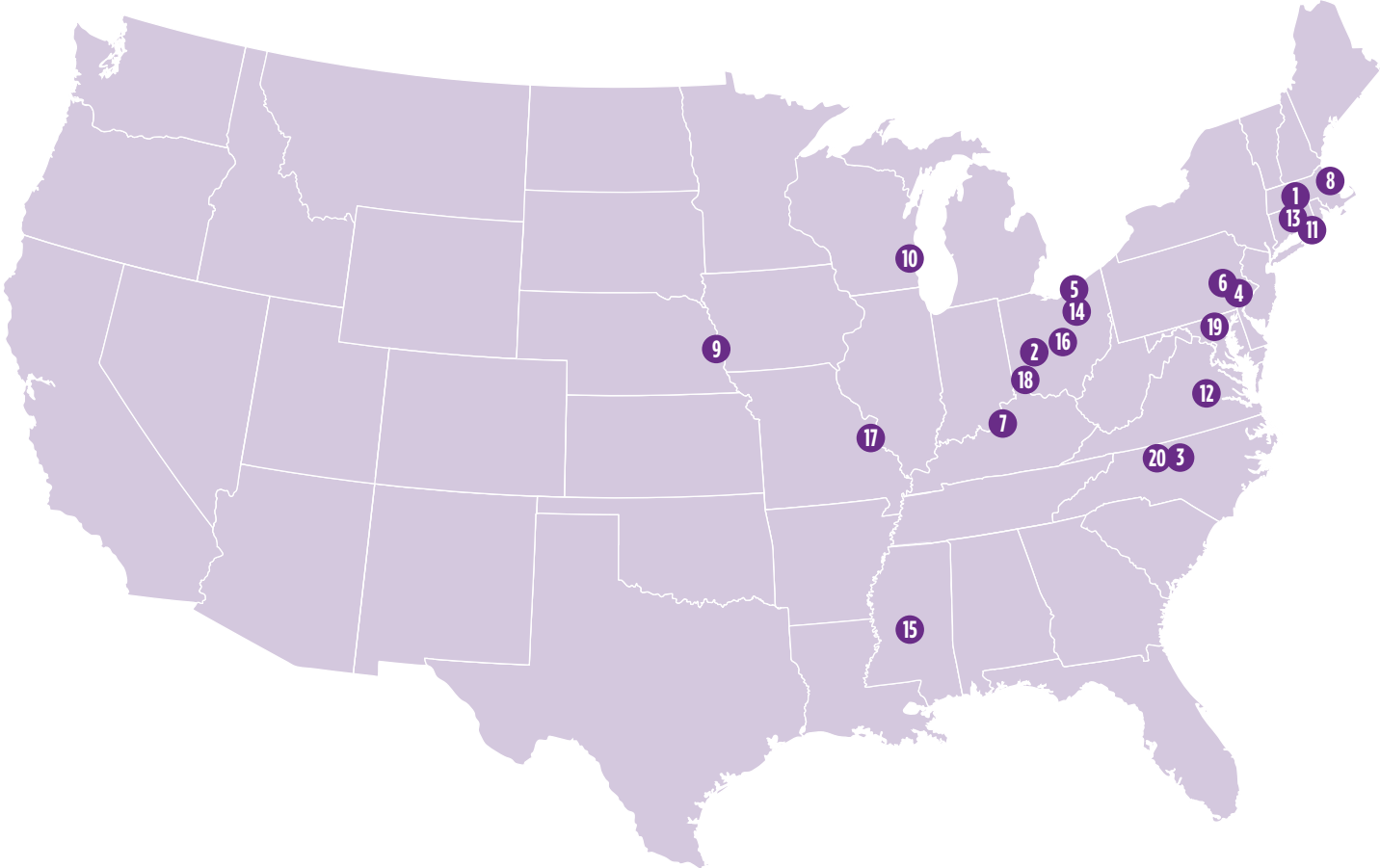
The goal of this report is to accelerate action to improve asthma prevalence and care in our nation, especially in these top cities. This data shows where to focus efforts to create healthier environments and communities to bring down asthma rates and deaths.

The 2019 Asthma Capitals™ report is an independent research project of the Asthma and Allergy Foundation of America with sponsorship from Sanofi Genzyme and Regeneron.

ABOUT THE ASTHMA AND ALLERGY FOUNDATION OF AMERICA

Celebrating more than 65 years of service, AAFA is the oldest and largest nonprofit patient organization for asthma and allergies. Its mission is to save lives and reduce the burden of disease for people with asthma and allergies through support, advocacy, education and research. AAFA provides community-based services through its digital communities and network of local chapters and support groups. AAFA educates patients with practical information about disease management. AAFA also helps consumers identify products suitable for those with asthma and allergies through the **asthma & allergy friendly**® Certification Program. For more information, visit aafa.org.

The Top 20 Most Challenging Places to Live With Asthma



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

- 1. Springfield, Massachusetts
- 2. Dayton, Ohio
- 3. Greensboro, North Carolina
- 4. Philadelphia, Pennsylvania
- 5. Cleveland, Ohio
- 6. Allentown, Pennsylvania
- 7. Louisville, Kentucky
- 8. Boston, Massachusetts
- 9. Omaha, Nebraska
- 10. Milwaukee, Wisconsin
- 11. New Haven, Connecticut
- 12. Richmond, Virginia
- 13. Hartford, Connecticut
- 14. Akron, Ohio
- 15. Jackson, Mississippi
- 16. Columbus, Ohio
- 17. St. Louis, Missouri
- 18. Cincinnati, Ohio
- 19. Baltimore, Maryland
- 20. Winston-Salem, North Carolina

The Top 100 Most Challenging Places to Live With Asthma

NATIONAL RANKINGS

(Factors are not weighted equally)

■ Worse Than Average

▲ Average

● Better Than Average

2019 National Rankings	Overall	Metropolitan Area	Total Score (Avg. 71.58)	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ER Visits for Asthma
1	■	Springfield, MA	100.00	■	▲	■
2	■	Dayton, OH	97.53	▲	▲	■
3	■	Greensboro, NC	88.39	▲	▲	■
4	■	Philadelphia, PA	87.49	■	■	■
5	■	Cleveland, OH	86.78	▲	▲	■
6	■	Allentown, PA	85.00	■	▲	■
7	■	Louisville, KY	84.91	■	▲	■
8	■	Boston, MA	84.74	■	■	▲
9	■	Omaha, NE	84.52	▲	■	■
10	■	Milwaukee, WI	84.44	▲	■	■
11	■	New Haven, CT	84.33	■	▲	▲
12	■	Richmond, VA	83.87	▲	■	■
13	■	Hartford, CT	83.24	■	▲	■
14	■	Akron, OH	83.22	▲	▲	■
15	■	Jackson, MS	83.14	●	■	▲
16	■	Columbus, OH	82.88	▲	▲	■
17	■	St. Louis, MO	82.82	▲	■	▲
18	■	Cincinnati, OH	82.77	▲	▲	■
19	■	Baltimore, MD	81.77	▲	▲	■
20	▲	Winston-Salem, NC	81.27	▲	■	■
21	▲	Chattanooga, TN	81.12	■	●	▲
22	▲	Greenville, SC	79.88	▲	▲	■
23	▲	Detroit, MI	79.80	■	■	●
24	▲	Buffalo, NY	79.44	▲	▲	■
25	▲	Birmingham, AL	79.00	■	▲	▲
26	▲	New Orleans, LA	78.97	▲	▲	■
27	▲	Albuquerque, NM	78.60	■	▲	▲
28	▲	Washington, DC	78.23	▲	■	▲
29	▲	Memphis, TN	78.19	■	■	●
30	▲	Worcester, MA	78.18	■	▲	▲
31	▲	Wichita, KS	77.76	▲	▲	■
32	▲	Oklahoma City, OK	77.42	▲	▲	▲

NATIONAL RANKINGS

(Factors are not weighted equally)

■ Worse Than Average

▲ Average

● Better Than Average

2019 National Rankings	Overall	Metropolitan Area	Total Score (Avg. 71.58)	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ER Visits for Asthma
33	▲	Charleston, SC	77.30	▲	▲	■
34	▲	Columbia, SC	77.23	▲	■	▲
35	▲	Toledo, OH	77.12	▲	▲	▲
36	▲	Chicago, IL	75.94	▲	■	▲
37	▲	Tulsa, OK	75.67	▲	▲	▲
38	▲	Spokane, WA	74.80	▲	■	▲
39	▲	New York, NY	74.35	▲	■	●
40	▲	Phoenix, AZ	74.28	▲	▲	▲
41	▲	Kansas City, MO	74.24	▲	▲	▲
42	▲	Bridgeport, CT	74.22	■	▲	●
43	▲	Nashville, TN	73.99	■	▲	●
44	▲	Albany, NY	73.71	▲	▲	▲
45	▲	Stockton, CA	73.58	▲	▲	■
46	▲	Tucson, AZ	73.25	▲	▲	▲
47	▲	Virginia Beach, VA	72.75	▲	▲	■
48	▲	Indianapolis, IN	72.73	▲	▲	▲
49	▲	Sacramento, CA	72.65	▲	■	▲
50	▲	Scranton, PA	72.41	■	▲	●
51	▲	Syracuse, NY	72.22	▲	▲	▲
52	▲	Modesto, CA	71.95	▲	▲	▲
53	▲	Harrisburg, PA	71.92	■	▲	●
54	▲	Pittsburgh, PA	71.13	■	▲	●
55	▲	Boise, ID	70.73	▲	▲	▲
56	▲	Little Rock, AR	70.40	▲	▲	▲
57	▲	Rochester, NY	70.33	▲	●	▲
58	▲	Durham, NC	70.20	▲	●	▲
59	▲	Las Vegas, NV	69.69	●	●	■
60	▲	Des Moines, IA	69.69	●	●	■
61	▲	Knoxville, TN	69.05	■	▲	●
62	▲	Grand Rapids, MI	68.83	■	●	●
63	▲	Denver, CO	68.49	▲	▲	▲
64	▲	Seattle, WA	67.86	▲	▲	▲
65	▲	Providence, RI	67.71	■	●	●
66	▲	Madison, WI	67.52	▲	●	▲
67	▲	Jacksonville, FL	67.27	●	▲	▲

NATIONAL RANKINGS

(Factors are not weighted equally)

■ Worse Than Average

▲ Average

● Better Than Average

2019 National Rankings	Overall	Metropolitan Area	Total Score (Avg. 71.58)	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ER Visits for Asthma
68	▲	Atlanta, GA	67.16	▲	▲	●
69	▲	Salt Lake City, UT	66.56	●	▲	▲
70	▲	Raleigh, NC	66.26	▲	●	▲
71	▲	Fresno, CA	65.96	▲	■	▲
72	▲	Portland, OR	65.78	▲	▲	●
73	▲	San Francisco, CA	65.51	▲	●	▲
74	▲	Charlotte, NC	65.09	▲	●	●
75	▲	Colorado Springs, CO	64.51	▲	▲	▲
76	▲	Dallas, TX	64.51	●	▲	▲
77	▲	Austin, TX	64.50	●	●	▲
78	▲	Oxnard, CA	62.45	▲	▲	▲
79	●	Bakersfield, CA	61.28	▲	▲	▲
80	●	San Diego, CA	61.20	▲	●	▲
81	●	Augusta, GA	60.31	▲	●	▲
82	●	Riverside, CA	60.30	▲	●	▲
83	●	Tampa, FL	60.03	●	●	▲
84	●	Baton Rouge, LA	59.08	▲	●	●
85	●	Orlando, FL	58.98	●	▲	▲
86	●	Lakeland, FL	58.92	●	●	▲
87	●	Minneapolis, MN	58.48	●	▲	●
88	●	Ogden, UT	58.05	●	■	●
89	●	Miami, FL	57.96	●	▲	▲
90	●	Los Angeles, CA	57.62	▲	▲	●
91	●	Provo, UT	57.41	●	■	●
92	●	Palm Bay, FL	56.83	●	▲	▲
93	●	San Jose, CA	56.28	▲	▲	●
94	●	San Antonio, TX	55.95	▲	●	●
95	●	El Paso, TX	54.71	▲	●	●
96	●	Daytona Beach, FL	54.17	●	●	●
97	●	Sarasota, FL	54.11	●	●	▲
98	●	Houston, TX	53.11	●	●	●
99	●	McAllen, TX	50.79	▲	●	●
100	●	Cape Coral, FL	49.22	●	▲	●

REGIONAL RANKINGS

■ Worse Than Average

▲ Average

● Better Than Average

(Factors are not weighted equally)

NORTHEAST							
2019 Regional Rankings	Overall	2019 National Ranking	Metropolitan Area	Total Score (Avg. 71.58)	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ER Visits for Asthma
1	■	1	Springfield, MA	100.00	■	▲	■
2	■	4	Philadelphia, PA	87.49	■	■	■
3	■	6	Allentown, PA	85.00	■	▲	■
4	■	8	Boston, MA	84.74	■	■	▲
5	■	11	New Haven, CT	84.33	■	▲	▲
SOUTH							
2019 Regional Rankings	Overall	2019 National Ranking	Metropolitan Area	Total Score (Avg. 71.58)	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ER Visits for Asthma
1	■	3	Greensboro, NC	88.39	▲	▲	■
2	■	7	Louisville, KY	84.91	■	▲	■
3	■	12	Richmond, VA	83.87	▲	■	■
4	■	15	Jackson, MS	83.14	●	■	▲
5	■	19	Baltimore, MD	81.77	▲	▲	■
MIDWEST							
2019 Regional Rankings	Overall	2019 National Ranking	Metropolitan Area	Total Score (Avg. 71.58)	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ER Visits for Asthma
1	■	2	Dayton, OH	97.53	▲	▲	■
2	■	5	Cleveland, OH	86.78	▲	▲	■
3	■	9	Omaha, NE	84.52	▲	■	■
4	■	10	Milwaukee, WI	84.44	▲	■	■
5	■	14	Akron, OH	83.22	▲	▲	■
WEST							
2019 Regional Rankings	Overall	2019 National Ranking	Metropolitan Area	Total Score (Avg. 71.58)	Subtotal: Estimated Asthma Prevalence	Subtotal: Crude Death Rate for Asthma	Subtotal: ER Visits for Asthma
1	▲	27	Albuquerque, NM	78.60	■	▲	▲
2	▲	38	Spokane, WA	74.80	▲	■	▲
3	▲	40	Phoenix, AZ	74.28	▲	▲	▲
4	▲	45	Stockton, CA	73.58	▲	▲	■
5	▲	46	Tucson, AZ	73.25	▲	▲	▲



Asthma Health Outcomes

We ranked cities based on three health outcomes: asthma prevalence, asthma-related emergency department visits and asthma-related mortality rates. The outcomes were not weighted equally.

ESTIMATED ASTHMA PREVALENCE

More than 26 million people living in the United States have asthma. Factors such as gender, race/ethnicity and socioeconomic status are associated with asthma, with the disease being more common in boys than girls in childhood. In adulthood, it reverses and more women than men have asthma. Non-Hispanic black people and Puerto Ricans are also more likely to have the disease than non-Hispanic white people.¹

About 20.3 million adults currently have asthma. Adults are nearly five times more likely to die from asthma than children.¹

The cities with the highest estimated asthma prevalence are:

Asthma Prevalence Ranking (*Tie)	Metropolitan Area	Overall Asthma Capital National Ranking
1	Albuquerque, NM	27
2	Louisville, KY	7
3	Nashville, TN	43
4*	Chattanooga, TN	21
4*	Knoxville, TN	61
6	Memphis, TN	29
7	Bridgeport, CT	42
8	New Haven, CT	11
9	Hartford, CT	13
10	Birmingham, AL	25



Albuquerque, NM

Asthma prevalence data often relies on self-report, and prevalence comparisons between cities and/or states may not be reliable due to differences in data collection methods and reporting. Data limitations should be considered when comparing different cities to each other, or with year-over-year comparisons.

1. CDC - Asthma - Most Recent Asthma Data. (2018, May 15). Retrieved March 27, 2019, from https://www.cdc.gov/asthma/most_recent_data.htm



Asthma Health Outcomes

Asthma can have a significant effect on lifestyle. Many people with asthma go to great lengths to avoid their asthma triggers and prevent flareups.



Jessica Barber Brown and her son Isaac, age 11, live about 45 minutes outside of Louisville, Kentucky (overall #7 on Asthma Capitals), in Lawrenceburg. Both Jessica and Isaac have asthma and allergies. Isaac was diagnosed with asthma and a milk allergy at age 3 after many trips to the emergency room with croup and breathing issues. And his mom, Jessica, was diagnosed with asthma shortly after him.

“I am basically allergic to Kentucky, which is inconvenient when you live there,” shared Jessica. “I am allergic to ragweed and dust mites – those are my biggest ones. Then colds and sickness can trigger my asthma as well.”

To manage their asthma, Jessica and Isaac have a plan for everything. They worked with their allergist to make this plan. “I like breathing so we just kind of figure things out,” she shared. Their plan includes taking long-term control medicines as prescribed and always having quick-relief inhalers on hand.

She recommends that everyone with asthma and allergies work with their allergist to plan out “under what circumstances you need to do x, y or z.” She knows that, “If Isaac is going to his grandparents, we need to do x. If he is going swimming, we need to do y. And, if he is playing outside during this time of year, we need to do z.”

Despite all the planning, “with the environmental allergens, and the cold, and the pollen and all the smells, it feels like a major game of whack-a-mole. And you are just never sure which one you are going to have to deal with at what time. And whichever one is popping up, you have to deal with that one as another one surfaces.”

For Jessica and Isaac, their asthma management plan focuses on reducing exposure to triggers that are harder to control. For Isaac, this means he can play outdoor soccer in the fall, but not in the spring. “He doesn’t play in the spring because allergens are worse then, and it’s just not good for him.”

Approximately
8.3%
of people living in the United States have asthma.¹

For each city included in the 2019 Asthma Capitals, AAFA obtained an estimated asthma prevalence for the respective county. The estimates ranged widely from 6.8% to 11.4%.



Asthma Health Outcomes

EMERGENCY DEPARTMENT VISITS

A visit to the emergency department (ED) may be necessary due to an asthma attack. According to a recent national survey, asthma accounts for 1.7 million visits to the emergency department yearly, making it one of the top 20 reasons for ED visits.²

It is important to seek medical care right away if you or your child has trouble breathing; however, unnecessary trips to the ED can be costly. On average, every asthma-related trip to the ED costs \$1,502.³

Effective asthma management may help reduce ED visits and hospitalizations. Knowing and avoiding asthma triggers, adhering to your medicine and following an Asthma Action Plan are steps that can improve your overall asthma management. Talk with your doctor to ensure you understand how to manage your or your child's asthma.

The Centers for Disease Control and Prevention (CDC) released its *Vital Signs* report on pediatric asthma. The findings showed that from 2010-2016 the use of Asthma Action Plans increased and the number of hospitalizations decreased. During the past 10 years, asthma-related hospitalizations decreased from 10% to 5%.⁴

These cities have the highest asthma-related ED visits:

Emergency Department Visits Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	Dayton, OH	2
2	Springfield, MA	1
3	Greensboro, NC	3
4	Omaha, NE	9
5	Cleveland, OH	5
6	Milwaukee, WI	10
7	Akron, OH	14
8	Richmond, VA	12
9	Columbus, OH	16
10	Greenville, SC	22



Dayton, OH

- Rui, P., & Kang, K. (2014). National Hospital Ambulatory Medical Care Survey: 2014 Emergency Department Summary Tables. Retrieved March 27, 2019, from https://www.cdc.gov/nchs/data/nhamcs/web_tables/2014_ed_web_tables.pdf
- Wang, T., Srebotnjak, T., Brownell, J., & Hsia, R. Y. (2014). Emergency department charges for asthma-related outpatient visits by insurance status. *Journal of Health Care for the Poor and Underserved*, 25(1), 396-405. doi:10.1353/hpu.2014.0051
- Vital Signs. (2018, February 06). Retrieved March 27, 2019, from <https://www.cdc.gov/vitalsigns/childhood-asthma/>

For each city included in the 2019 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 2017. Analyses included estimating the ED rate per 10,000 asthma patients.



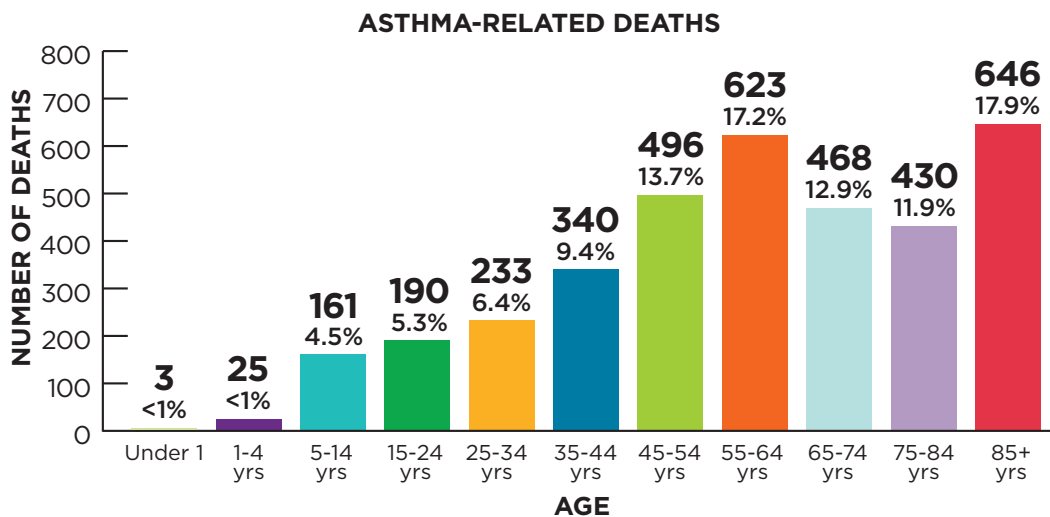
Asthma Health Outcomes

ASTHMA-RELATED MORTALITY

Tragically, asthma can be fatal. In 2015, there were 3,615 deaths attributed to asthma in the U.S.⁵ This means about 10 people per day lose their life to asthma.

AGE DISPARITY

As people age, their risk of dying from asthma increases. Seniors are more likely to be underdiagnosed, undertreated and managing multiple health conditions.



RACIAL DISPARITY

African Americans in the U.S. die from asthma at a higher rate than people of other races or ethnicities, according to the Office of Minority Health (U.S. Department of Human Health and Services):⁶

- African American women were 20% more likely to have asthma than non-Hispanic whites in 2015.
- In 2014, African Americans were almost three times more likely to die from asthma-related causes than the white population.
- In 2015, African American children had a death rate ten times that of non-Hispanic white children.

GENDER DISPARITY

- In children, more boys die from asthma than girls.
- In adults, the trend reverses and women are at much higher risk of dying from asthma than men.

5. Centers for Disease Control and Prevention. (2017, November 27). *National vital statistics reports, Vol 66, No 6*. Retrieved March 15, 2019, from https://www.cdc.gov/nchs/data/nvsr/nvsr66/nvsr66_06_tables.pdf

6. Office of Minority Health. (n.d.). Retrieved March 13, 2019, from <https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlid=15>



Asthma Health Outcomes

To reduce the risk of death from asthma, it is important to:

- Control asthma by taking prescribed medicines and updating care providers if symptoms are occurring more than twice per week.
- Avoid or reduce exposure to asthma triggers.
- Learn the signs and symptoms of asthma, including early warning signals.
- Have an Asthma Action Plan and take quick action according to the plan.

If you ever feel your life or your child's life is in danger, seek emergency care immediately. An Asthma Action Plan can help you know when you are in danger. It uses Red, Yellow and Green Zones for your symptoms. If you are in the Red Zone, it is a medical emergency. AAFA has an Asthma Action Plan template you can use to discuss your treatment plan with your health care provider. Visit aafa.org/actionplan to download it.



GREEN means Go Zone!
Use preventive medicine.

YELLOW means Caution Zone!
Add quick-relief medicine.

RED means Danger Zone!
Get help from a doctor.

The cities with the most asthma-related deaths are:

Asthma-Related Deaths Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	Jackson, MS	15
2	Provo, UT	91
3	Boston, MA	8
4	Chicago, IL	36
5	New York, NY	39
6	Spokane, WA	38
7	Columbia, SC	34
8	Memphis, TN	29
9	St. Louis, MO	17
10	Detroit, MI	23



Jackson, MS



Asthma Health Outcomes

AAFA uses aggregated, multi-year data to calculate death rates. In previous years, more than 10 years of data were used, factoring in asthma-related deaths from over a decade ago. In 2019, we decided to use data from only 5 years to provide an estimate that only factors in more recent deaths. This may explain any dramatic changes in ranking from previous years – a new methodology is being used.

In three of our top 25 Asthma Capitals (also in the top 10 for asthma-related deaths), AAFA has regional chapters who work diligently to address the asthma crisis in their communities. They offer special programs, services, education and community outreach to people with asthma.

AAFA New England Chapter

aafa.org/aafa-new-england-chapter

AAFA St. Louis Chapter

aafa.org/aafa-st-louis-chapter

AAFA Michigan Chapter

aafa.org/aafa-michigan-chapter



This Is What Laura Would Tell You About Asthma, If She Could

By Peter DeMarco, Laura's husband, of Boston, Massachusetts (overall #8 on Asthma Capitals)

Laura was afraid of heights – so she insisted we hike the highest mountains. It wasn't enough for her to just lift weights at the gym: she had to enter women's powerlifting competitions. To land her dream job at Harvard University, she endured nine exhausting rounds of interviews.

Laura thrived on challenges, so it's no surprise that's how she approached her asthma. It was just another challenge she needed to overcome.

I think that is why she decided to walk alone to the hospital the morning her attack struck. She was staying only a few blocks away, so she knew she'd

be there in a couple of minutes, faster than calling an Uber. It was 4 a.m., and I wasn't there, so maybe she felt embarrassed about waking someone else up to ask for help.

Laura had dealt with asthma for nearly 10 years, so she thought she knew what to expect – she could almost sense when a heavy pollen day, or extreme humidity, or a very dusty room might trigger it. When an attack did become severe, we always made it in plenty of time to an emergency room or to an all-night CVS pharmacy for nebulizer fluid. I would usually have to prod her to go though; she always thought her attack would subside if we just gave it another few minutes.

She always believed she could beat it herself.

Laura was so confident that September morning – so sure this would be just “another” attack – that she threw gym clothes into her backpack, perhaps thinking she could get in an early workout once she left the hospital. Nevertheless, she must have been so relieved when she reached the emergency room door.



Asthma Health Outcomes

But Laura did not beat her asthma that morning, because something terrible happened. Something she could never in her life have anticipated. The hospital door was locked, and there was no one in sight to let her into the emergency room.

Everything that could have gone wrong for Laura did go wrong that morning. The hospital security desk was left unattended all night ... her 911 distress call was mishandled ... those responsible for finding Laura went to the wrong hospital door. All unexpected. All beyond Laura's control.

You can read more if you wish in the Boston Globe in a story called "Losing Laura," which I wrote. Laura was just 34 years old, and now I am her widowed husband.

I have written this essay for the Asthma and Allergy Foundation of America because Laura can't have died for no reason. Her story just has to save someone else's life.

So this is my message to you - no, *this is Laura's message to you*:



Nothing is truly in your control until your asthma is back under control.

Please, please, please factor in the unexpected. Make it your mantra. Your inhaler could have a defective cartridge. You could be stuck in standstill traffic due to an accident. The hospital door you try could be locked, with no one in sight. It's not about what you know from past attacks. It's what you don't know about the next one.

When an attack strikes, don't be alone - tell someone as soon as you can. Don't be embarrassed to ask for help or think that by telling someone you are letting asthma win. Without oxygen, you have

between three and six minutes to live. Telling someone you're having an attack could save your life. That is how you beat asthma, by living.

By living.

I wish more than anything in the world that Laura had done that. If only she'd woken up the person she was staying with. If only she'd dialed 911 the moment her attack turned severe. If only she'd called me.

It has been just over two and a half years since her attack. You cannot imagine what it is like to lose the person you love to asthma. Tears are falling onto my keyboard as I type this.

So please, remember my wife. Remember Laura Beth Levis. But more importantly, remember her message.

When an attack strikes, tell someone.

Don't be alone.

Don't die alone.

For each city included in the 2019 Asthma Capitals, AAFA obtained the estimated asthma-related crude death rate per 100,000 people for the respective county from 2012-2016. The estimates range from 0.001% to 2.7%.



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. These are the top risk factors for asthma that influence the ranking of outcomes for cities in this report:

- Poverty
- Lack of health insurance
- Poor air quality
- Pollen
- Asthma quick-relief medicine use
- Asthma long-term controller medicine use
- Smoking laws
- Access to specialists

POVERTY

Poverty can play a major role in developing asthma and the ability to manage it. This can be because of poor rental housing, location near highways, not being able to pay for treatment and more. Many cities on our report have poverty as a top risk factor.

A study by the American College of Allergy, Asthma & Immunology (ACAAI) shows people with asthma below the poverty line have worse treatment outcomes. “We found that patients who have asthma and come from lower income households – making less than \$50,000 every year – are one and a half times more likely to see treatment fail. They are also almost twice as likely to have an asthma exacerbation,” stated first author Juan Carlos Cardet, MD, with Brigham and Women’s Hospital.⁷

Asthma can be especially challenging for families living in poverty. Proper asthma management can be difficult when you are worried about paying for housing, clothing and food. The cost of care may impact your decision to go to the doctor and pharmacy. A lack of reliable transportation may influence whether you attend regular health care appointments. If you or your child has asthma and your financial situation is interfering with asthma management, look for local resources in your neighborhood that can help. There are free clinics that will treat all patients regardless of their insurance status or ability to pay.

There are also programs that help cover costs of some medicines, such as:

- State pharmaceutical assistance programs
- Nonprofit programs
- Assistance programs offered by pharmaceutical companies

Visit aafa.org/asthma-assistance for more information.

7. Poverty Widens Gap in Care for Asthma and Allergies | AAAAAI. (n.d.). Retrieved May 2, 2019, from <https://www.aaaaai.org/about-aaaaai/newsroom/news-releases/poverty-asthma-allergies>



Risk Factors That Can Worsen Asthma or Influence Asthma Rates

Persons living below 100% of the poverty level are more likely to have asthma than those living at any percentage above the poverty level.⁸

These cities have the highest rates of poverty:

Poverty Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	McAllen, TX	99
2	New Orleans, LA	26
3	Philadelphia, PA	4
4	Richmond, VA	12
5	Augusta, GA	81
6	Detroit, MI	23
7	Baltimore, MD	19
8	Bakersfield, CA	79
9	Fresno, CA	71
10	El Paso, TX	95



McAllen, TX



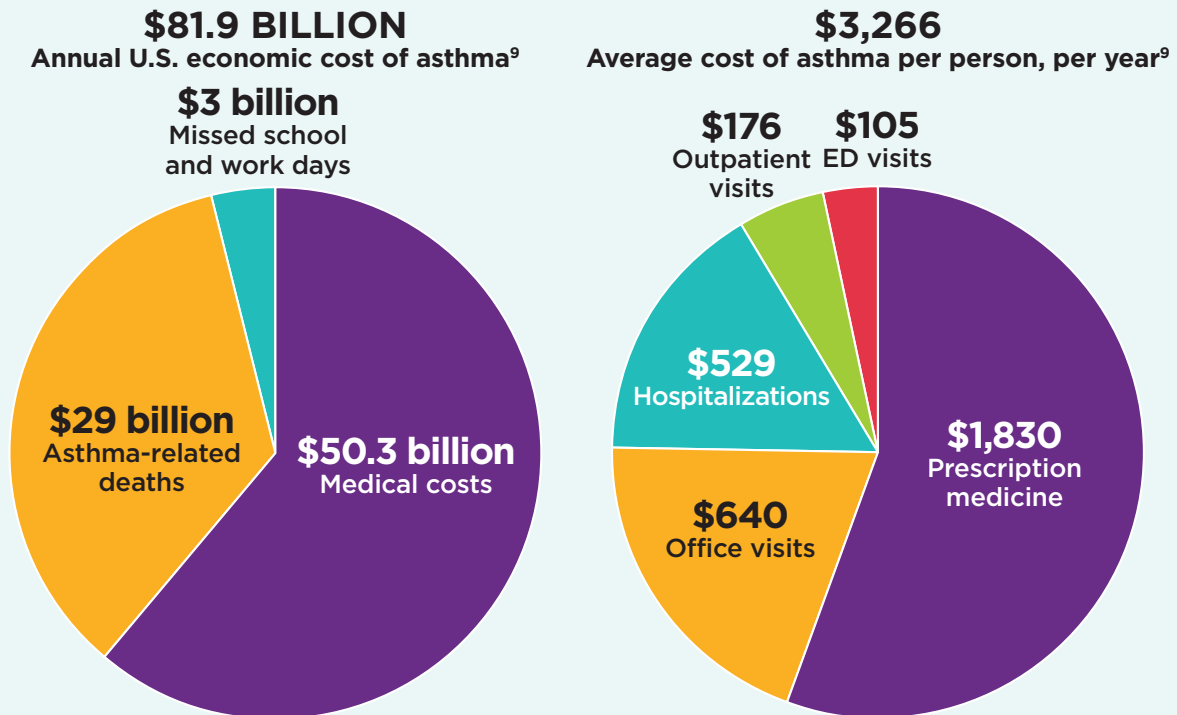
8. CDC - Asthma - Most Recent Asthma Data. (2018, May 15). Retrieved March 27, 2019, from https://www.cdc.gov/asthma/most_recent_data.htm



Risk Factors That Can Worsen Asthma or Influence Asthma Rates

COST OF MANAGING ASTHMA

The cost of managing asthma is steep – both for those with the disease and the nation as a whole.



The cost of managing asthma can create many financial challenges. Some costs are expected, such as regular doctor’s visits and prescription medicines. But unexpected ED visits, hospital stays, and missed work and school put a great burden on those with asthma and their families. Many are forced to choose between necessary, life-saving medicine and basic living expenses, such as food.

Controlling indoor air quality can be an added expense, especially if you need equipment to help reduce allergens and triggers.

“I’ve had to pay for people to cut my grass because I can’t do that, which is very frustrating,” said **Jessica Barber Brown of Louisville, Kentucky (overall #7 on Asthma Capitals)**. “You look at the budget and say the budget doesn’t have any room to give. But I end up having to find places to do that, because it comes down to ‘Am I going to be able to breathe or am I going to be able to afford groceries?’ Groceries become a moot point when you can’t breathe.”

9. Nurmagambetov T, et al. The Economic Burden of Asthma in the United States, 2008 - 2013. *Annals of the American Thoracic Society*: 11 Jan 2018.

For each city included in the 2019 Asthma Capitals, AAFA obtained the poverty rate for the respective county. The estimates range from 7.5% to 29.5%.



Risk Factors That Can Worsen Asthma or Influence Asthma Rates

LACK OF HEALTH INSURANCE

Health care and medicines can be very costly. For patients managing a chronic condition that requires medicine year-round, like asthma, having insurance is often a big help. However, insurance itself can also be costly. These costs may vary depending on if you are employed and if your employer 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. Some states have expanded health insurance options for their residents, while others have not. There may be local resources in your community to help determine what insurance option is best for you. Visit [HealthCare.gov](https://www.healthcare.gov) to get started.

These cities have the highest number of uninsured residents:

Lack of Insurance Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	McAllen, TX	99
2	Dallas, TX	76
3	El Paso, TX	95
4	Houston, TX	98
5	Miami, FL	89
6	Cape Coral, FL	100
7	San Antonio, TX	94
8	Tulsa, OK	37
9	Oklahoma City, OK	32
10	Sarasota, FL	97



McAllen, TX

Texas, Florida and Oklahoma have yet to expand their Medicaid programs under the Affordable Care Act (ACA). Texas is home to the largest number of uninsured Americans of any state in the country.¹⁰ For the millions of uninsured people in these states, this decision has left them without an option for affordable health insurance.

In our [My Life With Asthma survey](#), we found that the top three reasons people didn't take their prescribed asthma treatments were due to not being able to afford the medicines, medicine cost and the lack of health insurance coverage.

10. Berchick, E. R., Hood, E., & Barnett, J. C. (2018, September). *Health Insurance Coverage in the United States: 2017*(Rep.). Retrieved April 11, 2019, from <https://www.census.gov/content/dam/Census/library/publications/2018/demo/p60-264.pdf>

For each city included in the 2019 Asthma Capitals, AAFA obtained the uninsured rate for the respective county. The estimates range from 2.8% to 29.7%.



Risk Factors That Can Worsen Asthma or Influence Asthma Rates

POOR AIR QUALITY

Air pollution is a mixture of natural and man-made substances in the air we breathe. It is typically separated into outdoor and indoor pollution.¹¹ Air pollution includes gases, smoke from fires, volcanic ash, dust particles and other substances that are irritating to the lungs. Research shows that air pollution can cause and worsen asthma.

Ozone, a gas, is one of the most common air pollutants. Ozone contributes to what we typically experience as “smog” or haze. It is most common in cities where there are more cars. It is also more common in the summer when there is more sunlight and low winds. Ozone triggers asthma because it is irritating to the lungs and airways.

Other forms of air pollution can also trigger asthma. Small particles in the air can pass through your nose or mouth and get into your lungs. Airborne particles, found in haze, smoke and airborne dust, present serious air quality problems. People with asthma are at greater risk from breathing in small particles. The particles can make asthma worse.

Many sources, including local TV weather forecasts, report the expected air quality for the next day or two. This information can help you know when the air quality may trigger an asthma episode and allow you to plan accordingly.

These cities all received an F rating from the American Lung Association’s 2018 “State of the Air Report”:	
Metropolitan Area	Overall Asthma Capital National Ranking
Phoenix, AZ	40
Stockton, CA	45
Indianapolis, IN	48
Sacramento, CA	49
Modesto, CA	52
Pittsburgh, PA	54
Salt Lake City, UT	69
Fresno, CA	71
Bakersfield, CA	79
Riverside, CA	82
Ogden, UT	88
Los Angeles, CA	90
Provo, UT	91



Phoenix, AZ

11. National Institute of Environmental Health Sciences. (2018). *Air pollution*. Retrieved March 26, 2019, from <https://www.niehs.nih.gov/health/topics/agents/air-pollution/index.cfm>



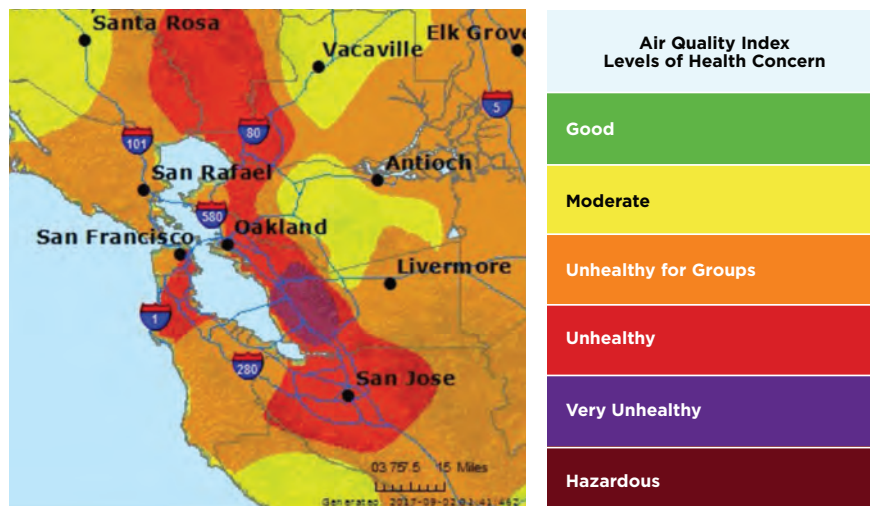
Risk Factors That Can Worsen Asthma or Influence Asthma Rates

California dominates this list because of wildfires. Smoke from wildfires contains tiny particles that affect air quality. These particles can irritate your eyes, nose, throat and lungs. Poor air quality can worsen asthma symptoms. Children and people with respiratory disease like asthma are at high risk for asthma episodes when the air quality is poor.

Wildfires do not only affect people in the immediate fire area. Smoke can blow many miles away and impact people hundreds of miles away. Smoke and ash contain harmful particles that can irritate even healthy lungs. The impact on those with asthma can be serious.

The Environmental Protection Agency (EPA) tracks and reports daily air quality around the country using the Air Quality Index (AQI). The AQI is a measure of air pollution to indicate the safety of the air and possible health effects. Those with asthma can watch air quality on [AirNow.gov](https://www.airnow.gov) to help them manage their symptoms.

AQI values are color coded by level of health concern. Green (AQI value of 0-50) means air quality is good. When the air quality reaches yellow (AQI value of 51-100) or higher, those who are sensitive to air pollution need to take caution, especially when outside.



The Air Quality Index (AQI) shows how clean or polluted the air is, and what associated health effects could be a concern. Forecasts and current measurements are available at [AirNow.gov](https://www.airnow.gov)

Air pollution is also connected to the development of asthma.¹²

Asthma rates are higher in polluted areas. Young children are particularly vulnerable when they live in areas with poor air quality.¹³

12. Gehring, U., Wijga, A. H., Hoek, G., Bellander, T., Berdel, D., Brüske, I., . . . Brunekreef, B. (2015). Exposure to air pollution and development of asthma and rhinoconjunctivitis throughout childhood and adolescence: A population-based birth cohort study. *The Lancet Respiratory Medicine*,3(12), 933-942. doi:10.1016/s2213-2600(15)00426-9

13. The Effect of Air Pollution on Lung Development from 10 to 18 Years of Age. (2005). *New England Journal of Medicine*,352(12), 1276-1276. doi:10.1056/nejm200503243521230



Risk Factors That Can Worsen Asthma or Influence Asthma Rates

This underscores the need to protect the Clean Air Act and enact policies that combat climate change. As temperatures rise, the risk of wildfires increases, and high-pressure weather systems trap ozone and other pollutants closer to the ground. Recently, the Environmental Protection Agency (EPA) disbanded a panel of air pollution experts who were responsible for reviewing air pollution standards and their impact on health.

Air quality can limit outdoor activities for those with asthma because inflamed lungs are more sensitive to poor air quality.



Lakia Shavon Lightner of Hartford, Connecticut (overall #13 on Asthma Capitals), has vivid memories from her childhood of visits to the emergency room at 2 in the morning. She has had severe asthma and allergies for as long as she can remember. She grew up in Hartford, but now lives in East Hartford, Connecticut.

She believes her asthma is more controlled now, but her asthma still limits what she can do. “I am limited and it’s expensive when you suffer from asthma and allergies,” she shared. “I notice a big difference living in the East Hartford area. It’s much better than the Hartford area.”

Weather and air quality both create conditions that trigger Lakia’s asthma.

“What triggers it is pollution, someone smoking around me,” Lakia said. “Also, the cold weather – that’s a challenge, and also the summertime. When it’s hot, I’m like a fish without water. I try to stay in the AC and have a fan around so I can breathe.”

To avoid her asthma triggers, sometimes she wears a mask to help make sure she can breathe well. But she doesn’t always know when she may run into her triggers.

“I don’t always wear the mask because people don’t always tell you if they smoke or don’t clean properly. Once I visit someone and get a picture of who they are, then I know if I need to bring the mask the next time I visit.”

She knows that if she is going to visit friends or family in Hartford, she is going to need her quick-relief inhaler because of the poor air quality. “The pollution is terrible there,” she shared.

For each city included in the 2019 Asthma Capitals, AAFA obtained scores for high ozone and high particle pollution days for each respective county. Then AAFA took an “average” of the two measures for the final air quality score.



Risk Factors That Can Worsen Asthma or Influence Asthma Rates

POLLEN

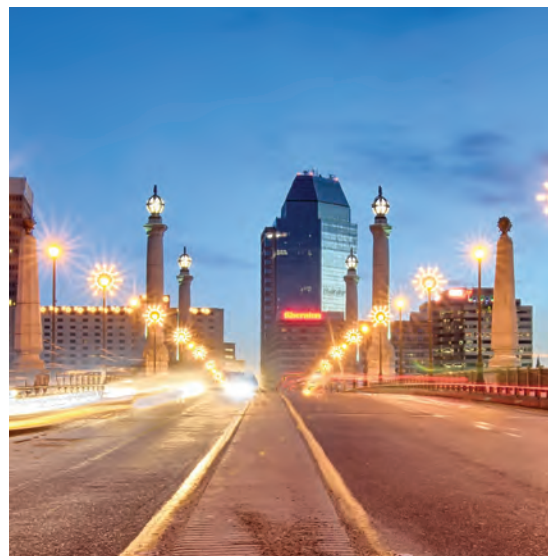
Substances that cause allergies (allergens) can trigger asthma. If you inhale something you are allergic to, you may experience asthma symptoms. Pollen is a common allergen that can cause allergic asthma (asthma triggered by allergens). An allergist can confirm whether you or your child have allergies, usually with a skin or blood test.

If pollen is an asthma trigger for you or your child, there are certain actions you can take to reduce, or minimize, your exposure to pollen. These include:

- Limiting outdoor activities during the hours when pollen counts are high
- Keeping windows closed during pollen season and using CERTIFIED **asthma & allergy friendly**[®] air cleaners and filters on your central air conditioning or HVAC units
- Bathing and shampooing before bed
- Changing and washing clothing after outdoor activities
- Wash bedding in hot, soapy water once a week
- Wear sunglasses and a hat - this will help keep pollen out of your eyes and off your hair
- Limit close contact with pets that spend a lot of time outdoors
- Dry your clothes in a clothes dryer, not on an outdoor line

These cities have the highest estimates of people affected by pollen:

Pollen Ranking (*Tie)	Metropolitan Area	Overall Asthma Capital National Ranking
1*	Springfield, MA	1
1*	New Haven, CT	11
1*	Hartford, CT	13
1*	Bridgeport, CT	42
5*	San Antonio, TX	94
5*	McAllen, TX	99
7	Richmond, VA	12
8	Syracuse, NY	51
9	Providence, RI	65
10	Memphis, TN	29



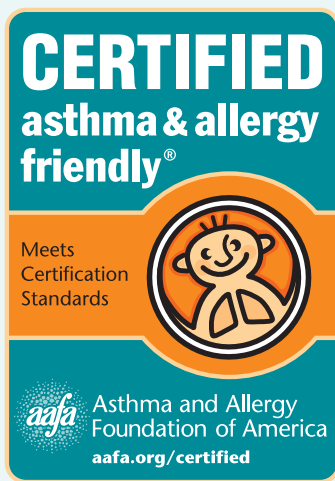
Springfield, MA



Risk Factors That Can Worsen Asthma or Influence Asthma Rates

High pollen can often send people with allergic asthma indoors.

“Living in this area of North Carolina, we definitely have a lot of trees with pollen,” said **Tracy Bush of Winston-Salem, North Carolina (overall #20 on Asthma Capitals)**. “Certain times of the year are worse. I actually have a weather app on my phone that pops up when there are medium or high levels of pollen. There were certain times of the year where it would affect [my son] behaviorally. I could tell something was going on. I would tell his teacher every year that about the end of October or November they’ll be emailing me about his behavioral issues. February, same thing. Those were certain times of the year when pollen would make him not feel well.”



ALLERGEN CONTROL

Asthma management involves taking medicine and avoiding your asthma triggers. Your asthma triggers may include irritants like air pollution or allergens like pollen.

Other allergens can also trigger asthma. Dust mites, cockroach debris, mouse dander, pet dander and mold can all trigger asthma. There are things you can do to control your environment and reduce exposure to allergens and irritants.

The **asthma & allergy friendly**[®] Certification Program sets high standards and then scientifically tests products to see if they meet those standards. Only products and services that pass every test will receive this mark. Learn more at aafa.org/certified.

AAFA also releases annual Allergy Capitals reports for spring and fall allergies. Visit allergycapitals.com to learn how your city ranks and what to do if you live in an Allergy Capital and have pollen allergies. In 2019, McAllen, Texas, ranked #1 on the Spring Allergy Capitals™ report.

Allergy Capitals Spring 2019

Asthma Capitals and Allergy Capitals (Spring and Fall) use different methodologies, using different factors (data) for each report. The factors are not weighted equally in the analyses. This may explain some of the differences in ranking between the Asthma Capitals and Allergy Capitals Reports.

For each city (Designated Market Area) included in the 2019 Asthma Capitals, AAFA obtained a comprehensive index of the population at risk of being affected by airborne allergenic pollen, derived from actual pollen counts, allergy prevalence for each pollen type and related factors.



Risk Factors That Can Worsen Asthma or Influence Asthma Rates

ASTHMA QUICK-RELIEF MEDICINE USE

Both long-term control medicines (sometimes called “controllers”) and quick-relief medicines (sometimes called “rescue inhalers”) may be necessary for optimal asthma management. Quick-relief medicines help relieve asthma symptoms as they are happening. These medicines act fast to relax tight muscles around your airways. This allows the airways to open up so air can flow through them. Frequent use of a quick-relief medicine (like an albuterol inhaler) is an indication there is a high number of asthma episodes.

If you use quick-relief medicines more than two days a week, this is a sign that your asthma is not under control. Talk with your health care provider about your asthma care plan and if you need to make changes.

For inhalers to work well they need to be used correctly. But they can be difficult to use and it can confuse people when their prescriptions change to a different type. More than half of all people who use inhalers don't do each step correctly. It is important for patients, nurses and doctors to learn proper inhaler technique and review inhaler use at every appointment.

Quick-relief medicine use is highest in these cities:

Asthma Quick-Relief Medicine Use Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	Toledo, OH	35
2	Des Moines, IA	60
3	Dayton, OH	2
4	Milwaukee, WI	10
5	Fresno, CA	71
6	Cleveland, OH	5
7	Syracuse, NY	51
8	Tampa, FL	83
9	Akron, OH	14
10	Springfield, MA	1



Toledo, OH

For each city included in the 2019 Asthma Capitals, AAFA obtained the number of quick-relief medicine prescriptions per patient prevalence, for a recent 12-month period, for the MSA.



Risk Factors That Can Worsen Asthma or Influence Asthma Rates

ASTHMA LONG-TERM CONTROLLER MEDICINE USE

Both controller and quick-relief medicines may be necessary for optimal asthma management. Controller medicines help prevent and control asthma symptoms. You may need to take this type of medicine every day for best results. There are several kinds of controller medicines, including inhaled corticosteroids (ICS). ICS medicines prevent and reduce airway swelling, as well as reduce mucus in the lungs. Combination inhaled medicines combine ICS with a long-acting beta agonist (LABA). LABAs open the airways by relaxing the smooth muscles around the airways. Other types of controller medicines include biologics or leukotriene modifiers. Always work with your doctor to determine which medicine is best for you or your child.

Asthma controller medicines are prescribed for persistent cases of asthma. A high number of these prescriptions may indicate that a city’s residents have more severe or uncontrolled cases of asthma.

These cities have the highest rates of asthma controller medicine use:

Asthma Long-Term Controller Medicine Use Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	Jackson, MS	15
2	Toledo, OH	35
3	Omaha, NE	9
4	Louisville, KY	7
5	Chattanooga, TN	21
6	Dayton, OH	2
7	Greenville, SC	22
8	Tampa, FL	83
9	Knoxville, TN	61
10	Des Moines, IA	60



Jackson, MS

For people with persistent asthma, controller medicines are essential to keeping symptoms under control. But they must be used regularly and consistently.

"I use [my long-term control medicine] every day in order to keep from wheezing and becoming short of breath," shared **Sharon B. of Richmond, Virginia (overall #12 on Asthma Capitals)**.

"As long as I take my medication, I don't have any attacks. But I will certainly have one, if I don't take it within 48 hours."

For each city included in the 2019 Asthma Capitals, AAFA obtained the number of controller medicine prescriptions per patient prevalence, for a recent 12-month period, for the MSA.



Risk Factors That Can Worsen Asthma or Influence Asthma Rates

SMOKING LAWS

According to the CDC, smoking is the leading cause of preventable death in the U.S.¹⁴ Smoking is not only harmful to the person doing the smoking but also to those nearby who inhale secondhand smoke or come into contact with thirdhand smoke. Many chemicals and substances in secondhand and thirdhand smoke can irritate the lungs and airways.

Secondhand smoke refers to smoke that is released in the air when a smoker exhales, as well as smoke released from a burning cigarette, cigar or pipe.

Thirdhand smoke is residue from tobacco smoke. When a cigarette is smoked, chemicals in the smoke stick to surfaces and dust for months after the smoke is gone. The chemicals in the residue then react to other pollutants in the air, like ozone, to create harmful particles you can easily inhale.¹⁵

Many state and local jurisdictions have passed laws that prohibit smoking in some places. These may include workplaces, restaurants, hotels, parks and transit systems. Research your state or county to see what the laws are in your area.

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
Atlanta, GA	68
Chattanooga, TN	21
Memphis, TN	29
Oklahoma City, OK	32
Tulsa, OK	37
Harrisburg, PA	53
Knoxville, TN	61
Nashville, TN	43
Virginia Beach, VA	47

What can cities do to help protect people from the harmful effects of tobacco smoke?

Strengthen protection for residents by making additional smoke-free zones (like public parks). Support smoking cessation programs. Encourage anti-tobacco campaigns that also teach about the dangers of vaping in schools.

What can states do to help protect people from the harmful effects of tobacco smoke?

Pass clean air laws that create smoke-free zones for the public. All indoor, public buildings should be smoke-free, and a buffer near entrances/exits should also be provided (e.g., no smoking within 25 feet of a building door or window). Fund smoking cessation programs.

14. Fast Facts and Fact Sheets | Smoking & Tobacco Use | CDC. (n.d.). Retrieved April 26, 2019, from https://www.cdc.gov/tobacco/data_statistics/fact_sheets/index.htm?s_cid=ossh-stu-home-spotlight-001

15. Emerging Evidence and Arguments for a Multidisciplinary Research Agenda. Environmental Health Perspectives, 119(9), 1218-1226. Retrieved March 27, 2019, from <https://ehp.niehs.nih.gov/doi/pdf/10.1289/ehp.1103500>

For each city included in the 2019 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 Factors That Can Worsen Asthma or Influence Asthma Rates

ACCESS TO SPECIALISTS

One of the most important parts of asthma management is working with your health care team to create a plan that keeps your asthma under control. In addition to a primary care doctor, a person with asthma might need to be in the care of a specialist. Pulmonologists, allergists and immunologists, for example, can provide specialized care for people with asthma and may have more experience treating patients with severe asthma or allergic asthma than a primary care physician.

Access to appropriate medical care is dependent upon different factors, including socioeconomic status, insurance status, and availability of specialists in nearby locations. The lack of availability of nearby asthma specialists may be associated with poor asthma outcomes.

These cities have the fewest asthma specialists per asthma patient:

Fewest Specialists Ranking	Metropolitan Area	Overall Asthma Capital National Ranking
1	Riverside, CA	82
2	Virginia Beach, VA	47
3	Ogden, UT	88
4	Modesto, CA	52
5	Bakersfield, CA	79
6	Dallas, TX	76
7	Atlanta, GA	68
8	New York, NY	39
9	Charlotte, NC	74
10	Greensboro, NC	3



Riverside, CA

Living in an area where there are fewer specialists can mean traveling long distances for care. This can be a burden on personal finances and time, especially when frequent trips are needed. And it may take months to get an appointment.

WHAT CAN CITIES DO TO HELP THIS ISSUE?

Recruit allergists and pulmonologists to work in your city.



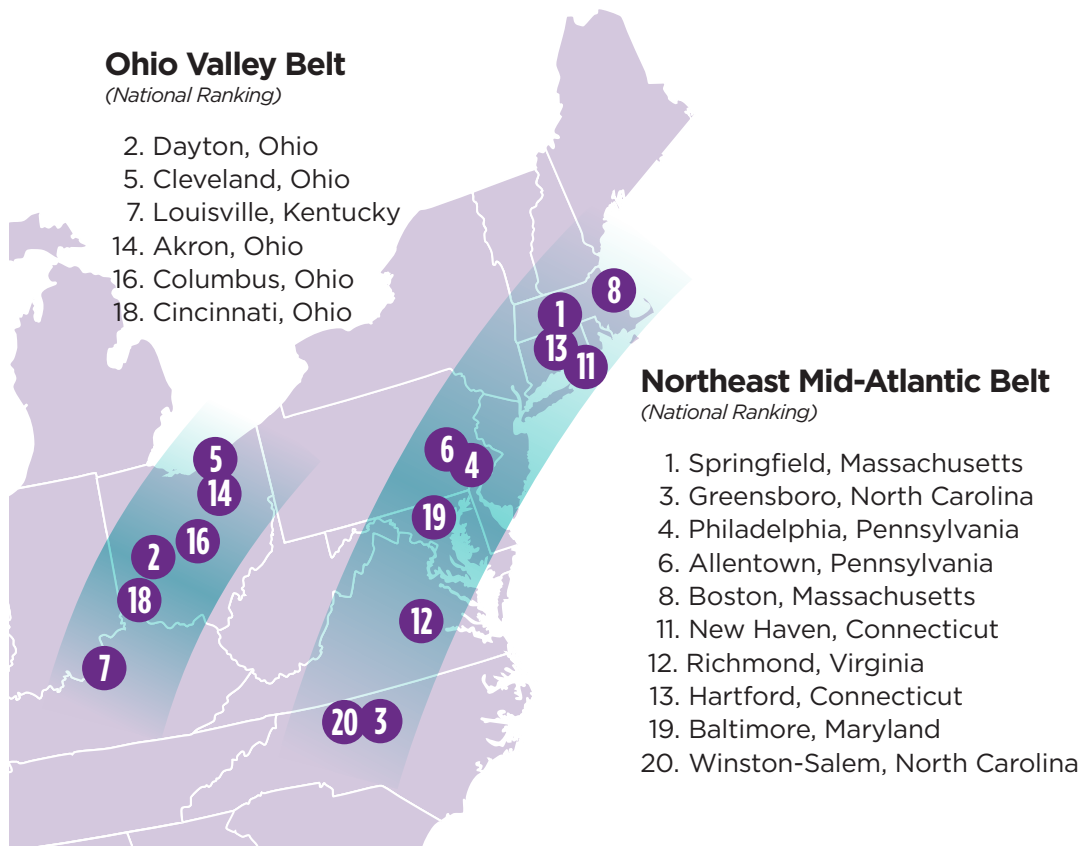
WHAT CAN STATES DO TO HELP THIS ISSUE?

Form a task force or asthma coalition to outline how to support asthma treatment in your state.

For each city included in the 2019 Asthma Capitals report, AAFA obtained an estimate of the number of certified pulmonologists vs allergists and immunologists in each city and respective county and selected the largest number. Then, AAFA calculated the total number of specialists per 10,000 asthma patients.

Regional Focus

During our research, we uncovered two eye-opening issues within our top 20 Asthma Capitals. First, all our top 20 Asthma Capitals are in the eastern half of the U.S. Second, there are two clear patterns, or “Asthma Belts,” that emerge when the top 20 Asthma Capitals are plotted on a map. These Asthma Belts indicate that further examination of these areas is needed on local, state and possibly even federal levels to improve asthma outcomes.



NORTHEAST MID-ATLANTIC ASTHMA BELT

Not only are this year’s top 20 capitals located on the eastern half of the country, many of them are clustered in the Northeast. The belt extends from Massachusetts to North Carolina. Poverty, air quality and access to specialists are key risk factors for these cities. This is likely a product of more industrial and urban populations. Asthma rates tend to be higher, especially among children, in urban locations due to more rental housing, more manufacturing and industrial businesses, and proximity to high-traffic roadways.



Access to asthma specialists in **Allentown, Pennsylvania (overall #6 on Asthma Capitals)**, is a challenge. There are fewer than a dozen asthma specialists in the area. **Dr. Robert Zemle** is one of them. He is an allergist with Allentown Asthma & Allergy, as well as the Chief of the Division of Allergy at Lehigh Valley Hospital. He treats both children and adults. And he recognizes the “huge impact asthma has on people’s lives.”

“Springtime is particularly hard for a lot of patients around here. The tree pollen season and the grass pollen season is a difficult time for many of our patients,” he explained. “It’s one of those things that [can] make it impossible [for them] to enjoy the outside.”

Helping people identify their asthma triggers, such as spring allergies, is an important part of Dr. Zemble’s job.

“We want to identify what are their triggers and what is going to affect them,” he shared. This includes “identifying the particular demographics of where they live and how they are going to affect them.”

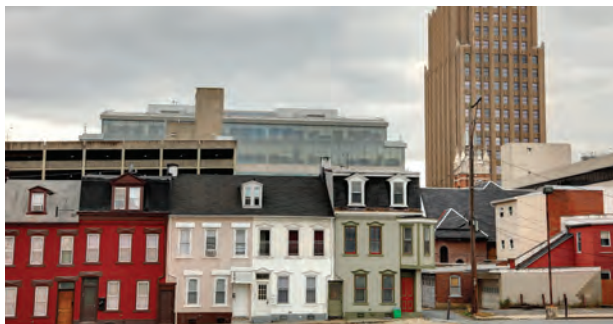
For example, he looks at a person’s exposure to pollen, insects, dust, poor air quality, pet dander and more. The exposure may depend on where they live. The Allentown area includes both urban and suburban areas. And Dr. Zemble sees people who live in both settings.

People who have asthma often have other medical conditions as well. Dr. Zemble has seen firsthand how “other allergic diseases are associated with the development of asthma. A lot of our patients with asthma also have atopic dermatitis, food allergies, allergic rhinitis and allergic conjunctivitis. Some of the patients are also overweight, and that is a known factor for developing and worsening asthma.”

He works in collaboration with the team at Allentown Asthma & Allergy to teach patients about asthma, how to identify symptoms and how to properly use an inhaler. He points out that proper inhaler use is critical.

“If you don’t [teach people how to properly use their medicine] and they aren’t getting their actual medicine [into their lungs], it doesn’t matter what medicine you prescribe them,” he shared.

His advice for other health care professionals is “to really communicate with your patients. Find out what is triggering their asthma. And really educate them on how and why to use their medicines.”



Allentown, PA



Columbus, OH

OHIO VALLEY ASTHMA BELT

Five Ohio cities are in the top 20 of our report – Akron, Cincinnati, Cleveland, Dayton and Columbus. With so much of Ohio facing poor outcomes, asthma appears to be a widespread concern. Nearby, Louisville appears in this “Asthma Belt.” Poverty, pollen, air quality and high numbers of medicine use are the key risk factors that have placed multiple Ohio cities at the top of our report. Most of the Ohio cities in the top 20 Asthma Capitals have a poverty rate that is higher than national average.

Poverty rates:

- Cleveland – 18.1%
- Cincinnati – 16.2%
- Columbus – 16%
- Dayton – 15.9%
- National average - 14%
- Akron – 12.9%

Poverty rates among children in these cities are even higher, especially among minority populations. Asthma rates among minorities coincide with these poverty rates. In Ohio overall, 16% of Non-Hispanic black children and 11.9% of Hispanic children have asthma, compared to 4.9% of Non-Hispanic white children.



Alisha Hopkins, CNP, is Director of the Lung Health Clinic for The Breathing Association, a free clinic in **Columbus, Ohio (overall #16 on Asthma Capitals)**. The Breathing Association helps people breathe easier through education, detection, care and treatment.

“Our patients live at a level of acceptance,” shared Alisha. She sees people “when they are very short of breath and their level of understanding about asthma is very low.” She works to help them realize that “breathing is not a luxury; it’s a necessity.”

Sometimes when people first come to see her, they are using their quick-relief inhaler four or five times a week. To Alisha, that “is not acceptable. Their asthma symptoms are not controlled.” For various reasons her patients often do not have health insurance. Or they can’t afford the copayments on their medicines.

“When they don’t have health insurance, I can tell,” she shared. “They don’t use the medication as prescribed.” She has had patients who used their grandmother’s inhaler, bought inhalers off the black market and/or spaced out doses of long-term control medicines rather than taking them every day as prescribed.

She often provides patients with sample medicines to help start getting their asthma under control. But she recognizes “a month’s sample is a Band-Aid. It’s not going to work.” So her work doesn’t stop there.

“I teach them to use the long-term control inhaler every day. You don’t get the same instant relief as the rescue inhaler, so they think it doesn’t do anything for them.”

But it does. Medicine adherence is a critical part of managing asthma. One of Alisha’s favorite things to hear from a patient at their follow-up appointment is, “I can’t believe it. I haven’t had to go to the ER at all.” And she tells them, “That is exactly what is supposed to happen.”

She also helps people learn how to be aware of their breathing. This includes knowing when and how many times to use their quick-relief inhaler.

“A lot of the education we provide is identifying the signs of shortness of breath and when to take action, when to call me and when to go to the ER,” she shared.

Part of the education she provides also includes understanding asthma triggers. In Central Ohio, this includes pollen.

“Central Ohio has a very high pollen count. Springtime is when people with asthma are having difficulty secondary to allergies. We must educate them about how asthma can be affected by allergies. I think education is the key to compliance and empowering people to feel that they are in control of their asthma. Because really they are.”

SPRINGFIELD, MASSACHUSETTS - #1 ASTHMA CAPITAL FOR 2019

Last year's top Asthma Capital, Springfield, Massachusetts, is again the most challenging place in the U.S. to live with asthma. It ranks #1 for its high asthma prevalence and high number of asthma-related emergency room visits. The area has the highest number of asthma-related emergency room visits in the U.S., as well as a high rate of asthma prevalence overall. High pollen counts are also a big factor for Springfield's residents with asthma. To get a better understanding of the asthma problem there, we talked with a local family, senator, allergist and city councilor.



“The prevalence of asthma rates among adults with asthma is higher in Massachusetts than anywhere else in the U.S. Forty-one percent of Massachusetts children in school or daycare with asthma have missed at least one day of school in the past year. Uncontrolled asthma symptoms interfere with active, healthy lives. AAFA New England is committed to making sure the facts about asthma are known, that the impact of asthma is understood, and that we provide the programming and resources necessary for individuals and families to better manage this chronic health condition, so that asthma outcomes and quality of life are greatly improved.” – *Jan Hanson, M.A., President of the AAFA New England Chapter*



Breathing has been a challenge for Quincy Elliott since the day he was born. He has chronic lung dysplasia and allergic asthma. Born premature at 26.5 weeks, he spent a month and a half in the hospital. “Quincy came home on oxygen, so that was a challenge because I had to tote around the oxygen tank wherever we went,” recalled Sherondia, Quincy’s mom.

Sherondia and Quincy, age 10, live in Springfield. While he is no longer carrying around an oxygen tank, he always carries his quick-relief inhaler and gets bi-weekly shots of Xolair. In addition to having asthma, Quincy is allergic to pollen, grass and pet dander. Pollen is one of the major asthma risk factors in Springfield, along with the use of quick-relief asthma medicine.

Getting allergy testing done was a turning point for managing Quincy’s asthma. Sherondia shared that “when he did the whole allergy testing, that clued me in to a lot of things about his health and why certain things would trigger his asthma. It was because of the pollen, the trees, the grass.”

During the spring when pollen is prevalent, simple activities like going outside for gym class are difficult for Quincy. As a result, he keeps both a quick-relief inhaler and a nebulizer at school. And it is a good thing he does, because “he is not able to run a long distance and do what all the other kids are doing,” shared Sherondia. He often “has to take a break and go to the nurse to use his inhaler.”

There have been some scary moments along the way, including trips to the emergency room. “Staying on top of things with him is the most important thing,” explained Sherondia. “And making sure that he is getting what he needs.”

To help build up his lung function, Quincy’s pulmonologist suggested he take up swimming. “It was a little push for him because he didn’t know how to swim and he was a little nervous and scared,” shared Sherondia. He has been taking swim lessons for eight months now and he is enjoying it.

Sherondia is working hard to help Quincy manage his asthma and do activities he wants to do. “I don’t want him to feel like his asthma is a crutch,” she shared. She wants to empower him. And so she wants more people to be aware of asthma, especially teachers in schools.



“True to our mission, AAFA New England is committed to improving the quality of life for people with asthma and allergies in all six New England states. We plan to take our support group concept to many communities, including Springfield, to provide ‘boots on the ground’ education, support and advocacy where it is most needed.” – *David Guydan, AAFA New England Executive Director*



We recently had an opportunity to talk with **Senator Eric Lesser from Massachusetts**. Here’s what he had to say about asthma in Springfield:

“I think the single most important thing for us, as policy makers, is to be well armed with good information about the problem and the scope of the problem,” he stated. “We rely on the research to inform the decision making going forward.”

Senator Lesser wants to “get people in to see their primary care doctor and young kids to see their pediatrician, so that issues can be spotted as soon as possible before they become debilitating emergencies that have to get treated in emergency rooms.”

He recognizes that to reduce the impact of asthma, we need to address air quality, poverty and education.

When asked about how air quality and pollution have an impact on asthma in Springfield, he acknowledged that “we are in the valley which exacerbates some of the pollution dynamics. And we have an industrial heritage here in Springfield. We were the home of Indian Motorcycles, Monsanto and American Bosch.” When those companies left, Springfield not only lost jobs. It was “also left with a major environmental legacy.”

So, what is Senator Lesser doing to make a difference and help those with asthma in Springfield?

He is working on initiatives to:

- **Provide better public transit and rail service.** He shared that “if we put in better rail service we could take tens of thousands of cars off the road. It would probably be the single biggest improvement in air quality we could do.”
- **Promote electric vehicles.** This includes “putting in more structures and incentives for vehicle charging stations and rebates for folks who purchase electric vehicles.”
- **Audit the energy efficiency of homes and create incentives for people to make their homes more energy efficient.** “A quarter of the air emissions in Massachusetts are actually from the residential building sector,” he shared. He thinks they can reduce this by doing home energy audits. They will identify opportunities to improve energy efficiency. For example, installing new insulation, replacing windows and fixing leaking roofs and doors could “mean less emissions because that is less power being demanded of our power plants and less emissions from the homes themselves.”

Above all, Senator Lesser thinks “we need to do more to raise public consciousness” about asthma. “You have to take on the socioeconomic issues. You have to take on the environmental issues. And you have to take on the issues like pollution that require a major mobilization to get done,” he shared.



David Robertson, MD, MPH, of Allergy Immunology Associates of New England shed some light on why Springfield ranks so high.

“It’s kind of a perfect storm in Springfield,” said Dr. Robertson. “One component of it is allergic disease. About 60 to 80% of kids with asthma will have an allergic contribution to their symptoms, and about 40 to 60% – roughly about half – of adults with asthma will have an allergic contribution. So it’s not surprising that Springfield was the #1 city for asthma and the #5 city for allergies. There’s definitely a link there.”

Geography and environment create a less-than-ideal situation for the residents of Springfield, according to Dr. Robertson. Because Springfield is in a valley, both pollen and carbon dioxide collect in the area. Carbon dioxide is trapped and heats up the valley, creating the perfect environment for the pollen season to be longer and more potent.

Socioeconomic factors affect Springfield’s asthma rates as well.

“Springfield, like a lot of urban centers, has a fairly large population that doesn’t either have access to health care, or it’s just socioeconomically disadvantaged,” Dr. Robertson explained. “Getting to the doctor regularly for checkups may be an issue because of transportation. There is a major teaching hospital here with Baystate and there are resident clinics. In theory, in the state of Massachusetts no one should go without health insurance, so everyone should have access to care. But getting into the doctor’s office on a regular basis for scheduled checkups, which is an integral part of asthma management, can sometimes be a challenge.”



In 2018, **Jesse Lederman, Springfield City Councilor At-Large and Chairman of the Health and Human Services Committee**, organized a committee meeting following the release of AAFA's Asthma Capitals report which ranked Springfield as the #1 Asthma Capital.

We took the opportunity to speak with Councilor Lederman about it.

"Springfield and the greater metropolitan region's continued asthma prevalence is a result of numerous circumstances," he states, "including geography, infrastructure, housing stock, lack of access to long and short-term health care and poverty."

Councilor Lederman thinks that housing stock and air quality, in particular, play a big role in the high number of asthma-related emergency department visits in the Springfield area.

"Some research has shown that 40% of asthma exacerbations are attributed to home-based health hazards," he points out. "A HUD housing analysis in Springfield has found that a large percentage of housing stock remains aged with a high need for rehabilitation. Springfield and the greater metropolitan region have some of the oldest housing stock in the state, which can leave units susceptible to conditions that lead to and exacerbate asthma."

He recognizes that Springfield's air quality is impacted by the heavy interstate traffic and commercial pollution, "made worse by [Springfield's] position in a valley which also traps pollution."

Councilor Lederman and the city council are working to reduce transportation pollution through implementation of a "Complete Streets" model. This program "seeks to upgrade infrastructure across the city to be more pedestrian friendly and encourage walking and biking, while also fighting for more funding at the state level for public transportation."

Partnerships are key in tackling the asthma epidemic locally. The city of Springfield has partnered with community organizations and health care institutions in efforts to reduce the asthma burden. Councilor Lederman credits the Pioneer Valley Asthma Coalition, a project of the Public Health Institute of Western Massachusetts, as well as the Springfield Department of Health and Human Services for much of this work.

When asked what can be done to reduce the asthma rates in Springfield, Councilor Lederman says "We need a region-wide and state-wide approach to reducing pollution, increase air quality and increasing health care access in coalition with major health care providers. In addition, in the city of Springfield, I believe we should be seeking funding at a higher level to expand the asthma home visit and rehabilitation programs that currently exist."

Councilor Lederman wants the public to understand this about asthma in Springfield:

"The asthma epidemic impacts all of us personally. In my work around environmental and public health I will often ask audiences to raise their hands if they have asthma, followed by a request to raise their hand if someone they know has asthma. By the end, consistently, all hands in the audience are raised. I want people in Springfield with asthma to know that there are resources available to help, and where there are not, we will continue working alongside them to develop and make available those resources."



What Can Be Done

During the past two decades, the prevalence of asthma has increased. AAFA commits to making an impact to reduce asthma rates, asthma deaths and the burden of this disease on people and communities. It will take multiple stakeholders working harmoniously to improve outcomes.

FEDERAL, STATE AND LOCAL HEALTH OFFICIALS CAN:

- Track asthma rates and the effectiveness of control measures so continuous improvements can be made in prevention efforts
- Improve asthma care through policies and funding that promote and support:
 - Free asthma screening programs
 - Influenza (flu) and pneumonia vaccination for people with asthma
 - Preexisting conditions coverage protections
 - Medicaid and Medicare expansion to cover poor, uninsured people
 - Affordable drugs and copayments
 - Asthma education and intervention programs
 - Asthma management plans in schools
 - Nurses in every school
- Promote improvements in indoor air quality for people with asthma through measures such as smoke-free air laws and policies, healthy schools and workplaces, home improvements and remediation for low income housing
- Reduce air pollution and improve outdoor air quality by promoting policies that support:
 - Carpools, public transportation, cycle and pedestrian-friendly roads
 - Electrifying buses and other public transportation
 - Traffic reduction measures to reduce idling
 - Rebates for electric cars and green energy solutions like solar panels
 - Reduction of food waste
 - Increased consumption of plant-based meals (reduction of meat intake)
 - Reduction of industrial air pollution from nitrogen oxides, carbon dioxide and ozone
 - Protection and creation of urban green spaces
 - Burn ban enforcements
 - Transitions to cleaner heating (reduce fireplace and wood stoves)
 - Composting and recycling
- Support tobacco cessation programs, tobacco prevention programs and vaping/e-cig interventions for teens and children
- Support and fund primary, secondary and tertiary asthma prevention research
- Include people with asthma in all levels of planning for asthma-related interventions
- Oppose step therapy for drug coverage that does not have adequate patient protections and may force patients to take a drug that is not designed to treat their specific health circumstances, negatively impacting care



What Can Be Done

- Expand funding for the National Asthma Control Program (NACP) of the Centers for Disease Control and Prevention (CDC)
- Recognize World Asthma Day (first Tuesday of May) and National Asthma and Allergy Awareness Month (May) and commit to reviewing the state of asthma annually

HEALTH CARE PROVIDERS CAN:

- Determine the severity of asthma and monitor how much control the patient has over it
- Make an Asthma Action Plan with all asthma patients
- Address co-morbidities and create a plan on how to co-manage those conditions
- Tailor asthma management plans to meet patients where they are – people’s needs are different and each case of asthma is unique
- Learn how to use all asthma medicines and then teach patients and their caregivers how to properly use the medicines and devices
- Check the patient’s inhaler technique at each asthma appointment
- Incorporate interactive learning in the clinic to teach patients and caregivers how to recognize early warning signs and symptoms of asthma and the Green, Yellow and Red Zones of an Asthma Action Plan
- Implement a way for patients/caregivers to report symptoms easily so that interventions are timely when a person is in the Yellow or Red Zone
- Discuss with patients and their caregivers the difference between long-term controllers and quick-relief medicines and why they are used
- Discuss environmental control at appointments and how to avoid asthma triggers such as tobacco smoke, mold, pet dander, dust mites and outdoor air pollution
- Prescribe inhaled corticosteroids for all patients with persistent asthma
- Use a stepwise approach to asthma therapy
- Refer patients to a specialist (e.g., allergist to conduct allergy testing; or an allergist or pulmonologist when a patient’s asthma is severe persistent or difficult to control)
- Refer patients to reputable local or national organizations that provide asthma support and education
- Encourage people with asthma to exercise and help them create a plan for managing/preventing exercise-induced symptoms
- Offer flu and pneumococcal vaccinations
- Assist patients with drug coverage questions, pre-authorizations and insurance appeals
- Advocate for federal, state and local policies that improve asthma



What Can Be Done

PEOPLE WITH ASTHMA AND PARENTS OF CHILDREN WITH ASTHMA CAN:

- Receive ongoing appropriate medical care and ask for a referral to an asthma specialist if their asthma is difficult to control or severe and persistent
- Be empowered through education to manage their asthma and asthma attacks
- Sign up for AAFA's free ASTHMA Care for Adults online course to learn about asthma triggers, how to control asthma and improve the home and work environments (sign up at aafa.org/asthmacare)
- Avoid asthma triggers at school, work, home and outdoors:
 - Check your indoor environments for ways to reduce asthma triggers
 - Use CERTIFIED **asthma & allergy friendly**[®] products to reduce exposure to allergens and asthma triggers (pillow encasements, vacuums, air cleaners, etc.)
- Parents of children with asthma should not smoke, and if they do, they can commit to quitting and sign up for a tobacco cessation program
- Use inhaled corticosteroids and other prescribed medicines correctly – ask the nurse or doctor to check technique at every appointment
- Take steps to reduce personal contributions to air pollution:
 - Walk or bike whenever possible
 - Use public transportation or carpools
 - Switch to cleaner energy if possible
 - Reduce food waste
 - Reduce meat consumption and replace with more plant-based meals
 - Use LED lights and turn them off when not in use
 - Use a smart thermostat to optimize your heating/cooling
 - Reduce, reuse, recycle
- Vote for asthma-friendly policies
- Speak at local city council meetings about asthma
- Spread asthma awareness on World Asthma Day

HEALTH INSURANCE COMPANIES CAN:

- Track asthma rates and the effectiveness of control measures so continuous improvements can be made in prevention efforts
- Improve asthma care by covering:
 - Influenza and pneumonia vaccinations (at all locations and without preauthorizations)
 - Asthma education and intervention programs (offer reimbursements for home visits by nurses and community health workers)



What Can Be Done

- The costs for environmental controls that reduce exposure to asthma triggers (e.g. air cleaners, carpet removal, allergen-barriers for bedding)
- Lung function tests
- Add all asthma medicines to their formularies so every patient with asthma has access to the medicine their care provider prescribes
- Refer patients to an asthma education or intervention program after emergency visits (AAFA's ASTHMA Care for Adults online course is free and available at aafa.org/asthmacare.)
- Support tobacco cessation programs, tobacco prevention programs and vaping/e-cig interventions for teens and children
- Support drug pricing transparency and overhauling the rebate system so patients have access to affordable medicines which increases likelihood of adherence
- Ensure all patients have an Asthma Action Plan
- Commit to researching and addressing why seniors and black women are at the highest risk of death from asthma
- Include patient protections into any step therapy requirements so patients do not encounter delays and restricted access to medically necessary and effective drugs and treatments

DRUG (PHARMACEUTICAL) COMPANIES CAN:

- Ensure diverse representation of patients in all clinical trial phases
- Include patients as advisors in all stages of drug development
- Support patient education
- Study barriers to medicine adherence
- Improve drug labels to prioritize health literacy and user experience
- Commit to researching and addressing why seniors and black women are at the highest risk of death from asthma
- Offer patient financial assistance
- Support drug pricing transparency and overhauling the rebate system
- Improve access to pharmacological therapies by keeping prices affordable

METHODOLOGY

The 2019 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. In 2018, the methodology changed from previous years' reports, in consultation with Mitchell Grayson, MD, chief of the Division of Allergy and Immunology and a professor of Pediatrics at The Ohio State University College of Medicine, and chairman of AAFA's Medical Scientific Council; therefore, comparisons to previous reports are not reliable. The three individual factors analyzed for the 2019 rankings are: estimated asthma prevalence; crude death rate from asthma; and emergency department visits due to asthma. For each factor, AAFA used the most recently available calendar year(s) data. Weights are applied to each factor; factors are not weighted equally. Total scores are calculated as a composite of all three factors, and cities are ranked from highest total score (city rank #1) to lowest total score (city rank #100).

ESTIMATED ASTHMA PREVALENCE

For each city, AAFA obtained the estimated asthma prevalence for the respective county.

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. Deaths rates from the most recent five year period were analyzed. This is a change from previous years, in which death rates from 10+ years were analyzed.

EMERGENCY DEPARTMENT VISITS DUE TO ASTHMA

For each MSA, AAFA obtained the total number of emergency department visits where an asthma ICD 10 code was included as a diagnosis.

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.

RISK FACTORS

- **Annual air quality** – Pollution levels and number of unhealthy outdoor ozone days, scored on a scale of A (best) to F (worst)
- **Annual pollen score** – A comprehensive index of the population at risk of being affected by airborne allergenic pollen, derived from actual pollen counts, allergy prevalence for each pollen type, and related factors (by Designated Market Area)
- **Medicine use (controller)** – Number of controller medicine prescriptions per patient prevalence
- **Medicine use (quick-relief)** – Number of rescue medicine prescriptions per patient prevalence
- **Number of asthma specialists** – Number of board-certified allergists/immunologists or pulmonologists per patient prevalence
- **Public smoking laws** – Number of “100% smoke-free” public smoking bans (e.g., bars, restaurants, workplaces, etc.)
- **Poverty rate** – Estimated population living in poverty
- **Uninsured rate** – Estimated population without health insurance

DATA SOURCES

- American Board of Medical Specialties, Specialists Database
- American Lung Association, Estimated Prevalence and Incidence of Lung Disease, 2018
- American Lung Association, State of the Air, 2018
- American Nonsmokers Rights Foundation, States, Commonwealths, and Territories with 100% Smokefree Laws in all Non-Hospitality Workplaces, Restaurants, and Bars, 2019
- Centers for Disease Control and Prevention, WONDER Online Database, Mortality
- IQVIA Allergy Activity Notification (AAN) Program Database
- IQVIA Emergency Visit Database
- IQVIA Medication Database
- U.S. Department of Commerce, Bureau of the Census, Metropolitan and Micropolitan Statistical Areas
- U.S. Department of Commerce, Bureau of the Census, Small Area Income and Poverty Estimates
- U.S. Department of Commerce, Bureau of the Census, Small Area Health Insurance Estimates

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RESOURCES

Get general information on asthma:
aafa.org/asthma

Get general information on allergies:
aafa.org/allergies

Join our community for the latest news and to talk to others managing asthma and allergies in an encouraging and supportive environment:
community.aafa.org

Follow our blog for news on asthma and allergies:
aafa.org/blog

Find products to help you create a healthier home through our **asthma & allergy friendly**® Certification Program:
aafa.org/certified

Learn how to improve your indoor air quality:
aafa.org/iaq

Learn how to manage pollen allergies:
aafa.org/pollen

Find school resources for managing your child's asthma:
aafa.org/school

Download an Asthma Action Plan:
aafa.org/asthmaactionplan

AAFA's Allergy Capitals™ Report:
allergycapitals.com

National Asthma and Allergy Awareness Month:
aafa.org/awarenessmonth

Find an allergist or immunologist:
allergist.aaaai.org/find

Follow the EPA's air quality reports:
AirNow.gov

Follow daily local pollen counts:
pollen.aaaai.org

See the air quality of U.S. cities on the American Lung Association's State of the Air Report:
stateoftheair.org