

# Asthma Burden Report

Missouri Asthma Prevention and Control Program



# OVERVIEW

- Missouri
- Asthma Prevalence
- Emergency Department Visits
- Hospitalizations
- Geographic Areas
- School Health
- Reducing the Burden and Improving Outcomes
- Resources





## Missouri

midwestern United States

### Population > 6 million

~ 1 in 6 children and 1 in 9 adults live in poverty

Aging and racial / ethnic diversity

### 115 counties

Rural (~86%) / Urban (14%) counties

> 60% of population in urban areas

### Many health professional shortage areas

### Bordered by 8 states

Iowa, Illinois, Kentucky, Tennessee, Arkansas, Oklahoma, Kansas, Nebraska



# Asthma Prevalence

- A chronic respiratory condition among children and adults
  - Characterized by episodes of shortness of breath, coughing, wheezing, chest tightness, and mild to severe respiratory distress

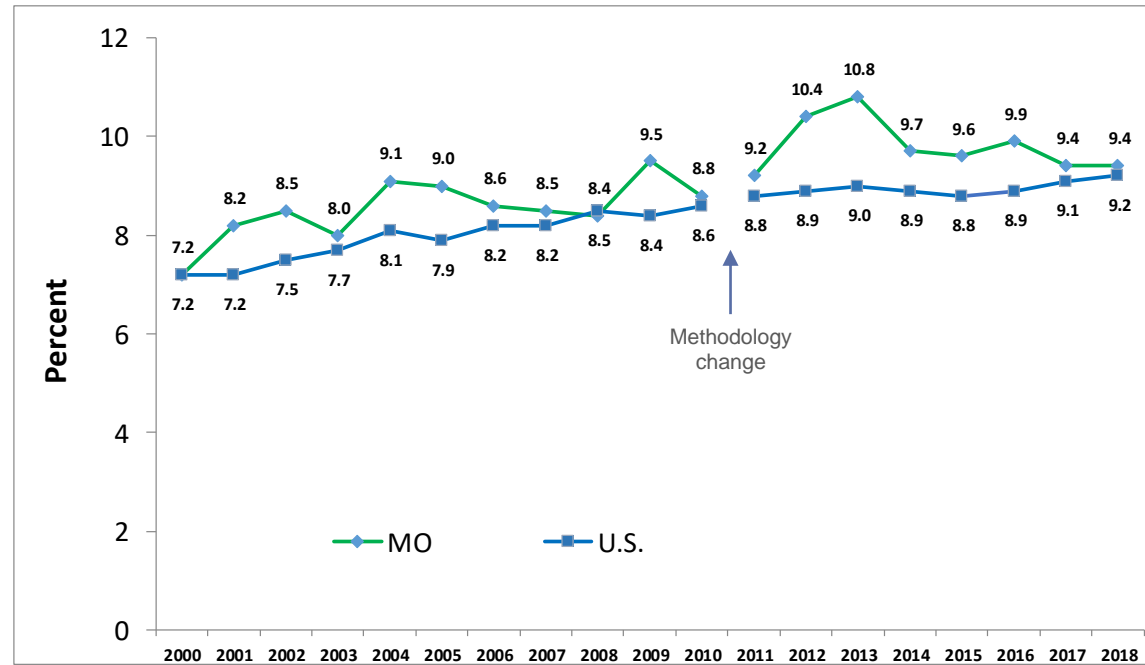
United States, asthma impacts:  
19.2 million adults  
5.5 million children

Missouri, asthma impacts 1/2 million people  
> 440,000 adults, age  $\geq$  18 years  
> 108,000 children, age 0 to 17 years

U.S. Centers for Disease Control and Prevention (CDC), National Health Interview Survey <https://www.cdc.gov/asthma/nhis/default.htm> and Behavioral Risk Factor Surveillance System (BRFSS) <https://www.cdc.gov/asthma/brfss/default.htm>



## Current asthma among adults 18 years and older, Missouri, 2019



Prevalence elevated in Missouri compared to US for most years

In 2018, prevalence in Missouri similar to US

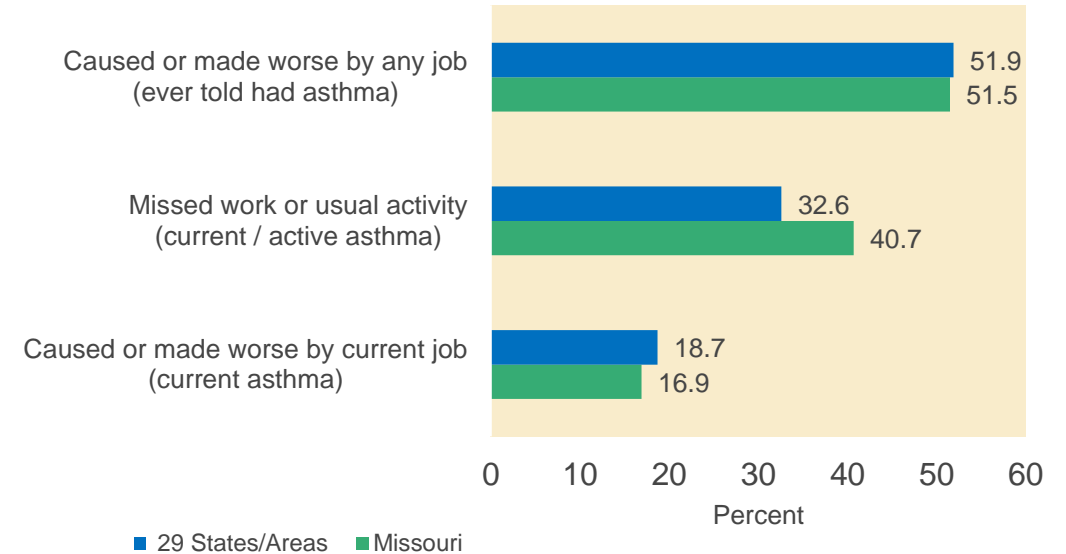
# Trends Adult Asthma Prevalence



# Work-related Asthma

## In Missouri

- Of the working adults ever told they had asthma, more than one-half reported a job at some point caused or made their asthma worse
- 2 out of 5 missed work or usual activity because of asthma
- 1 out of 6 reported current job caused or worsened asthma



# Pediatric Asthma



- Children share a large care burden for asthma in Missouri

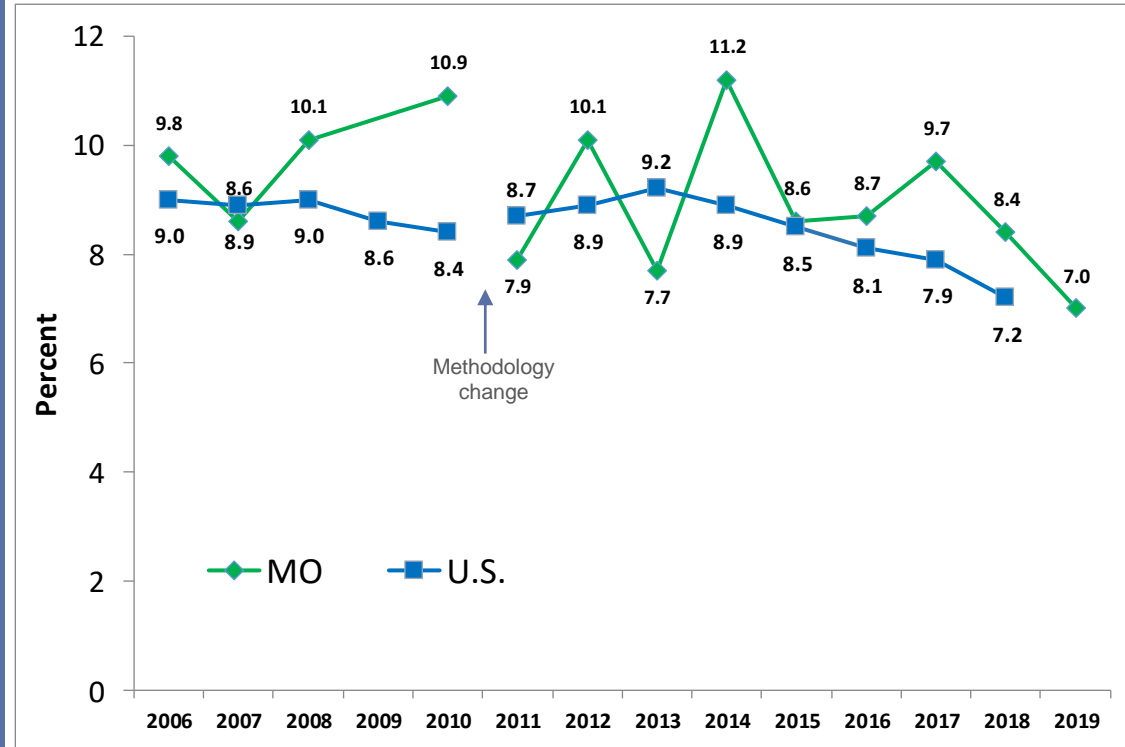
- Uncontrolled asthma results in urgent care, ER visits, and hospital stays





# Trends Childhood Asthma Prevalence

Current asthma among children age 0 to 17 years, Missouri, 2019



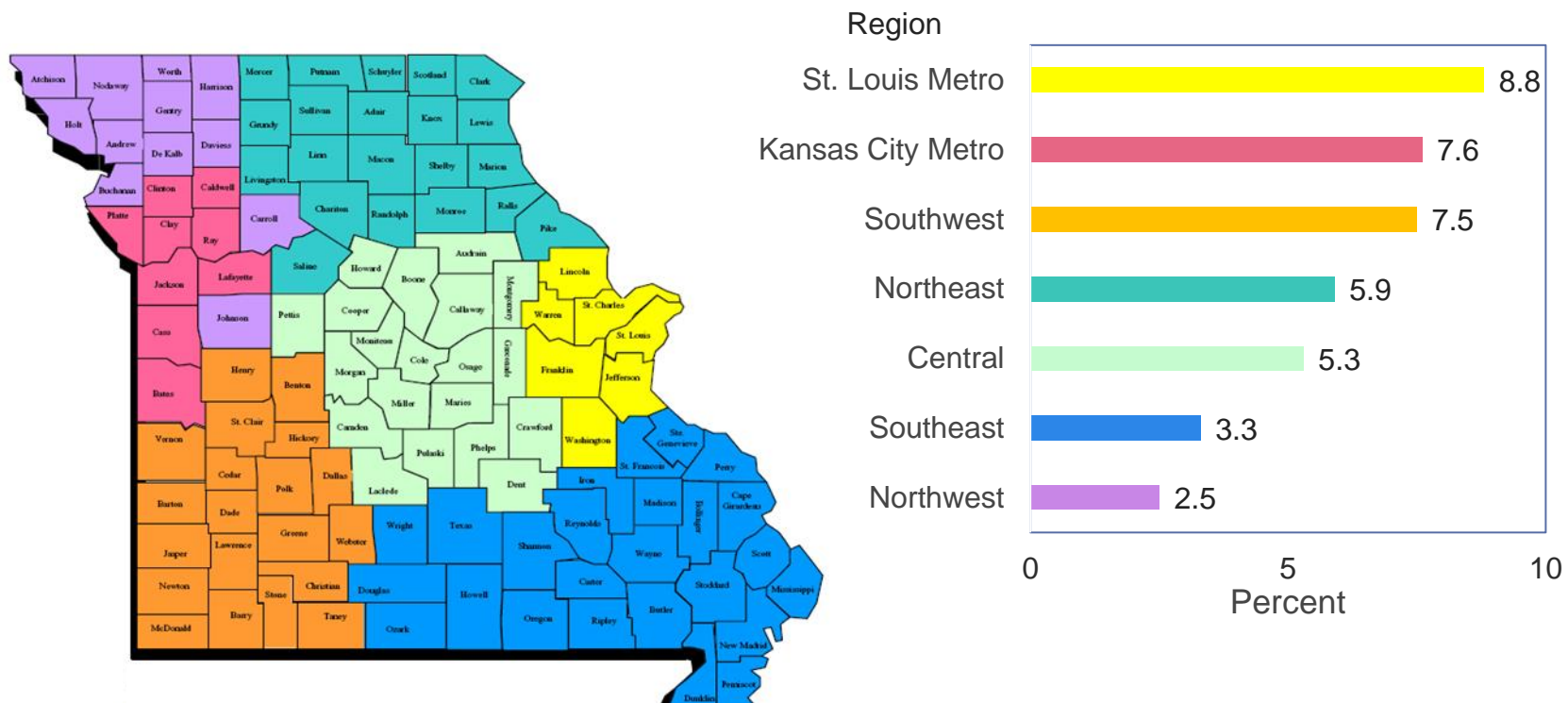
- Steep increase in prevalence 2007-2010
- Large fluctuations average 9.1% 2011-2015
- Declined 27.8% 2017 to 2019





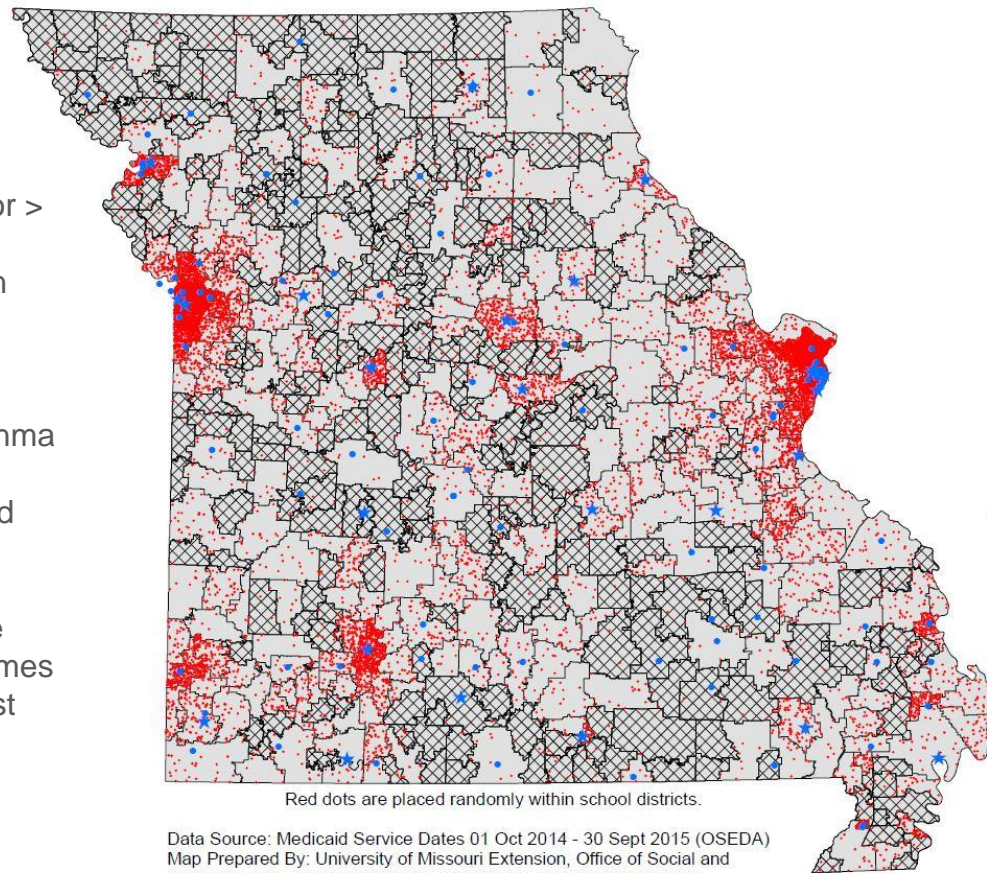
# Geographic Areas

## Prevalence of current asthma among children age 0 to 17 years, Missouri, 2019



## Children with Medicaid with HEDIS Persistent Asthma by School District

- Provides health care coverage for > one-third of all Missouri children
- Substantial proportion have uncontrolled asthma
- Guidelines based clinical care and community interventions are improving outcomes and lowering cost



### Legend

- ★ FQHC Center (25)
- FQHC Site (96)
- 1 Dot = 1 Child aged 5-18
- Suppressed school district

Missouri = 17,210 children in 271 districts  
 Suppressed = 473 children in 287 districts  
 N = 17,683

Data Source: Medicaid Service Dates 01 Oct 2014 - 30 Sept 2015 (OSED)  
 Map Prepared By: University of Missouri Extension, Office of Social and Economic Data Analysis (OSED) Map Generated On: 15 Aug 2016  
 HEDIS: Healthcare Effectiveness Data and Information Set  
 FQHC: Federally Qualified Health Center

MO  
 HealthNet



# Risk Factors

Many factors place children at high risk for asthma episodes

- Preschool children age 0 to 4 years
- Young boys compared to girls
- Low socioeconomic status
- Being African-American or other minority
- Co-morbidity conditions
- Environmental triggers

# Asthma Triggers

you can control  
**Asthma Triggers**

Environmental conditions that cause asthma symptoms are called triggers. Triggers irritate the lining of the airways, which can lead to an asthma attack. By identifying and reducing asthma triggers, you can help reduce the impact asthma has on your child's life.

**Cockroaches**

**Air Pollution**

**Indoor Mold**

**Dust Mites**

**Rodents**

**Tobacco Smoke**

**Animal Dander**

To identify and reduce exposure to asthma triggers visit:  
[www.cdc.gov/asthma/triggers.html](http://www.cdc.gov/asthma/triggers.html)

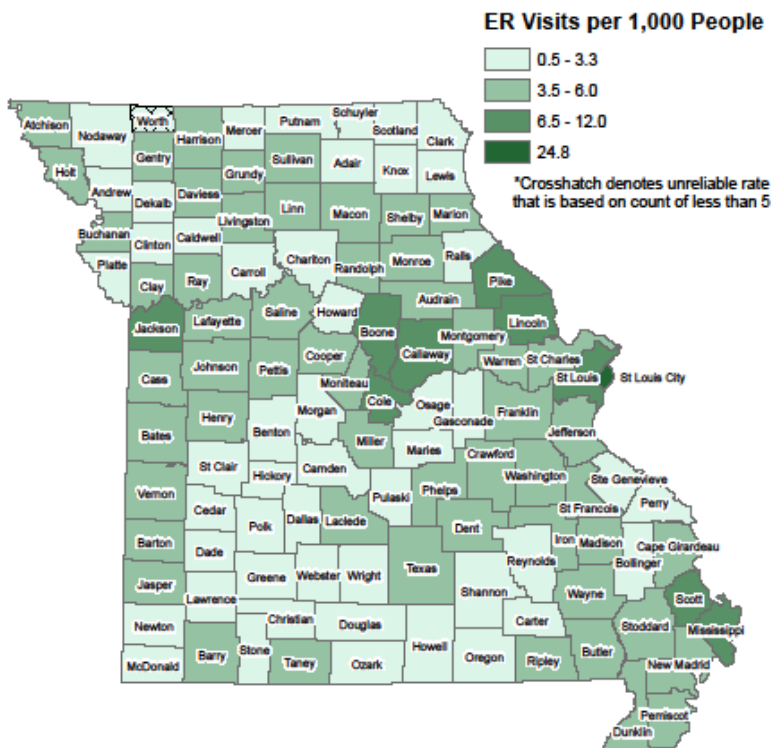


# Urgent Care

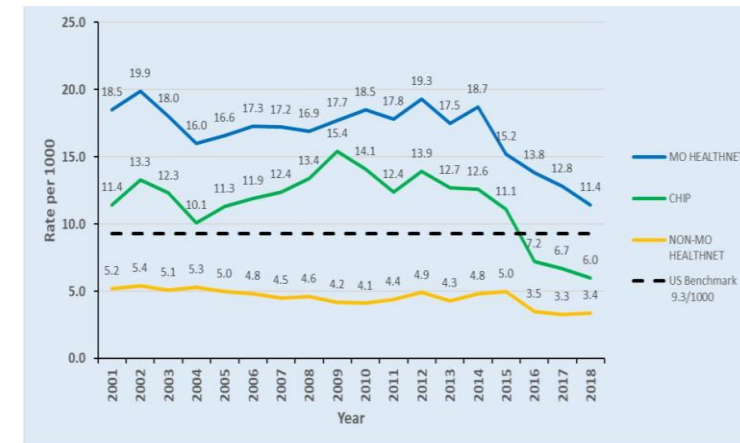
When an asthma attack is happening, care is needed

- In Missouri:
  - 1 in 2 children with asthma were reported to have an asthma attack in the past year (2012 - 2014)
  - ~13% v 17.2% (25 states) reported an urgent care or emergency room visit in the past 12 months

## Asthma ER Visits Under Age 18 2016-2019



- Children average ~10,000 ER visits annually for asthma
- High rates in urban, central medical hub, and southeast areas of Missouri
- Rates declining among MO HealthNet clients

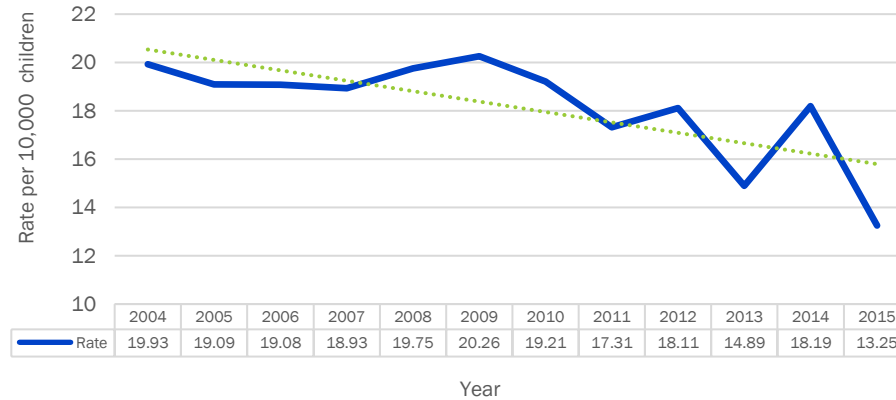


Data Source: DHSS Health Status Indicator Rates

# Emergency Room Visits

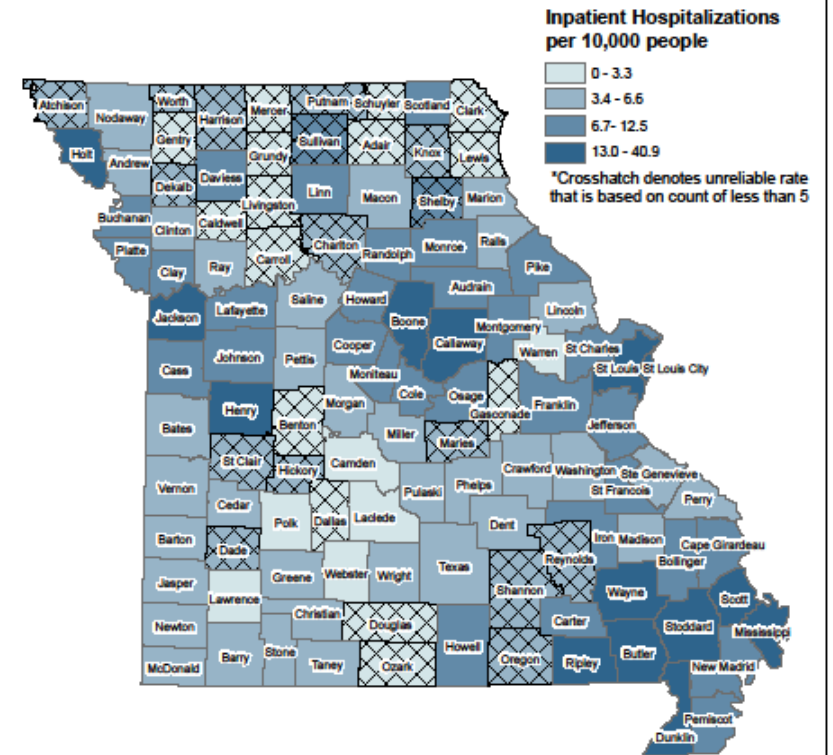
Children average 1,600 hospital stays for asthma annually

Asthma hospitalization rates declined 2.5 percent annually (2004-2015)

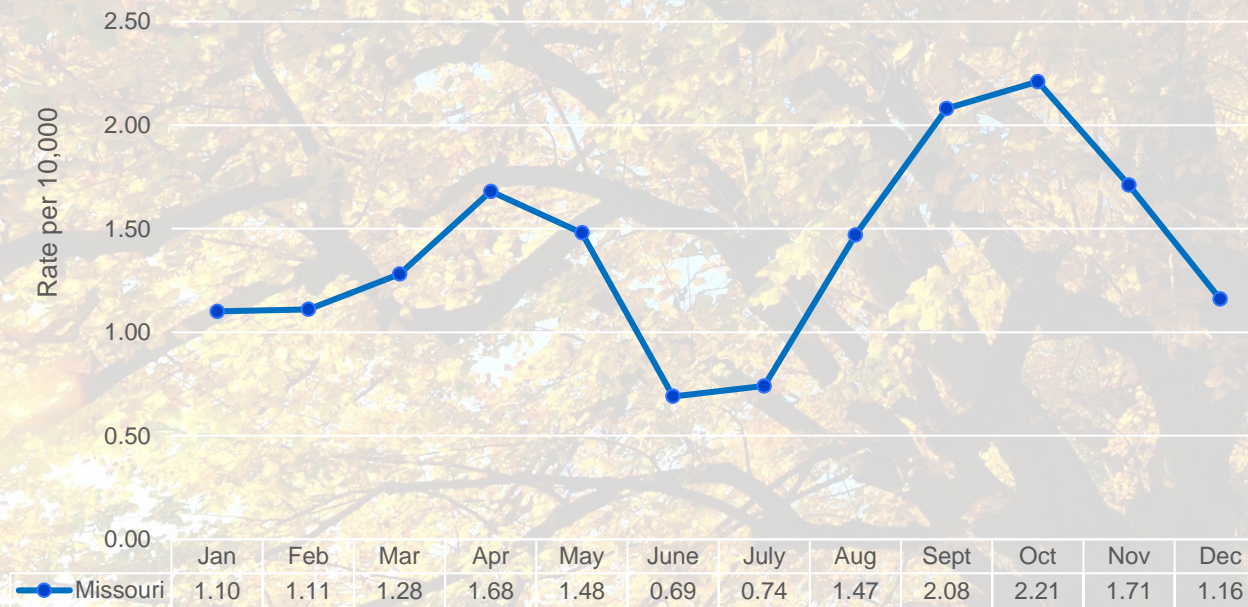


Source: Missouri Department of Health and Senior Services, Missouri Public Health Information Management System (MOPHIMS), Inpatient Hospitalizations Missouri Information for Community Assessment (MICA)

## Asthma Inpatient Hospitalizations Under Age 18 2016-2019



Asthma inpatient hospital admission average rates for children aged 0 to 19 years by month, Missouri. 2004-2015



Source: Missouri Department of Health and Senior Services. Missouri Public Health Information Management System (MOPHIMS), Environmental Public Health Tracking



# Seasonality





# Cost

## In Missouri:

- Inpatient hospital charges for asthma totaled \$105 million with children accounting for \$20.8 million (or 20%)
- Medicaid accounted for the largest pay source cited
  - > 50,000 children with asthma are enrolled in MO HealthNet
  - The average total cost per child with asthma through MO HealthNet was \$4,098 (2014)
- On average, 71 people die annually from asthma, about 5 are children (2015-2019)

## In the US:

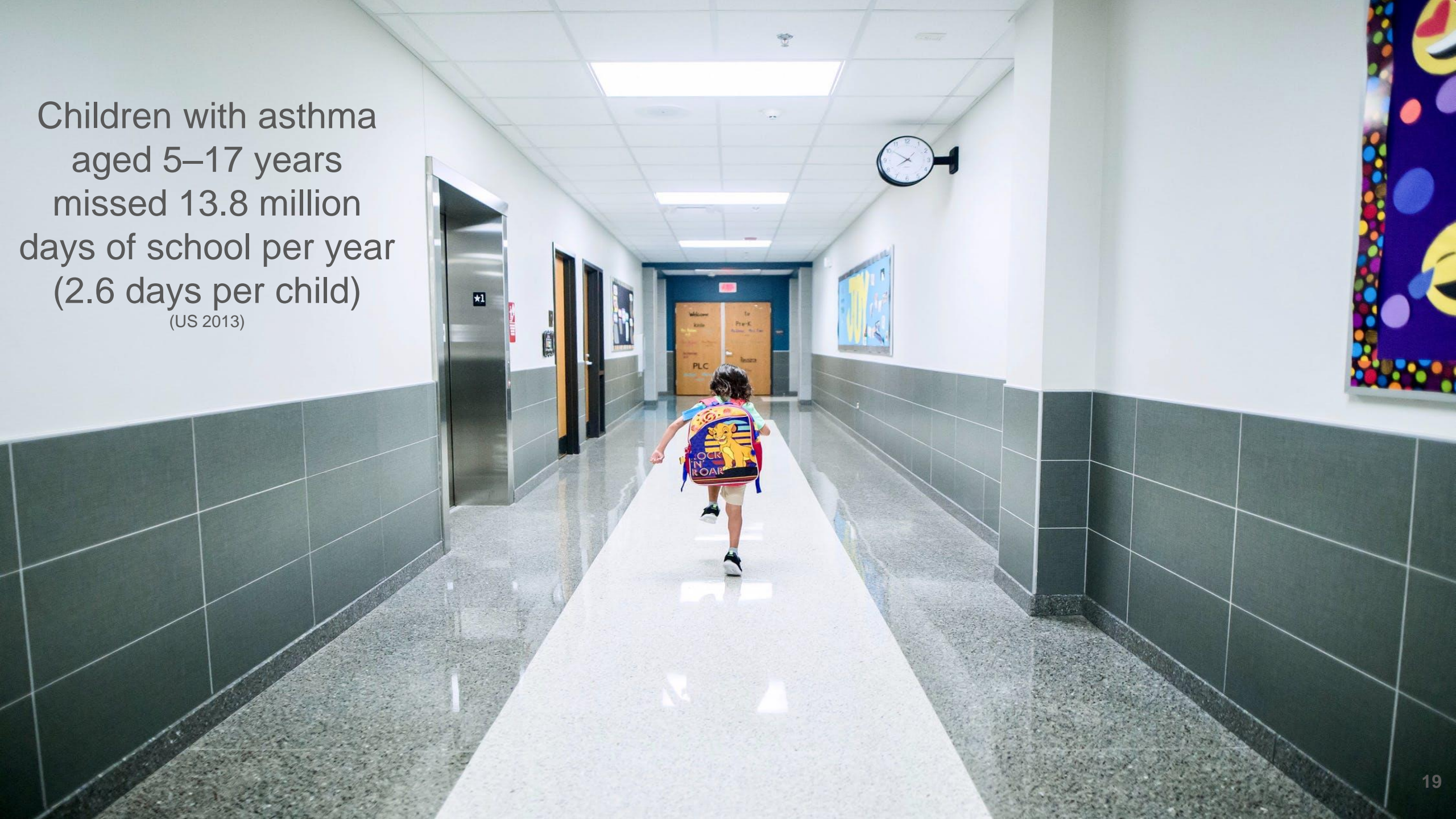
- Based on a pooled sample the annual per-person incremental medical cost of asthma was \$3,266
- Of that, \$1,830 was for prescriptions, \$640 for office visits, \$529 for hospitalizations, \$176 for hospital outpatient visits and \$105 for emergency room care
- Average deaths were 3,168 at a estimated statistical cost per life lost \$9.2 million



# School Health

- Schools offer and provide important health care and self-care management services for children with asthma and their families
- An effective school health program improves a child's ability to learn
- Linked with community resources, school health is a key approach to improving asthma control in pediatric populations

Children with asthma  
aged 5–17 years  
missed 13.8 million  
days of school per year  
(2.6 days per child)  
(US 2013)





# School Care

- Missouri schools provide essential support care for many children
- 9% (or more than 70,000) Missouri school children take asthma medication at school or home

Followed by: 8% report ADD / ADHD, 3% life-threatening allergies, and many other conditions

A young girl with dark hair, wearing a white surgical-style face mask and a red shirt with a green collar, is looking down at a document she is holding. The background is a blue wall with white grid lines. A dark blue rectangular box is overlaid on the left side of the image, containing the word 'Planning' in white text. A white rectangular box is overlaid on the right side of the image, containing text about the Missouri Asthma Prevention and Control Program (MAPCP).

# Planning

The Missouri Asthma Prevention and Control Program (MAPCP) through statewide systems and interventions link community (schools, agencies), health care (hospitals, clinics) and many others to address asthma in Missouri



# Asthma Strategies

- Clinic, school and community asthma interventions continue...
- Programs such as [Teaming Up for Asthma Control](#), [Childhood Asthma Linkages in Missouri 2](#), [Asthma Management Guidelines](#) and [Asthma Extension for Community Health Outcomes](#) are having an impact
- Transforming primary care to asthma specialty care

# Improving asthma control



- Reduces or eliminates symptoms
- Improves quality and mental health
- Let's kids enjoy life

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*Thank you to our many partners*



# Resources

- Centers for Disease Control and Prevention and Missouri Department of Health and Senior Services. Behavioral Risk Factor Surveillance System and Asthma Call-Back Study. <https://www.cdc.gov/asthma/national-surveillance-data/default.htm>
- Missouri Department of Health and Senior Services (DHSS). Health in Rural Missouri – Biennial Report 2018-2019. <https://health.mo.gov/living/families/ruralhealth/pdf/biennial2019.pdf>
- Missouri Department of Health and Senior Services, Missouri Public Health Information Management System (MOPHIMS), Inpatient Hospitalizations / Emergency Room Visits / Deaths / Environmental Public Health Tracking Program, Missouri Information for Community Assessment (MICA) <https://healthapps.dhss.mo.gov/MoPhims/MOPHIMSHome>
- Missouri Department of Social Services, MO HealthNet Division. Children’s Health Insurance Program and Show Me Healthy Babies Annual Report, Dec 2020. [https://dss.mo.gov/mhd/mc/pdf/CHIP\\_show-me-healthy-babies-annual-report-2020.pdf](https://dss.mo.gov/mhd/mc/pdf/CHIP_show-me-healthy-babies-annual-report-2020.pdf)
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Missouri Asthma Prevention  
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