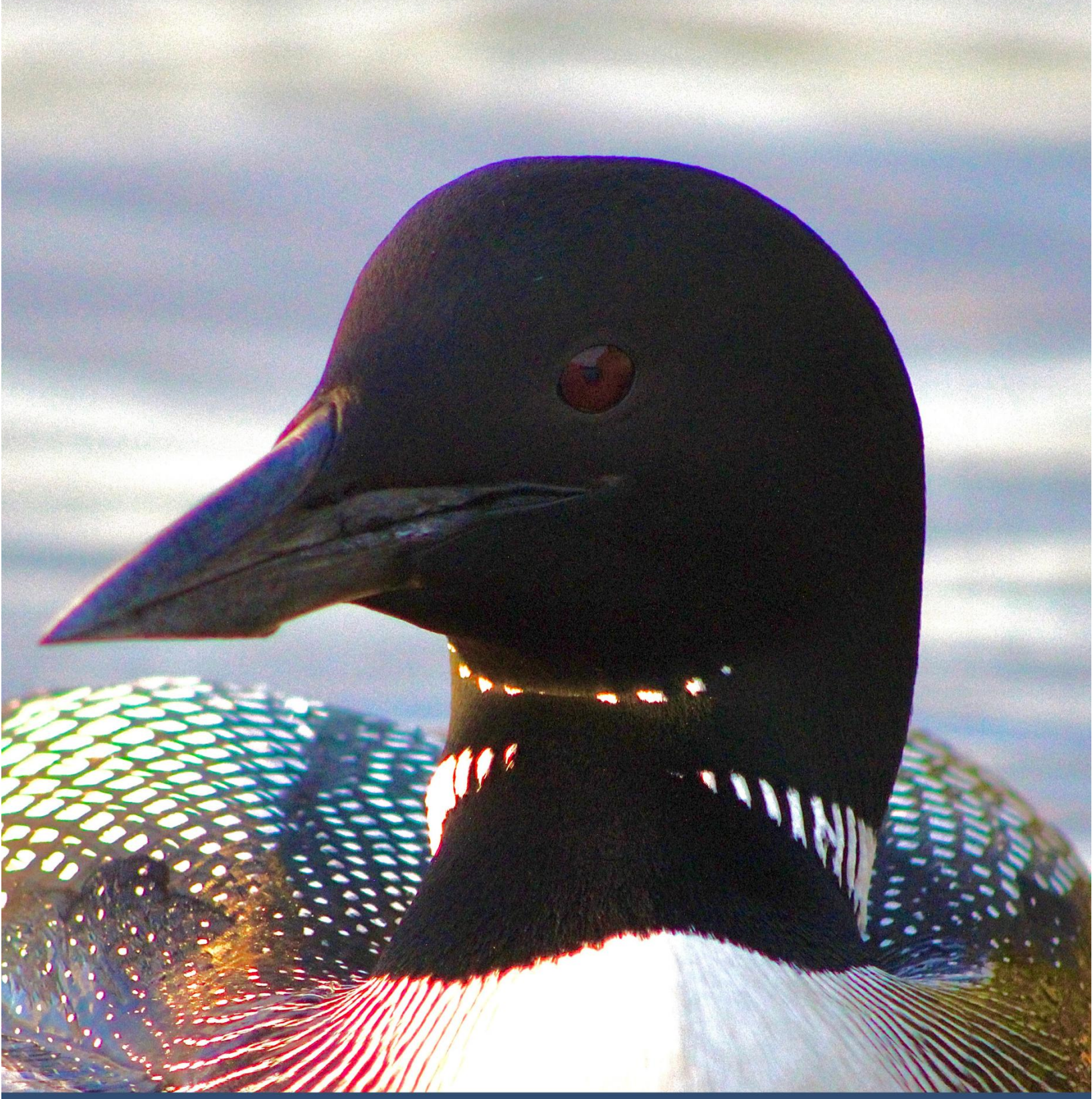
MAINE ASTHMA COALITION
STRATEGIC PLAN
2024 – 2028





Department of
Health and Human Services
DIRIGO
MAINE

CONTENTS



INTRODUCTION

Maine Demographics and Background

Maine is a large, predominantly Caucasian, rural state. It has a population of 1,405,012 individuals and a population density of 44.2 persons per square mile. This contrasts with the United States population density of 93.8 persons per square mile. Within the state, the population is not evenly distributed, with larger population centers found in the southern and mid-coast parts of the state and portions of the north, east and west primarily being forest. Maine also has a relatively older population, with a median age of 44.9 years compared to the U.S. age of 39.2 years. The percentage of the population that is identified as "white" is 93.7% in Maine compared to 75.3% in the United States.

Cities in Maine are generally small, especially compared to the Eastern United States. Portland, Maine's largest city, has a population of 69,104. Additionally, many of Maine's cities and towns are "mill towns", meaning they have been built around rivers with two cities geographically next to each other, but separated by a river and with separate governments and services. Examples of these include Portland/South Portland, Lewiston/Auburn, and Biddeford/Saco. Table 1 identifies relevant parameters of the counties within the State, including population centers found within those counties. Figure 1 shows the corresponding regions identified in Table 1.

Figure 1. Maine Counties and Regions

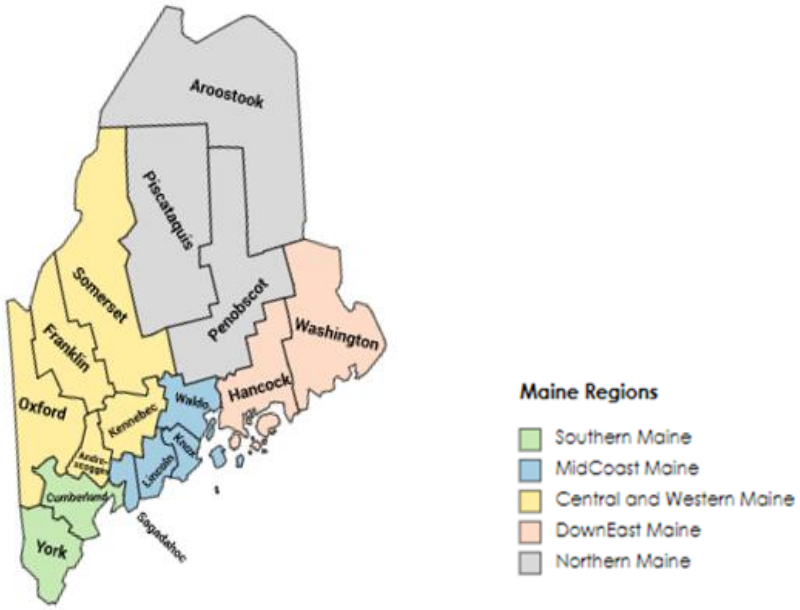


Table 1. Maine Demographics

Region	Population	Population Density (persons per square mile)	Median Household Income ($)	Poverty Rate (%)	Without Health Insurance (%)	Race (%)					Ethnicity (%)
						White	Black or African American	American Indian & Alaska Native	Asian	2+ Races	Hispanic or Latino
Maine	1,405,012	44.2	$71,773	10.4	7.5	93.7	2.1	0.7	1.4	2.0	2.3
United States	340,110,988	93.8	$78,538	11.1	9.5	75.3	13.7	1.3	6.4	3.1	19.5
SOUTHERN MAINE											
York County	218,586	213.9	$82,904	8.1	7.1	94.7	1.5	0.3	1.6	1.9	2.3
Biddeford City	22,367	749.6	$69,794	15.3	5.6	92.9	1.0	0.3	1.7	3.3	2.5
Saco City	20,960	528.2	$84,328	6.8	4.0	86.8	2.9	0.0	1.4	7.1	3.9
Cumberland County	310,230	362.4	$92,983	6.9	6.7	90.9	4.0	0.3	2.6	2.2	2.9
Portland City	69,104	3175.4	$76,174	11.2	6.2	80.1	9.0	0.2	3.2	6.2	3.1
South Portland City	26,840	2195.7	$84,563	6.0	7.1	83.6	6.9	0.2	2.8	5.6	3.3
MIDCOAST MAINE											
Lincoln County	36,507	77.3	$72,026	9.8	10.1	96.3	0.9	0.4	0.8	1.6	1.5
Knox County	40,977	111.2	$71,903	8.6	10.3	96.1	0.9	0.5	0.7	1.8	2.0
Sagadahoc County	37,513	144.5	$82,080	8.7	7.8	95.6	1.1	0.4	1.0	1.7	2.1
Waldo County	40,620	54.3	$68,441	12.7	10.4	96.5	0.7	0.6	0.7	1.6	1.7
CENTRAL AND WESTERN MAINE											
Somerset County	36,507	77.3	$72,026	9.8	10.1	96.3	0.9	0.4	0.8	1.6	1.5
Kennebec County	40,977	111.2	$71,903	8.6	10.3	96.1	0.9	0.5	0.7	1.8	2.0
Franklin County	37,513	144.5	$82,080	8.7	7.8	95.6	1.1	0.4	1.0	1.7	2.1
Oxford County	40,620	54.3	$68,441	12.7	10.4	96.5	0.7	0.6	0.7	1.6	1.7
Androscoggin County	113,765	237.5	$67,298	13.0	8.1	90.0	5.9	0.5	1.1	2.5	2.3
Lewiston City	38,404	1087.1	$56,558	17.7	6.8	80.9	11.0	0.5	1.7	5.5	3.0

Region	Population	Population Density (persons per square mile)	Median Household Income ($)	Poverty Rate (%)	Without Health Insurance (%)	Race (%)					Ethnicity (%)
						White	Black or African American	American Indian & Alaska Native	Asian	2+ Races	Hispanic or Latino
Auburn City	24,793	405.5	$66,552	12.6	8.5	91.2	3.1	0.0	1.1	4.3	2.3
DOWNEAST MAINE											
Hancock County	56,526	35.0	$69,630	10.1	11.5	95.2	1.3	0.5	1.3	1.6	2.0
Washington County	31,555	12.1	$52,237	20.1	11.6	90.9	0.9	5.1	0.6	2.5	2.7
NORTHERN MAINE											
Aroostook County	67,351	10.1	$54,254	12.1	10.4	94.5	1.1	2.0	0.6	1.8	1.8
Piscataquis County	17,486	4.2	$55,234	15.3	9.1	95.4	0.8	0.7	1.2	1.9	2.1
Penobscot County	155,312	44.8	$63,248	12.6	8.8	94.3	1.2	1.3	1.3	1.9	2.2
Bangor City	31,628	926.9	$58,096	14.9	7.2	87.9	2.8	1.2	1.9	4.6	3.2

Data Source: U.S. Census Bureau QuickFacts. (U.S. Census Bureau. https://www.census.gov/quickfacts; https://www.census.gov/quickfacts/fact/table/ME/LND110210 (Accessed on February 26, 2025).
Population Estimates: Maine and U.S. - July 1, 2024, (V2024) Counties and Towns: July 1, 2023, (V2023). Other measures: 2019-2023 ACS.

Purpose of the Strategic Plan

Maine's 4 Year Asthma Strategic Plan was developed to coordinate and guide the activities of the Maine Asthma Coalition. The Strategic Plan is intended to address the state of Maine and includes the following elements:

- A description of the problem across the entire geographic area (Chapter 1)
- A description of groups experiencing the highest asthma burden, their unique needs, and methods for addressing those needs (Chapter 2)
- An assessment of the current availability of asthma control services (Chapter 3)
- A listing of strategic priorities to be accomplished and expected outcomes (Chapter 4)
- A description of activities to be implemented collaboratively by the Maine Center for Disease Control and Prevention Asthma Program (Maine CDC Asthma Program) and its partners (Chapter 4)
- A description of the roles of the Maine CDC Asthma Program and its lead partners (Chapter 4)
- A timeline for completion of the strategic priorities (Chapter 4)

While the Asthma Coalition's purpose in creating this Strategic Plan is to identify and implement strategic priorities for Maine, the most valuable outcome of this planning process has been the journey to produce the document. The process of developing this document has resulted in the sharing of ideas, development of relationships and coordination of efforts within the larger Maine asthma control community. The Strategic Plan has also been a living document, being developed, updated, reviewed, and modified during the grant period.

Role of the Asthma Coalition

The Maine Asthma Coalition is a group of diverse and enthusiastic partners of the Maine CDC Asthma Program that is dedicated to sharing data and resources as we collaborate to address the problem of asthma in Maine. Additionally, the Coalition guides adjustments made to this 4-Year Asthma Strategic Plan to ensure that the strategic priorities and activities which the group works on collaboratively reflect current needs and priorities. A list of organizations in the Coalition can be found in Appendix A.

Plan Development

The Asthma Coalition Strategic Plan was developed over a series of Asthma Coalition meetings held during the 2019 to 2024 grant period. Individual sections were presented to the Coalition by the Maine CDC Asthma Program and feedback and discussion were integrated into the plan. The Strategic Plan was reviewed on an ongoing basis and adjustments were made as priorities and resources changed because of the COVID-19 pandemic.

Special Considerations

Relevant asthma prevalence, population counts, and disparity data will be reviewed as available and will be monitored for evaluation purposes. Within this document, links to relevant data sources are the preferred method to address changes in data, rather than updating figures on a yearly basis. Listings of links to these data sources are available in the Data Sources sections.

Maine is unusual in that it is a primarily rural state with very large counties. Major portions of several counties are unorganized townships which have low to no population counts. When evaluating geographic distribution of asthma, county maps or data can give a misleading view wherein a large proportion of the geography seems to have a high or low asthma rate, when, in fact, the population is small and/or concentrated in a small portion of the county. For that reason, identifying disparities in some manner other than geography is attempted where possible.

ASTHMA IN MAINE

The major points identified about prevalence of current asthma—defined by the Behavioral Risk Factor Surveillance System (BRFSS) as individuals that have ever been told that they have asthma by a health professional and still have the condition[1]—for 2022 in Maine include:

- Approximately 1 in 12 Mainers, nearly 161,000 people, have current asthma
- 13.1% of Maine adults have current asthma[2]
- Maine adults have significantly higher rates of asthma compared to adults nationwide
- Maine adults have a significantly higher rate of asthma than Maine children
- Maine children have a current asthma rate of 6.7%[2], which is consistent with nationwide rates

The major points identified about health care utilization due to asthma for 2021 in Maine include:

- Data suggests that emergency department usage for asthma has decreased over time
- An estimated 2,922 individuals had to visit the emergency department due to issues with asthma. This is an age-adjusted rate of 24.4 per 10,000 population[3]
- More females than males had to visit the emergency department due to asthma
- Emergency department visits and hospitalizations due to asthma vary by town
- 204 individuals were hospitalized in Maine. This is an age adjusted rate of 1.8 per 10,000 population[4]
- Asthma hospitalization rates have decreased over time

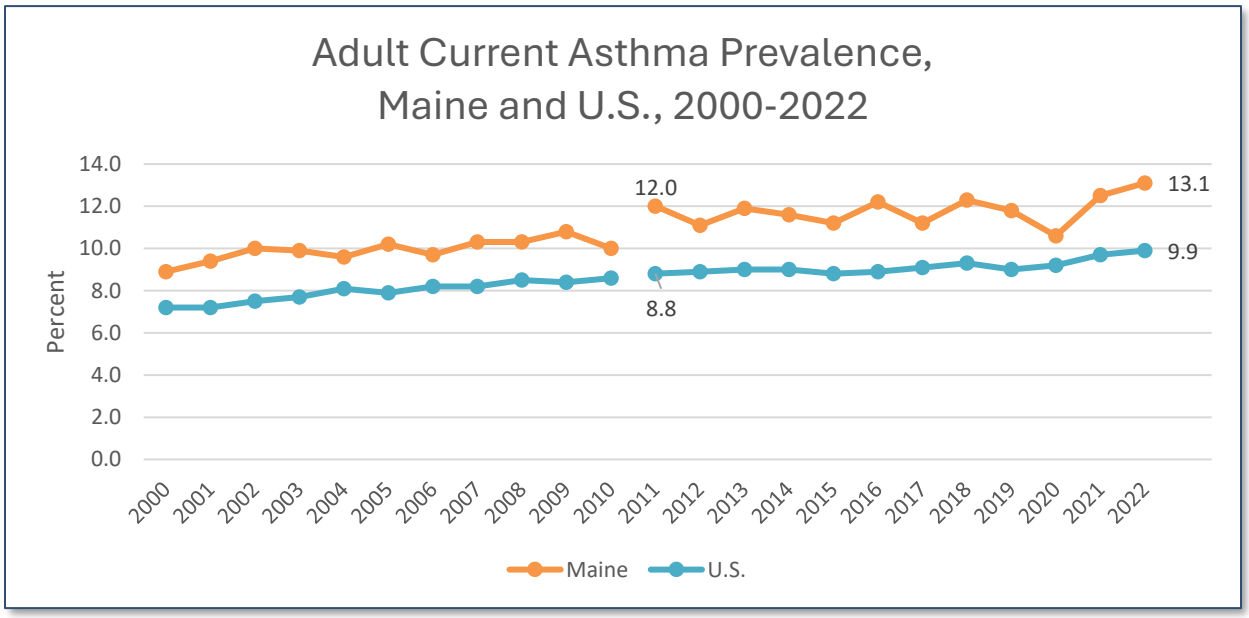
Major points around mortality associated with asthma in Maine include:

- Between 7 and 18 individuals die due to asthma each year in Maine[5]
- Mortality rates in Maine (8.4 per 1,000,000 population, 2018-2023) are similar to the U.S. rate (9.9 per 1,000,000 population) and in recent years, rates are similar among females and males (8.4 vs. 8.0 per 1,000,000 population)

Current Asthma Prevalence

As shown in the 2022 U.S. CDC data, 13.1% of Maine adults (18+ years old), an estimated 226,621 individuals, have current asthma.[2] Maine's rate is significantly higher than the national prevalence of 9.9% during the same period. According to 2022 BRFSS data, Maine has one of the highest adult current asthma rates in the country.

Figure 2. Adult Current Asthma Prevalence



Data Source: Maine Behavioral Risk Factor Surveillance System and BRFSS Web Enabled Analysis Tool (WEAT)

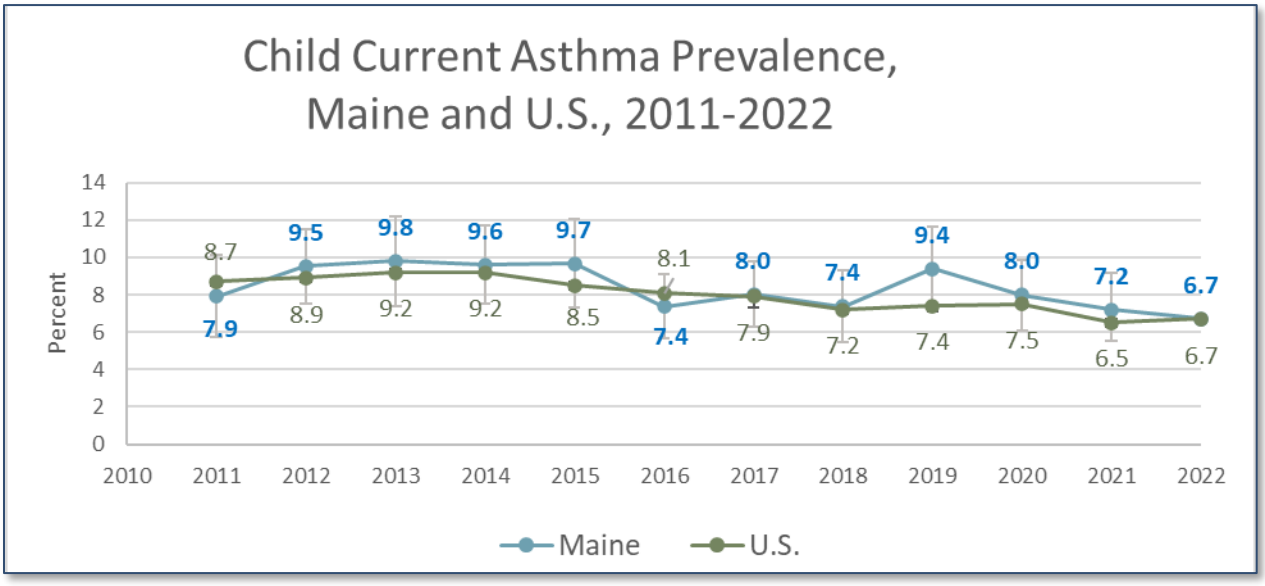
Note: The 2011 BRFSS data reflects a change in weighting methodology (ranking) and the addition of cell phone only respondents. Shifts in observed prevalence from 2010 to 2011 for BRFSS measures will likely reflect the new methods of measuring risk factors, rather than true trends in risk-factor prevalence. A break in trend lines after 2010 is used to reflect this change in methodology.

Asthma rates for adults appear to be increasing nationwide based upon recent BRFSS data (see Figure 2). Maine BRFSS data show the trend in adult current asthma rates has increased in recent years.[a] As expected, adult lifetime asthma prevalence—defined by BRFSS as individuals that have ever been told that they have asthma by a health professional--is significantly higher than current asthma prevalence for both the state of Maine (17.5%) and the United States

[a] BRFSS methodology changed in 2011, so measures of prevalence prior to 2011 cannot be compared to asthma prevalence measures post-2010.

(15.2%) based on BRFSS data from 2022. National and State data suggest there is no increase or decrease in asthma rates over time for children (Figure 3).[1,6]

Figure 3. Child Current Asthma Prevalence

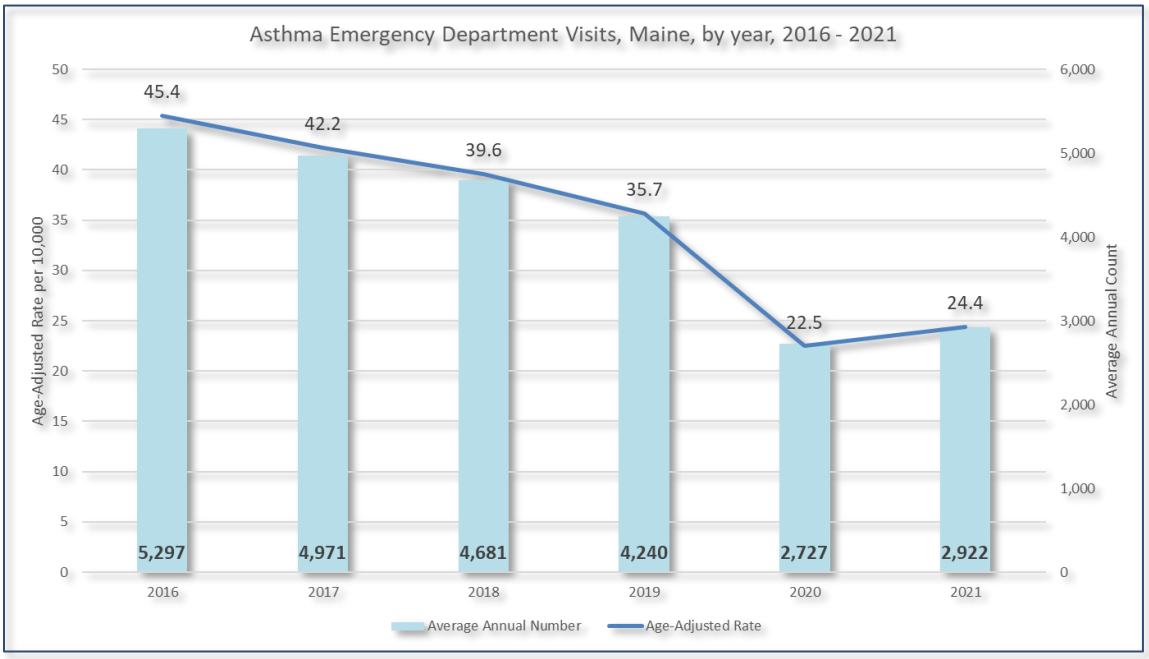


Data Source: BRFSS.
Children=ages less than 18 years.
US Data source: BRFSS Childhood Asthma Prevalence optional module: U.S. total excludes the territory, Puerto Rico and U.S. Virgin Islands in all reported years and depending on year, includes 29 to 33 states plus the District of Columbia.

Health Care Utilization

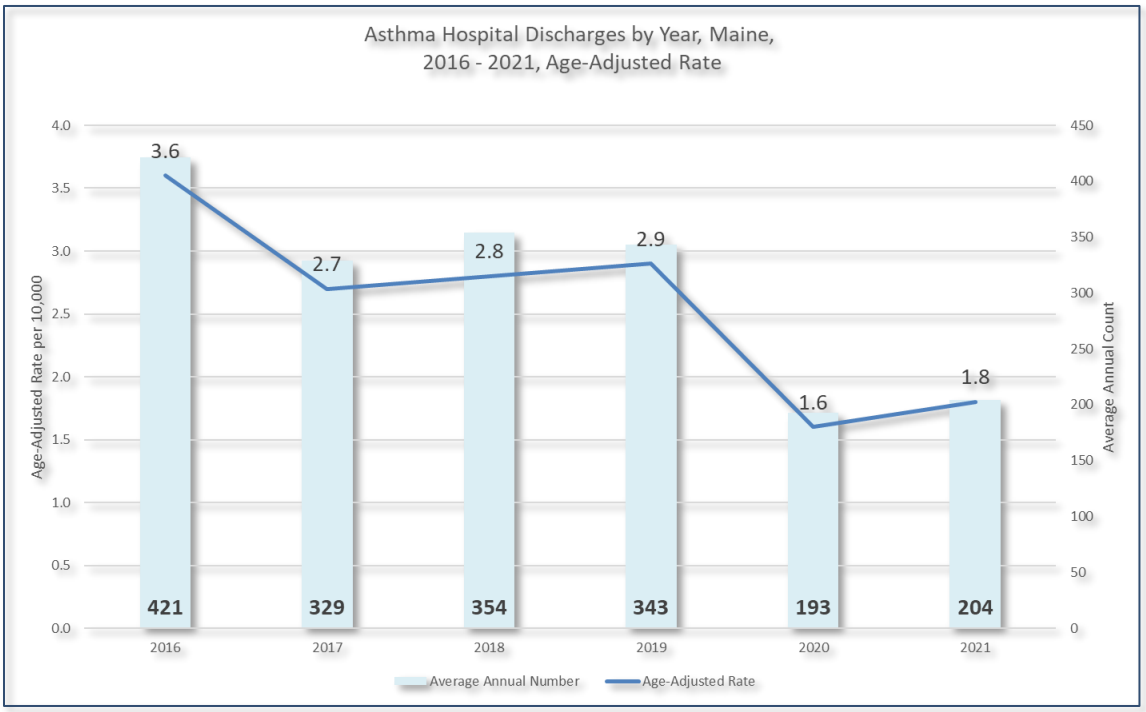
Health care utilization by individuals with asthma in Maine is evaluated through emergency department usage data2,4 and by hospitalization rates.2,4 Both measures were impacted by a change in ICD coding that was implemented midway through 2015. Coding changes from ICD-9 to ICD-10 impacted the ability to assess trends over the 2014 to 2016 timeframe. That said, data suggests decreasing rates for both emergency department usage and hospitalization during both time frames (Figures 4 and 5).

Figure 4. Asthma Emergency Department Visits



Data source: Maine Hospital Inpatient and Outpatient Databases: Maine Health Data Organization.

Figure 5. Asthma Hospitalization Rates



Data source: Maine Hospital Inpatient and Outpatient Databases: Maine Health Data Organization.

In 2021, it is estimated that 2,0224 individuals with asthma visited the emergency department which represents an age-adjusted rate of .24.4 per 10,000 population. More women than men visited the emergency department (Figure 6). Emergency department usage by age shows a relatively high level of usage by young children (ages 0-4) and a secondary peak in the 25-34-year-old range (Figure 7). This is consistent with national data and suspected to be due to health care delivery (i.e. 0–4-year-olds are told to go to the emergency department) and lack of insurance within the 25-34-year-old category.[7] In 2021, 204 individuals were hospitalized for asthma – which represents an age-adjusted rate of 1.8 per 10,000 population.[2]

Figure 6. Emergency Department Usage by Gender

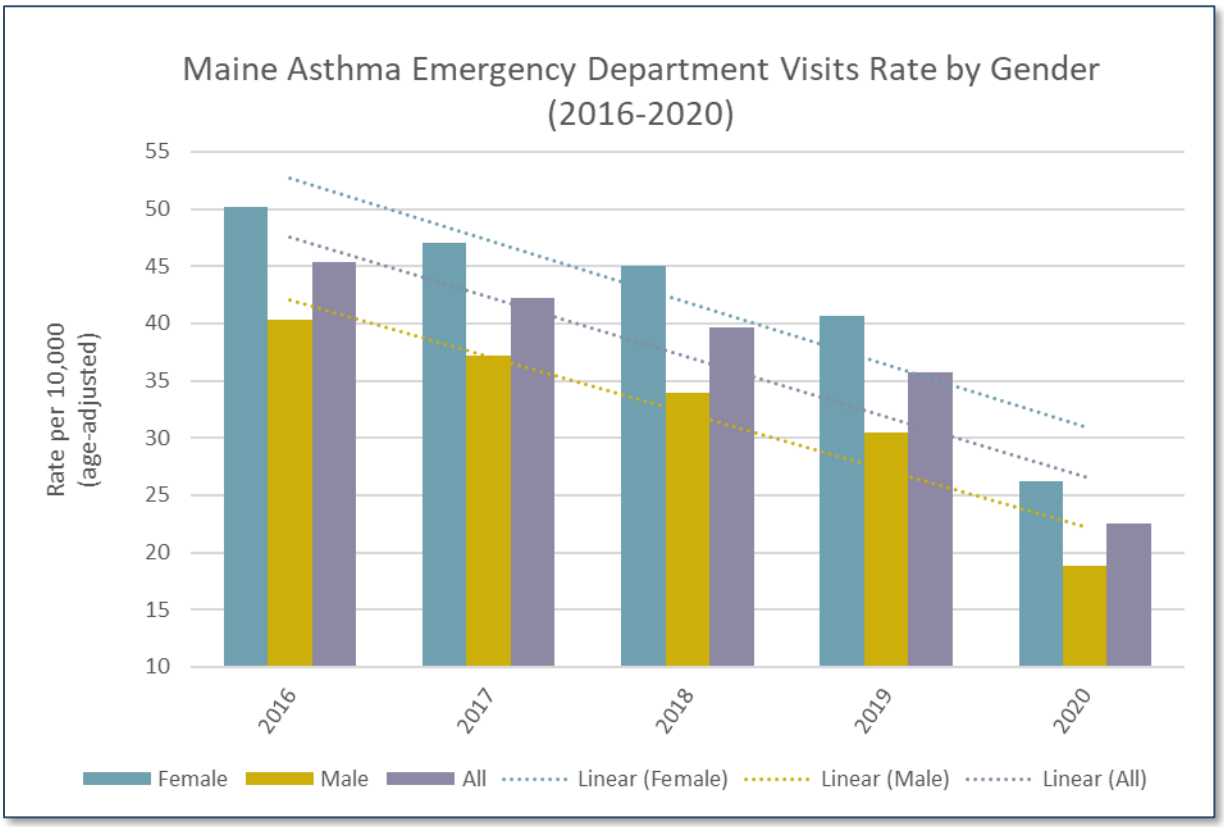
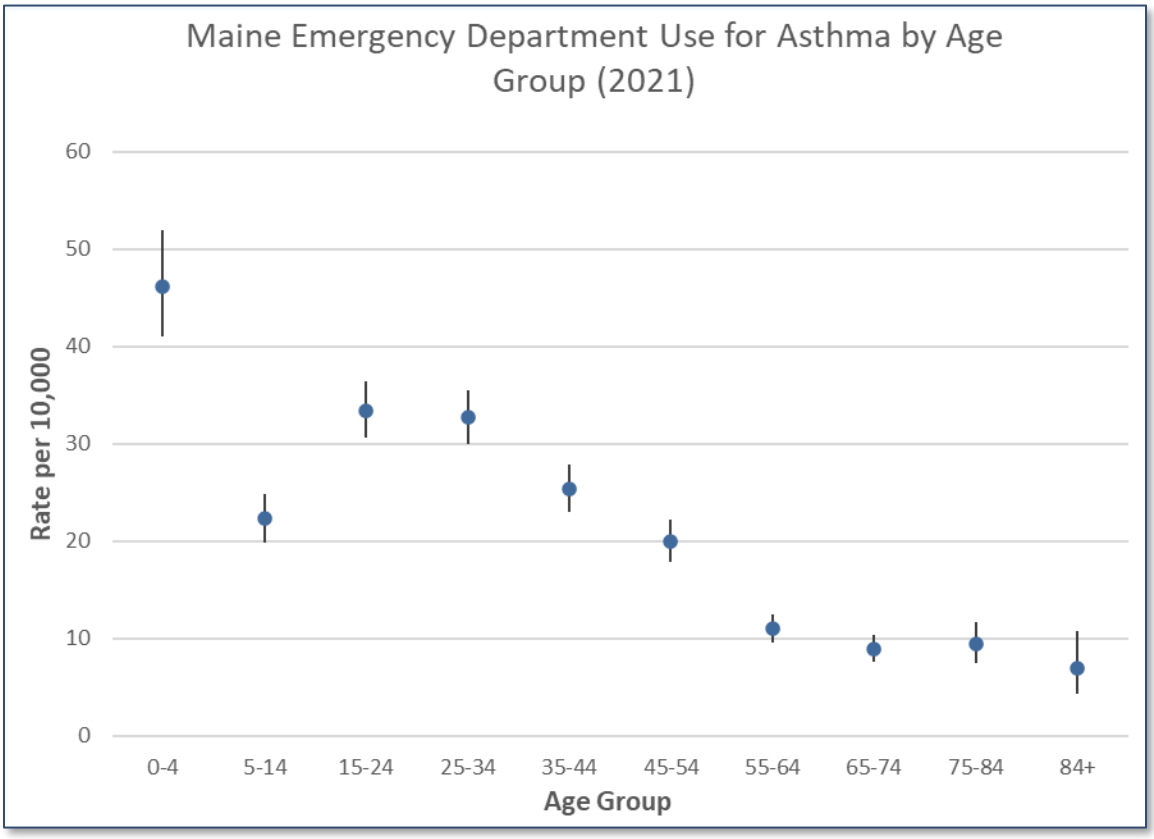
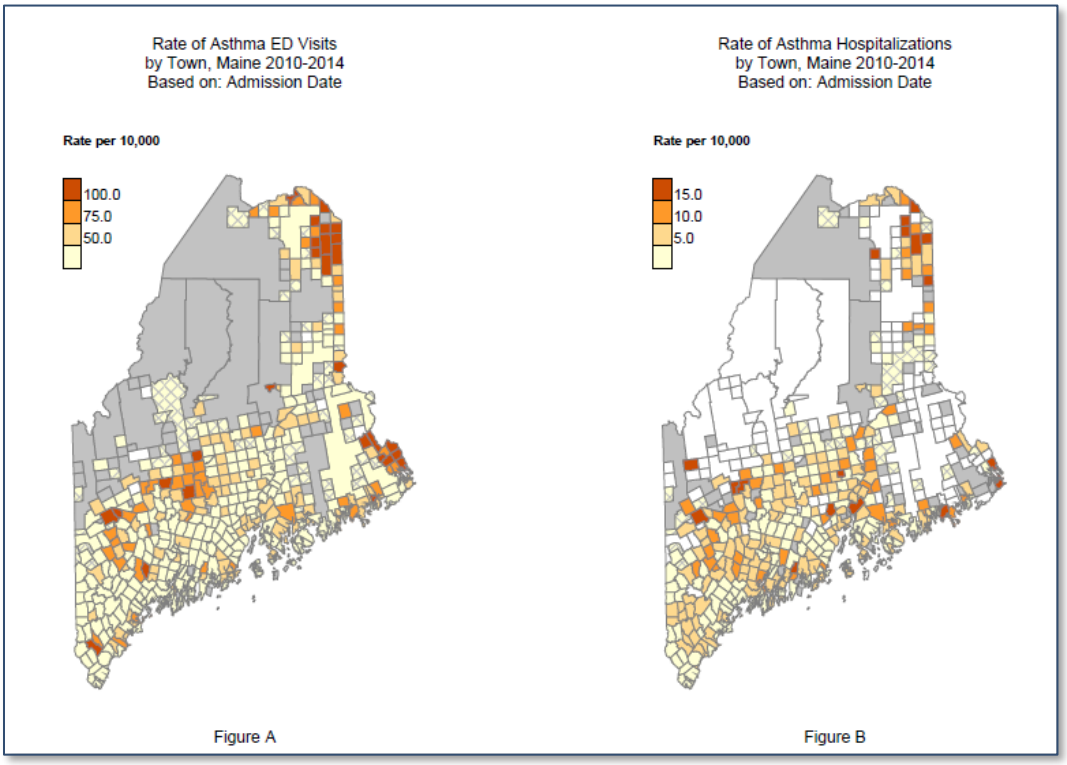


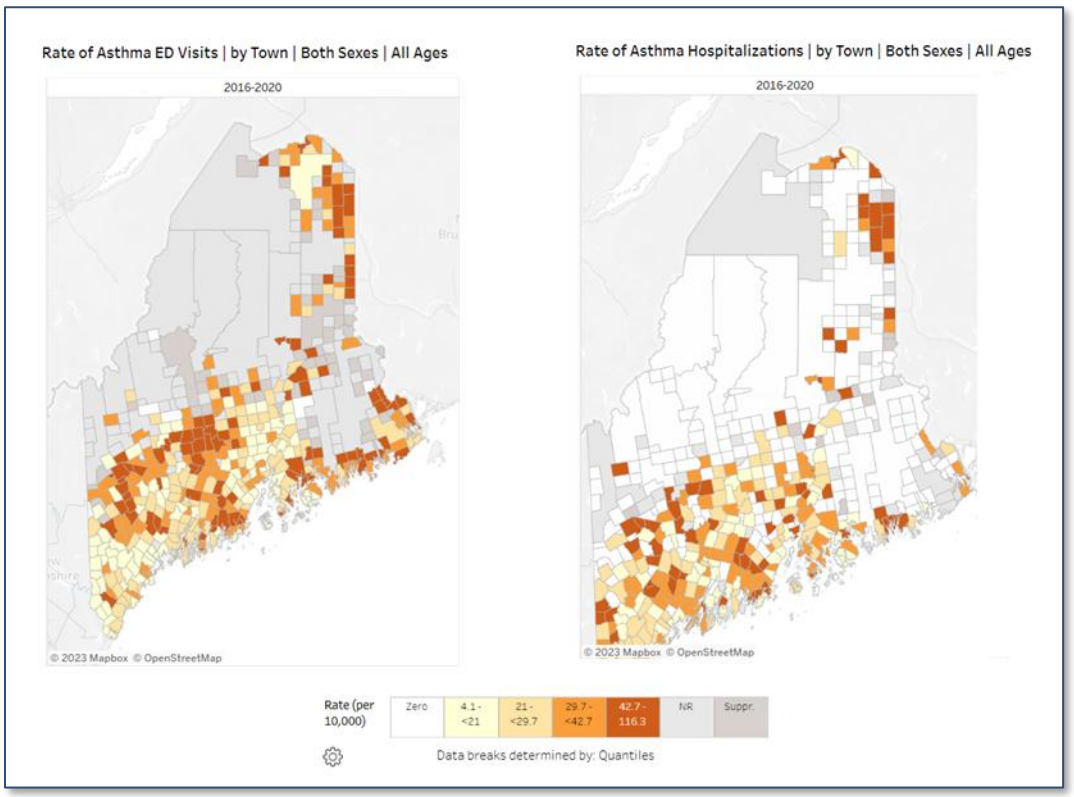
Figure 7. Emergency Department Usage by Age Group



Curiously, both emergency department visits and hospitalizations vary by town – with "hotspots" being seen in the Presque Isle area, the Princeton/Calais/Indian Township area and in the Skowhegan region (Figure 8). It is unclear whether this is due to differences in asthma rates (which are currently not evaluated at the town level) or due to differences in health care delivery and utilization.[7]

Figure 8.Emergency Department Visits and Hospitalizations by Town





Mortality

Between 7 and 18 individuals die due to asthma each year in Maine (Figures 9 and 10). While the numbers are low, it appears the trend is stable. Mortality rates in Maine (8.4 per 1,000,000 population from 2018-2023) are similar to the U.S. rate (9.9 per 1,000,000 population) and no longer continue to be higher among women than men in Maine (8.4 vs. 8.0 per 1,000,000 population) although nationally, the sex difference persists.[3]

Figure 9. Asthma Mortality

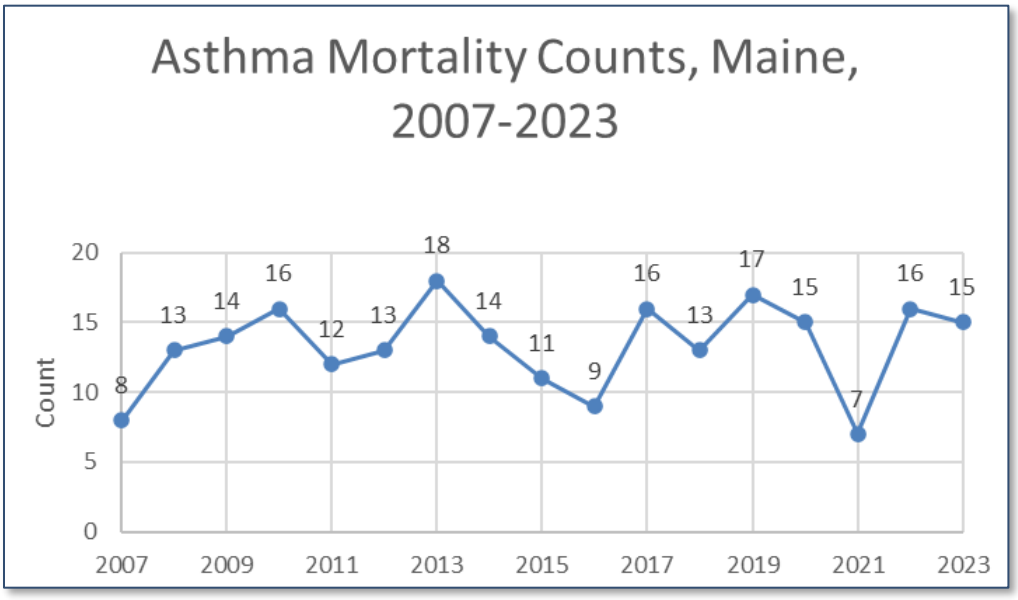
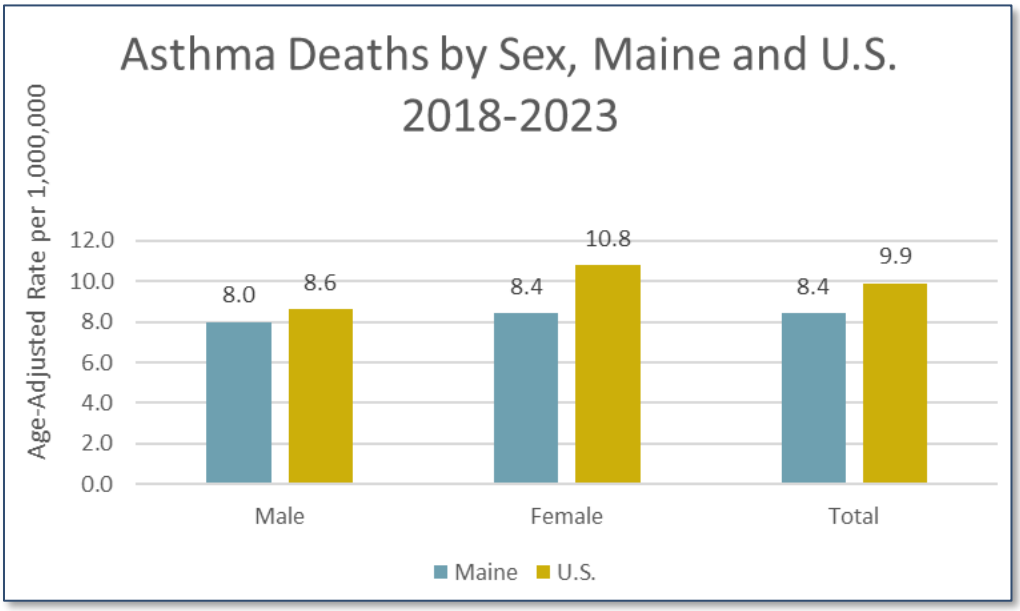


Figure 10. Age-Adjusted Mortality Rate



Data Sources:

1. National Center for Environmental Health. (n.d.). *Background Information, BRFSS Asthma Prevalence Data*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Environmental Health. Retrieved February 15, 2025, from https://www.cdc.gov/asthma/brfss/default.htm
2. National Division of Population Health. (2015). *BRFSS Prevalence & Trends Data*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. Retrieved February 15, 2025, from https://www.cdc.gov/brfss/brfssprevalence/
3. Maine Environmental Public Health Tracking Network. *Asthma: Emergency Department* Visits. (n.d.). Department of Health and Human Services, Maine Center for Disease Control and Prevention, Maine Environmental Public Health Tracking Network. Retrieved November 6, 2024, from https://data.mainepublichealth.gov/tracking/
4. Maine Health Data Organization. (n.d). *Hospital Inpatient and Outpatient Databases*. Retrieved from https://mhdo.maine.gov/
5. Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Mortality 2018-2023 on CDC WONDER Online Database, released in 2024. Data are from the Multiple Cause of Death Files, 2018-2023, Retrieved from http://wonder.cdc.gov/ucd-icd10-expanded.html.
6. National Center for Environmental Health. *National Health Information Survey.* (n.d.). U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Environmental Health. Retrieved from https://www.cdc.gov/asthma/data-visualizations/prevalence.htm
7. D. Yob, personal communication, 2025
8. Yob, D., Huston, S.L., Teach, F., Braddick, J., Severson, D. (2018). *The Burden of Asthma in Maine:* 2006-*2010*. Department of Health and Human Services, Maine Center for Disease Control and Prevention

POPULATIONS MOST IMPACTED

In the past, the Maine CDC Asthma Program has looked at targeting efforts based on geography. That is difficult in a state like Maine where counties are large geographically and varied in population density. Geography may not be the best way to allocate resources to address high risk/high burden populations in Maine.

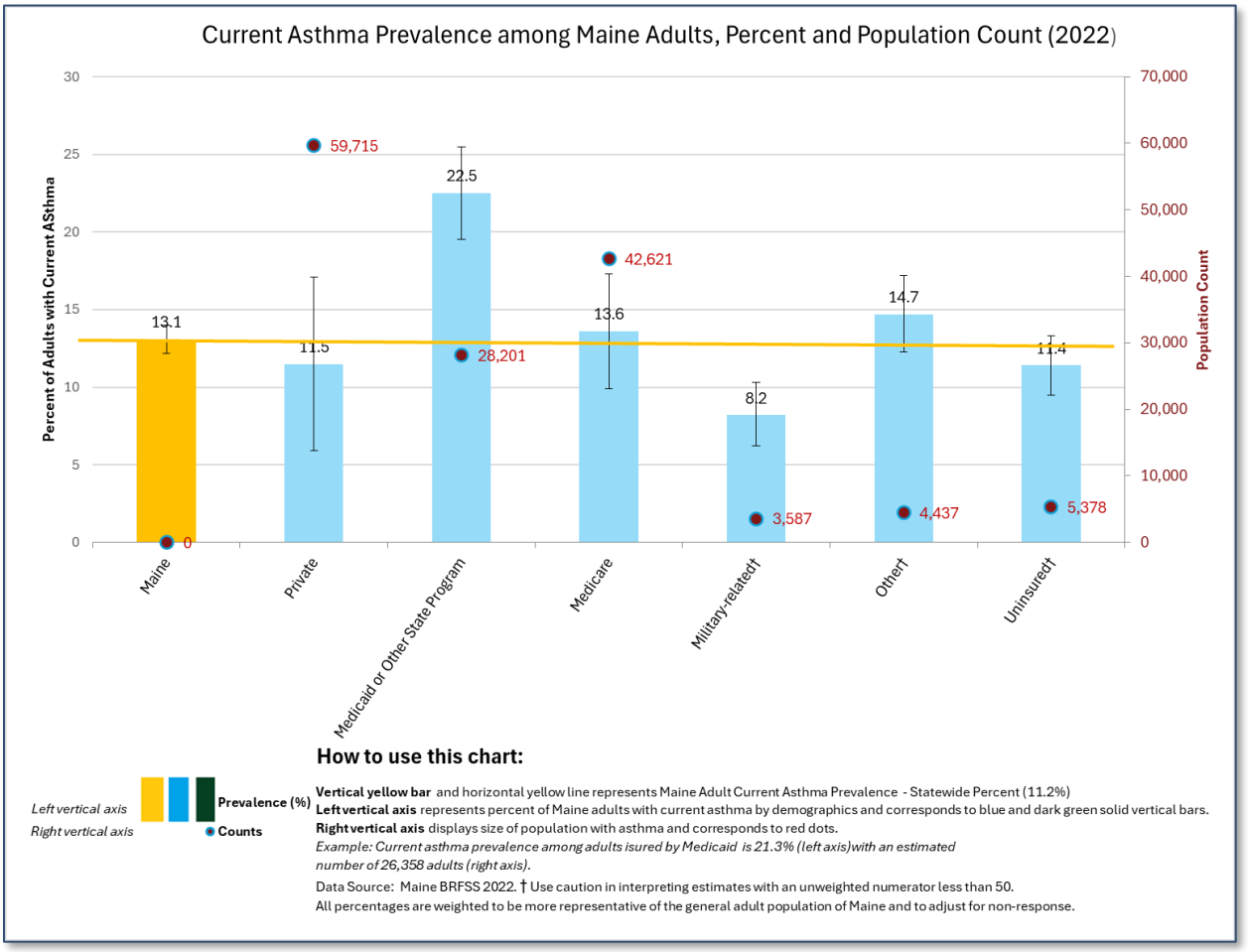
A more valuable approach may be to identify target populations and outreach mechanisms by social determinants of health data gathered by the BRFSS. Analysis of that data suggests that race (tribal populations in particular), income/insurance status (MaineCare recipients) and sexual orientation (bisexual or homosexual) are categories that may inform targeting of high risk/high burden populations. Additionally, focusing tobacco prevention and treatment efforts will have a positive impact on asthma rates and asthma health care utilization.

Targeting these groups is best achieved with a collaborative effort. Maine's tribal communities include the Aroostook Band of Micmac Indians, The Houlton Band of Maliseet Indians, Passamaquoddy Tribe at Indian Township and Pleasant Point, and the Penobscot Indian Nation. These communities have their own governmental and public health infrastructures which present potential opportunities for partnership.

Development of relationships between the Maine CDC Asthma Program and key lesbian, gay, bisexual, transgender, queer (LGBTQ+) organizations within the state also need to be developed and fostered. Potential organizational partners include Equality Maine, Out Maine, and Maine Transnet. Collaboration with these organizations is essential to understanding the unique needs of these populations as they relate to asthma and for the co-creation of solutions to address these needs.

The Maine CDC Asthma Program evaluated BRFSS data that looked at the relationships between asthma rates and various social determinants of health. Those results were compared to the state prevalence. Figure 11 provides an example of one of these analyses: the relationship between insurance status and asthma rates.

Figure 11. Relationship between Insurance and Asthma Prevalence



This graph shows the current asthma prevalence rate for the state of Maine (13.1%) as a vertical yellow bar and horizontal yellow line which correspond to the left axis. Both the rates and the counts of populations with asthma are graphed for each insurance category, where the counts are identified with a red dot that corresponds with the right axis. Error bars—seen as vertical black lines--identify the spread of the data. A simple measure of whether the rates of different categories are different is to compare error bars to see if they overlap. If they do not overlap, they are likely to be significantly different. In some social determinant categories, the number of individuals in the category is small enough to make these estimates uncertain.

Similar graphs were developed for both children and adults and for the following social determinants of health categories for the time periods of 2011 through 2022. Aggregated data were used to produce adequate sample size.

Prevalence data for Maine children were captured for the following categories:

- **Annual Household Income**. Children in households with incomes above $15,000 and $75,000 had a current asthma rate similar to the state asthma rate of 7.3% for 2020-2022. Data for children in households with the lowest incomes (less than $15,000 per year), are not reliable because of the low sample size.
- **Ethnicity and Race**. Evaluating the relationship between asthma and race and ethnicity in Maine is a challenge due to the small populations – which is reflected in the counts of populations with asthma (small populations) vs. the prevalence (which is high, but with large error bars), especially for the Native American/Alaskan population, Black/African American population, and the two or more races category. Even combining ten years of data, several of these categories had an unweighted numerator of less than 50, requiring caution in interpreting the results. While this is recognized, one can extrapolate to larger populations (such as the total U.S. population) where similar results are found. There are no reasons to suggest that the factors at the national level that are- associated with these populations' disproportionately high burden of asthma also do not operate within Maine.
- **Geographic Census Definitions**. Looking at census definitions yields surprising results. It is surprising that isolated rural areas have lower prevalence rates than the state as a whole and other census categories, although not statistically significantly different.
- **Sex**. Relative to the state prevalence of asthma among children of 8.9%, females have a lower rate at 5.0% and males have a higher rate at 8.8%.
- **Age**. The 12-17-year-old age category had a higher prevalence rate of asthma (9.1%) than children under 12 (4.1%).
- **Geography**. As discussed previously, evaluating asthma prevalence at the county level is problematic. Many of the counties had a numerator less than 50, resulting in a caution on how to interpret the data. However, prevalence seems to be elevated above the state rate in Lincoln and Sagadahoc counties. Looking at population counts, Cumberland, Penobscot and York counties have the largest populations of children with current asthma.

Prevalence data for Maine adults were captured for the following categories:

- **Annual Household Income**. The adult asthma rate in households with incomes greater than $25,000 was relatively similar (as judged by overlapping error bars) to the state asthma rate of 13.1%. Adults with incomes less than $15,000 per year had an asthma rate that was higher (26.2%) than the state rate. Adults in households with incomes between $15,000 and $24,999 also had an elevated asthma rate (20.9%).
- **Insurance status**. Individuals who received MaineCare (Maine's Medicaid program) had a significantly higher rate of asthma (22.5%) compared to the state rate. While this is not surprising given MaineCare is income based (and hence reflects the similar trends we see with income) it does offer a strong opportunity for intervention. Outreach through MaineCare services may be a promising way to reach this high burden population.
- **Sexual Orientation**. Individuals identifying as homosexual (gay or lesbian), or bisexual had higher asthma rates (16.2% and 19.7% respectively) compared to the state rate. Working through LGBTQ+ organizations may provide an opportunity to address these communities.
- **Education**. Those individuals with less than a high school diploma had a higher asthma rate (19.3%) compared to the state rate, although not statistically significantly different.
- **Ethnicity and Race**. As is stated prior, evaluating race and ethnicity in Maine is a challenge due to the small populations. However, the sample for American Indian/Alaskan Native populations was large enough to demonstrate an elevated asthma rate (19.8%) compared to the state rate. Those who identified as two or more races also showed an elevated rate of 19.6%.

  Unfortunately, BRFSS does not distinguish between race and immigrant status. So, for example, recent immigrants from sub-Saharan Africa cannot be parsed out from the "Black or African American" category. Even if they could, the sample size would decrease further. Of greater concern is the fact that the survey instrument is only offered in English – resulting in recent immigrants likely being under sampled.

- **Age**. Most age categories analyzed had asthma rates similar to the state rate (13.1%). The only possible exception was the age category of 25–34-year-olds who had an asthma rate of 17.2%.
- **Geography**. As discussed previously, evaluating asthma prevalence at the county level is problematic. Prevalence seems to be elevated above the state rate in Penobscot (14.8%) and Somerset (14.4%) counties.

These data were then normalized to the state asthma rates for both children and adults and then ranked by magnitude (Figures 12, 13, and 14). This effort prioritizes risk factors to help identify target populations for outreach, and/or asthma self-management intervention. Note that these figures only display prevalence, not population counts, and they do not address sample size, or variability and by extension statistical significance. Therefore, they do not allow for comparison across categories to identify populations or potential strategies for intervention.

Current asthma prevalence among Maine children demonstrates the impact of geography, insurance, sex, race, and income, on asthma rates. Current asthma prevalence in adults demonstrates the impact of insurance, sexual orientation, race, geography, income, and education on asthma rates.

Inhaled irritants from tobacco products, marijuana, and vaping, are a significant cause of asthma and have other associated health impacts. BRFSS data from 2022 suggests that 22.9% of individuals with current asthma currently smoke in Maine. In contrast, the overall Maine smoking rate is 15.1% (https://nccd.cdc.gov/weat/#/analysis). Given the strong working relationship between the Maine CDC Asthma Program and the Maine CDC Tobacco Program, coordination of efforts as they relate to asthma control will be a fruitful path to pursue.

In conclusion, certain populations (LGBTQ+, American Indian/Alaska Native, MaineCare recipients and users of tobacco and other inhaled products) experience a disproportionately higher burden of asthma than other populations. While certain populations within Maine don't have a large enough population to confidently identify their burden of asthma, other data can be used to supplement those conclusions.

Figure 12. Child Measures of Asthma Disparities

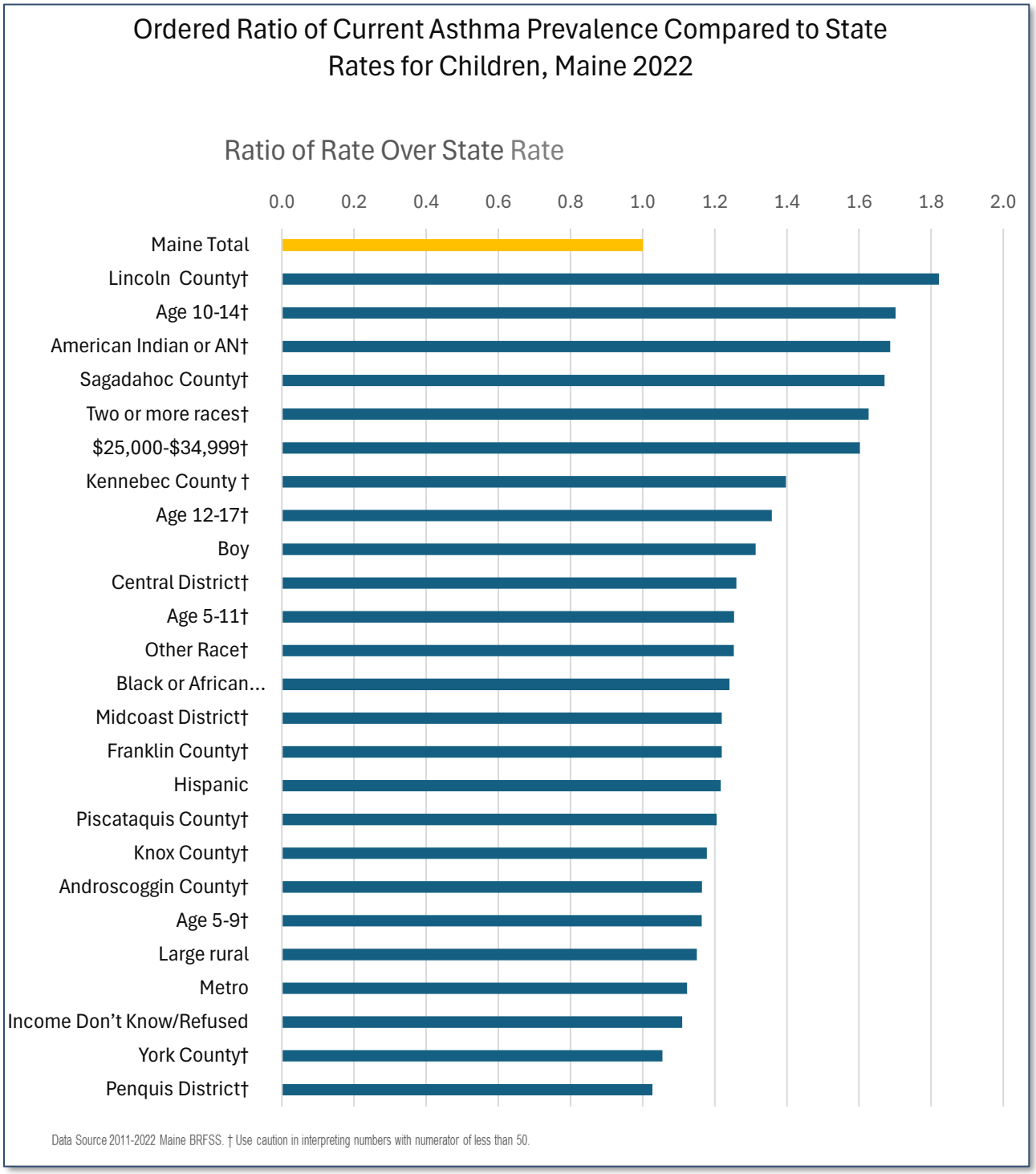


Figure 13. Adult Measures of Asthma Disparities: Demographic and Social Characteristics

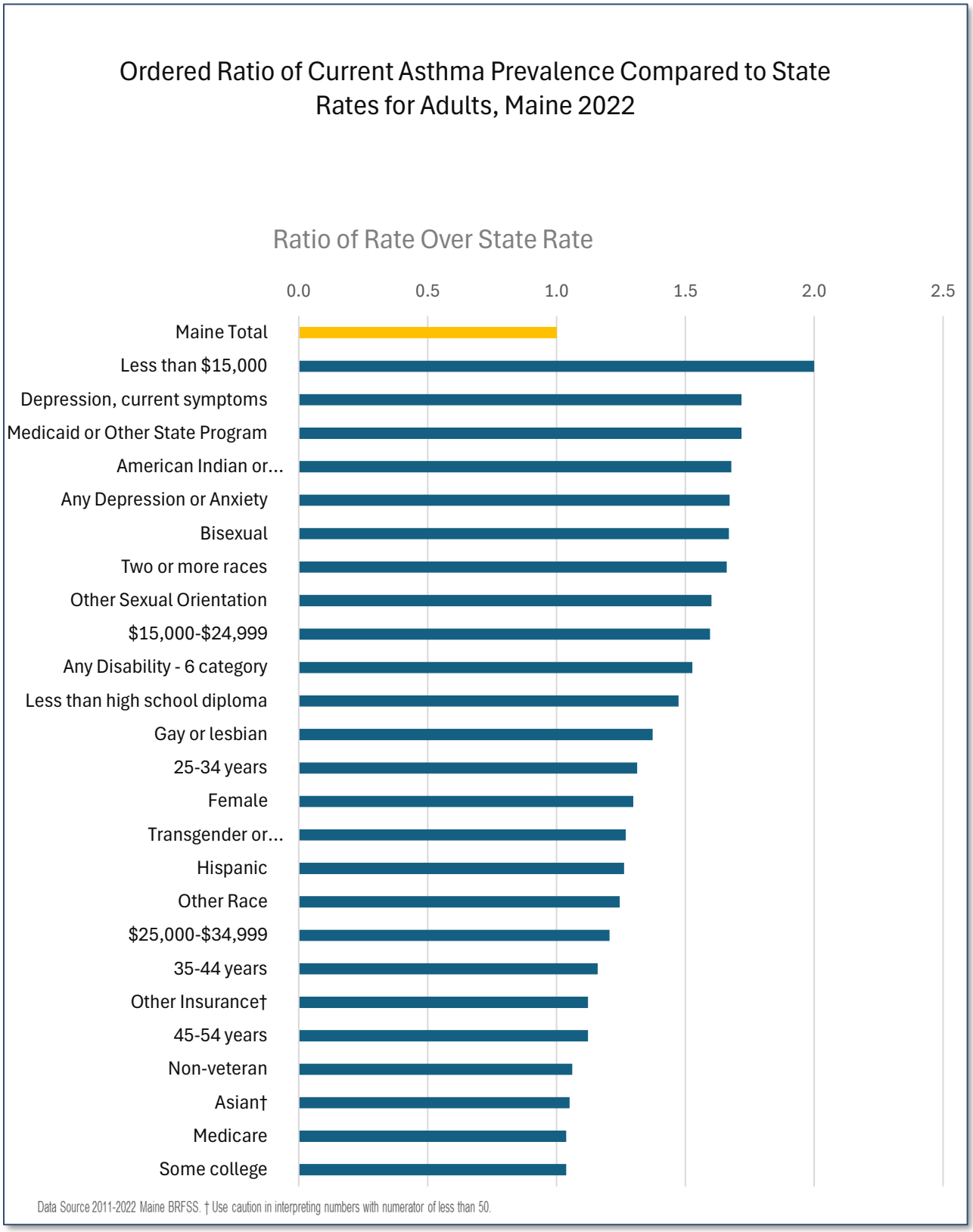
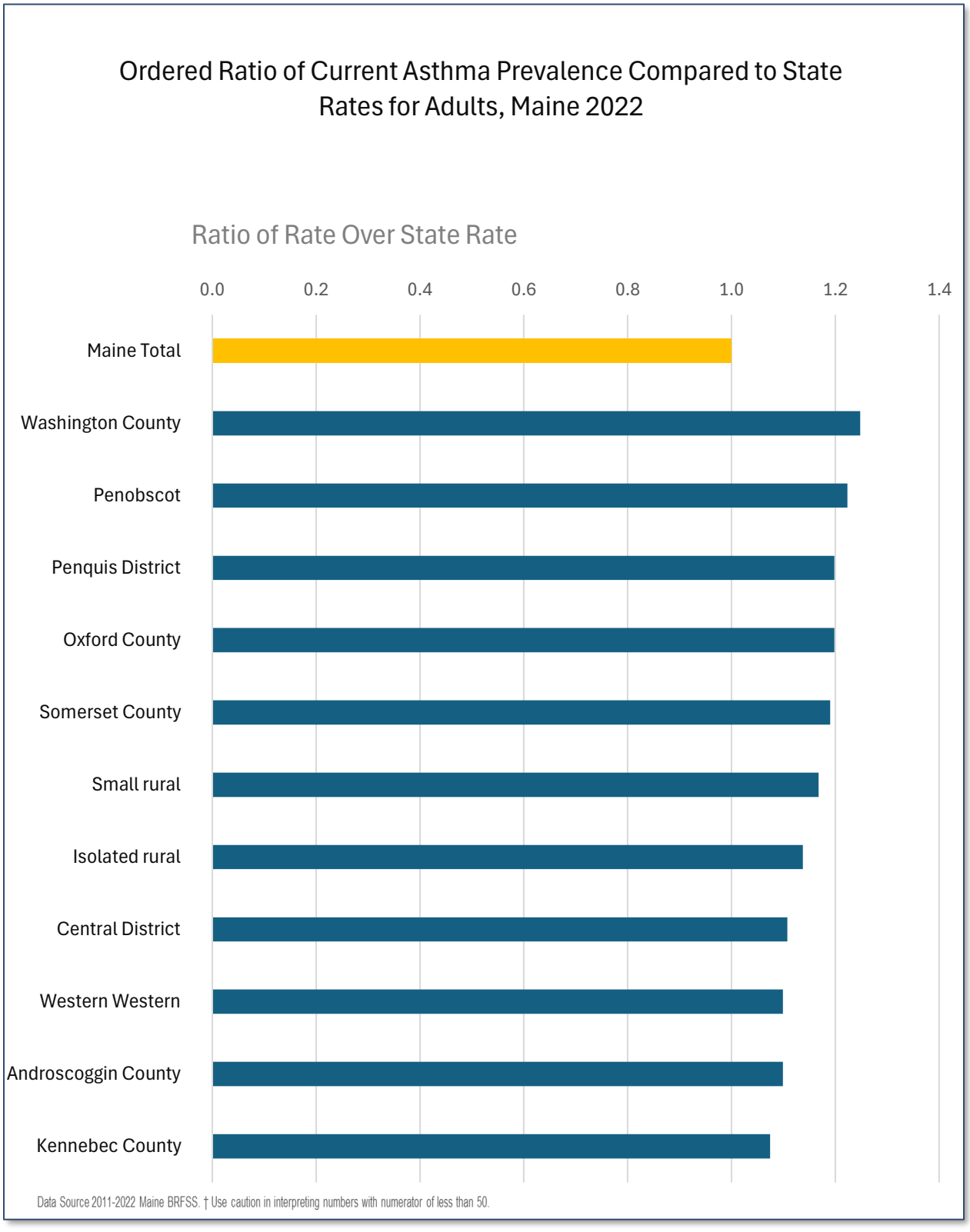


Figure 14. Adult Measures of Asthma Disparities: Geographic Characteristics



ASTHMA INFRASTRUCTURE

The Maine CDC Asthma Program and the Asthma Coalition define the asthma infrastructure within the state as the potential partners who have been or who may be available to provide Asthma Self-Management Education as the program expands. Of special interest is the geographic reach of this program.

Certified Asthma Educators

As of the summer of 2023, there were 24 currently licensed certified asthma educators within the state. There were another 37 listed whose licenses had lapsed. Of the 24 currently licensed, 13 are respiratory therapists, 7 are nurses, 2 are pharmacists and one is listed as having 1000 hours experience.[1,2] It appears that the landscape of this workforce has changed very little relative to the last scan conducted 3 years ago in 2020.

An analysis of the distribution of asthma educators within the state demonstrates they are more likely to be found in the more populated portions of the state. More rural portions of the state, such as Aroostook and Washington counties, do not have Certified Asthma Educators.

Respiratory Therapists

As of the summer of 2023, there are 628 Licensed Respiratory Therapists within the state of Maine. Of those 628, 10 are Respiratory Care Trainees (who are second year students and can perform some supervised care), 529 are Respiratory Therapists, 87 are Respiratory Technicians (who are entry level graduates), and 2 are Temporary Respiratory Technicians (Maine Licensing). [1,2] Respiratory Therapists are more evenly distributed across the state, following the population characteristics of the state.

Community Paramedicine Programs

Community Paramedics will once again implement the ASME Program in this grant cycle. In the 2014-2019 grant cycle they were found to be effective at delivering ASME to individuals with uncontrolled asthma.[b] United Ambulance implemented the ASME Program between 2014 and 2019 and was selected to continue its implementation for this grant cycle. Community Paramedics from United Ambulance will utilize existing relationships with rural communities

[b] Asthma Self-Management Education Evaluation Report 2020

and local health care systems to expand the ASME Program to the greater Lewiston and Bridgton areas. Links to localized resources and services to address participants' social and environmental needs will be made by Community Paramedics through referral pathways.

The effort to expand the community paramedicine program within the state continues. The Maine Emergency Medical Services Board has authority to establish community paramedicine services (Title 32: Chapter 2-B §84).[c] They are in the process of developing rules and educational requirements for Community Paramedicine programs. [3] Currently, the greatest limitation for developing services for expansion is sustainable funding; however, progress is being made as MaineCare is working to develop a reimbursement mechanism for Community Paramedicine services

As of January 2024, agencies within the state with a Community Paramedicine program designation include:

- Belfast Ambulance & Rescue Service
- Castine Fire Rescue Department
- Central Lincoln County Ambulance
- Charles A Dean Ambulance Service
- Cumberland Fire Department
- Delta Ambulance
- Med-Care Ambulance
- Memorial Ambulance Corps
- Northeast Mobile Health Services
- Northern Light Mayo Hospital
- Northern Light Medical Transport
- NorthStar
- Peninsula Ambulance Corps
- Portland Fire Department
- Sanford Fire Department
- St. George Ambulance
- Topsham Fire Department
- Union Fire-Rescue
- United Ambulance Service
- Waterville Fire Department
- Winthrop Ambulance Service

The distribution of existing Community Paramedicine Programs across the state shows significant gaps in Aroostook, Washington, and York Counties.

[c] Access via http://legislature.maine.gov/legis/statutes/32/title32sec84.html

Community Health Workers

Like Community Paramedics, Community Health Workers (CHWs) were used in the 2014-2019 grant cycle to provide Asthma Self-Management Education. They were also found to be effective implementors of the ASME Program, so they will implement the program again in this grant cycle. CHWs will be engaged through 5 agencies: Greater Portland Health, MaineHealth Maine Medical Center, Maine Access Immigrant Network (via Spectrum Generations), New Mainers Public Health Initiative, and Rangeley Health and Wellness. As health care extenders, CHWs are a useful partner for reaching individuals in immigrant communities, transient communities, and communities with a lack of resources. CHWs from the 5 agencies will leverage their positions as trusted community messengers to conduct ASME Program outreach to these communities and connect individuals to program services. They will also facilitate referrals to social and environmental support as they are uniquely situated to Maine's broad network of social services.

Figure 15. MECHW Directory of Organizations[d]

[d] Accessed 2/7/25 from https://mechw.org/resources.php

As of June 2023, according to the CHW Workforce Study, about 19 organizations surveyed employ a total of approximately 220 CHWs. [4] The Maine CHW Initiative (MECHWI) is a network of CHWs, and allies focused on strengthening the CHW profession in Maine. The following organizational members of MECHWI employ CHWs:

- AK Health and Social Services
- Aroostook Mental Health Center
- City of Portland
- Community Clinical Services
- DFD Russell
- Djibouti American Community Enrichment Project
- Eastport Health Center
- Fish River Rural Health
- Gateway Community Services
- Greater Portland Health
- Healthy Community Coalition (Franklin Hospital)
- Healthy Lincoln County
- Hometown Health Center
- Immigrant Welcome Center
- Northern Light Inland Hospital
- Lewiston Auburn Family Enrichment Services
- Maine Access Immigrant Network
- Maine Community Integration
- MaineHealth
- Maine Health Care Partners
- Maine Medical Center
- Maine Mobile Health Program
- MaineGeneral
- Mano en Mano
- Multicultural Community and Family Support Services
- New Mainer's Public Health Initiative
- Northern Light Mercy
- Portland Public Schools
- Rangely Health & Wellness
- Sacopee Valley Health Center
- Spectrum Generations
- St. Croix Regional Family Health Center
- The Opportunity Alliance
- Tri-County Mental Health Services
- Western Maine Community Action
- York Community Service Association
- York County Community Action
- Penobscot Community Health Center
- New England Arab American Organization
- Wabanaki Public Health & Wellness[4]

This list is not inclusive of the full scope of organizations that engage CHWs. For instance, many of the tribes have Community Health Nurses or Community Health Representatives who would be options for community prevention, education work, or Asthma Self-Management Education. CHWs are primarily found in the more populated portions of the state.

School Nurses

An annual survey collecting data from the 2022-2023 school year identified 328 public and private schools in the state.[5] A data search conducted in summer 2023 revealed that there were 652 nurses (459 full time equivalents) working in Maine schools. This represents a sharp increase in pre-pandemic numbers and may be associated with an influx in COVID funding to schools (and therefore may not be a sustained trend). As might be expected, the distribution of school nurses across counties roughly correlates with county-level population sizes.[6] While schools are distributed across the state, the state of Maine only requires one school nurse per School District. School Districts vary in the number of children and the number of schools within their district, so the number of children a school nurse serves can vary significantly.

Public Health Nurses

There are 9 Public Health Districts within the state of Maine: the 8 districts identified below and one tribal district that is managed by the Wabanaki Public Health Program and serves all Maine tribes. [7]

The state of Maine is in the process of restaffing public health nurses, but currently the staffing is:

- Districts 1 and 2: 6 nurses (York and Cumberland Counties)
- District 3: 4 nurses (Androscoggin, Franklin, and Oxford Counties)
- District 4: 2 nurses (Midcoast Region)
- District 5: 8 nurses plus 1 Public Health Nurse Referral Specialist (Kennebec and Somerset Counties)
- District 6: 2 nurses (Penobscot and Piscataquis Counties)
- District 7: 0 nurses (Washington and Hancock Counties)
- District 8: 3 nurses (Aroostook County)

State of Maine Public Health Nursing is committed to implementing the Maine Asthma Self-Management Education Program and is likely to begin initiation and training in the spring of 2021.

Additional resources available to the Asthma Self-Management Education Program include resources to address the environmental risk factors for asthma. Table 2 identifies the currently known programs that are available, the type of housing they address and whether the assistance is a grant or loan. Note that all programs may not be available to all recipients of Asthma Self-Management Education Program and may have income or other requirements.

Table 1. Resources Available in Maine to Address Housing-Related Asthma Triggers

Program Name	Type Of Housing	Focus	Which Asthma-Related Issues Addressed?	Type Of Assistance
Lead Hazard Control/ Healthy Homes	Private/ Rental	Lead remediation, health, and safety	Moisture/mold Pest exclusion Ventilation	Grant/loan
Central Heating Improvement Program (CHIP)	Private	Replacement of heating units	Combustion byproducts	Grant
Weatherization	Private/ Rental	Tightening building envelop	Moisture/mold Pest exclusion Ventilation	Grant
Home Repair	Private	Home repair, remove hazardous materials, health, and safety	Moisture/mold Pest exclusion Ventilation	Grant/ loan
Mobile Home Repair	Private	Repairing or replacing mobile homes	Moisture/mold Pest exclusion Ventilation	Grant
Emergency Repair	Private	Emergency health and safety repairs	Moisture (severe leaks)/mold	Grant/ loan
Housing Rehabilitation	Rental	Energy, lead-hazard control, accessibility, repair, and weather-related improvements	Moisture/mold Pest exclusion Ventilation	Loan

Program Name	Type Of Housing	Focus	Which Asthma-Related Issues Addressed?	Type Of Assistance
Community Aging in Place	Private	Minor repairs including gutters, minor plumbing, storm doors, health, and safety	Moisture/mold	Grant
Single Family Housing Repair Grant-USDA	Private	Remove health and safety hazards	Moisture/mold	Grant
Single Family Housing Repair Loan-USDA	Private	Repair, improve, or modernize, remove health and safety hazards	Moisture/mold Pest exclusion Ventilation	Loan
Rebuilding Together	Private	Minor home repairs	Moisture/mold	Volunteer assistance
Habitat for Humanity Home Repair	Private	Home repairs	Moisture/mold Pest exclusion Ventilation	Volunteer assistance/ loan

Data Sources:

1. The National Board for Respiratory Care. (n.d.). Retrieved from https://www.nbrc.org/

2. Maine Office of Professional and Occupational Regulation. (n.d.). *Board of Respiratory Care Practitioners*. Maine Department of Professional and Financial Regulation, Office of Professional and Occupational Regulation. Retrieved from https://www.maine.gov/pfr/professionallicensing/professions/board-respiratory-care-practitioners

3. Maine Emergency Medical Services. (n.d.). *Community Paramedicine*. Maine Department of Public Safety, Emergency Medical Services. Retrieved from https://www.maine.gov/ems/boards-committees/community-paramedicine

4. Weatherford, K, Casimir, T. 2023 Maine Community Health Worker Workforce Study Report for the Maine CHW Advisory Board, June 30th, 2023

5. Maine Department of Education. (June 2023). *School Health Annual Report*. Retrieved from https://neo.maine.gov/DOE/neo/DCAR/Reports/MainReport

6. T. Diaz, Office of School and Student Supports, Maine Department of Education, personal communication, June 2023.

7. Maine Public Health Nursing Program. (n.d.). *Division of Public Health Nursing*. Maine Department of Health and Human Services, Center for Disease Control and Prevention, Division of Public Health Nursing, Public Health Nursing Program. Retrieved from https://www.maine.gov/dhhs/mecdc/public-health-nursing/index.shtml

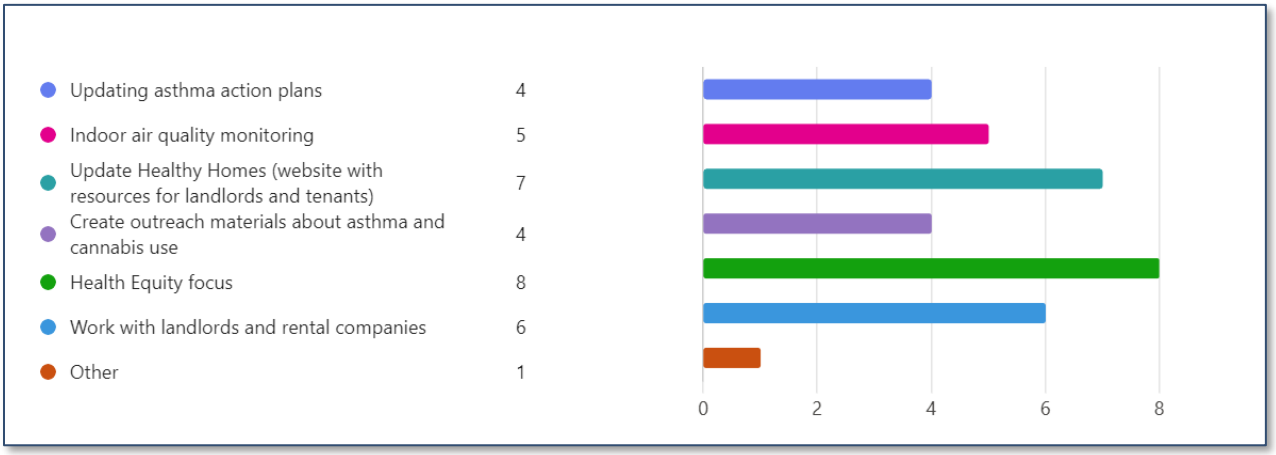
STRATEGIC PRIORITIES

Process

In the previous 2019-2024 period, the Asthma Coalition identified 3 strategic priorities which were tasked to corresponding workgroups. The process used to identify and select the priorities involved conducting a series of discussions to produce a list of priorities which was then ranked and voted upon to select 3 priorities to pursue. This same process was used to develop 3 new strategic priorities to guide the Coalition's work for the 2024-2028 period.

Discussion by the Coalition in May 2024 resulted in many proposed priorities, including updating asthma action plans; conducting indoor air quality monitoring; updating a healthy homes website; creating outreach materials about asthma and cannabis; health equity; and work with landlords and renters. These proposed priorities were then gathered into a survey and sent to Coalition members to capture their preferences based on level of importance (Figure 16). Based on the survey results, the top 3 priorities were selected, and workgroups were organized around them with the goal of advancing the assigned priority.

Figure 16. Asthma Coalition Strategic Priorities Survey Results



Priorities

The Coalition's selected priorities for 2024-2028 build upon the achievements of the previous workgroups. These workgroups produced several educational products including a promotional flyer for the Asthma Self-Management Education Program, a rack card about asthma and e-cigarettes, and a flyer promoting effective landlord/tenant communication around property

maintenance. In this period, the Coalition aims to continue to connect high-risk populations to information and resources by focusing on the following 3 priorities:

- Priority 1. Address asthma disparities within high-risk populations.
- Priority 2. Address environmental hazards within home environments that impact asthma.
- Priority 3. Pilot an indoor air quality monitoring project in the homes of ASME Program participants.

Workgroups

To advance the identified priorities, the Asthma Coalition established 3 workgroups: the Health Equity Workgroup, the Healthy Homes Workgroup, and the Indoor Air Quality Monitoring Workgroup. The Maine CDC Asthma Program is the lead for each workgroup and serves in a facilitator/management role with the overarching responsibility of assembling partners for working sessions, contracting services, and monitoring progress towards target outcomes.

Health Equity Workgroup

This workgroup is convened around Priority 1: Address asthma disparities within high-risk populations. Its goal is to collaborate on an activity that supports access to information and resources about asthma for high-risk populations with asthma disparities. Potential activities include translating materials into multiple languages and for populations with low health literacy and compiling a toolkit with resources for CHWs.

The group consists of members from the following organizations:

- MaineHealth
- Greater Portland Health
- Department of Education, Office of School and Student Supports
- University of Southern Maine, Epidemiology
- United Ambulance
- New Mainers Public Health Initiative
- Maine CDC Asthma Program

The meetings are led by the Maine CDC Asthma Program. The workgroup convened in December 2024 and members meet monthly. Work on this project will continue through years 2 and 3 of the grant and its projected completion is the summer of 2027.

Healthy Homes Workgroup

This workgroup is focused on Priority 2: Addressing environmental hazards within home environments that impact asthma. The goal of its work is to complete an activity that promotes healthy home environments by reducing the presence of environmental health concerns (many of which are asthma triggers) such as mold, pests, dust mites, indoor air pollutants, radon, and lead.

The group consists of members from the following organizations:

- Maine CDC Asthma Program
- Maine CDC Radon Program
- Maine CDC Childhood Lead Poisoning Prevention Program
- MaineHousing
- Maine Department of Agriculture, Conservation and Forestry, Integrated Pest Management
- Maine Indoor Air Quality Program
- Penquis (community action agency), Housing & Energy Services
- Maine Access Immigrant Network

The Maine CDC Asthma Program leads this workgroup which launched in January 2025 and meets monthly. It is anticipated that this project will be completed by the end of grant year 3 in the summer of 2027.

Indoor Air Quality Monitoring Workgroup

This workgroup is tasked with work on Priority 3: pilot an indoor air quality (IAQ) monitoring project in the homes of ASME Program participants. This group meets with the goal to develop and pilot an IAQ monitoring project using low-cost air monitors in homes where the ASME

Program is being implemented. Data from the IAQ monitors would be used to help ASME Program participants link asthma exacerbations with asthma trigger sources.

The group consists of members from the following organizations:

- Maine CDC Asthma Program
- Maine Department of Environmental Protection, Bureau of Air Quality
- Maine Indoor Air Quality Council
- United Ambulance
- Department of Education, Office of School and Student Supports
- Anderson Environmental Health
- Partnerships For Health

The group is led by the Maine CDC Asthma Program. It was convened in December 2024 and conducts monthly meetings. It is expected that this project will be completed at the end of the grant cycle in summer 2028. The group will seek funding for the air quality monitors from non-grant sources.

Summary

Despite improvements in asthma services and care in Maine, asthma remains a challenge that requires sustained attention by this Coalition and other asthma stakeholders. In 2022, the prevalence of current asthma among adult Mainers was slightly higher than the national rate (13.1% vs. 9.6%, respectively). Although the prevalence of current asthma among Maine children in 2022 was consistent with a nationwide rate of 6.7%, this statistic signals a need for improvement.

Like national asthma trends, the burden of asthma in Maine is distributed unequally. In 2022, populations with current asthma rates above the State rate include Mainers with low incomes (i.e., annual incomes of less than $15,000), MaineCare recipients, ethnic and racial minorities, and LGBTQ+ groups. Additionally, Mainers living in Lincoln and Sagadahoc counties appear to have elevated asthma rates. These data on asthma disparities can be used to more effectively target and tailor asthma interventions to these populations. One such intervention that utilizes

this data in this way is the ASME Program. The ASME Program has been implemented by various types of medical and non-medical professionals including certified asthma educators, respiratory therapists, community paramedics, CHWs, and public health nurses. The Coalition identified gaps in the geographic distribution of these professionals as part of its work to support expansion of the reach of the ASME Program to the previously described high burden populations. Within the professions that were found to be inequitably distributed, it was observed that this inequity ran along rural/urban divisions with more professionals' presence in populated counties vs. rural counties. This finding illustrates a potential barrier to equitable delivery of ASME, information that can be utilized to improve the program's reach. Recognizing an opportunity to increase the impact of ASME, the Coalition identified the ASME Program as a potential focus during the process of developing its strategic priorities.

The process of identifying and selecting Coalition strategic priorities resulted in the selection of 3 priorities and the formation of 3 workgroups tasked with carrying out work on their respective priorities. Each priority center connects high-risk populations to asthma related information and resources. The Health Equity Workgroup, for instance, is exploring ways to facilitate delivery of asthma information and resources to groups with asthma disparities and increase the awareness of the ASME Program among healthcare providers. Similarly, the Healthy Homes Workgroup is looking to address environmental health concerns which include sources of asthma triggers as part of a broader healthy homes strategy for low-income households. Finally, the Indoor Air Quality Monitoring Workgroup is piloting the use of air quality monitors in the homes of ASME Program participants as an educational tool to link asthma exacerbations with asthma triggers. Measurement of the success of these outreach products at achieving their aims, as well as the success of the Coalition as a whole, will be performed by the Maine CDC Asthma Program's evaluator, Partnerships for Health.

APPENDIXES

Appendix A. List of Asthma Coalition Members

Paola Piedrahita	Maine CDC Asthma Program
Leigh Riley	Maine CDC Asthma Program
Eric Frohmberg	Maine CDC Chronic Disease Programs
Michelle Mitchell	Partnerships for Health
Chad Mitchell	Partnerships for Health
Courtney Roderick	Partnerships for Health
Jessica Bonthius	Environmental Public Health Tracking, Maine CDC
Chris Paulu	Environmental Public Health Tracking, Maine CDC
Pamela Bryer	Department of Agriculture, Board of Pesticide Control
Hillary Peterson	Maine Department of Agriculture
Martha E Webster	Maine Bureau of Air Quality
Erin Arneson	Maine CDC Lead Program
Amy Fair	Maternal and Child Health Program
Jonathan Dyer	Maine Radon Program Coordinator
Norman Anderson	Environmental Public Health scientist
Hillary Colcord	Maine Primary Care Association
Christy Crocker	Maine Indoor Air Quality Council
Tammy Diaz	Maine Department of Education
Emily Poland	School Nurse Consultant Maine Department of Education
Pat Endsley	School Nurse Maine Association of School Nurses
Loretta Dutill	Value Based Purchasing Division, MaineCare
Martine Eon	Maine Medical Center
Betty Mezoff	Maine State Housing Authority
Jennifer Giosia	Penquis Community Action Agency
Candy Henderly	Director, Penobscot Nation Health Department
Sara Huston	Epidemiology, University of Southern Maine
Denise Yob	Epidemiology, University of Southern Maine
Nikki Jarvais	Rinck Advertising

Sarah Lewis	Maine Access Immigrant Network
Becca Matusovich	Partnership for Children's Oral Health
Thomas A. Mellow	Pediatric Pulmonologist, Maine Medical Center
Teresa Merrill	School Nurse, Gorham Public Schools
Christine O'Connor	Asthma Educator
Charles Ranson	Waldo Community Action Partners
Peter Rinck	Rinck Advertising
Sarah Rines	Center for Tobacco Independence
Daphne Russell	Community Paramedicine, United Ambulance
Dennis Russell	Community Paramedicine, United Ambulance
Rhonda Vosmus	Certified Asthma Educator, InterMed

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