

Memorandum

To: *Deborah Dingell, U.S. Congresswoman, co-chair of the House Asthma and Allergy Caucus*

From: *Laura Iannopollo, Chief of staff for Florida Department of Health*

RE: *The continued burden of asthma in the United States.*

Date: *July 28, 2024*

Summary

Asthma, a chronic respiratory disease, places a significant burden on millions of Americans. Efforts to improve health outcomes and mitigate the financial costs for access to asthma-related care and treatment is necessary. Those living in poverty, women, and racial/ethnic minority groups are disproportionately affected, often over-utilizing healthcare services (emergency department visits, hospitalizations) due to severe, uncontrolled asthma. Strategies to improve current asthma trends by increasing access to affordable care is covered in the following problem solutions: option 1- decreasing direct/indirect costs for asthma services, option 2- increasing insurance coverage for managing asthma-related care, and Option 3- having an effective asthma management plan. Direct and indirect costs associated with healthcare services and treatment have a significant impact on those living with the disease, particularly for uncontrolled asthma. Programs such as telemedicine, school-based interventions, and mobile digital applications can bridge the gap in access to care. Increasing insurance coverage has the ability to provide a safety net to patients to avoid devastating medical expenses. Last, education on self-management skills and adherence to guidelines-based treatment is necessary for controlling asthma, thus improving one's quality of life. My overall recommendation from this policy analysis is to implement option 3- having an effective asthma management plan.

The continued burden of asthma in the United States.

Asthma, a chronic respiratory disease, places a significant health and financial burden on approximately 25 million people. Effective management of asthma-related care requires utilization of preventative services to mitigate unnecessary complications and negative outcomes. As this disease is prone to quickly and intensely aggravate the bronchi, access to affordable care is also necessary to circumvent financial burdens resulting from over utilization of emergency care and hospitalization. Additionally, reduced quality of life, work productivity, and school performance leads to significant loss of income for the individual and community. Data trends indicate that asthma rates decrease as family income increases, with low-income families disproportionately affected (ALA, 2024) (Appendix A1). According to prior studies, the annual economic costs for asthma were \$6.2 billion in 1990, drastically increasing to \$81.9 billion in 2013” (Nurmagambetov, Kuwahara, & Garbe, 2018) (Appendix A2).

The current asthma prevalence increased from 7.4% in 2001 to 7.7% in 2021 (CDC, 2023) (Appendix B1). According to the Centers for Disease Control and Prevention (CDC), children (age <18 years) accounted for 6.5% and adults (age 18+ years) accounted for 8.0% of the population diagnosed with asthma (Appendix B2). Females (8.9%) were higher than males (6.5%). Boys (7.3%) were more likely than girls (5.6%) to have asthma. Following maturity, however, adult females (9.7%) were more likely than adult males (6.2%) to have asthma (Appendix B3). Data trends pertaining to gender differences indicate that NH Black persons (10.9%) were more likely than NH Whites (7.6%) to have asthma (Appendix B4) (CDC, 2023).

The national rate of asthma death “declined from 15.0 per million in 2001 to 10.6 per million in 2021” (CDC., 2023) (Appendix C1). The asthma mortality reported in 2021 totaled to 10.6% of the U.S. population (Appendix C2). Children accounted for 2.0% and adults accounted for 13.1%. Individuals aged 65+ years had the highest mortality rate compared to all other age groups (Appendix C3). Overall, females (12.5%) were more likely to die from asthma than males (8.7%). Amongst race/ethnicity differences, black persons (24.4%) were more likely to die from asthma than whites (9.8%) and Hispanics (5.8%) (CDC, 2023) (Appendix C4).

Option 1 Decreasing direct/indirect costs for asthma services

Individuals with uncontrolled asthma are often disproportionately affected by poor health outcomes resulting from financial barriers to affordable care. And inadequate access to primary preventative services limits an individual’s ability to attain appropriate treatment. This cycle leads to severe, uncontrolled asthma leading to permanent lung damage, poor quality of health, and mortality. Low-income families and racial/ethnic minorities experience higher rates of morbidity and mortality resulting from barriers to access in care due to affordability issues. Alternative strategies to improve access while decreasing direct and indirect costs to care include telemedicine, school-based interventions, and mobile digital applications (Codispoti, Greenhawt, Oppenheimer, 2022). These methods promote ease of access and low-cost availability to communities without damaging quality of care by reducing issues of no-shows, non-patient contact, and by avoiding unnecessary out-of-pocket expenses from recurring medical visits and treatment. However, it may be challenging to implement these strategies in areas with low or undetermined funding. Bridging the gap in health services reduces the rate of inaccessibility for asthma-related care, improves quality of life, and work productivity.

Option 2 Increasing insurance coverage for managing asthma-related care

In 2022, approximately 27.6 million people of all ages (8.4%) were uninsured, with the largest proportion of the uninsured among working adults aged 18-64 (Cohen, Briones, & Martinez, 2024) (Appendix D1-D2). In the absence of insurance or with high out-of-pocket costs for those underinsured, individuals are more likely to forego medical services, less likely to adhere to medications, or to obtain self-management knowledge. Despite evidence-based guidelines for managing asthma, lack of affordable care continues to exacerbate asthma-related health burdens by reducing access to medications and physicians. In turn, patients are unable to adhere to effective treatment. This domino effect drives up health care costs due to urgent care and hospitalizations. Despite the increased coverage following the Affordable Care Act, adoption of Medicaid expansion has not been universal. Increased access to healthcare services and treatment via insurance coverage is a critical aspect for reducing negative health outcomes. According to the U.S. Centers for Medicare & Medicaid Services the national health spending grew 4.1%, totaling 4.5 trillion in 2022, with households accounting for 28% (CMS, 2024). Health insurance is intended to protect individuals from devastating medical expenses, yet financial barriers to attaining appropriate coverage escalates health care utilization from uncontrolled asthma and contributes to a cycle of rising costs and poor health outcomes.

Option 3 Having an effective asthma management plan

Education on asthma self-management is essential for the general health and well-being of asthma patients, helping them better regulate their condition. Patients who actively participate in their own care and have productive interactions with their healthcare professionals are more likely to successfully control their health. Self-management entails self-monitoring, avoiding asthma triggers, identifying and treating symptoms, and taking controller medication as directed (Gardner, Kaplan, Collins, Zahran, 2021). The most effective strategy to avoid symptoms of asthma is to have a treatment plan, collaborated between the patient and provider. However,

there are still alarming differences in treatments provided and adherence to prescribed medicines. A patient’s inaccurate self-assessment of their illness poses a risk to their health. “Nonadherent patients are more likely to need more novel/expensive therapies that increases direct and indirect cost to the individual” (Codispoti, Greenhawt, Oppenheimer, 2022). Guidelines-based asthma management coupled with education on self-management skills, offered through programs such as Breath Well, Live Well, can have financially positive impacts. Improved quality of life reduces costs incurred from hospitalization and ER visits, improves work productivity, and reduced obstacles in care due to financial difficulties.

Table 1. Outcomes matrix evaluative criteria of the policy alternatives

Policy Alternatives and Criteria	Cost	Efficacy & Effectiveness	Feasibility
Alternative 1: Decreasing direct/indirect costs for asthma services	<p>Lowers health expenditures.</p> <p>Reduces out-of-pocket costs for patients</p> <p>(Marye & Atav, 2023)</p>	<p>Reduces access to care barriers.</p> <p>Improves treatment compliance.</p> <p>Diverse implementation strategies.</p> <p>Improves asthma self-management.</p> <p>(Marye & Atav, 2023)</p>	<p>Diverse populations require state and local community involvement.</p> <p>Variation in state health system operations.</p> <p>Not timely.</p> <p>(Marye & Atav, 2023)</p>
Alternative 2: Increasing insurance coverage for managing asthma-related care	<p>Cost-sharing reduces access to prescription drugs.</p> <p>Reduces total healthcare expenditures.</p> <p>(Stadhouders, Kruse, Tanke, Koolman, & Jeurissen, 2019)</p>	<p>Reduces the number of uninsured.</p> <p>Varying state coverage for healthcare and treatment.</p> <p>Improved quality of care.</p> <p>(Pruitt, Yu, Kaplan, Hsu, & Collins, 2018)</p>	<p>Limited political support.</p> <p>Not timely.</p> <p>(Drake, Tolbert, & Rudowitz, 2024)</p>
Alternative 3: Having an effective asthma management plan	<p>Reduces healthcare utilization and costs.</p> <p>Increased workplace productivity.</p> <p>Gardner, Kaplan, Collins, & Zahran, 2021)</p>	<p>Successful control of asthma.</p> <p>Promotes self-management.</p> <p>Gardner, Kaplan, Collins, & Zahran, 2021)</p>	<p>Diverse populations require provider-to-patient training.</p> <p>Flexible delivery.</p> <p>Gardner, Kaplan, Collins, & Zahran, 2021)</p>

Recommendation

In conclusion to this policy analysis, my recommendation for reducing the health and economic burden of asthma throughout the U.S. is option 3: having an effective asthma management program. Debbie Dingell, with your current efforts to address the nation’s public health response to asthma, you and I both have a keen interest in ensuring underserved and vulnerable communities have access to guidelines-based care and treatment. Options 1 and 2 may have

positive impacts for communities, however, with the diverse populations, varying insurance coverage, and variations in healthcare system operations across all 50 states hinders a timely response. Asthma care and treatment bears a significant financial burden on individuals and families, especially among those living in poverty, women, and racial/ethnic minority groups disproportionately impacted. Your efforts to address policy changes that ensure availability and access to affordable asthma control management and provisions to promote self-management skills are critical.

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Appendix A

Economic Impact



Figure A1. Current asthma rate by family income, 2022. *Image source:* ALA (2024). *Data source:* CDC (2023, July 18).

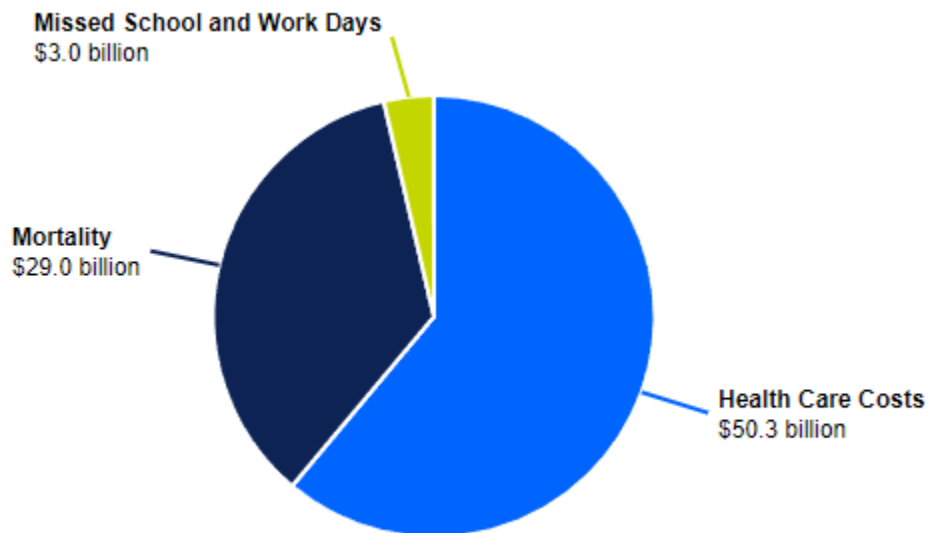


Figure A2. Total annual economic cost from asthma, 2013. *Image source:* ALA (2024). *Data source:* Nurmagambetov, Kuwahara, & Garbe (2018).

Appendix B

Prevalence of Asthma

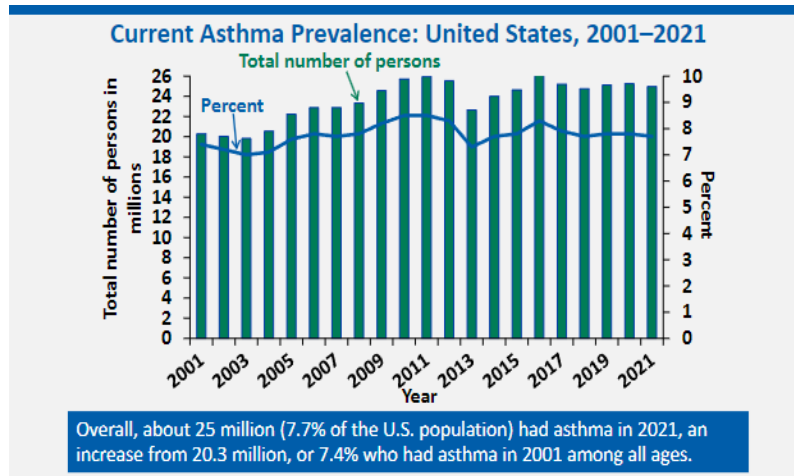
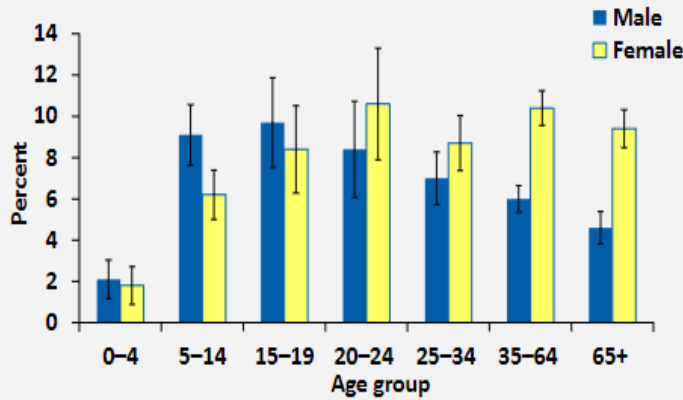


Figure B1. Current Asthma Prevalence: United States, 2001-2021 *Source:* CDC (2023)

Characteristic	Population with Current Asthma N = 24,963,874 (7.7%)	
Characteristic	Number	Percent
Total		
Children (Age <18 years)	4,675,475	6.5
Adults (Age 18+ years)	20,288,399	8.0
Sex		
Males	10,273,831	6.5
Boy (Age <18 years)	2,695,146	7.3
Men (Age 18+ years)	7,578,685	6.2
Females	14,690,043	8.9
Girls (Age <18 years)	1,980,329	5.6
Women (Age 18+ years)	12,709,714	9.7
Race/Ethnicity		
White NH	14,806,266	7.6
Children (Age <18 years)	2,074,381	5.5
Adults (Age 18+ years)	12,731,885	8.0
Black NH	4,207,324	10.9
Children (Age <18 years)	1,058,310	11.6
Adults (Age 18+ years)	3,149,013	10.7
Hispanic	3,916,576	6.4
Children (Age <18 years)	1,102,471	5.9
Adults (Age 18+ years)	2,814,105	6.7

Figure B2. Current Asthma Prevalence within the U.S., 2021. *Source:* CDC (2023).

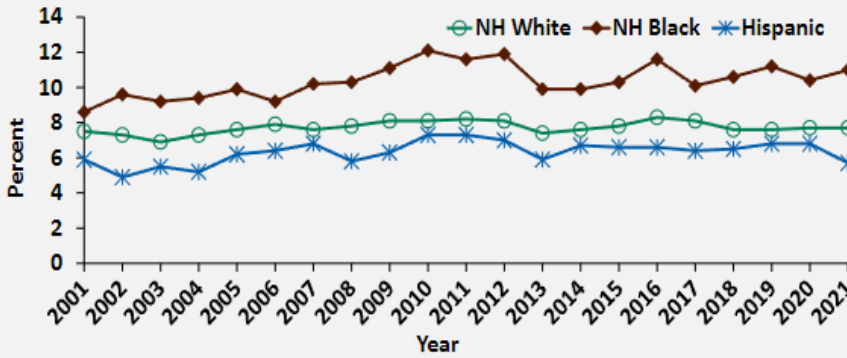
Child and Adult Current Asthma Prevalence by Age and Sex: United States, 2021



Current asthma prevalence for children aged 5–14 years was higher for males than for females. Among adults 35 years and older, current asthma prevalence was higher for females than males.

Figure B3. Child and Adult Current Asthma Prevalence by Age and Sex: United States, 2021. *Source:* CDC (2023).

Current Asthma Prevalence by Race and Ethnicity: United States, 2001–2021



Asthma is more common among non-Hispanic (NH) Black persons compared with NH White persons and Hispanic persons. Percent of current asthma increased from 2001 through 2021 among NH White persons, NH Black persons, and Hispanic persons.

Figure B4. Current Asthma Prevalence by Race and Ethnicity: United States, 2001-2021. *Source:* CDC (2023)

Appendix C

Mortality of Asthma

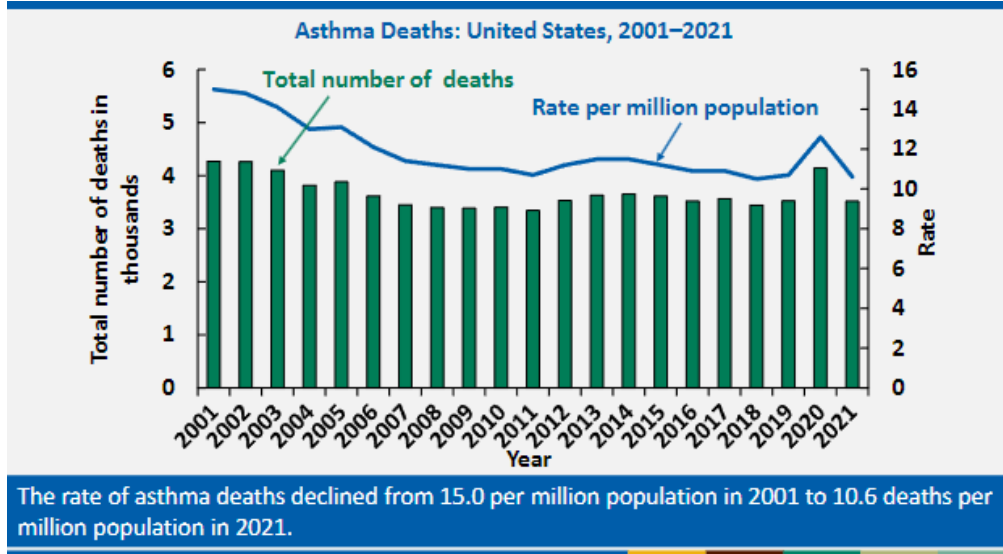


Figure C1. Asthma Deaths: United States, 2001-2021. *Source:* CDC (2023).

Characteristic	Population of Asthma Mortality	
	N = 3,517 (10.6)	
	Number of Deaths	Rate (per Million)
Children (Age <18 years)	145	2.0
Adults (Age 18+ years)	3,372	13.1
<u>Sex</u>		
Males	1,430	8.7
Children (Age <18 years)	89	2.4
Adults (Age 18+ years)	1,341	10.6
Females	2,087	12.5
Children (Age <18 years)	56	1.6
Adults (Age 18+ years)	2,031	15.4
<u>Race/Ethnicity</u>		
White NH	1,929	9.8
Children (Age <18 years)	36	1.0
Adults (Age 18+ years)	1,893	11.8
Black NH	1,020	24.4
Children (Age <18 years)	78	7.7
Adults (Age 18+ years)	942	29.7
Hispanic	366	5.8
Children (Age <18 years)	27	1.4
Adults (Age 18+ years)	339	7.8

Figure C2. Asthma Mortality within the U.S., 2021. *Source:* CDC (2023).

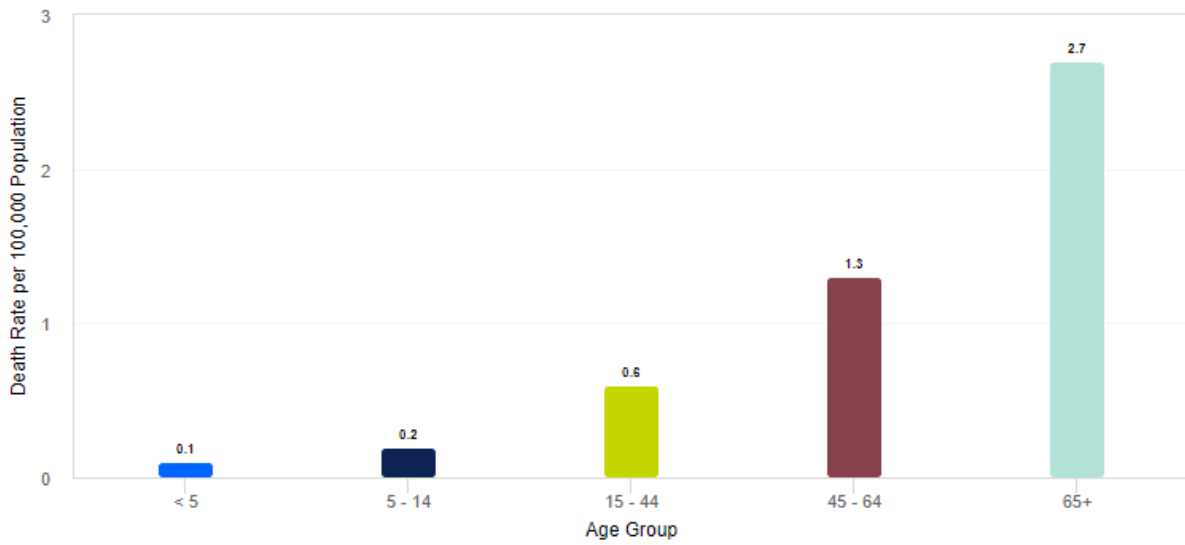
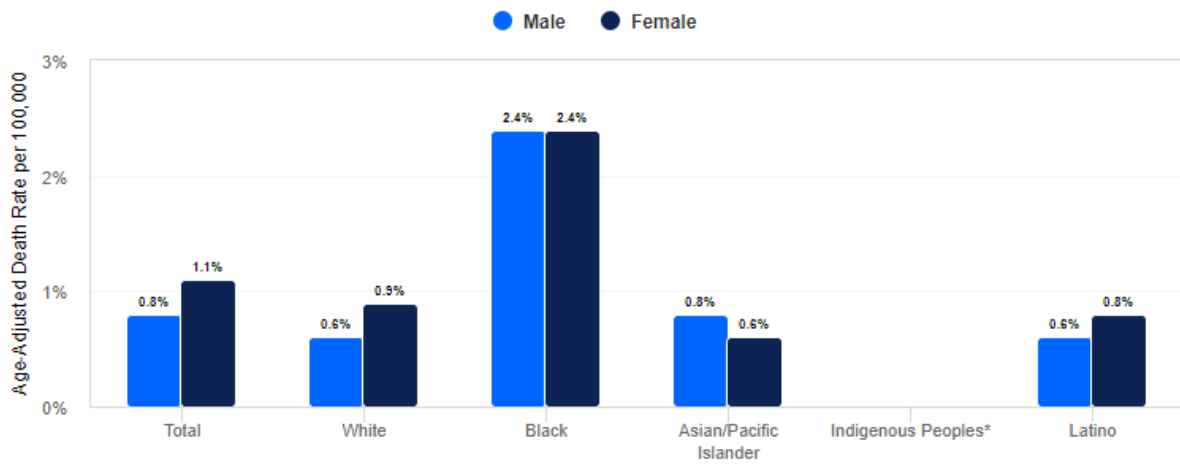


Figure C3. U.S. Asthma mortality by age group, 2021. *Source:* ALA (2024).

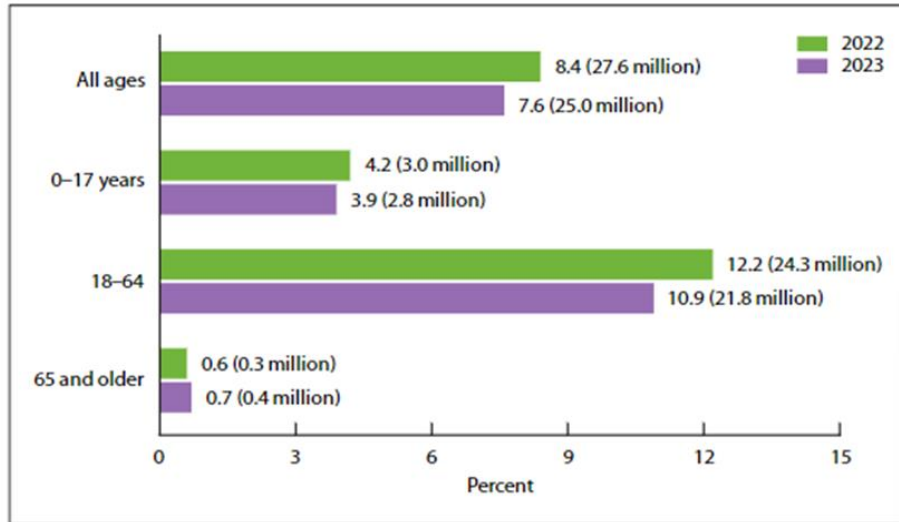


*Rate unavailable due to too few deaths or too much variance to allow for accurate reporting and sufficient confidentiality.

Figure C4. U.S. asthma mortality rate by race/ethnicity and gender, 2021. *Source:* ALA (2024).

Appendix D

U.S. Insurance Coverage



NOTES: People were defined as uninsured if they did not have any private health insurance, Medicare, Medicaid, Children's Health Insurance Program (CHIP), state-sponsored or other government plan or military plan. People were also defined as uninsured if they had only Indian Health Service coverage or had only a private plan that paid for one type of service, such as accidents or dental care. Data are based on household interviews of a sample of the U.S. civilian noninstitutionalized population.
SOURCE: National Center for Health Statistics, National Health Interview Survey, 2022-2023.

Figure D1. Percentage and number of people who were uninsured, by age group and year: United States, 2022-2023. *Source:* Cohen, Briones, & Martinez (2024).

Age group	Uninsured (%)	Public Health Plan	Private Health Insurance
		Coverage (%)	Coverage (%)
All ages	8.4	39.5	61.0
Age 0-17	4.2	43.7	54.3
Age 18-64	12.2	22.0	67.8
Age 65 and older	0.6	95.2	45.7

Figure D2. Percentage of people who were uninsured, had public health plan coverage, or had private health insurance coverage by age group in the U.S., 2022. *Source:* Cohen, Briones, & Martinez (2024).