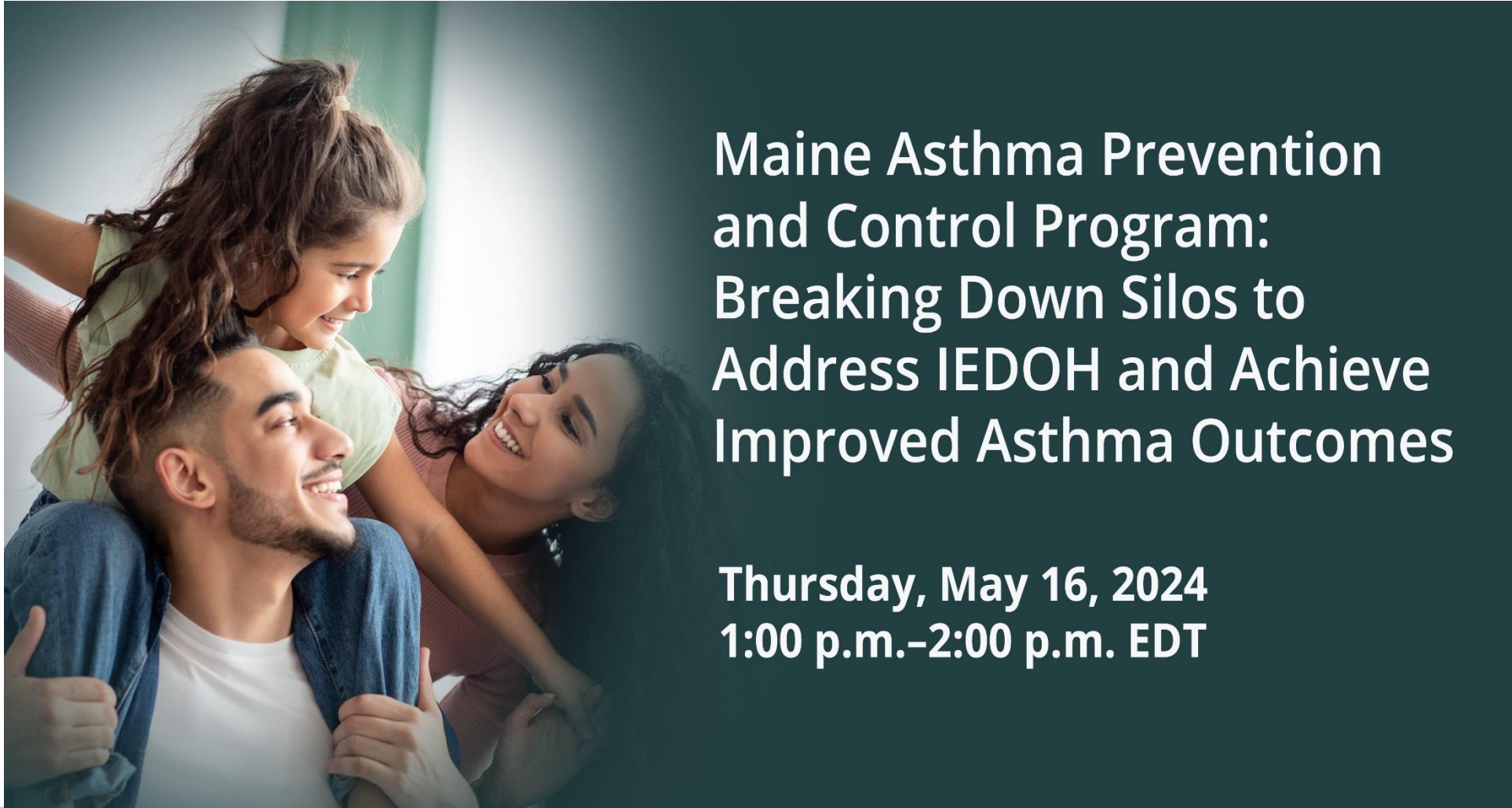




Learn From EPA's 2024 Asthma Award Winner!



Maine Asthma Prevention
and Control Program:
Breaking Down Silos to
Address IEDOH and Achieve
Improved Asthma Outcomes

Thursday, May 16, 2024
1:00 p.m.–2:00 p.m. EDT

Learning Objectives

Maine Asthma Prevention and Control Program will share how they—

- Fostered a culture of cross-program collaboration to develop and expand asthma control services in the state of Maine.
- Established the Maine In-Home Asthma Education Program (HAEP).
- Promote a culture of evaluation to improve program efficacy and demonstrate improved asthma outcomes.

Featured Speakers



Tracey Mitchell, RRT, AE-C

Environmental Protection
Specialist, U.S. Environmental
Protection Agency (EPA)



Eric Frohberg, M.A.

Senior Health Program
Manager, Maine Center for
Disease Control and Prevention



Polling Question 1

What best describes the type of organization that you represent?

1. Government agency
2. Health care provider
3. Community-based asthma program
4. Healthy homes program
5. Other

Polling Question 2

How familiar are you with the indoor environmental determinants of health (IEDOH)?

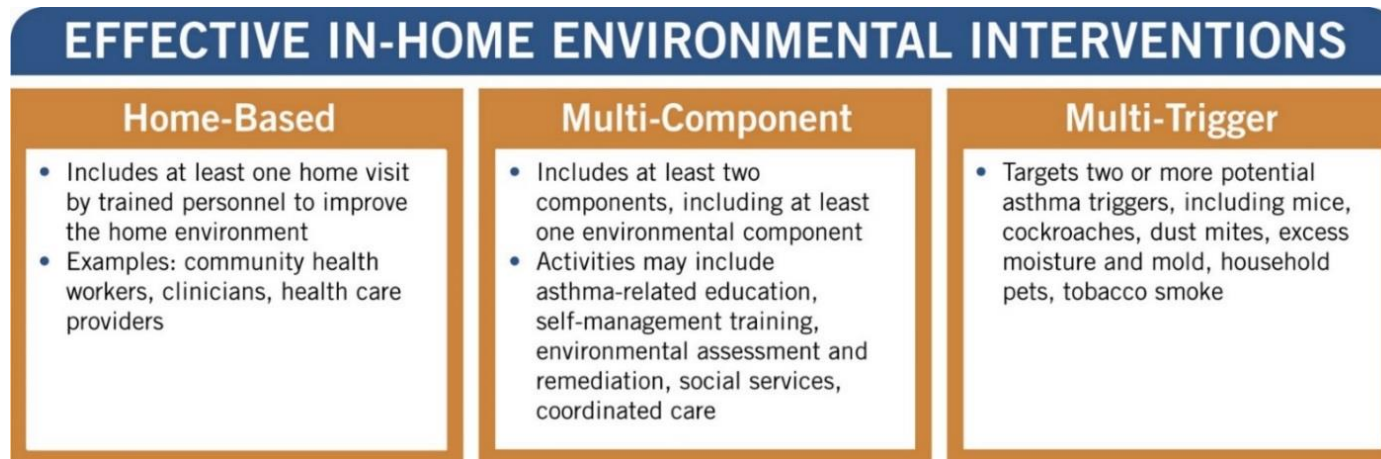
1. Very familiar—my asthma program addresses IEDOH.
2. Familiar—my asthma is in the process of expanding to include IEDOH.
3. Somewhat familiar—I've heard the term but am not really sure what it is.
4. Not familiar—I've never heard of IEDOH.



Environment Plays a Critical Role in Asthma Control

- Federal asthma guidelines recognize environmental trigger reduction as a critical component of comprehensive asthma care.*
- The evidence demonstrates that in-home environmental interventions are effective at improving asthma control.†

EPA is a federal lead for the integration of environmental risk reduction into standards of care.



* NHLBI. *Guidelines for the Diagnosis and Management of Asthma* (EPR-3). 2007. <https://www.nhlbi.nih.gov/health-topics/guidelines-for-diagnosis-management-of-asthma>

† CDC. *The Guide to Community Preventive Services*. 2005. <https://www.thecommunityguide.org>

The System for Delivering High-Quality Asthma Care

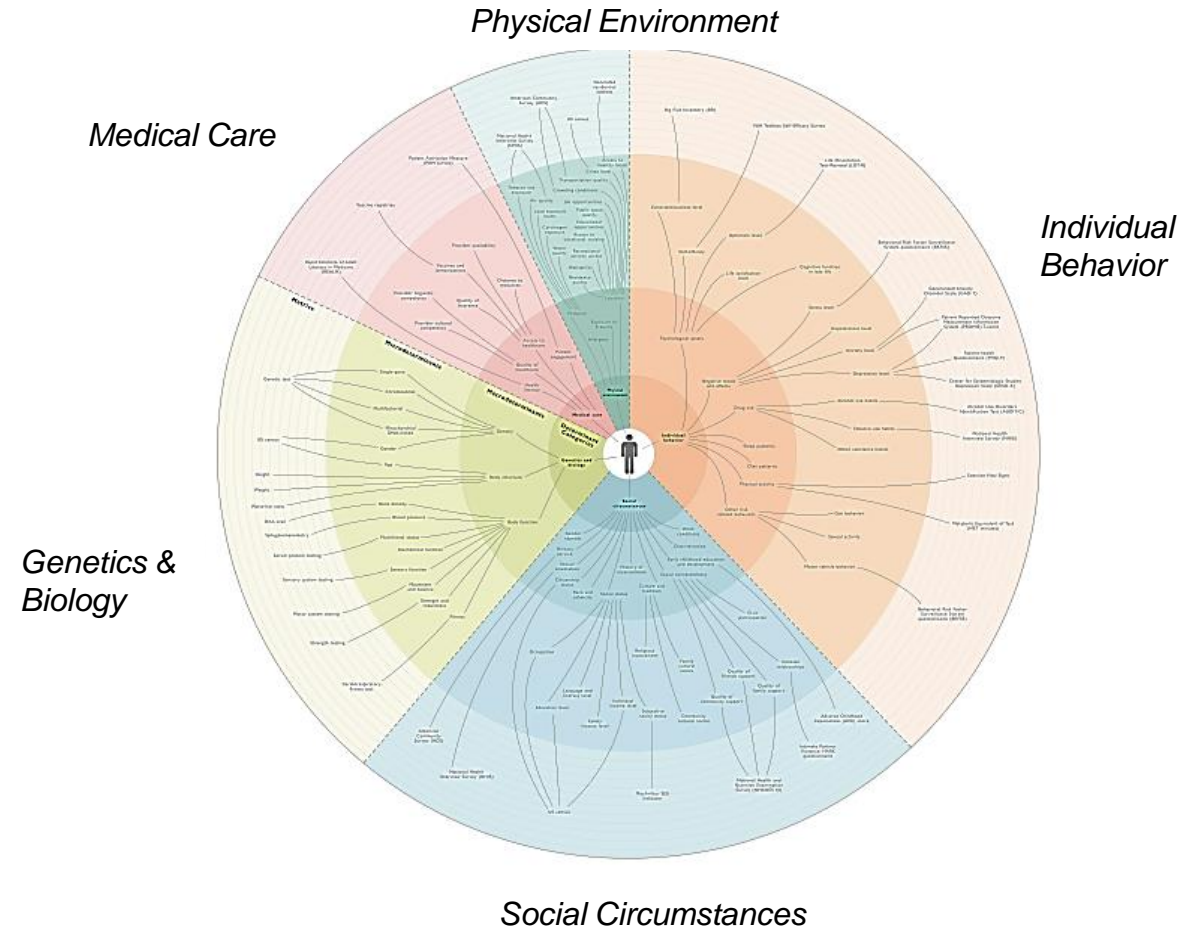


Solutions for IEDOH

- High-quality asthma **systems break down silos** to address IEDOH in asthma.
- Systems require **time, partnership, data, and investment** to scale and sustain.
- Assembling community systems to address IEDOH in asthma is a model **for the social determinants of health (SDOH)**.



SDOH are the conditions in the environments where people are born, live, work, play, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.

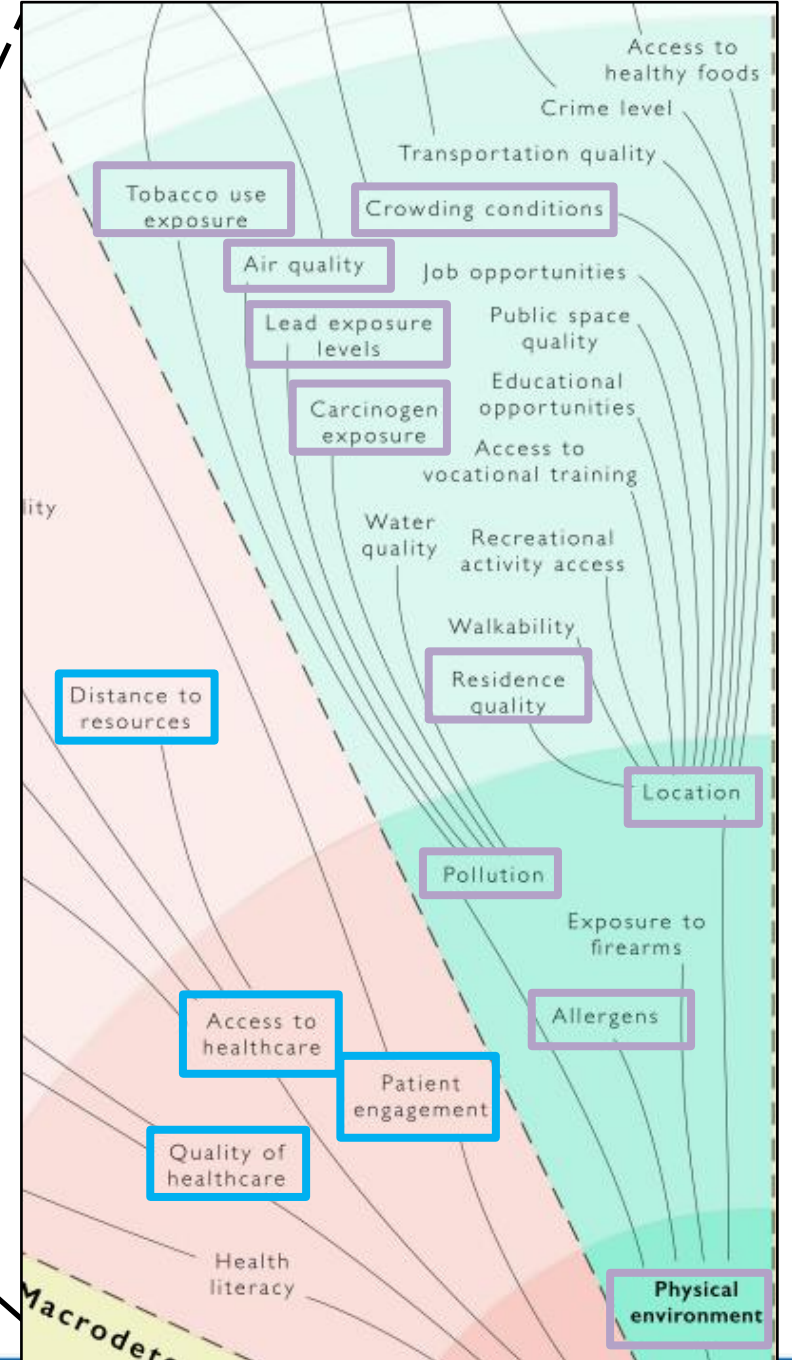
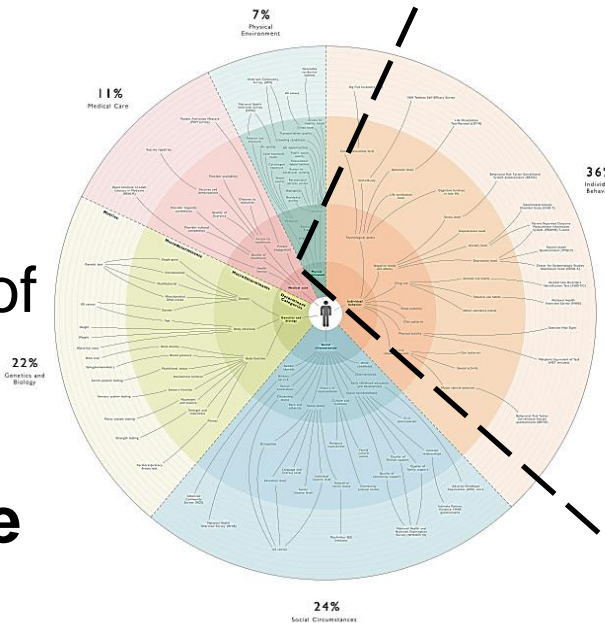


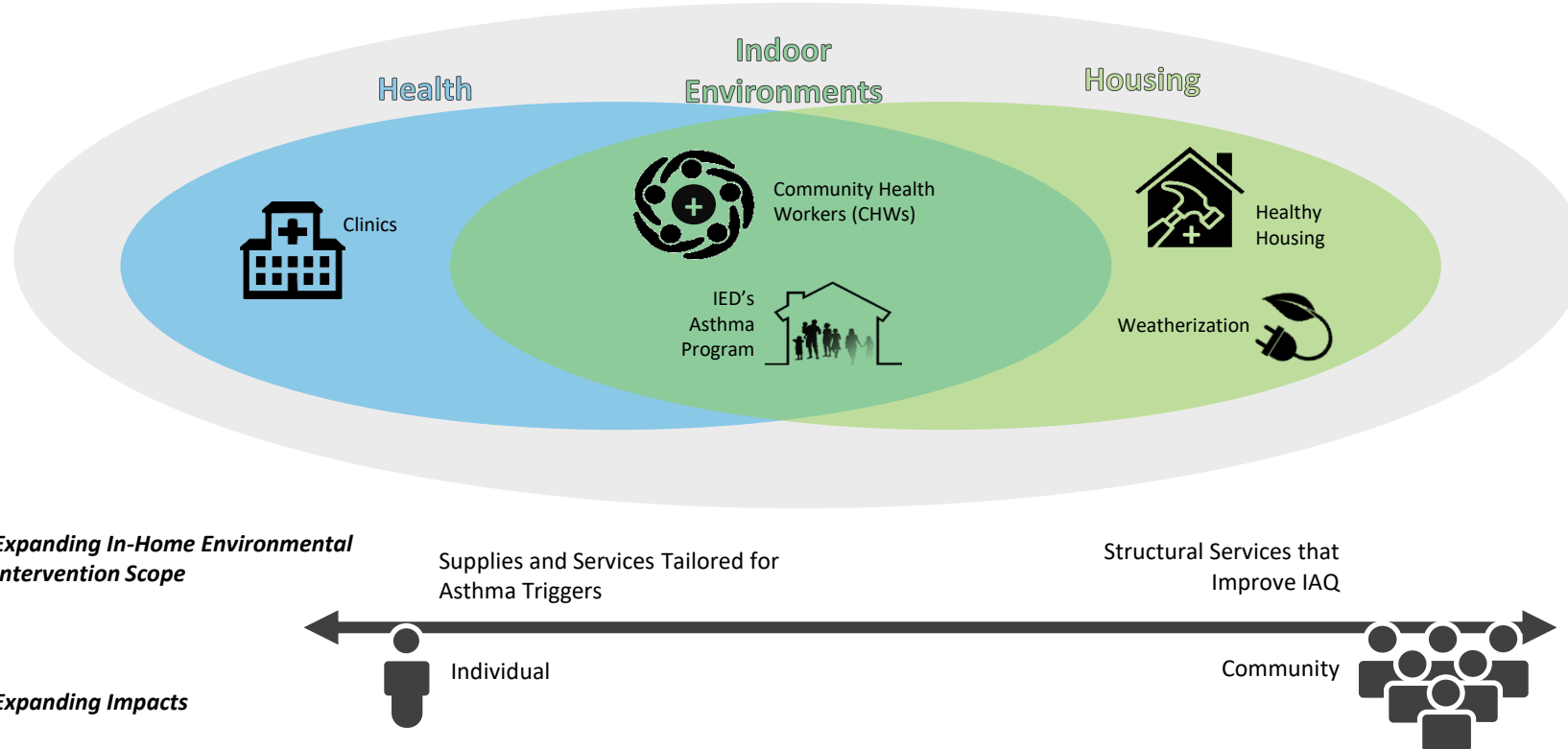
GoInvo Infographic:
https://www.goinvo.com/vision/determinants-of-health/?utm_source=determinant



IEDOH are a subset of SDOH clustered in the physical environment that **covary with housing quality and medical care.**

IEDOH are modifiable environmental factors indoors—such as household air pollution and the presence of pests, mold and moisture, chemicals, and irritants—that **influence risk and experience of chronic disease.**





About the Award

National Environmental Leadership Award in Asthma Management

The application focuses on three areas:

1. Comprehensive Asthma Management
 - a. Management and Operations
 - b. Integrated Health Care Services
 - c. Tailored Environmental Services**
2. Getting Results: Evaluation
3. Sustainability



About the Award

National Environmental Leadership Award in Asthma Management



Nation's highest honor for exceptional asthma management programs.

- **Goal:** The award program showcases and spreads best practices in comprehensive asthma care and management.
- **Eligibility:** Applicants must follow national guidelines and address published criteria for achieving improved health outcomes and program sustainability, especially for environmental justice communities.
- **Review:** Applications undergo a two-tiered review process, which includes reviewers from other federal agencies and national nongovernmental organizations.

Award Winners Hall of Fame

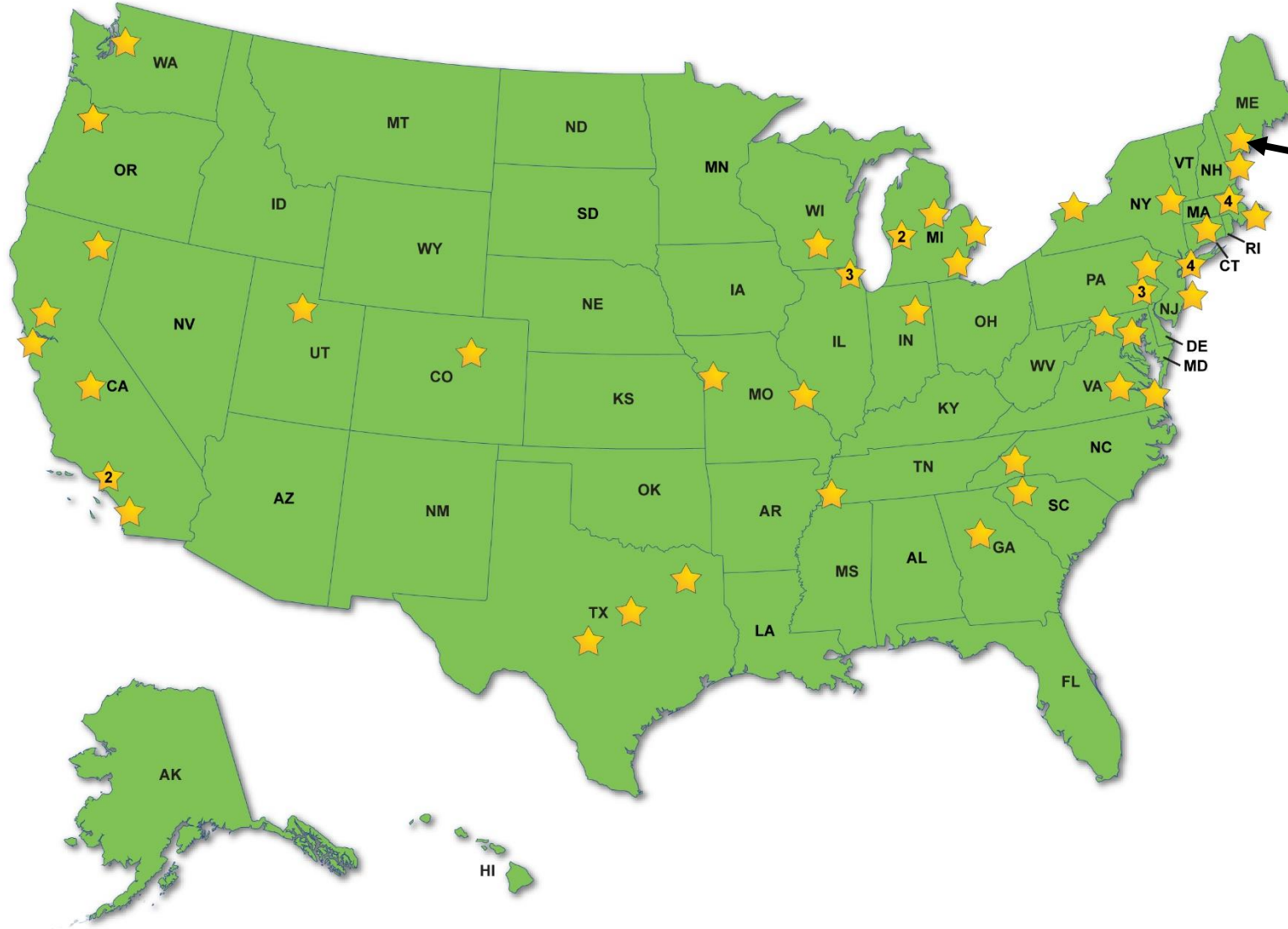
www.asthmacommunitynetwork.org/awards/winners





Awards Hall of Fame

Since 2005, 53 asthma programs been inducted into the Awards Hall of Fame.



Maine CDC Asthma Prevention and Control Program Breaking Down Silos to Address IEDOH and Improve Asthma Outcomes

Eric Frohmberg

May 16, 2024



Maine CDC Asthma Prevention and Control Program



Maine Asthma Self-Management Education Program

Proposed Schedule for Program Completion

Pre-Enrollment

- Assess Eligibility and Enrollment



Visit 1 & Visit 2

- **Module 1:** Establish Rapport and Obtain Baseline Information*
- **Module 2:** Asthma Education*
- **Module 3:** Medication Assessment and Reconciliation*
- **Module 4:** Asthma Action Plan*
- **Module 5:** Tobacco Use and Exposure to Secondhand Smoke
- **Module 6:** Asthma Management and Treatment Goals
- **Module 7:** Home Environmental Assessment and Trigger Reduction



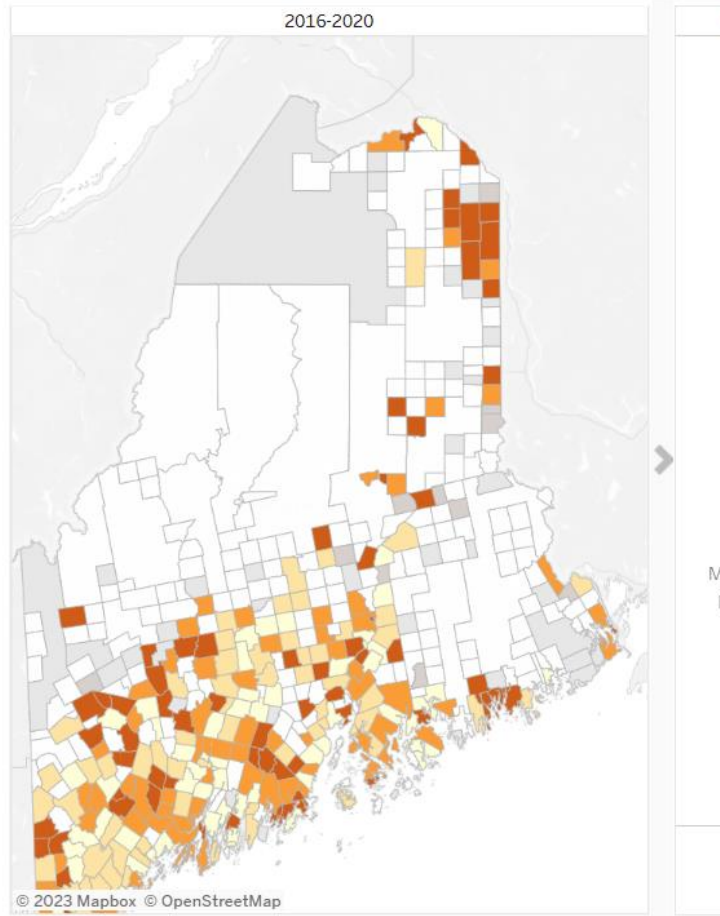
Post Intervention Evaluations

- One-Month Post Visits Evaluation *
- Six-Months Post Module 7 Evaluation (if applicable)
- Twelve-Months Post Visits Evaluation



*Module is mandatory in order to meet federal requirements

Rate of Asthma Hospitalizations | by Town | Both Sexes | All Ages

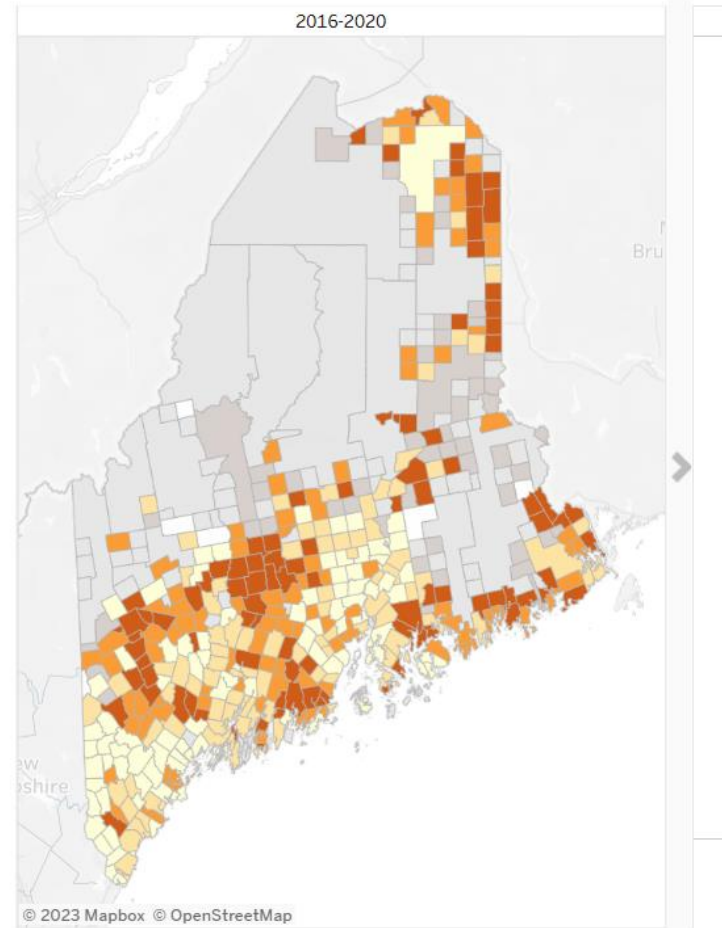


Rate (per 10,000)	Zero	0.4 - <1.4	1.4 - <2.1	2.1 - <3.3	3.3 - 17.5	NR	Suppr.
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Data breaks determined by: Quantiles

Rate of Asthma ED Visits | by Town | Both Sexes | All Ages

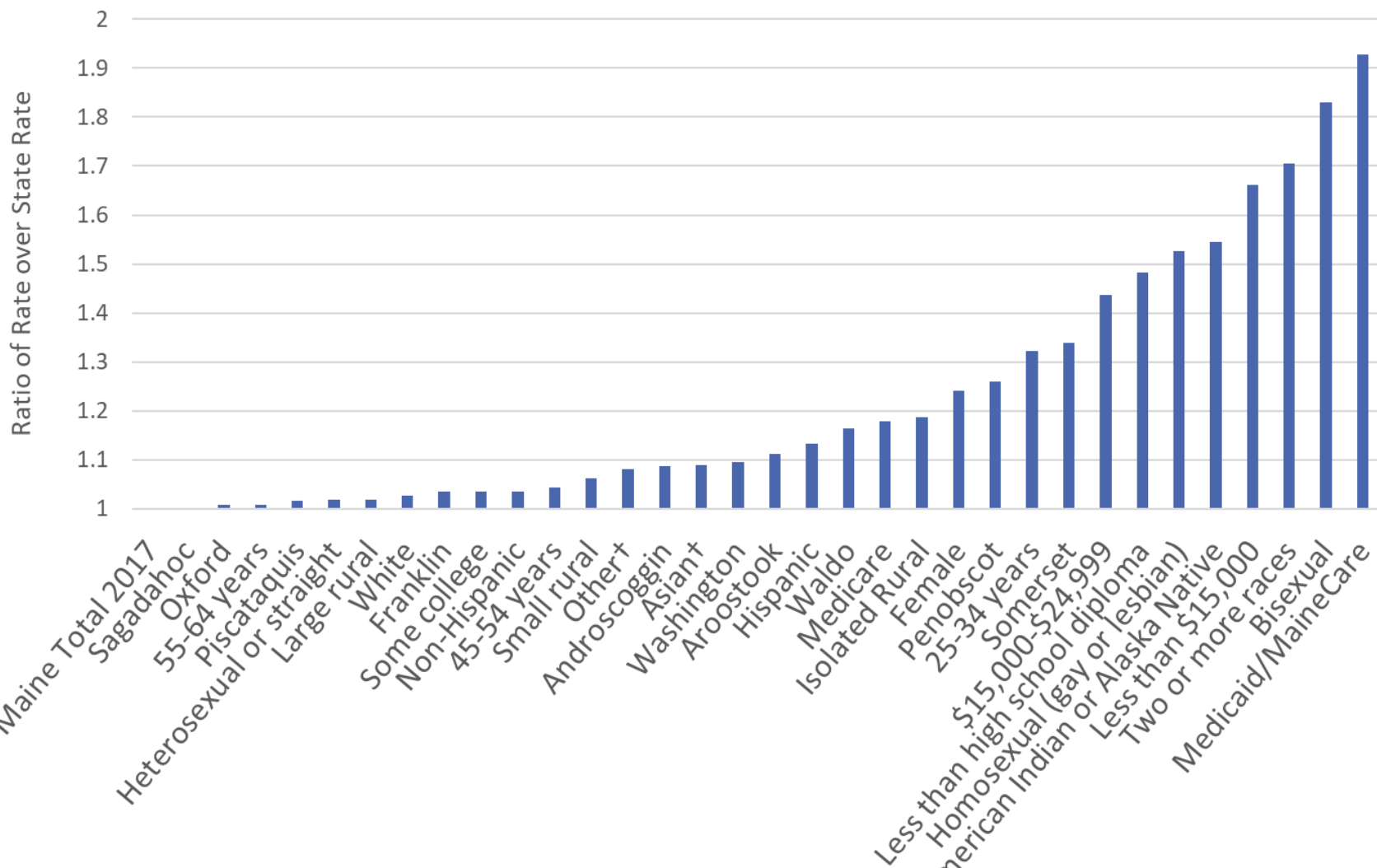


Rate (per 10,000)	Zero	4.1 - <21	21 - <29.7	29.7 - <42.7	42.7 - 116.3	NR	Suppr.
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Data breaks determined by: Quantiles

Ordered Ratio of Asthma Prevalance compared to State Rates for Adults



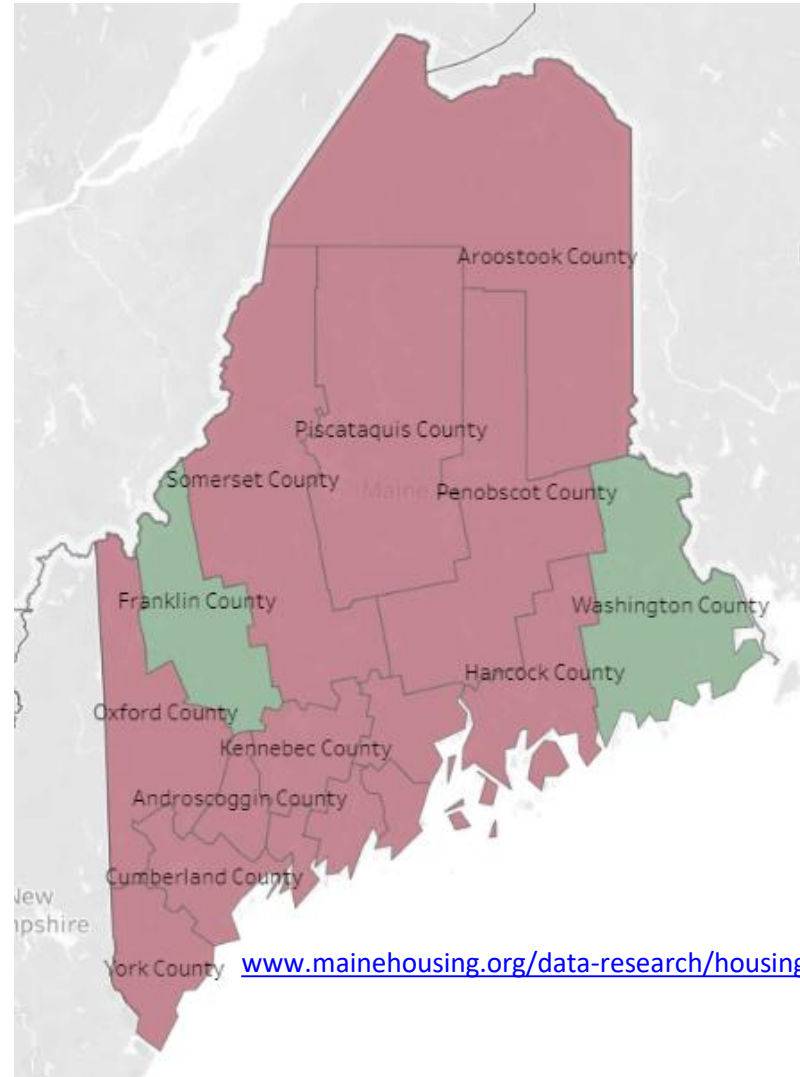
Data Source: Maine BRFSS 2017 and 2011-2017. † Use caution in interpreting estimates with an unweighted numerator less than 50.



HEALTHY HOMES AND SECONDHAND SMOKE EXPOSURE IN THE IMMIGRANT COMMUNITY

Maine Prevention Services

Rental Housing Facts and Affordable Index for Maine Counties



www.mainehousing.org/data-research/housing-data/affordability-indexes

Implementors

- 2014–2019
 - Community Paramedicine
 - Community Health Workers
 - City Public Health Nurses
- 2020–2024
 - Major Hospital System
 - Community Paramedicine
 - Statewide Public Health Nursing

Referrals

Home Characteristics and Asthma Triggers

Checklist for Home Visitors

Using this Home Assessment Can Help Make Homes Healthier.

A trained home visitor can help find common asthma triggers in homes and discuss ways to reduce and remove triggers. Removing asthma triggers in the home, along with proper medical care can improve health.

The checklist is organized into a Core Assessment plus two appendices (Dust Mite Module and Mold and Moisture Module). The Core Assessment can be used for all types of housing and climates, but the additional modules can be used if dust mites or mold/moisture issues are suspected by the trained home visitor. The suggested action items in this checklist are generally simple and low cost.

Kennebec Valley Community Action Program	✓	✓		✓		(207) 859 1500 Toll Free: (800) 542 8227
Opportunity Alliance	✓					(207) 553 5900 Toll Free: (800) 698 4959
Penquis community Action Program	✓	✓		✓	✓	(207) 973 3500 Toll Free: (800) 215 4942
Waldo Community Action Partners	✓	✓		✓		(207) 338 3025 Toll Free: (800) 498 3025
Western Maine Community Action	✓	✓		✓		(207) 645 3764 Toll Free: (800) 645 9636
York County Community Action Corp	✓	✓		✓		(207) 324 5762 Toll Free: (800) 965 5762

Partners

MaineHousing	Community Action Agencies
Tobacco Program	Center for Tobacco Independence
Climate and Health Program	Tribal Representatives
Childhood Lead Program	Community Health Worker Agencies
Maine Indoor Air Quality Council	Community Paramedicine Agencies
School Nursing	Hospital Systems
Pesticide Program	MaineCare
Bureau of Air Quality	Partnerships for Health

Collaborative Projects (Landlord Evaluation)

The evaluation aimed to explore various environmental hazards that may occur in rental housing:

- Air quality and ventilation
- Lead paint
- Mold
- Pests
- Radon
- Smoking and secondhand smoke
- Water leaks
- Water quality

MAINE IN-HOME ASTHMA EDUCATION PROGRAM IMMEDIATE OUTCOMES



ADULTS (n=117)

HEALTH CARE UTILIZATION

3-months prior to Program enrollment vs. Program Completion

CHILDREN (n=50)



Urgent Care

82.5% decrease in adults who used urgent care.



Urgent Care

71.9% decrease in children who used urgent care.

Emergency Department

81.6% decrease in adults who used ER care.



Emergency Department

87.6% decrease in children who used ER care.

Ambulance Services

77.4% decrease in adults who used ambulance services.



Ambulance Services

100.0% decrease in children who used ambulance services.

Overnight Hospitalizations

76.4% decrease in adults who were hospitalized overnight.



Overnight Hospitalizations

65.0% decrease in children who were hospitalized overnight.

QUALITY OF LIFE

3-months prior to Program enrollment vs. Program Completion



Missed Work Days

67.0% decrease in adults who missed work.
62 fewer work days missed.

Missed School Days

61.7% decrease in children who missed school.
117 fewer school days missed.



Asthma Control

98.5% increase in adults with well-controlled asthma.



Asthma Control

91.1% increase in children with well-controlled asthma.

Tobacco Use

18.2% decrease in adults who use tobacco every day.



Tobacco Use

47.2% decrease in caregivers who use tobacco every day.

Asthma Action Plans

121.2% increase in adults with Asthma Action Plans.



Asthma Action Plans

37.7% increase in children with Asthma Action Plans.

Medication Adherence

55.0% increase in adults with improved adherence.



Medication Adherence

19.8% increase in children with improved adherence.

MAINE IN-HOME ASTHMA EDUCATION PROGRAM 6 MONTH OUTCOMES



ADULTS (n=66)

HEALTH CARE UTILIZATION

3-months prior to Program enrollment vs. 6 months after Program Completion

CHILDREN (n=12)



Urgent Care

82.1% decrease in adults who used urgent care.



Urgent Care

76.5% decrease in children who used urgent care.

Emergency Department

72.7% decrease in adults who used ER care.



Emergency Department

66.7% decrease in children who used ER care.

Ambulance Services

82.4% decrease in adults who used ambulance services.



Ambulance Services

NA.

Overnight Hospitalizations

33.3% decrease in adults who were hospitalized overnight.



Overnight Hospitalizations

NA

QUALITY OF LIFE

3-months prior to Program enrollment vs. Program Completion



Missed Work Days

39.8% decrease in adults who missed work.
33 fewer work days missed.

Missed School Days

86.1% decrease in children who missed school.
31 fewer school days missed.



TOTAL COSTS

- Infrastructure
- Outreach
- Professional Development
- Program Implementation

\$2,992.24 PER PERSON



TREATMENT COSTS

- Program Implementation

\$1,475.99 PER PERSON

COST SAVINGS

- Healthcare costs averted
 - Urgent care
 - Emergency room
 - Ambulance
 - Hospitalization
- Productivity
 - Absenteeism

QUALITY OF LIFE

- Controlled asthma
 - Yaghoubi: 0.07 QALYs
- 1 QALY = \$50,000



RETURN ON INVESTMENT

COST SAVINGS

3 months : \$1 : \$0.77

6 months: \$1: \$1.80

12 months: \$1 : \$3.09

QUALITY OF LIFE
\$1 : \$1.86



Next Steps

- IAQ Monitoring:
Education and Evaluation
- MaineCare:
Sustainable Implementation
- Continue Landlord Coalition work



Questions/Comments

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Question & Answer Session

Polling Question 3

Based on today's presentation, what action do you feel more equipped to take in your asthma program?

1. Expand partnerships to address IEDOH in your asthma program.
2. Utilize evaluation to improve program efficacy and demonstrate improved asthma outcomes
3. Request a mentor on [AsthmaCommunityNetwork.org](https://www.AsthmaCommunityNetwork.org).
4. Apply for the 2025 National Environmental Leadership Award in Asthma Management.



Visit [AsthmaCommunityNetwork.org](https://www.AsthmaCommunityNetwork.org)



May 1 Press Release: www.epa.gov/newsreleases/epa-marks-asthma-awareness-month-and-honors-national-leader-fight-against-asthma