

# EXHALE Guide for Medicaid and Children's Health Insurance Program (CHIP) Leaders

Strategies to Help People with Asthma Achieve Better Health

The Centers for Disease Control and Prevention's (CDC's) National Asthma Control Program created this Guide to assist Medicaid and CHIP leaders in using CDC's EXHALE strategies to help people with asthma achieve better health outcomes.

## EXHALE

- Is a set of six strategies that each contribute to better asthma control.
- Can help both children and adults with asthma.
- Can have the greatest impact when multiple strategies are used together.

Medicaid and CHIP leaders can engage partners with the shared goal of improving the health of children and adults with asthma.

This Guide will explain how Medicaid and CHIP leaders can implement EXHALE-related interventions to improve the health of beneficiaries with asthma.



Centers for Disease  
Control and Prevention  
National Center for  
Environmental Health

October 6, 2020

Dear Stakeholder:

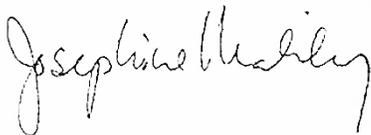
Asthma affects about 6–10% of Medicaid beneficiaries and results in medical costs of approximately \$630–\$970 per member per year (Nurmagambetov T, et al. State-level medical and absenteeism cost of asthma in the United States, *J Asthma*, 2017). These costs include hospitalizations and emergency department (ED) visits for asthma attacks, many of which can be avoided through preventive services and high-quality healthcare.

This EXHALE Guide describes EXHALE, an evidence-based blueprint for a multi-faceted, unified approach to controlling asthma and preventing asthma attacks. Research has shown that each of the six strategies in EXHALE has reduced asthma-related hospitalizations, ED visits, and healthcare costs. EXHALE can help communities, organizations, and states prioritize prevention activities based on the best available evidence. To facilitate a unified approach to asthma control, other EXHALE Guides have been developed and tailored to managed care leaders and staff, healthcare professionals, healthcare system executive leaders, public health professionals, schools, and people with asthma, their families, and their caregivers.

This document includes many actions Medicaid and CHIP leaders can take to drive improvement in asthma care and outcomes. For example:

- Medicaid and CHIP leaders can engage partners (e.g., managed care organizations or public health asthma control programs) in collaborative efforts to improve the health of children and adults with asthma.
- Medicaid and CHIP leaders can improve healthcare quality (e.g., by encouraging asthma-related Performance Improvement Projects or by monitoring asthma-related quality measures).
- Medicaid and CHIP leaders can improve access to or use of EXHALE-related services, including community- or home-based asthma self-management education, as well as home assessments for environmental triggers of asthma attacks. Some state Medicaid programs have added coverage for these cost-effective, community- or home-based services, as described in this document.

Medicaid and CHIP leaders, working with partners, can work together to implement EXHALE successfully and make a positive, lasting impact on people with asthma. This EXHALE Guide can help us realize that vision.



**Josephine Malilay, Ph.D., M.P.H.**

Chief

Asthma and Community Health Branch  
Division of Environmental Health Science and Practice  
National Center for Environmental Health  
Centers for Disease Control and Prevention



**Joy Hsu, M.D., M.S. (CDR, USPHS)**

Medical Officer

Asthma and Community Health Branch  
Division of Environmental Health Science and Practice  
National Center for Environmental Health  
Centers for Disease Control and Prevention

# Executive Summary for Medicaid and CHIP Leaders

Asthma is a common and costly condition that affects up to 1 in 10 Medicaid beneficiaries. Managing a chronic condition like asthma can be affected by educational, environmental, behavioral, and social factors.

EXHALE is an evidence-based set of six strategies developed by CDC's National Asthma Control Program. Each EXHALE strategy has been proven to reduce asthma-related hospitalizations, ED visits, and healthcare costs. Also, the first five strategies in EXHALE have been shown to increase asthma controller medication use, which can improve the Asthma Medication Ratio.

Medicaid and CHIP leaders can use the EXHALE strategies to improve, and reduce disparities in, asthma control and asthma outcomes among Medicaid and CHIP beneficiaries. For example, Medicaid and CHIP leaders can implement quality improvement interventions that improve the health of people with asthma.

Possible interventions include:

- Analyzing and using claims data strategically (see [page 10](#) for a successful state example);
- Encouraging delivery of high quality asthma care (see examples of what Medicaid and CHIP leaders can do starting on [page 7](#)); and
- Collaborating with managed care organizations and other partners to improve coordination of services and build synergy (see [page 8](#) and [page 9](#) right sidebars for more information).

This Guide will provide more detail about how Medicaid and CHIP leaders can implement EXHALE-related interventions to improve the health of people with asthma.

# Welcome to EXHALE

CDC's National Asthma Control Program (NACP) and its partners help Americans with asthma achieve better health and improved quality of life. NACP developed EXHALE, a set of six strategies that each contribute to better asthma control.

## EXHALE strategies can improve health

EXHALE is evidence-based and can be cost-effective.

Each EXHALE strategy can reduce asthma-related hospitalizations, emergency department (ED) visits, and healthcare costs.



Medicaid and CHIP leaders can use EXHALE to help beneficiaries with asthma achieve better health

## What are the EXHALE strategies?



# EXHALE

### Education

on asthma self-management

### X-tinguishing

smoking and exposure to secondhand smoke

### Home

visits for trigger reduction and asthma self-management education

### Achievement

of guidelines-based medical management

### Linkages

and coordination of care across settings

### Environmental

policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources

# Table of Contents

<b>How EXHALE Can Help Medicaid and CHIP Leaders</b> .....	<b>6</b>
<b>Examples of How Medicaid and CHIP Leaders and Staff Can Use EXHALE</b> .....	<b>7</b>
<b>What EXHALE in Action Can Look Like: Selected Examples</b> .....	<b>10</b>
<b>Frequently Asked Questions</b> .....	<b>11</b>
<b>Selected Resources Related to EXHALE</b> .....	<b>15</b>

## Other EXHALE Guides are available for:

- Healthcare professionals.
- Healthcare system executive leaders.
- Managed care leaders and staff.
- People with asthma, their families, and their caregivers.
- Public health professionals.
- Schools.

These Guides are available at:  
<https://www.cdc.gov/asthma/exhale/>

# How EXHALE Can Help Medicaid and CHIP Leaders

Medicaid and CHIP leaders have an important role in improving the health of people with asthma. EXHALE can help.

## How can EXHALE improve healthcare quality?

- **Reduce hospitalizations and ED visits:** Each EXHALE strategy can reduce asthma-related hospitalizations and ED visits. For example, the Home Asthma Response Program (HARP) in Rhode Island, which has implemented multiple EXHALE strategies, found improved Asthma Medication Ratio scores and a 75% reduction in asthma-related hospital and ED costs among program participants after one year. More information about HARP is available in this [infographic](#) and this [6|18 Initiative State Spotlight](#).
- **Improve asthma medication adherence:** Each EXHALE strategy has increased controller medication use and decreased rescue medication use, except for the strategy [Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources](#).

*Using multiple EXHALE strategies together in every community can achieve the greatest impact.*

## How can EXHALE be used if resources are limited?

- **Analyzing claims data can help focus resources** by identifying people who can benefit from EXHALE (examples start on [page 7](#)).
- **Focusing more resource-intensive services (such as home visits) on people at higher risk of asthma attacks can maximize available resources.** Not every person with asthma will need every EXHALE strategy.
- **Working with partners can build synergy and avoid duplication of efforts.** Learn more about how managed care organizations (MCOs) and public health asthma control programs can be partners in using EXHALE on [page 8](#) and [page 9](#), respectively.

## Asthma is common, costly, and controllable.

- About 25 million Americans have asthma (1 in 13 Americans).<sup>1</sup>
- In a state, up to 1 in 10 Medicaid beneficiaries can be affected by asthma; asthma affects about 6–10% of Medicaid members (varies by state).<sup>2</sup>
- Annual medical costs of asthma are:
  - About \$630–\$970 per Medicaid beneficiary (varies by state).
  - About \$4–\$566 million for each state Medicaid agency (varies by state).

### EXHALE can help.

<sup>1</sup>[CDC, Most Recent Asthma Data.](#)

<sup>2</sup>Nurmagambetov T, et al. [“State-level medical and absenteeism cost of asthma in the United States.”](#) J Asthma, 2017.



# Examples of How Medicaid and CHIP Leaders and Staff Can Use EXHALE

## **E**ducation on asthma self-management

[National clinical guidelines for asthma](#) recommend asthma self-management education (AS-ME) for all people with asthma. AS-ME includes educating people with asthma and their families about how to use asthma medications correctly and how to identify and reduce exposure to asthma triggers (such as cockroaches and mold). Some health insurance plans have indicated their reimbursement rate of individual AS-ME has been approximately \$50 per 30-minute unit; details are available in these documents from [California](#) and [Missouri](#).

Medicaid and CHIP leaders and staff can (either directly or in partnership with MCOs):

- Collect, analyze, and use claims data (including asthma-related quality measure data – see box on the side of this page) to identify people who can benefit from AS-ME and connect them to AS-ME services.
- Encourage MCOs to increase the delivery and quality of AS-ME to MCO members; possibilities include:
  - Performance Improvement Projects to improve asthma-related quality measures (for example, MCOs can provide AS-ME to people with asthma through trained MCO staff or referrals to existing AS-ME services).
  - Pay-for-performance metrics using asthma-related quality measures to hold MCOs accountable for delivering high-quality AS-ME.
  - Contractual requirements to provide AS-ME to MCO members with asthma.

## **X**-tinguishing smoking and exposure to secondhand smoke

Cigarette smoke can trigger asthma attacks that require hospital or ED care. About 20% of U.S. adults with asthma smoke cigarettes.<sup>1</sup>

Medicaid and CHIP leaders and staff can (either directly or in partnership with MCOs):

- Analyze claims data (if possible) to identify people with asthma who smoke tobacco and connect them to evidence-based cessation treatments, including cessation counseling (individual, group, or telephone-based) and cessation medications approved by the U.S. Food and Drug Administration.
- Encourage MCOs to increase availability, reduce barriers, and raise awareness of covered cessation treatments among people with asthma and healthcare professionals (such as through Performance Improvement Projects to improve tobacco-related quality measures including Medical Assistance with Tobacco Cessation).
- Encourage smokefree policies, which can support tobacco cessation and reduce exposure to secondhand smoke. More information is available in the section [Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources](#).



### Asthma-related quality measures overview

Medicaid and CHIP leaders and staff can collect, report, and use asthma-related quality measures, including:

- Asthma Medication Ratio.
- Asthma in Younger Adults Admission Rate.
- Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate.

More information on quality measures relevant to Medicaid and CHIP leaders is available [here](#).

<sup>1</sup>CDC, Percentage of People with Asthma who Smoke.  
[https://www.cdc.gov/asthma/asthma\\_stats/people\\_who\\_smoke.htm](https://www.cdc.gov/asthma/asthma_stats/people_who_smoke.htm).

# Examples of How Medicaid and CHIP Leaders and Staff Can Use EXHALE (continued)

## Home visits for trigger reduction and asthma self-management education

Care management in the home can be uniquely cost-effective for people at high risk for asthma attacks (e.g., people who have had one or more asthma-related hospitalization or ED visit in the last year). Healthcare professionals, trained community health workers, and others can assess homes for triggers of asthma attacks (such as cockroaches and mold), as well as provide AS-ME to reduce asthma triggers and improve medication adherence. Some organizations have indicated the reimbursement rate of a home visit or home assessment has been approximately \$80 to \$125 per visit; details are available in these documents from [Michigan](#) and [Missouri](#).

Medicaid and CHIP leaders and staff can (either directly or in partnership with MCOs):

- Analyze claims data to identify people who could especially benefit from home-based care management for asthma (for example, people with frequent ED visits or hospitalizations for asthma) and arrange for these specialized services.
- Encourage MCOs to increase the delivery and quality of home-based care to people at high risk for asthma attacks (for example, through Performance Improvement Projects that involve analyzing data to identify people who could benefit from home-based asthma management, delivered by trained MCO staff or through referrals to specialized home-based asthma care management services).

## Achievement of guidelines-based medical management

[National clinical guidelines](#) for asthma can help healthcare professionals diagnose, assess, monitor, and treat people with asthma. Ensuring that asthma medications are being provided to people according to clinical guidelines can prevent hospitalizations and ED visits for asthma. Often, these effective medications are not prescribed or taken appropriately.

Medicaid and CHIP leaders and staff can (either directly or in partnership with MCOs):

- Analyze claims data to identify asthma medication purchases that do not appear guidelines-based, and then consider one or more of the following interventions:
  - Notify the prescribing healthcare professionals (see [page 10](#) for a successful state example);
  - Connect individuals with asthma to AS-ME services or use specially-trained case managers to deliver AS-ME, because AS-ME is proven to increase adherence to asthma medication; and
  - Assess and address barriers to medication adherence among people with asthma.
- Reduce barriers to using spacers or valved holding chambers (VHCs) with asthma inhaler medication – for example, by implementing a common formulary that allows people with asthma to obtain multiple spacers or VHCs within one year (when prescribed) for use in various settings (such as school and home) without a prior authorization process.

## MCOs can be partners in using EXHALE

Medicaid and CHIP leaders can partner with MCOs in using EXHALE to help people with asthma. For example, Medicaid and CHIP leaders can:

- Recommend or require MCOs to conduct Performance Improvement Projects that address asthma using the EXHALE strategies.
- Hold MCOs accountable for delivering high-quality care by using asthma-related quality measures as pay-for-performance metrics.
- Facilitate sharing of MCO best practices or lessons learned from EXHALE-related activities or services to inform future quality improvement projects for people with asthma.



## Examples of How Medicaid and CHIP Leaders and Staff Can Use EXHALE (continued)

### Linkages and coordination of care across settings

Coordinated care includes linking people to needed healthcare and social services. Numerous MCOs have helped their members with asthma and reduced healthcare costs by using specially-trained staff (such as case managers or community health workers) or contracts with community organizations to coordinate care for people with asthma.

Medicaid and CHIP leaders and staff can (either directly or in partnership with MCOs):

- Establish Medicaid Health Homes for people with asthma (example State Plan Amendment [here](#)).
- Develop or strengthen partnerships with health departments, healthcare organizations, and schools to facilitate coordinated care for people with asthma and build synergy.
- Inform and help people with asthma, their families, and their caregivers register for local support services, such as:
  - Transportation to medical appointments.
  - [Home weatherization assistance programs](#) that provide loans or grants to low-income residents to repair or improve their homes, which can reduce asthma triggers in their homes (such as mold and pests).

### Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources

Medicaid and CHIP leaders usually have little to no direct influence on environmental policies or best practices. However, they can learn about and share information with partners and community leaders on policies or best practices that affect the health of Medicaid or CHIP beneficiaries with asthma. These include:

- [Home weatherization assistance programs](#) that provide loans or grants to low-income residents so they can repair or improve their homes, which can reduce asthma triggers (such as mold and pests).
- Smokefree policies, including:
  - Comprehensive smokefree policies that prohibit smoking in all indoor spaces of workplaces, restaurants, bars, and public and private multi-unit housing (including apartment buildings).
  - Smokefree rules that prohibit smoking in homes and vehicles.
- Modifying older diesel engines of school buses to run more cleanly to reduce air pollution.
- Eliminating, when possible, or reducing exposure to asthma triggers in the workplace.

### Public health asthma control programs can be partners in using EXHALE

Some state, territorial, and local health departments have asthma control programs. These programs' activities can complement Medicaid and CHIP agency activities. For example, public health asthma control programs might be able to:

- Provide information on how asthma affects a state or community, how EXHALE can help a particular state or community, and how EXHALE-related activities can be carried out.
- Connect people with asthma to existing EXHALE-related programs, such as AS-ME or home visits for asthma.
- Convene partners (such as from healthcare, schools, or the community) to work together to help people with asthma.

Contact information for some state, territorial, and local asthma control programs in health departments is available at <https://www.cdc.gov/asthma/contacts>.

Health department programs and services vary. Contact your health department to learn more about potential partnership opportunities to help people with asthma.



# What EXHALE in Action Can Look Like: Selected Examples



The **Missouri Department of Social Services' MO HealthNet Division ("MO HealthNet")** and its partners have successfully carried out EXHALE-related activities to help people with asthma in Missouri. For example:

**MO HealthNet and its partners used health insurance claims data to improve the health of people with asthma.**

MO HealthNet partnered with the Missouri Asthma Prevention and Control Program (MAPCP, in the Missouri Department of Health & Senior Services) and other entities to conduct a quality improvement project in which Medicaid pharmacy claims data were analyzed to identify people with asthma whose medication use did not appear to follow guidelines. These individuals' physicians were then notified by mail. In one year, this program increased guidelines-based use of asthma medications and saved the state Medicaid agency approximately \$430,000 in medication costs over 6 months. More information about this project is available in this [brief](#).

**MO HealthNet and its partners established a system to reimburse in-home AS-ME and home visits for asthma.**

MO HealthNet partnered with MAPCP and others to establish a system to reimburse for home environmental assessments and AS-ME provided in the home by submitting a Medicaid state plan amendment (SPA) to the Centers for Medicare & Medicaid Services (CMS). CMS approved this SPA in 2016 (available [here](#)).

**MO HealthNet and its partners expanded access to patient-centered medical homes for people with asthma.**

MO HealthNet partnered with MAPCP and others to expand access for children with asthma as the only qualifying condition to MO HealthNet's Primary Care Health Home (PCHH) Initiative (which focuses on care coordination via selected local healthcare providers), by submitting and receiving CMS approval in 2016 for a Medicaid SPA (available [here](#)). About a year after this SPA was approved, more than 3,000 children with asthma were supported by this new approach to care coordination. As of October 2019, more than 4,500 people below age 21 years enrolled in PCHH with an asthma diagnosis.

**MO HealthNet and its partners raised awareness among MO HealthNet beneficiaries of available resources to quit smoking.** This [flyer](#) includes information on the Missouri Tobacco Quitline and covered tobacco cessation benefits.

## Example of a CHIP SPA related to asthma

A SPA from Maryland established a CHIP Health Services Initiative that provides home assessments for children with asthma and/or blood lead levels over 5 mcg/dL. Learn more [here](#).



# Frequently Asked Questions

## How can data be used to identify people with asthma?

People with asthma can be identified in various ways, including:

- **The International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) code J45 – Asthma;** more information is available at <https://www.cdc.gov/asthma/data-analysis-guidance/ICD-9-CM-ICD-10-CM.htm>.
- **The definition for persistent asthma for some Healthcare Effectiveness Data and Information Set (HEDIS) measures.** More information is available at <https://www.ncqa.org/hedis/measures/> and <https://www.ncbi.nlm.nih.gov/pubmed/21087074> (in Table 2 of this research publication).

These criteria can potentially identify people with asthma who smoke, if used in conjunction with medical billing codes for tobacco screening or cessation. Links to medical billing codes for tobacco screening and cessation can be found on page 12 of this [document](#).



## How can data be used to identify people at high risk of asthma attacks?

People at high risk of asthma attacks can be identified in various ways, including through:

- **Asthma-related quality measures:** For example, an Asthma Medication Ratio of less than 0.5 was associated with a higher risk of asthma-related ED visits and hospitalizations in two studies that analyzed Medicaid and commercial claims data from more than 400,000 people ([2018 study](#), [2019 study](#)).
- **Other claims data:** For example, in the Texas Medicaid Medication Therapy Management Pilot project (January–September 2014), people who met one or more of the following claims-based criteria in the past year were included in the category “high-risk asthma”:
  - 6 or more short-acting beta agonist medications dispensed;
  - 2 or more oral corticosteroid medications dispensed;
  - 2 or fewer inhaled corticosteroid medications dispensed; or
  - Asthma-related ED visit or hospitalization.

More information on this project is available [here](#).

- **Examples from state and territorial health departments:** Some state and territorial health departments have used data to identify areas where more asthma-related ED visits and hospitalizations occur, to try to provide services to help communities in greatest need. Often, these efforts are led by asthma control programs in these health departments. Contact information for asthma control programs in health departments is available at <https://www.cdc.gov/asthma/contacts>.

## Frequently Asked Questions (continued)

### How can claims data be used to identify AS-ME or home visit services for asthma?

Several Current Procedural Terminology (CPT) and Healthcare Common Procedure Coding System (HCPCS) codes can be used to look for AS-ME or home visits for asthma in claims data.

Examples of CPT and HCPCS codes that can be used to identify AS-ME	
Code	Brief Description
94664 (CPT)	Demonstration and/or evaluation of patient utilization of an aerosol generator, nebulizer, metered dose inhaler, or intermittent positive pressure breathing device.
98960 (CPT)	Education and training for patient self-management.
99401–99404 (CPT)	Preventive medicine counseling (individual).
99411–99412 (CPT)	Preventive medicine counseling (group).
99605–99607 (CPT)	Medication therapy management service(s) provided by a pharmacist.
S9441 (HCPCS)	Asthma education.

Examples of HCPCS codes that can be used to identify home visits for asthma	
Code	Brief Description
G0299	Direct skilled nursing services in the home health or hospice settings.
S9441	Asthma education.
T1028	Home environment assessment.

Limitations of using these codes include:

- Health insurance plans and healthcare professionals may not use any of these codes for AS-ME or home visits for asthma, so people could be receiving these services more frequently than claims data indicate.
- These codes do not provide information on the quality of the AS-ME or home visits.
- Some of these codes can be used for diseases other than asthma, so these codes may or may not indicate AS-ME or a home visit for asthma if multiple health conditions (such as ICD-10-CM code J45 [asthma] and other ICD-10-CM codes) are associated with a medical claim.

Documents describing codes for AS-ME have been identified from [California](#) and [Missouri](#).

Documents describing codes for home visits have been identified from [Michigan](#) and [Missouri](#).

Tobacco screening and cessation services can be provided during AS-ME or home visits for asthma. Links to codes for tobacco screening and cessation can be found on page 12 of this [document](#).

## Frequently Asked Questions (continued)

### Which AS-ME can people with asthma, their families, and their caregivers access online?

Examples of Online AS-ME for Patients with Asthma, Their Families, and Their Caregivers			
Name (Source)	Intended Audience	Language(s)	How to Access
<a href="#">Asthma Basics</a> (ALA)	Adults and children with asthma, their families, and their caregivers.	English, Spanish	Go to website (use hyperlink)
<a href="#">Asthma Care for Adults</a> (AAFA)	Adults with asthma and their caregivers.	English, Spanish	Go to website (use hyperlink)

AAFA, Asthma and Allergy Foundation of America; ALA, American Lung Association.

### Which resources can help healthcare professionals and others deliver AS-ME?

Examples of Resources That Can Help Healthcare Professionals and Others Deliver AS-ME			
Name (Source)	Intended Audience	Language(s)	How to Access
<a href="#">Asthma Basics</a> (ALA)	School nurses, CHWs, and others who teach adults and children with asthma, their families, and caregivers.	English, Spanish	Go to website (use hyperlink)
<a href="#">Asthma Basics for Children</a> (AAFA)	Healthcare professionals who teach parents and teachers of young children with asthma.	English, Spanish	Go to website (use hyperlink)
<a href="#">Asthma Education for the Community Health Worker</a> (AAE)	CHWs who teach people with asthma and their families.	English	Go to website (use hyperlink)
<a href="#">Breathe Well, Live Well Training for Educators</a> (ALA)	Healthcare professionals, health educators, or CHWs who teach adults with asthma.	English	See note*
<a href="#">Kickin' Asthma</a> (ALA)	School personnel and others who teach children with asthma aged 11–16 years.	English	See note*
<a href="#">Open Airways for Schools</a> (ALA)	School personnel and others who teach children with asthma aged 8–11 years.	English, Spanish	See note*
<a href="#">Wee Breathers</a> (AAFA)	Healthcare professionals who teach parents of young children with asthma.	English, Spanish	Go to website (use hyperlink)
<a href="#">You Can Control Asthma</a> (AAFA)	Healthcare professionals who teach school-age children with asthma and their families.	English, Spanish	Go to website (use hyperlink)

\*Contact the American Lung Association at 1-800-586-4872 to access training and program materials. Kickin' Asthma and Open Airways for Schools are designed to be delivered as group AS-ME.

AAE, Association of Asthma Educators; AAFA, Asthma and Allergy Foundation of America; ALA, American Lung Association; CHW, community health worker.

Notes about this page:

- This information is current as of August 2020.
- More information on some of these tools and other AS-ME tools is available at the Agency for Healthcare Research and Quality [Technical Brief on AS-ME packages](#).

## Frequently Asked Questions (continued)

### How can EXHALE address social determinants of health?

Multiple EXHALE strategies can improve conditions in the places where people live, work, learn, play, and spend time.

For example:

- Strategies assessing and addressing asthma triggers can improve conditions in homes, schools, workplaces, and other settings; for example, specialized home-based care management services that address both environmental asthma triggers and improve asthma-self management (represented by the strategy [Home visits for trigger reduction and asthma self-management education](#)) can improve conditions in homes and reduce asthma-related ED visits and hospitalizations.
- The strategy [Linkages and coordination of care across settings](#) includes connecting people with asthma to local support services that can improve housing conditions and reduce asthma triggers, such as [home weatherization assistance programs](#).

### How Program Evaluation Can Help with EXHALE

Program evaluation can show how well EXHALE-related efforts can help people with asthma and how these efforts can be improved. Medicaid and CHIP leaders may be asked to participate in program evaluation conducted by the health department, or might opt to carry out evaluations on their own.

#### Examples of questions that Medicaid and CHIP leaders can use for program evaluation include:

- Are people with asthma aware of and receiving the AS-ME and referrals they need to prevent asthma attacks?
- What barriers are MCOs encountering in delivering guidelines-based care to their members with asthma?
- Is asthma care coordinated across healthcare organizations, schools, the health department, and other entities? What gaps exist?

Evaluation is a learning process that can be integrated into routine practices. Good evaluations are systematic, follow a standard framework (such as the [CDC Framework for Program Evaluation in Public Health](#)), and involve the people who are working with or served by the program. More information and resources on program evaluation can be found at [https://www.cdc.gov/asthma/program\\_eval/default.htm](https://www.cdc.gov/asthma/program_eval/default.htm).

# Selected Resources Related to EXHALE

## Resources related to multiple EXHALE strategies:

- CDC's [EXHALE: A Technical Package to Control Asthma \(full document\)](#).
- CDC's [6|18 Initiative: Control Asthma](#).
- Centers for Medicare & Medicaid Services' [Improving Asthma Control Learning Collaborative](#).
- National Governors Association's [Health Investments that Pay Off: Strategies for Addressing Asthma in Children](#).
- American Lung Association's [Asthma Guidelines-Based Care Coverage Project](#), which describes Medicaid coverage of asthma care [by jurisdiction](#) for all 50 states, District of Columbia, and Puerto Rico.
- Nurmagambetov T, Khavjou O, Murphy L, Orenstein D, [State-level medical and absenteeism cost of asthma in the United States](#), J Asthma, 2017.

## E ducation on asthma self-management

- American Lung Association's [Medicaid Coverage of Asthma Self-Management Education](#).

## X -tinguishing smoking and exposure to secondhand smoke

- CDC's [6|18 Initiative: Reduce Tobacco Use](#).
- Centers for Medicare & Medicaid Services' [Quality Improvement Initiatives on Tobacco Cessation](#), which includes information on what Medicaid and CHIP leaders have done and can do to reduce tobacco use.
- [State Medicaid Coverage for Tobacco Cessation Treatments and Barriers to Accessing Treatments – United States, 2008–2018](#), DiGiulio A, Jump Z, Babb S, et al., MMWR Morb Mortal Wkly Rep, 2020.
- American Lung Association's fact sheets on [Helping Smokers Quit Saves Money](#), [Tobacco Cessation Coverage: Standard Medicaid](#), and [Tobacco Cessation Coverage: Medicaid Expansion](#).
- The [Million Hearts® Tobacco Cessation Change Package](#) has many tools and resources for clinical care. For example, links to medical billing codes for tobacco screening and cessation can be found on page 12 of this document.

Smokefree policies can support tobacco cessation and reduce exposure to secondhand smoke. Related resources are available below, under the strategy [Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources](#).

## H ome visits for trigger reduction and asthma self-management education

- [Home Characteristics and Asthma Triggers Checklist for Home Visitors \(English version\)](#) created by the CDC, the U.S. Environmental Protection Agency, and the U.S. Department of Housing and Urban Development (Spanish version [here](#), standardized home visit training in English [here](#)).
- CDC's [Strategies for Addressing Asthma in Homes](#).
- National Center for Healthy Housing's eLearning: [Building Systems to Sustain Home-Based Asthma Services](#).

## Selected Resources Related to EXHALE (continued)

### Achievement of guidelines-based medical management

- National Asthma Education and Prevention Program's [Guidelines for the Diagnosis and Management of Asthma \(EPR-3\)](#).
- Center for Health Care Strategies' [Return on Investment Forecasting Calculator for Quality Improvement Initiatives](#).

### Linkages and coordination of care across settings

- American Academy of Pediatrics' [National Resource Center for Patient/Family-Centered Medical Home](#), which describes medical home initiatives and resources by state.
- Center for Health Care Strategies' [Return on Investment Forecasting Calculator for Health Homes and Medical Homes](#).
- [Neighborhood Navigator](#), an interactive tool that identifies community resources by zip code. Neighborhood Navigator is available through the American Academy of Family Physicians' The EveryONE Project®.

### Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources

- CDC's [Health Impact in 5 Years Initiative](#), which includes [home weatherization assistance programs](#), [clean diesel bus fleets](#), and [comprehensive smokefree policies](#).
- CDC's National Institute for Occupational Safety and Health website on [work-related asthma](#).

**For more information, visit:**

<https://www.cdc.gov/asthma/exhale/>

