EXHALE Guide for Healthcare Professionals

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 healthcare professionals 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.**

This Guide explains how healthcare professionals can use EXHALE strategies, individually or in combination, to help people with asthma achieve better health outcomes. This guide is a summary of resources to support use of EXHALE strategies. Every person with asthma does not necessarily need every strategy.

Healthcare professionals have the power to improve the health of people with asthma through high-quality care, asthma self-management education, and referrals to available support services. Healthcare professionals can engage partners with the shared goal of helping children and adults with asthma.

Centers for Disease Control and Prevention
National Center for Environmental Health

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

Each EXHALE strategy can reduce asthma-related hospitalizations, emergency department (ED) visits, and missed days of work or school.

Healthcare professionals can use EXHALE to help people with asthma achieve better health

What are the EXHALE strategies?

E X H A L E

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

The Role of Healthcare Professionals in Asthma Control

Managing a chronic condition like asthma depends on education, environment, behavior, and social factors. Each person with asthma has a unique set of triggers that causes them to experience symptoms.

Healthcare professionals can guide people with asthma and their communities to follow best practices to help people with asthma. Healthcare professionals can help reduce the morbidity and mortality of asthma by using the EXHALE strategies.

This Guide will explain how EXHALE-related interventions can help healthcare professionals improve the health of people with asthma.

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Appendices

How EXHALE Can Help Healthcare Professionals

Healthcare professionals have an important role in improving the health of people with asthma. EXHALE can help.

Each EXHALE strategy has:

- Reduced hospitalizations and ED visits.

- Reduced missed days of work or school.

- Improved medication adherence.*

*Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources is the only EXHALE strategy that has not been linked to improved medication adherence.

How can EXHALE be used during busy clinical practice?

- Members of the healthcare team can work together to use EXHALE (examples are provided on the next page).

- Patients with asthma, their families, and their caregivers can be given the EXHALE Guide designed for them.

- Every person with asthma does not necessarily need every strategy. More resource-intensive services (such as home visits) can be focused on people at higher risk of asthma attacks.

- Many health departments have asthma programs that can help connect patients with asthma, their families, and their caregivers to available EXHALE-related services; for asthma program contact information, visit https://www.cdc.gov/asthma/contacts.

EXHALE can have the greatest impact when:

- Multiple EXHALE strategies are used together in every community.

- Healthcare professionals, health insurance plan administrators, public health professionals, school personnel, patients with asthma, their families, and other community members work together in using EXHALE.

Other EXHALE Guides are available for:

- People with asthma, their families, and their caregivers.
- Healthcare system executive leaders.
- Managed care leaders and staff.
- Medicaid and Children's Health Insurance Program leaders.
- Public health professionals.
- Schools.

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

Examples of How Healthcare Professionals and the Healthcare Team Can Use EXHALE

Education on asthma self-management

- Teach patients with asthma, their families, and their caregivers to manage asthma by using a personalized action plan.

- Refer patients with asthma, their families, and their caregivers to existing asthma self-management education (AS-ME) programs.

- Receive training and/or become certified in delivering AS-ME.

- Investigate and consider using available medical billing codes that can be used for AS-ME.

For more information about these examples, please see Appendix 1.

X-tinguishing smoking and exposure to secondhand smoke

- Routinely screen:

  - Patients with asthma for tobacco use and exposure to secondhand smoke.

  - Family members and caregivers of patients with asthma for tobacco use.

- Provide guideline-based cessation treatment including behavioral counseling (individual, group, or telephone-based) and cessation medications approved by the U.S. Food and Drug Administration to patients with asthma, family members, and caregivers who use tobacco.

- Connect patients with asthma, family members, and caregivers who use tobacco to community tobacco cessation services, including state quitlines for more intensive assistance (English: 1-800-QUIT-NOW or 1-800-784-8669; Spanish: 1-855-DEJELO-YA or 1-855-335-3569; Mandarin and Cantonese: 1-800-838-8917; Korean: 1-800-556-5564; Vietnamese: 1-800-778-8440).

- Encourage smokefree policies, which can support tobacco cessation and reduce exposure to second-hand smoke. More information is available in the section Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources.

Home visits for trigger reduction and asthma self-management education

- Refer patients with asthma (such as patients with frequent ED visits or hospitalizations for asthma), their families, and their caregivers to existing asthma-related home visit programs. Many health departments have asthma programs that can provide information on existing home visit programs for asthma; for asthma program contact information, visit https://www.cdc.gov/asthma/contacts.

- Encourage local home visit programs for asthma to use the Home Characteristics and Asthma Triggers Checklist for Home Visitors (English version), which is also available in Spanish, includes low-cost steps to reduce asthma triggers, and has a related, standardized training for home visitors here.

Examples of How Healthcare Professionals Can Use EXHALE (continued)

Achievement of guidelines-based medical management

- Receive training in delivering guidelines-based medical management of asthma. Examples of available online trainings are provided in Appendix 2.

- Review inhaler technique (if applicable) with patients with asthma, their families, and their caregivers, which can be reinforced with CDC's videos on "Know How to Use Your Asthma Inhaler."

- Use decision-support tools (such as treatment algorithms, system reminders, and pocket-sized guidelines summaries) and shared decision-making (in which healthcare professionals work with patients to decide on treatment) when caring for patients with asthma.

- Participate in quality improvement activities to improve care for patients with asthma. Some health departments have asthma control programs that can be partners in healthcare quality improvement for patients with asthma. Contact information for selected state, territorial, and local asthma control programs in health departments is available at https://www.cdc.gov/asthma/contacts.

Linkages and coordination of care across settings

- Refer patients with asthma, their families, and their caregivers to available support services (when applicable) such as prescription assistance programs that offer reduced costs for prescription medications. Health departments can help people register for available support services.

- Use a patient-centered medical home model (which prioritizes coordinated care) to deliver primary care.

- Improve communication and coordination with local schools about caring for children with asthma (for example, by creating and sharing asthma action plans).

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

- Inform community leaders about successful policies or practices that help people with asthma, including:

  - 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).

  - 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). Additionally, healthcare professionals can adopt, implement, and enforce comprehensive smokefree policies that prohibit use of all tobacco products in hospital and clinic buildings, as well as on hospital and clinic property. An example policy for a healthcare facility can be found here.

    - 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.

How Program Evaluation Can Help with EXHALE

Program evaluation can show how well EXHALE-related efforts are helping people with asthma and how these efforts can be improved. Healthcare professionals might be asked to participate in program evaluation conducted by the health department. Also, healthcare teams might opt to carry out evaluation activities on their own (such as quality improvement activities).

Examples of questions that healthcare professionals can use for program evaluation include:

• Are patients with asthma, their families, and their caregivers receiving AS-ME and other referrals they need to prevent asthma attacks?

• Are members of the healthcare team appropriately trained to deliver guidelines-based medical management and use decision support tools as indicated?

• Is asthma care coordinated across healthcare organizations, schools, the health department, and other entities? What gaps exist?

• Are there additional opportunities to share information with community leaders about successful policies and practices?

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.

EXHALE can 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 addressing asthma triggers (such as Home visits for trigger reduction and asthma self-management education and Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources) can improve conditions in homes, schools, workplaces, and other settings.

• The strategy Linkages and coordination of care across settings includes connecting people with asthma to local support services that can improve housing conditions and thereby reduce asthma triggers, such as home weatherization assistance programs.

Selected Resources Related to EXHALE

Resources related to multiple EXHALE strategies:

- CDC's EXHALE: A Technical Package to Control Asthma, which describes EXHALE and the supporting evidence in detail.

- CDC's 6|18 Initiative: Control Asthma, which describes how CDC is working with healthcare partners to improve health and control health care costs among people with asthma.

- CDC Vital Signs: Asthma in Children, which describes how asthma affects U.S. children and what can be done to help.

Education on asthma self-management

- Agency for Healthcare Research and Quality Technical Brief on AS-ME packages, which describes the features of and evidence for some available AS-ME trainings.

X-tinguishing smoking and exposure to secondhand smoke

- CDC's Smoking & Tobacco Use: Healthcare Provider Resources provides resources intended to help providers integrate cessation into their practice and ensure that patients have the right tools to begin their quit journeys.

- CDC's Smoking & Tobacco Use: Education and Training includes training resources offering evidence-based information and practical advice to help patients quit tobacco.

- CDC's Smoking & Tobacco Use: Quitlines and Other Cessation Support Resources features facts and FAQs on quitlines and other cessation support resources, such as apps or texting programs.

- The Million Hearts® Tobacco Cessation Change Package has many tools and resources for clinical care.

- U.S. Preventive Services Task Force's Tobacco Smoking Cessation in Adults, Including Pregnant Women: Behavioral and Pharmacotherapy Interventions.

- U.S. Public Health Service's Clinical Practice Guideline for Treating Tobacco Use and Dependence: 2008 Update.

Home visits for trigger reduction and asthma self-management education

- Home Characteristics and Asthma Triggers Checklist for Home Visitors (English version), created by CDC, U.S. Environmental Protection Agency, and 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, which includes core elements of home visits for asthma.

Achievement of guidelines-based medical management

- American Academy of Family Physicians' METRIC® Module: Asthma.

- American Academy of Pediatrics' Asthma: Quality Improvement Resources & Tools.

- Elward KS, "Asthma Days: An Approach to Planned Asthma Care", Family Practice Management (2004), which describes how one clinical practice improved asthma care for people with asthma.

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

Selected Resources Related to EXHALE (continued)

Linkages and coordination of care across settings

- American Academy of Allergy, Asthma & Immunology's School-Based Asthma Management Program (SAMPRO), which includes tools to improve care coordination between healthcare organizations and schools.

- National Association of State Boards of Education's How Schools Work and How to Work with Schools, which includes practical steps for working with schools.

- 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 Smoking & Tobacco Use: Secondhand Smoke provides links to fact sheets, reports, infographics, and other resources.

- American Lung Association's Create an Asthma-Friendly Work Environment, which includes information on how to help employees with asthma.

- U.S. Department of Energy's Where to Apply for Weatherization Assistance.

- The University of California, San Francisco Smoking Cessation Leadership Center's Destination Tobacco Free: A Practical Tool for Hospitals and Health Systems is a toolkit to help health systems create and implement smokefree policies.

- The University of Colorado Anschutz Medical Campus, School of Medicine, Behavioral Health and Wellness Program's Dimensions: Tobacco-free Policy Toolkit is a toolkit to help health systems create and implement smokefree policies.

For more information, visit:
https://www.cdc.gov/asthma/exhale/

Appendix 1: Selected Information About Education on Asthma Self-Management

This appendix includes additional selected information about the examples of how healthcare professionals and the healthcare team can use the EXHALE strategy Education on asthma self-management.

The information provided in this appendix is organized according to the examples listed earlier in this document:

- Teach patients with asthma, their families, and their caregivers to manage asthma by using a personalized action plan.

- Refer patients with asthma, their families, and their caregivers to existing asthma self-management education (AS-ME) programs.

- Receive training and/or become certified in delivering AS-ME.

- Investigate and consider available medical billing codes that can be used for AS-ME.

Example 1: Teach patients with asthma, their families, and their caregivers to manage asthma by using a personalized action plan

The following websites have examples of asthma action plans that can be personalized:

- CDC's Tools for Asthma Control includes printable, electronic, and computer-based asthma action plans.

- American Lung Association's Create an Asthma Action Plan includes English and Spanish asthma action plans.

Example 2: Refer patients with asthma, their families, and their caregivers to existing asthma self-management education (AS-ME) programs

Many health departments have asthma programs that can provide information on existing AS-ME programs; for asthma program contact information, visit https://www.cdc.gov/asthma/contacts.

Also, the following table lists some online AS-ME available to patients with asthma, their families, and their caregivers:

Examples of Online AS-ME for Patients with Asthma, Their Families, and Their Caregivers			
Name (Source)	**Intended Audience**	**Language(s)**	**How to Access**
Asthma Basics (ALA)	School nurses, CHWs, and others who teach adults and children with asthma, their families, and caregivers.	English, Spanish	Go to website (use hyperlink)
Asthma Care for Adults (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; CHW, community health worker.

The information on this page 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.

Example 3: Receive training and/or become certified in delivering AS-ME

The National Asthma Educator Certification Board is a voluntary testing program used to assess knowledge in asthma education. Certified asthma educators are typically licensed healthcare professionals (such as a nurse or a respiratory therapist) who obtain this certification, but others (such as community health workers) can also become certified if they have at least 1,000 hours of relevant experience and pass this test.

The following table lists some available resources that 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**
Asthma Basics (ALA)	School nurses, CHWs, and others who teach adults and children with asthma, their families, and caregivers.	English, Spanish	Go to website (use hyperlink)
Asthma Basics for Children (AAFA)	Healthcare professionals who teach parents and teachers of young children with asthma.	English, Spanish	Go to website (use hyperlink)
Asthma Education for the Community Health Worker (AAE)	CHWs who teach people with asthma and their families.	English	Go to website (use hyperlink)
Breathe Well, Live Well Training for Educators (ALA)	Healthcare professionals, health educators, or CHWs who teach adults with asthma.	English	See note*
Kickin' Asthma (ALA)	School personnel and others who teach children with asthma aged 11–16 years.	English	See note*
Open Airways for Schools (ALA)	School personnel and others who teach children with asthma aged 8–11 years.	English, Spanish	See note*
Wee Breathers (AAFA)	Healthcare professionals who teach parents of young children with asthma.	English, Spanish	Go to website (use hyperlink)
You Can Control Asthma (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.

Example 4: Investigate and consider available medical billing codes that can be used for AS-ME

The following table lists some medical billing codes that have been used to receive payment for delivering AS-ME. Reimbursement for these codes is not guaranteed because health insurance plans (including state Medicaid agencies) vary in which codes they reimburse. Some health insurance plans have reimbursed one or more of these codes.

AS-ME: Medical Billing Code Examples	
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.

CPT, Current Procedural Terminology code.
HCPCS, Healthcare Common Procedure Coding System code.

Documents describing use of medical billing codes for AS-ME have been identified from California and Missouri.

Appendix 2: Selected Information About Achievement of Guidelines-Based Medical Management

Quality improvement tools and resources include:

- American Academy of Family Physicians' METRIC® Module: Asthma.

- American Academy of Pediatrics' Asthma: Quality Improvement Resources & Tools.

- Elward KS, "Asthma Days: An Approach to Planned Asthma Care," Family Practice Management (2004).

The following table lists some trainings available to healthcare professionals and others on guidelines-based medical management:

Examples of Training Opportunities for Healthcare Professionals on Guidelines-Based Medical Management	
Name (Source)	**Notes**
Asthma Educator Institute **(ALA)**	Continuing education credits vary by location.
Asthma Management and Education Online **(AAFA)**	Nurses and respiratory therapists can earn 8.75 contact hours.
Creating Asthma-friendly Environments and Promoting Access to Guidelines-based Care for Children with Asthma **(NASN, NEEF)**	Nurses can earn 3.0 contact hours.
Environmental Management of Pediatric Asthma: Guidelines for Health Care Providers **(NEEF)**	Continuing education credits are not available.
Environmental Triggers of Asthma **(ATSDR)**	Physicians can earn 1.75 continuing education credits; nurses can earn 1.75 contact hours; health educators can earn 1.5 contact hours.
EQIPP: Asthma **(AAP)**	Physicians can earn 54 continuing education credits; nurses can earn 54 contact hours.
Physician Asthma Care Education **(NIH)**	Website contains materials to deliver this curriculum to physicians.
Putting It Into Practice: Pediatric Environmental Health Training Resource **(CEHN)**	Continuing education credits are not available.

AAFA, Asthma and Allergy Foundation of America; AAP, ALA, American Lung Association; American Academy of Pediatrics; ATSDR, Agency for Toxic Substances and Disease Registry; CEHN, Children's Environmental Health Network; EQIPP, Education in Quality Improvement for Pediatric Practice; NASN, National Association of School Nurses; NEEF, National Environmental Education Foundation; NIH, National Institutes of Health.

The information in this table is current as of August 2020.