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**MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH**

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Community Health Worker  
Pediatric Asthma  
Home Visiting Program

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## **Program Summary**

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2017



# OVERVIEW

Asthma home visits led by a community health worker (CHW) have been shown to be effective in improving asthma outcomes and quality of life for pediatric participants and their caregivers. The Massachusetts Department of Public Health's Asthma Prevention and Control Program (APCP) is committed to expanding the evidence-based asthma home visiting program administered by CHWs and making it broadly available to those children in Massachusetts who would benefit.

Developed with a variety of stakeholders, this *Program Summary* and associated *Protocol Manual* have been created as a resource for those seeking to initiate CHW-led asthma home visiting programs — community health centers, clinical provider groups, community-based organizations, local health departments/boards of health, and others. The *Program Summary* and *Protocol Manual* pull from the rich history of successful home visiting programs in Massachusetts and is strongly grounded in evidence-based practice.

A photograph of a city skyline, likely New York City, featuring several prominent skyscrapers under a cloudy sky. The word "INTRODUCTION" is overlaid in large, white, sans-serif capital letters across the bottom portion of the image.

# INTRODUCTION

**In order to ensure that community health worker (CHW)-led asthma home visits in Massachusetts are evidence-based, the Massachusetts Department of Public Health (MDPH) has developed this *Program Summary* and the associated *Protocol Manual* for providers that encompass home visiting protocols, key educational messages, standardized environmental assessments, and standard definitions and outcome measures.**

**These materials were developed in collaboration with the following partners:**

Asthma Regional Council/New England Asthma Innovation Collaborative  
Baystate Medical Center  
Boston Medical Center  
Boston Public Health Commission  
Cambridge Public Health Department/Cambridge Health Alliance  
Boston Children's Hospital  
Harvard T.H. Chan School of Public Health  
Holyoke Health Center  
Massachusetts Coalition for the Homeless  
Massachusetts Coalition for Occupational Safety and Health  
Massachusetts Department of Public Health Occupational Health Surveillance Program  
MassHealth  
New Bedford Health Department  
Self Help, Inc.  
Tufts Medical Center  
UMass Lowell — Lowell Healthy Homes/New England Healthy Homes Training Center  
UMass Lowell — Lowell Center for Sustainable Production  
UMass Memorial Medical Center  
Winchester Hospital

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# BACKGROUND



**This *Program Summary* and associated *Protocol Manual* were developed in conjunction with individuals and organizations across the Commonwealth with experience implementing successful asthma home visiting programs.**

In 2014, the APCP convened a working group comprised of individuals and organizations from across Massachusetts with a history of successful implementation of CHW-led asthma home visiting initiatives. Participants included certified asthma educators, CHWs, physicians, nurses and other clinical providers, and public health professionals involved in asthma home visiting across the Commonwealth.

Developed out of these stakeholder meetings, the APCP created two documents covering CHW-led pediatric asthma home visiting in Massachusetts. The first, this *Program Summary*, provides useful background information on standardization efforts in Massachusetts, the context of CHW-led asthma home visiting in the Commonwealth, consensus statements developed by participating stakeholders, and key references. The second document is the *Protocol Manual*, offering model procedures for home visiting.

The consensus statements in this document draw from the strong evidence base in the academic literature on CHW-led asthma home visiting, as well as the extensive experience of participating stakeholders. These consensus statements reflect a shared understanding of the minimum necessary requirements for successful CHW-led asthma home visiting programs in Massachusetts.

The consensus statements address core aspects of asthma home visiting interventions including:

- The minimum number of asthma home visits expected to produce successful outcomes,
- Key educational topics and educational messages to be covered during asthma home visits and,
- Data elements necessary for successful home visiting implementation.

In addition to this *Program Summary* and associated *Protocol Manual*, the APCP provides site-specific technical assistance to support the implementation of asthma home visiting programs. The APCP currently supports several initiatives across Massachusetts including those participating in the Prevention Wellness Trust Fund. For more information on technical assistance, please contact [prevention.wellness@state.ma.us](mailto:prevention.wellness@state.ma.us).

# COMMUNITY HEALTH WORKERS IN MASSACHUSETTS



**Community Health Worker is an umbrella term for over 50 job titles including outreach worker, community health educator, and patient navigator.**

In 2009, the Massachusetts Health Care Reform Law created the Health Care Quality and Cost Council (HCQCC) which charged the Massachusetts Department of Public Health to investigate and study the use and funding of community health workers by public and private entities. During this time, Massachusetts explored the potential role of community health workers in addressing the home environment. By 2014, Massachusetts met its goal of increasing the number of community health workers trained on asthma and environmental interventions by 20%, as outlined in the *Strategic Plan for Asthma in Massachusetts, 2009-2014*.

Community Health Worker is an umbrella term for over 50 job titles including outreach worker, community health educator, and patient navigator. The term increasingly includes positions that represent emerging career ladders with different levels of responsibility. Essential to many public health interventions, CHWs have been explicitly recognized in state and national health reform legislation as a valuable addition to patient-centered, culturally responsive healthcare delivery teams. Within the past five years, the Department of Labor has recognized CHWs with a Standard Occupational Classification and approved the occupation as an “apprenticeable trade.” Voluntary state certification of CHWs will be available in 2017 through a priority initiative of the Massachusetts Department of Public Health.

Massachusetts health reform served as a precursor to the 2010 federal health reform law, the Affordable Care Act (ACA), which included CHWs in multiple ways and identified them as health professionals. Major federal initiatives in the ACA include the establishment of the Center for Medicare and Medicaid Innovation Center, which supports CHWs through the development and testing of innovative health care payment and service delivery models, and expansion of the Centers for Disease Control and Prevention's promotion of and support for CHWs.

- For more information about CHW's in Massachusetts please visit [www.mass.gov/eohhs/gov/departments/dph/programs/community-health/prevention-and-wellness/comm-health-wkrs/](http://www.mass.gov/eohhs/gov/departments/dph/programs/community-health/prevention-and-wellness/comm-health-wkrs/)
- Chapter 58, Acts of 2006, "An Act Providing Access to Affordable, Quality, Accountable Health Care," Section 110 DPH Public Health Council was reconstituted in 2007 as part of health care reform and includes a seat for CHWs – "a non-health care provider appointed by the governor from a list of three persons nominated by the Massachusetts Association of Community Health Workers." Please visit [malegislature.gov/Laws/SessionLaws/Acts/2006/Chapter58](http://malegislature.gov/Laws/SessionLaws/Acts/2006/Chapter58)
- Chapter 224, Acts of 2012, "An Act Improving The Quality Of Health Care And Reducing Costs Through Increased Transparency, Efficiency And Innovation," Payment Reform Legislation. Visit [malegislature.gov/Laws/SessionLaws/Acts/2012/Chapter224](http://malegislature.gov/Laws/SessionLaws/Acts/2012/Chapter224)

# CHW CERTIFICATION IN MASSACHUSETTS



**The Board of Certification of Community Health Workers was established by statute in 2010.**

The 2006 Massachusetts Health Reform Law, Chapter 58, Section 110, requested that the MDPH convene a statewide CHW advisory council to investigate the workforce and report its findings and recommendations to the legislature. Thirty-four recommendations were made in four key categories:

- Strengthen CHW professional identity
- Strengthen CHW workforce development, including training and certification
- Expand financing mechanisms
- Establish a state infrastructure

Recommendation #2.6 called for the establishment of a certification process for CHWs, based on diverse, cross-sector support. The Massachusetts Association of Community Health Workers (MACHW) held forums for CHWs statewide to hear their views on certification. CHWs generally supported certification, provided that it is voluntary and that CHWs be included on the certification board. Together with experts at MDPH, MACHW wrote legislation to establish the Board of Certification of CHWs, and MACHW, joined by key partner organizations, led a statewide campaign to garner support for the legislation.

The following year, Chapter 322, Acts of 2010, “An Act Establishing a Board of Certification of Community Health Workers,” was signed into law, and took effect in 2012. The law calls for voluntary certification, rather than mandatory licensure. The intent of the law is to create a competency-based process that recognizes and strengthens the work of CHWs while simultaneously avoiding the creation of barriers for effective CHWs to earn certification.



Since 2012, the Massachusetts Board of Certification of CHWs, located at the MDPH Division of Health Professions Licensure, has made policy decisions to inform the regulations on CHW certification and approval of CHW training programs. The Board is appointed by the governor and has 11 seats (including the Chair), four of which are CHWs. The Commissioner of Public Health or his or her designee is the Chair.

There are two proposed pathways for CHW certification, which include 1) The successful completion of core training in addition to 2,000 hours of work experience or 2) “Grandfathering” of current CHWs, which requires 4,000 hours of work experience. The grandfather option will only be available for the first three years following the inauguration of the Board Certification of CHWs.

For updated information on the development of certification regulations, please see the Massachusetts Board of Certification of CHWs at [www.mass.gov/eohhs/gov/departments/dph/programs/hcq/dhpl/community-health-workers/about](http://www.mass.gov/eohhs/gov/departments/dph/programs/hcq/dhpl/community-health-workers/about).

# CHW CORE TRAINING



**Core competencies are defined as a set of overlapping and mutually reinforcing skills and knowledge essential for effective community health work.**

In Massachusetts a variety of experienced organizations provide both core competency and advanced training for CHWs. However, the need for expanded training capacity has been documented for years. When CHW certification becomes operational, an even greater need is anticipated and training programs will need to be approved in order for successful students to qualify for state certification as CHWs.

**The 10 core competencies for CHW certification are as follows:**

1. Outreach Methods and Strategies
2. Individual and Community Assessment
3. Effective Communication
4. Cultural Responsiveness and Mediation
5. Education to Promote Healthy Behavior Change
6. Care Coordination and System Navigation
7. Use of Public Health Concepts and Approaches
8. Advocacy and Community Capacity Building
9. Documentation
10. Professional Skills and Conduct

For more information, details about the core competencies and a list of approved core competency training programs, please visit [www.mass.gov/eohhs/gov/departments/dph/programs/hcq/dhpl/community-health-workers/ma-board-of-certification-of-communityhealth-workers.html](http://www.mass.gov/eohhs/gov/departments/dph/programs/hcq/dhpl/community-health-workers/ma-board-of-certification-of-communityhealth-workers.html).

Training Programs Offering Core Competency Trainings for CHWs:

- **CHEC Boston** – Community Health Education Center at the Boston Public Health Commission has been providing CHW trainings since 1993. Visit [bphc.org/whatwedo/outreach-education-training/chec-community-health-education-center/Pages/CHEC-Community-Health-Education-Center.aspx](http://bphc.org/whatwedo/outreach-education-training/chec-community-health-education-center/Pages/CHEC-Community-Health-Education-Center.aspx)
- **CHEC Lowell** – Community Health Education Center at Lowell Community Health Center. Visit [www.lchealth.org/professionals/community-health-education-center](http://www.lchealth.org/professionals/community-health-education-center)
- **OWTI** – Outreach Worker Training Institute is a CHW training center based at the Central Massachusetts AHEC in Worcester. Visit [www.centerforhealthimpact.org/training/community-health-worker-training](http://www.centerforhealthimpact.org/training/community-health-worker-training)
- **MDPH Patient Navigator training course** – A hybrid model CHW training, and includes 11 online modules as well as 16 hours of in-class training. Visit [www.patientnavigatormass.org](http://www.patientnavigatormass.org)
- **Western Massachusetts Public Health Training Center** – Offers training programs for frontline public health workers. Visit [www.umass.edu/wmphtc/training](http://www.umass.edu/wmphtc/training)

Two-year and four-year college programs that offer courses for CHWs, designed to complement core competency training:

- **MassBay Community College** offers both a certificate and an associate degree in Community Health.
- Several community colleges in Massachusetts offer CHW training programs and others are currently in development.

# MDPH ASTHMA HOME VISITING TRAINING FOR COMMUNITY HEALTH WORKERS



**The MDPH Asthma Home Visiting Training includes both classroom training for CHWs and CHW supervisors, field-based mentorship for CHWs, and ongoing support.**

The ACPH has supported the development of the MDPH Asthma Home Visiting Training for Community Health Workers in order to promote the adoption of evidence-based asthma home visiting practices and to meet the needs of Massachusetts insurers to consider payment for asthma home visiting interventions delivered by CHWs. This Training was developed and implemented by the Boston Public Health Commission Asthma Prevention and Control Program and Community Health Education Center, in conjunction with the ACPH. The Training includes:

- CHW training – 4-day training on asthma intervention protocol that includes a home visit, environmental assessment, and education on modifiable factors to reduce asthma triggers. Motivational interviewing techniques are also discussed.
- Supervisors training – 1.5-day training to review the CHW home visitor protocol/model and the role of the CHWs. Motivational interviewing is also discussed.
- Ongoing CHW support – includes quarterly in-person support meetings.
- In-depth training on educating adolescents with asthma.
- Field-based mentoring program for CHWs.
- Observation-based skills assessment of CHWs at the completion of the training/mentoring program.



The 4-day training includes one day on asthma management and medications, two days on environmental assessment and trigger reduction, and one day on motivational interviewing techniques. The training is designed for CHWs who are employed or seeking employment in programs that provide asthma home visits. We also offer a post-training, field-based mentoring program which strengthens the skills CHWs learn in the classroom, and consists of shared asthma home visits performed by an experienced CHW and newly trained CHWs, with increasing responsibility gradually shifted to the trainees. The observation-based skills assessment covers common skills necessary for successful asthma home visiting delivery, including asthma management knowledge and basic understanding of asthma, local resources, environmental management, motivational interviewing, organization and documentation, and empathy and listening skills.

To learn more about the MDPH Asthma Home Visiting Training for Community Health Workers, or to find out about upcoming training opportunities, please contact [prevention.wellness@state.ma.us](mailto:prevention.wellness@state.ma.us).

# CHW ASTHMA HOME VISITING PAYMENT AND STAFFING MODELS



**More opportunities for sustainable payment and reimbursement for CHW-led asthma home visiting exist than ever before, particularly through emerging payment models like ACOs.**

**Overview:** It is the goal of the APCP to ensure universal access to high-quality CHW-led asthma home visits for children in Massachusetts. To this end, the APCP supports insurer reimbursement for these home visits, either through traditional fee-for-service mechanisms or through emerging bundled and global payment strategies including Accountable Care Organizations. Massachusetts is in a moment of great flux between traditional health care payment models and emerging models. As a result, many more opportunities for sustainable payment and reimbursement for CHW-led asthma home visiting exist than ever before, but the path forward is not clear. *The APCP will update this document regularly as new information about payment for asthma home visiting programs becomes available.*

**Staffing models:** In recent years CHW-led asthma home visiting has been conducted by different organizations employing a variety of staffing models. These include departments of health, community-based nonprofit organizations, hospitals and other clinical settings, insurers, and academic institutions. Across program models, CHWs may work in close collaboration with primary care teams in clinical settings or in programs that have limited contact with the clinicians serving their clients. Regardless of the staffing model, strong communication with primary care providers is a key component to success. While most programs utilize CHWs to conduct asthma home visits on their own, some include nurses and housing inspectors as part of the home visiting team.

There are a number of factors to consider when implementing a specific program model, including:

1. The number of high-risk children with asthma in a program's patient pool or community
2. The presence of established asthma home visiting programs that might serve the target intervention population
3. Factors unique to the communities where CHW-led asthma home visiting is adopted



**Current payment models:** Currently, CHW-led asthma home visits are not routinely covered by health insurance. However, some health plans in Massachusetts and elsewhere in the U.S. are beginning to implement reimbursement for these services. In the absence of widespread traditional payment for these health services, CHW-led asthma home visiting has been funded through a variety of mechanisms and payment models. Funding for CHW-led asthma home visiting has often been time-limited or tied directly to grant funding. Nonetheless, some programs have found ways to leverage funds for quality improvement that covers the use of CHWs for asthma home visiting and applying Determination of Need funding.

The *CHW Pediatric Asthma Home Visiting Program: Protocol Manual* promotes a model of asthma home visiting led by CHWs exclusively with strong connections to the clinical setting or a medical home. Partners who have contributed to the development of this *Program Summary* and *Protocol Manual* represent the variety of staffing and payment models currently established in Massachusetts. More information about their specific programs can be found in the “**Massachusetts Home Visiting Programs, Educational Materials, and Protocols**” chapter on page 35 of this *Program Summary*.

# CHW INTEGRATION INTO CLINICAL TEAMS

The MDPH Office of Community Health Workers has developed a number of resources to support integration of CHWs into clinical teams. These resources include best practices and complement technical assistance provided by the Office of CHW for those interested in employing CHWs. These resources will guide anyone who is designing or managing a new CHW program on the following fundamentals:

- CHW Recruitment and Hiring
- CHW Core Competency Training, On-the-Job Orientations, and Continuing Education
- CHW Supervision
- Integration of CHWs into Care Teams
- Evaluating CHW Programs and Interventions

For more information about the Office of CHWs, please visit [www.mass.gov/dph/chw](http://www.mass.gov/dph/chw).

# CONSENSUS STATEMENTS

The consensus statements below draw from robust evidence, based on CHW-led asthma home visiting in the academic literature and the extensive experience of participating stakeholders. These consensus statements reflect a shared understanding of the minimum necessary requirements for successful CHW-led asthma home visiting programs in Massachusetts.

## **Number of home visits**

A minimum of three CHW-led asthma home visits is recommended for success.

## **Visit practitioner**

Although various staffing models have been successfully developed and deployed in Massachusetts, these materials are designed for use in programs that utilize a CHW as the asthma home visitor.

## **Referral criteria**

CHW-led asthma home visits should target high-risk pediatric patients, in particular, those with poorly controlled asthma, based on National Asthma Education and Prevention Program (NAEPP) guidelines. A sample high-risk definition can be found in the *APCP CHW Pediatric Asthma Home Visiting Program: Model Protocol*.

# CONSENSUS STATEMENTS

## **Supplies**

Participants should be provided with basic supplies for the remediation of environmental triggers. The average cost of these supplies is \$150-\$250 per participant. These supplies include, at a minimum:

- **Cleaning Supplies**
  - Mop
  - Bucket
  - Vinegar
  - Baking soda
  - Microfiber dust cloths
  - Sponges
  - Spray bottles (for vinegar/water cleaning solution)
  - Sweeping cloths and refills
  - HEPA vacuum cleaner (approximately \$100/vacuum)
  - Large plastic storage bins
- **Food Storage**
  - Dry food storage containers
- **Anti-Pest Supplies**
  - Glue traps
  - Roach gel
- **Pillow and Mattress Encasements**
  - Pillow covers
  - Mattress covers (in sizes twin through king)

## **Data Collection**

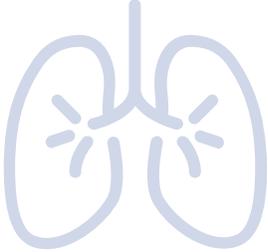
- Information about data collection, including consensus statements on data collection key measures, can be found in the “Introduction to Data Collection” chapter of this document.

## **Educational Topic Areas and Messages**

- Consensus statements on key educational topic areas and messages can be found in the next section called “Key Messages”.

# KEY MESSAGES

This chapter provides an overview of key educational topics and educational messages that CHWs should discuss with families during a home visit. These topics were developed by stakeholders with experience implementing or working with asthma home visiting programs.

Key Topics	Educational Messages
<p data-bbox="207 814 423 947">Asthma Basics</p> 	<ul style="list-style-type: none"><li>■ Asthma is a chronic or ongoing condition. Asthma can be managed and controlled.</li><li>■ Show picture of normal airway versus airway during an asthma episode.</li><li>■ Asthma causes muscle tightness, chest swelling, breathing difficulty, and increased mucous production.</li><li>■ Signs and symptoms of asthma include coughing, chest tightness, shortness of breath, and wheezing.</li><li>■ Many things can make asthma symptoms worse or trigger an asthma attack. Common triggers include dust mites, roaches and rodents, air pollution and pollen, mold, tobacco smoke, and certain chemicals.</li><li>■ It is important to reduce exposure to asthma triggers to better control asthma symptoms. Know your triggers at home, school, work and outdoors.</li><li>■ Follow the “Rules of Two.” Answering “YES” to the following questions is a sign that asthma is not well controlled:</li></ul> <p data-bbox="516 1486 727 1522"><i>Ask:</i> DO YOU:</p> <ol style="list-style-type: none"><li>1. Take your “quick-relief inhaler” more than TWO TIMES A WEEK?</li><li>2. Awaken at night with asthma more than TWO TIMES A MONTH?</li><li>3. Refill your “quick-relief inhaler” more than TWO TIMES YEAR?</li><li>4. Measure your peak flow at less than TWO TIMES 10 (20%) from baseline with asthma symptoms?</li></ol> <p data-bbox="516 1812 1474 1890"><i>Communicate:</i> If YES is answered to any of the questions above, you should talk to your doctor about your asthma control status.</p>

# KEY MESSAGES

## Key Topics

## Educational Messages

### Asthma Action Plan



An Asthma Action Plan (AAP) provides a written daily plan for managing asthma.

- **Explain** Green Zone, Yellow Zone, and Red Zone.
- **Remind them** to keep the AAP in a visible place at home and school.
- **Remind them** to make sure school nurse has a copy of the AAP.
- **Describe** when to seek help for worsening asthma symptoms.
- **Reinforce** the importance of checking in regularly with your doctor (by phone).
- **Communicate** to provider if families are confused about any information on the AAP.

### Exercise



- Children with asthma should be able to exercise if their asthma is in good control. Exercise can help children with asthma feel better so they can stay active just like everyone else. However, for some children, exercise can trigger an asthma attack.
- A provider may recommend pretreatment with rescue medication to control asthma symptoms during and following exercise.
- If a child continues to have breathing problems during and after exercising, consult the child's health care provider.

### Medication and Adherence



#### Control Medicines

Control medications are taken daily to control asthma and prevent asthma episodes.

- **Explain** how they reduce swelling of the airways, but do not provide quick relief of asthma symptoms.
- **Remind them** to rinse out mouth after use.

#### Quick Relief Medicines

These medications work by relaxing the airway to provide quick relief of asthma symptoms.

- **Explain** that they **DO NOT** reduce swelling.



Key Topics	Educational Messages
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(continued)

- **Explain** that they **DO NOT** control asthma.
- **Explain** that side effects include shakiness, faster heartbeat, and nervousness. If you use the quick relief medicine more than two times a week, your asthma is NOT controlled.
- **Explain** Controller and Quick Relief medicines for families and go over how and when to take each medication as detailed in the child’s AAP.

**Medications – General Information**

- **Remind** them to use spacer with ALL Metered-Dose Inhalers (MDIs).
- **Show/explain** priming and cleaning of inhalers.
- **Explain** how to keep track of how many puffs are used.
- **Show/explain** how to read a prescription label.
- **Show/explain** how to order and pick up refills.

## Using MDIs, Spacers, and DPIs



**Metered Dose Inhalers (MDIs)**

MDIs release medicine as a “puff of air” delivered to the lungs. A spacer should be used with MDIs.

**Spacer**

Using a spacer helps deliver the medicine to the lungs instead of to the mouth or throat, and reduces side effects.

- The CHW should ask if the child has a spacer and demonstrate correct use of the spacer.
- The CHW should ask the child and family to demonstrate how the spacer is used.
- The CHW should teach the child and family how to clean the equipment.

**Dry Powder Inhalers (DPIs)**

- DPIs release medicine in a powder form and do not require a spacer.
- Demonstrate proper MDI (with spacer) and DPI techniques. Show handout on correct inhaler technique.

# KEY MESSAGES

## Key Topics

## Educational Messages

### Cleaning Products and Healthy Cleaning



- Cleaning is necessary to remove dirt and germs, which helps reduce mold and dust, but can be dangerous if not done correctly. Chemicals found in many cleaning products can make asthma symptoms worse and cause asthma attacks.
- Provide educational resources to replace commonly used cleaning products with appropriate cleaning products and solutions. Demonstrate use of these products.
- Use a mixture of white vinegar and water (e.g., ¼ cup white vinegar, 1 quart water in a spray bottle) as a general household cleaner.
- Use baking soda as a scouring scrub, rather than bleach or cleaning products like all-purpose cleaners.
- When possible, use less-toxic, certified cleaning products (e.g., Green Seal and EcoLogo).
- Open windows or turn on an exhaust fan for good ventilation when using bleach and other cleaning products.

### Fumes, Odors and Strong Smells

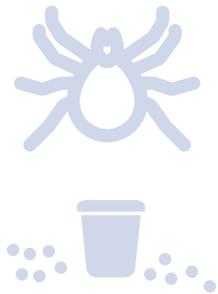


- Strong smells from common household items, including cleaning supplies, perfumes, air fresheners and gas/smoke from stoves and heaters can trigger asthma attacks.
- Many household chemicals and personal care products may contain chemical irritants and can be hazardous. Breathing fumes from these products can make asthma symptoms worse.
- Avoid exposure to air fresheners (sprays, plug-ins, etc.), perfumes, scented candles, and incense.



Key Topics	Educational Messages
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# Dust, Dust Mites and Clutter



- Dust and dust mites are the most common asthma triggers. Dust can contain allergens such as dust mite waste, animal dander, and mold.
- Breathing in dust and dust mite droppings can trigger an asthma attack. Controlling dust is an important way to control and potentially prevent asthma.
- Dust mite waste products contain allergens. Dust mites thrive in fabrics like carpets and bed linens.
- Dust mites are found in every home, no matter how clean.
- If possible, remove carpeting and keep homes free from rugs which can contain dust even after vacuuming.
- Get rid of dust by reducing clutter. Excessive clutter can harbor dust. Use storage bins to help eliminate clutter.
- Vacuum floors, rugs, and all upholstered surfaces using a HEPA vacuum and damp-mop hard surfaces once or twice a week.
- Using allergy control covers on mattress and pillows is an important method for controlling dust mites.
- Keep stuffed animals out of sleeping areas.
- Wash bed linen weekly in hot water.
- Keep child out of room for 20 minutes after vacuuming to allow dust particles to settle.

# Secondhand Smoke

(tobacco, marijuana, or other plant-based smoke)



- Tobacco smoke is one of the most common triggers of asthma attacks. Exposure can cause people to develop asthma who did not have the disease before.
- Keep the home and car smoke-free. Minimize children’s exposure to secondhand smoke. Encourage family members to quit smoking.
- People can be exposed to tobacco and plant-based smoke without smoking. Smoke can stay in the air or on clothing.
- Make your home and vehicle Smoke-Free Zones. If family members must smoke, they should smoke outside, wear a jacket covering that can be removed when they enter the home, and wash hands after smoking.

# KEY MESSAGES

## Key Topics

## Educational Messages

(continued)

- If people are exposed to tobacco smoke at work they should remove their clothing when returning home.
- Do not allow visitors to smoke in the home.
- Many landlords and property owners are making their housing smoke-free. Check with your landlord or condo association.
- The CHW can provide information and resources including a Quitline number (1-800-QUIT-NOW).

## Pets



- Animals with fur or feathers carry allergens in their saliva and on their skin (dander), fur or feathers. These allergens can trigger asthma.
- If you suspect a pet allergy, you can have your child tested.
- If the child is allergic to the pet, the best approach is to remove it from the home; having an animal in the house can make asthma worse. At a minimum, keep the pet out of the child's bedroom and play area.
- There is no such thing as a hypoallergenic dog or cat because people are allergic to dander.
- Limit pets on furniture.
- Wash pets once per week.
- A HEPA air filter can help remove pet allergens from the air.
- Vacuum frequently, using a vacuum with a HEPA filter. Vacuuming can reduce the amount of pet allergen in the home.
- Drape a pet blanket over your pet's favorite spot and wash it regularly.
- Removing carpet, drapes and cloth-covered furniture can also help because these items trap dander.

## Roaches



- Roaches, including their fecal waste and carcasses, can trigger asthma attacks.
- Many homes have roaches no matter how clean they are.
- Determining the source of roaches may lead to solutions for getting rid of them.
- Roaches are very common indoor pests found in multi-unit housing.
- It is a property owner's responsibility to keep homes free from rodents and pests, but there are also things tenants can do to reduce the



Key Topics	Educational Messages
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(continued)

- likelihood of infestation.
- Remove rodent attractants such as food, garbage, and clutter from both inside and outside the home.
- Use Integrated Pest Management practices (IPM) to manage pest problems. See “IPM” Key Messages, on page 26.
- Provide resources for talking to landlord about pest control.
- If necessary, refer to the local public health department or housing inspectors.
- Pesticides and other chemicals can be chemical irritants and can be hazardous.
- Pesticides should be your last resort in solving home pest problems. Use non-chemical methods such as glue traps.

## Mice and Rats



- The urine and hair of mice contain allergens that can trigger asthma attacks. Reducing exposure to rodent allergens is an important strategy in helping to control asthma.
- Mice can be very difficult to remove. Prevent rodents from entering the house. Sealing holes with steel wool and copper mesh can prevent them from traveling through buildings.
- It is a property owner’s responsibility to keep homes free from rodents and pests, but there are also things tenants can do to reduce the likelihood of infestation.
- Remove rodent attractants such as food, garbage, and clutter from both inside and outside the home.
- Use Integrated Pest Management practices (IPM) to manage pest problems. See “IPM” Key Messages on page 26.
- Provide resources for talking to landlord about pest control.
- If necessary, refer to the local public health department or housing inspectors.
- Pesticides and other chemicals can be chemical irritants and can be hazardous.
- Pesticides should be your last resort in solving home pest problems. Use non-chemical methods such as glue traps.

# KEY MESSAGES

## Key Topics

## Educational Messages

### Integrated Pest Management



Integrated Pest Management (IPM) is a prevention-based strategy that can provide long lasting pest control. IPM targets the underlying causes of pest infestations to deprive pests of food, water, shelter and building access.

Use Integrated Pest Management (IPM) principles including:

- Identify pest problems through monitoring and inspection.
- Block pest entry points.
- Remove pests' food, water, and shelter.
- Use low-toxicity, low-risk pesticides only as needed.

Other good IPM practices include:

- Wash all the dishes. Do not keep dirty dishes in the sink overnight.
- Put all food in the refrigerator or in sealed storage.
- Clean the stove and wipe dry the sink and kitchen counters.
- Limit eating to the kitchen/dining room area.
- Mop and vacuum the floors after cooking or eating. Vacuum once a week. Vacuum old pest droppings. HEPA vacuums are best.
- Get a tight fitting lid or cover for your trashcan and take the trash out daily.
- Keep your home dry by cleaning up spills and leaks.
- Eliminate clutter and move furniture away walls to prevent hiding places.
- Do not leave pet food and water out.
- Use hot soap and water to wash pest travel routes, urine and feces.

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### Trash



- Keep garbage containers tightly closed.
- Wash recyclables before putting them into a recycle bin.
- Empty trash every day.



Key Topics	Educational Messages
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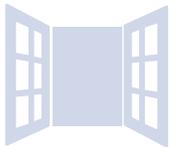
## Heating Sources, Air Conditioning and Maintenance of Air Filtration Systems



- Change the furnace filter as recommended by manufacturer.
- Use an air conditioner during pollen season, especially on high-pollen days. Central air systems are preferable to window air conditioning units. Replace and clean air filters as recommended.

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## Outdoor Air Quality



- Outdoor air that is polluted can cause asthma attacks.
- Be aware of poor Air Quality Index days and plan to use rescue inhaler. Visit [www.mass.gov/eea/agencies/massdep/air](http://www.mass.gov/eea/agencies/massdep/air)
- On days when air quality is poor, limit outdoor activity.

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## Pollen



- Pollen comes from trees, flowers, grass, and weeds and can trigger asthma. High pollen counts in the spring and fall seasons are known to be asthma triggers for some children.
- If possible keep windows closed on high-pollen days.
- Remove shoes at the door.
- Shower before sleeping.
- Shampoo your child's hair on high-pollen days.

# KEY MESSAGES

## Key Topics

## Educational Messages

### Mold/Must/ Mildew



- Mold can cause asthma or can trigger an asthma attack.
- Leaks, moisture and humidity can help mold grow and contribute to mildew. Identify the source of the water so it can be prevented.
- Have leaky plumbing and/or leaky roof fixed.
- To reduce the moisture level in your home, run a fan in the bathroom or open a window when shower is in use. Check the bathroom fan to make sure it is working; hold a small piece of tissue paper to the fan to see if it stays up.
- If materials like carpet or walls have remained wet for longer than 48 hours, or mold growth is widespread, it may require replacement.
- Safe, green cleaning materials (e.g., baking soda and white vinegar) are recommended for daily cleaning to reduce and prevent mold. Harsher cleaners may be necessary to clean small amounts of mold.
- Wash mold off hard surfaces and dry completely. Wear rubber gloves, a protective mask, and goggles when cleaning. Never mix cleaning products together.
- Regularly wipe down damp walls and areas that tend to grow mold, like caulking in bathrooms.
- Before painting or caulking surfaces, clean mold and dry the surface.

### Bedding



- Wash bedding in the hottest water possible and dry on high heat every week.
- Use cotton or synthetic pillows and bed covering instead of feather or down.
- Cover pillows and mattress with zippered allergy control covers.

### Carpeting/ Flooring



- Removing rugs and carpeting from your home is recommended. It is particularly important to remove them from your child's/children's bedroom(s).
- Hard flooring and surfaces are easier to clean than rugs and carpeting.
- If a client has flooring that needs to be addressed by a landlord, provide a sample of a Reasonable Accommodation letter. Sample letter text is shown on the opposite page.
- Vacuum and damp-mop once or twice a week.
- Use a vacuum with a HEPA filter.

*Sample of Letter to Request Reasonable Accommodation*

[DATE]

[NAME OF BUILDING MANAGER]  
[ADDRESS]

Re: Reasonable Accommodation for my disability

Dear [BUILDING MANAGER NAME]:

I live at [ADDRESS] in [UNIT NUMBER] and have lived there since [DATE]. I am a qualified individual with a disability, as defined by the Fair Housing Amendments Act of 1988.

Our building's rules state [XXX]. Because of my disability, I need the following accommodations: [LIST ACCOMMODATIONS]. A medical provider has prescribed this accommodation for my disability. I would like to meet with you to discuss these and any other accommodations that will enable me to have an equal opportunity to live in and enjoy this residence.

Please let me know what, if any, additional information you need from my health care provider in order to better understand my disability and the limitations it imposes.

Under the Fair Housing Amendments Act, it is unlawful discrimination to deny a person with a disability a reasonable accommodation of an existing building rule or policy if such accommodation may be necessary to afford such person full enjoyment of the premises.

Please keep this request for accommodation confidential, as required by federal law. Please contact me within the next ten days to discuss this important issue. I look forward to your response and appreciate your attention to this matter.

Sincerely,  
[SIGNATURE]  
[RESIDENT NAME]

# ANCILLIARY MESSAGES

## **Occupational Exposures to Smoke and/or Chemicals and Cleaning Products**

*While these messages are strongly grounded in the academic evidence, they have not been field-tested by CHW-led asthma home visiting programs in Massachusetts to date.*

### **Know what affects your asthma at work:**

- People who work in healthcare, home care, childcare, hair and nail salons, cleaning jobs, as well as in factories and in construction may have asthma related to their jobs. Many occupations have potential hazards.
- Asthma hazards in health and home care professions include cleaning products, especially those with disinfectants; construction jobs may include exposure to dust; installation and maintenance jobs may have exposure to secondhand cigarette smoke; manufacturing jobs may include exposure to various chemicals such as epoxies; and auto-body painters and insulators may be exposed to isocyanate.
- Some chemicals can cause asthma, even in those who never had asthma before.
- You have a right to know about the chemicals with which you work. Your employer must have safety data sheets and hazard information about every chemical at work. Teens should be aware of their right to know about chemicals on the job and ask for training on how to properly use the chemicals.
- Some workplace hazards can be brought home on work clothes (such as wood, cement or metal dust, wheat flour, smoke particles). Leave work clothes at work; launder separately.
- Talk to your healthcare provider about the chemicals or tasks that bother your asthma.
- Learn about **Workers Compensation** that covers medical expenses and partial replacement of lost wages if you miss work due to a workplace illness. For information, visit [www.mass.gov/lwd/workers-compensation](http://www.mass.gov/lwd/workers-compensation)
- Learn about the **Occupational Safety and Health Administration (OSHA)** rules about your right to a safe and healthful workplace. Visit [www.osha.gov/law-reg.html](http://www.osha.gov/law-reg.html)

## Primary Prevention Messages

*While these messages are strongly grounded in the academic evidence, they have not been field-tested by CHW-led asthma home visiting programs in Massachusetts to date.*

**Asthma is caused by a variety of factors; some are inherited and some are due to environmental exposures that can be controlled. The causes are different for different people.**

- Many of the environmental factors that trigger asthma attacks can also cause asthma in people who have never had the disease before.
- “Primary Prevention” is taking steps to prevent asthma before it develops.
- People who have a family history of asthma are at higher risk of developing the disease than people whose family members do not have asthma.
- For people who have a family history of asthma, reducing exposure to agents that can cause asthma may prevent the disease in family members who have not been diagnosed.
- To reduce the risk of developing asthma, minimize exposure to stress, tobacco smoke, dust, mold, household chemicals, rodents, roaches, and traffic-related air pollution.
- Reducing asthma triggers at home, in school or work may require different strategies for each place.
- Stress and exposure to certain chemicals in school, at work or at home can cause asthma or make it worse.

# ANCILLIARY MESSAGES

## School

*While these messages are strongly grounded in the academic evidence, they have not been field-tested by CHW-led asthma home visiting programs in Massachusetts to date.*

### **Keep the student's Asthma Action Plan in an easily accessible place.**

- Make sure the school nurse has a copy of the Asthma Action Plan.
- Knowing what may trigger or cause asthma at home, in school or work may require different strategies in each place to reduce or eliminate those triggers.
- Exposure to certain chemicals can cause asthma or make it worse at home, in school or at work.
- Schools are required by law to have an integrated pest management plan to rid the building of pests without use of pesticides. If a school is relying on chemical treatment, the administration should meet with the Integrated Pest Management coordinator or vendor to review the program.
- Know the basics about the heating/ventilation system in the home, school or workplace in order to know how they should be maintained and operated. For more information: [www2.epa.gov/iaq-schools](http://www2.epa.gov/iaq-schools)
- Parents should ask to walk through their child's school to see if there are carpet-free classrooms. If there is carpeting, see how frequently it is vacuumed and replaced.
- Schools should not allow furry pets to be kept in classrooms.
- Parents should work with the school nurse, custodian, principal, and other parents to establish a school environmental committee.
- Parents should make sure that the child's school is using green cleaning products approved by the Massachusetts Department of Education. This information is available from the Massachusetts Operational Services Division on their Environmentally Preferable Products statewide contract. Visit [www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/procurement-prog-and-serv/epp-procurement-prog/green-products-and-serv/specific-epp-statewide-contracts/green-cleaning-products.html](http://www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/procurement-prog-and-serv/epp-procurement-prog/green-products-and-serv/specific-epp-statewide-contracts/green-cleaning-products.html)

# INTRODUCTION TO DATA COLLECTION

## Why Collect Data?

Data collection is a beneficial activity for CHW-led asthma home visiting programs, both in monitoring the success of a given program, and in providing CHWs and clinical staff with essential observations about home asthma management, measures of asthma control, and home environmental triggers. This may be the only opportunity for clinical providers to fully assess the actual use and understanding of asthma medications that have been prescribed, the environmental conditions of their patients, and to provide appropriate counseling on how these conditions can impact patients' asthma symptoms and control.

The Massachusetts stakeholders have identified the following as essential areas for data collection. Sample data collection tools and questions can be found in the APCP's *CHW Pediatric Asthma Home Visiting Program: Model Protocol*.



Key Data Collection Area	Key Questions and Considerations
Asthma Control	<ul style="list-style-type: none"><li>■ Asthma Control Status should be assessed at each home visit.</li><li>■ Using a validated or proven asthma control assessment, such as the Asthma Control Test or MDPH Two Week Recall Questionnaire, is preferred.</li><li>■ Questions about missed school, daycare, and work days because of asthma are beneficial and should be assessed at the start and completion of the program.</li></ul>
Health Care Utilization	<ul style="list-style-type: none"><li>■ Questions about overnight hospitalizations, emergency room (ER) visits, and unscheduled office visits should be included. They should be assessed at the start and completion of the intervention, at least, and more frequently, if possible.</li></ul>



Key Data Collection Area	Key Questions and Considerations
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## Asthma Action Plan (AAP)

- Questions about the provision of AAPs to patients and the actual use of the AAP during the last asthma episode should be included. They should be assessed at least at the start and completion of the intervention.
- Assess for presence of all medications listed on the AAP and how they are actually being used. Check their adherence to controller medications or overuse of rescue medications, frequency of use, understanding of the medication purpose, appropriate use of devices, obtaining the last refill, how to receive refills, and if they are aware of and are checking counters on inhalers.

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## Environmental Triggers

- Questions about environmental tobacco smoke (ETS), mold/moisture, pets, roaches, rodents, and chemicals should be included. They should be assessed at the start and completion of the intervention, at least, and more frequently, if possible.
  - A comprehensive Environmental Walk Through should be completed of the main living areas in the home, including the child's/children's sleeping area(s), the living room, the kitchen, and the bathroom. The Walk Through should be conducted at the start and completion of the intervention, at least, if not more frequently.
  - The Environmental Walk Through should include observations of environmental tobacco smoke (ETS), dust, mold/moisture, pets, roaches, rodents, and chemicals.
-

# MASSACHUSETTS HOME VISITING PROGRAMS, EDUCATIONAL MATERIALS, AND PROTOCOLS

At the time of this document's publication, the following organizations and institutions support CHW-led asthma home visiting programs in Massachusetts:

## **Boston Asthma Home Visit Collaborative (BAHVC)**

Boston Public Health Commission (BPHC), Boston

**Program overview:** This collaborative currently includes home visiting programs at BPHC, Tufts Medical Center, Partners Asthma Center, Massachusetts General Hospital's Chelsea HealthCare Center, and Boston Children's Hospital. Home visits include one-on-one conversations covering asthma basics, provision of educational materials, review of the asthma action plan, review of prescribed medications and equipment, establishment of asthma management goals, assessment of the home environment, education in ways to reduce triggers including training in the use of supplies, connection with additional resources as needed, and communication with primary care providers and/or asthma care coordinators and specialists.

**Protocol:** Asthma home visiting protocol includes education topics, educational materials, durable medical equipment, home visitor training, organizational responsibilities, and referral and reporting systems.

**Training:** BAHVC offers free asthma home visiting services conducted by a trained CHW to qualifying Boston residents through member programs. A provider referral is strongly preferred to facilitate a key feedback loop and ensure coordination between home visitor, client, and medical home.

Visit [www.bphc.org/bahvc](http://www.bphc.org/bahvc)

### **Community Asthma Initiative (CAI)**

Boston Children's Hospital, Boston

**Program overview:** CAI serves children who live in Boston, are under 2 years old and have poorly controlled asthma. Poorly controlled asthma is evidenced by emergency room visits, hospitalizations for asthma, courses of oral steroids to treat asthma exacerbations; or other indicators, such as frequent missed school days due to asthma, or overuse of medication. The program provides home visits conducted by CHWs and, as needed, a nurse. CAI works with each family to help them understand their child's asthma and the medications used to treat it, and to identify and reduce asthma triggers in the home and other places where the child spends time. Home visits are offered in Spanish, Cape Verdean Creole, and Portuguese.

**Protocol:** Home environmental assessments are conducted during visits. Supplies, including dust mite-proof bedding encasements, HEPA vacuum cleaners, Integrated Pest Management materials and storage bins, are provided to patients. Case management services and family advocacy are provided along with community resources that include: housing inspections, financial assistance, daycare services, and support around school issues. Families generally receive three home visits, followed by follow-up telephone calls at 6 and 12 months afterward. Additional home visits and/or case management are provided as needed.

**Educational materials:** Videos about the use of asthma devices are available online, in English at [www.youtube.com/playlist?list=PL2FC4884607BF4E7D](https://www.youtube.com/playlist?list=PL2FC4884607BF4E7D) and in Spanish at [www.youtube.com/watch?v=II-bN8T9Vuk&list=PLNdnrJ0WHYVZwjDWSa5a qP-r4maazquP8](https://www.youtube.com/watch?v=II-bN8T9Vuk&list=PLNdnrJ0WHYVZwjDWSa5a qP-r4maazquP8).

Visit [www.childrenshospital.org/centers-and-services/programs/a\\_-e/community-asthma-initiative-program](http://www.childrenshospital.org/centers-and-services/programs/a_-e/community-asthma-initiative-program)

### **Community and Hospital Asthma Management Program (CHAMP)**

Winchester Hospital, Winchester

**Educational materials:** Checklist for the Home Environment

used for conducting home visits includes questions about heating sources, neighborhood traffic, building age/type, smoking, burning candles/incense, pets, pests, mold/must/mildew, household products, and types of furniture/floor covering.

Visit [www.winchesterhospital.org/our-services/wellness--fitness-programs/asthma-management-program](http://www.winchesterhospital.org/our-services/wellness--fitness-programs/asthma-management-program)

### **Holyoke Health Center, Holyoke Medical Center, and Western Mass Physician Associates**

Holyoke

**Protocol:** Patients are recruited from Holyoke Health Center and Western Mass Physician Associates' high-risk asthma registry. At Holyoke Health Center, patients receive a visit from a nurse and pharmacist. At the Holyoke Medical Center, a nurse provides one-on-one education to asthma patients and their families. For both medical centers, a CHW follows up with patients using the CHW home visit model. Over four visits, CHWs assess the home environment and educate families on how to manage triggers unique to the patients and their homes. This includes education on asthma control, medications and adherence, reducing triggers in the home, integrated pest management, safe cleaning, and tobacco cessation.

Visit [www.holyokehealth.com](http://www.holyokehealth.com) or [www.wmpa-inc.org](http://www.wmpa-inc.org)

### **Lowell Healthy Homes Program**

UMass Lowell, Lowell

**Protocol:** Families who participate in the Lowell Healthy Homes Program receive an environmental health assessment by qualified home health assessment workers to identify hazards in the home that may worsen the asthma condition. Education includes information on dust mites, pets and animals, cockroaches, mold and mildew, tobacco smoke, air pollution, and general safety.

Visit [www.uml.edu/Research/CCRE/what-we-do/Community-Based-Initiatives/Lowell-Healthy-Homes.aspx](http://www.uml.edu/Research/CCRE/what-we-do/Community-Based-Initiatives/Lowell-Healthy-Homes.aspx)

## **Learners Take Action: Reducing Asthma Disparities through Adult Basic Education**

JSI Research & Training Institute, Inc., Boston

**Education:** JSI supports residents, members of immigrant churches, and daycare providers conducting healthy homes visits. The organization adapted a commonly used home assessment checklist to create low-literacy asthma curricula for adult education classrooms. *Asthma Trigger Factors Checklist* is used for conducting home visits. The checklist includes questions about smoking, pets, heating sources, scented candles, mold, carpeting, rodents, cockroaches, dust mites, and bedding.

Visit [www.jsi.com/JSIInternet/USHealth/project/display.cfm?ctid=na&cid=na&tid=40&id=11962](http://www.jsi.com/JSIInternet/USHealth/project/display.cfm?ctid=na&cid=na&tid=40&id=11962)

## **Massachusetts Asthma Action Partnership (MAAP)**

Boston

The Massachusetts Asthma Action Partnership's mission is to reduce asthma health disparities, and improve the quality of life for all people with asthma in the Commonwealth by coordinating statewide programs. MAAP is the only statewide asthma partnership that links local efforts across the state and brings together community organizations and others to achieve sustainable statewide changes in the environment, education, and quality of health care as they relate to asthma.

MAAP is a program of Health Resources in Action's Policy and Practice Department, a nonprofit, public health and medical research funding organization. MAAP has over 100 members, representing asthma coalitions, health centers, hospitals, parents of children with asthma, health insurers, volunteer organizations, unions, community-based organizations, school nurses, physicians, local boards of health, community activists, colleges, and others. MAAP has five active committees: Steering, Healthy Housing, Healthy Schools/Child Care settings, Health (providers),

and Primary Prevention. MAAP and its members are working to support the goals and objectives outlined in the *Strategic Plan for Asthma in Massachusetts: 2015–2020* available at [massclearinghouse.ehs.state.ma.us/asthma/as931.html](http://massclearinghouse.ehs.state.ma.us/asthma/as931.html)  
Visit [maasthma.org](http://maasthma.org)

### **Massachusetts Association of Community Health Workers (MACHW)**

Worcester, Mass.

**Overview:** MACHW is the state-wide professional organization for community health workers from all disciplines. Founded in 2000, MACHW empowers CHWs to lead the movement to organize, define and strengthen the profession of community health work.

MACHW's mission is to strengthen the professional identity of CHWs, foster leadership among CHWs, and promote the integration of CHWs into the healthcare, public health, and human service workforce.

Visit [machw.org](http://machw.org)

### **New England Asthma Innovations Collaborative (NEAIC)**

Asthma Regional Council of New England/Health Resources in Action, Inc., Boston

**Overview:** NEAIC's eight clinical sites in Connecticut, Massachusetts, Rhode Island, and Vermont provide home visiting services for families with one or more children with poorly controlled asthma. These visits include asthma management education and environmental asthma trigger assessments. Asthma education conducted during home visits covers the basic physiology of asthma, environmental factors that may trigger asthma symptoms in the patient, and review of the patient's asthma medications.

Environmental assessments cover smoking, mold, pets, pests, chemicals, and dust, the provision of supplies, behavior modification through motivational interviewing, and community resource referrals.

Visit [asthmaregionalcouncil.org/our-work/neaic](http://asthmaregionalcouncil.org/our-work/neaic)

### **Pioneer Valley Asthma Coalition (PVAC)**

Springfield

**Overview:** PVAC is a coalition of health professionals and institutions, community groups and residents, public health organizations, municipal and state agencies, academic institutions, schools, day care, and housing and environmental groups committed to improving asthma and environmental conditions that affect health in western Massachusetts.

PVAC has implemented the following asthma home visiting programs: A pilot of Building Asthma Safe Environments for pediatric asthma home visits; Reducing Asthma Triggers for Older Adults; asthma home visiting for older adults with asthma; and Springfield Healthy Homes Collaborative asthma home visiting.

Visit [pvasthmacoalition.org](http://pvasthmacoalition.org)

### **The Reducing Ethnic/Racial Asthma Disparities in Youth (READY)**

**Boston Medical Center** (Boston) and **Baystate Medical Center** (Springfield)

The NIH-funded Reducing Ethnic/Racial Asthma Disparities in Youth (READY) study includes an intervention that ties asthma home visits to clinical care, to address both environmental and social barriers to optimal asthma control. To address environmental and social barriers to optimal health, the first phase of the NIH-funded READY intervention study ties asthma home visits to clinical care. The intervention has shown significant promise in reducing urgent care utilization, improving asthma symptoms, and improving caregiver quality of life. Funded by the U.S. Department of Housing and Urban Development, the second phase of the study, READY2, will be completed in 2017. This phase measures reduction in healthcare utilization as part of a cost analysis designed to support potential insurance reimbursement for the intervention.

Visit [www.bmc.org](http://www.bmc.org) or [www.baystatehealth.org/locations/baystate-medical-center](http://www.baystatehealth.org/locations/baystate-medical-center)

Additional information about READY can be found in the APCP's *CHW Pediatric Asthma Home Visiting Program: Model Protocol*.

### **Room-to-Breathe Initiative**

Massachusetts Coalition for the Homeless, Lynn

When CHWs conduct home visits, they use a tablet to connect to a Web-based program that includes the home assessment tool they fill out online. Detailed home assessment includes a household profile, and sections to enter information about the site, the building system, sanitary code, health hazards, mold, income and benefits, ethnicity, and data about the living room/kitchen/dining room/bathroom/bedroom.

Visit [www.mahomeless.org/room-to-breathe](http://www.mahomeless.org/room-to-breathe)

### **UMass Memorial Health Care**

Worcester

This pilot project uses a range of educational materials in its Worcester Bell Hill/Plumley Village neighborhood asthma home-visiting program. Educational materials include information on asthma control, asthma medications and adherence, asthma triggers, reducing triggers in the home, integrated pest management, safe cleaning, and tobacco cessation.

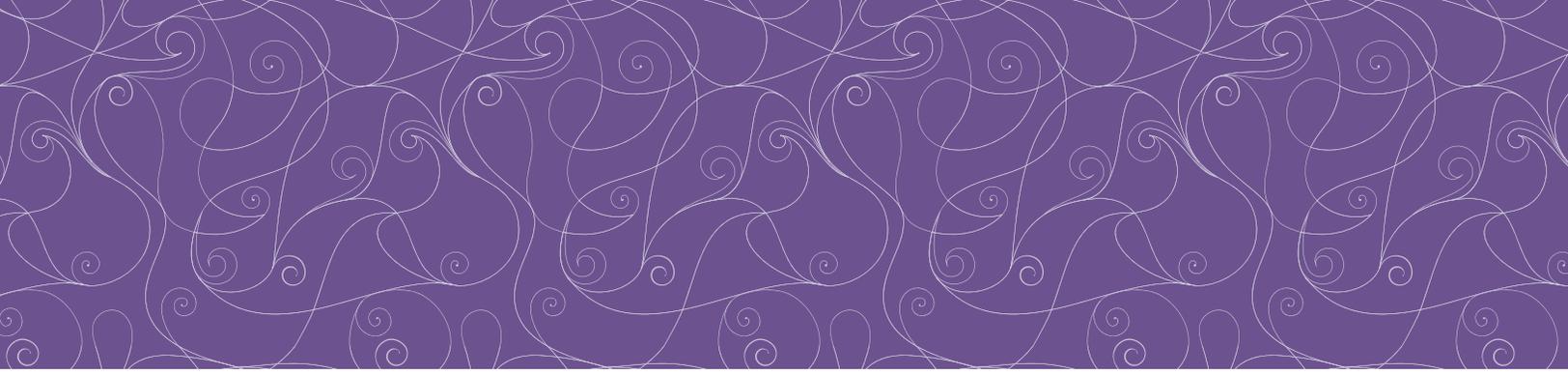
Visit [www.umassmemorialhealthcare.org/umass-memorial-medical-center](http://www.umassmemorialhealthcare.org/umass-memorial-medical-center)

### **UMass Memorial Medical Center**

Worcester

The evidence-based program links clinical and community partners and utilizes culturally-competent community health workers to assess and address asthma triggers in the home. The intervention targets students in the Worcester Public Schools (WPS) and Worcester Head Start program and patients at multiple clinical sites who are identified as high-risk.

CHWs are trained to provide basic education to familiarize patients and parents with medication and improve adherence to medication for children with poorly controlled asthma. Target outcomes include reducing missed school days for children



and work days for parents, and reducing hospitalizations and emergency room visits.

Clinical care teams for this intervention consist of a Provider Champion, R.N. Clinical Care Managers (CCMs), CHWs, and a data analyst. UMass Memorial Pediatric Pulmonology works closely with the schools, and provides training programs to WPS/ Head Start nurses, clinical providers at each clinical site, and to students and their parents/guardians.

Visit [www.umassmemorialhealthcare.org/umass-memorial-medical-center](http://www.umassmemorialhealthcare.org/umass-memorial-medical-center)

# Introduction to the *Protocol Manual*

The APCP CHW Pediatric Asthma Home Visiting Program: Protocol Manual is adapted from the APCP's *Reducing Ethnic/Racial Asthma Disparities in Youth (READY)* study protocol.

The model protocol has been generalized for use outside of the research context, but retains its strong evidence base.

The APCP recommends the model protocol for new CHW-led asthma home visiting programs.

# READY STUDY BACKGROUND

**B**uilding on the work of James Krieger, MD, and utilizing home-based, multi-trigger, and multicomponent environmental interventions detailed in the CDC Community Guide, the APCP has completed the first phase of the NIH-funded Reducing Ethnic/Racial Asthma Disparities in Youth (READY) study, which tied asthma home visits to clinical care to address both environmental and social barriers to optimal asthma control.<sup>1,2</sup> READY addresses the challenge of effectively integrating home-based environmental and educational interventions, delivered by community health workers (CHWs), into clinical practice to reduce disparities in the burden of asthma.

The READY study is a collaborative effort between the Massachusetts Department of Public Health, Boston Medical Center, and Baystate Medical Center. The study intervention involved:

- Conducting five home visits over a 6-month period
- Assessing the home for multiple exposures (such as cockroaches, mold, and dust mites)
- Motivating participants to take low-cost actions and use home goods like vacuums, mattress covers, and Integrated Pest Management kits
- Offering advice and tools to reduce exposures
- Advocating for improved housing
- Improving communication with health care providers
- Raising expectations for children functioning with asthma through use of the You Can Control Your Asthma educational program, a well-validated program in low-literacy populations

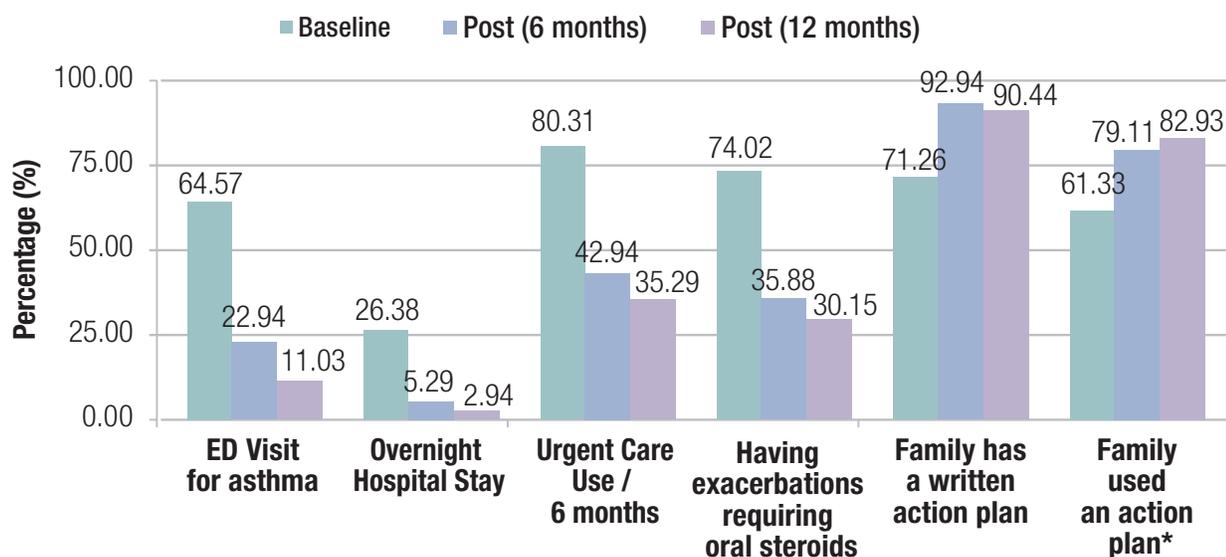
READY has shown significant promise in reducing urgent care utilization, improving asthma symptoms, and improving caregiver quality of life among a low-income urban population with uncontrolled asthma (see figure below).

<sup>1</sup> Guide to Community Preventive Services. Asthma control: home-based multi-trigger, multicomponent interventions. [www.thecommunityguide.org/asthma/multicomponent.html](http://www.thecommunityguide.org/asthma/multicomponent.html). Accessed: 05/06/2014.

<sup>2</sup> Krieger JK, Takaro TK, Song, L, Weaver, M. The Seattle-King County healthy homes project: a randomized, controlled trial of a community health worker intervention to decrease exposure to indoor asthma triggers. April 2005, Vol 95, No. 4. American Journal of Public Health. 652-659.

Preliminary results indicate that some asthma-related health outcomes improved significantly after the intervention, including the proportion of participants who had emergency room visits, hospitalizations, used urgent health services or used oral steroid medication, and who received an Asthma Action Plan. The second phase, READY2, funded by the U.S. Department of Housing and Urban Development, measures reduction in health care utilization as part of a cost analysis designed to support potential insurance reimbursement of the intervention.

READY - Asthma Morbidity Pre vs Post 11/2013



The Model Protocol was developed to further generalize the findings process and health outcomes of the READY Study. In addition, to identify the implementation practices of the asthma programs in the Commonwealth of Massachusetts.

**The Model Protocol includes:**

- A minimum of three home visits conducted by a trained CHW that include asthma management and environmental trigger remediation education according to the standardized protocols

- CHW training must include both Core Competency Training and MDPH Asthma Home Visitor Training
- Integration of the CHWs into the clinical team with data from home visits reported back to the clinical team to improve patient care
- Provision of low-cost supplies for families to reduce trigger exposure in the home
- Minimum data collection, including health outcomes and environmental assessment data, using standardized data collection tools
- Targeted enrollment for children identified as high-risk

**High Risk Definition:**

Below is a criterion for identifying a high risk patient list.

- Not well-controlled asthma, or very poorly controlled asthma, as assessed by a standardized asthma control test,  
OR
- Have been hospitalized for asthma in the last 12 months,  
OR
- Have visited the emergency room for asthma in the last 12 months,  
OR
- Have had an unscheduled office visit for asthma in the last 12 months  
OR
- Have had one or more episodes in the last 12 months of oral corticosteroids because of worsening asthma in the last 12 months

**Note on Model Protocol Handouts:**

The handouts for children and families provided in English in the *CHW Pediatric Asthma Home Visiting Program: Model Protocol* are also available upon request in Spanish, Haitian Creole, and Portuguese. More languages may become available in the future.

# YOU CAN CONTROL ASTHMA

The You Can Control Asthma (YCCA) program was designed by the Asthma and Allergy Foundation of America to provide children and their families with culturally appropriate asthma education materials that are easy to read. YCCA was used for the READY Study and is also referenced in CHW home visits 1-4 of the MDPH *CHW Pediatric Asthma Home Visiting Program: Protocol Manual*. The protocol provides the page numbers of the YCCA educational topics which correspond with each visit. The booklets are available in English and Spanish.

For more information on the program and ordering details, please visit the Asthma and Allergy Foundation of America at [www.aafa.org](http://www.aafa.org).

# SAMPLE RESOURCE LIST FOR CHW ASTHMA HOME VISITS

In addition to providing condition-specific education to families, CHWs also link clients to wider social resources in the communities that they serve. Below are common resources that CHWs should be familiar with in their communities. CHWs are well served by knowing how to connect their clients to these services.

1. Tobacco Quitline/Quitworks
2. Medical-Legal Partnership (MLP) or Legal Services Corporation where MLP is not available
3. Board of Health/Inspectional Services Department
4. Food Bank/Food Assistance
5. Women, Infants and Children (WIC) Services
6. Assistance Programs for Medications
7. Department of Children and Family Services
8. Domestic Violence Referral
9. Homeless Shelters
10. Financial/Housing Assistance Programs

# CHW RESOURCES

**Medical Home Chapter Champions Program for Asthma from the American Academy of Pediatrics (AAP)**

[www.aap.org/en-us/professional-resources/practice-transformation/medicalhome/Pages/Asthma-Allergy-and-Anaphylaxis.aspx](http://www.aap.org/en-us/professional-resources/practice-transformation/medicalhome/Pages/Asthma-Allergy-and-Anaphylaxis.aspx)

**The Community Guide**

[www.thecommunityguide.org/asthma/index.html](http://www.thecommunityguide.org/asthma/index.html)

**Controlling Asthma Triggers**

[pvasthmacoalition.org/yahoo\\_site\\_admin/assets/docs/Top\\_Ten\\_Actions\\_to\\_Control\\_Triggers.31795451.pdf](http://pvasthmacoalition.org/yahoo_site_admin/assets/docs/Top_Ten_Actions_to_Control_Triggers.31795451.pdf)

**How to Use an Inhaler Video**

English: [www.youtube.com/watch?v=vPmtxMpIUdA](http://www.youtube.com/watch?v=vPmtxMpIUdA)

Spanish: [www.youtube.com/watch?v=fe\\_NL3ybCdY](http://www.youtube.com/watch?v=fe_NL3ybCdY)

**National Center for Healthy Housing**

[www.nchh.org](http://www.nchh.org)

**National Center for Medical-Legal Partnership**

[medical-legalpartnership.org](http://medical-legalpartnership.org)

**Safe Cleaning Recipes**

[pvasthmacoalition.org/safecleaningforpeoplewithasthma.pdf](http://pvasthmacoalition.org/safecleaningforpeoplewithasthma.pdf)

**U.S. Department of Housing and Urban Development**

[portal.hud.gov/hudportal/HUD](http://portal.hud.gov/hudportal/HUD)

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**Community Health Worker  
Pediatric Asthma  
Home Visiting Program**  
Program Summary

