



# Creating a Medical Home for Asthma



**An Asthma Management  
Program for  
Healthcare Providers**

**Getting Started with CMHA**

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Web site address: [http://www.nyc.gov/html/doh/html/cmha/getting\\_started.html](http://www.nyc.gov/html/doh/html/cmha/getting_started.html)

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# Overview of “Getting Started”

The goal of this manual is to provide clear and easily applied guidance to help clinic staff prepare for the adoption and implementation of the Creating a Medical Home for Asthma program (CMHA) in the health care setting. It is designed to recommend practical steps that can be performed by any member of the clinic staff to obtain the necessary information to facilitate “getting started”.

More specifically, this manual guides the user through a series of processes that represent the “guiding principles and key strategies” of CMHA. These strategies were developed to support the achievement of the program goals listed below. The basic elements of this program consist of the training and implementation procedures. The actions described in this manual can facilitate a smooth, seamless integration of the CMHA program in your clinic, and ensure that staff are fully prepared to implement the appropriate procedures.

The goals of the CMHA program are:

- To provide continuing care in primary and specialized clinics to greater numbers of children with asthma.
- To improve the health status of children suffering from asthma through appropriate therapy, patient education, and guided self-management by the family.
- To improve quality of life for the entire family through communication between the clinic staff and the family about asthma. Given the inherent differences in the structure

and management of health care organizations, there are likely to be many variations in staff knowledge, expertise, and administrative systems across public health settings. Therefore, in addition to providing a “user friendly” format, the CMHA program offers *versatility so that it can be easily adapted to fit the needs* of most public health clinics or health care organizations.

The program goals and strategies are flexible enough that they can be used as presented in this manual or tailored to the specific needs of your clinic. Therefore, healthcare managers or supervisors are encouraged to modify the CMHA program, as necessary, to serve the needs of your staff and operations of your public health clinic. However, when recommending adaptations to the program, clinic managers or supervisors should *not* consider rejecting any portion of the program unless a self-assessment demonstrates that your clinic is meeting appropriate asthma care goals.

The following sections will describe how to conduct a clinic self-assessment and community assessment. Information gained from these assessments can be used to obtain resources and support from management, as well as determine which components of the program should be adapted according to the needs of the healthcare organization.

# Coordinating the Program

Coordinating the CMHA program in your clinic can be a smooth process, once everyone understands how it can be integrated into the current clinic operations, and management support is obtained for the program. As mentioned in a companion document, *Introduction and Background*, the program is based on a set of guiding principles and key strategies. The remaining sections of this manual provide a detailed description of each of the following principles or strategies, which serve as a basis for preparing the clinic staff for implementing the program.

## Creating a Medical Home for Asthma

### *Guiding Principles and Key Strategies*

- Identify an individual as an advocate or “champion” of the program who can promote and coordinate implementation of the program.
- Conduct a careful needs assessment of the problems and desired outcomes for asthma care, including an assessment of barriers to change and positive assets for change within both the clinic and the community.
- Obtain the commitment of top leadership to the change process.
- Involve all clinic personnel in the learning process to develop a team approach to CMHA.
- Use interactive learning strategies to actively engage clinic staff in identifying and overcoming barriers to change and to help them take ownership of the program.
- Make supervisory staff part of the intervention team with initial training that prepares them to realize the goals of the program through supervisory action.
- Base asthma care on current best practices guidelines for asthma care such as the NAEPP<sup>1</sup> or Pediatric Best Practices guidelines.
- Recognize that adherence to treatment guidelines is not enough for a successful CMHA program. The key ingredients are teamwork and coordination of care among staff, and the development of partnerships among clinic staff and patients that enable patients to learn how to control asthma.

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<sup>1</sup> National Asthma Education and Prevention Program (NAEPP), National Heart, Lung, and Blood Institute (NHLBI). 2002. NAEPP Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma—Update on Selected Topics 2002. (<http://www.nhlbi.nih.gov/guidelines/asthma/index.htm>)

# Identifying a CMHA Program Champion within Your Clinic

The primary responsibility of the **CMHA program champion** is to become an authority on the program and to serve as the primary coordinator in the planning and integration of each phase of the program. This person will “champion” the principles of the program and serve as an advocate for its adoption. Leadership is an extremely important function of the program champion because successful adoption of the program depends on having someone who can effectively communicate the goals of the program and who is empowered to take action. Implementation of the CMHA program requires guidance and support from all levels within the health care organization, and as such, it is important that someone have a genuine interest in improving the approach to asthma management and care in the clinic.

The choice of a CMHA program champion depends primarily on the structure of the organization. It can be either a formal or informal leader within your clinic who will support and encourage the adoption of the program. Typically, this person will belong to senior management and be considered a valuable and respected leader within the clinic environment. Alternatively, the coordinator may be an informal leader, such as a health professional within the clinic who influences the staff and provides general leadership of the clinic.

Answering the following questions may provide some guidance in identifying a CMHA champion in your clinic:

- Which formal or informal leader is likely to support and encourage the clinic to take a new direction?
- Who has influence over other formal and informal leaders in the clinic?
- Who will work with you to implement the program in your clinic?
- Is this person able to make decisions regarding the budget and general strategic direction of the clinic?
- Is this person valued and respected within the clinic?
- Will the staff follow this person’s advice?

These are examples of suggested questions. However, based on your experience within your clinic, you may find it necessary to ask additional questions to facilitate the selection of an appropriate program champion.

A key to encouraging cooperation at all levels is to become an expert on the program. The first step to becoming an authority on the CMHA program is to carefully read the details of the program and to understand what is involved. Supervisors and managers need to be informed about how integration of the CMHA program can benefit the clinic and how it will affect the current mode of operations, particularly as it relates to asthma management. Thus, it is the initial responsibility of the program champion to become an authority on the CMHA program and have a comprehensive understanding of the resources necessary to successfully implement each component.

Additional responsibilities of the program champion may include:

- Creating an awareness of the need for improved asthma management and care.
- Promoting the philosophy of the CMHA program and how it can benefit the clinic and community.
- Generating support from management (e.g., funding, resources, approval) and staff (e.g., cooperation).
- Coordinating the training and implementation of the program.
- Working with management to prepare a plan to ensure sustainability of the program.

To aid the program champion in developing a comprehensive understanding of the program, the authors have provided a series of manuals that not only describes all the phases in detail, but also offer a step-by-step approach to help you obtain the information you need. These materials can be downloaded from the CMHA website. The program and training materials should be disseminated to appropriate staff, as needed.

The next step is to obtain meaningful information about how the program fits into the broader context of the clinic and community. The next few sections provide detailed information about the types of questions that should be addressed and types of data that can be obtained to present a comprehensive picture of the need for asthma education and intervention.

You can then use all the information to make informed decisions about how best to focus your efforts and resources, and evaluate the likelihood that the leaders in your clinic will adopt the CMHA program.

# Conducting Assessments within Your Clinic and Community

In addition to identifying key decision makers or advocates of the program within the health care setting, it is important to understand your clinic's current approach to asthma care and management. This will help you to brainstorm about various approaches that may work to support implementation of the CMHA program in your clinic.

## A. Clinic Self-Assessment

A clinic self-assessment can be conducted to summarize the clinic's current approach to pediatric asthma care and management. By conducting a self-assessment of your clinic's current operations, you will be able to place the CMHA program within the context of your clinic processes, and assess how it can be beneficial and integrated into the daily workings of the clinic.

Below is a list of sample questions, divided into four key areas that can provide a foundation for conducting the self-assessment of the clinic.

<b>Current Asthma Management</b>
<ul style="list-style-type: none"><li>• How are patients with asthma identified and diagnosed in your clinic?</li><li>• How many patients with asthma are treated in your clinic per day?</li><li>• What is the level of severity of asthma seen in your clinic? What proportion of patients with asthma suffers from mild intermittent, mild persistent, moderate persistent, or severe persistent asthma? (<b>See Appendix A for the Asthma Severity Classification Chart</b>)</li><li>• Is the level of severity for each patient documented in patients' medical charts at each visit, based on NHLBI guidelines?</li><li>• What percentage of patients with persistent asthma receives long-term controller therapy?</li><li>• Do patients receive asthma self-management education in your clinic?</li><li>• Do patients have written self-management plans?</li><li>• What percentage of patients make urgent visits for acute asthma care to your clinic or local emergency care facilities?</li><li>• What percentage of patients have been hospitalized for asthma in the past year?</li></ul>

### **Patient and Caregiver Satisfaction with Current Asthma Care**

- What do patients and their caregivers think about the way the clinic works? Is the reception by staff friendly? Do they have long waiting times? What works well and what needs to be improved?
- Do patients and caregivers feel that they are receiving appropriate care for their asthma?
- Are the patients and caregivers satisfied with the amount of time and attention they are receiving for the diagnosis and treatment of asthma?

In addition to conducting an assessment of asthma management in your clinic, you should also consider health professional resources necessary for providing the current level of asthma care within your clinic. You may want to think about the following:

### **Staff Resources and Professional Development**

- Do the physicians or nurses feel overwhelmed with the amount or difficulty of asthma care in the clinic?
- What are some of the problems experienced by staff regarding asthma care?
- What are some of their suggestions for improvement?
- Does management currently provide financial support for the professional development of clinic staff?

Another important consideration when introducing a program is the availability of resources compared to the costs involved with implementation. In addition to the training costs, there are costs for purchase of materials, labor time, and other resources that may be needed. These cost categories are only suggested and may be modified depending on the situation within your clinic. The capacity and resources of each clinic may determine the significant cost considerations. Below is a list of questions that can help you determine how resources are currently being used and whether additional costs should be considered.

### **Cost Considerations and Clinic Resources**

- How can training be done with minimal impact on the normal work routine of clinic staff?
- How many hours will be spent on training for each member of the staff? Are there overtime labor hours available?
- Can the clinic schedule the time needed to conduct training?
- What resources does the clinic have available to support training and implementation of the program? What other resources are needed?
- What are the potential long-term economic benefits associated with changing the current system?

## **Sources of Information – Clinic or Health care organization**

Many sources of information within the healthcare setting are available. They can help address the key areas described above and assist you with creating an accurate picture of the operations of your clinic regarding asthma management. Using multiple sources of information will allow you to develop a comprehensive estimation of the burden of asthma and how the CMHA program can benefit the clinic. Potential sources of information include:

- Medical records
- Patient and staff surveys
- Interviews with management personnel
- Budget reports.

## **B. Community Needs Assessment**

Conducting a community assessment in addition to the clinic assessment can provide a context for understanding the impact of asthma on your community. This will also allow you to evaluate how a program such as CMHA can benefit the community. It may also be useful to compare rates in the community with those in your clinic. The following questions are arranged by category and can serve as a guide to understanding the local asthma perspective.

### ***Prevalence***

*Prevalence* means the number of existing cases of a particular condition, disease or occurrence (e.g., number of persons with asthma) at a given time.

- Have asthma prevalence studies been conducted in your community? What rates were found?

### ***Mortality***

*Mortality* is the number of cases that result in death from a health condition.

- What are the annual mortality rates due to asthma in your community in the past 10 years per 100,000 inhabitants? For children aged 0-14 years?
- Have any children died from asthma in your community or clinic?

## ***Hospitalization***

*Hospitalization* refers to admission to the hospital for inpatient, outpatient, or emergency room services to obtain treatment for particular health conditions.

- How many individuals were hospitalized due to asthma in your community in the past 5 years? How many children aged 0-14 years?

## ***Primary Care***

*Primary care* means obtaining treatment from a primary care physician during a scheduled office visit.

- How many outpatient visits associated with asthma occurred in primary care departments in your community in the past 5 years? How many visits for children?

## **Sources of Information - Community**

To address questions regarding asthma within the community, there are usually a variety of sources available. By starting with the sources listed below, you can find some reliable information directly related to the above categories and questions.

- Local health departments
- Local hospital records
- State asthma program coordinator.

For information on state asthma programs and state contacts, go to <http://www.cdc.gov/asthma> (click on state asthma contacts and programs). Otherwise go to <http://www.ced.gov/nceh/airpollution/asthma/contacts/default.htm>.

It is very important to gather information from sources that are consistent and credible. The information gathered can be used to prepare a presentation for management and other potential stakeholders to gain their support for the program. The next section provides a more detailed discussion about coordinating your data and preparing your presentation.

# Gain Management Support for the CMHA Program

Once you have identified a CMHA program champion within the clinic to coordinate and advocate for the adoption of the CMHA program, and have considered the internal dynamics of your clinic and community needs, you now have the information you need to gain management support for the program. Use this information to demonstrate how the CMHA program adds value to your clinic or health care organization.

To aid in the presentation of the CMHA program to key decision makers, the program includes a series of PowerPoint slides that describes the basic details of the program (i.e., the significance and goals of the CMHA program, results of the program from the test clinics, the team approach, and the training program). In addition, there are several blank slides where you can insert the information you have obtained specific to your organization and community.

This presentation kit, titled “Creating a Medical Home for Asthma: An Asthma Management Program for Healthcare Providers,” is included in **Appendix B** or can be downloaded from the website.

When presenting the CMHA program to key decision makers, analyze and describe the benefits the clinic will likely see if the program is implemented. For example, the following are a list of benefits observed when the New York City clinics implemented the CMHA program:

- Increased number of new patients with asthma identified by clinic staff.
- Increased treatment with anti-inflammatory medications for patients with persistent asthma.
- Improvement in patients’ symptoms related to asthma seen by physicians.
- Patients empowered toward self-management.
- Improved patient education efforts in the clinic.
- Trends toward reduced emergency room visits and hospitalization.

You may consider presenting these topics with the assistance of the clinic staff who will be involved in the program. This presentation approach may foster buy-in and political support from the entire leadership of the clinic.

To ensure that decisions will be made following the presentation, discuss next steps during the end of the presentation; schedule a meeting to discuss the clinic self-assessment you conducted to address specifically how CMHA can benefit the staff and patients; and develop an action plan to assist with coordinating the CMHA program in conjunction with the clinic leadership. A sample clinic action plan is outlined in **Appendix C**.

# Coordinating the CMHA Program Training

Once clinic management has agreed to support the implementation of the CMHA program, the next step is to coordinate the training for the clinic staff directly involved with the implementation of the program. Below are *five steps* that should be followed to coordinate and prepare clinic staff for the training. They are: (1) Obtain CMHA training materials and resources; (2) assemble the training team; (3) organize the health care clinic team; (4) develop the training schedule; and (5) coordinate logistical arrangements.

## Step 1: Obtain CMHA Training Materials and Resources

In addition to this guide for getting started, there are additional program materials that should be used for training in the CMHA program. These manuals are provided as a guide for both the trainers and the participants, to help each group adequately prepare for and participate in the training.

The *Instructor's Guide* is a resource manual that provides tools, lists of resources, and background information needed to conduct the training. Much of the information provided is specific to the program itself, although it also includes key concepts that need to be understood before training begins. The *Instructor's Guide* also contains a section on interactive instructional strategies—such as role-playing skits—that can be used to help all participants make the most of the learning experience.

The *Program Handbook* is a practical manual that should be used by the participants during the training. It includes session agendas, handouts, instructions, and key concepts that are used throughout the process. Participants are encouraged to review the manual before the training and before each session to prepare for the activities.

Additional resources that may be used to supplement the training materials can be downloaded from the website. Resources such as the *Guide to Implementation* and the supplemental materials can provide some additional context for how the program will be implemented in the clinic setting. Videos are also a necessary tool for the training and are available in a CD or in downloadable streaming video from the CMHA website.

## Step 2: Assemble Training Team

The next step for the program champion when coordinating the CMHA training is to assemble a training team. The training team consists of a group of specialists who will be responsible for conducting the training for the program. Creating a team to conduct the training is central in the communication, cooperation, and collaboration throughout the entire process.

The training team consists of three key individuals: an asthma specialist, one or more group facilitator/health educators, and a medical or administrative leader from within the organization itself. This team may be supplemented by other health professionals with a special interest or expertise in improving care for asthma. These three individuals are vital to the success of the training and each one plays a different role throughout the process.

The key individuals represent the minimum number of individuals needed to conduct the training. However, the authors recommend that additional individuals are included who have expertise in other areas as well. For example, a person with expertise in behavioral science can provide some additional insight for the theories presented during the training.

Below is a description of the specific skills or competencies needed to adequately staff each position.

**Asthma Specialist** – This individual should be a pulmonologist or allergist who currently treats asthma patients. He or she will be responsible for presenting and reviewing approaches to asthma treatment, and teaching clinic clinicians practical ways to apply the guidelines in their primary care setting.

**Group Facilitator/Health Educator(s)** – These individuals should have experience using group processes to help organizations make changes to improve the quality of their operations. Alternatives might be a health promotions specialist or an organizational business trainer. The facilitators should also be very familiar with the operations and culture of the clinic staff. This can be accomplished by providing them with a copy of the results of your clinic needs assessment.

**Medical/Administrative Leader** – This person has a formal or informal leadership role within the organization in which the program will be implemented. He or she can be an administrator, medical director, or nursing director. This individual's role is to guide the activities that involve administrative changes, and to emphasize the commitment to change and quality improvement.

Once the training team is assembled, the CMHA program champion should provide each member with a copy of the training materials, as well as a brief orientation on the philosophy and goals of the CMHA program. Since they are likely to be unfamiliar with the training process itself, they may find it helpful to review some of the key areas of the program and the descriptions of their roles and responsibilities.

The PowerPoint presentation described earlier and located in Appendix B, may be a useful tool during the orientation of the training team. Copies of the presentation should also be provided to the team for use during the initial training session. It will help provide context for the clinic as well as prepare them for the areas that they should emphasize during the training.

### **Step 3: Organize the Health Clinic Team**

Implementing the CMHA program requires a committed team working together and building relationships with patients and families. Thus, the health clinic team is a critical part of the overall program, and is the key to its success. This team consists of clinic staff that will be trained in preparation for implementation of the program. Initially, the health clinic team is led by the **program champion**, with active participation from the clinic managers. After the training, managers are responsible for overseeing the implementation of the program and supervising the performance of the health clinic team.

#### ***Clinic Managers/Supervisors***

The clinic managers can provide the resources and authority to implement the CMHA program. They need to be informed and active members of the CMHA team because their activities and decisions can have a direct impact on the quality and delivery of the program. The supervisors are responsible for overseeing the clinic staff as they initiate the program. A special one-day orientation should be conducted that will prepare them for the implementation of CMHA in their clinic and provide strategies for maintaining the program.

#### ***Physicians***

Physicians play a major role in this program because they provide care and support for the patients with asthma. Often, they can make decisions affecting the allocation of resources and time for the staff in the clinic. Physicians have knowledge and information regarding asthma and care for asthma that can impact the implementation of the program. Throughout the training, physicians will learn strategies that can enhance communication with their patients, as well as receiving the latest information on asthma management and treatment strategies.

#### ***Nurses***

Nurses play a primary role in the care of patients with asthma in the clinic. They monitor patients, and recognize various trends in patients that may be early warning signs of more chronic conditions. Often, nurses offer patient education on various conditions, so their efforts will be integral to the program.

#### ***Administrative Staff***

Administrative staff members include all support staff (such as receptionists, clerks, orderlies, laboratory technicians, and medical records staff). They are a very important part of the team because they generally are the first to greet families as they enter the clinic and the last to address them as they leave. Information about the families should be shared with the administrative staff so that they understand their role in maintaining good relationships with the families.

## ***Other Clinic Personnel***

Outreach counselors are a good resource for clinics implementing the CMHA program; however, they are not mandatory. They can provide aid and counseling to families in crisis as well as follow up with families when they do not keep their scheduled visits. Outreach counselors can play a pivotal role in extending the continuity of care philosophy by serving as a liaison with the clinic, the family, and the community. Developing relationships with various community organizations allows the counselors to provide families with information on community resources that are available to support their needs.

### **Step 4: Develop Training Schedule**

Although there is a set average length for each training session, there is no set length of time allotted between sessions. Therefore, this step requires extensive communication between the training team and the health clinic team, in order to coordinate scheduling for each session. Cooperation from management is also helpful, and in most cases essential, in order to develop the training schedule. The training organizers should be sure to communicate with the managers and/or supervisors to determine allowances for professional development, make alternative arrangements for clinic coverage (if needed), and obtain approval for release time or schedule flexibility for staff participating in the training.

### **Step 5: Coordinate Logistical Arrangements**

Another important consideration in coordinating training is the logistical arrangements that need to be made in advance. In addition to the training costs, there are costs for purchase of materials, labor time, and other resources that may be needed. Below is a list of the potential cost considerations:

- Materials and Facilities Costs
  - Reproduction of materials and handouts for participants
  - Reservation of training room, and audiovisual equipment, if necessary
- Resource Costs
  - Labor hours spent on training for each clinic staff member
  - Any overtime labor hours due to training, if necessary
  - Catering (i.e., food and beverage), if needed
  - Monetary compensation for training team.

Finally, once the training has been coordinated and logistical arrangements made, it is time to actually implement the training efforts. Training materials consist of two documents, the *Instructor's Guide* and *Program Handbook*, and videos. Each of these resources can be downloaded from the website. If your computer does not have the capability to download the video from the website via streaming media, you can request a copy on a CD from the New York City Department of Health and Mental Hygiene. The contact information is available on the website and listed on the title page of this manual. The first *Instructor's Guide* is for the training team and provides information on instructional strategies, activities, and related materials for

each session. The *Program Handbook* is for the training participants, and describes key concepts, activities, and handouts that will be used throughout the training.

Communication and advanced preparation are essential factors in coordinating a successful training. All members of the training team should be aware of their responsibilities throughout the training, and have the information and materials appropriate for the session and/or activities they will be leading. In addition, clinic staff who will be participating in the training should be notified several weeks in advance about the training schedule, arrangements that need to be made before and during the training, and any provisions that have been made for their absence. Allowing staff plenty of time to plan for the upcoming training will minimize the burden and encourage full participation.

## Technical Assistance

Program consultants are available to provide support and technical assistance in addressing advanced questions regarding program training and implementation. The program champion, training coordinator, implementation planner, clinic staff, and managers are likely to raise various questions and concerns. Thoroughly reviewing the materials and developing a comprehensive understanding of the program can help provide answers to most questions. However, in some instances questions may arise that require a technical response or detailed explanation that extends beyond the normal scope of knowledge and expertise. These questions can be directed to the appropriate consultant for technical assistance.

A team at Columbia University, led by David Evans, Ph.D., developed the original version of the CMHA program. Dr. Evans will serve as the primary program consultant and will provide technical assistance for questions related to the program. The website lists contact information for additional technical assistance consultants under the Contacts button.

# Appendix A: Asthma Severity Classification Chart

The following two pages can also be downloaded from:

<http://www.nhlbi.nih.gov/guidelines/asthma/index.htm>.

## Stepwise Approach for Managing Infants and Young Children (5 Years of Age and Younger) With Acute or Chronic Asthma

Classify Severity: Clinical Features Before Treatment or Adequate Control		Medications Required To Maintain Long-Term Control
Symptoms/Day Symptoms/Night		Daily Medications
<b>Step 4</b> Severe Persistent	Continual Frequent	<ul style="list-style-type: none"> <li>Preferred treatment:                             <ul style="list-style-type: none"> <li>High-dose inhaled corticosteroids</li> <li>AND</li> <li>Long-acting inhaled beta<sub>2</sub>-agonists</li> </ul> </li> <li>AND, if needed,                             <ul style="list-style-type: none"> <li>Corticosteroid tablets or syrup long term (2 mg/kg/day, generally do not exceed 60 mg per day). (Make repeat attempts to reduce systemic corticosteroids and maintain control with high-dose inhaled corticosteroids.)</li> </ul> </li> </ul>
<b>Step 3</b> Moderate Persistent	Daily > 1 night/week	<ul style="list-style-type: none"> <li>Preferred treatments:                             <ul style="list-style-type: none"> <li>Low-dose inhaled corticosteroids and long-acting inhaled beta<sub>2</sub>-agonists</li> <li>OR</li> <li>Medium-dose inhaled corticosteroids.</li> </ul> </li> <li>Alternative treatment:                             <ul style="list-style-type: none"> <li>Low-dose inhaled corticosteroids and either leukotriene receptor antagonist or theophylline.</li> </ul> </li> </ul> <p>If needed (particularly in patients with recurring severe exacerbations):</p> <ul style="list-style-type: none"> <li>Preferred treatment:                             <ul style="list-style-type: none"> <li>Medium-dose inhaled corticosteroids and long-acting beta<sub>2</sub>-agonists.</li> </ul> </li> <li>Alternative treatment:                             <ul style="list-style-type: none"> <li>Medium-dose inhaled corticosteroids and either leukotriene receptor antagonist or theophylline.</li> </ul> </li> </ul>
<b>Step 2</b> Mild Persistent	> 2/week but < 1x/day > 2 nights/month	<ul style="list-style-type: none"> <li>Preferred treatment:                             <ul style="list-style-type: none"> <li>Low-dose inhaled corticosteroid (with nebulizer or MDI with holding chamber with or without face mask or DPI).</li> </ul> </li> <li>Alternative treatment (listed alphabetically):                             <ul style="list-style-type: none"> <li>Cromolyn (nebulizer is preferred or MDI with holding chamber)</li> <li>OR leukotriene receptor antagonist.</li> </ul> </li> </ul>
<b>Step 1</b> Mild Intermittent	≤ 2 days/week ≤ 2 nights/month	<ul style="list-style-type: none"> <li>No daily medication needed.</li> </ul>

<b>Quick Relief</b> All Patients	<ul style="list-style-type: none"> <li>Bronchodilator as needed for symptoms. Intensity of treatment will depend upon severity of exacerbation.                             <ul style="list-style-type: none"> <li>Preferred treatment: Short-acting inhaled beta<sub>2</sub>-agonists by nebulizer or face mask and spacer/holding chamber</li> <li>Alternative treatment: Oral beta<sub>2</sub>-agonist</li> </ul> </li> <li>With viral respiratory infection                             <ul style="list-style-type: none"> <li>Bronchodilator q 4–6 hours up to 24 hours (longer with physician consult); in general, repeat no more than once every 6 weeks</li> <li>Consider systemic corticosteroid if exacerbation is severe or patient has history of previous severe exacerbations</li> </ul> </li> <li>Use of short-acting beta<sub>2</sub>-agonists &gt;2 times a week in intermittent asthma (daily, or increasing use in persistent asthma) may indicate the need to initiate (increase) long-term control therapy.</li> </ul>
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<b>Step down</b> Review treatment every 1 to 6 months; a gradual stepwise reduction in treatment may be possible.
<b>Step up</b> If control is not maintained, consider step up. First, review patient medication technique, adherence, and environmental control.

<b>Goals of Therapy: Asthma Control</b>
<ul style="list-style-type: none"> <li>Minimal or no chronic symptoms day or night</li> <li>Minimal or no exacerbations</li> <li>No limitations on activities; no school/parent's work missed</li> <li>Minimal use of short-acting inhaled beta<sub>2</sub>-agonist (&lt; 1x per day, &lt; 1 canister/month)</li> <li>Minimal or no adverse effects from medications</li> </ul>

- Note**
- The stepwise approach is intended to assist, not replace, the clinical decisionmaking required to meet individual patient needs.
  - Classify severity: assign patient to most severe step in which any feature occurs.
  - There are very few studies on asthma therapy for infants.
  - Gain control as quickly as possible (a course of short systemic corticosteroids may be required); then step down to the least medication necessary to maintain control.
  - Provide parent education on asthma management and controlling environmental factors that make asthma worse (e.g., allergies and irritants).
  - Consultation with an asthma specialist is recommended for patients with moderate or severe persistent asthma. Consider consultation for patients with mild persistent asthma.

## Stepwise Approach for Managing Asthma in Adults and Children Older Than 5 Years of Age: Treatment

Classify Severity: Clinical Features Before Treatment or Adequate Control		Medications Required To Maintain Long-Term Control	
	Symptoms/Day Symptoms/Night	PEF or FEV <sub>1</sub> PEF Variability	Daily Medications
<b>Step 4</b> Severe Persistent	Continual Frequent	≤ 60% > 30%	<ul style="list-style-type: none"> <li>■ Preferred treatment:                             <ul style="list-style-type: none"> <li>– High-dose inhaled corticosteroids AND</li> <li>– Long-acting inhaled beta<sub>2</sub>-agonists AND, if needed,</li> <li>– Corticosteroid tablets or syrup long term (2 mg/kg/day, generally do not exceed 60 mg per day). (Make repeat attempts to reduce systemic corticosteroids and maintain control with high-dose inhaled corticosteroids.)</li> </ul> </li> </ul>
<b>Step 3</b> Moderate Persistent	Daily > 1 night/week	> 60% – < 80% > 30%	<ul style="list-style-type: none"> <li>■ Preferred treatment:                             <ul style="list-style-type: none"> <li>– Low-to-medium dose inhaled corticosteroids and long-acting inhaled beta<sub>2</sub>-agonists.</li> </ul> </li> <li>■ Alternative treatment (listed alphabetically):                             <ul style="list-style-type: none"> <li>– Increase inhaled corticosteroids within medium-dose range OR</li> <li>– Low-to-medium dose inhaled corticosteroids and either leukotriene modifier or theophylline.</li> </ul> </li> </ul> <p>If needed (particularly in patients with recurring severe exacerbations):</p> <ul style="list-style-type: none"> <li>■ Preferred treatment:                             <ul style="list-style-type: none"> <li>– Increase inhaled corticosteroids within medium-dose range and add long-acting inhaled beta<sub>2</sub>-agonists.</li> </ul> </li> <li>■ Alternative treatment:                             <ul style="list-style-type: none"> <li>– Increase inhaled corticosteroids within medium-dose range and add either leukotriene modifier or theophylline.</li> </ul> </li> </ul>
<b>Step 2</b> Mild Persistent	> 2/week but < 1x/day > 2 nights/month	≥ 80% 20–30%	<ul style="list-style-type: none"> <li>■ Preferred treatment:                             <ul style="list-style-type: none"> <li>– Low-dose inhaled corticosteroids.</li> </ul> </li> <li>■ Alternative treatment (listed alphabetically): cromolyn, leukotriene modifier, nedocromil, OR sustained release theophylline to serum concentration of 5–15 mcg/mL.</li> </ul>
<b>Step 1</b> Mild Intermittent	≤ 2 days/week ≤ 2 nights/month	≥ 80% < 20%	<ul style="list-style-type: none"> <li>■ No daily medication needed.</li> <li>■ Severe exacerbations may occur, separated by long periods of normal lung function and no symptoms. A course of systemic corticosteroids is recommended.</li> </ul>
<b>Quick Relief</b> All Patients	<ul style="list-style-type: none"> <li>■ Short-acting bronchodilator: 2–4 puffs short-acting inhaled beta<sub>2</sub>-agonists as needed for symptoms.</li> <li>■ Intensity of treatment will depend on severity of exacerbation; up to 3 treatments at 20-minute intervals or a single nebulizer treatment as needed. Course of systemic corticosteroids may be needed.</li> <li>■ Use of short-acting beta<sub>2</sub>-agonists &gt;2 times a week in intermittent asthma (daily, or increasing use in persistent asthma) may indicate the need to initiate (increase) long-term control therapy.</li> </ul>		

**Step down**  
Review treatment every 1 to 6 months; a gradual stepwise reduction in treatment may be possible.

**Step up**  
If control is not maintained, consider step up. First, review patient medication technique, adherence, and environmental control.

- Note**
- The stepwise approach is meant to assist, not replace, the clinical decisionmaking required to meet individual patient needs.
  - Classify severity: assign patient to most severe step in which any feature occurs (PEF is % of personal best; FEV<sub>1</sub> is % predicted).
  - Gain control as quickly as possible (consider a short course of systemic corticosteroids); then step down to the least medication necessary to maintain control.
  - Provide education on self-management and controlling environmental factors that make asthma worse (e.g., allergens and irritants).
  - Refer to an asthma specialist if there are difficulties controlling asthma or if step 4 care is required. Referral may be considered if step 3 care is required.

**Goals of Therapy: Asthma Control**

- Minimal or no chronic symptoms day or night
- Minimal or no exacerbations
- No limitations on activities; no school/work missed
- Maintain (near) normal pulmonary function
- Minimal use of short-acting inhaled beta<sub>2</sub>-agonist (< 1x per day, < 1 canister/month)
- Minimal or no adverse effects from medications

## Appendix B: CMHA – PowerPoint Presentation

The actual PowerPoint presentation slides can be downloaded from the CMHA program website under Getting Started – PowerPoint Presentation.



## Appendix C: Sample Clinic Action Plan

The table below is a sample “action plan worksheet” for launching the CMHA program in your clinic.

<b>What? Steps/Activities/Tasks</b>	<b>How?</b>	<b>When?</b>	<b>Who? Activity/Task Coordinator &amp; Team Responsible</b>
<b>Understand the CMHA Program:</b> <ul style="list-style-type: none"> <li>▪ Background and objectives</li> <li>▪ Local burden of asthma</li> <li>▪ The guiding principles</li> </ul>			
<b>Identify a CMHA Program Champion:</b> <ul style="list-style-type: none"> <li>▪ An informal or formal leader to support the program</li> </ul>			
<b>Understand the Internal Dynamics of Your Clinic:</b> <ul style="list-style-type: none"> <li>▪ Conduct a needs assessment of asthma in your clinic and community</li> <li>▪ Understand the team-based nature of the program</li> <li>▪ Understand the roles of various staff and their importance to the program</li> </ul>			
<b>Gain Management Support for the CMHA Program:</b> <ul style="list-style-type: none"> <li>▪ Present the CMHA program</li> <li>▪ Schedule follow-up meetings for implementation of the program</li> </ul>			