



# Creating a Medical Home for Asthma



An Asthma Management  
Program for  
Healthcare Providers

**A Guide To Implementation**

# Creating a Medical Home for Asthma

## An Asthma Management Program For Health Care Providers

Web site address: <http://www.nyc.gov/html/doh/html/cmha/implementation.html>

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## Overview

This implementation guide is designed for health professionals with a wide range of experiences in delivering clinical healthcare services. The goal of this manual is to provide clear and easily applied guidance to facilitate implementation of the *Creating a Medical Home for Asthma (CMHA) program* in your health care organization. It is designed to recommend practical steps that can be carried out by any member of the clinic staff. The CMHA program is also flexible enough that it can be easily adapted to fit the needs of any clinic or health care organization.

### Adaptation of the CMHA Program

The strategies outlined in the CMHA program can be used as presented in this manual or tailored to the specific needs of each individual clinic. Because the organizational and management structures of clinics may vary, slight modifications may be necessary to serve the needs of clinic staff and clinic operations.

The basic principles of CMHA should be used as a guide when considering how to modify and adapt the program. The implementation process is designed to be flexible, and it is important that the philosophy of the team-based “system of care” approach (described below) is clearly communicated throughout the program. Thus, you should not reject any portion of the program unless your clinic self-assessment (“See Getting Started with CMHA”) demonstrates that your system is meeting appropriate asthma care goals, which are integrated with the goals of the CMHA program.

The remaining sections of the manual are organized around three key components of the CMHA program: implementing the team-based approach; developing a CMHA management plan; and using CMHA resources.

#### ***Goals of Creating a Medical Home For Asthma***

- To provide continuous care in primary and specialized clinics to greater numbers of children with asthma.
- To improve the health status of the 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.

# Implementing a Team-Based Approach to Asthma Management

## Understanding the “System of Care” Philosophy

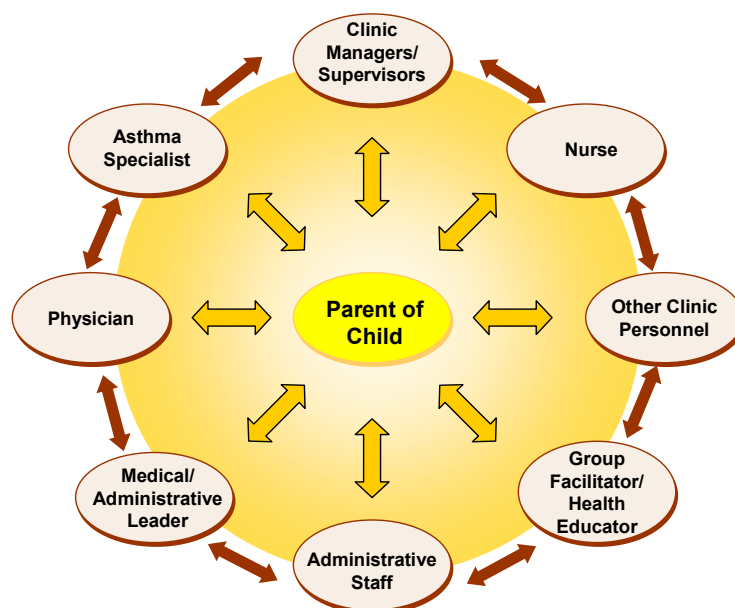
The CMHA implementation plan as presented in this manual is a set of flexible and specific activities for creating a team-based approach to asthma management in the clinic, based on the **system of care** philosophy.

The system of care philosophy represents a set of central beliefs about how services should be delivered to children and their families. At its core, the system of care concept is:

- Child-centered and family focused, with the needs of the child and family influencing the types and mix of services provided.
- Community-based, with the bulk of services, management and decision-making responsibility resting at the community level.
- Culturally competent, with agencies, programs, and services that are responsive to the cultural, racial, and ethnic differences of the populations they serve.

The system of care philosophy is a core concept of the CMHA program. A fundamental principal in this philosophy is the concept of the **team based approach**, which describes how staff should interact as a team to provide coordinated and comprehensive services that focus on the needs of families of children with asthma.

**Figure 1. The System of Care Team Based Approach to Asthma Management**



## **Understanding the Team-Based Approach: The Health Clinic Team**

### **The Roles and Responsibilities of Clinic Personnel**

Implementing the CMHA program requires a committed team working together to build relationships with families who have children with asthma. Thus, creating and maintaining a health care clinic team is a key to its success. Each member of the health clinic staff plays an distinctive role that contributes to the overall goals of the care and treatment of asthma. Below is a description of how each member of the health clinic staff uniquely contributes to the team.

#### *Clinic Managers/Supervisors*

The clinic managers provide the resources and authority to facilitate and supervise implementation of the CMHA program. Their activities and decisions have a direct impact on the quality and delivery of the program. They are also active members of the CMHA health care team because they are responsible for developing a management plan to integrate and maintain the program in their clinic.

#### *Physicians and Other Clinicians*

Physicians and other clinicians, such as pulmonologists and allergists, play a major role in this program because they provide direct care and treatment for the patients with asthma. The CMHA program, emphasizes increased communication between the physician and family. Physicians work with families to help them develop the skills to manage their child's chronic asthma at home, and encourage adherence to the treatment regimen. Often, physicians must rely on the information gathered from the other members of the health care team to ensure they are effectively identifying the needs of their patients and providing appropriate treatment and care.

#### *Nurses*

Nurses play a primary role in identifying and educating patients with asthma in the clinic. They monitor patients, and recognize various trends that may be early warning signs of increasing severity in the patients' condition. By building rapport and developing trusting relationships, nurses encourage families to schedule regular visits and maintain their appointments. Nurses are in a position to address most problems or concerns that may arise as well as to provide asthma education to families.

#### *Administrative Staff*

Administrative staff includes all support personnel (e.g., receptionists, orderlies, 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 acknowledge them as they leave. Families generally develop their impression of the clinic based on their interaction with the administrative and support staff. Information should be shared with the administrative staff so that they understand their role in maintaining good relationships with 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 systems 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.

### **The Benefits of Teamwork**

It is important for all members of the clinic team to understand the key concepts of the CMHA program, and to be alert to how they can help families solve asthma management problems. For example, in the New York City Child Health Clinics (CHCs), the receptionists and public health assistants often found it necessary to tell families that it was important to keep appointments for follow-up visits even if the child was well, so the Physician could see how the treatment was working to keep asthma under control. They also routinely let families know that the clinic had a special asthma program, and that was why they were asking the family to fill out a screening form. Clinics whose receptionists and public health assistants participated actively tended to have larger gains in numbers of asthma patients than other clinics.

### Helping Families Understand How They and the Clinic Staff Can Work as a Team

Another key to successful implementation of this program is to make sure the families understand the responsibilities of each health care professional in which they come into contact.

For example, families should understand that:

- 1. All staff members understand and can talk about asthma.**
- 2. Parents and caregivers work with staff to establish and keep appointments.**
- 3. Parents and caregivers are encouraged to take an active role in learning to control their child's asthma.**
- 4. Family participation and observations are necessary:**
  - To evaluate whether the treatment plan is workable at home
  - To evaluate how the treatment plan is working
  - To make medication adjustments.

# Implementing CMHA: The Management Planning Process

## Creating a Management Plan for CMHA

As previously described, the manager or clinic supervisor provides the leadership to manage the implementation and integration of CMHA-related activities. The delegation of activities helps ensure that clinic staff understand their role in preventing and solving any problems that arise with changing the way the clinic currently operates. Because this program represents a team-based approach, the program is more likely to be effectively implemented—and therefore successful when the entire staff support the process—than if one or two people were trying to carry it out alone.

The most important responsibilities for the manager or supervisor to incorporate into the management planning process are to:

- Oversee the work and ask questions that will help you ensure the program is being properly implemented.
- Identify goals and ask clinic staff to demonstrate that they have met those goals.

There are also the dimensions of the management planning process which are described in more detail below:

1. Establish policies to support the integration of CMHA.
2. Improve communication and problem solving skills.
3. Monitor implementation progress and performance goals.
4. Support ongoing professional development.

### Establish Policies to Support the Integration of CMHA

*A critical step in successfully implementing the Creating a Medical Home for Asthma program is helping staff to understand the new approach to asthma management and how it should be integrated into the current clinic operations.*

The first step in the management plan is to establish **policies** that support the implementation of CMHA.

**Policies** are guidelines that represent goals for performance and establish criteria for determining a course of action. By establishing criteria and goals, staff are encouraged to achieve and maintain high standards of performance. The advantage of developing policies that are staff friendly and supportive is that it limits the confusion that often accompanies the implementation of new procedures.

#### *Policy Example*

The New York City Child Health Clinics made a policy change to improve care and support the program by converting from a first-come, first-served session appointment system to a timed appointment for each individual family.

In addition, the clinic administration reduced staff fears that the CMHA program would encourage families to treat the clinics as a new emergency room by reiterating an existing policy that the clinic was not required to serve unregistered families who walked in without an appointment.

## Improve Communication and Problem-Solving Skills

An underlying goal of the management plan is to develop strategies for communication that are designed to (1) prevent and resolve any CMHA-related problems by assessing communication skills and (2) determine whether changes are needed to improve your ability to:

- Respond to complaints and incidents quickly with staff and patients.
- Solve problems effectively among staff and patients.
- Communicate in a way that reduces concerns of clinic staff and/or patients during a potential crisis.

The CMHA program emphasizes the involvement and interaction of all clinic personnel as a team in preventing and treating asthma. By encouraging increased dialogue through meetings and other activities, clinic staff learn to share ideas about particular problems and identify issues that are relevant to the CMHA program. Some of these problems and issues can be addressed by the following questions (used in training during Session 1—the Interview Technique):

- What concerns you in expanding services to create a medical home for asthma?
- What would help you feel more comfortable in implementing this program?
- What do you see as potential aids to implementing the program?
- As a member of the health care team, how do you plan to encourage clients to communicate their questions and concerns about asthma to you?
- What special needs of your client population may affect how they receive asthma messages?



## Monitor Implementation Progress and Performance Goals

The purpose of monitoring the implementation processes and performance goals is to obtain timely feedback and provide advice on the extent to which the program is meeting the needs of the patients and clinic. It also helps provide insight into revisions or adjustments that may be necessary to improve performance, and ensures that the vision of the clinic aligns with the goals of the program.

The supervisor should meet with each physician to review the asthma patients who have been identified. Then use of an electronic database, if available to record the diagnoses for each patient and problems treated at each visit. In addition the database should include information on medications dispensed or described at the visit.

This database could produce printouts that were reviewed by the supervisor and the physician, and enabled the supervisors to discuss both the identification of new cases and the use of appropriate therapy with the physicians and the entire clinic team.

In the New York City Child Health Clinics, for example, the supervising physician and nurse for each region set up monthly meetings with each clinic team to discuss progress of the program. They obtained feedback about progress and problems from all clinic personnel. Many clinics found that trying to screen every patient who came in for asthma proved to be too large a task, so a strategy was developed to screen children during the 6 months, and at the 1-, 3-, and 5-year visits.

## Support Ongoing Professional Development

Knowledge of the updated guidelines from the National Heart, Lung, and Blood Institute (NHLBI) is important for the treatment of children with asthma. Clinic staff should be familiar with the up-to-date recommendations on:

- **Medications**—long-term management of asthma in children with mild or moderate persistent asthma, combination therapy in moderate persistent asthma, and use of antibiotics to treat acute exacerbations of asthma.
- **Monitoring**—written action plans compared to medical management alone, and peak flow-based compared to symptom-based written action plans.
- **Prevention**—effects of early treatment on the progression of asthma.

Additionally, clinic staff should be comfortable with:

- Talking about a treatment plan for a child with his or her caregiver.
- Demonstrating the proper use of the peak flow meter, nebulizer, and MDI with both spacers and other asthma devices

# Materials Needed to Prepare for Asthma Patient Visits

- Asthma Screening form (Appendix A)
- Visit forms (i.e., first visit and second visit) (Appendix B)
- Treatment plan/asthma action plans (Appendix C)
- Asthma equipment and devices (e.g. peak flow meter)

## Using the Screening, Visit, and Treatment Plan Forms in Your Clinic

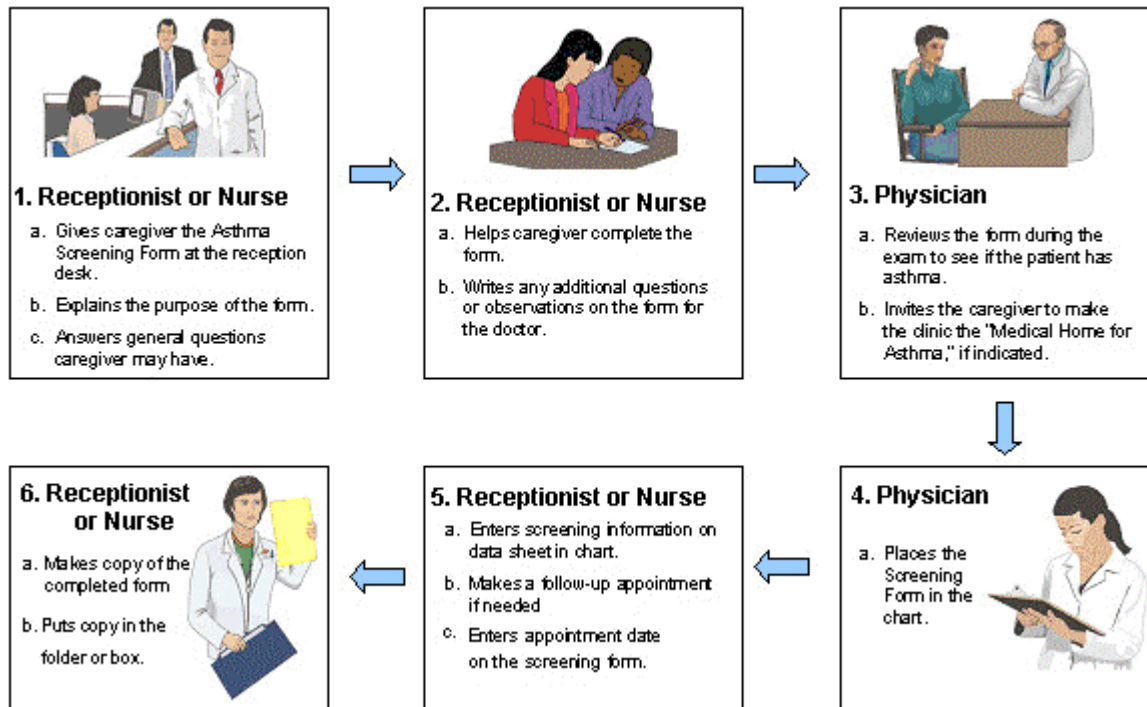
### Screening Procedures for Clinic Personnel

During the initial implementation of CMHA an asthma screening form was developed as a way to help identify children with asthma in busy health care settings. The screening form was used as a resource to obtain information that families may not offer about their child's asthma, to remind other health care staff who may not know to request such information. By using the Asthma Screening questionnaire pediatricians in New York City's Child Health Clinics were able to identify more than 5,000 children with asthma as of 1996, as opposed to less than 1,000 in 1991 (Lobach, 1996). Therefore, the asthma screening forms has become an essential tool for clinics that plan to increase their care of children with asthma by implementing the CMHA program.

Since the CMHA program focuses on a team-based management approach to treating children with asthma, it is natural that the clinic's screening procedure also follows the path from one clinic staff member to another, in a seamless fashion. Figures 2a and 2b describe the approach to using the screening form that was adopted by the New York City Child Health Clinics.

All members of the health clinic team should be aware how the screening form is used and the path the screening from follows once it is completed by the parent/caregiver. The information on the screening form will provide the physician with the necessary input to recommend appropriate treatments or follow-up exams. Other members of the health clinic team can use the information to schedule asthma visits for families and children as needed.

**Figure 2a: Illustrated Path of Asthma Screening Form**



**Figure 2b: Asthma Screening Form—Sample Instructions**

**Path of the Asthma Screening Form**

- Receptionist or NURSE
  - Gives caregiver the Asthma Screening Form at the reception desk
  - Explains the purpose of the form
  - Answers general questions caregiver may have
- Receptionist or NURSE
  - Helps caregiver complete the Asthma Screening Form
  - Writes any additional questions or observations on the form for the Physician
- Physician
  - Reviews the form during the exam to see if the patient has asthma
  - Invites the caregiver to make the clinic the "medical home for asthma," if indicated
- Physician
  - Places the Asthma Screening Form in the chart
- Receptionist or NURSE
  - Enters screening information on data sheet in the chart
  - Makes a follow-up appointment, if needed
  - Enters appointment date on Asthma Screening Form
- Receptionist or NURSE
  - Makes copy of the completed form
  - Places copy in a folder or box for the supervisor's review

## Procedures for Establishing and Conducting Patient Visits

After the family has completed the form, the physician (or healthcare provider) will review and discuss the details with the family during their regular visit. If the physician concludes that asthma is a likely diagnosis, s/he may recommend that the family schedule another appointment to specifically discuss their child's asthma. The figure below describes the appropriate forms associated with each follow-up visit, followed by the procedures to follow once children have been identified as having asthma during their regular visit.

### Sample Protocol for Conducting Patient Visits: Visit Forms and Treatment Plans

1. Children who have been identified during the regular visit as having asthma are scheduled for a First Visit for Asthma at a later date. Only the Asthma Screening Form needs to be completed during the regular visit.
2. When the child returns for the scheduled asthma visit, the clinician conducts the visit using the two-part First Visit for Asthma form and the two-part Treatment Plan, rather than the progress notes.
  - The original of the Treatment Plan is given to the family
  - The original of the First Visit for Asthma form and a copy of the Treatment Plan remain in the chart as a permanent part of the child's record. Both forms are needed in order to complete the record of the visit.
  - A second copy of the First Visit for Asthma form and the Treatment Plan are stapled together and put in the folder, along with a copy of the Screening Forms. Always be sure to include the following information on the appropriate form:
    - a. All forms: clinic identification; child's full name; date of visit
    - b. Visit form: child's registration number
    - c. Treatment plan: clinician's name
3. When the child returns for scheduled follow-up asthma visits, the same procedure is followed, except the clinician uses the shorter Return Visit for Asthma form and Treatment Plan. Both forms are still needed to have a complete record of the visit. The date of the visit is especially important on the Treatment Plan, so the family will not confuse current forms with previously issued forms.

#### Two exceptions:

1. Emergency visits – If a clinician wants to treat a child with asthma symptoms in the clinic before a scheduled First Visit for Asthma, the shorter Return Visit for Asthma form can be used. Cross out the word "Return" on the form and write "Emergency" in its place. The child will still be given a Treatment Plan for instructions to follow until a scheduled visit can be arranged. When the child returns for the scheduled asthma visit, the more complete First Visit for Asthma form and Treatment Plan are used.
2. Return visits where the prescribed Treatment Plan has not changed – The only time a Treatment Plan form is not needed is when a child returns for one or more follow-up visits, and there is no change in treatment, AND the caregiver still has this plan and can show it to you. Then the clinician may use a blank place on the bottom of the Return Visit for Asthma form to write that there is no attached Treatment Plan form because the treatment has not changed, and then signs it.

## Instructions for the First Asthma Visit

1. Give the Asthma Screening Form to the caregiver of each child older than 6 months who has come for a regular visit and who has not been screened before.
2. Tell the caregiver that the clinic is now offering continuing medical care for asthma and that you want to find out how many children enrolled in the clinic have asthma.
3. When the caregiver returns the form, check to see that it is complete and help finish it, if necessary. Even if the child does not have asthma, it is important that the heading and questions 1, 2, and 3 be completed. Please check to see that the caregiver has listed a current telephone number.
4. If the caregiver has any questions, answer them if you can. If there is a question you cannot answer, encourage the caregiver to ask the Physician or nurse, and write a note on the screening form describing the question. Also, feel free to write any observations you have that might be helpful to the Physician (for example, coughing in the waiting area). The goal of the program is to make people feel that the clinic is responsive to their needs, by “creating a medical home for asthma” for them.
5. Place the form in the chart for the Physician to review during the visit. The Physician will review the form with the caregiver. If it is agreed that the child’s asthma will be treated at the clinic, the Physician will request an appointment in a certain period of time. This will be written at the bottom of the Screening Form.
6. When the chart comes back to the appointment desk, check the Screening Form to see if the Physician has requested an appointment. If an appointment is requested, schedule it as close as possible to the time requested. Enter the appointment date and the child’s registration number on the Screening Form. If a timely appointment cannot be made, please check with the Physician before making an appointment.
7. Once all information has been recorded, make a copy of the form. The original stays in the chart, and the copy goes into a folder or box for the supervisor’s review.
8. Children who were screened but who do not have asthma should be re-screened at one, three, and five years of age, and at every visit thereafter. To keep track of when children should be screened, keep a record of the screening on the data sheet at the front of the chart.

# Appendix A

<b>New York City Department of Health and Mental Hygiene</b>	<b>Patient Stamp</b>																														
Screen children during scheduled visits at 6 months and 1, 3, and 5 years of age, and then repeated at each asthma visit thereafter.																															
<b>Asthma Screening Questionnaire</b>																															
<p>Dear Parent/Caretaker:          The medical team of this clinic will take care of children with asthma on an on-going basis. To find out if any of your children or children you take care of have asthma, please answer the questions below by checking or filling in the correct answer.</p>																															
<p>1. Please write the name, birthdate, and telephone number of the child being seen by the doctor today. Also write the name of the child's mother.</p> <p>           Child's First Name _____ Last Name _____ Birthdate ____/____/____  <small>Month Day Year</small> </p> <p>           Mother's First Name _____ Last Name _____ Birthdate ____/____/____  <small>Month Day Year</small> </p> <p>2. Does this child ever have:</p> <table border="0"> <tr> <td>Wheezing?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td>Trouble breathing?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> <tr> <td>Frequent cough?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td>Tightness in chest?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> <tr> <td>Shortness of breath?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td></td> <td></td> <td></td> </tr> </table> <p>3. Has a doctor ever told you that this child had:</p> <table border="0"> <tr> <td>Asthma?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td>Bronchitis?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> <tr> <td>Bronchiolitis?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td>Asthmatic bronchitis?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> </table>		Wheezing?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Trouble breathing?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Frequent cough?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Tightness in chest?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Shortness of breath?	<input type="checkbox"/> Yes	<input type="checkbox"/> No				Asthma?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Bronchitis?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Bronchiolitis?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Asthmatic bronchitis?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
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Bronchiolitis?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Asthmatic bronchitis?	<input type="checkbox"/> Yes	<input type="checkbox"/> No																										
<p><b><i>If you answered yes to any of the questions above:</i></b></p>																															
<p>4. Has this child ever been treated by a doctor for this problem? <input type="checkbox"/> Yes <input type="checkbox"/> No          Where is he/she usually treated for this problem? _____</p> <p>5. Is this a hospital emergency room? <input type="checkbox"/> Yes <input type="checkbox"/> No          A clinic? <input type="checkbox"/> Yes <input type="checkbox"/> No          A private healthcare provider? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>6. When was your child last treated for this problem? ____/____/____  <small>Month Day Year</small></p> <p>7. Do any other children in your home ever have asthma or breathing problems? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>																															
<b>To Be Completed By Physician</b>																															
<p><b><i>Please make sure that all questions are answered.</i></b>  <b><i>Make appointments for all children that the parent/caretaker wants treated for asthma.</i></b></p>																															
<p>Impressions:    ___ No asthma    ___ Asthma    ___ Undetermined          Disposition:    ___ Follow-up appointment to be scheduled in _____ weeks.                            ___ Child will be cared for elsewhere at _____          Family screened by Dr. _____ Date ____/____/____  <small>Month Day Year</small></p>																															
<b>To Be Completed at Appointment Desk</b>																															
<p>Date of follow-up appointment: ____/____/____    Registration number _____  <small>Month Day Year</small></p>																															
<b>Copy - Medical Records</b>																															

# Appendix B

<b>New York City Department of Health and Mental Hygiene</b>	<b>CLINIC STAMP</b>
<b>First Visit for Asthma</b>	
Date: _____ Child's name: _____ Child's registration #: _____ Child's birth date: _____ <b>Family history of asthma:</b> None _____ <b>List relatives with asthma:</b> _____ <b>Environment:</b> Smokes at home _____ Pets _____ <b>Birth history:</b> Vaginal delivery _____ Or C-section _____ Weight _____ Condition _____ Neonatal problems _____ <b>History of:</b> Bronchitis _____ Bronchiolitis _____ Eczema _____ Allergies _____ Other relevant past history: _____ _____ _____	
<b>Present Illness</b>	
When did your child first develop breathing problems? _____ _____ What has happened since then? _____ _____ <b>Frequency of symptoms:</b> Days per week ____ Days per month ____ Less often ____ <b>Symptoms occur in:</b> Fall ____ Winter ____ Spring ____ Summer ____ / During Day ____ Night ____ <b>Triggered by:</b> Respiratory infection ____ Exercise ____ Allergy ____ Irritants ____ Other _____ <b>Number of asthma-related:</b> ER visits _____ Hospitalizations _____ Hospitalized at _____ Current medicines for asthma? _____ Do you have any questions or concerns about the medications? _____ _____ Do you have any concerns or worries that we haven't talked about? _____ _____ _____	
<b>Physical Examination</b>	
Temperature _____ Height _____ Cardiac rate _____ Respiratory rate _____ General appearance: _____ ENT _____ Abdomen _____ Lungs _____ Skin _____ Heart _____ Other _____	
<b>Asthma Severity</b>	
Mild intermittent ____ Mild persistent ____ Moderate persistent ____ Severe persistent ____	
<b>Nurse's Note:</b>	<b>Taught</b>
Aerosol nebulizer	_____
Inhaler and spacer	_____
Oral medication	_____
<b>Copies: White (Medical Records)</b>	<b>Yellow (physician)</b>



# Appendix C

## Recommended Treatment Protocols for Children With Asthma at Different Levels of Severity

### SAMPLE LONG TERM TREATMENT PLAN FOR MILD INTERMITTENT ASTHMA

Name \_\_\_\_\_ Date \_\_\_\_\_ Spacer \_\_\_\_\_

CLINICAL CONDITION	Baseline Plan & When asthma is under control	At the <b>FIRST</b> sign of a cold or mild attack <sup>b</sup>	For rapidly worsening asthma (severe attack)	For cough or wheeze with exercise
<b>Peak Flow</b> (% personal best)	80% or above	50 to 80%	below 50%	2 puffs 5-10 minutes before exercise
<b>MEDICATION</b> <i>Reliever:</i> Inhaled short-acting beta <sub>2</sub> -agonist <sup>a</sup>  Albuterol	2 puffs as needed	2 puffs every 4 hr <sup>c,f</sup>	2-4 puffs every 20 minutes for 3 doses <sup>e</sup>  then 2-4 puffs every 4 hr	
Corticosteroid Tablet or Syrup	0	0	Begin with 1-2 mg/kg/day <sup>d</sup>  <b>NOTIFY MD</b>	

Footnotes for clinicians only

- a Use more than 2x/week may indicate need to initiate long term controller (anti-inflammatory) therapy. See Long Term Treatment Plan for Mild Persistent Asthma.
- b If viral infections provoke severe attacks (exacerbations) consider short course of corticosteroid tablets or syrup at the first sign of a cold or viral illness; see dose next column.
- c The need for beta<sub>2</sub>-agonist for more than 24-48 hrs indicates at least a moderate attack; consider short course of corticosteroid tablets or syrup.
- d Maximum corticosteroid dose 60 mg/day; 3-11 day course.
- e If there is not a good response, seek emergency care immediately. If there is a good response continue in this column and notify MD.
- f. If beta<sub>2</sub>-agonist needs to be given for 24 hr or longer more often than every 6 weeks, initiate long term controller (anti-inflammatory) therapy. See Sample Long Term Treatment Plan for Mild Persistent Asthma.



**SAMPLE LONG TERM TREATMENT PLAN FOR MILD PERSISTENT ASTHMA**

**Name** \_\_\_\_\_ **Date** \_\_\_\_\_ **Spacer** \_\_\_\_\_

<b>CLINICAL CONDITION</b>	<b>Baseline Plan &amp; When asthma is under control</b>	<b>At the <u>FIRST</u> sign of a cold Or mild attack</b>	<b>For rapidly worsening asthma (severe attack)</b>	<b>When there is no cough or wheeze for 2 months</b>	<b>For cough or wheeze with exercise</b>
<b>Peak Flow</b> (% personal best)	80% or above	50 to 80%	below 50%	over 80% for 2 months	
<b>MEDICATION</b> <i>Reliever</i> Inhaled short-acting beta <sub>2</sub> -agonist <sup>a</sup>  Albuterol	2 puffs as needed	2 puffs every 4 hr <sup>c</sup>	2-4 puffs every 20 min for 3 doses <sup>e</sup>  then 2-4 puffs every 4 hr	2 puffs as needed	2 puffs 5-10 min before exercise <sup>h</sup>
<i>Controller</i> 1) inhaled low dose corticosteroid <sup>b</sup> Beclomethasone 42 mcg <b>or</b>	1-4 puffs 2x/day	1-4 puffs 2x/day	1-4 puffs 2x/day	0	
2) nonsteroid <sup>g</sup> Nedocromil	0	0	0	2 puffs 2-3x/day <sup>f</sup>	
Corticosteroid Tablet or Syrup	0	0	Begin with 1-2 mg/kg/day <sup>d</sup>  <b>NOTIFY MD</b>	0	

Footnotes for clinician only

- a Daily or increasing use indicates need for more long term controller (anti-inflammatory) therapy.
- b Equivalent drugs: fluticasone 44 (1-2 puffs, 2x/day), flunisolide 250 (1 puff, 2x/day), budesonide 200 (inhalation 1x/day) or triamcinolone 100 (2-4 puffs, 2x/day).
- c The need for beta<sub>2</sub>-agonist for more than 24-48 hrs indicates at least a moderate attack; consider short course of corticosteroid tablets or syrup.
- d Maximum corticosteroid dose 60mg/day; 3-11 day course.
- e If there is not a good response, seek emergency care immediately. If there is a good response, remain in this column and notify MD.
- f When free of symptoms for 4 to 6 months may try discontinuing controller medicines.
- g Nonsteroids include cromolyn and nedocromil: In young children, these may be tried before inhaled corticosteroids. Antileukotriene agents may also be considered as an alternative: zafirlukast (20 mg 2x/day) or zileuton (600 mg 4x/day) for patients 12 yrs; montelukast 5 mg 1x/day for patients 6-14 yrs, 10 mg 1x/day for 15 yrs.
- h If it is difficult to take short acting beta<sub>2</sub>-agonists before exercise consider long-acting beta<sub>2</sub>-agonist (salmeterol) to protect against exercise induced bronchospasm for up to 8 hr.



## SAMPLE LONG TERM TREATMENT PLAN FOR MODERATE PERSISTENT ASTHMA

Name \_\_\_\_\_ Date \_\_\_\_\_ Spacer \_\_\_\_\_

CLINICAL CONDITION	Baseline Plan & When asthma is under control	At the <u>FIRST</u> sign of a cold or mild asthma attack	For rapidly worsening asthma (severe attack)	When there is no cough or wheeze for 2 months	For cough or wheeze with exercise
<b>Peak Flow</b> (% personal best)	Baseline-60 to 80% Under control- 80% or above	50 to 80%	below 50%	over 80% for 2 months	2 puffs 5-10 minutes before exercise <sup>g</sup>
<b>MEDICATION</b> <u>Reliever:</u> Inhaled short-acting beta <sub>2</sub> -agonist <sup>a</sup>  Albuterol	0	2 puffs every 4 hr <sup>c</sup>	2-4 puffs every 20 minutes for 3 doses <sup>e</sup> then 2-4 puffs every 4 hr	0	
<u>Controller:</u> 1) inhaled medium dose corticosteroid <sup>b</sup> Beclomethasone 84 mcg and 2) Long-acting beta <sub>2</sub> -agonist <sup>h</sup> Salmeterol and 3) Antileukotriene <sup>i</sup>	2-4 puffs 2x/day	2-4 puffs 2x/day	2-4 puffs 2x/day	1 puff <sup>f</sup> 2x/day	
Corticosteroid Tablet or Syrup	0	0	Begin with 1-2 mg/kg/day <sup>d</sup> NOTIFY MD	0	

**Footnotes for clinician only**

- a Daily or increasing use indicates the need for more long term controller (anti-inflammatory) therapy.
- b Equivalent drugs: fluticasone 110 (1-2 puffs, 2x/day), flunisolide 250 (2 puffs, 2x/day), budesonide 200 (1 inhalation 2x/day) or triamcinolone 100 (4-6 puffs, 2x/day). If night time symptoms not controlled, add long acting inhaled beta<sub>2</sub>-agonist 2x/day.
- c The need for beta<sub>2</sub>-agonist for more than 24-48 hrs indicates at least a moderate attack; consider short course of corticosteroid tablets or syrup.
- d Maximum corticosteroid dose 60 mg/day; 3-11 day course.
- e If there is not a good response, seek emergency care immediately. If there is a good response continue in this column and notify MD.
- f When free of symptoms for 4 months use low dose inhaled corticosteroid.
- g If it is difficult to take short acting beta<sub>2</sub>-agonists before exercise consider long-acting beta<sub>2</sub>-agonist (salmeterol) to protect against exercise induced bronchospasm for up to 8 hr.
- h. If needed, consider long-acting inhaled beta<sub>2</sub>-agonist (salmeterol 2 puffs, 2x/day) especially for night time symptoms.
- i Antileukotriene agents may be used as additive therapy: zafirlukast (20 mg 2x/day) or zileuton (600 mg 4x/day) for patients 12 yrs; montelukast 5 mg 1x/day for patients 6-14 yrs, 10 mg 1x/day for 15 yrs.



**SAMPLE LONG TERM TREATMENT PLAN FOR SEVERE PERSISTENT ASTHMA**

**Name** \_\_\_\_\_ **Date** \_\_\_\_\_ **Spacer** \_\_\_\_\_

CLINICAL CONDITION	Baseline Plan & When asthma is under control	For rapidly worsening asthma (severe attack)	When there is no cough or wheeze for 2 months	For cough or wheeze with exercise
<b>Peak Flow</b> (% personal best)	Baseline-below 60% Under control- 80% or above	below 50%	above 80% for 2 months	2 puffs 5-10 min before exercise
<b>MEDICATION</b> <i>Reliever:</i> Inhaled short-acting beta <sub>2</sub> -agonist <sup>a</sup>  Albuterol	2-4 puffs as needed	2-4 puffs every 20 minutes for 3 doses <sup>e</sup> then 2-4 puffs every 4 hr	2-4 puffs as needed	
<i>Controller:</i> 1) Inhaled high dose Corticosteroid <sup>b</sup> Beclomethasone 84 mcg	4-5 puffs 2x/day	4-5 puffs 2x/day	2-4 puffs 2x/day <sup>f</sup>	
and 2) Long-acting beta <sub>2</sub> -agonist Salmeterol	2 puffs 2x/day	2 puffs 2x/day	2 puffs 2x/day	
and 3) Antileukotriene <sup>g</sup>				
Corticosteroid Tablet or Syrup	0.25-2 mg/kg/day <sup>d</sup>	2 mg/kg/day  <b>NOTIFY MD</b>	0	

Footnotes for clinician only

- a Daily or increasing use indicates need for more long term controller (antiinflammatory) therapy.
- b Equivalent drugs: fluticasone 110 (2-3 puffs, 2x/day), flunisolide 250 (2-3 puffs, 2x/day), budesonide 200 (1-2 inhalations 2x/day) or triamcinolone 100 (>6 puffs, 2x/day).
- d Maximum corticosteroid dose 60 mg/day. With improvement gradually lower dose and if possible change to every other day schedule.
- e If there is not a good response, seek emergency care immediately. If there is a good response continue in this column and notify MD.
- f When free of symptoms for 4-6 months reduce inhaled corticosteroids to medium dose.
- g. Antileukotriene agents may be used as additive therapy: zafirlukast (20 mg 2x/day) or zileuton (600 mg 4x/day) for patients 12 yrs; montelukast 5 mg 1x/day for patients 6-14 yrs, 10 mg 1x/day for 15 yrs.



## LONG TERM TREATMENT PLAN FOR MILD INTERMITTENT ASTHMA

Name \_\_\_\_\_ Date \_\_\_\_\_ Spacer \_\_\_\_\_

CLINICAL CONDITION	Baseline Plan & When asthma is under control	At the <u>FIRST</u> sign of a cold or mild attack	For rapidly worsening asthma (severe attack)	For cough or wheeze with exercise
<b>Peak Flow</b> (% personal best)	80% or above	50 to 80%	below 50%	
<b>MEDICATION</b> <i>Reliever:</i> Inhaled short-acting beta <sub>2</sub> -agonist				
Corticosteroid Tablet or Syrup				



**LONG TERM TREATMENT PLAN FOR MILD PERSISTENT ASTHMA**

Name \_\_\_\_\_ Date \_\_\_\_\_ Spacer \_\_\_\_\_

CLINICAL CONDITION	Baseline Plan & When asthma is under control	At the <u>FIRST</u> sign of a cold or mild attack	For rapidly worsening asthma (severe attack)	When there is no cough or wheeze for 2 months	For cough or wheeze with exercise
<b>Peak Flow</b> (% personal best)	80% or above	50 to 80%	below 50%	over 80% for 2 months	
<b>MEDICATION</b>  <i>Reliever</i> Inhaled short-acting beta <sub>2</sub> -agonist					
<i>Controller</i> 1) inhaled low dose corticosteroid					
<b>or</b>					
2) nonsteroid					
Corticosteroid Tablet or Syrup					



**LONG TERM TREATMENT PLAN FOR MODERATE PERSISTENT ASTHMA**

Name \_\_\_\_\_ Date \_\_\_\_\_ Spacer \_\_\_\_\_

CLINICAL CONDITION	Baseline Plan & When asthma is under control	At the <u>FIRST</u> sign of a cold or mild asthma attack	For rapidly worsening asthma (severe attack)	When there is no cough or wheeze for 2 months	For cough or wheeze with exercise
<b>Peak Flow</b> (% personal best)	Baseline-60 to 80% Under control- 80% or above	50 to 80%	below 50%	over 80% for 2 months	
<b>MEDICATION</b>  <i>Reliever:</i> Inhaled short-acting beta <sub>2</sub> -agonist					
<i>Controller:</i> 1) inhaled medium dose corticosteroid  and 2) Long-acting beta <sub>2</sub> -agonist  and 3) Antileukotriene					
Corticosteroid Tablet or Syrup					



**LONG TERM TREATMENT PLAN FOR SEVERE PERSISTENT ASTHMA**

Name \_\_\_\_\_ Date \_\_\_\_\_ Spacer \_\_\_\_\_

CLINICAL CONDITION	Baseline Plan & When asthma is under control	For rapidly worsening asthma (severe attack)	When there is no cough or wheeze for 2 months	For cough or wheeze with exercise
<b>Peak Flow</b> (% personal best)	Baseline-below 60% Under control-80% or above	below 50%	above 80% for 2 months	
<b>MEDICATION</b> <i>Reliever:</i> Inhaled short-acting beta <sub>2</sub> -agonist				
<i>Controller:</i> 1) Inhaled high dose Corticosteroid				
and 2) Long-acting beta <sub>2</sub> -agonist				
and 3) Antileukotriene				
Corticosteroid Tablet or Syrup				