

Corporate Standards for Asthma Care
New York City Health and Hospitals Corporation
Executive Leadership Asthma Task Force

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Introduction

The New York City Health and Hospitals Corporation (HHC) Asthma Task Force was commissioned by the Council of Senior Vice Presidents and Medical Directors with the approval of the President of the Corporation and the Senior Vice President of Medical and Professional Affairs. Pediatric and adult asthma experts representing all seven networks met regularly for 10 months to produce the finest plan possible for the management of asthma based on the needs of the patients in the HHC system and existing national and international guidelines.

These HHC corporate guidelines call for each network to develop policies, procedures, practices and monitoring activities to assure that the standards are being met. Under these guidelines, we are confident all New Yorkers receiving asthma care at an HHC facility will get the best care possible and will have an excellent chance to live a normal, symptom-free life despite the diagnosis of asthma.

Structure

Included in these guidelines are:

- 1. The Executive Summary:** This is a concise review and outline of each of the sections in the Corporate Standards and how each network should endeavor to comply with the recommendations in this document.
- 2. Diagnosis of Asthma Standards:** Concepts, Guidelines and Measures of Effectiveness that can be used to aid in the initial diagnosis and assessment of asthma.
- 3. Assessment and Management Standards:** Concepts, Guideline and Measures of Effectiveness that can be used for the continuing assessment of asthma and the management of the disease using the classification of disease severity.
- 4. Acute Exacerbation Asthma Visit or Admission Standards:** Concepts, Guidelines and Measures of Effectiveness that can be used for the appropriate planning of patient care after an asthma exacerbation.
- 5. Home and Environmental Control Measures to Avoid Exacerbations:** Concepts, Guidelines, and Measures of Effectiveness for identification of environmental triggers in the home and measures to control these triggers.
- 6. Patient and Family Education Standards:** Recommendations for techniques of education and resources that should be provided by the networks to enable successful education programs.

Efforts by the HHC networks need to be expanded to include inpatients and emergency department patients. Community education offerings should be expanded. Programs should include at a minimum the outcome objectives, process objectives and teaching aids listed in this document.

7. Quality Improvement Measures: Elements of performance that the Task Force recommends be collected and analyzed. The recommended measures reflect crucial aspects of care.

8. Corporate Asthma Drug Formulary: Reliever and controller/preventive medications, their formulations, concentrations and doses. The medications listed here are designated as the minimum asthma drug armamentarium to be offered by each network. These agents were selected by the Task Force based on review of evidence based research and the current NIH NAEPP EPRII recommendations.

9. Instructions for using HHC Medication Treatment Guidelines: A simple introduction to the Medication Treatment Guidelines including step-down medication recommendations for adults and children.

10. Medication Treatment Guidelines (Pediatrics): A simple-to-use drug protocol for children with asthma, based on the severity classifications of the National Asthma Education and Prevention Program.

11. Medication Treatment Guidelines (Adults): A simple-to-use drug protocol for adults with asthma, based on the severity classifications of the National Asthma Education and Prevention Program.

Monitoring and Evaluation

Each topic has been organized as a series of concepts. For each concept, there are recommended standards and measures of effectiveness.

The measures of effectiveness can be used as quality improvement measures. Because it is impossible to collect and analyze data for all of these measures due to the limitation of all our resources, some elements of performance are recommended by the Task Force for monitoring by each network. The recommended measures reflect crucial aspects of care. A listing of these Quality Improvement Measures appears on pages 23-24..

Using their own Performance Improvement methodology, each network may choose elements that they wish to monitor. The Task Force has recommended to the Medical and Professional Affairs Committee that these Quality Improvement Measures be required for monitoring.

Sample Documents

1. Home Trigger Reduction Checklist: Strategies for reducing asthma triggers in the home environment. These should also be included in each network's asthma patient education and home visit education program.

2. Asthma Education Session Guidelines: All networks already offer asthma education. These programs need to be expanded to include inpatients and emergency department patients. Community education offerings should be expanded. Programs should be standardized and include, at a minimum, the outcome objectives, process objectives and teaching aids listed in this document.

3. On Line Asthma Action Plan: Suggested Asthma Action Plan (AAP) that can be placed online by Information Technology Departments of individual networks. Because the AAP should be provided to the patient in a language they understand well, it has already been translated and is available from HHC in more than twenty languages.

4. Interval Assessment Document: Data elements contained in this document allow care providers to have the information necessary to reassess the quality of life and level of asthma control during interval visits for adults and children. The document may be implemented in the hard copy (included in this package) or in electronic form. Any entry in a shaded section indicates that the patient requires a more intensive evaluation and possible referral.

Glossary of Terms

AAP	Asthma Action Plan
BD	Bronchodilator
CXR	Chest X-ray
ED / ER	Emergency Department / Emergency Room
EIB	Exercise Induced Bronchospasm
FEV1	Forced Expiratory Volume in one second
GERD	Gastroesophageal Reflux Disease
IPM	Integrated Pest Management
MDI	Metered Dose Inhaler
PFM	Peak Flow Meter
PEFM	Peak Expiratory Flow Monitoring
PEFR	Peak Expiratory Flow Rate
NAEPP	National Asthma Education and Prevention Program
TCP	Tobacco Cessation Program

Executive Summary

Initial Assessment and Diagnosis

The characteristics of asthma must be understood to ensure timely diagnosis of the disease. Asthma is a disease characterized by:

- Airflow obstruction that may be reversible (as assessed by clinical symptoms and pulmonary function testing)
- Airway hyper responsiveness
- Airway inflammation
- Airway remodeling

An attempt to confirm the diagnosis of asthma should be made within three months of the initial diagnosing visit. In many cases, the patient will be seen first in the ER or hospital as the result of an exacerbation. It is important that the patient be seen during a period of non-exacerbation, both to confirm the diagnosis and to establish a baseline for proper classification of asthma severity.

Classification-based treatment (combined with periodic reassessment) will result in appropriate management and the greatest potential for the patient to maintain a lifestyle minimally affected by the disease.

Making the diagnosis will include:

Medical History

In taking the medical history, particular emphasis should be placed on **eliciting daytime and nocturnal episodic symptoms of airflow obstruction**, including shortness of breath, wheezing, chest tightness and cough. All of these symptoms need not be present and, in some cases, only one symptom, such as cough, may be present. Symptoms of atopy should be assessed

Cigarette use or second-hand tobacco exposure: The use of cigarettes or other tobacco products by the patient or others, at home or in the workplace, should be assessed and documented at the initial visit and regularly thereafter. Asthma-related risks of such exposure should be discussed and referral to the Tobacco Control Program and treatment should be offered and documented to all smoking patients and family members and other contacts.

Physical Examination

The physical examination should emphasize evaluation of the accessory muscles of respiration, nasal flaring, prolonged expiration, wheezing, or decreased breath sounds. Signs of atopy should be evaluated.

Objective Measurements of Airflow

Objective measurements of airflow should include pulmonary function studies – which should minimally consist of spirometry – to assess for presence, degree and reversibility of airflow obstruction. Pulmonary function studies for adults and children more than 6 years of age should be available in each network within two weeks of request.

Additional Testing

Additional testing may be needed to establish the diagnosis of asthma and exclude alternative diagnoses. These additional studies may include continuous peak expiratory flow monitoring (PEFM) bronchoprovocation, chest x-ray and bronchoscopy. Additional tests also may include allergy testing and assessment of gastroesophageal reflux.

Assessment and Management

Once the initial diagnosis is made, providers should determine and document the severity of asthma according to the National Asthma Education and Prevention Program (NAEPP) guidelines. The initial severity classification should be made when the patient is at baseline, not during an acute exacerbation.

After ER or inpatient discharge, the first outpatient visit should include:

- Baseline severity classification and confirmation of classification
- Inhaler/spacer/discus technique
- Discussion of potential trigger exposures
- Education about self-monitoring
- Discussion of psychosocial factors
- Review of the Asthma Action Plan

Disease assessment is multifactorial and requires regular reassessment. Optimal disease control is not possible without periodic clinical assessment. Patients should be reassessed regularly at the appropriate ambulatory facility.

Visits should be scheduled at least every one to six months, depending on the disease severity, education needs, and level of disease control. Visits should be frequent when the diagnosis is first made, when educational and/or behavior needs are unmet and when treatment goals are not reached. Visits should be scheduled twice a year even when patients become expert in self-management and achieve their desired treatment goals.

At each clinic visit, the adequacy of treatment and management should be reassessed. For patients with persistent asthma, each assessment should at least include:

- assessment of the clinical severity of the disease with monitoring of the frequency and severity of daytime and nocturnal symptoms
- review of home PEFM measurements
- functional activity assessment and quality of life assessment
- assessment of patient ability to recognize asthma symptoms
- demonstration of patient ability to obtain and appropriate use of metered dose inhalers (MDIs) and large volume spacers
- knowledge of triggers and trigger avoidance
- identification of barriers to disease management including addressing patient concerns
- understanding and review of the Asthma Action Plan
- an examination, including PEFM
- identification of co-morbidities that may reduce asthma control including obesity, gastric esophageal reflux disease (GERD), allergic rhinitis and sleep apnea.

With appropriate treatment and care, patients with asthma can maintain a lifestyle minimally impeded by the disease. Medication selection and dosage should be guided by the severity classification and the step-wise approach in the HHC Corporate Standards, which is derived from the NAEPP guidelines.

The insurance status of the patient should be reviewed, to confirm that the patient has the ability to attend the network program and to obtain the recommended medications.

All patients with persistent asthma should have anti-inflammatory therapy included in the treatment plan. Patients with moderate or severe persistent asthma will require inhaled steroids for long-term control therapy.

Management

To achieve optimal management of the disease, providers must include appropriate patient education and assessment of environment and triggers. **Patient-centered care is essential for successful results.** Provider and patient should agree with the goals of asthma therapy. These goals should include the patient's personal goals (e.g., to participate in sports, to climb subway stairs without resting, etc.).

Personal peak expiratory flow rate (PEFR) monitoring as a preferred means of monitoring control should begin in most patients after the initial visit with the provision of a peak flow meter and skills demonstration performed at the visit.

An individualized **Asthma Action Plan** (AAP) should begin to be developed by the third visit or third month of care for all patients. Each patient should know how to recognize the early warning symptoms of asthma and, when those early warning signals of asthma are present, know what actions to take based on their Asthma Action Plan. The presence of an AAP should be recorded in the MISYS (hospital information system).

The patient should work with staff to create a management plan that covers:

- Control of inflammation
- Plan for episodic exacerbations
- Triggers avoidance and reduction
- Environmental control
- Long term care, and the monitoring required
- Medications
- Proper use of MDI/spacers and nebulizers
- AAP

Following exacerbations or hospitalization there should be easy and timely access to follow up within one week to the patient's PCP or within two weeks to the asthma specialist.

Referral to a specialist, such as ENT, allergist or other specialist, should be considered

and documented when:

- the diagnosis can't be confirmed after the third month of care
- the diagnosis is unclear and doesn't fit the criteria for asthma, as per the guidelines (for example, isolated cough)
- specialized treatment and education are needed
- the patient is unresponsive to therapy
- the patient has had a life-threatening exacerbation
- the patient is classified as having moderate/severe persistent asthma
- there is a significant or persistent change in the disease
- there is a step up in medication
- psychiatric, psychosocial and family stresses are present.

All patients with asthma should be considered at high risk and immunized against influenza virus and pneumococcal pneumonia.

Home Visits

Home visits by appropriately credentialed professionals should be offered to all patients with moderate and severe persistent disease by the third visit or third month of care. These experts will check for triggers, educate families on reduction strategies and avoidance of triggers, and reinforce the disease management education and AAP received from their provider. They will provide physicians with a detailed analysis of the home environment. With their recommendations, health care providers and patients can work together to minimize trigger exposure in the home.

Should a facility contract with a separate entity for home visits, the entity must meet HHC minimal standards of education and home assessment.

Environmental Control Measures to Avoid Exacerbations

Control of the patient's environment can reduce asthma exacerbations, ER visits, hospitalizations, school and work absenteeism, and can improve asthma control.

Local environmental control can be accomplished in the home.

Procedures should be in place at each HHC facility to assist families to eliminate antigenic stimuli, such as dust, and organic materials as recommended in these guidelines (see page 19).

Patient and Family Education

Education is essential to patient empowerment and optimal disease management. One emphasis should be that a goal of treatment is disease management so that the patient may live a normal life.

Each network should provide comprehensive asthma education with a scope that includes inpatient education, outpatient education, E.D., and community outreach.

The educational program should be accessible to all patients, and each family should receive linguistically and culturally appropriate written explanations of the asthma program in each network. Culturally appropriate educational materials and interpreters should be available.

Asthma educators should be available for the outpatient clinics and should visit all hospitalized and ER patients to assess the reasons for the exacerbation and to provide appropriate education.

The educational program should be step-wise and use skills demonstration. The program should inform patients and families about the definition of asthma; explanation of what happens during an attack; role of atopy; treatment goals; triggers; smoking cessation; safe and effective use of asthma medications and dispensing systems (inhaler devices, spacers, nebulizer, dry powder inhalers, etc.); home assessments; management of asthma at home, in school, and at work; and the role of immunizations.

Patients should be informed of asthma registries (if your network uses one).

Education should include information about warning signals, the symptoms of asthma exacerbations, and information about when to seek medical care vs. self-management.

Reassessment

Once treatment goals have been met and after about six months of treatment, medication step-down trials should be attempted to achieve optimal control with the least medication possible. The patient's ability to obtain the recommended medication should be confirmed.

Treatment goals should be reassessed annually. Spirometry should be scheduled annually for adults classified as moderate or severe persistent.

For persistent asthmatics, included in each reassessment should be:

- addressing patient concerns

- addressing efficacy of the asthma management plan with:
 - peak flow measurement
 - assessment of symptoms and symptom days
 - quality of life
 - demonstration of appropriate use of MDI, spacer, nebulizer, PFM
 - interpretation of AAP
 - knowledge of triggers and trigger avoidance
 - log is assessed and documented

Concepts, Standards and Measures of Effectiveness in the Diagnosis of Asthma

Concept	Standard	Measures of Effectiveness
<p>A timely asthma diagnosis is based on three key points – episodic symptoms of airway obstruction, the obstruction is at least partially reversible and alternative diagnoses are excluded.</p>	<ul style="list-style-type: none"> ■ Diagnosis of asthma should be confirmed within three months ■ Absence of symptoms at examination does not exclude diagnosis <ul style="list-style-type: none"> · Cough could be only symptom ■ In children under six, good response to a three-month trial of asthma medication can be helpful in diagnosing asthma 	<p>A correct asthma diagnosis is based on appropriate history, directed physical examination, and supporting confirmatory testing.</p>
	<ul style="list-style-type: none"> ■ Physical examination should include, at minimum, documentation of: <ul style="list-style-type: none"> · Vital signs · Skin: dermatitis · Nail beds: clubbing · Eyes: conjunctival edema · Ears, nose & throat: findings consistent with atopy · Neck: thyroid, trachea · Heart: rhythm, size, murmurs, S3, S4 · Chest: hyperexpansion of the thorax, wheezing 	
<p>Presence of episodic symptoms of airway obstruction</p>	<p>History or presence of episodic symptoms of airway obstruction should be documented.</p>	
<p>Airflow obstruction is at least partially reversible.</p>	<p>Document that airflow obstruction is at least partially reversible:</p> <ol style="list-style-type: none"> a. Peak flow 2:12% improved 15 minutes after use of bronchodilator <p style="text-align: center;">-or-</p> <ol style="list-style-type: none"> b. Peak flow 2:12% improved over 	

Concept	Standard	Measures of Effectiveness
	measure in ER -or- c. Spirometry (children aged 6 and older when indicated and all adults) pre and post BD	
Alternative diagnoses are excluded.	Additional tests may be needed for proper consideration of other diagnostic possibilities and to document related co-morbidity. Tests may include PEFM, bronchoprovocation, flow volume loops, bronchoscopy, allergy testing, and GERD study.	
Chest x-rays are not required to diagnose asthma.	Chest x-rays should be ordered for difficult-to-control asthma, when referral to a specialist is indicated and when considering alternative diagnoses.	
Spirometry is important for diagnosis and severity classification.	Spirometry should be available within two weeks of request for adults and children.	Timely diagnosis and classification and reclassification for all asthmatics are important.
Symptoms during exercise as well as $\geq 15\%$ decrease in PEF or FEV: after exercise, suggest EIB.	See appropriate (adult or pediatric) medication guidelines for drug, dosage, route, and frequency.	Patients with EIB are able to engage in normal activity with minimal symptoms.

Concepts, Standards and Measures of Effectiveness in the Assessment and Management of Asthma

Concept	Standard	Measures of Effectiveness
Disease Classification		
Correctly classifying disease severity guides appropriate management.	All providers should determine and document asthma severity according to NAEPP classifications, and determine the adequacy of treatment and the management plan at each clinic visit.	<ul style="list-style-type: none"> ■ Patients will adhere to the treatment plan. ■ Patients will be satisfied with their care and management.
Disease assessment is multifactorial and must be reassessed regularly.	<p>For persistent asthmatics, each reassessment should at least include:</p> <ul style="list-style-type: none"> ■ Addressing patient concerns ■ Addressing efficacy of the asthma management plan with: <ul style="list-style-type: none"> · peak flow measurement · assessment of symptoms and symptom days · assessment of quality of life · demonstration of appropriate use of MDI, spacer · interpretation of AAP · knowledge of triggers and trigger avoidance management 	
	Important co-morbidities affecting asthma, including obesity, GERD, allergic rhinitis, sleep apnea, etc. should be documented.	
Medication treatment should be based on disease severity.	A stepped approach, based on NAEPP guidelines, should be used to determine treatment.	<ul style="list-style-type: none"> ■ Treatment matches severity class. ■ Disease control is maximized and patient experiences minimal number of symptom days.

Concept	Standard	Measures of Effectiveness
		<ul style="list-style-type: none"> ■ Patient experiences minimal or no medical side effects.
	<p>Once treatment goals have been met, medication step-down trials should be attempted to achieve optimal treatment outcomes with the lowest possible dosing regimen necessary to maintain treatment goals.</p>	
Asthma Action Plans		
<p>Asthma Action Plans help patients and families partner with providers, and help them to better understand care plans.</p>	<p>AAPs should be completed by third visit or third month of care for all patients with persistent asthma.</p>	<p>All asthmatics with persistent disease will have AAPs completed by third month of care.</p>
<p>Asthma Action Plans help providers communicate.</p>	<p>AAP should be recorded online on Per Se for access by PCP, specialists, ER, ICU and medical units.</p> <p>All changes to the AAP at subsequent visits should be recorded promptly.</p>	<p>Optimal communication between disciplines and venues of care is achieved to optimize care planning and continuity.</p>
<p>Objective data are crucial to assessment, reassessment and planning care.</p>	<p>A PFM with detailed instructions should be dispensed at the patient's first visit with an outpatient provider or at the first planned education session. With the patient's understanding of the AAP, personal PEFR monitoring as a preferred measure of control should begin.</p>	<p>All patients with moderate and persistent disease should use PFMs regularly.</p>
Disease Management		
<p>With appropriate treatment and care, patients with asthma should be able to have a lifestyle unimpeded</p>	<ul style="list-style-type: none"> ■ Reassess every 1-6 months depending on disease severity, patient's education needs, and the level of disease control 	<ul style="list-style-type: none"> ■ Long-term control of symptoms. ■ Within one year of continuous care, patients will achieve

Concept	Standard	Measures of Effectiveness
by the disease. Periodic clinical assessment and reassessment is required for optimal disease control.	<p>achieved.</p> <ul style="list-style-type: none"> ■ Schedule more frequent visits, especially at the beginning of treatment, and/or until goals of care are met. ■ Always discuss patient self monitoring in educational and follow-up visits. 	<p>treatment goals, including:</p> <ul style="list-style-type: none"> · Minimal (or no) chronic symptoms, including nocturnal symptoms. · Minimal or no exacerbations. · No emergency visits or hospitalizations. · Minimal (or no) need for p.r.n. beta2 agonist, i.e., generally <2 times per week (for severe asthmatics, once daily or less is acceptable). · No limitations on activities, including exercise. · No school or work missed. · PEF circadian variation of less than 20%. · (Near) normal PEF (.80% of personal best) · Minimal (or no) adverse effects from medications.
	<p>Disease management and control is achieved by working together with network staff to create a management plan that covers:</p> <ul style="list-style-type: none"> ■ Control of inflammation. ■ Plan for episodic exacerbations. ■ Techniques for trigger avoidance and reduction. ■ Environmental control. ■ Long-term care, and the monitoring required. ■ Medication information. ■ Proper use of MDI/spacers and nebulizers. ■ Asthma Action Plan. 	
Patient self-monitoring and self-management are essential for empowerment, for	<ul style="list-style-type: none"> ■ Provider and patient should agree on the goals of asthma therapy. Goals should include the patient's personal goals 	<ul style="list-style-type: none"> ■ The patient is able to maintain normal activity levels. ■ Chronic symptoms are prevented and the patient has

Concept	Standard	Measures of Effectiveness
partnering with providers, and for optimal disease control.	<p>(e.g., participate in sports, climb subway stairs without resting, etc.).</p> <ul style="list-style-type: none"> ■ Treatment should be based on the stepwise approach. The patient should know how to recognize symptoms and what to do when they occur. ■ The initial treatment should be aggressive, based on the guidelines and the severity classification. ■ The patient should use an Asthma Action Plan. ■ PEFM is recommended for self-monitoring, especially for patients with moderate and severe persistent asthma, and when patient is symptomatic. 	<p>normal or near normal lung function.</p> <ul style="list-style-type: none"> ■ The patient is satisfied with care. ■ The patient has minimal or no side effects.
Maintaining normal lung function and preventing premature or accelerated decline in lung function are goals of asthma therapy.	Spirometry should be performed annually for adults with moderate or severe persistent asthma.	Adults with persistent asthma have an annual spirometry.
Anti-inflammatory treatment is the cornerstone in treating persistent disease.	All patients with persistent asthma should have anti-inflammatory therapy consistent with the NAEPP guidelines included in their treatment plan.	Patients with persistent asthma will be treated with anti-inflammatory medication.
The stepwise approach to treatment maximizes the likelihood of optimal disease management. Treatment goals and care plans should be driven by the stepped approach.	<p>All patients should have treatment plans developed in a stepwise approach consistent with NAEPP.</p> <p>Treatment plans should be reevaluated and modified at least annually to consider stepping down the medication plan, even for well-controlled patients.</p>	<p>Asthmatics will meet their treatment goals within one year of continuous care.</p> <p>Plans should be reviewed at least annually.</p>
Prevention of respiratory	All patients with asthma should be	

Concept	Standard	Measures of Effectiveness
infections is a cornerstone of excellent asthma management.	considered high risk and immunized against influenza and pneumococcal pneumonia as per the protocol.	
The special considerations of schoolchildren with asthma must be addressed.	<ul style="list-style-type: none"> ■ Medications should be available in school as needed. ■ Medication use forms should be easily available to providers. 	Schoolchildren with persistent asthma will have a plan for the management of exacerbations in school which has been communicated to all appropriate personnel.
Many patients misuse medication and asthma management tools.	At each visit, appropriate understanding and use of MDI, AAP, spacer, nebulizer, PFM and log is assessed and documented.	Patient and family are empowered and become critical team partners. No incidents of misuse of medication or management tools occurs.
Specialists		
Patients with moderate and severe persistent asthma should have access to specialists as needed.	Following exacerbations or hospitalization, there should be easy and timely access within one week to PCP or two weeks to asthma specialist.	
Referral to specialist can frequently aid in achieving optimal control in some cases.	<p>Consider specialist referral when:</p> <ul style="list-style-type: none"> ■ It has not been possible to confirm the diagnosis after the third month of care. ■ The diagnosis is unclear and doesn't appear to fit asthma, according to the guidelines. ■ Specialized treatment and education are needed. ■ Patient is unresponsive to therapy. ■ There has been a life-threatening exacerbation. ■ Patient is classified as having moderate or severe asthma. ■ Psychiatric, psychosocial or family stresses are present. 	<ul style="list-style-type: none"> ■ Asthma diagnosis is confirmed. ■ Asthma control is optimized in difficult cases. ■ Close monitoring of more severe cases is accomplished. ■ Alternative diagnoses are excluded. ■ Care is coordinated within subspecialties. ■ Specialist review adds safety layer to the patient's care and disease management

Concept	Standard	Measures of Effectiveness
Specialist input has been strongly demonstrated to improve asthma care.	Primary providers should document that referral to allergist, ENT or other specialist was considered when: <ul style="list-style-type: none"> ■ there is a significant or persistent change in the disease ■ when there is a step-up in medication ■ when the asthma is difficult to control ■ when there are coexisting psychosocial, psychiatric and family problems. 	Asthma treatment goals are met at higher rates.
Referral to specialist can frequently aid in achieving optimal control in some cases.	Consider specialist referral when: <ul style="list-style-type: none"> ■ It has not been possible to confirm the diagnosis after the third month of care. ■ The diagnosis is unclear and doesn't appear to fit asthma, according to the guidelines. ■ Specialized treatment and education are needed. ■ Patient is unresponsive to therapy. ■ There has been a life-threatening exacerbation. 	Asthma diagnosis is confirmed.
Tobacco Use		
Tobacco use and exposure are major triggers and exacerbating factors for asthma.	Tobacco use by the patient or exposure due to use by family and household members, or others, should be assessed and documented at the initial visit and regularly thereafter.	Tobacco use and exposure as a trigger is reduced.
	Referral to TCP and treatment should be offered and documented to all smoking patients and family members and other contacts.	Tobacco use by patients and family members is reduced/ceased within one year of continuous care.
Education		

Concept	Standard	Measures of Effectiveness
<p>Patient education after diagnosis is a crucial management technique to create patient empowerment for optimal disease control.</p>	<p>Education should include at minimum the following elements:</p> <ul style="list-style-type: none"> ■ Addressing patient’s concerns ■ Emphasizing patient understanding that asthma can be managed and that a primary goal of treatment is that patient may live a normal life. 	<ul style="list-style-type: none"> ■ Education is provided at the time of diagnosis and every visit. ■ Proper use of medications to prevent side effects is demonstrated during each visit.

Concepts, Standards and Measures of Effectiveness for Acute Exacerbation Asthma Visit or Admission

Concept	Standard	Measures of Effectiveness
<p>Accurate asthma severity classification is essential to designing an effective treatment plan.</p>	<ul style="list-style-type: none"> ■ The initial severity classification should be made when patient is at baseline, not during an acute exacerbation. ■ Making the classification should be completed and documented by the third clinic visit in most instances. ■ Inpatient and emergency providers should use the documented severity classification to assist with treatment and discharge planning. 	<p>Discharge treatment is appropriate to disease severity.</p>
<p>Severe asthma exacerbations may signal a change in asthma severity requiring a change in classification or indicate that severity classification was incorrect.</p>	<p>After ER or inpatient discharge, the provider at the first outpatient visit should document the appropriate reassessment, including:</p> <ul style="list-style-type: none"> ■ Baseline severity classification. ■ Appropriateness of classification. ■ Inhaler/spacer/discus technique. ■ Potential trigger exposure. ■ Patient’s knowledge about self-monitoring. ■ Psychosocial factors. ■ Review of Asthma Action Plan. 	<p>Seven-day ER revisit and 30-day re-hospitalization rates are reduced.</p>
<p>Anti-inflammatory preventive/reliever medications are the underpinning of excellent management of persistent asthma. They have been proven unequivocally to dramatically reduce the likelihood of relapse</p>	<p>Anti-inflammatory medications should be prescribed after acute exacerbation. <i>(See adult or pediatric medication guidelines for drug, dosage, route and frequency)</i></p>	<p>Patients discharged from the ED with acute asthma exacerbation should be on a course of corticosteroids as per the protocol.</p>

Concept	Standard	Measures of Effectiveness
following acute exacerbation.		
Prompt follow-up with a primary care provider or asthma specialist is expected after acute exacerbation.	All patients seen in the ED or hospitalized for an acute exacerbation should have a follow-up visit within 1 week of discharge with their primary care provider or within 2 weeks with an asthma specialist.	

Concepts, Standards and Measures of Effectiveness for Home and Environmental Control Measures to Avoid Exacerbations

Concept	Standard	Measures of Effectiveness
<p>Local environmental control should be achieved at the home.</p>	<p>A procedure should be in place to assist families to eliminate antigenic stimuli, such as dust and organic material, as is recommended in NAEPP II.</p>	<p>Patients with persistent asthma who agree to a home visit receive a visit quickly enough that the physician receives and can document the results of the home visit and assessment within one month of classification.</p>
<p>Environmental control can reduce asthma exacerbations, ER visits, hospitalizations, school and work absenteeism, and can improve the quality of life. It can prevent an accelerated decline in pulmonary function.</p>	<ul style="list-style-type: none"> ■ Every dust elimination program should include carpets and other dust-collecting materials. ■ The program must include provision or easy access to necessary equipment and supplies (e.g., mattress covers, vacuum cleaner, etc.). ■ Any program to eliminate organic antigens must include attention to animal dander, vermin infestation and elimination of pets from the home, and encourage barriers such as pillowcases and mattress covers. ■ Any home visit entity contracted should meet minimal standards of education and home assessment. 	<ul style="list-style-type: none"> ■ Reduced dust and dust collectors, improved vacuuming technique and frequency (at least twice each month) where necessary. ■ Improved quality of patient's life and patient satisfaction, and reduced days lost from school and/or work.
<p>The home is an excellent classroom for customized learning. Trigger identification in the home and avoidance are essential to good control.</p>	<p>Education during the home visit must cover at a minimum:</p> <ul style="list-style-type: none"> ■ bedroom ■ kitchen ■ bathroom ■ general recommendations for cleaning and vacuuming ■ rugs/carpets 	<p>All items listed in the Home Trigger Reduction Checklist are covered.</p>

Concept	Standard	Measures of Effectiveness
	<ul style="list-style-type: none"> ■ plant care ■ pets 	
<p>Integrated Pest Management (IPM) relies on knowledge of pest interactions with the host environment, breeding patterns, where to look for nests, and how to minimize breeding.</p>	<ul style="list-style-type: none"> ■ Each network should have an IPM program included in the armamentarium of environmental control. ■ Each network's IPM program should have two components: mechanical techniques and chemical techniques. 	<p>An effective IPM program will include:</p> <ul style="list-style-type: none"> ■ Reduced vermin harborage; minimization of garbage, food fragments and crumbs from surfaces; improved food handling and storage; sealed cracks and crevices; elimination of mold from moist areas in the bathroom. ■ Licensed pest abatement program to apply chemicals containing pyrethrums.

Concepts, Standards and Measures of Effectiveness for Patient and Family Education

Concept	Standard	Measures of Effectiveness
Education is essential to patient empowerment and optimal disease management.	Each network should provide comprehensive asthma education with a scope that includes inpatients, outpatients, ED, community/outreach and the environment (home, school, work, etc.)	Patients and families are knowledgeable about and empowered to partner with providers and participate in their own/their family members' care.
Education should be comprehensive and sufficient to empower patients and families to participate actively in care. It should be designed to accommodate patients' readiness to learn and the venue of care (i.e., inpatient education will differ from a community education program.)	Education programs must be accessible to all patients and include at a minimum: <ul style="list-style-type: none"> ■ Definition of asthma. ■ An emphasis that the goal of treatment is to be able to live a normal life. ■ Explanation of what happens during an attack. ■ Role of atopy. ■ Trigger categories, trigger examples, trigger avoidance and minimization techniques. ■ Therapeutic strategies for reliever vs. controller medication. ■ Use of MDI, spacer, PEFM, PEFR log, nebulizer. ■ Role of exercise. ■ 504 services for schools, etc. 	<ul style="list-style-type: none"> ■ Patients and families are knowledgeable enough to participate in planning and implementing care. ■ Networks have an education program meeting all standards and accessible to all asthmatics in the outpatient, urgent care and inpatient settings. <p>See Asthma Education Session Guidelines (page 27) for education curriculum elements.</p>
The home is an excellent venue for asthma education and reinforcement.	Home visits by appropriately credentialed professionals should be offered to all with moderate and severe persistent disease. Educational objectives should be emphasized during these visits.	<ul style="list-style-type: none"> ■ Minimized exacerbating influences in the home and immediate vicinity. ■ Increased patient satisfaction.
When patients participate in planning care, understanding, treatment	Patients and families are involved in all aspects of asthma care.	Patients and families contribute to therapeutic success and become partners with their health care

Concept	Standard	Measures of Effectiveness
regimen adherence and improved outcomes are the result.		providers.
Patients and families have varied capacities to learn.	Asthma-specific learning needs, abilities, preferences and the readiness to learn should all be assessed.	Patients and families contribute to therapeutic success and become partners with their health care providers.
Many asthma resources exist in each network's community.	Patients and families should be informed about access to additional asthma treatment and management resources in their community and via HMOs.	Increased awareness of asthma management resources throughout the community.
Culture and language are critical to patient-provider partnerships and to effective communication.	Culturally appropriate educational materials, including AAP and PEFr logs and access to interpreters, should be routinely employed.	Patients and families contribute to therapeutic success and become partners with their health care provider.

Quality Improvement Measures

The measures of effectiveness included in the Concepts, Standards and Measures of Effectiveness charts on the pages 8-22 can be used as quality improvement measures. Although it would be impossible to collect and analyze data for all of these measures due to resource limitations, some elements of performance are recommended by the Task Force for monitoring by each network. The recommended measures reflect crucial aspects of care. The Task Force has recommended to the Medical and Professional Affairs Committee that monitoring these elements be required.

Diagnosis:

- 95% of patients in regular care (≥ 3 months continuous follow-up) will have asthma severity documented in the medical record.

Assessment and Management:

- 100% of asthmatics with persistent disease will have an AAP completed by the third month of care.
- 100% of patients with moderate and persistent disease will use PEFMs and maintain a log for review by provider.
- 80% of patients, within one year of continuous care, will achieve treatment goals including minimal chronic symptoms, minimal exacerbations and no emergency visits or hospitalizations, no limitations on activities and no missed school or work.
- Tobacco use is reduced or ceased by 30% of patients and family members within one year of continuous care.
- 85% of adults with persistent asthma have an annual spirometry.
- 80% of asthmatics will have met their goals within one year of continuous care.
- 90% of patients will have treatment goals and care plans reviewed and documented annually.
- 90% of school children with persistent asthma will have a plan for the management of exacerbations in school.
- 80% of patients will be immunized as per the protocol.
- Patients will experience improved quality of life, while days lost from school and work will be reduced by 95%.

Acute Exacerbation Visits or Admissions:

- Discharge treatment is appropriate to the disease severity in 95% of cases reviewed.
- Seven-day ER revisits and 30-day rehospitalization rates are reduced by 25% to 50% of baseline after 12 months of implementation of these guidelines.
- 100% of patients discharged from ER/ED with acute asthma exacerbation will be on a course of corticosteroids.

Home Visits:

- For 70% of patients with persistent asthma who agree to a home visit, the visit will be completed and the physician will receive and document the results of the home visit within one month of classification.

Education:

- 100% of networks will have an education program meeting all measures and accessible to all asthmatics in the outpatient, urgent care and inpatient settings..

Home Trigger Reduction Checklist

Strategies to be covered during asthma patient and family education (by physicians, nurses, respiratory therapists, home visitors) designed to optimize the home environment for children and adults with asthma:

General Recommendations

- _ Avoid using the vacuum when the asthmatic child or adult is present.
- _ Clean under beds, behind couch and other large items of furniture.
- _ Avoid carpeting if possible.
- _ Use a damp mop to clean floors.
- _ Use a wet rag for tabletops, shelves, picture frames, plants, chairs, etc.
- _ Get rid of stacks and piles of things out in the open (papers, mail, newspapers, rags, etc.).
- _ Avoid spray cologne and perfumes, scented deodorants, and other perfumed products such as shampoos, soaps and laundry detergents.
- _ Remove dead and decaying leaves from plants.
- _ Avoid cats and dogs as pets. If a pet is important, turtles, snakes, lizards and fish pose less risk to the asthmatic.
- _ Scented candles and incense should not be used.
- _ Change or clean air conditioner filters at least once a year.
- _ Establish regular schedules for washing curtains and furniture covers.

The Bedroom

- _ Avoid room humidifiers (they can become breeding grounds for mold).
- _ Keep closet doors closed (to prevent dust accumulation).
- _ Remove carpets and rugs.
- _ Avoid heavy curtains and blinds that cannot be cleaned frequently.

- _ Use mattress, pillow and furniture covers that can be easily washed.
- _ Wash bed linens regularly and at a high temperature setting.
- _ Avoid stuffed animals, if possible. If not possible, store in a large plastic bag and allow the child to play with only one at a time.
- _ Avoid piles of papers and other dust collectors on shelving. If possible, move bookcases out of the bedroom into hallways or other rooms. Dust regularly.

The Kitchen

- _ Avoid open cans and boxes of food by placing all into sealed, plastic containers and bags.
- _ Don't use bug spray. Instead, use boric acid around cracks and crevices, and bait traps.
- _ If it is necessary to have an exterminator spray, do so when the asthmatic child or adult will be out of the home for at least 8 hours.
- _ Clean under the refrigerator, sink and under the stove, if possible.

The Bathroom

- _ Clean regularly.
- _ Eliminate mold on tile, walls and floor with a 1:10 solution of bleach, which is applied with a sponge and wiped off.
- _ Have leaky pipes and other sources of water repaired.

Asthma Education Session Guidelines

Outcome Objectives

Following the asthma education session, participants will:

- Be able to verbalize their experiences and feelings about having asthma or having a child with asthma.
- Know the basic anatomy and physiology of lungs, breathing and asthma.
- Know how to identify triggers particular to their or their child's asthma as well as others.
- Understand the use of peak flow meters in the prevention and management of asthma attacks.
- Know the proper technique for using a peak flow meter and, for parents, know how to keep a log of their child's peak flow rate.
- Know the steps to take in the event that they or their child have an asthma episode, including how to determine whether to see a doctor in the clinic/office or go to the Emergency Room.
- Understand the importance of fostering a good relationship with a single health provider and establishing a treatment plan particular to their or their child's asthma.
- Be familiar with the different types of medications for asthma (quick relief vs. preventive medicines), including each one's particular function and any possible side effects.
- Know the proper technique for using a Metered Dose Inhaler with and without a spacer, as well as the Diskus inhaler.
- Know the important expectations their health provider has regarding their or their child's asthma.
- Know about available programs for further help in asthma management provided by their health provider, health plan or community.

Process Objectives

- Facilitator conveys enormity of the problem of asthma in the community.

- Participants share feelings and experiences as asthmatics or as parents of children with asthma.
- Facilitator leads lecture/discussion about anatomy and physiology of lungs, breathing and asthma.
- Participants discuss asthma triggers: what they are and how to identify them.
- Facilitator explains purpose and use of different asthma medications.
- Facilitator explains early warning signs of an asthma episode. The group then discusses steps to be taken in the event of an episode.
- Facilitator demonstrates, and each participant practices, proper use of a peak flow meter and Metered Dose Inhaler with and without a spacer.
- Group discusses expectations from their health providers and other resources.
- Facilitator introduces and explains available services to further manage asthma.

Teaching Aids

- Pre- and post-questionnaires
- Age- and language-appropriate literature
- Placebo Metered Dose Inhaler
- Placebo Diskus Inhaler
- Spacer
- Peak flow meter
- Peak flow log
- Lung diagram/model (normal and asthmatic)
- Asthma medication list
- Asthma Action Plan (in different languages)
- Medication authorization form
- Information on existing programs within the network and in the community.

NYC HEALTH & HOSPITAL CORPORATION

ATHMA BEST PRACTICE TASK FORCE

INTERVAL ASSESSMENT

Date: _____

Reason for Visit Today:

Patient's Personal Tx Goals (e.g. specific activities you'd like to you'd like to do but asthma is stopping):

Current NHLBI asthma classification

- I. Mild intermittent III. Moderate Persistent
II. Mild persistent IV. Severe persistent

HISTORY

Recent Symptoms (Cough, wheeze, SOB) in past few days.

TRIGGERS (e.g. Allergies, Pets, Mold, Strong Odors, Weather Change, Tobacco Smoke, Exercise, URI, Strong Emotions, etc.)

EVENTS/STATUS in past month (Urgent Care Visits, Hospitalization, Missed Days from Work/School, Steroid Bursts, etc.)

GENERAL QUALITY OF LIFE (patient's self-rating): Which best characterizes effect of asthma on patient?

HIGH 1 2 3 4 LOW
No effect on any life activity May affect some life activity Life activity often affected Life activity severely affected

Activity/Exercise tolerance Can you do all the things you'd like to do (keep up with friends, sports, climb stairs, gym class, sleep through the night, shop, etc.):

Adherence to preventive meds: Excellent (missed 2 doses/week) Good (missed 2-4 doses/week)
Poor (missed 4 doses/week) WHY?

Patient demonstrated appropriate technique: MDI w/spacer PFM Other Inhaled device

PEAK EXPIRATORY FLOW MEASUREMENT

Today's PEFR L/min Personal Best or Estimated for Height PEFR goal: L/min

PHYSICAL EXAMINATION:

General appearance:

BP: mmHg P: BPM RR: BPM T: F
HT cm WT: kg O2 Sat: %EARS: NOSE:
HANDS: EYES:
PHARYNX: NECK/THYROID:
AIRWAY/TRACHEA: ABDOMEN:
EXTREMITIES: PULMONARY:

ASSESSMENT

- Optimally controlled (consider reclassification and step-down treatment after 6 months.)
Well controlled (No classification change, possible need to modify medication plan)
Not well controlled (INTENSIVE ASSESSMENT INDICATED) (consider tx plan change or specialist referral.)

Any check or positive response in a shaded area requires intensive asthma assessment

PLAN:

ACUTE TREATMENT TODAY:

CHRONIC MEDICATION PLAN (+dosages): (LIST BASED ON RECOMMENDATIONS OF TASK FORCE; consider step down in optimally controlled):

Rescue:

Preventive/Anti-inflammatory:

REVIEW/UPDATE ASTHMA ACTION PLAN: Y / N

IMMUNIZATIONS: Pneumovax _____
 Influenza _____
 Other : _____

Labs:

CHEST X-RAY: