Diagnosis and Management of Asthma – Pediatric/Adult – Inpatient/Ambulatory Clinical Practice Guideline

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Release Date: July 2015
Expiration Date: July 2017
Executive Summary
Guideline Overview
We agreed to endorse the 2015 Global Initiative for Asthma (GINA) Global Strategy for Asthma Management and Prevention Guideline (accessed 5/15/15).¹

Key Practice Recommendations & Companion Documents
We support the following key recommendations summarized from GINA¹, in addition to those recommendations found within the 2015 GINA quick-reference pocket guides available online (accessed on 5/15/15):
- GINA Pocket Guide for Asthma Management and Prevention (Age 6 or older)
- GINA Pocket Guide for Asthma Management and Prevention (Age 5 or younger)

WHAT IS ASTHMA?
Asthma is a chronic inflammatory disorder of the airways which causes symptoms of wheezing, shortness of breath, tightness in the chest, and cough that may vary in frequency and over time.

ESTABLISHING A DIAGNOSIS
It is recommended to complete a medical history to establish respiratory symptoms, as well as lung function testing using spirometry or peak expiratory flow (PEF) (see Figure 1). A diagnosis of asthma may be made after consideration of a patient’s history and whether the patient exhibits variable expiratory airflow limitations (i.e., difficulty exhaling due to bronchoconstriction, airway wall thickening, and increased mucus).

Figure 1. Summary of Diagnostic Steps

Patient presents with respiratory symptoms

Perform detailed medical history/examination

Yes

Symptoms consistent with asthma?

Yes

Perform lung function testing (spirometry or PEF)

Results support diagnosis of asthma?

Yes

Asthma diagnosis

No

No

Consider alternative diagnosis (outside guideline scope)

No

Figure 1. Summary of Diagnostic Steps

Common Characteristics of Asthma:
- Symptoms of wheezing, shortness of breath, chest tightness, or cough
- Symptoms occur or worsen at night
- Symptoms may be triggered by exercise, infection, allergens, changes in weather, or emotions/hormonal changes
PROVIDING TREATMENT AND ASSESSMENT

The goals of asthma treatment include:
- Prevention of chronic asthma symptoms and asthma exacerbations;
- Maintenance of normal activity levels;
- Patient satisfaction with asthma care and quality of life (i.e., having normal or near normal lung function, experiencing no or minimal side effects).

Asthma treatment should follow a repeating pattern of assessment of control, adjustment of treatment, and review of response to the treatment.

### Assessment

An age-appropriate questionnaire should be used to help determine asthma control and efficacy of the treatment plan. It is recommended to assess asthma control at least annually.

- Asthma Control Test (ACT) for patients age 12 years or older.
- Childhood Asthma Control Test (cACT) for patients age 6-11 years.
- Test for Respiratory and Asthma Control in Kids (TRACK) for patients age 5 years or younger.

### Treatment

The age-differentiated Stepwise Approach to Control should be used to guide the prescription of asthma medication (controllers and rescue). A full listing of medications available in the United States is summarized in the Asthma Rescue and Controller Medication Table, and dosing options for inhaled corticosteroids are available in the Asthma Medication Dosing Table.

All patients should have a written asthma action plan, which should include:
- A list of medications and a description of how to use them
- Environmental triggers

Patients age 18 years or older with uncontrolled severe-persistent asthma, despite use of recommended therapeutic regimens and referral to an asthma specialist (Step 5) may be candidates for a non-pharmacological intervention of Bronchial Thermoplasty.
**Review Response**

It is recommended that patients be seen every 1-3 months after initiating treatment and every 3-12 months thereafter.

Patients should be seen by the provider managing their asthma within 1 week following an exacerbation to re-evaluate the patient compliance and treatment plan efficacy.

**MANAGING ASTHMA EXACERBATIONS**

Asthma exacerbations are acute or subacute episodes of progressively worsening asthma symptoms (i.e., shortness of breath, coughing, wheezing, chest tightness).

Treatment algorithms should be followed to guide exacerbation management within the outpatient, emergency department, and inpatient settings:

- Asthma Exacerbation- Primary Care Algorithm
- Asthma Exacerbation- Emergency Department (Pediatric) Algorithm
- Asthma Exacerbation- Inpatient (Pediatric) Algorithm
- Asthma Exacerbation- Emergency Department (Adult) Algorithm
- Asthma Exacerbation- Inpatient (Adult) Algorithm
Companion Documents
1. GINA Pocket Guide for Asthma Management and Prevention (Age 6 or older)
2. GINA Pocket Guide for Asthma Management and Prevention (Age 5 or younger)
3. GINA Appendices to the Global Strategy for Asthma Management and Prevention

Patient Resources
Scope
Disease/Condition(s): Asthma

Clinical Specialty: Pulmonary, Allergy, Family Medicine, Internal Medicine, Pediatrics, Hospitalists, Respiratory Therapy, Emergency Medicine

Intended Users: Physicians, Advanced Practice Providers, Respiratory Therapists, Registered Nurses, Pharmacists, Asthma Educators

CPG objective(s): To provide evidence-based recommendations for the management of asthma across age groups and clinical settings.

Target Population: Any pediatric (0-11 years), adolescent (12-17 years), or adult (18 years or older) patient diagnosed with asthma.

Methodology
The GINA guideline1 was produced using the standard methodology of the GINA Science Committee outlined on page vi of the full guideline (http://www.ginasthma.org).

Rating Scheme for the Strength of the Evidence/Recommendations:

<table>
<thead>
<tr>
<th>Sources of evidence</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Randomized controlled trials (RCTs) and meta-analyses. Rich body of data. Evidence is from endpoints of well designed RCTs or meta-analyses that provide a consistent pattern of findings in the population for which the recommendation is made. Category A requires substantial numbers of studies involving substantial numbers of patients.</td>
</tr>
<tr>
<td>B</td>
<td>Randomized controlled trials (RCTs) and meta-analyses. Limited body of data. Evidence is from endpoints of intervention studies that include only a limited number of patients, post hoc or subgroup analysis of RCTs or meta-analysis of such RCTs. In general, Category B pertains when few randomized trials exist, they are small in size, they were under-taken in a population that differs from the target population of the recommendation, or the results are somewhat inconsistent.</td>
</tr>
<tr>
<td>C</td>
<td>Nonrandomized trials. Observational studies. Evidence is from outcomes of uncontrolled or non-randomized trials or from observational studies.</td>
</tr>
<tr>
<td>D</td>
<td>Panel consensus judgement. This category is used only in cases where the provision of some guidance was deemed valuable but the clinical literature addressing the subject was insufficient to justify placement in one of the other categories. The Panel Consensus is based on clinical experience or knowledge that does not meet the above listed criteria.</td>
</tr>
</tbody>
</table>
Introduction
Asthma is a chronic inflammatory disorder of the airways. In susceptible individuals, this inflammation causes recurrent episodes of coughing (particularly at night or early in the morning), wheezing, breathlessness, and chest tightness. These episodes are usually associated with widespread but variable airflow obstruction that is often reversible either spontaneously or with treatment. The goals of asthma therapy are to prevent chronic asthma symptoms and asthma exacerbations, maintain normal activity levels, have normal or near normal lung function, experience no or minimal side effects and have patient satisfaction with asthma care.

Recommendations
We endorse the recommendations outlined within the 2015 GINA Guideline\(^1\) located online at [http://www.ginasthma.org/documents/4](http://www.ginasthma.org/documents/4) (accessed on 5/15/15).


Disclaimer
CPGs are described to assist clinicians by providing a framework for the evaluation and treatment of patients. This Clinical Practice Guideline outlines the preferred approach for most patients. It is not intended to replace a clinician’s judgment or to establish a protocol for all patients. It is understood that some patients will not fit the clinical condition contemplated by a guideline and that a guideline will rarely establish the only appropriate approach to a problem.

References