The following evidence-based guideline was used in developing this clinical care guide: National Institute of Health (NIH – National Heart, Lung, and Blood Institute (NHLBI) and American Academy of Allergy, Asthma, and Immunology (AAAAI)

**Documented Health Condition:** Asthma

## What is asthma?

Asthma (AZ-ma) is a chronic (long-term) lung disease that inflames and narrows the airways. Asthma causes recurring periods of wheezing (a whistling sound when you breathe), chest tightness, shortness of breath, and <u>coughing</u>. The coughing often occurs at night or early in the morning.

To understand asthma, it helps to know how the <u>airways</u> work. The airways are tubes that carry air into and out of your lungs. People who have asthma have inflamed airways. The inflammation makes the airways swollen and very sensitive. The airways tend to react strongly to certain inhaled substances. When the airways react, the muscles around them tighten. This narrows the airways, causing less air to flow into the lungs. The swelling also can worsen, making the airways even narrower. Cells in the airways might make more mucus than usual. Mucus is a sticky, thick liquid that can further narrow the airways. This chain reaction can result in asthma symptoms. Symptoms can happen each time the airways are inflamed.

#### **Common Causes of Asthma**

The exact cause of asthma isn't known. Researchers think some genetic and environmental factors interact to cause asthma, most often early in life. These factors include:

- An inherited tendency to develop allergies, called atopy (AT-o-pe)
- Parents who have asthma
- Certain respiratory infections during childhood
- Contact with some airborne allergens or exposure to some viral infections in infancy or in early childhood when the immune system is developing

If asthma or atopy runs in your family, exposure to irritants (for example, tobacco smoke) may make your airways more reactive to substances in the air.

### **Diagnosis and Clinical Indicators**

Your primary care provider or an allergist diagnoses asthma by taking a thorough medical history and performing breathing tests to measure how well your lungs work.

One of these tests is called *spirometry*. You will take a deep breath and blow into a sensor to measure the amount of air your lungs can hold and the speed of the air you inhale or exhale. This test diagnoses asthma severity and measures how well treatment is working. Whether it's intermittent, mild, moderate, or severe will determine what treatment you'll start on.

Many people with asthma also have allergies, so your doctor may perform allergy testing. Treating the underlying allergic triggers for your asthma will help you avoid asthma symptoms.

### **Signs and Symptoms**

The most common symptom is wheezing. This is a scratchy or whistling sound when you breathe. Other symptoms include:

- Shortness of breath
- Chest tightness or pain
- Chronic coughing
- Trouble sleeping due to coughing or wheezing

Asthma symptoms, also called asthma flare-ups or asthma attacks, are often caused by allergies and exposure to allergens such as pet dander, dust mites, pollen or mold. Non-allergic triggers include smoke, pollution or cold air or changes in weather.

## **Treatment and Self-Care**

There is no cure for asthma, but symptoms can be controlled with effective asthma treatment and management. This involves taking your medications as directed and learning to avoid triggers that cause your asthma symptoms.

Controller medications are taken daily and include inhaled <u>corticosteroids</u>. Combination inhalers contain an inhaled corticosteroid plus a <u>long-acting beta-agonist (LABA)</u>. LABAs are symptom-controllers that are helpful in opening your airways. However, in certain people they may carry some risks.

## **Definition of Well-managed Asthma**

#### Good asthma control will:

- Prevent chronic and troublesome symptoms, such as coughing and shortness of breath
- Reduce your need for quick-relief medicines (see below)
- Help you maintain good lung function
- Let you maintain your normal activity level and sleep through the night
- Prevent asthma attacks that could result in an emergency room visit or hospital stay

To control asthma, partner with your doctor to manage your asthma or your child's asthma. Children aged 10 or older—and younger children who are able—should take an active role in their asthma care.

Taking an active role to control your asthma involves:

- Working with your doctor to treat other conditions that can interfere with asthma management.
- Avoiding things that worsen your asthma (asthma triggers). However, one trigger you should not avoid is physical activity.
   Physical activity is an important part of a healthy lifestyle. Talk with your doctor about medicines that can help you stay active.
- Working with your doctor and other health care providers to create and follow an asthma action plan.

An asthma action plan gives guidance on taking your medicines properly, avoiding asthma triggers (except physical activity), tracking your level of asthma control, responding to worsening symptoms, and seeking emergency care when needed.

#### Resources

Asthma Overview (American Academy of Allergy, Asthma, and Immunology)

What is Asthma? (National Institutes of Health; National Heart, Lung, and Blood Institute)

Asthma Basics (American Lung Association)

Asthma: Diseases and Conditions (Mayo Clinic)

Chronic Care Guideline Goal from <u>MCG</u>	"As evidenced by" (AEB) example	Suggested care plan education from Coach & Communicate
Goal: Better understanding of asthma diagnosis.	As evidenced by patient self-reporting understanding of asthma triggers.	Asthma Triggers
astnma diagnosis.	As evidenced by patient self-reporting understanding of asthma symptoms	Asthma: Symptoms of Difficulty Breathing
	As evidenced by patient self-reporting comprehension of health education received.	
	As evidenced by patient self-reporting adherence to prescribed asthma action plan.	Asthma: Using an Asthma Action Plan
Goal: Better understanding of need for medical follow-up to	As evidenced by patient/parent successfully following up with pulmonologist	
manage asthma.	As evidenced by patient/parent successfully following up with primary MD	
	As evidenced by patient/parent successfully following up with allergist	
Goal: Develop, implement and maintain copy of Asthma self-management plan or Asthma Action plan.	As evidenced by patient self-reporting follow up with primary asthma care provider to develop, review, or evaluate for problems with self-management plan	Asthma: Managing your asthma
Action plan.	As evidenced by patient self-reporting asthma action plan understanding.	Assessing Your Asthma Knowledge
	As evidenced by patient self-reporting self-care interventions necessary to maintain asthma self-management such as	
Goal: maintain or achieve control of asthma symptoms.	As evidenced by reduced utilization of rescue inhaler	Asthma: Overuse of Quick-relief medications
,	As evidenced by improved asthma control test results	Asthma: Measuring Peak Flow
	As evidenced by increased activity/exercise tolerance	
	As evidenced by reduced asthma related ER or urgent care visits	

Goal: Understand the use of	As evidenced by member self-reporting understanding of how to use inhalers or	Asthma: Using and Inhaler and Spacer
inhalers and medication to	nebulizers.	
manage asthma.	As evidenced by member self-reporting adherence to inhalers as prescribed.	Inhaled quick-relief medicines for
		<u>asthma</u>