

**COMMON CLINICAL DIAGNOSES AND CONDITIONS****ASTHMA****INTRODUCTION**

Asthma is the most common childhood chronic disease and is the third leading cause of hospital admission for children less than 15 years of age. Prevalence and mortality rates have increased over the past decade, along with costs, the latter predominantly associated with hospital based care. The Department of Health and Human Services (DHHS), through the National Institutes of Health (NIH), coordinated the National Asthma Education and Prevention Program designed to provide up-to-date evidence-based guidelines for the diagnosis, treatment and prevention of asthma. The DHHS also identified asthma as one of the key elements of the Healthy People 2010 initiative with several specific health objectives related directly to inpatient management. Due to the chronic nature of this disease, pediatric hospitalists should not only treat the acute exacerbation resulting in status asthmaticus, but also create or re-affirm long term management plans.

**KNOWLEDGE**

*Pediatric hospitalists should be able to:*

- Discuss the pathophysiology of asthma addressing both bronchoconstrictive and inflammatory components and state how each impacts pharmacologic treatment choices.
- Compare and contrast the pathophysiology of asthma with other common small airway illnesses in children such as bronchiolitis, viral pneumonia with bronchospasm, or chronic lung disease.
- List the differential diagnosis of wheezing for various age groups and delineate the defining features leading to a diagnosis of asthma.
- Summarize evaluation, monitoring, and treatment options for patients with worsening cardiorespiratory status including mental status assessment, capnography, inhaled and intravenous medications, respiratory support and others.
- Describe the signs and symptoms of impending respiratory failure and list criteria for transfer to an intensive care unit.
- Cite the common complications of asthma or asthma treatment, including pneumothorax, atelectasis, lobar collapse, poor cardiac output, dysrhythmias and others.
- State the basic pharmacology, safety profile and potential adverse effects of commonly used medications.
- Discuss the impact of risk factors (such as genetic predisposition and family history) associated chronic comorbidities (such as atopic dermatitis and allergic rhinitis) and exacerbating factors (such as gastroesophageal reflux and smoke exposure) on morbidity, treatment and prognosis.
- Define asthma groups by symptom severity and frequency based on current classification guidelines.
- Explain the significance of environmental controls and trigger avoidance in minimizing asthma exacerbations.
- Describe the utility of using asthma action plans to both monitor and treat asthma via pulmonary function testing (spirometry and/or peak flow) and proper use of controller and reliever medications.
- Discuss the goals of asthma management, including the maintenance of normal activity levels and pulmonary function, the prevention of chronic symptoms, recurrent exacerbations, and hospitalizations, and the provision of optimal pharmacotherapy while minimizing adverse events.
- Give examples of specific indications for referral to an asthma subspecialist.
- Illustrate why proper coding for asthma is critical to assure proper local resource use, accurate billing, and appropriate national comparisons of asthma data.

**SKILLS**

*Pediatric hospitalists should be able to:*

- Correctly diagnose and classify asthma by efficiently performing an accurate history and physical examination.
- Recognize signs and symptoms of serious complications of asthma such as pneumothorax or impending respiratory failure.
- Direct an evidence-based treatment plan for status asthmaticus.
- Order and interpret objective measures of pulmonary function, including peak flow monitoring and spirometry.
- Order and interpret results of basic diagnostic tools such as chest radiograph and blood gas as indicated.
- Order appropriate monitoring and correctly interpret monitor data.

## COMMON CLINICAL DIAGNOSES AND CONDITIONS

- Provide supplemental oxygen therapy and advanced airway management as necessary.
- Recognize indications for hospital admission and discharge, and for transfer to a higher level of care or tertiary care facility.
- Modify the medication regimen based upon accurate assessment of changes in disease severity.
- Efficiently render care by creating a discharge plan which can be expediently activated when appropriate.
- Consistently initiate patient and family/caregiver asthma education as soon after admission as possible, as appropriate for the clinical context.
- Coordinate care with the primary care provider including discharge medications and instructions, and follow-up plans.
- Complete a written asthma action plan and use it to educate patients and the family/caregiver on trigger avoidance, medication adherence, and disease control.

## ATTITUDES

*Pediatric hospitalists should be able to:*

- Reinforce the role and responsibility of patients and the family/caregiver regarding self-care, recognition of symptoms, and disease management.
- Communicate effectively with patients, the family/caregiver and healthcare providers regarding care plans.
- Engage in a multi-disciplinary approach to the prevention, diagnosis, and treatment of asthma, involving when appropriate, social workers or case managers, respiratory therapists, and subspecialists.
- Collaborate with primary care providers and subspecialists to ensure coordinated longitudinal care for children with asthma.

## SYSTEMS ORGANIZATION AND IMPROVEMENT

*In order to improve efficiency and quality within their organizations, pediatric hospitalists should:*

- Lead, coordinate or participate in local and national initiatives to further the development and implementation of evidence-based clinical guidelines to promote effective resource utilization and improve quality of care for hospitalized children with asthma.
- Work with hospital administrators to implement and utilize performance feedback and quality improvement measures to assess outcomes of instituted guidelines for the management of inpatient asthma.
- Collaborate with primary care providers, subspecialists, social workers, and case managers to ensure a smooth transition to the outpatient setting, and to minimize the need for readmission.