

# *University of Michigan Hospital and Health Systems Multidisciplinary Inpatient Pediatric Asthma Education Clinical Practice Guideline*

**TITLE:** Inpatient management of pediatric asthma education

*Origin Date: 06/15/2013 Revision Date: 06/15/2015*

## **I. OVERVIEW**

Asthma is a bronchial inflammatory disease. Clinically, it presents with varying degrees of airway obstruction, leading to clinical symptoms of wheezing, chest tightness, dyspnea, shortness of breath and/or coughing. The cornerstone of asthma management is anti-inflammatory therapy and bronchodilation in conjunction with comprehensive education and an asthma action plan. National guidelines reinforce that asthma education prevents hospitalizations and hospital readmits. Furthermore it is recommended that education should be reinforced and provided by members of all healthcare disciplines (e.g., physicians, pharmacists, nurses, respiratory therapists, and asthma educators).<sup>1</sup> See Table 2 for specific care team responsibilities.

The following resources are available to meet the education needs of inpatients with a primary diagnosis of asthma:

- Asthma Action Plan
- Asthma education class
- Bedside education
- GetWell Network
- Patient Education Clearinghouse

**PURPOSE:** The purpose of this guideline is to provide guidance and suggestions on how to provide standardized education for pediatric patients hospitalized with a primary diagnosis of asthma and to their caregivers.

**GOALS:** Provide appropriate educational interventions to inpatient pediatric asthma patients and their caregivers.

**SCOPE:** This document is intended to provide evidence and clinical practice-based guidelines for the education of pediatric inpatients with a primary diagnosis of asthma.

## **II. DEFINITIONS**

**Asthma Action Plan:** provides information on daily management of asthma along with how to recognize and handle worsening asthma symptoms. The benefits of developing a written asthma action plan include a reduction in symptoms, less limitation of activity, improvement in quality of life and perceived control of asthma and improved medication adherence<sup>2</sup>. The Asthma Action Plan must be completed prior to discharge. The patient medical record must include a copy of the written Asthma Action Plan and documentation that a copy was provided to the patient/caregiver.

It is a personalized daily self-management plan that is developed in partnership with the patient/ caregiver and addresses:

- How to monitor asthma symptoms
- Environmental Control and control of other triggers
- Method and timing of rescue actions
- Use of controllers
- Use of relievers

**Bedside Education:** Respiratory Therapy provides patient specific education focusing on wellness, prevention and health promotion. The goals of the teaching session are based upon the patient's and/or caregiver's level of knowledge, identified learning needs and concerns, health beliefs, cultural practices and comprehension. Education and reinforcement involves active

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<sup>1</sup> NHLBI Expert Panel Report 3, 2012

<sup>2</sup> NHLBI Guidelines, 2007

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participation of the patient and/or family/guardian and should emphasize increasing knowledge of the disease process and active participation in treating asthma.<sup>3</sup> Comprehensive asthma education and documentation includes:

- Acute exacerbation: What constitutes an acute exacerbation and what to do in such circumstances. How to self-medicate to initiate treatment of flares
- Arrangements for follow-up care
- Asthma Action Plan
- Asthma mechanisms: inflammation and bronchospasm
- Controller vs. rescue medications
- Medications: Dosing, schedule, rationale (effect on asthma mechanisms)
- Peak expiratory flow rate (PEFR) if indicated: How to use a peak flow meter and how to interpret the results
- Proper inhaler and device use: How to correctly use a metered dose inhaler and spacer. (Valved holding chamber must be used in children, avoid open spacers)
- Warning symptoms/signs: Their own warning signs (e.g., increased shortness of breath, chest tightness, cough).

Respiratory Therapy provides an asthma education packet along with additional relevant handouts. The Registered Nurse is responsible for reinforcing asthma teaching as provided by Respiratory Therapy.

**GetWell Network:** An inpatient multimedia information portal available via in-room televisions.

- It is the Registered Nurse's responsibility to assess the learning needs of the patient and caregivers and order the appropriate videos.

**Inpatient Pediatric Asthma Education Class:** Standardized asthma education class provided by the Pediatric Pulmonary Lab and Mott Respiratory Care. The session provides one hour of self-management education and the use of a written Asthma Action Plan. The class is offered Monday through Friday and reviews the American College of Chest Physician's patient education guide "Controlling Your Asthma".

**Michigan Visiting Nurses Asthma Home Environmental Assessment Program:** MVN education will be tailored to the patient's and family's needs and will include: a physical environmental assessment of the home and education regarding trigger mitigation; method and timing of rescue actions; use of controllers; use of relievers; and communication with the patient's primary care provider. Case Managers will attempt to identify similar services for patients who reside outside of the MVN service area.

**Patient Education Clearinghouse:** The Clearinghouse is a central repository of patient education materials that have been approved for use at UMHS. The Clearinghouse includes print, video and web-based materials that were created in-house or by reputable organizations and associations. Materials in the Clearinghouse must meet a selection criteria and be approved by the relevant committees or clinicians. The Clearinghouse will link patient education and patient instructions materials with Electronic Medical Record system (MiChart) and the Health System's public website UofMhealth.org.<sup>4</sup>

### III. EDUCATION CRITERIA

There are five major education criteria that must be met prior to discharge. This includes but is not limited to:

**(1) Use of controllers and relievers.** Long-term control medications are taken on a daily basis to achieve and maintain control of asthma. Patient education should surround rationale for use, timing of use, possible side effects. Quick-relief medications are for relief of acute symptoms and to prevent exercise-induced bronchospasm. Short Acting Beta Agonists (SABAs) are the "rescue" medication for

<sup>3</sup> UMHS Asthma Guidelines for Clinical Care, 2010

<sup>4</sup> UMHS Patient and Family Education, 2012

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exacerbations (or flares). Treatment is initiated as needed for symptoms. Treatment intensity depends on severity. Increasing frequency of SABA indicates a probable need to step-up therapy.<sup>5</sup>

**(2) Use of prescribed inhalers and devices.** Patients/families/guardians will receive individualized instruction in the proper use of all inhaled medications and related devices. This includes the use of valved holding chambers with all metered dose inhalers. Chamber with mouthpiece or mask will be used according to patient age and ability.

**(3) Discussion of control of environmental and other triggers.** Patients will attempt to identify and avoid environmental exposures that worsen their asthma. This includes but is not limited to respiratory infections, food allergens, animal dander, dust mites, cockroaches, pollen and mold, tobacco smoke, strong odors and sprays. See Table 1.

**(4) Provision of a written Asthma Action Plan.** Action plan should meet all criteria as described in Section II.

**(5) Arrangements for follow-up care:** Discussion with the patient/ caregiver will surround the importance of follow-up with the patient's Primary Care Physician and recommendation for a referral to an Asthma Specialist as indicated. Patients will be referred to an asthma home access program either through MVN or locally if outside the service area by Case Managers.

## IV. GUIDELINE

General guidelines for asthma management are available from the University of Michigan Health System (1) and the National Lung, Heart and Blood Institute (2).

## V. LINKS

- **National Heart, Lung and Blood Institute Guidelines for the Diagnosis and Management of Asthma –**  
<http://www.nhlbi.nih.gov/guidelines/asthma/>
- **UMHS Asthma Guidelines for Clinical Care -**  
<http://www.med.umich.edu/1info/FHP/practiceguides/asthma/asthmagdln.pdf>
- **UMHS Directions for Creating an Asthma Action Plan in MiChart-**  
[http://www.med.umich.edu/1info/FHP/practiceguides/asthma/MiChart\\_AAP\\_Encounter\\_Directions.pdf](http://www.med.umich.edu/1info/FHP/practiceguides/asthma/MiChart_AAP_Encounter_Directions.pdf)
- **UMHS Inhalers Instruction Sheet-**  
<http://www.med.umich.edu/1info/FHP/practiceguides/asthma/inhalers2011.pdf>
- **UMHS Pediatric Respiratory Care Policy and Procedure: Asthma Education-**  
<http://www.med.umich.edu/i/respcare/pediatric/P%20&%20P%20Chs%207-12/Policy%2012.01%20Asthma%20Education.pdf>

## VII. EXHIBITS

**Table 1: Common Asthma Triggers**

**Table 2: Responsibility Grid**

<sup>5</sup> UMHS Asthma Guidelines for Clinical Care, 2010

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## REFERENCES:

<sup>1</sup> National Heart, Lung, and Blood Institute (2012). Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma (EPR-3). Available at <http://www.nhlbi.nih.gov/guidelines/asthma/>

<sup>2</sup> National Heart Lung and Blood Institute. (2007). National asthma education and prevention program. Available at <http://www.nhlbi.nih.gov/guidelines/asthma/index.htm>

<sup>3, 5-6</sup> University of Michigan Health System (2010). Asthma guidelines. Available at <http://www.med.umich.edu/info/FHP/practiceguides/asthma/asthmagdln.pdf>

<sup>4</sup> UMHS Policy 03-07-020: Patient and Family Education  
<http://www.med.umich.edu/i/policies/umh/03-07-020.html>

**Table 1. Common Asthma Triggers**

|   |  |  |
|---|--|--|
| <b>Smoking (or passive smoking)</b>   | <b>Pollutants:</b><br>Air pollutants<br>Occupational exposures | <b>Respiratory tract infections:</b><br>Viral URI illness<br>Sinusitis<br>Bronchitis |
| <b>Indoor allergens:</b><br><b>House dust mites</b><br><b>Animal dander</b><br><b>Cockroaches</b><br><b>Molds</b> | <b>Medications:</b><br>$\beta$ -blockers<br>Aspirin<br>NSAIDS  | <b>Medical comorbidities:</b><br>GERD<br>Depression/ stress<br>Rhinitis              |
| <b>Outdoor allergens:</b><br><b>Pollens</b><br><b>Molds</b>   | <b>Exercise</b><br><br><b>Cold air</b>                         | <b>Sulfites</b>  |

**Table 2. Responsibility Grid**

| Education Action Items         | Respiratory Therapy | Physician | Registered Nurse |
|--------------------------------|---------------------|-----------|------------------|
| Develop Asthma Action Plan*    | ✓                   | ✓         |                  |
| Teach Asthma Education Class** | ✓                   |           |                  |
| Provide Asthma Packet          | ✓                   |           |                  |
| Provide Asthma Handouts        | ✓                   |           |                  |
| Order GetWell Videos           |                     |           | ✓                |
| Bedside Education              | ✓                   | ✓         | ✓                |

\* Can be reviewed by Respiratory Therapy, Pediatric Pulmonary Lab or Physician

\*\* Provided by the Pediatric Pulmonary Lab and Mott Respiratory Care

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|---|---|---|--|---|--|--|
| <b>Hospital Multidisciplinary Asthma Team (HMAT) Workgroup Authors:</b><br><br>Guideline approved by HMAT Committee |   | <b>Judy Bielenda, RRT, AE-C</b><br><br><i>Inpatient Respiratory Therapy</i> | <b>Mary Britt, BS, RRT, RPFT, AE-C</b><br><br><i>Respiratory Therapy</i> | <b>Amy Filbrun, MD, MS</b><br><br><i>Pediatric Pulmonary</i>                    | <b>Cathy Lewis, MSN,RN,CNS</b><br><br><i>Pediatric Inpatient Nursing</i> | <b>Terry Murphy, MD</b><br><br><i>Hospitalist</i>                    |
| <b>Paulette Ratkiewicz, RRT, RPFT</b><br><br><i>Pediatric Pulmonary</i>   | <b>Sue Roebuck, BSN, RN</b><br><br><i>Nurse Education Coordinator</i> | <b>Kelly Schultz, BSN, RN</b><br><br><i>Quality Improvement</i>             | <b>Barb Slattery RN-BC</b><br><br><i>Patient-Family Care Coordinator</i> | <b>Karla Stoermer-Grossman, MSA, RN, AE-C</b><br><br><i>Pediatric Pulmonary</i> | <b>DeAnn VanSickle, BSN, RN</b><br><br><i>Quality Improvement</i>        | <b>Alison Wilson, BSN, RN, CCM</b><br><br><i>Practice Management</i> |