**Michigan Quality Improvement Consortium Guideline**

# General Principles for the Diagnosis and Management of Asthma

**The following guideline recommends general principles and key clinical activities for the diagnosis and management of asthma.**

| Eligible Population | Key Components | Recommendation and Level of Evidence |
|---|---|---|
| Children and adults with the following:<br>>Wheezing<br>>History of cough (worse particularly at night), recurrent wheezing, recurrent difficulty in breathing, recurrent chest tightness.<br><br>Symptoms occur or worsen in response to triggers such as exercise, viral infection, inhalant allergens, irritants, changes in weather, strong emotional Expression, stress, menstrual cycles. | Diagnosis and management goals | Follow the GLOBAL INITIATIVE FOR ASTHMA (GINA) 2024 Diagnosis Algorithm. (GINA 2024 Diagnosis)<br>Detailed medical history and physical exam to determine precipitating factors and that symptoms of recurrent episodes of airflow obstruction are present and reversed by bronchodilator.<br>Use spirometry ($FEV_1$, FVC, $FEV_1$/FVC, FEF 25-75) in all patients age ≥ 5 (and all those capable of performing spirometry) to determine that airway obstruction is at least partially reversible. Consider alternative causes of airway obstruction.<br>Goals of therapy:<br>Reduce impairment: chronic symptoms, need for rescue therapy, Oral Corticosteroids (OCS) and to maintain near-normal lung function and activity level.<br>Reducing risk: exacerbations, need for emergency care or hospitalization, loss of lung function or reduced lung growth in children, or adverse effects of therapy. |
| | Initiating Treatment and Stepping Up or Down as Needed | Assess asthma control and likelihood of adherence to daily controller therapy.<br>Assess device technique, compliance and concerns at every visit.<br>Follow GINA 2022 Initiating Treatment Algorithm. (GINA 2024 Initiating Treatments)<br>Provide a written asthma action plan and review at each visit.<br>Assure follow-up visits every 1-3 months after initiating treatment and every 3-12 months thereafter. After an exacerbation, a review visit within 1 week should be scheduled. **[D]**<br>Review response and adjust medications as needed:<br>• Obtain spirometry ($FEV_1$, FVC, $FEV_1$/FVC, FEF 25-75) to confirm control after symptoms have stabilized; and at least every 1-2 years, more frequently for uncontrolled asthma.<br>• Assess risk & control: track exacerbations requiring (OCS), ED visits, hospitalizations and seasonality of symptoms, Asthma Control Test (ACT) or Asthma Impairment and Risk Questionnaire (AIRQ)<br>• Stepping medications down or up (Link to Stepping Down and UP)<br>○ Stepping down: consider when symptoms are well controlled and lung function stabilizes for 3 or more months **[D].** Choose a low-risk season.<br>○ Stepping up: assess patient's health literacy and knowledge of medication device technique, compliance, environmental factors, tobacco exposure, and exposure to respiratory infections. |
| | Education | Develop written asthma action plan collaborating **[B]** Update annually, more frequently if needed.<br>Provide self-management education. **[A]** Teach and reinforce: monitoring to assess control and signs of exacerbations (either symptoms or peak flow monitoring) **[B]**; utilizing a written asthma action plan; taking medication correctly (inhaler technique and use of devices); recognizing, reporting and avoiding environmental and occupational factors that may trigger or exacerbate asthma (outdoor activity, gastroesophageal reflux; *see Eligible Population column)*.<br>Individualize asthma education to patient's level of literacy; consider patients' cultural beliefs and as it relates to their management. **[C]** |
| Symptoms occur or worsen at night. | Control environmental factors and comorbid conditions | Recommend measures to reduce or eliminate triggers. **[A]**<br>Consider allergen immunotherapy for patients with persistent asthma and where there is clear evidence of a relationship between symptoms and exposure to an allergen (dust, mold, pollen, pets.) **[B]**<br>Treat relevant conditions (e.g., allergic bronchopulmonary aspergillosis **[A]** gastroesophageal reflux/laryngotracheal reflux **[B]** obesity **[B]** obstructive sleep apnea **[D]**, rhinitis and sinusitis **[B]**, chronic stress or depression **[D]**, vocal cord dysfunction, **[D]**.)<br>Vaccines: Inactivated influenza vaccine for all patients over 6 months of age **[A]** unless contraindicated. COVID-19 vaccine; Avoid intranasal influenza vaccine.<br>Give age-appropriate pneumococcal vaccine. |
| | Medications | Follow stepwise management per GINA 2024 Medication Management)<br>Adolescents and adults should be considered for ICS-formoterol as controller and reliever.<br>Re-evaluate in 2 - 6 weeks for control. Modify treatment based on level of control. See: JACI A Practical Guide to Implementing SMART in Asthma Management - The Journal of Allergy and Clinical Immunology: In Practice (jaci-inpractice.org) and SMART Therapy.<br>Consider step down if well-controlled for 3 months. |
| | Referral | Consider a referral to an allergist or pulmonologist if 1) there are difficulties achieving or maintaining control, 2) if immunotherapy or biologics are to be considered, 3) if additional testing is indicated such as an exhaled nitric oxide test, in patients with allergic or eosinophilic asthma known as the (FeNO Test) 4) if the patient has required **2 or more bursts of oral corticosteroids** in the past year 5) if there was an asthma related hospitalization, or 6) if there are questions as to the veracity of the diagnosis.. **[D]** |

**Levels of Evidence for the most significant recommendations:** A = randomized controlled trials; B = controlled trials, no randomization; C = observational studies; D = opinion of expert panel

This guideline lists core management steps. It is based on 2007 National Asthma Education and Prevention Program Expert Panel Report 3, Guidelines for the Diagnosis and Management of Asthma. National Heart, Lung and Blood Institute; Global Initiative for Asthma 2022. Global Strategy for Asthma Management and Prevention, 2020; NHLBI Asthma Care Quick Reference Diagnosing and Managing Asthma NIH Publication No. 12-5075, Revised September 2012; Advisory

Committee on Immunization Practices, Pneumococcal ACIP Vaccine Recommendations (cdc.gov). JACI in Practice 2021.