



<b>Body System:</b> Respiratory		
<b>Session Topic:</b> Asthma Update		
<b>Educational Format</b>		<b>Faculty Expertise Required</b>
<b>REQUIRED</b>	Interactive Lecture	Expertise in the field of study. Experience teaching in the field of study is desired. Preferred experience with audience response systems (ARS). Utilizing polling questions and engaging the learners in Q&A during the final 15 minutes of the session are required.
<b>OPTIONAL</b>	Problem-Based Learning (PBL)	Expertise teaching highly interactive, small group learning environments. Case-based, with experience developing and teaching case scenarios for simulation labs preferred. Other workshop-oriented designs may be accommodated. A typical PBL room is set for 50-100 participants, with 7-8 each per round table. <u>Please describe your interest and plan for teaching a PBL on your proposal form.</u>
<b>Professional Practice Gap</b>	<b>Learning Objective(s) that will close the gap and meet the need</b>	<b>Outcome Being Measured</b>
<ul style="list-style-type: none"> <li>Patients require assistance recognizing and avoiding environmental triggers for their asthma.</li> <li>Family physicians need to understand the most appropriate diagnostic and treatment plans to help patients with long-term management of asthma. Management strategies should include consideration of pulmonary function tests (typically done through spirometry), assessment of asthma control and reasons for lack of control, assessment of allergic and non allergic triggers, selection of effective quick relief and controller medications and development of an asthma management plan.</li> <li>Family physicians need to be competent in managing asthma in both the</li> </ul>	<ol style="list-style-type: none"> <li>Use evidence-based criteria to order and interpret appropriate tests for asthma.</li> <li>Analyze environmental triggers for asthma with patients and select factors to reasonably avoid or control them.</li> <li>Develop system-wide interventions that promote patient adherence to long-term management of chronic asthma.</li> <li>Collaborate with asthma patients to develop an asthma action plan that encourages adherence.</li> </ol>	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.



<p>inpatient and outpatient setting.</p> <ul style="list-style-type: none"> <li>• In prescribing quick-relief and controller medications, family physicians need to carefully explain to patients and families the difference between therapies prescribed and which agents are most effective in the event of an asthma attack/exacerbation.</li> <li>• Family physicians may not be aware of the current updates to the Expert Panel Review’s guidelines and recommendations within the National Asthma Education and Prevention Program or existence of the more recently updated GINA asthma guidelines.</li> </ul>		
<b>ACGME Core Competencies Addressed (select all that apply)</b>		
X	Medical Knowledge	Patient Care
X	Interpersonal and Communication Skills	Practice-Based Learning and Improvement
	Professionalism	Systems-Based Practice
<b>Faculty Instructional Goals</b>		
<p>Faculty play a vital role in assisting the AAFP to achieve its mission by providing high-quality, innovative education for physicians, residents and medical students that will encompass the art, science, evidence and socio-economics of family medicine and to support the pursuit of lifelong learning. By achieving the instructional goals provided, faculty will facilitate the application of new knowledge and skills gained by learners to practice, so that they may optimize care provided to their patients.</p> <ul style="list-style-type: none"> <li>• Provide up to 3 evidence-based recommended practice changes that can be immediately implemented, at the conclusion of the session; including SORT taxonomy &amp; reference citations</li> <li>• Facilitate learner engagement during the session</li> <li>• Address related practice barriers to foster optimal patient management</li> <li>• Provide recommended journal resources and tools, during the session, from the American Family Physician (AFP), Family Practice Management (FPM), and Familydoctor.org patient resources; those listed in the <u>References</u> section below are a good place to start             <ul style="list-style-type: none"> <li>○ Visit <a href="http://www.aafp.org/journals">http://www.aafp.org/journals</a> for additional resources</li> <li>○ Visit <a href="http://familydoctor.org">http://familydoctor.org</a> for patient education and resources</li> </ul> </li> <li>• Provide tools, resources, and strategies to foster the implementation of evidence-based asthma management guidelines into practice</li> </ul>		



- Provide specific strategies and resources to assist physician learners to develop collaborative care plans with asthma patients to develop an asthma action plan that encourages adherence
- Provide recommendations for the use of evidence-based criteria to order and interpret appropriate tests for asthma.
- Provide recommendations to help physician-learners to analyze environmental triggers for asthma with patients and select factors to reasonably avoid or control them.
- Provide recommendations and strategies for developing system-wide interventions that promote patient adherence to long-term management of chronic asthma.
- Provide strategies for collaborating with asthma patients to develop an asthma action plan that encourages adherence.
- Provide recommendations regarding guidelines for Medicare reimbursement.
- Provide recommendations to maximize office efficiency and guideline adherence to the diagnosis and management of asthma.
- Provide an overview of newly available treatments, including efficacy, safety, contraindications, and cost/benefit relative to existing treatments.

**\*Note** – the scope of this topic should cover from infancy to old age and prn rescue to new biologics. This will highlight the new biologic therapies that have been approved in late 2016 and more will probably be approved in 2017

### Needs Assessment

Asthma is one of the most common chronic diseases; it is estimated that 27 million people, including over 7 million children (9.5% of all children), are believed to currently have the condition.<sup>1</sup> It accounts for more than 14 million ambulatory visits to office-based physicians – 3 million of which are to family physicians.<sup>2</sup> In 2008, asthma accounted for an estimated 14.4 million lost school days; therefore, once a child is diagnosed with asthma, the goal of therapy is to reduce wheeze and cough, reduce the risk and number of acute exacerbations, and minimize adverse effects of treatments, sleep disturbances, and absences from school.<sup>3</sup> Symptoms vary widely, therefore asthma must be distinguished from other causes of respiratory illness. Asthma has no exact cause, no known cure and can manifest at different stages of a person's life (although it is most often diagnosed in children). Adults with asthma may experience cough, wheezing, chest tightness and shortness of breath in response to a number of environmental “triggers,” such as tobacco smoke; viral and bacterial infections; strenuous exercise or exposure to cold, dry air; acid reflux; and allergen exposure.<sup>4,5</sup>

Data from a recent American Academy of Family Physicians (AAFP) CME Needs Assessment survey suggests that family physicians have knowledge gaps with regard to asthma management. More specifically, CME outcomes data from 2012 - 2016 AAFP FMX (formerly Assembly): *Asthma* (both pediatric and adult) sessions indicates that physicians have knowledge and practice gaps related to asthma clinical decision making tools (e.g. asthma APGAR); using spirometry to confirm asthma; the identification of asthma triggers; teaching and reviewing proper inhaler use; new treatment options and treatment dosing; the use of asthma action plans; and use of inhaler spacers.<sup>6-9</sup>



Family physicians are faced with several barriers to providing optimal management of the pediatric patient with asthma. Frequently, when pediatric patients seek medical care in a general emergency room for asthma exacerbations, there is a lack of follow up with their primary care provider.<sup>10</sup> This is particularly concerning because general emergency departments under-prescribe corticosteroids (as measured by current NIH treatment guidelines).<sup>11</sup> Additionally, data from some studies suggest that primary care physicians inconsistently follow national guidelines for influenza vaccination of children with asthma, and should refer to recommendations of the National Asthma Education and Prevention Program (NAEPP).<sup>12</sup>

The differential diagnosis of wheezing must be carefully considered, particularly in infants and young children, for whom testing for reversible airflow obstruction is technically difficult. Pulmonary function tests are a critical component of assessing and diagnosing asthma patients. Practice profile data report that 66% of family physicians conduct spirometry tests.<sup>13</sup> However, some studies suggest that the use of spirometry in primary care settings for pediatric patients with asthma does not conform to national guidelines.<sup>14</sup> Most infants and children with recurrent wheezing or chronic cough are most likely to suffer from asthma; however, family physicians should consider other causes in the differential diagnosis.<sup>15,16</sup>

For patients with persistent difficult to control asthma or asthma diagnostic uncertainty, pulmonary function tests are a critical component of assessing and diagnosing asthma patients. Practice profile data report that 66% of family physicians conduct spirometry tests.<sup>13</sup> Initial assessing asthma severity and then monitoring asthma control is fundamental to effective asthma management. However, management of asthma often fails due to non-adherence to its portion on the evidence-based guidelines.<sup>17</sup> Physicians need training to properly use asthma assessment tools such as the Asthma APGAR, the Asthma Control Test (ACT™) or the Asthma Control Questionnaire (ACQ).<sup>17,18</sup>

Treatment for asthma consists of medications for both quick relief of symptoms and control of long term inflammation and bronchoconstriction, generally in the form of inhaled medicines. The mainstay of treatment for asthma are anti-inflammatory drugs, inhaled corticosteroids and leukotriene modifiers with the addition of long acting bronchodilators when anti-inflammatory therapy alone is inadequate to gain and maintain asthma control and prevent recurrent asthma exacerbations. Treatment of acute asthma exacerbations includes short acting bronchodilators which can be administered via a metered-dose inhaler or a nebulizer and for prolonged or severe exacerbations, oral corticosteroids.<sup>19</sup> Treatment of acute asthma exacerbations includes short acting bronchodilators which can be administered via a metered-dose inhaler or a nebulizer and for prolonged or severe exacerbations, oral corticosteroids.<sup>4,19,20</sup> In 2010, the U.S. Food and Drug Administration (FDA) required Risk Evaluation and Mitigation Strategies (REMs) and class-labeling changes be instituted to improve the safety and use of LABAs.<sup>21</sup> New REMS have been published since 2011 for fluticasone propionate and salmeterol xinafoate, arformoterol tartrate, and inhalation powder.<sup>22</sup> LABAs appear to be safe when used with inhaled corticosteroids. LABA monotherapy is associated with an increase in asthma-related mortality and nonfatal serious adverse events, but not in all-cause mortality.<sup>23</sup> Family physicians must ensure that they receive education related to pharmacologic changes and post-marketing changes for certain drugs. They must have appropriate resources and systems set up to search for adverse reactions and possible drug interactions in their patients. Physicians must be kept up to date on



new treatments as they become available, and be prepared to counsel patients regarding efficacy, safety, contraindications, and costs/benefits relative to existing treatments. For example, physicians should be familiar with recently FDA approved biologic treatments for severe asthma such as Cinqair (reslizumab), approved in March 2016; and Nucala (mepolizumab), approved November 2015.<sup>24</sup>

It is imperative that patients understand the difference between quick-relief medications (such as short-acting beta<sub>2</sub> agonists) and long-term medications, and which to use in the event of an asthma attack. Patients should also be counseled about the importance of always having a “rescue inhaler” to treat the sudden onset of asthma symptoms and understanding the warning signs of acute asthma symptoms or an asthma attack as directed in an asthma management or asthma action plan.

Physicians should also be aware that Black populations may be disproportionately affected by LABA risks.<sup>25</sup> The primary outcome from the BELT Randomized Clinical Trial study was time to asthma exacerbation, defined as a worsening asthma event requiring oral or parenteral corticosteroids. Among black adults with asthma treated with ICS, adding a LABA did not improve time to asthma exacerbation compared with adding tiotropium. These findings were not affected by polymorphisms at the Arg16Gly locus of ADRB2. These findings do not support the superiority of LABA + ICS compared with tiotropium + ICS for black patients with asthma.<sup>25</sup>

As asthma is a complex disorder characterized by variable and recurrent symptoms, airflow obstruction, bronchial hyperresponsiveness and underlying inflammation, treatment plans should include patient-specific approaches and long-term management to gain control of the disease. The National Asthma Education and Prevention Program (NAEPP), an expert panel convened by the National Institutes of Health, has a series of recommendations for addressing asthma in specific age groups. For adults, recommendations include using a four-step approach for assessing the level of severity, impairment and frequency of asthma and providing education and medication based on comorbid conditions and environmental triggers. Physicians should also not shy away from prescribing physical training for patients with asthma. Physical training lasting for at least 20 to 30 minutes, two to three times a week for at least six weeks, improves physical fitness in patients with asthma; and is not associated with worsening of asthma symptoms.<sup>26</sup> However, if exercise-induced bronchoconstriction is suspected in the asthmatic patient athlete, refer to the diagnosis and management recommendations presented in the 2011 AFP issue, *Exercise-Induced Bronchoconstriction: Diagnosis and Management*.<sup>27</sup>

In order to curb health-care costs and improve patient care, physicians should consider the following *Choosing Wisely* recommendation from the American Thoracic Society (ATS) and the American College of Chest Physicians (ACCP):<sup>28</sup>

- Do not routinely administer IV steroids, use oral corticosteroids whenever feasible for patients hospitalized for asthma exacerbations.

General principles established by the NAEPP Expert Panel Report 3 (EPR-3) in 2007, include the following clinical activities: including medications, patient education, environmental control measures and management of comorbidities at each step of asthma treatment; initiating therapy based on asthma severity; and adjusting therapy based on asthma control. Patients also benefit



from systematic chronic care plans and support for self-management of their condition, which family physicians are uniquely positioned to provide. Written asthma action plans, for instance, are an integral tool used to help improve health outcomes for pediatric patients who have asthma.<sup>20</sup> While standard patient education, in theory, increases their knowledge enough to make behavioral change that leads to improved outcomes, self-management strategies aim to build patients' confidence in their abilities to manage their symptoms and treatment and make necessary lifestyle changes.<sup>29</sup> Physicians should consider utilizing a guidelines-based management plan that considers the developmental age of the pediatric patient.<sup>30</sup> The NAEPP supports self-management programs as an approach to control factors and conditions that affect asthma.<sup>20</sup> There is also some evidence that using a mailed asthma control questionnaire (ACQ) is an effective approach for tracing asthma patients who need medical attention, as well as tracing patients who would otherwise not have consulted their family physician.<sup>31</sup> Family physicians can improve quality of care for asthma patients by utilizing tools that foster the implementation of current guidelines, such as the asthma APGAR clinical decision making tool.<sup>32,33</sup>

The American Medical Association's Physician Consortium for Performance Improvement has published the "Asthma Physician Performance Measurement Set," which sets forth clinical recommendations for physicians to use in their practices, as well as clinical performance measures for each recommendation.<sup>34</sup> These clinical performance measures include the following:

- Whether patients were evaluated during at least one office visit during the reporting year for the frequency of daytime and nocturnal asthma symptoms, as well as the percentage of patients who were so evaluated.
- Whether patients with mild, moderate or severe persistent asthma were prescribed either the preferred long-term control medication or an acceptable alternative treatment, as well as the percentage of all patients who received such a prescription, and the distribution of long-term control therapy by category of medication, severity classification and age range.

Finally, family physicians should consult the American Academy of Allergy, Asthma, & Immunology (AAAAI) referral guidelines as part of the routine clinical decision making process.<sup>35</sup> This guideline presents referral guidelines for 14 categories of allergic diseases, including several specific considerations for asthma patients.

#### Resources: Evidence-Based Practice Recommendations/Guidelines/Performance Measures

- Evaluation of the patient with chronic cough<sup>16</sup>
- The diagnosis of wheezing in children<sup>15</sup>
- Childhood Asthma: Treatment Update<sup>3</sup>
- Cochrane Briefs: Addition of Long-Acting Beta Agonists for Asthma in Children<sup>36</sup>
- Management of Acute Asthma Exacerbations<sup>19</sup>
- Medical Therapy for Asthma: Updates from the NAEPP Guidelines<sup>20</sup>
- A stepwise approach to the interpretation of pulmonary function tests<sup>37</sup>
- Safety of long-acting Beta agonists in adults with asthma<sup>23</sup>
- Physical training for patients with asthma<sup>26</sup>
- Exercise-induced bronchoconstriction: diagnosis and management<sup>27</sup>
- Supporting self-management in patients with chronic illness<sup>29</sup>



- Tracing Uncontrolled Asthma in Family Practice Using a Mailed Asthma Control Questionnaire<sup>31</sup>
- Tools and strategies for improving asthma management<sup>32</sup>
- PCPI Approved Quality Measures: Asthma<sup>34</sup>
- Consultation and referral guidelines citing the evidence: how the allergist/immunologist can help<sup>35</sup>
- Asthma APGAR clinical decision making tools<sup>33</sup>
- FPM Toolbox – Disease Management: Asthma<sup>38</sup>
- National Asthma Control Initiative (NACI)<sup>39</sup>
- FamilyDoctor.org. Asthma | Overview (patient resource)<sup>40</sup>

### References

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