

## Potential Barriers and Suggested Ideas for Change

**Key Activity:** Develop initial assessment and management protocol.

**Rationale:** The history and physical examination obtained from the patient and family interviews form the foundation on which all future assessments, diagnostic considerations, and therapeutic decisions rest. Findings from history and physical examination establishes the patient's previous diagnosis, suggests possible triggers of the current exacerbation and the degree of intervention currently needed. Proper assessment of the current exacerbation level of severity ensures the treatment is appropriately modified for individual patients.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
<b>Gap:</b> A focused patient history is not obtained or documented.		
You do not have a patient history form that incorporates key elements for patients with asthma, or you are unclear about what should be included in the history.	<p>Obtain or develop a structured history form to ensure that key information for treating patients with asthma exacerbations is documented, such as:</p> <ul style="list-style-type: none"> <li>• Present illness, including current triggers</li> <li>• Current management plans for chronic and acute asthma, including adherence to the medication regimen</li> <li>• Inpatient history and risk factors for sudden death from asthma</li> <li>• Other relevant medical problems</li> </ul> <p>Special attention should be paid to <a href="#">Risk Factors for Death from Asthma</a>.</p>	Contact other hospitals for the history form they use and adapt for your purposes.
There may be time constraints placed on attending physicians to obtain and document a focused patient history for every patient.	Develop a protocol that designates trained personnel to obtain and document the patient history using a structured form for the attending physician's review.	Ask the patient and/or family to fill out a history questionnaire for asthma while waiting to be seen to help speed up the documentation process. Have trained personnel review and clarify responses for the attending physician's review.
<p>The parent or caregiver:</p> <ul style="list-style-type: none"> <li>• Does not have the patient's full history information</li> <li>• Is unable to communicate the patient's history because there is a language barrier</li> <li>• Lacks the knowledge of asthma triggers, its daily management, and how to recognize and handle worsening asthma</li> </ul>	<p>Use an electronic medical record system to obtain available patient history.</p> <p>Use interpretation services available in your hospital.</p> <p>Document knowledge and skill gaps to guide educational efforts during the hospital course.</p>	<p>Designate a member of the team to contact the primary care physician to obtain patient history.</p> <p>Use a commercially available "language line" interpretation service offered via telephone.</p>

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
<b>Gap:</b> A physical examination that meets National Heart, Lung, and Blood Institute (NHLBI) guideline recommendations for patients with a reported asthma exacerbation is not completed or documented.		
You do not have an examination form with places to record pertinent information for patients with asthma, or you are unclear about what should be included in the examination.	Obtain, or develop and use, a structured examination form to ensure that all pertinent physical findings are obtained and documented for patients with an asthma exacerbation, including: <ul style="list-style-type: none"> <li>• Full vital signs</li> <li>• General assessment</li> <li>• Head, ears, eyes, nose, and throat (HEENT)</li> <li>• Cardiac examination</li> <li>• Respiratory examination, including pulse oximetry and degree of dyspnea</li> <li>• Abdominal examination</li> <li>• Forced expiratory volume in the first second of expiration (FEV<sub>1</sub>) or peak expiratory flow (PEF) measurements, as appropriate</li> </ul>	Contact other hospitals for the examination form they use and adapt for your purposes.
All NHLBI-recommended elements of the physical examination are not obtained and/or documented.	Establish a protocol for trained nursing personnel to obtain vital signs, and a protocol for nurses or respiratory therapists (RTs) to obtain pulse oximetry measurements and peak flow measurements for the attending physician's review.  To aid documentation, provide space on the RT assessment and nursing vital sign assessment forms to record PEF and pulse oximetry measurements.	Meet with the respiratory therapy and nursing staff supervisors to review NHLBI guideline recommendations for physical examinations of patients with asthma exacerbations.  Discuss the importance of the recommended elements and proper documentation. Address objections and brainstorm ways to overcome obstacles.  Hold an in-service or educational session with all staff members to communicate outcomes.
Peak flow measurements are not consistently obtained or documented for children ages 5 years or older because the appropriate peak flow meter is not available.	Equip staff members and/or patients with age-appropriate peak flow meters to ensure availability.  Initiate a respiratory flow sheet for nurses, RTs, and physicians to use for documenting physical examination findings, pulse oximetry, and PEF on presentation and during admission.	

Peak flow measurements are not documented because the child is unable to perform the maneuver.	Document the child's attempts to perform the maneuver and need for further training.	Use this information to guide patient education during the hospital course.
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<b>Gap:</b> The severity classification of the patient's current asthma exacerbation is not assessed or documented and, therefore, is not used to guide medication decisions according to NHLBI guidelines.		
You do not have a validated instrument for classifying the severity of asthma exacerbations or are unsure about the classifications.	Obtain, or develop and implement, a validated instrument such as the NHLBI <a href="#">Formal Evaluation of Asthma Exacerbation Severity in the Urgent or Emergency Care Setting</a> or asthma scoring system (click for an <a href="#">example</a> used by the Connecticut Children's Medical Center) to classify the level of asthma exacerbation and guide medication decisions.  Also see <a href="#">Figure 5-1</a> for classifying asthma exacerbations based on symptoms, signs, and initial PEF or FEV <sub>1</sub> .	
Current classification of the severity of the asthma exacerbation may be assessed and used to guide medication decisions but is not documented in patients' charts.	Use a preprinted history form or preprinted orders pathway to prompt documentation of exacerbation severity classification.	Discuss the need for all team members to have the severity classification of the exacerbation documented and available in the patient's chart. Brainstorm ways to overcome any obstacles.
<b>Gap:</b> The NHLBI-recommended approach to initiate asthma therapy based on the severity classification of the patient's current asthma exacerbation is not consistently followed or documented.		

<p>Some but not all of the NHLBI-recommended procedures for initiating asthma therapy are consistently followed.</p>	<p>Use an asthma pathway to guide selection of appropriate medications and dosages and oxygen, if needed.</p> <p>Develop a protocol to apply the NHLBI-recommended procedures for initiating asthma therapy:</p> <ol style="list-style-type: none"> <li>1. Document that therapy was initiated based on the severity classification of the patient's current asthma exacerbation (taking into account systemic corticosteroids taken before admission).</li> <li>2. Recommend the type, amount, and schedule of preferred medications; document reasons when nonpreferred agents are used. Consult your hospital's asthma pathway <a href="#">or Dosages of Drugs for Asthma Exacerbations</a> guidelines, for example, as a reference of recommended medication dosages for:                         <ul style="list-style-type: none"> <li>• Inhaled short-acting beta agonist (SABA)</li> <li>• Systemic corticosteroids</li> </ul> </li> <li>3. Provide oxygen, if needed. Create standing orders for nurse or RT to initiate oxygen therapy for hypoxemia.</li> </ol>	<p>In a staff meeting with other ordering physicians, discuss the importance of using your hospital's recommended approach for initiating asthma therapy.</p> <p>Review all relevant recommendations, tables, and figures from the NHLBI guidelines.</p> <p>Use preprinted orders for medications and frequency of dosing according to patients' severity classification and for oxygen, if needed.</p>
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## Potential Barriers and Suggested Ideas for Change

**Key Activity:** Hospital course.

**Rationale:** Patients must be watched closely for signs of worsening airflow obstruction or fatigue to help the physician decide whether additional therapy is necessary to identify adverse effects. Through frequent and open communication, a shared understanding of the treatment approach to control the asthma can be achieved. Through education, patients and caregivers can be equipped with the skills necessary to monitor asthma, assess level of control, administer medications correctly, avoid environmental triggers, and use the written asthma action plan.

Viral infections are the most common precipitant of asthma symptoms. Influenza type A and B viral infections can be prevented with an annual influenza vaccination.

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<b>Gap:</b> Serial assessments to monitor the patient's response to asthma therapy are not being conducted consistently, documented, and/or are not being reviewed by the attending physician.		
Staff is unclear about when or how often the serial assessments should be conducted.	Develop a schedule of reassessments appropriate to the level of severity of the asthma exacerbation and treatment required to monitor response to therapy.	
Staff is unclear about what the serial assessments should include.	Establish a protocol for conducting serial assessments to monitor the patient's response to asthma therapy that includes all of the following: <ul style="list-style-type: none"> <li>• Time and date of assessment</li> <li>• Interval since last bronchodilator treatment and frequency of treatments</li> <li>• Respiratory rate and accessory muscle use</li> <li>• Air exchange and presence of wheezing</li> <li>• Pulse oximetry measurements and oxygen requirements</li> <li>• Peak flow measurements, if applicable</li> </ul>	Consult with other hospitals to see their guidelines for monitoring the patient's response to therapy. For example, the James M. Anderson Center for Health Systems Excellence at Cincinnati Children's has shared their <a href="#">evidence-based care guidelines</a> .
Staff is unclear about who should conduct and review the serial assessments.	Define clear roles and responsibilities for hospital staff to ensure that: <ul style="list-style-type: none"> <li>• Assessments are completed for all patients with an asthma exacerbation.</li> <li>• Assessments are completed by trained personnel, eg, the resident physician, respiratory therapist (RT), nursing staff, or other qualified personnel.</li> <li>• The attending physician reviews all serial assessments not performed personally.</li> </ul>	Discuss the roles, responsibilities, and appropriate workflow for serial assessments in a physician staff meeting. Brainstorm obstacles and ways to overcome them.  Consult with other hospitals to see how they staff serial assessments.

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Some ancillary staff members do not have the knowledge or experience to perform the serial assessments.	Provide education for ancillary staff to ensure they know how to perform the serial assessments. Review elements to include in the assessment.	Consult with nursing or RT supervisors for relevant training resources within their respective professional organizations.
There are variances in assessment results among staff because of the subjective nature of the examination and because assessments may be conducted by multiple staff members with varying expertise (eg, nurse, physician, or RT).	Consider using a hospital-approved numeric scoring system to address variances in assessment results among staff. Click for an <a href="#">example</a> .	If variances persist, consider conducting an interrater reliability evaluation to assess the consistency of the scoring system, then gain agreement among raters.
Some staff members do not recognize the importance of serial assessments and/or do not know the proper frequency for assessments.	In a staff communication session, discuss the importance of repeated assessments to monitor asthma therapy and the needed frequency of assessment. Review National Heart, Lung, and Blood Institute (NHLBI) guideline recommendations for serial assessments.	Discuss objections to conducting serial assessments and obstacles with staff. Address objections and brainstorm ways to overcome obstacles.
There is no place to document serial assessments in the record or the documentation is not completed in a timely manner.	Establish a clear protocol for documenting serial assessments—in patient charts, on bedside flow sheets, or in the hospital's electronic medical record (EMR) system, as directed by hospital procedures. In a staff communication session, help staff develop an understanding that results must be entered in a timely manner for the attending physician to review.	
The results of the serial assessments are not accessible when or where the attending physician is ready to review them.	Use the hospital's EMR system to facilitate the review of serial assessments by the attending physician and other hospital team members.  If the hospital does not have an EMR system, establish a protocol for ancillary staff members to inform the attending physician when the reassessment is completed.	
Assessments are not being utilized to wean patients in a timely fashion.	Develop an order for weaning beta agonist therapy based on serial assessments. This could be part of a larger asthma order set and could be incorporated into an EMR or used as a paper tool.	Consult with other hospitals to share their orders for weaning therapy. For example, the James M. Anderson Center for Health Systems Excellence at Cincinnati Children's Hospital has shared their <a href="#">Asthma Exacerbation In-Patient Order Set</a> online.
<b>Gap:</b> Asthma education and self-management materials are not explained or provided to patients.		

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
The asthma educational message and materials are not consistent between patients and among providers.	<p>Collaborate with your team to develop an asthma education protocol that begins on hospital day 1 and <b>introduces</b> key educational messages, <b>reviews</b> them throughout the patient's hospital stay, and <b>documents</b> them in the patient's chart. Patients and their families need:</p> <ul style="list-style-type: none"> <li>• A fundamental knowledge about the disease</li> <li>• An understanding of the role of medications in controlling asthma—for quick relief and long-term control</li> <li>• Self-management skills, including how to:                             <ul style="list-style-type: none"> <li>○ Monitor the level of asthma control</li> <li>○ Take (or give) medications correctly</li> <li>○ Identify and avoid environmental triggers</li> <li>○ Use the individualized asthma action plan</li> </ul> </li> </ul>	Consult with other hospitals about their asthma education materials and protocols. Discuss ideas with your team and choose which ones to implement in your hospital.
The asthma educational materials are not tailored to the patient's and family's literacy level and language.	<p>Engage the services of an interpreter to converse with patients in their native language and to translate materials as needed.</p> <p>Research materials available in other languages on the Internet. Check out these materials in Spanish:</p> <ul style="list-style-type: none"> <li>• <a href="http://www.epa.gov/iaq/espanol/asma.html">http://www.epa.gov/iaq/espanol/asma.html</a></li> <li>• <a href="http://www.cdc.gov/spanish/enfermedades/asma.html">http://www.cdc.gov/spanish/enfermedades/asma.html</a></li> </ul>	
Not all staff members feel equipped as educators.	Provide skill-building training for staff that supplies relevant asthma education in a practice setting.	<p>Enlist the support of others on your team regarding educational activities that would empower staff to be effective educators.</p> <p>Consider offering continuing education credit courses, either on-site or online.</p>
There is not enough time for the hospital staff to provide patient education.	Develop a protocol that designates a care team member to review key educational messages and materials with patients and families.	<p>Consult with the hospital administration about staffing needs.</p> <p>Discuss ways to meet this requirement of The Joint Commission.</p>



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The educational and self-management messages and materials are communicated to the patient and family, but might not be implemented.	Ask the patient and family to take an increasingly active role in administering medications and assessing for signs of improvement during the hospitalization. Examples: <ul style="list-style-type: none"> <li>• Demonstrate a skill and have the patient return the demonstration.</li> <li>• Provide a daily diary for the patient or family member to record asthma control and signs of decline or improvement in the condition.</li> </ul>	If literacy, language, social, or cultural barriers exist, engage the services of an interpreter or social worker as needed to ensure the educational messages are understood. Also offer education to staff about the populations in the area to increase staff understanding of relevant social and cultural issues.
<b>Gap:</b> Recommendation or administration of annual influenza vaccine is not performed.		
There is no protocol in place for recommending or administering influenza vaccine to patients with asthma.	Develop a protocol to recommend or administer influenza vaccinations to patients with asthma who are 6 months or older. For example, add influenza vaccine to the physician's order set.	Consult with your hospital administration about adding a Best Practice Alert (BPA) to your EMR for patients admitted with a diagnosis of asthma.
The date of the patient's last influenza vaccination is unknown. <ul style="list-style-type: none"> <li>• Parental recall may be inaccurate.</li> <li>• State and/or local registries are not available, the hospital does not have access to them, or there is insufficient time to check.</li> </ul>	Ask the parent or a team member to consult the patient's primary care physician or state or local registry, if available.  If previous administration of the influenza immunization is unknown and cannot be documented, it is recommended that patients admitted with an asthma exacerbation receive the annual influenza vaccine during hospitalization.	If the hospital does not have access to state or local registries, discuss participation with hospital administration.
The purpose and importance of the influenza vaccine for children with asthma are not clear to the patient and family.	Provide information to patients and families about the importance of an annual influenza vaccination for patients with asthma. Patients with asthma may be at increased risk for complications from influenza.	The CDC fact sheet, Key Facts About Influenza and Influenza Vaccine, is available at: <a href="http://www.cdc.gov/flu/keyfacts.htm">http://www.cdc.gov/flu/keyfacts.htm</a>
The patient and family or hospital staff are concerned about the cost of the vaccine.	Involve the social worker, who may be able to recommend ways to obtain the vaccine at little or no cost.  Explain the cost-effectiveness of the immunization compared with associated health care-related to complications of influenza.	Review the following article with hospital staff and administration regarding the cost-effectiveness of influenza immunization for children with asthma:  Teufel RJ II, Basco WT Jr, Simpson KN. Cost effectiveness of an inpatient influenza immunization assessment and delivery program for children with asthma. <i>J Hosp Med</i> . 2008;3(2):134–141



# EQIPP: Asthma - Hospitalist

## Potential Barriers and Suggested Ideas for Change

**Key Activity:** Discharge planning.

**Rationale:** The National Heart, Lung, and Blood Institute (NHLBI) guidelines recommend developing a written asthma action plan with input from the patient and family to ensure their understanding of the instructions for medications prescribed and how to recognize and handle worsening asthma. The guidelines also recommend a stepwise approach for managing the asthma long-term to identify the lowest dose of inhaled corticosteroids that maintains asthma control. It is important for the primary care physician (PCP) to have the same understanding of hospitalization as the patient so they can reevaluate the patient's current management.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
<b>Gap:</b> A written asthma action plan is not developed with, or explained to, every patient before discharge.		
You do not have age-appropriate asthma action plans or are unclear about what to include in the plans.	<p>Obtain or develop an asthma action plan that meets The Joint Commission requirements, NHLBI recommendations, and the needs of your hospital and the patients it serves.</p> <p>Examples of <a href="#">asthma action plans</a> are provided by the NHLBI. The patient's plan should include instructions for daily management and how to recognize and handle worsening asthma:</p> <p><b>Daily management</b></p> <ul style="list-style-type: none"> <li>List medicine to take daily, including the specific names of the medications.</li> <li>Describe actions to take to control environmental factors that worsen the asthma.</li> </ul> <p><b>How to recognize and handle worsening asthma</b></p> <ul style="list-style-type: none"> <li>Describe signs and symptoms that indicate worsening asthma:               <ul style="list-style-type: none"> <li>Increased wheeze, shortness of breath, nighttime awakenings, etc.</li> <li>Peak expiratory flow measurements (if peak flow monitoring is used)</li> </ul> </li> <li>List medications to take in response to signs of worsening asthma.</li> <li>Describe symptoms that require urgent medical care.</li> <li>List appropriate phone numbers for emergency contacts such as physician, emergency department, and ambulance service.</li> </ul>	Contact other organizations and asthma coalitions to see the asthma action plans they are using and adapt them for your purposes.
Owing to time constraints, the plan is not consistently completed or reviewed with the patient and family before discharge.	Designate and train appropriate staff to complete and review the action plan with the patient and family, eg, nurse clinician, asthma educator, or respiratory therapist. Reinforce key educational messages and ensure that the asthma action plan is understood.	<p>In a staff meeting, discuss the roles and responsibilities for asthma patient care and the workflow process.</p> <p>Brainstorm obstacles for developing and reviewing the asthma action plan and ways to overcome them.</p>

# EQIPP: Asthma - Hospitalist

Some staff may think that completing and reviewing the hospital discharge plan with the patient and family is sufficient.	Review the NHLBI guidelines recommendations with staff concerning asthma action plans and discuss differences between the discharge plan and the asthma action plan. The asthma action plan discusses the long-term management of asthma.	In a staff meeting, discuss any lingering or hidden objections and brainstorm ways to overcome them.
<b>Gap:</b> A written discharge plan is not provided or reviewed with every patient.		
The discharge plan is developed but might not be reviewed with the patient and family before discharge.	Develop a protocol that designates appropriately staff to review your hospital's asthma discharge plan, which meets The <a href="#">Joint Commission requirements</a> and recommendations made in the NHLBI <a href="#">Checklist for Hospital Discharge of Patients with Asthma</a> , with the patient and family. Reinforce key educational messages and ensure that the discharge plan is understood.	Brainstorm obstacles for developing and reviewing the discharge plan and ways to overcome them.
<b>Gap:</b> A follow-up appointment to monitor asthma control is not recommended for every patient with asthma.		
A follow-up appointment is not consistently recommended or documented.  Some patients are discharged before the intended recommendation is made owing to the difficulty of predicting the discharge date.	In a staff meeting, discuss The <a href="#">Joint Commission requirements</a> concerning the recommendation of a follow-up appointment made before discharge. Brainstorm obstacles for ensuring this requirement is met and ways to overcome them.	Schedule or recommend a follow-up appointment during the <b>first</b> day of hospitalization to ensure the appointment is made before the patient is discharged from the hospital.
Patients and/or families are reluctant to schedule follow-up visits or are unprepared for them.	<p>Explain to patients and/or families that continual, regular care in an outpatient setting can help reduce the readmission rate. Discuss the purpose for and value of follow-up visits to assess:</p> <ul style="list-style-type: none"> <li>• Asthma control</li> <li>• Adherence to the medication regimen</li> <li>• Goals of treatment</li> <li>• Quality-of-life issues, including any missed work or school, reduction of activities, sleep disturbances, etc.</li> <li>• Written action plan: Review and adjust as needed, and confirm that patient and family know what to do if the asthma gets worse</li> <li>• Peak flow measurements or asthma diary, if indicated</li> <li>• Inhaler device and spacer technique, as appropriate</li> <li>• Satisfaction with asthma care</li> </ul> <p>Prepare the patient and family to report key factors that determine whether the</p>	Involve the social worker to see if there are hidden objections, eg, cost, social or cultural concerns, or dissatisfaction with current ongoing asthma care.

## EQIPP: Asthma - Hospitalist

	<p>asthma is well controlled at the follow-up visit. This includes monitoring asthma symptoms, medication use, restricted activity, and peak flow values, if measured. Consider asking the patient and/or family to keep a daily diary to provide the PCP at the follow-up visit.</p> <p>A patient self-assessment for follow-up visits, such as the NHLBI <a href="#">Sample Patient Self-Assessment Sheet for Follow-up Visits</a>, can help monitor the asthma.</p>	
The patient and family do not have a PCP with whom to schedule a follow-up visit.	Involve the social worker if the patient does not have sufficient access to follow-up care. The social worker can suggest resources to meet the needs of the patient and family.	
<b>Gap:</b> Copies of the patient's discharge plan and asthma action plan are not provided to the patient's PCP or asthma clinic for every patient with asthma.		
It is unclear who will provide or transmit the plan and when it should be done.	<p>Establish or use a hospital-wide protocol for staff that clearly defines the roles, responsibilities, and time frame for providing or transmitting the patient's discharge plan and asthma action plan to the patient's PCP or asthma clinic in a timely manner.</p> <p>The protocol should consider what to do if the PCP does not have a dedicated fax or secure e-mail, eg, provide copies of the plans for the patient and family to take to the follow-up appointment.</p>	In a staff meeting, brainstorm obstacles for providing and transmitting the discharge plan to the PCP and ways to overcome them.
The PCP contact information is not available.	<p>Delegate a staff member, eg, the unit secretary, to locate the PCP contact information using available resources—phone book, Internet, Medical Information Service via Telephone (MIST line), etc.</p> <p>Create a matrix of referring PCPs and asthma clinics that includes the optimal way to transmit discharge plans and one or more alternative methods that meet the requirements of the Health Information Portability and Accountability Act (HIPPA). Distribute the matrix to appropriate hospital staff members to use when transmitting discharge plans to PCPs.</p>	
The plan is not in the appropriate format to provide or transmit to the PCP or asthma clinic.	<p>Consult with the health information management committee in your hospital to help spearhead the efforts to:</p> <ul style="list-style-type: none"> <li>• Create a <b>triplicate paper form</b> of the asthma action plan and discharge plan so copies are available to distribute to all parties: the hospital, patient and family, and the PCP or asthma clinic.</li> <li>• Create the plans in <b>electronic format</b> so copies are available to print or transmit to all parties and there is an electronic medical record of the plans.</li> </ul>	Meet with the hospital administration to discuss the needs, requirements, and associated costs for creating the form in the appropriate format. Explain how this effort will help meet The Joint Commission requirement.