

## Asthma in the emergency department

### Introduction

Approximately 235 million individuals suffer from asthma in the United States. It is one of the leading chronic diseases among children. Asthma is a preventable cause of 2.9 million asthma emergency department (ED) visits in the United States annually. In 2009, asthma accounted for more than 21,000 ED visits in Wisconsin, costing the state \$86 million. Over the last 10 years, there has been a gradual increase in lifetime and current asthma prevalence among children and adults.

With increasing rates of asthma in the state of Wisconsin, high-quality care is critical. The *National Asthma Education and Prevention Program Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma, 2007*,<sup>3</sup> (NAEPP guidelines) indicates four main components of effective asthma management. The components include: 1) routine health care, 2) pharmacological treatment, 3) education and 4) elimination and/or reduction of environmental asthma triggers.

Individuals who are seen in the ED for an asthma exacerbation are often not engaging in routine care, especially those with multiple admissions in a year. Lack of follow-up care after an ED visit can increase the patient's risk of a return ED visit. The Wisconsin Asthma Coalition (WAC) identified the need to improve the process of engaging patients in follow-up care as a way to reduce the rate of ED visits.

Comprised of more than 200 individual members and 10 local asthma coalitions, the WAC is committed to improving asthma management in Wisconsin by increasing implementation of the NAEPP guidelines.

### Summary of issue

The primary purpose of an ED visit is to receive acute emergency care rather than routine care. Therefore, patients receive minimal guidance regarding long-term management of their asthma. This poses an issue since asthma is a chronic condition and requires routine health care. According to Schnitman et al., 2009,<sup>2</sup> ED protocol should include: providing basic asthma education, determining the severity of the patients' asthma, determining if a controller medication is necessary and making follow-up care referrals.

Lack of time allotted with patients in an ED is a barrier staff faces. Staff often does not have enough time with the patient to provide comprehensive asthma education or to assist patients in securing a follow-up visit appointment.

Many patients need guidance on long-term asthma management, but families in an emergency situation are under a great deal of stress. They may not absorb sufficient information to make sound decisions regarding their asthma management. Once discharged and their immediate asthma symptoms dissipate, they may feel that their asthma has improved and therefore do not need further medical treatment/evaluation. To bridge this gap, there are some things that can be implemented in the ED that would get patients started in the right direction. Long-term care guidance an ED may offer include: prescribing

and providing access to controller medications, developing an asthma action plan and actively connecting the patient with a primary care provider (PCP).

The ED may be an opportunity for asthma patients to begin long-term care through use of a controller medicine and creation of an asthma action plan; however, many emergency physicians feel that the provision of these measures is the responsibility of the PCP. Conversely, according to Schnitman et al.<sup>2</sup>, asthma patients are more likely to continue controller medications through a PCP if the ED begins the prescription.

A significant number of patients with uncontrolled asthma utilize the ED for primary care, which may lead to the overuse of oral systemic corticosteroids, such as Prednisone. The NAEPP guidelines<sup>3</sup> state over-use can lead to side effects, such as “adrenal suppression, growth suppression, dermal thinning, hypertension, Cushing’s syndrome, cataracts, and muscle weakness.” The guidelines state, “Chronic corticosteroid use also can result in immunologic attenuation with loss of delayed-type hypersensitivity, diminished immunoglobulin G (IgG) levels without changes in functional antibody response, potential for reactivation of latent tuberculosis infection, and possible increase risk for infection, especially the development of severe varicella” (p. 224).

The NAEPP guidelines stress the importance of ongoing asthma monitoring to maintain, control and prevent exacerbations. Patients who utilize the ED for ongoing asthma care drive up costs with frequent ED visits. As stated earlier, \$86 million was spent on emergency asthma care in Wisconsin in 2009.

EDs can address the stress family’s face by engaging in follow-up procedures with their patients 24-72 hours after the initial visit. This could be accomplished by a follow-up phone call from an ED nurse to go over any questions, review their asthma action plan, encourage families to fill medications and assist families with scheduling the follow-up visit.

It is recommended for patients to receive follow-up care between one and four weeks after an ED visit. This enables patients to connect with a PCP, obtain medical guidance, ensure proper controller treatment, create and/or confirm an asthma action plan and provide more comprehensive asthma education. However, Schnitman et al.<sup>2</sup> reports that follow-up care after ED visits is deficient around the nation.

### **Data Collection Process**

The WAC leveraged existing relationships to access ED directors in Wisconsin and secured meetings with 14 EDs. Meeting attendees varied, but included the medical director, nurse manager, respiratory therapy department, case managers, and other staff who may lead asthma interventions. The WAC explored existing protocol used during an asthma ED visit, follow-up protocol for asthma patients after an ED visit, determined the EDs’ perceived willingness to implement change and identified needs that EDs have.

A survey tool was created by the WAC emergency services initiative team. Survey questions were based on the Schnitman et al.<sup>2</sup> literature review. The questions focused on: current services provided for asthma patients visiting the ED for an exacerbation, ED goals pertaining to asthma care improvement and interest in implementing a template to alert primary care providers that their patient was seen in the ED.

The 14 Wisconsin EDs had varying protocol, services and goals regarding asthma. While all hospitals provide some sort of basic asthma education during an ED visit, only 3 of 14 (21%) provide an asthma action plan to their patients. The educational materials and information varies between hospital systems and physicians. Asthma 101 and device training are the leading forms of education provided to patients during an ED visit. Time is the most significant barrier for patients in the ED to receive comprehensive education to

manage their asthma. Busy ED staff has a limited amount of time with each patient in order to see all patients admitted to the ED.

The WAC found that the majority of EDs are more likely to prescribe and/or dispense a rescue inhaler than a controller medication. Most ED physicians will not provide prescriptions and/or dispense controller medications because they feel this is the role of a PCP and that prescribing/dispensing controller medications will encourage patients to use the ED for primary care.

All EDs surveyed refer patients for follow-up care with their PCP. This may be verbal referral or may be written on the patient's discharge slip. However, the majority of the time it is the patient's responsibility to make the connection and follow-up with their PCP. One ED reported that contacting a patient after discharge from an ED is difficult because contact information may not be reliable. Only 6 of the 14 EDs surveyed will alert the patient's PCP regarding the emergency visit if the PCP is within their same medical system. Half of the EDs made follow-up calls to the majority or all patients within 24 to 72 hours following a visit. Only one ED surveyed has the ED physician make personal calls to PCPs.

Electronic medical record systems can aid in the communication between PCPs and EDs. However, the level of communication varies from information listed deep within a chart, to an email sent to the PCP. While the latter may be more proactive, many PCPs are overwhelmed by the number of emails received. In addition, finding the information within the electronic records serves as a challenge and requires the PCP to actively look for it. Some information is easily located where as other information requires more time to find because each electronic medical record is created differently.

None of the EDs surveyed had a standard of follow-up protocol for asthma patients discharged from the ED. EDs that do have follow-up procedures in place lack consistency in how and when the procedures are carried out.

## **Recommendations**

The focus of the WAC emergency services follow-up initiative is to implement and standardize a more efficient and effective follow-up protocol that EDs can utilize for patients using the ED for asthma care. EDs should:

**Use standardized asthma protocol.** EDs should implement a standard asthma protocol based on the NAEPP guidelines to ensure that all patients are receiving the same high quality care. This protocol should include severity assessment, asthma education, asthma action plan, consideration of starting a controller medication and follow-up procedures.

**Provide effective follow-up care.** Identifying effective measures that increase patient follow-up care will decrease ED visits and increase asthma management. One study<sup>1</sup> showed a 60% increase in patient follow-up with their PCP when the ED gave patients a 5-day prescription of Prednisone, provided transportation vouchers to get to a PCP and called the patient within 48 hours to remind them to make an appointment with their PCP.

**Prescribe controller medications.** WAC recommends EDs dispense and/or prescribe controller medications to begin long-term asthma management. This would allow patients to begin the use of a controller medication and increase likelihood that the PCP will continue the use of controller medication following the ED visit.

## **Next steps for WAC**

After completing this initial assessment, the WAC felt additional information was needed before creating a follow-up tool or resource. The immediate next steps include:

1. Collecting additional information about services provided following an ED visit, such as interventions led by health plan case managers.
2. Exploring options to increase the number of patients who make and attend their follow-up visit within 1-4 weeks.
3. Exploring innovative strategies for enhanced asthma education through technology.

## **References**

- <sup>1</sup>Ornato, J.P. (2007). Treatment strategies for reducing asthma-related emergency department visits. *The Journal of Emergency Medicine, 3*.
- <sup>2</sup>Schnitman, R.C., Farris, J., & Smith, S.R. (2009). Follow-up care for children with asthma after emergency department visits. *Clinical Pediatric Emergency Medicine, 10*, pp.109-114.
- <sup>3</sup>U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung and Blood Institute. (2007). Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma. (NIH Publication 07-4051).