



Asthma Quick Takes

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Welcome to Asthma Quick Takes

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We are pleased to introduce the first issue of the National Asthma Control Program's (NACP) quarterly newsletter, *Asthma Quick Takes*! This newsletter will bring to your attention recent important publications on asthma, relevant news, and program successes and challenges for those involved in public health interventions for asthma.

The "Article Summaries" section will present the key messages or findings from recent studies or official reports. Our public health professionals will also contribute editorial comments on published journal articles and reports.

The "NACP Corner" will highlight a state activity, such as a quality evaluation of broad interest or any new products or materials that are available through CDC's NACP.

The "Recommendations Review" section summarizes official asthma care recommendations. This issue reviews the recommendations of the Advisory Committee on Immunization Practices for persons with asthma.

Asthma Quick Takes will be distributed through CDC's NACP AsthmaTalk listserv. If you would like to receive the newsletter but do not want to be on the listserv, please send an email to AsthmaQT@cdc.gov with your request. Feel free to share these newsletters!

Article Summaries, Topic I.

Triage nurse initiation of corticosteroids in pediatric asthma is associated with improved emergency department efficiency. [published in *Pediatrics*]

Early administration of systemic steroids reduces hospital admission rates for children with moderate and severe asthma exacerbation. [published in *Ann Emerg Med*]

Improving Emergency Department Efficiency

The first two articles, published in 2012, describe system-level measures that have reduced the length of stay and need for hospitalization following an emergency room (ED) visit for asthma. The authors evaluate the use of "clinical pathways"--standardized protocols for the management of asthma exacerbations--in the ED. Both papers are based on the recommendation of the Expert Panel Report-3 guidelines for use of systemic (by mouth or intravenous) steroids during moderate to severe asthma exacerbations.

Zemek et al.'s study¹ was performed to determine whether a clinical pathway directing ED triage nurses to give oral steroids to children with moderate to severe asthma exacerbations would lead to more rapid improvement of asthma symptoms in the ED. This Canadian study compared outcomes of children given oral corticosteroids after physician evaluation with outcomes of children given steroids by a triage nurse according to a clinical pathway. The second study by Bhogal et al.² also looked at the utility of a clinical pathway to promote early use of steroids in the ED for children having moderate to severe asthma exacerbations. Bhogal and coauthors compared children who were given steroids a) within an hour of ED arrival (according to protocol), b) more than an hour after ED arrival, or c) not at all.

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Both studies reported improved outcomes in children given steroids according to a clinical pathway. Zemek's study found that children who were given steroids at triage received them an average of 44 minutes earlier, were discharged an average of 44 minutes earlier, and were less likely to be admitted to the hospital than those given steroids after a doctor's order. There was no difference in rate of follow-up ED visits or hospital readmission in the seven days after the visit between the group receiving steroids as prescribed by a pathway and the group receiving steroids after being ordered by a physician. Bhogal's study also noted that children who received systemic steroids within 75 minutes of arrival at the ED as directed by a clinical pathway were 15% less likely to be admitted. There was no significant association between time of steroid administration and return visit to the ED within 72 hours. Use of a clinical pathway to achieve early administration of steroids improved ED efficiency, lessening the total time spent in the ED and decreasing hospital admissions.

References

- 1) Zemek Roger, Plint Amy, Osmond Martin H, Kovesi Tom, Correll Rhonda, Perri Nichols, and Barrowman Nick. Triage nurse initiation of corticosteroids in pediatric asthma is associated with improved emergency department efficiency. *Pediatrics* 2012;129:671-680.
- 2) Bhogal SK, David McGillivray D, Jean Bourbeau J, Benedetti A, Bartlett S, Ducharme, FM. Early administration of systemic steroids reduces hospital admission rates for children with moderate and severe asthma exacerbation. *Ann Emerg Med* 2012;60:84-91.

Quick Takes Comment: These articles show that a small change in ED procedures (introduction or modification of a clinical pathway) can improve ED efficiency and reduce hospitalizations without an associated adverse effect on repeat visits or hospitalization within the following 7 days. Of course, these clinical pathways don't address efforts to improve asthma control in the long term and should be coupled with referral for asthma education and ongoing care by a primary care provider. Perhaps some of the 44 minutes saved through the early administration of systemic corticosteroids can be used to check on inhaler technique, make referrals to an asthma education class or home visit program, engage in communication with the primary care provider, or even administer a flu shot!

Article Summaries, Topic III.

Influenza and Asthma

Increased H1N1 infection rate in children with asthma. [published in *Am J Respir Crit Care Med*]

First things first: protecting children with asthma from infection with influenza. [published in *Am J Respir Crit Care Med*]

The third article³ and the accompanying editorial⁴ focus on the risk of influenza infections in people with asthma and the importance of influenza vaccinations. As you may recall, during the 2009 flu season, people with asthma were at increased risk of hospitalization due to H1N1, a new strain of influenza virus. This recently published paper (June, 2012) by Kloepfer et al. sheds some light on the reason for that increased risk. At the onset of the H1N1 pandemic and before the H1N1 vaccine was available, the authors incorporated the collection of nasal samples for H1N1 into a larger ongoing study that tested children for infection with common viruses such as the human rhinovirus (which causes the common cold). They followed children with and without asthma over time, collecting weekly nasal samples. In addition, children recorded cold and asthma symptoms on a diary card. The authors hypothesized that children with asthma would be infected with H1N1 at the same rate as children without asthma but would have more severe symptoms.

Kloepfer et al. found that children with asthma were much more likely to become infected with the H1N1 virus (41% vs. 24%) than were children without asthma. Children with asthma, were not, however, more likely to become infected with the other viruses being studied. The authors also evaluated the effect of H1N1 on asthma control, and found that 23% of episodes of loss of asthma control were associated with H1N1 infection. Kloepfer et al. hypothesized that the children with asthma may have an impaired response to influenza virus by the cells that line the airways, and recommended further research to test this hypothesis.

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In an accompanying editorial⁴ two scientists from CDC's NACP and two scientists from the National Center for Immunization and Respiratory Disease underscored the importance of Kloefer's recommendations to immunize children with asthma with the influenza vaccine. The editorial's authors note that influenza vaccination rates among people with asthma remain low - less than 40% - and issue a call to action for health care providers, including emergency department physicians, to encourage their patients with asthma to receive vaccinations and, if feasible, to offer the vaccinations themselves.

References

- 3) Kloefer KM, Olenec JP, Lee WM, Liu G, Vrtis RF, Roberg KA, Evans MD, Gangnon RE, Lemanske RF Jr, Gern JE. Increased H1N1 infection rate in children with asthma. *Am J Respir Crit Care Med* 2012;185:1275-1279.
- 4) Garbe PL, Callahan DB, Lu PJ, Euler GL. First thing first: protecting children with asthma from infection with influenza. *Am J Respir Crit Care Med* 2012;185:i-ii.

Quick Takes Comment: It is difficult to accurately measure susceptibility to influenza or the effectiveness of influenza vaccination, both in persons with and without asthma, for a variety of reasons. One reason is because the antigens in the flu virus usually "shift" from year to year, with some components of the annual flu virus similar to those of previous years. Thus, either previous infection or immunization may provide partial protection. H1N1 was unique in that it was a "new" virus, so previous exposures to influenza did not provide protection, thus making it easier to study. The authors hypothesized that the increased risk of infection with H1N1 in persons with asthma is the same for all influenza viruses, supporting the recommendation for annual immunization with the influenza vaccine.

Section 2. NACP Corner

Evaluating Partnerships Just got Easier!

The evaluation team at APRHB is pleased to announce the newest module in the Learning and Growing through Evaluation series: Module 3, Evaluating Partnerships! This latest module in the series was published this July and has already received positive feedback from grantees. Given the critical role state asthma partnerships play in helping to reduce the burden of asthma, this valuable resource is offered to guide states in designing, implementing, and utilizing their evaluation findings to optimize their partnership's effectiveness.

Like the other two Learning and Growing resources, Evaluating Partnerships applies the generic strategies of the CDC Framework for Evaluating Public Health Programs (1999), providing step-by-step guidance in evaluating state asthma partnerships. Owing to the Framework's built-in flexibility, asthma programs can tailor their evaluation designs and methods to match their specific needs. This is especially important given the wide variety of state asthma partnerships.

What's in the Guide? Evaluating Partnerships describes how partnerships are conceptualized within the context of state asthma programs. The module then walks through the six steps of the Evaluation Framework, providing examples to stimulate thinking about ways to tailor evaluations to specific partnership needs to ensure the evaluation's usefulness, feasibility, ethics, and accuracy. While CDC recognizes the great variability among statewide partnerships, it is acknowledged that similarities exist. These commonalities or critical dimensions of partnerships are depicted in the Partnership Concept Map and are intended to stimulate discussion among stakeholders around key questions concerning the partnership. The model is built around the assumption that partnerships that perform well ultimately contribute to positive programmatic outcomes; it does not assume that all partnerships function effectively.

Go to Page 4 for more
[Details about the Evaluation Guide and How to Order One!](#)

Section 3: Recommendations Review

Immunization Recommendations for Persons with Asthma

The article summaries on influenza and asthma provide an opportunity to remind health care providers and asthma program staff about recommendations for immunizing persons with asthma. All immunization recommendations for children and adults with asthma are the same as for people without asthma with two exceptions: influenza and pneumococcal vaccines.

Influenza vaccine: The recommendation is that everyone six months and older receive the influenza vaccine annually. However, people with asthma should only receive the trivalent inactivated influenza vaccine; they should not receive the inhaled live attenuated influenza vaccine. Persons who have a history of egg allergy should consult with their health care provider.

Pneumococcal vaccines protect people against the bacteria *Streptococcus pneumoniae*. This type of bacteria causes serious infections in both children and adults, including pneumonia, meningitis, and sepsis, as well as ear infections, sinus infections, and several other types of infections. Two types of pneumococcal vaccines are currently available:

The first is the 13-valent pneumococcal conjugate vaccine (PCV13), which immunizes against 13 serotypes (different strains of the pneumococcal bacteria) that cause pneumococcal disease. It covers 6 additional serotypes than the previously-recommended 7-valent pneumococcal conjugate vaccine (PCV7) and thus replaces it. PCV13 is used in children because it is more effective in stimulating the immune system and because it better protects against the types of pneumococcal disease that are most likely to cause serious illness in healthy children.

The general recommendation is that:

Infants receive four doses of PCV13 at 2, 4, 6, and 12-15 months. Catch up doses (for children who were not

immunized as infants) can be given, but PCV13 is not routinely given to healthy children 5 years of age and older. (Details regarding catch up dosing for healthy children can be found at <http://www.immunize.org/catg.d/p2010.pdf>.)

The second is the 23-valent pneumococcal polysaccharide vaccine (PPSV23) which covers more serotypes but does not produce as effective an immune response in children. The general recommendation is that:

All persons aged 65 or older receive one dose of PPSV23 because of their susceptibility to a greater number of serotypes of pneumococcus bacteria and their greater risk for serious pneumococcal disease.

There are additional recommendations for people with certain underlying medical conditions, one of which is asthma:

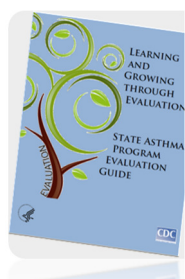
Adults aged 19-64 with asthma of any severity should receive the PPSV23 if they did not receive it as a child. People who receive PPSV23 for an underlying medical condition should receive a second dose at age 65 or later if at least five years have passed since the previous dose.

(<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5934a3.htm>).

There are additional recommendations for adults and children who receive chronic high dose oral corticosteroids for asthma (this does not include those taking short bursts or inhaled corticosteroids). Clinicians who treat individuals in this category should refer to the specific guidance provided in the following resources:

<http://www.cdc.gov/mmwr/pdf/rr/rr5911.pdf> (for children) and

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6140a4.htm> (for adults).



Evaluating Partnerships contains several useful appendices, including a Glossary of Terms (Appendix A), Evidence Base on Effective Partnerships (Appendix B), A Crosswalk of Partnership Concepts with Evaluation Questions and Tools (Appendix C); and Sample Partnership Evaluation Tools (Appendix D). Many states have found Appendix C's list of sample evaluation questions and tools extremely helpful in focusing their evaluation and considering the most appropriate questions.

WHERE CAN WE FIND THIS EVALUATION GUIDE?

This important resource can be found on the CDC's asthma website:

http://www.cdc.gov/asthma/program_eval/guide.htm

Look for the next module of Learning and Growing through Evaluation on evaluating surveillance systems, coming soon!