

Date: April 10, 2012

Title: Using formal communication to collaborate with schools to decreased patient admissions/Emergency Department visits and missed school days and improve ACT scores for children with asthma

Clinical Question:

- | | | |
|---|----------------------|--|
| P | (Population/Problem) | Among school aged children with asthma |
| I | (Intervention) | does formal communication/education with school nurses/personnel |
| C | (Comparison) | compared to no formal communication/education |
| O | (Outcome) | reduce Emergency Department (ED)/hospital admissions, decrease school absences and improve Asthma Control Test (ACT) scores (>20)? |

Target Population for the Recommendation:

School-aged children (Kindergarten to 12th Grade) with Asthma

Definitions:

Formal communication is defined as a standardized method for transmitting information concerning hospitalized children with Asthma and the school system they attend.

Asthma Control Test (ACT): The ACT consists of five questions. This test assesses how well controlled a patient's asthma is by asking about various symptoms, medication use and activity limits within the past four weeks. It provides a score that can help the practitioner determine if the current treatment plan is working or if it might be time for a change in the present plan. A score > 20 is a sign of asthma that is well controlled.

Recommendation: (See Table of Recommendation Strength following references)

It is recommended that formal communication between hospitals and school nurses/ personnel be initiated to decrease school absences, ED visits, hospitalizations and to improve ACT scores among school aged children with asthma (Bartholomew, et al., 2006, [2b]; Byrne, et al., 2006, [5a]; Erickson, et al., 2006, [4b]; Guglielmo, et al., 2006, [5a]; Wheeler, et al., 2006, [5b]).

Discussion/Summary of Evidence Related to the Recommendation:

Many studies use well defined interventions such as Open Airways for Schools, Watch, Discover, Think and Act, National Heart, Lung and Blood Institute (NHLBI), national asthma guidelines as well as locally organized asthma coalitions (Bartholomew, et al., 2006, [2b]; Frankowski, et al., 2006, [5a]; Guglielmo, et al., 2006, [5a]). The studies, quality improvement projects and expert opinions reviewed, demonstrated when interventions are used to prevent and treat symptoms, provide self-management, educate the school personnel staff and children with asthma as well as their families, there were fewer missed school days, a decrease in ED visits and hospitalizations as well better asthma control for the students (Bartholomew, et al., 2006, [2b], Byrne, et al., 2006, [5a], Erickson et al., 2006, [4b], Frankowski, et al., 2006, [5a], Guglielmo, et al., 2006, [5a], Wheeler et al., 2006, [5b]). All programs utilized in the studies incorporated communication among school nurses, hospital clinicians and some physicians.

The Healthy Learner Model (Erickson, et al., 2006 [4b]) and Open Airways programs (Guglielmo et al., 2006, [5a], Frankowski et al., 2006, [5a]) were both well received by schools and have been shown to be very effective. The use of The Healthy Learner Model for Student Chronic Conditions Management enabled the Minneapolis Public Schools (MPS) to shift from episodic asthma visits in the schools to more preventative care visits. Prior to the initiation of this asthma program parent surveys of children with asthma provided evidence that many students' asthma was not well controlled. Many parents viewed daytime and nighttime symptoms as "normal for children with asthma". Eighty five percent of parents mistakenly believed their child's asthma was in good control. Surveys also confirmed that parents did not understand the meaning of good asthma control and needed asthma education reinforced. Although no statistics were given post program, it was stated overall there was an improvement in asthma education, communication, improved attendance and active participation in learning (Erickson et al., 2006, [4b]).

The Open Airways for Schools program also had a positive impact on reducing asthma hospitalizations and ED visits as well as increasing knowledge and self-management skills as shown in the Long Beach public schools system in New York (Guglielmo et al., 2006, [5a]) as well as the Vermont school system (Frankowski et al., 2006, [5a]). These studies showed that by using the Open Airways program and by the formation and continued growth of partnerships between the schools, community health clinic, health education department, community hospital and local allergy/asthma specialists that there was a 17% increase in daily asthma medication usage, a 29% decrease in school days missed for asthma students and a 31% decrease in hospital stays related to asthma. Ninety seven percent of students returned to class after visiting the health office with acute symptoms and receiving treatment with asthma medications and no children were sent to the Emergency Department from the health office (Guglielmo et al., 2006, [5a]).

Reference List: (Evidence Level in []; See [Table of Evidence Levels](#))

Bartholomew, L., Sockrider, M., Abramson, S., Swank, P., Czyzewski, D., Tortolero, S., Markham, C., Fernandez, M., Shegog, R., Tyrrell, S. (2006). Partners in school management: Evaluation of a Self-Management Program for Children with Asthma. *Journal of School Nursing*, 76(6), 283-290, [2b].

Byrne, J., Schreiber, M., Nguyen, T, (2006).Community Hospital-School Partnership to Treat Asthma Episodes at School and Improve Management, *Journal of School Health*,76(6), 336-339, [5a].

Erickson, C., Splett, P., Mullett, S., Jensen, C., Belseth S. The Healthy Learner Model for Student Chronic Conditions Management – Part II: The Asthma Initiative (2006). *The Journal of School Nursing*, 22, 319-329. [4b].

Frankowski, B., Keating, K., Rexroad, A., Delaney, T., McEwing, S., Wasko, N., Lynn, S., Shaw, J. (2006). Community Collaboration: Concurrent Physician and School Nurse Education and Cooperation Increases the Use of Asthma Action Plans. *Journal of School Nursing*, 76(6), 303-306, [5a].

Guglielmo, C., Little, A. (2006), Tragedy in a Beachfront Community: A Proactive School District responds to asthma. *Journal of School Health*, 76(6), 297-299, [5a].

Wheeler, L., Merkle, S., Gerald, L., Taggart, V. (2006), Managing Asthma in Schools: Lessons Learned and Recommendations. *Journal of School Health*, 76(6), 340-344, [5b].

SUPPORTING INFORMATION

Background/Purpose of BES_t Development:

Cincinnati Children's Hospital Medical Center's (CCHMC) 2015 strategic goal for Asthma is to reduce the use of the Emergency Department (ED) and inpatient services by children with asthma by 30% through the creation of an integrated CCHMC asthma program. The program will incorporate specific strategies to reach schools, primary healthcare providers and the asthma community as a whole by June 30, 2015 as measured by asthma ED and inpatient admission rates for CCHMC.

The goal is to implement a collaborative strategy between school personnel, communities, primary healthcare providers and the hospital to provide education to school staff, children with asthma and their families. Education will focus on self-management, providing necessary treatment during school hours and the prevention of missed school days, ED visits and hospitalizations related to asthma.

Applicability Issues:

Cost - Plans must be made to cover the costs of training and supplies.

Time involved – Advanced planning is important to decrease time constraints on school personnel, families and asthma school children.

Staff involvement –Increase asthma knowledge with training programs for staff and school nurses so they may recognize and treat the signs and symptoms of an Asthma exacerbation, therefore preventing ED visits/hospitalizations and missed school days (Bartholomew, et al., 2006, [2b]).

MD involvement – Increase in use of Asthma Action Plans (Frankowski, et al., 2006, [5a]).

School involvement—Having the support of the school staff with help to increase staff knowledge regarding asthma, resulting in fewer asthma exacerbations and decreasing school absenteeism (Bartholomew, et al., 2006, [2b]; Erickson, et al., 2006, [4b]).

Health Information Portability and Accountability Act (HIPAA) –Appropriate HIPAA forms must be signed by families to allow information regarding their children to be shared with school personnel.

Student/family involvement - Studies show that when families/students are proactive and involved in their treatment they miss fewer school days and have fewer ED visits (Byrne, et al., 2006, [5a]; Bartholomew, et al., 2006, [2b]; Erickson, et al., 2006, [4b]).

Outcome or Process Measures:

Improve ACT scores > 20

Decrease school absences related to asthma by 10% for the school year

Decrease number of ED visits by 10% in a school year

Decrease the number of hospitalizations by 10% for the school year

Decrease the number of visits to the school health office by 20% for the school year

Search Strategy:

Databases: Ovid, CINAHL, Medline, PubMed

Search terms: Asthma, school nurse, hospitalization, Emergency services, school age children,

Filters: English language, school aged children

Dates searched: 2006-2012

Last date searched: September 29, 2011

Relevant CCHMC Evidence-Based Documents:

Evidence-Based Care Guideline for Management of Acute Exacerbation of Asthma in children aged 0 to 18 years

Health topic – Asthma

Group/Team Members:

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Conflicts of Interest were Declared for Each Team Member:

No financial conflicts of interest were found.

The following financial conflicts of interest were disclosed:

Note: Full tables of evidence grading system available in separate document

- [Table of Evidence Levels of Individual Studies by Domain, Study Design, & Quality](#) (abbreviated table below)
- [Grading a Body of Evidence to Answer a Clinical Question](#)
- [Judging the Strength of a Recommendation](#) (abbreviated table below, dimensions table above)

Table of Evidence Levels (see note above):

Quality level	Definition
1a [†] or 1b [†]	Systematic review, meta-analysis, or meta-synthesis of multiple studies
2a or 2b	Best study design for domain
3a or 3b	Fair study design for domain
4a or 4b	Weak study design for domain
5a or 5b	General review, expert opinion, case report, consensus report, or guideline
5	Local Consensus

†a = good quality study; b = lesser quality study

Table of Language and Definitions for Recommendation Strength (see note above):

Language for Strength	Definition
It is strongly recommended that... It is strongly recommended that... not...	When the dimensions for judging the strength of the evidence are applied, there is high support that benefits clearly outweigh risks and burdens. (or <i>visa-versa</i> for negative recommendations)
It is recommended that... It is recommended that... not...	When the dimensions for judging the strength of the evidence are applied, there is moderate support that benefits are closely balanced with risks and burdens.
There is insufficient evidence and a lack of consensus to make a recommendation...	
<i>Given the dimensions below and that more answers to the left of the scales indicate support for a stronger recommendation, the recommendation statement above reflects the strength of the recommendation as judged by the development group. (Note that for negative recommendations, the left/right logic may be reversed for one or more dimensions.)</i>	
1. Grade of the Body of Evidence	<input type="checkbox"/> High X Moderate <input type="checkbox"/> Low
Comments:	
2. Safety / Harm (Side Effects and Risks)	X Minimal <input type="checkbox"/> Moderate <input type="checkbox"/> Serious
Comments:	
3. Health benefit to patient	X Significant <input type="checkbox"/> Moderate <input type="checkbox"/> Minimal
Comments: <i>Providing schools with a child's Asthma plan of action post hospitalization can lead to a quicker recovery and a lower risk of a relapse therefore preventing missed school days, decreased asthma symptoms, decreased ED visits and a decrease in hospitalizations.</i>	
4. Burden on patient to adhere to recommendation	<input type="checkbox"/> Low <input type="checkbox"/> Unable to determine X High
Comments: <i>Self-management takes time to master http://www.cincinnatichildrens.org/service/j/anderson-center/evidence-based-care/chronic-care/</i>	
5. Cost-effectiveness to healthcare system	X Cost-effective <input type="checkbox"/> Inconclusive <input type="checkbox"/> Not cost-effective
Comments: <i>(Erickson, et al., 2006)</i>	
6. Directness of the evidence for this target population	X Directly relates <input type="checkbox"/> Some concern of directness <input type="checkbox"/> Indirectly relates
Comments:	
7. Impact on morbidity/mortality or quality of life	X High <input type="checkbox"/> Medium <input type="checkbox"/> Low
Comments: <i>A child whose asthma is well controlled is able to perform routine activities without restrictions.</i>	

Copies of this Best Evidence Statement (BEST) and related tools (if applicable, e.g., screening tools, algorithms, etc.) are available online and may be distributed by any organization for the global purpose of improving child health outcomes.

Website address: <http://www.cincinnatichildrens.org/svc/alpha/h/health-policy/best.htm>

Examples of approved uses of the BEST include the following:

- copies may be provided to anyone involved in the organization's process for developing and implementing evidence based care;
- hyperlinks to the CCHMC website may be placed on the organization's website;
- the BEST may be adopted or adapted for use within the organization, provided that CCHMC receives appropriate attribution on all

- written or electronic documents; and
- copies may be provided to patients and the clinicians who manage their care.

Notification of CCHMC at EBDMinfo@cchmc.org for any BEST adopted, adapted, implemented, or hyperlinked by the organization is appreciated.

Please cite as: Cincinnati Children's Hospital Medical Center: Best Evidence Statement: Using formal communication to collaborate with schools to decreased patient admissions/Emergency Department visits and missed school days and improve ACT scores for children with asthma, <http://www.cincinnatichildrens.org/svc/alpha/h/health-policy/best.htm>, BEST 125, pages 1-5, April 10, 2012.

This Best Evidence Statement has been reviewed against quality criteria by 2 independent reviewers from the CCHMC Evidence Collaboration.

For more information about CCHMC Best Evidence Statements and the development process, contact the Evidence Collaboration at EBDMinfo@cchmc.org.

Note

This Best Evidence Statement addresses only key points of care for the target population; it is not intended to be a comprehensive practice guideline. These recommendations result from review of literature and practices current at the time of their formulation. This Best Evidence Statement does not preclude using care modalities proven efficacious in studies published subsequent to the current revision of this document. This document is not intended to impose standards of care preventing selective variances from the recommendations to meet the specific and unique requirements of individual patients. Adherence to this Statement is voluntary. The clinician in light of the individual circumstances presented by the patient must make the ultimate judgment regarding the priority of any specific procedure.