

reported information including height and weight, the study size and multinational nature of this study is impressive. This study adds to the increasing body of evidence indicating obesity as a risk factor for symptoms of asthma. In addition, the American Academy of Pediatrics' guidelines for the prevention of childhood obesity suggest limiting sedentary time/screen time to <2 hours per day, which is clearly supported by this study.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2013-2294MMMM

Elaine Porter, MD
Angela Duff Hogan, MD
Norfolk, VA

The Joint Commission Children's Asthma Care Quality Measures and Asthma Readmissions

Fassl BA, Nkoy FL, Stone BL, et al. *Pediatrics*. 2012;130(3):482-491

PURPOSE OF THE STUDY. To examine provider compliance with 3 Joint Commission Children's Asthma Care (CAC) measures, β -agonist use (CAC 1), systemic steroid use (CAC 2), and patient discharge with a home management plan of care (CAC 3). The study also examined whether use of these measures had an impact on the rate of patient readmission to the hospital for asthma care. Additional measures examined included length of stay, costs, and relative resource units.

STUDY POPULATION. A total of 1865 patients, ages 2 to 17 years, discharged between January 1, 2005, and December 31, 2010, from the Primary Children's Medical Center in Salt Lake City, Utah, with the primary diagnosis code for asthma (493.xx).

METHODS. An asthma care process model was designed, based on national guidelines and asthma quality measures. Initial implementation was facilitated by paper-based decision support tools such as admission and discharge order sets. Due to difficulties with consistency in documentation, an electronic discharge order set was implemented. All information was determined from retrospective chart review. Provider adherence with all 3 measures was documented. Rate of readmission to any of 22 surrounding hospitals or emergency departments for each patient was noted.

RESULTS. Preimplementation with CAC 1 and CAC 2 were high at 99% and 100%, respectively. Preimplementation compliance with CAC 3 was 0% but improved to 87% during postimplementation period. After 9 months, readmission rates decreased from 17% to 12%. No statistically significant differences were observed for any of the secondary hospitalization outcomes.

CONCLUSIONS. Implementation of an asthma care process model compliant with CAC measures is associated with a sustained, though delayed, reduction in asthma read-

missions with no changes in secondary hospitalization outcomes, such as length of stay or cost of hospitalization. High baseline compliance with CAC 1 and CAC 2 suggests that they may not be ideal measures in evaluating effective care for childhood asthma.

REVIEWER COMMENTS. An inpatient asthma care model, including an asthma action plan at discharge, reduces hospital readmissions. Though the specific care models may differ between hospitals and providers, the importance of time spent educating patients and their families about appropriate pharmacotherapy and environmental control of asthma cannot be understated. Although this facility demonstrated high baseline compliance with β -agonist and oral steroid use, this should not undermine the importance of these measures in asthma care. This study serves as a reminder to health care providers of the significant role that patient education plays in the long-term care of children with asthma.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2013-2294NNN

Jordan Smallwood, MD
William Dolen, MD
Augusta, GA

Association Between Evidence-Based Standardized Protocols in Emergency Departments With Childhood Asthma Outcomes: A Canadian Population-Based Study

Li P, To T, Parkin PC, Anderson GM, Guttman A. *Arch Pediatr Adolesc Med*. 2012;166(9):834-840

PURPOSE OF THE STUDY. To assess the utility of evidence-based standardized protocols (EBSPs) for children treated in emergency departments (EDs) for asthma compared with EDs with no standardized protocols (SPs) in Ontario, Canada.

STUDY POPULATION. Children with previously diagnosed asthma ages 2 to 17 years ($N = 31\,128$) seen in 146 EDs in Ontario from April 2006 to March 2009.

METHODS. The primary outcome measure for this retrospective population-based cohort study was hospital admission at the time of the index ED visit. Secondary outcomes included 7-day return visit to ED and 7-day outpatient follow-up visit.

RESULTS. Of 146 EDs, 70.5% did not use SPs for treating pediatric asthma. The cohort made a total of 46 510 ED visits. From the index ED visit, 4211 (9.1%) were admitted to the hospital. Of those discharged, 1778 (4.2%) and 7350 (17.4%) had ED return visits and outpatient follow-up visits, respectively. The EBSPs were not associated with hospitalizations, return visits, or follow-up (adjusted odds ratio, 1.17 [95% confidence interval (CI), 0.91-1.49]; adjusted odds ratio, 1.10 [95% CI,

0.86–1.41]; and adjusted odds ratio, 1.08 [95% CI, 0.87–1.35], respectively).

CONCLUSIONS. In a multivariable analysis, the study authors found that there was no significant association between the use of SPs and outcomes. The EBSPs were not associated with improvements in rates of hospital admissions, return visits to the ED, or outpatient follow-up visits.

REVIEWER COMMENTS. EBSPs were defined as containing evidence-based format and content that was embedded into workflow; these included preprinted and clinical pathways (defined as structured multidisciplinary plans of care). Other SPs (nonevidence based) included clinical practice guidelines (systematically developed statements) and medical directives (standing orders that nurses or respiratory therapists can initiate). Limitations of this study include the inability to assess implementation of these protocols given its observational design. Moreover, none of the SPs were computerized, a feature shown to enhance clinical practice outcomes.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2013-2294000

Jennifer S. Kim, MD
New York, NY

The School-Based Preventative Asthma Care Trial: Results of a Pilot Study

Halterman JS, Fagnano M, Montes G, et al. *J Pediatr.* 2012;161(6):1109–1115

PURPOSE OF THE STUDY. To test the feasibility and preliminary effectiveness of the School-Based Preventive Asthma Care Technology (SB-PACT) program, which included directly observing therapy of preventive asthma medications in school facilitated by Web-based technology for systemic symptom screening, electronic report generation, and medication authorization from providers.

STUDY POPULATION. The study included 100 children (aged 3–10 years) with physician-diagnosed asthma with persistent symptoms based on National Heart, Lung, and Blood Institute guidelines from 19 inner-city schools in Rochester, New York.

METHODS. The investigators conducted a pilot, randomized trial of SB-PACT versus usual care. Outcomes were assessed longitudinally by blinded interviewers. Analyses included bivariate statistics and linear regression models, adjusting for baseline symptoms.

RESULTS. There were data for 99 subjects for analysis. The investigators screened all children by using a Web-based system, and 44 of 49 treatment group children received directly observed therapy as authorized by their providers. Treatment group children received preventive medications 98% of the time they were in school. Over the school year,

children in the treatment group experienced nearly 1 additional symptom-free day over 2 weeks versus the usual care group (11.3 vs 10.40, $P = .13$). Treatment children also experienced fewer nights with symptoms (1.68 vs 2.20, $P = .02$), days requiring rescue medications (1.66 vs 2.44, $P = .01$), and days absent from school due to asthma (0.37 vs 0.85, $P = .3$) compared with usual care. Further, treatment children had a greater decrease in exhaled nitric oxide (-9.62 vs -0.39 , $P = 0.03$) suggesting reduction in airway inflammation.

CONCLUSIONS. The SB-PACT intervention demonstrated feasibility and improved outcomes across multiple measures in this pilot study. Future work will focus on further integration of preventive care delivery across community and primary care systems.

REVIEWER COMMENTS. I applaud these investigators not only on their previous work with their school-based asthma therapy trial from 2006 to 2009 (*Arch Pediatr Adolesc Med* 2011;165:262–268) that directly observed administration of preventive asthma medications in the school setting, but this current SB-PACT study, which used a Web-based program to overcome key barriers to sustainability identified in their original study. This pilot study of school-based asthma care was effective in reducing morbidity for children at high risk with asthma. The Web-based screening mechanism worked efficiently for most participants and primary care physicians involved in terms of communication and systematic medication delivery. Children receiving this intervention experienced fewer asthma symptoms, less absenteeism from school, and had reduced airway inflammation. It will be very interesting to see how future studies with larger sample sizes can help to effectively reduce the overall morbidity among high-risk school aged children with asthma. Keeping our asthmatic children healthy and in school where they can learn effectively should be the primary goal here!

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2013-2294PPP

John M. James, MD
Fort Collins, CO

Disagreement Among Common Measures of Asthma Control in Children

Green RJ, Klein M, Becker P, et al. *Chest.* 2013;143(1):117–122

PURPOSE OF THE STUDY. The primary goal of asthma management is control. This can be assessed by history, physical examination, and measurement of lung function. There are multiple methods to measure control. The purpose of this study was to describe agreement among different measures of asthma control in children.

STUDY POPULATION. Atopic children ages 4 to 11 with chronic asthma attending routine follow-up examinations. Asthma

Association Between Evidence-Based Standardized Protocols in Emergency Departments With Childhood Asthma Outcomes: A Canadian Population-Based Study

Jennifer S. Kim

Pediatrics 2013;132;s40

DOI: 10.1542/peds.2013-2294000

Updated Information & Services	including high resolution figures, can be found at: /content/132/Supplement_1/s40.2.full.html
Permissions & Licensing	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: /site/misc/Permissions.xhtml
Reprints	Information about ordering reprints can be found online: /site/misc/reprints.xhtml

PEDIATRICS is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. PEDIATRICS is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2013 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 0031-4005. Online ISSN: 1098-4275.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Association Between Evidence-Based Standardized Protocols in Emergency Departments With Childhood Asthma Outcomes: A Canadian Population-Based Study

Jennifer S. Kim

Pediatrics 2013;132;s40

DOI: 10.1542/peds.2013-2294000

The online version of this article, along with updated information and services, is located on the World Wide Web at:
/content/132/Supplement_1/s40.2.full.html

PEDIATRICS is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. PEDIATRICS is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2013 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 0031-4005. Online ISSN: 1098-4275.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

