
**Purpose of the Study.** To determine the specificity, sensitivity, and feasibility of using a 2-part (child + parent questionnaire) case finding tool (Video-guided Asthma Screening for Children-School Age, VASC-SA) to identify elementary school children with asthma.

**Study Population.** A total of 350 matched parent-child pairs

**Methods.** As part of the VASC-SA, children and parents were both queried. The child checklist included 2 practice items and 9 items asking about asthma symptoms and diagnosis. The items were visually cued using a 10-minute videotape using split-screen vignettes, one corresponding to a no response (most children do not . . .) and one to a yes response (some children . . .). Three case definition algorithms were examined (all included inhaled medication, or current diagnosis, or wheeze with 0, 1, or 2 other symptoms). The VASC-SA was administered to English-speaking children in grades 1 to 4 from one school. All parents were sent a written asthma questionnaire. Positive screens were compared with diagnosis obtained from physician report or parent interview.

**Results.** Asthma prevalence in this sample ranged from 14% to 14.9% using VASC-SA case definitions. Sensitivity for the 3 definitions ranged from 79% to 81% and specificity ranged from 94.5% to 95%. The predictive value positive ranged from 66% to 69% and predictive value negative was 97%. Concordance of child and parent reports was highest for previous asthma diagnosis and use of inhaled medication.

**Conclusions.** The VASC-SA appears to be a promising new epidemiologic tool to facilitate asthma screening in elementary schools. Prescreening children before parents may offer a practical approach in a large, community-based population.

**Reviewer’s Comments.** The authors observed that even more restrictive definitions of asthma eg, wheeze plus 1 or 2 other symptoms, or medications, or current diagnosis did not significantly alter the sensitivity or specificity of results (beyond simply wheezing alone, or medications, or current diagnosis). They also point out that the sensitivity and specificity of child-reported symptoms alone were low and thus inadequate without parental verification. Surprisingly, 30% of children with a parent diagnosis of asthma were unknown to the school nurse before the study. In addition, eight children (2.2%) received a new diagnosis of asthma as a result of the screening. Future longitudinal studies should include assessment of asthma severity and follow-up for those with a positive screen (to get a sense of the clinical impact of using the VASC-SA).

**CONSISTENCY OF CARE WITH NATIONAL GUIDELINES FOR CHILDREN WITH ASTHMA IN MANAGED CARE**

**Study Population.** The study included 318 children 5 to 17 years old with asthma.

**Methods.** A cross-sectional survey at 2 managed care organizations in the United States was conducted in 1997–1998. The participants were actually the parents of the 318 children with asthma. The outcome measures were an evaluation of the care provided in 4 domains: 1) periodic physiologic assessment, 2) appropriate use of medications, 3) patient education, and 4) control of factors contributing to asthma severity.

**Results.** A total of 533 patients were eligible for the study and 318 (60%) participated. A total of 59% were male, 76% were white, and 60% were 5 to 10 years of age. Deficiencies in care were identified in all domains, including 45% of children with moderate or severe asthma on no daily long-term controllers, 49% having written instructions for managing asthma episodes, 44% having instructions for the appropriate use of medication before exposures, and 56% having been evaluated by allergy testing, and 54% having been evaluated by pulmonary function tests.

**Conclusion.** The care of children with asthma is deficient in many areas, particularly including the use of controller medications and asthma education.

**Reviewer’s Comments.** This study clearly indicates the need for a comprehensive approach to asthma management in managed care settings. These results, however, are almost certainly applicable to most primary care settings, where time constraints make it difficult for even the best-educated practitioner to implement all of the necessary components of asthma care. For most patients with moderate and severe asthma, care will be most effectively delivered in a collaborative effort between the primary caretaker and an asthma consultant.

**USE OF INHALED ANTIINFLAMMATORY MEDICATION IN CHILDREN WITH ASTHMA IN MANAGED CARE SETTINGS**

**Study Population.** A total of 318 children aged 3 to 15 years with at least 1 diagnosis of asthma.

**Methods.** Using automated databases, a 1-year cross-sectional study of children with asthma aged 3 to 15 years, cared for in 3 MCOs was used to evaluate the association of age and other factors with controller medication use.

**Results.** A total of 13,352 children were studied. Significantly fewer children aged 3 to 5 years were dispensed any (≥1) controller medication than older children (P < .001). Among children dispensed 6 or more β-agonists, only 39% also received 5 or more controller dispensings, with adolescents significantly less likely than younger children to receive 5 or more controllers (33%; P < .001). Significant differences were observed among MCOs in proportions of patients dispensed controller medication. In a multiple logistic regression model, controlling for frequency of β-agonist-dispensing and MCOs, significantly lower dispensing of any controller medication was seen for those aged 3 to 5 years (odds ratio [OR]: 0.8, 95% confidence interval [CI]: 0.7–0.9) and for girls (OR: 0.9; 95% CI: 0.8–0.96). In contrast, for repeated (≥5) controller dispens-
ing there were significantly fewer dispensings to adolescents (OR: 0.7; 95% CI: 0.6–0.9) and girls (OR: 0.8; 95% CI: 0.7–0.9).

Conclusions. There may be differences in the use of preventive asthma medication in children that are affected by age, sex, and health care organization. Few children with frequent symptoms are using controllers regularly, as is recommended by national guidelines.

Reviewers’ Comments. It has been a decade since the National Asthma Education and Prevention Program asthma management guidelines were first published in which the use of preventive medications were strongly encouraged and emphasized. This study reviews the dispensing of antiinflammatory medications in 3 diverse managed care settings and clearly demonstrates that those patients with a high requirement for β-agonists seemed to receive inadequate ‘controller’ medication. Preschool-aged children in particular were less likely to be started on controller medications whereas adolescents were less likely to take the medications. New therapies recently approved specifically for preschool children, such as nebulated budesonide and oral montelukast, may result in greater prescribing of controller medications for this age group. Partnering with adolescents to manage their asthma and monitoring of β-agonist refills may help to increase adherence with controller medications in this age group. There was also a difference between the sexes with less use of controllers in girls compared with boys. Both physiologic and psychosocial differences may be factors and more research will be needed to clarify this. Although this study suffers with the inherent weaknesses associated with database analysis, it serves as a timely reminder of the importance of providing preventive medications for children with asthma.

STUART E. TURVEY, MD, DPHIL
LYNDA C. SCHNEIDER, MD
Boston, MA

A COMPREHENSIVE INNER-CITY ASTHMA PROGRAM REDUCES HOSPITAL AND EMERGENCY ROOM UTILIZATION


Purpose of the Study. The purpose of this study was to evaluate the effect of a comprehensive care program for asthma on emergency department visits and hospital admission rates in an inner-city pediatric population.

Study Population. Three hundred asthma patients ages 2 to 17, who presented to an inner-city emergency department.

Methods. Patients were randomized to obtain asthma care in a specialty clinic or to continue to receive care by other health resources. The specialty clinic provided medical treatment, environmental control, education, close monitoring, and 24-hour availability. Monthly questionnaires on use of hospital facilities for asthma care were sent to the caregivers of the children. Retrospective data on the use of resources by study participants was analyzed using a hospital database.

Results. One hundred twenty-nine patients, 60 patients in the treatment group and 69 in the control group, met the inclusion criteria of returning 9 questionnaires during 1995 with at least 1 questionnaire being completed for each season. Demographics of the control and treatment groups were similar with the exception that 35% of the treatment group had severe asthma versus 16% in the control group (P < .05). During the first 12 months of the study, 32 patients from the treatment group visited the emergency department 73 times; in comparison, 46 patients in the control group visited the emergency department 269 times. The mean number of emergency department visits per patient per month was 0.101 ± 0.158 for the treatment group versus 0.326 ± 0.704 for the control group (P = .01). In both groups, 26% of the patients were hospitalized at least once. During a second study year, 53 patients from the treatment group continued to receive asthma care through the same center. 14 of these patients made 20 emergency room visits during the subsequent 12 months. Of the 66 patients in the control group who continued with the study, 23 patients visited the emergency room 56 times, 0.396 ± 0.716 visits per patient per years for the treatment group compared with 1.2 ± 2.155 for the control group (P < .03). In the second year, 26% of the treatment group patients visited the emergency room at least one, while 53% of the treatment group had visited during the first year (P < .07).

Conclusion. A comprehensive asthma care program is effective in reducing hospital utilization in the inner city.

Reviewer’s Comments. In this study, the investigators put together what appears to be a very effective comprehensive care program for inner-city asthmatics. Those patients who participated in the study appeared to benefit from the support and education. As we see again and again, preventive measures can significantly reduce emergency room and hospital utilization and this will lead to decreases in medical costs. The study also demonstrates the difficulties that are constantly encountered in intervention programs in the inner-city population. Although 300 patients enrolled, only 129 completed the study. Also, the high level of intervention is quite difficult for practitioners to achieve. Future studies should focus on techniques for improving patient compliance with intervention programs, as well as which interventions in a comprehensive intervention program are effective in reducing hospital utilization.

HELEN SKOLNICK, MD
Princeton, NJ

CONTINUED INCREASE IN THE PREVALENCE OF ASThma AND ATopy

Downs SH, Marks GB, Sporik R, Belosouva EG, Car NG, Peat JK. Arch Dis Child. 2001;84:20–23

Purpose of the Study. Asthma and allergy were reported by many studies to be on the rise in the early 1990s. Has this trend continued?

Study Population. A total of 1016 schoolchildren age 8 to 11 years in Wagga Wagga, Australia, studied in 1997 compared with 850 schoolchildren of the same ages studied in the same location in 1992.

Methods. A parental questionnaire was used to estimate asthma prevalence. Key questions asked to parents included “Has your child wheezed in the last 12 months?” and “Has your child ever been diagnosed as having asthma by a doctor or at a hospital?” Prick skin tests to common aeroallergens were also performed. A child was considered atopic if they had 1 or more positive skin tests.

Results. See Table below:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>1992</th>
<th>1997</th>
<th>Percentage Increase (95% Confidence Interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheezed</td>
<td>22.1</td>
<td>27.2</td>
<td>5.1 (1.2–9.0)</td>
</tr>
<tr>
<td>Diagnosed with asthma</td>
<td>30.5</td>
<td>38.6</td>
<td>8.1 (3.8–12.4)</td>
</tr>
<tr>
<td>Atopic</td>
<td>38.7</td>
<td>45.4</td>
<td>6.4 (2.2–11.2)</td>
</tr>
</tbody>
</table>

Reviewer’s Comments. In this study, the investigators put together what appears to be a very effective comprehensive care program for inner-city asthmatics. Those patients who participated in the study appeared to benefit from the support and education. As we see again and again, preventive measures can significantly reduce emergency room and hospital utilization and this will lead to decreases in medical costs. The study also demonstrates the difficulties that are constantly encountered in intervention programs in the inner-city population. Although 300 patients enrolled, only 129 completed the study. Also, the high level of intervention is quite difficult for practitioners to achieve. Future studies should focus on techniques for improving patient compliance with intervention programs, as well as which interventions in a comprehensive intervention program are effective in reducing hospital utilization.

HELEN SKOLNICK, MD
Princeton, NJ
Use of Inhaled Antiinflammatory Medication in Children with Asthma in Managed Care Settings

Stuart E. Turvey and Lynda C. Schneider

*Pediatrics* 2002;110:450

Updated Information & Services

including high resolution figures, can be found at:

/content/110/Supplement_2/450.1.full.html

Subspecialty Collections

This article, along with others on similar topics, appears in the following collection(s):

**Allergy/Immunology**

/cgi/collection/allergy:immunology_sub

**Asthma**

/cgi/collection/asthma_sub

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
Use of Inhaled Antiinflammatory Medication in Children with Asthma in Managed Care Settings
Stuart E. Turvey and Lynda C. Schneider
Pediatrics 2002;110;450

The online version of this article, along with updated information and services, is located on the World Wide Web at:
/content/110/Supplement_2/450.1.full.html