ensure proper use. Understanding the limitations of medication device delivery can assist the pediatrician in avoiding medication errors in asthmatic children. Device training for both children and their parents is an essential part of asthma education.

Health Plan Notification and Feedback to Providers Is Associated With Increased Filling of Preventer Medications for Children With Asthma Enrolled in Medicaid


PURPOSE OF THE STUDY. To determine if children enrolled in Medicaid managed care that provides asthma-specific communication to providers would be more likely to have adequate asthma-medication filling.

STUDY POPULATION. The study included 4498 children between the ages of 2 and 17 years with moderate-to-severe asthma enrolled in Medicaid in Tennessee and Washington State from 2000 and 2002.

METHODS. Study subjects had (1) an asthma hospitalization or asthma emergency department (ED) visit, (2) high use of asthma medications in the 6 months before their hospitalization or ED visit, and (3) stayed in the same Medicaid health plan from study entry through follow-up. Interviews were conducted with health plans to identify communication strategies used to improve asthma care by providers in the plan. The main outcome measure was guideline-recommended filling of asthma-preventer medications.

RESULTS. In the 365-day follow-up period, children in plans that provided specific feedback to providers about asthma quality and notified providers when children had an asthma-related event had higher rates of filling prescriptions than children in plans with neither (164.6 ± 13 vs 135.3 ± 10.8 days; P < .05). For children with the greatest asthma severity, enrollment in a plan with both features was associated with 27.1 additional days of filling (95% confidence interval: 0.7–53.4 days) during the follow-up period.

CONCLUSIONS. Health plan communication to providers was associated with increased preventer filling in children with moderate-to-severe asthma in 2 state Medicaid programs.

REVIEWER COMMENTS. The children with the higher preventer fill rates only used their medications for less than half of the year. Identification of patients at high risk and frequent follow-up are needed to ensure more regular use of preventer medications. Health plans could assist providers by providing quarterly updates of fill rates for these patients at high risk so that intervention could occur before the patient ends up in the hospital or ED.

Adherence to Follow-up Recommendations in Asthma


PURPOSE OF THE STUDY. To assess the willingness of parents of children with possible asthma to visit their general practitioner (GP).

STUDY POPULATION. A cross-sectional group of 130 Dutch children aged 7 to 10 years with possible asthma were studied.

METHODS. Participating parents completed the International Study of Asthma and Allergies in Childhood questionnaire. A child was considered to have “diagnosed asthma” if a doctor had diagnosed him or her with asthma in the preceding 12 months. A child was considered to have “possible asthma” if the child had (1) no physician-diagnosed asthma in the preceding 12 months, (2) asthma symptoms in the preceding 12 months, and (3) either reversible airway obstruction or bronchial hyperreactivity. Parents of children with possible asthma were sent a letter recommending further medical evaluation by their GP. The GP received a letter with the results of the questionnaire and lung-function tests. A research nurse contacted parents to conduct a telephone interview regarding adherence to recommendations.

RESULTS. A total of 2745 children were invited to participate in the study, and 1758 children participated. Eighty-one (5%) children were diagnosed with asthma and 130 (8%) had a possible diagnosis of asthma, which represented the study population. A follow-up interview was completed for 114 children (88%). Sixty-two percent of the children visited a doctor, and 38% of the parents refused to visit the GP. The main reason for parents not visiting a GP was absence or mildness of symptoms. Most of the parents stated that they would visit a GP if symptoms worsened.

CONCLUSIONS. Two thirds of the children with undiagnosed asthma visited their GP. Willingness to follow-up the recommendations was greater for children with more severe airway reversibility and if the mother was less well educated.
Impact of Interview Mode on Accuracy of Child and Parent Report of Adherence With Asthma Controller Medication

Bender BG, Bartlett SJ, Rand CS, Turner C, Wamboldt FS, Zhang L. *Pediatrics*. 2007;120(3). Available at: www.pediatrics.org/cgi/content/full/120/3/e471

**PURPOSE OF THE STUDY.** To examine the effect of different modes of reporting adherence on the accuracy of self-administration of inhaled corticosteroids in asthmatic children under conditions mimicking a clinical trial.

**STUDY POPULATION.** A total of 104 asthmatic children, 8 to 18 years old, who were being treated for asthma with regular use of inhaled corticosteroids were studied. One parent was required to participate with each child.

**METHODS.** Each parent/child pair was assigned to 1 of 3 self-reporting modes: audio computer-assisted self-interview (ACASI), face-to-face interview with a member of the study staff, or self-administered paper-and-pencil questionnaire. The same mode was administered at each study visit for any given parent/child pair: baseline and at 1, 2, 3, and 4 months. Corticosteroid metered-dose inhalers were fitted with an electronic chronometer that captured the time and date of metered-dose inhaler dispensing, freshly initialized at baseline and at each study visit. Adherence was determined by dividing the number of puffs recorded by the number of puffs prescribed. Self-assessment of adherence was determined similarly for the 3 modes. The recall time frames were 1 week and 1 day. The primary outcome was self-reporting discrepancy (percent adherence recorded minus percent self-adherence self-reported). A positive discrepancy score represented underreporting, a negative score represented overreporting, and zero represented exact reporting. Adequate accuracy was considered when the discrepancy score was ±25%.

**RESULTS.** Children and parents overrepresented adherence for both the 1-week and 1-day monitoring periods. Adherence discrepancy was the greatest in the ACASI mode (adequate accuracy for children and parents, respec-

CONCLUSIONS. Self-reporting of adherence was insufficient even under the best of circumstances regardless of the mode of self-reporting used in this study.

**REVIEWER COMMENTS.** The recently updated National Asthma Education and Prevention Program report underscored the need to address adherence when considering a step up in asthma medication. Inaccurate accounting for adherence may taint clinical trials that examine treatment outcomes and on which guidelines are based. Several studies have used electronic chronologs to monitor adherence. Even then, dose dumping (dispensing several puffs in the air over a short period to boost the number of dispensings recorded) has been reported. You can lead a patient to an inhaler, but you can't make them inhale.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2008-2139MMM

Mary V. Lasley, MD
Seattle, WA

Early Rattles, Purrs and Whistles as Predictors of Later Wheeze


**PURPOSE OF THE STUDY.** To determine how different respiratory sounds in 2-year-olds (whistles, purrs, and rattles) characterized as wheeze by parents predicted wheeze and asthma diagnosis at 5 years of age. A better understanding of parental descriptions of respiratory symptoms may lead to a more accurate diagnosis of asthma.

**STUDY POPULATION.** The study subjects were children followed at 2 time points: at ages 2 and 5 years. They were recruited randomly before birth irrespective of history of parental asthma and allergy.

**METHODS.** Two thousand pregnant women were recruited randomly at 12 weeks’ gestation, initially as part of a longitudinal birth cohort designed to relate dietary exposure in early life to asthma outcomes in childhood. Parents filled out questionnaires by mail regarding respiratory symptoms when their children were aged 2 and 5 years. Questions included, “Has your child ever suffered from asthma?” and “Has this been diagnosed by a doctor?” Current wheeze was defined as wheezing that has occurred over the last 12 months. If present, parents were asked to categorize the wheeze by sound, describing it as a whistle, rattle, purr, or other sound. If “other sound” was designated, the subjects were excluded from the analysis.
Adherence to Follow-up Recommendations in Asthma

Mary V. Lasley

*Pediatrics* 2008;122;S211

DOI: 10.1542/peds.2008-2139LL

---

Updated Information & Services

including high resolution figures, can be found at:
/content/122/Supplement_4/S211.2

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
Adherence to Follow-up Recommendations in Asthma
Mary V. Lasley
Pediatrics 2008;122;S211
DOI: 10.1542/peds.2008-2139LLL

The online version of this article, along with updated information and services, is located on the World Wide Web at:
/content/122/Supplement_4/S211.2