Improving the rate that asthma action plans are provided to pediatric patients with a diagnosis of asthma in the outpatient setting

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Introduction:

An estimated 300 million individuals and families are affected by asthma worldwide. The National Asthma Education and Prevention Program’s Expert Panel Report 3 in 2007 on Guidelines for the Diagnosis and Management of Asthma emphasize the importance of asthma control. Asthma control is defined as the degree to which the manifestations of asthma are minimized by therapeutic intervention and the goals of therapy are met to decrease associated morbidity. The guidelines confirm the importance of teaching patients and their parent’s skills to self-monitor and manage asthma as a means to increase asthma control.

The use of asthma action plans is promoted as a way to provide further instructions for daily treatment and ways to recognize and handle worsening asthma. Asthma action plans are a written plan for use by parents and caregivers when their child’s peak flow or symptoms change, enabling them to take action based on previously provided instruction. Long-standing randomized controlled trials have found these plans to be effective in improving patient outcomes by decreasing emergency room visits and hospital admissions for asthma.

In reality, however, there has been a lag between trial-based recommendations supporting the use of asthma action plans and their actual day-to-day clinical use. These plans are seldom issued by professionals or used by patients or their parents, likely secondary to professional time constraints, misunderstanding of the utility of the plans, poor patient follow-up, and poor accessibility to an effective plan template for use. After chart review from the outpatient pediatric clinic, it was found that asthma action plans were provided to patients with a diagnosis of asthma at a rate of 3%. This study aimed to increase the rate to 50% that asthma action plans were provided to pediatric patients with a diagnosis of asthma in the outpatient setting to increase patient medication compliance and enable self-management.

Methods – Phase 1:

Initial chart review on patients with a diagnosis of asthma between April 9, 2013 and April 22, 2013 revealed that an asthma action plan was provided or reviewed for one patient out of 29 (3.4%) in the outpatient clinic. This was assessed by review of provider documentation for patient encounters during which a patient’s diagnosis of asthma was addressed, either in encounters for well child care, asthma exacerbations, or asthma medication refills. After discussion with residents currently in the outpatient clinic, significant barriers to providing asthma action plans included time constraints, ease of completion, and poor access to an effective plan template.
Having an accessible plan in the system would be ideal, as handouts such as an asthma action plan would be saved to the patient’s medical record after being provided to the patient. The asthma action plan template available in the current electronic medical record was reviewed, and found to be difficult to read and timely to complete. Further investigation revealed that it would be difficult to insert a custom plan template with drop-down menus into the system, which would aid in efficient completion.

The asthma action plan template utilized for patients being discharged from the inpatient service has been found to be an effective, easy to use template. The template is color coded for improved readability and patient understanding, and has drop down-menus for drug name, dose, and instructions, which improve ease of completion. This template is available in both English and Spanish on the computer desktop of a computer in a centralized work area in the Children’s Hospital.

During the first phase of this study, the asthma action plan templates utilized by the inpatient service were transferred to the computers in the physician work area in the outpatient clinic (Appendices 1 and 2), as a means to improve accessibility to an effective template. The residents were notified of the template’s presence on the desktop at the onset of the study period (April 23, 2013). At the conclusion of the study period (May 7, 2013), charts were pulled for patients with a diagnosis of asthma. The outcome measure was defined as the number of asthma action plans provided divided by the number of patient encounters during which a patient’s diagnosis of asthma was addressed, either in encounters for well child care, asthma exacerbations, or asthma medication refills, expressed as a percentage.

**Results – Phase 1:**

Chart review to assess the rate that asthma action plans were provided revealed that 6 patients out of 49 with a diagnosis of asthma received an asthma action plan (rate of 12%). This represents an increase from a rate of 3% prior placing the asthma action plan template on the computer desktops in the physician work area (Table 1).

![Chart](image)

**Table 1.** Rates that asthma action plans were provided to patients before an after placing asthma action plan templates on the desktops of physician computers (phase 1).
Discussion – Phase 1:
The aim of this study was to increase the rate to 50% that asthma action plans were provided to pediatric patients with a diagnosis of asthma in the outpatient setting. While the first phase of the study resulted in an increased rate that asthma action plans were provided (3 to 12%), this goal was not reached. It is evident that improving accessibility to plan templates by placing them on the computer desktops yielded a small improvement, but the improvement is sub-optimal. Therefore, a second phase to the study was pursued to implement further interventions in an attempt to reach this goal.

Methods – Phase 2:
As above, residents have identified time constraints, ease of completion, and poor access to an effective plan template as reasons why asthma action plans are not provided to patients. The first phase of the study aimed to improve the accessibility to an effective asthma action plan, with sub-optimal results. It was evident that further interventions would be required to reach the study goal.

It is recognized that time constraints and busyness can lead to the unintentional neglecting to provide asthma action plans. Patient prompting to the physician can be a valuable tool in overcoming this shortcoming. During the second phase of this study, a small handout was created that prompted patients with asthma to ask for an asthma action plan. This handout was attached to the Asthma Control Test (ACT) form given to patients during the check-in process. The presence of the asthma action plan templates on the computer desktops in the physician work area (as in phase 1) was verified. The study period ran from July 24, 2013 to July 31, 2013, after which charts were pulled for patients with a diagnosis of asthma. The outcome measure was again defined as the number of asthma action plans provided divided by the number of patient encounters during which a patient’s diagnosis of asthma was addressed, either in encounters for well child care, asthma exacerbations, or asthma medication refills, expressed as a percentage.

Results – Phase 2:
Chart review to assess the rate that asthma action plans were provided after the second intervention revealed that 4 patients out of 23 with a diagnosis of asthma received an asthma action plan (rate of 17%). This represents an increase from a rate of 3% prior to any intervention and 12% after placing the asthma action plan template on the computer desktops in the physician work area (Table 2).
Table 2. Rates that asthma action plans were provided to patients after providing patient handout (phase 2), as compared to before an after placing asthma action plan templates on the desktops of physician computers (phase 1).

Discussion – Phase 2:
The aim of this study was to increase the rate to 50% that asthma action plans were provided to pediatric patients with a diagnosis of asthma in the outpatient setting. The second phase of the study, like the first, resulted in an increased rate that asthma action plans were provided. However, after two interventions this rate (17%) remains significantly below the goal rate of 50% of patients with a diagnosis of asthma receiving an asthma action plan. This study goal was not achieved.

A confounding factor affecting the results of this study is the time of the year in which the various phases of data collection occurred. It is possible that some residents were not present when the notification of the template’s presence on the desktop at the onset of the study period occurred. The physicians included in the different phases of data collection were not consistent. The increased incidence of asthma exacerbations in the spring versus summer months resulting in decreased patient encounters in the July data collection period also affects study results.

The lag between trial-based recommendations supporting the use of asthma action plans in improving patient outcomes and their actual day-to-day clinical use remains. Further studies investigating additional interventions are warranted to continue attempts at increasing the rate that asthma action plans are provided. Other interventions may include placing a direct link to an effective asthma action plan (such as the one included in the first phase of this study) in the patient encounter note in the electronic medical record, additional physician education on the importance of asthma action plans in improving patient outcomes, and creating a quick-text for physician charting which prompts a physician to chart if a plan was provided.
Appendix 1. Asthma action plan template (English).
Appendix 2. Asthma action plan template (Spanish).
References:


