Implementation of an Asthma Prompting Form to Improve Asthma Care in a Pediatric Office

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Abstract. Asthma, the most common chronic illness of childhood, can be a life-threatening experience. This project tested the effectiveness of a prompting form to improve preventive asthma care during a non-asthma office visit. Thirty randomly selected charts from 2008 without a prompt form were compared with thirty randomly selected charts from 2009 with a completed form for differences.

The number of medications reviewed ($p = .001$) and the frequency of refills written ($p = .024$) were significantly higher in the prompt group. Education was higher ($p = .000$) if smoking was included. Use of an asthma plan was not significantly different between groups. Triggers were more frequently discussed in the prompted group. The use of a prompting form facilitates discussion and improvement of preventive asthma care.

Introduction

Asthma is the most common chronic illness of childhood in the United States. According to the latest published statistics from the Centers for Disease Control (CDC) 6.8 million children are living with asthma [1]. An asthma attack is a distressing and potentially life-threatening experience. Asthma is a major cause of childhood disability. It limits children’s ability to sleep, learn, and play. Medical care and the indirect costs of missed work days for parents are issues that burden families with children living with asthma. Receiving asthma education is one way that children and parents can take a proactive role in managing asthma and preventing exacerbations. As children are diagnosed, an in-depth explanation of asthma, symptoms, treatment, home management plans, and resource information should be provided.

The new asthma guidelines, from the National Asthma Education and Prevention Program (NAEPP) published in 2007, stress treatment based on symptom management rather than by asthma classification [2]. To effectively meet these guidelines, a practitioner must evaluate asthma status at each visit, non-asthma related and asthma related [3]. Medications are to be reviewed and treatment altered as needed to manage the symptoms of the patient. To facilitate routine asthma assessment, structures must be developed that incorporate assessment in a time efficient manner for the practitioner during each visit with the child. Use of an asthma prompting form in the office setting provides that structure. Use of the prompting form was to prompt practitioners to evaluate asthma status on non-asthma related office visits. Nola Pender’s Health Promotion Model (HPM) [4], which considers cognitive recognition of needed behavioral changes served as a basis for the theoretical framework of this project.

Experiment, Results, Discussion, and Significance

This project assessed the effectiveness of an asthma prompting form in a pediatric office to improve asthma care. The specific project question was: Would asthma symptoms and treatment be evaluated and discussed more frequently at non-asthma pediatric office visits if the practitioner received a parent completed prompting form as the practitioner entered the examination room?

The prompting form addressed key points from the revised asthma guidelines. This included asthma classification by patient experienced symptoms over the past 2-week period. The practitioner was also prompted to review current medications, discuss triggers (events or situations that caused an exacerbation of asthma symptoms), perform spirometry, instruct patient perform peak flow measures daily, and discuss the child’s exposure to second-hand smoke.

Seven pediatricians and five nurse practitioners provided care for the children in this pediatric office. The subjects in this project were between the ages of 1-21 years, had an asthma diagnosis and had an office visit for a non-asthma related health concern during the project timeframe. After IRB approval, thirty randomly selected charts, based on ICD-9 codes for asthma diagnosis and non-asthma visit between June 2008 and August 2008 were
reviewed to establish baseline for evaluation and education provided about asthma. The asthma prompting form was introduced to the practitioners in June 2009. Thirty randomly selected charts, based on ICD-9 codes for asthma diagnosis and non-asthma visit between June 2009 and August 2009 were reviewed to assess change in asthma evaluation and education provided. The same chart review tool was used in both samples.

There were 29 (48%) females and 31 (52%) males aged 1 to 21 years of age included in the chart reviews. Groups were examined for differences in demographic data by using t-tests. Child age and gender did not differ significantly between groups nor did the percentage of nurse practitioners to physicians. Chi square was used to measure homogeneity of proportions of characteristics with no significant differences (p ≤ .05). All aspects of education, asthma management, and medication changes between the non-prompted (2008) group and the prompted (2009) group were analyzed. Education, other than smoking, was documented more frequently in the non-prompted group without statistical significance (60% vs. 12%; p > .05). Smoking education was one of the most significant changes between the two groups. The office made the transition from paper records to electronic records just a few weeks before this project started. One of the “flags” on the electronic record of a patient diagnosed with asthma was discussion of smoking. It was a mandatory prompt that requiring a response before other documentation could be accomplished. This could explain the 100% improvement in this particular education topic. However, the fact still remains that the practitioner had a “prompt” on this topic resulting in significant improvement. Education also included discussion of triggers, which were discussed more in the prompted group (37% vs. 3%; p= .001). Written asthma treatment plans doubled in the prompted group (4 vs. 2). This was not a significant difference due to low numbers.

Asthma medications were reviewed significantly more often in the prompted group (96% vs. 63%; p = .001), however, medications and treatments were changed more frequently in the non prompted group (20% vs. 0%; p = .010 and 20% vs. 10%; p = .278). There were increased numbers of prescription refills written with the use of the prompting form in 2009 as opposed to the numbers seen in 2008 (43% vs. 17%; p = .024). This was a significant difference. A prompting form, either in paper or electronic form, should be utilized in any practice treating asthmatic children.

Conclusions

The prompting form is a useful clinical tool in pediatric patients who have asthma. Aspects of asthma and asthma control were discussed more frequently with the use of the prompting form. Asthma plans were discussed twice as often with the prompting form. Refill prescriptions were written 2.5 times more often and medications were reviewed with the patient 20% more frequently.

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