Asthma Action Plan Evaluation

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Overview

Purpose of the Evaluation
The primary purpose of this evaluation is to identify how asthma action plans (AAP) are being used for asthma management by health professionals, school personnel and parents. The secondary purpose is to identify barriers in obtaining and utilizing action plans. The findings from this evaluation will be used to identify target audiences and needs associated with AAPs to more effectively utilize program resources. Ideally, the results will assist in increasing the number of people in Utah who have been given an AAP and use it to manage their asthma.

Background
In 2004, the Utah Legislature passed Utah Code 53A-11-602 allowing students to carry and self-administer inhaler medications in school. A provision of this law was that parents or guardians, along with health care providers, would supply the schools with written authorization for use. The most effective way of ensuring proper use of asthma medications by students is to have an asthma action plan on file in the school. Cicutt reports that an individualized asthma action plan is necessary in supporting asthma management and is a communication and coordination tool between students, parents, the health care provider, and school personnel.1 To date, the Utah Asthma Program (UAP) has not done any specific interventions around AAPs. One mini-grant was awarded to school nurses in the Jordan School District during the 2004-2005 school year for an asthma health fair focused on collecting AAPs. Also, a copy of an asthma action plan is listed on the program website.

In 2006, Primary Children’s Medical Center (PCMC) implemented a program where children hospitalized because of asthma were given AAPs and other information upon discharge. The physicians at PCMC reported a 90% success rate in discharging patients with an AAP and instructions. However, they did not witness decreases in readmission rates for those patients. The PCMC study results were different from those experienced in other trials where patients with an asthma action plan were significantly less likely to be admitted to the hospital than those without a plan.2 Karmella Koopneirs is currently heading a project that involves an asthma patient post-hospital follow-up questionnaire regarding the discharge information. Several physicians at PCMC are involved in this study, including: Bernhard Fassl, Flory Nkoy, Bryan Stone, and Chris Maloney. The study involves follow-up phone calls to parents of patients ages 2-17 four weeks after being admitted to the hospital for asthma related issues. The study began in January 2011. As results are made available; they will be utilized by the UAP.

Methodology
The evaluation group worked together to structure the asthma action plan evaluation. The evaluation was carried out using a non-experimental design and mixed methods for data collection. The quantitative data analyses included primarily descriptive statistics, along with some content analysis. The qualitative data were analyzed for themes and pertinent recommendations.

Evaluation Questions
These evaluation questions were written by the evaluation group and reflect the interest of the vested stakeholders in the task force and action groups. These questions will be answered throughout the remainder of the report.

1. How are the action plans being utilized by health professionals and schools?
2. How many providers are using action plans? Barriers?
3. How can the form be structured to better suit health professionals, school nurses, and parents?
4. How can the action plans be improved for parental use and understanding?
5. Where are the gaps or breakdowns in getting an action plan for the child and then getting it to the school district?

**Data Collection**
The data for this evaluation were collected using several different methods. The first method included a literature review and assessment of current surveillance data on AAP. The second set was of data collected using telephone-based focus groups with school nurses. Three focus groups were held, each including 3-5 school nurses. The next set of data was collected through a needs assessment which included an Internet-based survey of all physicians in Utah and focus groups with physicians in Northern Utah and the Wasatch Front area. The evaluator was the moderator for all of the focus groups included in this evaluation. The final data were to be obtained through the PCMC discharge follow-up study, but the data from this study is not available yet.

**Data Analysis**
The surveillance data from the Behavioral Risk Factor Surveillance System (BRFSS) Call-back and the School Health Profiles (SHP) were analyzed using SAS statistical software. The quantitative data from the physician survey were analyzed using Microsoft Excel and contain primarily descriptive statistics. The key-informant interviews were transcribed by the UAP Evaluator/Epidemiologist. The qualitative data were analyzed for themes and pertinent recommendations using Bryman’s Four Stages of Coding. The physician focus group data were analyzed using the evaluation questions.

**Results**
The results of the literature review, school nurse focus groups, surveillance data, and physicians’ needs assessment will be presented according to the evaluation questions. Table 1 shows the data sources and sample size of each data source used in this report.

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRFSS Call-back 2008-2009</td>
<td></td>
</tr>
<tr>
<td>Adults</td>
<td>660</td>
</tr>
<tr>
<td>Children</td>
<td>180</td>
</tr>
<tr>
<td>School Health Profiles 2010</td>
<td></td>
</tr>
<tr>
<td>Elementary Principals</td>
<td>367</td>
</tr>
<tr>
<td>Secondary Principals</td>
<td>179</td>
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<tr>
<td>Physician Needs Assessment</td>
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<tr>
<td>Survey</td>
<td>126</td>
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<tr>
<td>Focus Groups</td>
<td>7</td>
</tr>
<tr>
<td>School Nurse</td>
<td></td>
</tr>
<tr>
<td>Focus Groups</td>
<td>12</td>
</tr>
</tbody>
</table>

**How are the action plans being utilized by health professionals and schools?**

Although AAPs are recommended by the NAEPP Guidelines, physicians in the focus groups were somewhat split as to the importance of giving AAPs to patients. Comments ranged from not having a formal plan to AAPs being too time-consuming a practice. The text box below shares physician quotes on how AAPs are being used.
School nurses find AAPs to be useful, but rarely receive them from parents and are often not in the school when the student has an asthma attack. Similarly, a survey conducted among school nurse, reported that 72% agreed or strongly agreed that having an AAP on file in school increased their confidence in caring for a child with asthma. Most of the districts reported having either an electronic system or book containing student action plans. The action plans were made available to teachers and secretaries. Quotes on this topic from the school nurse focus groups are shared below.

- “Don’t have a formal action plan that we give to patients”
- “A lot of patients in our practice have one, but I don’t know that it always gets updated and used for sure.”
- It’s just like, try this, and if this doesn’t work, then try this and that type of thing rather than going off numbers cause even when they did use them (peak flow meters), half the time, they didn’t use them right.

How many providers are using action plans?

The data to answer this question come from the BRFSS and physician needs assessment. Asthma action plans are not used by every physician, but most use them for some patients. As mentioned earlier, some of the barriers reported were the time it takes to fill out the form, no standardized form, and lack of use by parents. Figure 1 shows BRFSS self-reported adult data and child data reported by parents along with the Healthy People 2020 target.

**Figure 1: Percent of Adults and Children Who Have Been Given an Asthma Action Plan by a Physician**

![Figure 1: Percent of Adults and Children Who Have Been Given an Asthma Action Plan by a Physician](image-url)

Source: BRFSS Call-back 2008-2009
As seen in Figure 1, more children than adults receive AAPs from physicians and the number of children in Utah who received an asthma action plan is higher than the HP2020 target. No specific data have been collected as to why physicians provide fewer AAPs to adults. When physicians were asked about providing AAPs to patients, over half (56%) reported giving an AAP to somewhere between half and all of their patients. Figure 2 shows the results of this survey question.

*Figure 2: Physician Survey: Those Patients with Current Asthma Given an Asthma Action Plan*

![Figure 2: Physician Survey](image)

The majority of physicians give an AAP to some patients, but 9% reported not giving any AAPs to patients and 17% only give them based on severity. When asked a survey follow-up question, most physicians reported always giving AAPs to patients who have a history of severe exacerbations or poorly-controlled asthma.

**Barriers?**

In the physician focus groups, it was mentioned that AAPs were generally given to “severe asthma cases” and that filling out the form was “time consuming.” Also, physicians reported little confidence in patients understanding or using them. All of the physicians mentioned being very busy, so if physicians don’t feel that patients use the form, then there isn’t much incentive to fill them out. The box below contains specific quotes from the physician focus groups.

- “Just like any guidance, they just don’t use them. Biggest barrier is you go through it with them and they just don’t use it. They come back in for more steroids. Important to have if they realize how to use it and not just file it away. It would probably work great if people would look through them, just like all the other materials. But it’s just the whole idea of them throwing it away or just never looking at them again.”
- “Lots of patients have one – not reviewed often.”
- “I think it’s fifty-fifty on whether parents use them.”

Accessibility also appears to be an issue. Physicians do not have a standard form and most do not have access to an electronic version. An electronic AAP would make it easier for physicians to complete the form.
and for schools to receive it. The physicians at PCMC have been successful in utilizing AAPs because it is a necessary requirement for discharge from the hospital and is in an electronic format.

**How can the form be structured to better suit health professionals, school nurses and parents?**

The literature suggests that AAPs should include: information on monitoring symptoms or peak flow; reminders of warning signs, symptoms, and triggers; information on restoring control; and how to respond to danger signs. An asthma action plan should have clear points, that help teach patients to recognize and respond to an exacerbation.

One physician in the focus group said that he didn’t have a standard form, but gave instruction on triggers and inhaler use. This is a useful practice, but having a written document to review at home or send to school is a best practice. A succinct, electronic form would be the most beneficial for health professionals and school nurses. This would allow health professionals to fill out the forms and update them more quickly. The form could be emailed to parents and school nurses after being completed. Both school nurses and physicians mentioned that most people with asthma don’t usually have a peak flow meter, which is often a measure used to determine what action step should be taken on the asthma action plan. An asthma action plan written without the use of peak flow meter readings should be considered or adequate information should be provided on each step if a peak flow meter is not available.

A form that is easier to read and understood by parents could help them use the form more in their child’s asthma management practices. The asthma action plan provided on the UAP website provides adequate, easily understood information for parents. Physicians should emphasize AAPs more and explain to parents how to use them in asthma management.

**Where are the gaps or breakdowns in getting an action plan for the child and then getting it to the school district?**

There are several players involved in getting an action plan on file at school. Breakdowns in this process can occur at any level, resulting in the AAP not making it to school. The first step is the physician. According to the BRFSS, less than half (45.7%) of elementary-aged children were reported as having received an asthma action plan from their physician. This is shown in figure three below.

*Figure 3: Asthma Action Plans for Elementary-aged Children with Current Asthma*

![Graph showing asthma action plans for elementary-aged children with current asthma.](image-url)
In a study done by Douglass and colleagues, the most common reason identified for not having an action plan was that the patient had not been given one by his or her doctor.\textsuperscript{5} Physicians need to be more consistent in providing patients with AAPs to improve asthma management.

As shown in Figure 3, the next broken link occurs with parents returning the AAP to the schools. Only about 32.9\% of parents reported that their child had an action plan on file at school. There are several reasons AAPs don’t make it to schools and there is no clear solution to this problem. In an article by Jones, Pill and Adam, non-compliant patients reported that they felt action plans could be useful for people with more serious asthma and compliant patients felt that action plans were pointless for them or that they already had a full understanding of the issues.\textsuperscript{6} Perhaps patients and parents do not recognize the usefulness of the action plan.

In the school nurse focus groups, nurses reported identifying students with asthma and sending home the proper forms, only to receive about 50\% back, even after calling to remind parents. School nurses shared many reasons why they feel parents do not return action plans to schools. These are shared below.

- Sometimes parents don’t think that it is that big of a health issue and do not need to report it.
- School nurses were not sure if parents realized that they needed to send a copy to school.
- Possible stigma or discrimination if the parent reports a child's asthma to the school.

School nurses also reported having difficulty identifying students with asthma because each nurse covers about six different schools. Many school nurses reported hounding parents to turn in self-administration forms and AAPs for those identified as having asthma on health forms. When parents do not list asthma on the health form, students with asthma are sometimes identified by teachers who see a student using an inhaler without having the proper forms on file.

The last, somewhat outside link in the chain, is school administration. From the School Health Profiles, it was identified that principals over reported the number of action plans on file at their school. As seen in Figure 4, the majority of principals (83.7\%) reported having all or most student AAPs on file in elementary schools. This conflicts with data in Figure 3, where only about 33\% of parents reported having an action plan on file at school for their child with asthma. Another issue was that 1.4\% or about five elementary school principals who reported having no students in their school with asthma. According to current BRFSS data, 8.8\% of school children—or approximately 53,000 school-aged children—in Utah were reported as having current asthma.

\textbf{Figure 4: Percent of Schools Reporting Action Plans on File at School, Elementary}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure4}
\caption{Percent of Schools Reporting Action Plans on File at School, Elementary}
\end{figure}

Source: Elementary SHP 2010
A similar trend of over reporting was found in secondary schools, as seen in Figure 5. About 50% of school principals reported action plans on file, whereas only 20.3% of parents reported their child having an action plan on file at school.

*Figure 5: Asthma Action Plan Data for Secondary School-aged Children*

This belief by school principals that the majority of students with asthma in their school have an action plan on file may correlate to less emphasis by school administration on obtaining action plans.

Sources: BRFSS Call-back 2007-2009 & Secondary SHP 2010
Recommendations

The use of AAPs is a reinforced practice in asthma literature and in the National Asthma Education and Prevention Program. More effort must be put into improving AAP use. Below are recommendations for each of the main target audiences.

Physicians

- Educate physicians on the need for action plans
- Create a single, interactive AAP for physicians
- Work on explanation of the action plan to parents
- Provide more asthma trainings to physicians
- Devote one telehealth program to AAP and issue an action statement

Schools

- Have a statewide school nurse asthma training
- Build better ways to obtain AAP from parents by reviewing schools that currently have computerized systems
- Break down the misconceptions of school administration
- Improve the access to asthma action plans for all first responder personnel
- Teach staff how to administer an inhaler

Parents

- Emphasize the importance of AAP in asthma management
- Educate on medications and use
- Reinforce the need to file proper asthma forms with the school
References