

Title of Project:

2+2 Asthma Crew: Asthma Education in the Elementary School Environment

Background/Vision

The *2+2 Asthma Crew* asthma education project, which has been in existence since September of 2011 under the direction of [CHEST member], serves five elementary school campuses within the North East Independent School District (NEISD) of San Antonio, Texas. Asthma prevalence rates at the five elementary campuses are above the district average of 12%. These schools are considered economically disadvantaged and have been identified as potential areas where asthma may be negatively impacting the students' ability to meet their full academic potential due to loss of instruction time and/or absenteeism. This is based on several metrics: prevalence rates, aggregate inhaler usage (PRN and scheduled), and campus nurse feedback. The *2+2 Asthma Crew* project received prior funding from the CHEST Foundation on September 1, 2012. This 2013 grant proposal would continue and expand the existing asthma educational outreach program by identifying asthma hospitalization rates by zip code. This additional metric would enable us to strategically identify where the outreach program could have a more dramatic impact in the quality of life for these students. In 2013, we would also like to video-record the asthma education activities associated with the program so that we can document the project as a replicable model for other elementary school-based asthma education programs. This program will run from September 1, 2013 through August 31, 2014.

Personal Experience

[The CHEST member] will commit 5% of his/her time to work with the Asthma Educator to coordinate each school's program. This includes meeting monthly with the principals and school nurses at each school to determine dates of the events, the times, the places, and the method of communication to student and parents to participate. [CHEST member] will participate in the meetings mentioned above, as well as coordinating the logistical details of using a NEISD facility. The Asthma Educator instructs/trains all the teaching elements of the elementary age curriculum to the UTHSCSA students prior to the event to ensure curriculum objectives are met. The UTHSC Respiratory Care students in their junior and senior years will participate in the education stations. This has been successful over the last 2 years of providing the program.

[CHEST member] will spend about 5% effort toward the project, and the Asthma Educator consultant will spend approximately 200 hours per year on this program. That includes about 4 hours each per week, plus 6 hours for each of the 5 elementary school program days.

Detailed Project Description

This free asthma educational program is provided within an identified zip code area. This area has a high asthma prevalence community and creates an environment where adults and elementary-age students learn about asthma management at their respective educational levels. This model was created by [CHEST member] and has been well received and successful within five economically disadvantaged elementary schools in San Antonio's NEISD.

In 2012-13, this program reached more than 180 students/families with asthma from the five campuses and evaluation measures revealed disease management strategies were obtained. Of the families served, approximately 85% are Hispanic. This was only approximately 20% of the asthma population of these campuses. The ultimate goal of this program is to help parents and students effectively manage asthma so as to avoid hospitalization/school absenteeism.

Prior to beginning the program, each student completes the Asthma Control Test (ACT). This test determines how well the child's asthma is currently controlled. This asthma education program incorporates six interactive stations using a variety of hands-on instructional materials to reach children in creative and memorable ways:

1. *What is Asthma?* Using [display kit] with asthma whose rib cage opens to reveal lungs, healthy and inflamed airways, and removable, inflatable bronchioles, the students are introduced to what asthma is and the terms that describe asthma. The children also create fake mucus.
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2. *Asthma Symptom recognition.* Using [display kit], the students are introduced to the terms that describe symptoms associated with asthma and are given an "airway" (PVC pipe and/or paper towel roll). Cotton balls and the fake mucus are put into the "airway" to mimic the symptoms of asthma.
3. *Asthma Trigger awareness and avoidance.* A "trigger bin" full of plastic triggers such as dogs, cats, buses, cars, etc. provides examples of the "triggers" associated with asthma.
4. *Medication Management.* Using placebo medications, spacers, peak flow meters, and asthma action plans the students learn how to manage asthma.
5. *Trigger avoidance.* Students learn strategies to reduce trigger exposure.
6. *Living with Asthma.* The students are encouraged to exercise, eat healthy, and avoid triggers. Exercise-induced asthma and how to control it are discussed here.

The students rotate through each station building asthma knowledge and applying it to a "model airway" made from a piece of PVC pipe and/or paper towel roll. The project has incorporated a fun food activity to recap the knowledge gained about asthma. All participants are given a spacer, peak flow meter, and an asthma action plan.

While the students are participating in the asthma stations, the parents are simultaneously participating in an asthma education program in a seminar format

taught by a certified asthma educator/respiratory therapist and pediatric pulmonologist. The seminar includes the description of asthma, asthma symptom recognition, asthma triggers and avoidance, medication management, and asthma control expectations. The parents complete the Asthma Control Test (ACT), as well.

At the end of the simultaneous activities, the children showcase what they have learned by performing a play that incorporates the asthma knowledge gained. This incorporates a fun tunnel, jump ropes, and plastic balls (large and small) to simulate the pathophysiological changes that occur in the asthma airway and the reversal of these changes when disease management strategies are followed. The respiratory therapist will evaluate attendees' medication technique using *[training kit]* and answer disease management medication questions. The parent and child with asthma will assess the current level of asthma control using the fractional exhaled nitric oxide using *[a test kit]*.