Asthma Environmental Interventions for School-Based Health Centers

CASE STUDIES AUGUST 2017
Addressing Asthma and Air Pollution: How one School-Based Health Center in Los Angeles County partnered with bus drivers to reduce air pollution

Asthma is a significant concern in Carson, CA, just 14 miles south of downtown Los Angeles. The Carson Wellness Center, which provides services to students from three schools that share a common campus, as well as individuals and families in the surrounding community, has 1,400 patients with a documented diagnosis of asthma.

The clinic staff know that a common environmental asthma trigger—outdoor air pollution—isn’t something that patients and their families can fully control, yet it’s a significant problem in their community. The Center is on the corner of a busy intersection and the bus pick-up location for the schools is directly behind the center. Staff in the clinic reported a smell of exhaust fumes, mostly in the mornings and afternoons on really hot or really cold days. They realized that the smell was coming from the school buses idling outside of the clinic, right next to the air intake vent. They augmented this anecdotal data with data collected from an assessment they conducted with patients to increase their understanding of which asthma environmental triggers are most common. The data from the student assessments pointed to idling buses and trucks as the most concerning asthma environmental trigger in their school community.

In response, the Wellness Center staff undertook efforts to reduce bus idling. They began by conducting a survey of bus the drivers to gain a better understanding of their knowledge and behaviors. What they learned is that the bus drivers were idling in order to keep their air conditioners or heaters on. They knew that there was a district policy against idling, but they didn’t know about the health effects of idling.

So, the Wellness Center staff invited the drivers into the center for an educational session. They identified a champion and she made sure that all of her colleagues attended the session. She motivated the other drivers to attend and texted them reminders. The center staff provided snacks for the bus drivers during the training.

“These changes could not have occurred without our partnership with the bus drivers. Sometimes the best health champions come from unexpected places.”
Top 3 tips for engaging non-clinical staff, like bus drivers:

1. **Identify a champion.** Collaborate with that champion to plan the initial training or meeting, identifying a location and time that will be convenient for the participants.

2. **Provide free food or other incentives.**

3. **Follow-up.** Continue to build the relationship after the initial training.

By the end of the session, the bus drivers had a better understanding of the health impacts of idling and agreed to change their behavior. The Wellness Center staff offered for the bus drivers to come into their clinic — which has air conditioning and heat — on those hot or cold days. The staff also posted anti-idling signs outside in order to educate other drivers and the clinic staff reduced their own idling (in cars) based on their increased awareness. An unexpected outcome was that the bus drivers were so interested in the issue of asthma that they asked for (and received) a training on how to respond to an asthma emergency.

One thing that the Wellness Center staff learned from this experience is the value of partnerships. While they are the experts in the clinical management of asthma, to truly address the problem of asthma, the clinical management must be partnered with environmental management. When it comes to the environment, unexpected partners may indeed be the experts. Betty Franco shares, “These changes could not have occurred without our partnership with the bus drivers. Sometimes the best health champions come from unexpected places.”

### Contact

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For more information on how school-based health centers can address environmental asthma triggers, view the Asthma Environmental Intervention Guide for School-Based Health Centers.
Empowering Students to Reduce Environmental Asthma Triggers in their Homes

In Hempstead, NY, the rate of emergency room visits for asthma is three times higher than the average in Nassau County, Long Island and almost twice as high as the rate for the State of New York. The Hempstead High Health Center, established 20 years ago by Winthrop University Hospital, helps students overcome many challenges they face in managing their asthma, including environmental triggers of asthma at home. Some of the most common housing issues that students experience include poor ventilation, heating, and concerns regarding personal safety in their neighborhoods. The majority of students at Hempstead High School with asthma often experience fragmented care and inadequate education about medication use and prevention. That is where the Hempstead High Health Center comes in.

The Hempstead High Health Center (HHHC) team recognized that in order to improve their patients’ outcomes, they had to address all of these individual and environmental barriers to effective asthma management. They knew they had to empower students in their own self-directed care and asthma management. Gina Galante, Pediatric Nurse Practitioner, shared that the team understands that, “teenagers enjoy taking command of their health care, and partnering with a teen with asthma to educate them and reduce the environmental triggers to improve their asthma will be an asset to their overall quality of life.”

The HHHC team decided to use an Asthma Education Support Group to educate and empower their patients to be leaders and make a strong impact on reducing environmental asthma triggers in their homes. This program, held during students’ lunch periods, provides asthma education that promotes self-management and incorporates life-long skills, which transition them to establish greater independence as they approach adulthood. The group has been a forum not only for students to learn from the staff about asthma management, but for health center staff to better understand the barriers that often make a student’s asthma difficult to manage, especially those which exist in a student’s environment. The aim of the health center staff was to work with each student to identify troubling asthma triggers that are within their control to change.

“Teenagers enjoy taking command of their health care, and partnering with a teen with asthma to educate them and reduce the environmental triggers to improve their asthma will be an asset to their overall quality of life.”
Sierra, a slender, intelligent, 15-year-old with mild intermittent asthma, is a participant of the Asthma Education Support Group at the Hempstead High Health Center. She lives with her mom, her mom’s boyfriend, and two younger brothers in a small, deteriorating apartment. Sierra shares a bedroom with both brothers. They sleep in bunk beds, she in the top bunk and her two brothers sharing a lower bunk. Sierra and her family have considered moving multiple times because of the substandard housing conditions. Sierra wants to stay because she has moved many times already and does not want to leave her friends at school.

As part of her participation in the Asthma Education Group, Sierra conducted an asthma trigger assessment of her apartment. In her assessment she reported: mice, cockroaches, dust and mold in the bathrooms and kitchen. She also shared that her mom’s boyfriend smoked indoors. After Sierra shared the results of her assessment, the HHHC team worked with her to identify something that she had the control to change in her home. Sierra recognized that because she shares a bunk bed with her brothers, she could make a change there. She requested that the health center provide her with two new dust mite-proof mattress and pillow encasements. In addition to providing these products, the team talked with Sierra about asthma-safer cleaning, and gave her an affordable asthma-friendly cleaning product to use. Sierra was able to use the products given to her and her family, and says that they have improved quality of life at home. Both Sierra and her mom continue to speak to the boyfriend about reducing smoking in the apartment, which he has done.

Some best practices from the Asthma Education Support Group include:

- Student workshops that focus solely on asthma triggers in the home
- Student-led asthma trigger assessments of their homes
- Focusing on what students could control in the environment
- Providing “Anti-Trigger Kits” to students, which contain:
  - Dust mite-proof encasements for pillows and mattress
  - Asthma-friendly cleaning products
  - A gift-card to a local hardware store to obtain needed HVAC filters and asthma-friendly pest control products like boric acid for cockroaches

Reflecting on this work, the HHHC team recognizes that, “while the changes they have made may seem minimal, this project has given the teens an opportunity to be leaders in their own communities and advocate for more asthma friendly environments. Helping students and their families feel more healthy and comfortable in their homes and communities will always be meaningful.”
Managing Asthma Triggers from School to the Home: How One School-Based Health Center is Educating a School Community

Located in Milwaukee County in Southeast Wisconsin, Frances Starms Discovery Learning School serves a predominantly African American community (96% of students are Black, non-Hispanic) and has one of the highest rates of asthma in the state, at 22%. Contributing to these high rates of asthma are a variety of environmental factors.

Many schools in Milwaukee County are over 100 years old and have limited resources to address issues such as mold, excess dust, and pests. Many homes in this community are also old, non-owner occupied, and in various states of disrepair, further contributing to asthma trigger risks. Additionally, nearly one in four (24%) adults in Milwaukee County are smokers, according to the 2010 Behavioral Risk Factor Surveillance Survey.

Rita Higgins, the Asthma Management Program Coordinator with the Children’s Hospital of Wisconsin School Nurse Program understands how environmental factors contribute to asthma and impact student success. She explains that, “asthma can result in unproductive and missed classroom time for students and missed work time for parents.” Rita and her team at Frances Starms Discovery Learning School recognized the need to integrate an environmental asthma trigger education initiative within the existing Asthma Care Program, and through a strong school-hospital partnership, they worked to update curriculum and change how asthma education was delivered.

The revised, comprehensive approach to reduce environmental asthma triggers targeted the entire school community, including students and staff. Community education, empowerment, and advocacy activities included:

- A survey to help students identify triggers at home and at school
- Education classes to help students identify where they could make changes to the environment
- Role playing scenarios and tools to help students respectfully advocate for changes at home or school that would reduce asthma triggers

“A vibrant community begins with vibrant and healthy families, so helping reduce the burden of asthma helps the student, family, and community reach their maximum potential.”
Rita’s success resulted from building relationships with key partners. The Frances Starms Discovery Learning School staff members, who were empowered by this initiative, were notable partners. For a group of teachers, this initiative meant immediate changes in the classroom. They participated in the school environmental trigger assessment and discovered that their classrooms had asthma triggers. Teachers of younger children learned that the stuffed animals made available to students carry dust-mites, a very common trigger for asthma. Teachers knew that getting rid of the stuffed animals would be a tough option for all due to the comfort they provide, so Rita shared a more feasible idea to help reduce the dust-mites on the stuffed animals—put them in the freezer. Rita explained that freezing the stuffed animals weekly and storing them between uses in a container with a lid, would help reduce dust-mites. The positive feedback Rita got from the teachers was inspiring! She shared, “It felt so great to empower those who are responsible for so much of our children’s day. To give them information that they could immediately act upon and implement in future years was an awesome opportunity.” Because of Rita’s successful individual work with the teachers at Francis Starms, the school administration is exploring other ways to provide ongoing support for teachers to help reduce asthma triggers in their classrooms.

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Students who participated in the asthma education class reported positive experiences after discussing asthma triggers with family members or peers, such as asking them to avoid wearing perfume, burning incense, or smoking in the car. Rita and her team also conducted a comprehensive school environment assessment for asthma triggers, which included:

- Verification of asthma triggers that were present in classrooms or common areas
- Education for teachers and other school staff who were responsible for the environment about their role in reducing triggers
- A final walkthrough report of “high asthma trigger zones” for school personnel with low- or no-cost recommendations on how to reduce environmental triggers

As a result of relationship-building and individualized education, school staff expressed that they could implement the recommended changes immediately or before the end of the school year. Teachers, who were previously unaware that asthma triggers existed in their classrooms, made immediate changes such as requesting more regular vacuuming of carpets and keeping a regular schedule for blind/curtain dusting or cleaning. The efforts to reduce environmental asthma triggers among students through comprehensive education and structural changes on campus highlight the dedication of a community to make real, lasting change. Rita understands that “a vibrant community begins with vibrant and healthy families, so helping reduce the burden of asthma helps the student, family, and community reach their maximum potential.”

For more information about Regional Asthma Management & Prevention, visit http://www.rampasthma.org/. For more information about California School-Based Health Alliance, visit http://www.schoolhealthcenters.org/
Incorporating Environmental Asthma Trigger Information into the Electronic Medical Record: How a system-wide change resulted from one Nurse Practitioner’s efforts to better educate patients and families

The North Elementary School-Based Health Center, located in a Health Professional Shortage Area (HPSA) in Watertown, New York, is just 30 miles South of the Canadian border. The Center serves the children of the Fort Drum Army Base, as well as many children who have another outside Primary Care Provider but visit the clinic when they cannot be seen by their regular doctor. As a result, they often have the opportunity to care for children who are experiencing acute asthma exacerbations.

The full-time Family Nurse Practitioner at the school-based health center, Melissa Reynolds, recognized that reducing environmental triggers is essential to reducing asthma exacerbations. She explained, “We have many children whose parents are tobacco smokers and I would like to focus on reducing this trigger, in addition to others.”

Melissa noted that when she’d ask children about asthma triggers during appointments, they’d simply say “yes” or “no” to everything. She began thinking that a picture tool could be useful so that the children could point to the triggers that make their asthma worse. So, her first step was to develop a laminated picture tool for use in one-on-one education. The next challenge was figuring out how to reach parents with information about reducing asthma triggers. Their current practice was to send home a clinical visit summary with an Asthma Action Plan, but that didn’t include any information on asthma triggers.

To address this challenge, Melissa worked with the company that manages their Electronic Medical Records (EMR) to make changes to the system. Now, the EMR system automatically pulls in Asthma Trigger fields and includes trigger information on the printed Asthma Action Plan. It defines asthma triggers, lists which triggers the child has identified as a concern, and delivers key messages on ways to reduce exposure to those triggers.

The improvement in the EMR impacted not just Melissa’s school, but five other school-based health centers run by the same Federally Qualified Health Center, North Country Family Health Center. To accompany this system-wide change, Melissa provided education to the five other Nurse Practitioners, who were all thrilled about this improvement to the ways that they can incorporate education about environmental management into their interactions with students and families.

Melissa is conducting a small-scale evaluation to determine whether this change improved knowledge and changed behaviors of her patients and their families. Assuming positive findings, she hopes to work with the EMR company to expand this change beyond her own clinic system so that all health centers with the same EMR company can systematically incorporate environmental trigger information into their asthma management.

“We have many children whose parents are tobacco smokers and I would like to focus on reducing this trigger, in addition to others.”
In the meantime, she already knows that her efforts have improved the life of one student. Ben is a child with asthma seen at the North Elementary School-Based Health Center. Melissa prescribed both a quick-relief medicine to address the symptoms of an asthma attack and a long-term controller medicine to reduce the frequency and severity of attacks. Despite taking the medications correctly, Ben's asthma was not under control and it was worse during the winter months. Melissa learned that his parents were smoking in the house, but only smoked in the bedroom with the door closed. She conducted an educational intervention with both the patient and parent in person and sent home an asthma action plan with triggers identified for this patient and ways to avoid them. At a three-month follow-up visit, Melissa learned that the parents had stopped smoking in the home after the educational intervention. The parents had been under the impression that because they were closing the door, the smoke was not filtering out to the children in the rest of the apartment. Because of this change, the child had reduced asthma symptoms. Ben’s mom explained that the educational intervention was extremely helpful for her to understand what asthma triggers are and ways to reduce them in the home environment. She also showed improvement in her knowledge based on a pre/post-test assessment. She missed 2 out of 8 questions in the pre-test and had 100% correct on the post-test. She noted that the child did not have any ER visits this winter and had reduced wheezing episodes and asthma symptoms since eliminating smoking in the home.

Contact

A Patient-Centered Approach to Reducing Asthma Triggers at School and Home

St. James School-Based Health Center is located in Philadelphia, Pennsylvania in a neighborhood with one of the highest poverty rates in the nation. Dale Ayton is a Pediatric School Nurse for the 14 school-based health centers that are part of the Education Plus Health network, which includes St. James School.

Dale understands the need for a comprehensive health initiative for students facing poverty and the associated health impacts. “In a city where 33% of children live below the poverty line, 41% of children are overweight or obese, and 23% of children have asthma, the need for targeted and enhanced interventions at the school-based health centers that I oversee, is tremendous.”

She goes on to explain that, “asthma is the single greatest concern for my school and our families.” The high levels of air pollution and substandard housing conditions, including pest infestations, exacerbate the problem of asthma. Family instability and mobility in Philadelphia make it challenging for students and their families to follow asthma management plans with consistency. Consequently, asthma education and monitoring has become Dale’s “number one, daily task.”

Dale and her team had already been working to improve clinical management for their patients with asthma. They conducted an evaluation to assess the impact of these efforts across the 14 school-based health centers and discovered that 62% of their patients with asthma increased their school attendance over the last two years, and that the percentage of poorly controlled asthma cases has decreased over the last three years.

Dale and her team decided to build upon their successes and adopt a multi-pronged approach to asthma management including the reduction of environmental asthma triggers. First, during appointments with students, health center staff focused on educating them about ways to reduce environmental exposures to reduce exposure to environmental asthma triggers in school. Second, they worked with all 14 schools within their network to reduce indoor and outdoor environmental asthma triggers through educating the teachers and providing them with a checklist to identify and reduce triggers in their own classrooms, as well as educating community members.

The staff at St. James School became the most engaged in the initiative. The school implemented a comprehensive plan to address environmental triggers on their campus. The plan included:

- Discouraging staff from using perfumes, other scented personal products, and scented markers, as scented products are respiratory irritants.
- Evaluating cleaning solutions used in the school for their environmental impact and potential to trigger asthma.
- Eliminating rugs from classrooms and discouraging clutter, as dust mites found in cluttered spaces and rugs are asthma triggers.
- Placing signage outside to eliminate idling motors throughout the day, as particulate matter from idling vehicles exacerbates asthma.

“Asthma is the single greatest concern for my school and our families.”
Amare is a fifth-grade student at St. James School. He lives with his Grandma in Western Philadelphia and was diagnosed with asthma just this school year. Dale was alerted to Amare's needs when teachers informed her that he was asking to use his albuterol inhaler several times a week. When Dale met with him during an appointment at the Education Plus Health’s St. James School-Based Health Center, he was wheezing and had diminished airflow. Dale discovered that he was given a quick-relief medication (albuterol) to take during asthma attacks, but wasn't given a controller medication to prevent asthma attacks nor educated about reducing exposure to environmental asthma triggers. Dale knew that Amare could greatly benefit from an asthma management approach that included education about environmental triggers. When Dale spoke to Amare’s Grandma, she was excited that they would finally be able to increase his comfort and activity tolerance while decreasing his asthma symptoms. Amare and his Grandma came in for a second appointment and were provided detailed asthma education regarding the environmental triggers of asthma, and how to reduce them. Additionally, Amare was prescribed an asthma controller medication to help prevent asthma attacks. Amare and his Grandma worked with Dale to develop a personalized self-management plan and to assist him to identify environmental triggers and respond to asthma symptoms early. At a follow-up appointment, Amare was able to list his asthma triggers including many outdoor and a few indoor home triggers. According to Dale and Amare’s self-reports, he has experienced a significant reduction in his asthma symptoms and has not had an asthma attack this spring, for the first time in years. Amare and his Grandma are proud of his accomplishments and feel empowered to continue to monitor his asthma and reduce asthma triggers at home.

“School children learn best and feel best when they are well and part of a caring community.”

The relationships that Dale built with the St. James staff were vital to their enthusiastic approach to this initiative. Many common barriers to success were eliminated and the initiative was successful. As Dale knows, “the school’s enthusiastic support of wellness programs to improve air quality and reduce triggers was key to the level of staff involvement and asthma trigger awareness.” Dale knows that, “school children learn best and feel best when they are well and part of a caring community.” That is why the Education Plus Health’s St. James School-Based Health Center has become an ideal access point to provide not only the close monitoring and individualized care to meet the needs of students with asthma and their families, but also the resource for environmental asthma trigger education that can transform schools to make them a healthier and safer place for all staff, family, and students.

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For more information about Regional Asthma Management & Prevention, visit http://www.rampasthma.org/. For more information about California School-Based Health Alliance, visit http://www.schoolhealthcenters.org/
Addressing a Hidden Asthma Trigger through an Innovative Partnership

Located on the East Side of Cincinnati, the school-based health center at Riverview East Academy is one of thirteen full-service Cincinnati Health Department school-based health centers located in Cincinnati Public Schools. Cincinnati has one of the highest rates of childhood poverty in the nation. At Riverview East Academy, 92% of students are from low-income families and 13% of students have asthma.

In partnership with Cincinnati Children’s Hospital, the school-based health center had already begun addressing asthma. In 2016, school-based health center staff proposed a project to build on past asthma work by focusing on environmental asthma triggers. According to Nicholas Sharp, Caseworker Associate, “Being aware and knowledgeable about environmental asthma triggers will lead to quality improvement… Our students will benefit directly from this improvement now and in the future.”

The school-based health center staff began their project by assessing the most common environmental asthma triggers. Students identified the use of scented personal products, such as body sprays and perfumes, as a common problem that exacerbated asthma symptoms. Personal scented products contain an array of volatile organic compounds (VOCs), which are respiratory irritants. The health center staff decided to focus on educating 7th and 8th graders, who were at an age of just beginning to use such products.

Of course, conducting education requires staff time, so the school-based health center pursued an innovative partnership. They were able to work with 1st and 2nd year medical students from the University of Cincinnati Medical Center. The students were taking a course called Physicians and Society 101, which partners fifteen groups of medical students with a community health center, agency or advocacy organization throughout the greater Cincinnati area. A group of ten students was placed with the school-based health center to support this and other projects and they were subsequently able to take the lead on developing and providing education sessions.
The medical students led education sessions for ninety 7th and 8th graders at Riverview East Academy. The 7th and 8th graders gained knowledge of asthma triggers, what to do when their friend is having an asthma attack, and learned about how their hygiene practices (e.g. spraying perfume at school, using scented lotions, etc.) can affect other students with asthma. The medical students provided education about how to reduce asthma triggers in the school and provided the 7th and 8th graders with various asthma-friendly (unscented) hygiene products, such as shower products and deodorant.

The education sessions and provision of unscented personal products changed student knowledge and behavior. A pre- and post-test demonstrated a statistically significant improvement in student knowledge. Several students reported that they could tell the difference when their peers started using unscented products. They also noted an increase in comfort and willingness to talk with other students who continued to use scented products.

For any school-based environmental change, it’s also essential to educate teachers and staff. Fortunately, the school-based health center staff developed a strong relationship with the school principal when the center first opened in 2014. The principal has been very supportive of the school-based health center and provided them with two 45-minute sessions at staff meetings to conduct education. This ensured that that the teachers were knowledgeable about and bought into the changes. One teacher noted, “I now bring in unscented lotion for students to use.” Another noted that “students seem more sensitive to the impact of scented products on others.” And, yet another noted improvements in her own respiratory health.

In addition to having an impact on the Riverview East Academy students and teachers, this project had an impact on the medical students. While too many physicians focus solely on prescribing the right medications for their patients with asthma, this group learned an important lesson about treating asthma through both clinical and environmental management. Often when medical students match into a specialty, those who choose residency in primary care cite the Physician and Society 101 community project as a strong factor in their decision. The project offers opportunities for community connections that are cornerstones in primary care; a holistic environmental approach to health and well-being. The community of Riverview East Academy presented a unique experience that highlights the impact and importance of cultural competency in practice that facilitates these connections, a skill critical to care of underserved populations.

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Imagine children with asthma sitting out for PE, not taking part in athletics, waiting outside the nurse’s office, or simply absent from school. That was the reality at many Port Chester, NY schools back in 2007 before the Open Door Family Medical Center’s School-Based Health Centers launched a comprehensive asthma management and prevention program. Now the picture is quite different. Every child with asthma seen at the school-based health centers (SBHCs) has well-controlled asthma. The number of acute care visits decreased by 83% and the number of missed school days decreased by 93%.

How did the School-Based Health Centers achieve such dramatic improvements in asthma management? According to Ellette Hirschorn, Director of Clinical Services and Programs for Open Door Family Medical Centers, “Our mantra is ‘We build strong healthy communities.’ Once everyone is on the same page, it’s easy to achieve. Everyone wants a healthy community.”

Asthma is a significant public health concern for the Port Chester community. 18% of children seen by the School-Based Health Centers have asthma. 70% of residents are 100% below poverty level and 30% are between 150-200% below poverty level. 72% of the population is Hispanic and many of the adults do not exhibit literacy in either Spanish or English. The Open Door Family Medical Centers responded by ensuring that all of their providers were trained in and practicing the clinical practices recommended in the national asthma management guidelines. But they didn’t stop there. Ms. Hirschorn explains, “It started in our school-based health centers to improve the clinical care for children with asthma. It evolved into an effort to improve systems across the community. We take a whole system approach.”

Indeed a whole systems approach is required to effectively address asthma, because even children with the best medical care will continue to suffer from asthma exacerbations if they encounter environmental asthma triggers at home, school, or in their outdoor environments. The SBHCs partnered with others in the community to implement a truly impressive array of interventions aimed at creating healthier communities where all children can breathe easily. Just a sampling of activities conducted by School-Based Health Center staff and partners include:

- Educate children with asthma one-on-one, through Asthma Club, and through Open Airways and Kickin’ Asthma, which are evidence-based programs developed by the American Lung Association.
- Partner with Not-on-Tobacco Adolescent Smoking Cessation Program to help their teen patients stop smoking and improve their ability to breathe.
Initiated smoke-free parks, ensuring that all children are protected from exposure to second-hand-smoke, which has been shown to not only worsen asthma, but also to contribute to the development of asthma.

Developed a partnership with a home visiting nurse program where nurses work with families to identify environmental asthma triggers in the home and make recommendations to reduce exposure.

Educated school bus drivers about the health impacts of idling, which include unnecessary exposure to particulate matter that can worsen asthma.

Port Chester School District developed a policy of no-idling on school grounds.

Developed a Safe Routes to Schools program to encourage kids to walk to school, decreasing the amount of polluting traffic at school drop-off while encouraging physical activity.

Established a policy on asthma-friendly cleaning products, as many cleaning products used by schools exacerbate asthma.

Created a school policy on the use of Integrated Pest Management, which is a way to prevent pest infestations that can trigger asthma without using harmful chemicals.

The SBHC staff and partners also conducted activities in day care centers because, as Ms. Hirschorn explains, “If you can identify children with asthma early, you can get the asthma under control by the time they reach elementary school.” The SBHC staff made sure that everyone in the community received the same messages about asthma management and prevention—from the day care center providers to the high school principals; from the school lunch ladies to the parks and recreation department staff; and perhaps most importantly, from the children to the parents and caregivers. Ms. Hirschorn describes, “We include the parents in everything—whatever information the kids get, the parents get too. Our parents really want the best for their kids.”

This approach is what makes School-Based Health Centers well-positioned to address asthma. They can forge the connections among parents, clinicians, schools, and communities. It takes an asthma champion like Ellette Hirschorn and strong partnerships. Ms. Hirschorn’s comment truly captures the reason for this program’s success, “We have a great team and everyone is really invested in doing the best for the children and community.”

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For more information on how school-based health centers can address environmental asthma triggers, view the Asthma Environmental Intervention Guide for School-Based Health Centers.

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Seven years ago in Henderson, children with asthma who lacked health insurance were forced to either forego treatment or utilize local emergency departments as their primary care source. Without a medical home, where families are educated on health promotion as well as illness care, the families of these children lacked information on the avoidance of environmental asthma triggers. The combination of inadequate medical care and ongoing exposure to asthma triggers led to many unnecessary and costly emergency department visits and hospitalizations. That was before the Dr. Joel & Carol Bower School-Based Health Center launched its asthma program in 2008.

The mission of the Center is to provide high quality, accessible health care to all children in Henderson schools, especially the uninsured, underinsured, and vulnerable populations. The Health Center is dedicated to treating the whole child; to promote physical, emotional, and social health; to effectively manage chronic illness; and to minimize health-related school absences. Approximately 900 children are served by the school-based health center (SBHC) every year and they proudly share that none of the children with asthma under the care of the Center were hospitalized during their time receiving care.

Providing health care at school makes a lot of sense. As Erika Webber, the School-Based Health Center Coordinator explains, “In order to get kids to graduate and stay in school, we need to keep them healthy.” The first visit with each student with asthma includes an hour-long comprehensive appointment. They conduct a screening, get a Spirometer reading, and conduct education. They also provide the children with inhalers, nasal spray and other medications depending on the severity with the goal of achieving adequate asthma control.

Once they have had the initial visit, they then refer them to the Healthy Homes program for a home visit and assessment of environmental asthma triggers. Deborah Noll, Pediatric Nurse Practitioner, explains “Anything you can prevent, you don’t have to treat. If we identify and eliminate triggers, hopefully we can keep the kids on less medicine and keep them in school.”

The home visit is conducted by the University of Nevada, Las Vegas & the Dignity Health program, which is designed to identify the child’s environmental asthma triggers. There is seamless coordination between the home visiting program and the school-based health center (SBHC). The visit includes a home assessment, evaluation, tools to help control triggers, and solutions to reduce trigger exposure.
Such solutions can include giving the family needed mattress pads (to reduce exposure to dust mites, a common asthma trigger) or non-chemical pest control products (to reduce exposure to cockroaches, which can trigger asthma attacks). The home visitors also talk to apartment managers around systemic concerns like mold, which can make asthma worse. The Healthy Homes providers communicate directly with the School-Based Health Center staff about the triggers they identify and the recommendations they made. When the children are seen back in the clinic, the nurse practitioners are able to reinforce the messages that the home visitors provided, which includes strategies for avoiding triggers.

The School-Based Health Center is uniquely positioned to enhance collaboration among school staff, students, parents, and clinicians. They see the patients with asthma every 2-3 months and often see the parents and caregivers of the younger kids providing an opportunity to educate them directly about asthma triggers. For parents who smoke, they talk about cessation and refer them to cessation classes at the health department. They also talk about ways to reduce exposure to secondhand smoke until parents can successfully quit, such as smoking outside, wearing a smoking jacket, and keeping smoke out of the cars. The SBHC staff also meet with the school staff four times per year and have an opportunity to educate them. Additionally, the SBHC staff communicates with the school to let them know what the asthma triggers are for each student with asthma. Sherrilyn Coffman, Director of the Center explains, “The school staff is very supportive of the asthma program.”

The staff at the Dr. Joel & Carol Bower School-Based Health Center is committed to building on the success of their asthma program to continue meeting the needs of the most vulnerable children in their community. Though the program has benefited from support from the Dignity Health Foundation for several years, both the Center and the home visiting program face ongoing funding challenges. They are working on agreements to bill insurers for the care and education provided, which could be a sustainable source of some funds, but about half of the children they see do not have any insurance at all. As they focus on sustainability, they remain committed to both asthma management and prevention. Ms. Webber explains, “The comprehensive approach is essential for our program’s success!”

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For more information on how school-based health centers can address environmental asthma triggers, view the Asthma Environmental Intervention Guide for School-Based Health Centers.

For more information about Regional Asthma Management & Prevention, visit http://www.rampasthma.org/.
For more information about California School-Based Health Alliance, visit http://www.schoolhealthcenters.org/
West Oakland is a small neighborhood in Alameda County, California, on the shores of the San Francisco Bay, where residents live near thousands of moving and stationary sources of diesel pollution. Container trucks carry goods to and from the Port of Oakland, U.S. Postal Service trucks carry mail to a major distribution center, and trucks and automobiles move overhead on freeways that surround the community. In 2008, the California Air Resources Board (CARB) conducted a health risk assessment and reported that West Oakland residents are exposed to high concentrations of diesel particulate matter—almost three times higher than the average background levels in the Bay Area. The population is predominantly African-American and 35% of residents live below the federal poverty line.

Asthma is a significant public health concern for this community. Rates for Emergency Department visits due to asthma are higher in Alameda County than for the state and West Oakland children go to the Emergency Department with asthma almost twice as often as the county average. The West Oakland Middle School has 220 students enrolled and over 50 have been diagnosed with asthma and many more report undiagnosed respiratory concerns. The West Oakland Middle School (WOMS) Health Center recognized the disproportionate burden of asthma in their community and chose to prioritize asthma as one of the key health issues they address at their clinic.

Run by Lifelong Medical, the WOMS Health Center developed an asthma management program based on national clinical guidelines. Components of their asthma management program include: an assessment and health history with the nurse practitioner, assessment of asthma control, medication management, provision of an asthma action plan, and spirometry—a tool recommended in the national clinical guidelines but greatly underutilized in clinical practice. “Although spirometry is only used by 52% of providers, we know that it is an essential tool in the diagnosis and management of asthma and are committed to providing the highest standard of care,” says Kristine Carter, Nurse Practitioner.
They also conduct asthma education in a group setting at their clinic. They work with an AmeriCorps: Community Health Corp volunteer to conduct the four-session training which covers: what asthma is; recognizing symptoms; understanding medications; and identifying and reducing exposure to environmental triggers at home, school, and in the community. “Students are hesitant about coming to class, but are always excited to share what they have learned and used,” shares Aaron Steinfeld, the Community Health Corp Volunteer. Forty students were able to complete the educational program in the 2014–2015 school year.

The staff at the WOMS Health Center are eager to strengthen their asthma program in the fall by adding a component that directly addresses the air pollution in West Oakland through implementing the EPA’s Flag Program. The Flag Program uses different colored flags to inform students, school staff, and the community of daily air quality conditions. The flag colors correspond to the colors used in EPA’s Air Quality Index (AQI), which tells how clean or polluted the air is for that day. Sharing the daily air quality through these highly visible flags increases awareness about air pollution. In addition to raising awareness, the flag program also serves as important guidance for modifying physical activity in order to protect the health and well-being of students.

In addition to expanding the breadth of their asthma program, the staff have plans to expand their reach. They will be expanding their own clinic services to include students from a nearby Charter Middle School. Additionally, they plan to replicate their comprehensive asthma program in another school-based health center run by Lifelong Medical in East Oakland, CA. Hana Shirriel-Dia, Health Center Supervisor, shares: “We know that our program is working and we’re excited to expand it to other locations to help children all across Oakland breathe easier.”


3 Douglas, R. “A Brief History of West Oakland” adapted from Olmsted and Olmsted (1994)

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Leveraging Medicaid Delivery System Reform to Improve Asthma Management: The story of a network of 20 School-Based Health Centers in Texas

The 20 school-based health centers (SBHCs) run by the John Peter Smith Health Network serve over 40,000 children each year. There is great diversity in race, ethnicity, and English language ability and the majority of children seen are uninsured or underinsured. Tarrant County has asthma prevalence and emergency department visit rates that are higher than state or national averages. To address this, the School-Based Health Center Network leveraged their unique relationship with schools, students, and families along with the funding opportunity provided through DSRIP to launch a comprehensive asthma program.

DSRIP, the Delivery System Reform Incentive Payment, provides states with significant funding that can be used to support hospitals and other providers in changing how they provide care to Medicaid beneficiaries. Texas was one of the first three states in the country to implement DSRIP initiatives, under which funds to providers are tied to meeting performance metrics. The John Peter Smith Health Network has a DSRIP agreement with the state to improve asthma management for children, which led to the creation of a comprehensive asthma program that reaches 2,000 children with asthma each year.

As a first step in the program, each SBHC identifies either existing or new patients between the ages of 2 and 26 with a diagnosis of persistent asthma. During the first visit, the providers focus on assessing asthma control, understanding history and symptoms, conducting allergy tests, and providing medications. They conduct one-on-one education and schedule a group asthma educational follow-up visit.

The providers know, however, that asthma management and prevention cannot be achieved solely through clinical care. Beverly Ewing, School-Based Clinic DSRIP Nurse Practitioner, explains, “We all know that prevention starts in the home and in the environment.” The program was able to utilize four bilingual Community Health Workers from the Community Health Department to conduct a home visit during which they educate the family about environmental asthma triggers and conduct a home assessment to identify environmental triggers.

“We all know that prevention starts in the home and in the environment.”

—Beverly Ewing, School-Based Clinic DSRIP Nurse Practitioner
any indoor or outdoor triggers. They made recommendations based on their findings. For example, parents can reduce indoor asthma triggers by keeping pets out of the children’s bedrooms, using asthma-friendly cleaning products, and prohibiting smoking in their house or apartment. They also identified systemic problems that could worsen asthma. For example, plumbing leaks can expose children to mold, a common asthma trigger, and tobacco smoke from one apartment unit can enter another unit. In those cases, the Community Health Workers notified the health care providers who would then suggest environmental improvements to the property managers. The Community Health Workers entered any triggers they found into the electronic medical record so that clinicians could follow-up and reinforce messages.

The Nurse Practitioner also teaches group education classes for students and families. They discuss the causes of asthma along with allergens, medications, action plans, and nutrition. They encourage active participation with games and activities. One creative and fun activity is “Trigger Tag” in which every participant is assigned a trigger and wears a sign around their neck with a picture of that trigger. Then, they go outside and the students get to use super soakers to shoot the triggers that make their asthma worse. It’s a fun activity in a hot climate that also reinforces the important role of environmental asthma triggers.

The program lasts for eight months and includes a number of follow-up clinical and educational appointments. The goals are to decrease exacerbations and emergency department use and to increase knowledge and the use of controller medications. Though the program is still new, students and families are already reporting improvements in their asthma control.

Factors contributing to the success of the program include having an asthma champion, like Beverly Ewing, and “having fantastic nurse practitioners and physician assistants.” Yet, despite the innovative funding source, financial sustainability has been a challenge. In December, the program faced budget cuts and is currently not able to conduct home visits. Ms. Ewing and partners are committed to bringing back the home visits and continuing this comprehensive approach. She is hopeful as she explains, “We’re all working for a common cause—to make sure children can breathe.”

Contact

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For more information on how school-based health centers can address environmental asthma triggers, view the Asthma Environmental Intervention Guide for School-Based Health Centers.
Help us share your story! If you are part of a school-based health center conducting asthma environmental interventions, we’d like to work with you to share your story. Contact us at info@rampasthma.org.