

# BREATHING EASIER IN ARIZONA: AN ACTION PLAN FOR CHANGE

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# *Breathing Easier in Arizona:*

## *An Action Plan for Change*



## ABOUT THE ARIZONA ASTHMA COALITION

The Arizona Asthma Coalition (AAC) is a non-profit partnership founded in 1996. Coalition members include state and local public health departments, the Indian Health Service, health plans, faculty from colleges and universities, school health nurses, environmental health experts, a member of the legislature, community non-profit organizations, pharmaceutical companies as well as individual physicians, nurses, pharmacists and respiratory therapists.

The goals of the Arizona Asthma Coalition are to reduce illness and deaths from asthma and to improve the quality of life for people living with asthma. The Coalition was formed in 1996 because public health and managed care partners were concerned that asthma is more prevalent and serious in Arizona than in other states. Maricopa County, for example, has one of the highest asthma death rates in the nation. Through partnership



development and coalition building, the Arizona Asthma Coalition advocates for asthma prevention, improved quality of care, and improved quality of life for people with asthma in Arizona.

As a non-profit organization, we rely on community partners to help us achieve our goals. We are grateful for the funding we have received from the American Public Health Association (APHA), the St. Luke's Health Initiatives, and the Robert Wood Johnson Foundation's "Cooperative Actions for Health Program." The Coalition also contracted with the Arizona Department of Health Services to develop a number of projects funded by the state tobacco tax. In addition, member agencies such as health plans, health departments, pharmaceutical companies and individuals have provided substantial funding through donations. The American Lung Association provides coordination and office services.

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## INTRODUCTION

Asthma is a major chronic disease, affecting the lives of more than 20 million Americans, including an estimated 600,000 Arizonans.

While it is well documented that asthma rates are increasing nationally, what is not as well known is that the rate and seriousness of asthma in Arizona is worse than the U.S. average.

For the sake of those who unnecessarily suffer and die from asthma, and for numerous economic reasons, Arizonans must understand and take a more aggressive approach in addressing this issue.

*The good news is that asthma is treatable.* Although asthma may never go away, a person with asthma can lead a normal life. Symptoms and the underlying disease can be controlled and activity can be unlimited.

*The bad news is that there are several barriers that prohibit early diagnosis and treatment.* Widely accepted national evidence-based guidelines establishing a standard of care for asthma have been available since 1991, with revisions made in 1997 and 2002. Yet in Arizona, despite these advances, we have been unable to decrease the asthma burden!

### For example, asthma still is:

- not widely understood;
- often mis-diagnosed (or under-diagnosed particularly in infants/young children);
- under-treated;
- associated with high urgent care or Emergency Department usage;
- affecting the quality of life of the person with asthma by unnecessarily disrupting normal activities;
- disrupting sleep and leading to frequent absences from school and work; and
- putting a financial strain on our education and health care systems.



While Arizonans can be proud of the tremendous progress made over the years — such as helping to reduce air pollution by carpooling — there still is much to be done to alleviate the negative effects of asthma.

*We have an opportunity and obligation to make this situation better. We're asking for your help.* By continuing to educate Arizonans and the medical community, and by changing or approving new public policy, we can control asthma, eliminate needless deaths and suffering resulting from asthma, and help to establish a fiscally sound health care system.



## ASTHMA FACTS

Asthma is a chronic disease that makes the airways in the lungs inflamed, swollen, and sensitive. The inflammation and swelling come and go, but the sensitivity to irritation always is present. The swelling and inflammation can be controlled with medication and by staying away from triggers that irritate the airways.

Asthma can come in many forms. Recurrent episodes of coughing or wheezing are almost always due to asthma. A cough can be the only symptom. Other symptoms are chest tightness and shortness of breath, and sometimes even chest pain. Asthma is a disease that is present all the time. Certain factors, known as triggers, set off asthma flares that cause symptoms. With occupational asthma, for example, symptoms are worse during work hours, and usually go away or diminish outside of work.

*The key to diagnosing asthma is identifying a recurring pattern of symptoms, usually associated with exposure to one or more triggers.*

### DIAGNOSING AND CONTROLLING ASTHMA

It is important to diagnose individuals with asthma as early as possible. Early diagnosis and treatment lowers the risk of further complications. When asthma is caused by allergens or irritants, controlling exposure to the triggers may help to avoid repeated episodes. At times, individuals will still have asthma symptoms despite avoidance.

Because asthma symptoms — coughing, difficulty breathing, wheezing — are not always present, it is easy to think of asthma as a series of individual events. However, these acute symptoms, or flares, are only the visible symptoms of a chronic condition. Asthma always is present — the flares occur when the underlying disease is aggravated.

#### ASTHMA TRIGGERS

- Exercise
- Tobacco smoke
- Animal dander
- Dust
- Pollens
- Changes in the weather
- Infections

Because of this, asthma medications fall into two categories: rescue/reliever medications like albuterol, and long-term controllers like inhaled steroids. Rescue treatment is aimed at opening the airways during an asthma episode. Controller medications help reduce inflammation and irritability in the lungs which can prevent long-term damage to lung tissue.

Evidence-based guidelines for treating asthma have been available for more than a decade. Although the guidelines have shifted over time to reflect an enhanced understanding of the underlying causes of asthma, the basic principles remain constant: using rescue and controller medications appropriately. The current focus of the guidelines is on preventing asthma flares by reducing exposure to asthma triggers, and using controller medications to decrease the inflammation that results from these triggers.



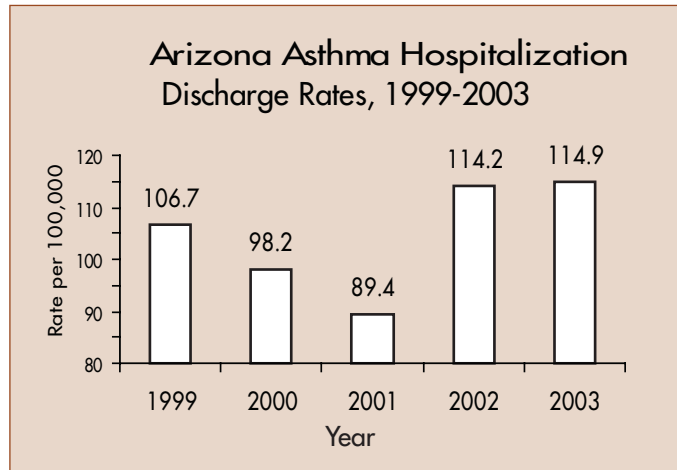
## PREVALENCE

According to the Arizona Department of Health Services (ADHS), the prevalence for asthma among Arizona adults (those 18 years of age or older) was approximately 12.5 percent in 2003. Approximately 12 percent of all Arizona adults were told by a doctor or health care professional they have asthma. Although asthma can be controlled, 400 people died from asthma in the years 1998-2003, an average of 80 asthma-related deaths each year.

## HOSPITALIZATIONS

Arizona Hospitalization Discharge Data (2003) show a total of 32,171 asthma-related hospitalizations for Arizona residents. The average length of stay was approximately four days with a total of 132,479 days for all asthma-related hospitalizations. An average of \$20,185 was spent per hospitalization with a total health care expenditure of \$650 million for all hospitalizations.

Additionally, a greater number of females were hospitalized for asthma-related causes (66 percent females vs. 34 percent males). The majority of hospitalizations were among Non-Hispanic White/Caucasian Arizonans followed by Hispanics/Latinos, and African Americans (65 percent, 15.6 percent, and 5.6 percent respectively). Because African Americans represent only 3.3 percent of Arizona's population, their rate of hospitalization is disproportionately high.



For those under 21 years, hospitalization discharge data show a total of 2,952 hospitalizations where asthma was the main diagnosis. Approximately 39 percent of this group was less than 1-year to 4-years-old, 46 percent were between 5-years and 14-years-old, and 9 percent were between 15-years and less than 21-years-old. The average stay was approximately 2.5 days with a total of 7,250 days for all hospitalizations. An average of \$8,153 was spent

per hospitalization with a total health care expenditure of \$24 million.



## TREATMENT BARRIERS AND RECOMMENDED SOLUTIONS

There are many barriers that prohibit individuals, providers, and the health care system itself from effectively managing asthma.

### BARRIERS ENCOUNTERED BY INDIVIDUALS

For *individuals*, living with asthma requires a day-to-day strategy. A number of factors contribute to an asthmatic's ability to control the disease and lead a normal life. These factors include:

- access to the health care system;
- a lack of knowledge about the disease, which results in limited or no asthma self-management, and not adhering to a treatment plan;
- an inability to acquire prescription drugs;
- limited to no control over environmental factors such as indoor and outdoor air quality, workplace exposures, and exposure to other irritants;
- concerns about using steroid medications — which are a major controller medication;
- asthmatics experiencing flare ups tend to use acute care settings, which creates a barrier for the primary care provider to create an appropriate action plan;
- low-income asthma patients tend to have more asthma complications due to difficulty obtaining medications, and difficulty controlling triggers in limited housing options;
- a lack of trust in the health care provider or health care system may affect a physician's ability to deliver appropriate asthma education and care; and
- exclusive use of non-medical alternatives, such as calming techniques, breathing exercises, and dietary manipulation, may interfere with treatment of lung inflammation.



### ACCESS TO CARE

The number of people in Arizona who do not have health care insurance is at an all-time high. The evidence from large medical research studies reveals that people without health insurance experience adverse health outcomes. In general, the uninsured:

- use fewer preventive services and are four times more likely than insured patients to require emergency care and avoidable hospitalizations;
- delay or forego needed care;
- receive fewer therapeutic services including medications; and
- have higher mortality and disability rates.



During the 3-year period from 2001 to 2003, the U.S. Census reported that 17.3 percent of Arizonans, more than 950,000 people, lacked health insurance. This compared to 15.1 percent for the U.S. population. Of the 276,800 Arizona children with no health insurance, half are thought to be eligible, but not enrolled in public programs such as AHCCCS, Arizona’s Medicaid program, and KidsCare.

## RECOMMENDED SOLUTIONS FOR INDIVIDUALS

By understanding how the above-referenced factors interact, we can help to develop a coherent policy that improves the quality of life for people with asthma.

Patient education is key to managing this disease. Once diagnosed with asthma, an individual becomes responsible for understanding the disease, controlling trigger exposures as best possible, and assessing and treating flares. Optimally, each asthma patient forms a partnership with a health care provider. Health care providers have the responsibility to teach patients about asthma management, provide the appropriate medications, and create an understandable treatment plan — an “asthma action plan.”

### Issues:

1. Lack of continuity of care delayed the diagnosis. All the pieces of the puzzle were present, but were not put together.
2. Patricia used the Emergency Department for an illness that should be treated in an office setting.
3. Often, there is poor recognition of how asthma presents in children and/or a reluctance to diagnose asthma.
4. Patricia’s family was never told that she might have asthma.

## PEDIATRICIAN CASE NOTES

### Case #1

*Patricia, a 13-year-old girl, came to me for evaluation of a chronic cough. She had been seen in a local Emergency Department for flu-like symptoms and chest pain. A chest X-ray showed some mild abnormalities. In the past six months, she had been to the Emergency Department three times for a cough, and was treated with several antibiotics without improvement. On one of these visits, she had been given an inhaler to “try.” She used the inhaler so much it ran out in a few weeks, and when she tried to get another one, she was referred to me.*

*Recently, her mother had noticed that Patricia was very short of breath when she ran, and often had to stop because of cough and chest pain. Her mother recalls that Patricia had wheezy illnesses when younger and received breathing treatments on other Emergency Department visits. Other members of the family have asthma or wheezing.*

*Upon examination, Patricia’s lungs sounded unusually quiet. A peak flow meter reading was in the abnormal range. Patricia was given an asthma rescue medication, and her breath sounds and peak flow both improved. She was diagnosed with asthma, started on controller medications and asthma education begun. Patricia now reports she has no problem running track at school, and her cough is now controlled.*





## Case #2

Michael, a 3-year-old living in Pinetop, had a cold for four days before he went into the Emergency Department. At that time, he had a fever of 104 degrees and was lying around without much energy. He would have coughing fits and his stomach hurt. Michael's chest X-ray was read as pneumonia and he was sent to the local hospital for admission. He was treated with a rescue medication, antibiotics, steroids and oxygen. Michael got better, and went home on asthma rescue medications.

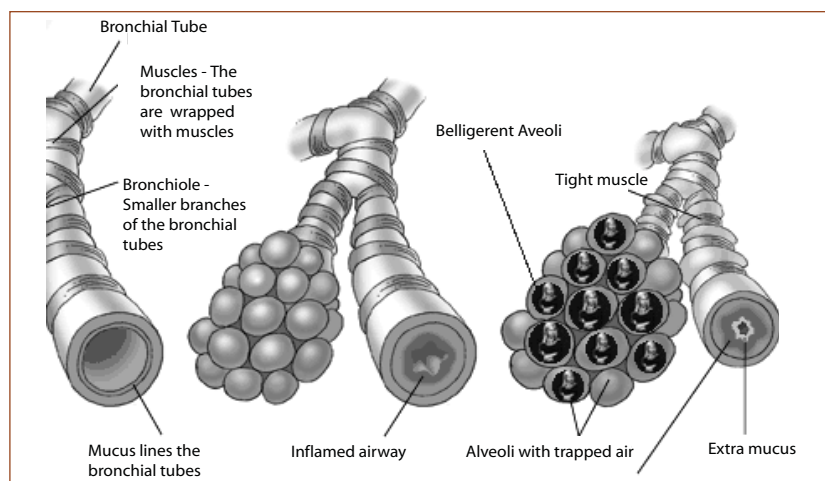
During the next few months, a pattern emerged. Michael would begin with cold symptoms, start to cough (especially at night), and often have high fevers. His lung exam would be similar to that first admission to the hospital. He would need oxygen, breathing treatments and steroids, and would eventually recover.

Although generally healthy, Michael had been hospitalized for viral pneumonia the year before. He was tested for immune system problems, but his immune system was normal. Everyone in his family has allergies, and he has a relative with asthma.

A pediatric lung specialist was enlisted to help with Michael's asthma management. He has had no further hospitalizations since asthma education and preventive asthma treatment were started. Part of the management has been moving Michael to more aggressive treatment during the controlled/prescribed burn season, when burning of the forest undergrowth results in increased exposure to smoke.

### Issues:

1. Continuity of care. With continuity of care, health care providers can better identify a pattern of asthma flares and control the flares at onset of symptoms.
2. Lack of providers with training in how asthma presents in children, especially those with unusual symptoms or in younger age groups.
3. Increased environmental exposure to smoke—either from controlled/prescribed burns or tobacco.



Normal lung airways (left) Airways with inflammation (center) Airways during an asthma attack (right)

### **Notes from a Community Health Worker**

*Maria is a 16-year-old who suffers from asthma. Maria and her mother were referred to a local agency by a KidsCare employee. A lay health worker from the local agency visited Maria's home to find out that she suffers asthma attacks every few weeks and has extreme difficulty breathing. Every time this happens, the ambulance is called.*

*Maria's mother explained that when Maria was a baby, she suffered from a virus that almost killed her. The doctors explained the virus could attack Maria later on in her life. Maria's mother does not know if they were referring to asthma at that time. However, since then, Maria has been diagnosed with asthma, and suffers symptoms daily.*

*Maria has trouble communicating her exact symptoms to the doctor. Her mother, who does not speak English, cannot communicate with the doctor at all. She worries that Maria is not explaining all her symptoms, and that she is not receiving the best treatment. Maria has difficulty breathing and her symptoms increase with weather changes. Maria's only treatment for asthma is an inhaler. Maria does not visit a doctor regularly, and does not have an assigned health care provider. She ends up going to the Emergency Department when she's sick. As a result of Maria's disease, her mother often stays home from work to take care of her, causing the family additional financial hardship.*

### **BARRIERS ENCOUNTERED BY PROVIDERS**

Even though almost 90 percent of health care providers report that they are aware of the asthma treatment guidelines, only 30 to 60 percent of *providers* follow the guidelines.

#### **Why?**

- Providers may lack knowledge of and/or agreement with guidelines.
- Providers may be reluctant to change practice patterns.
- A provider may wish to change practice patterns, but may be constrained by external barriers, such as a lack of a practice-wide reminder system or adequate scheduled visit time.
- Payment for an office visit may not be sufficient to cover the time necessary for asthma education.
- There is a lack of trained medical interpreters who could provide better communication between the patient and their health care provider.

In addition to providers, pharmacists have a tremendous opportunity to help manage asthma care. Because they fill prescriptions and give advice on how to use medications appropriately, they can play a key role. However, *pharmacists* also encounter barriers.

- While the majority of pharmacists are trained to provide education about asthma, economic pressures in community pharmacies are making it increasingly difficult to provide this education.
- Increasing co-payments for medications has led to fewer refills on prescriptions, and refills occurring later than planned.



## RECOMMENDED SOLUTIONS FOR PROVIDERS

Providers must read and know current asthma management guidelines, then measure how well they achieve the standards. This can be achieved through:

- education sessions to review guidelines for those unfamiliar with them, including demonstration and use of asthma equipment;
- adopting the chronic illness model approach;
- creating Asthma Quality Improvement collaboratives, which are more effective than traditional continuing medical education, and involve decision support tools to increase awareness of and use of guidelines;
- using tools such as pocket cards, patient encounter forms specific for asthma, and self-administered questionnaires for patients to assist in collecting data; and
- involving other office personnel to assist with asthma education, including the use of devices and medications.

## BARRIERS ENCOUNTERED BY THE HEALTH CARE SYSTEM

Over time, our *health care system* has evolved to treat acute diseases. While this may be a positive result for traumatic issues, chronic diseases are best treated with continuity.

- People with asthma have several points of contact with the health care system — the primary care office, the Emergency Department, pharmacies, and hospitals. Children with asthma also may receive treatment at school.
- Communication between these various points of care may be poor or conflicting.
- The health care system does not encourage telephone or email communication, creating a barrier to “touching base” on asthma management issues.
- Some sites may lack the ability to schedule and provide appropriate follow-up care.
- The health care system discourages continuity of care through a lack of accessibility to the primary care system on nights and weekends.
- Lack of health insurance is a significant barrier to good asthma management. Higher rates of asthma in minority populations, urban areas and some rural sites highlight racial and economic health care disparities.



- There is inconsistent access to necessary equipment/resources (especially spacers and peak flow meters) across health plans.
- Medication costs of more than \$100 per month for a controller and rescue combination may cause those without a prescription benefit in their insurance coverage to not fill prescriptions or to avoid using expensive medications as prescribed.

*Improve indoor air quality by reducing allergens and irritants.*

## RECOMMENDED SOLUTIONS FOR THE HEALTH CARE SYSTEM

The health care system would be more effective if it established:

- clinical information systems, i.e., a registry that links information from various domains (from the Emergency Department to the primary care provider, or pharmacy to provider, etc.);
- education programs outside clinical venues, i.e. asthma education intervention provided at the schools or the workplace have been shown to decrease the frequency of symptoms;
- behavior interventions such as an inner city asthma intervention program in which a master's level social worker is trained as an asthma counselor to assist patients and their families in controlling asthma; and
- an organized, informed approach to students with asthma in schools and in sports.



## ASTHMA AND THE ENVIRONMENT

The quality of the indoor and outdoor environment has a significant impact on a person's ability to live with asthma. An individual has the most control over the home environment, far less control over the school or workplace, and almost no control over the outdoor environment. Simple measures can help to control environmental quality at all these sites.



## INDOOR AIR QUALITY

Environmental conditions inside the home, school, and business, may play a significant role in triggering asthma attacks. Americans spend up to 90 percent of their time indoors, where exposure to allergens and irritants plays a major role in triggering asthma symptoms. Allergens — including dust mites, pests (such as cockroaches), molds, and pet dander - and irritants — such as secondhand tobacco smoke, wood smoke, cleaning chemicals, perfume and fumes from paint and gasoline — also can trigger asthma attacks.



Awareness of and controlling environmental triggers can help improve an asthma sufferer's quality of life because it can reduce the number of attacks. However, finding those triggers is not always a simple task. Many people with asthma do not know what causes attacks or how to avoid asthma triggers. For more information on asthma triggers, visit [www.azasthma.org](http://www.azasthma.org).

## OUTDOOR AIR QUALITY

Outdoor air quality also plays a substantial role in the number and severity of asthma attacks. Days when the air is designated as “unhealthy” or “moderate” are associated with an increase in the number of doctor visits and hospitalizations for respiratory symptoms. Recent studies have found that pollution may harm lung growth in children.

### Outdoor air pollutants arise from three general categories:

- major sources such as large industrial facilities and power plants;
- area sources — typically emissions from smaller facilities such as dry cleaners - can collectively be of concern; and
- mobile sources — both on-road sources, such as cars, light trucks, large trucks and buses, and non-road sources such as farm and construction equipment, lawn and garden equipment, marine engines, aircraft, and locomotives.

The most significant air pollution problems in the state of Arizona are from particulates, ozone and hazardous air pollutants. The major type of pollutant varies by location in Arizona. The Phoenix area has the greatest problem with ozone concentrations; more rural parts of Arizona may have greater problems with particulate matter.

*Reducing air pollution has a substantial positive impact on health. Still, more needs to be done.*



Air pollution control efforts are working! Despite continued growth in Arizona, not a single air pollutant at any site shows a consistent upward trend. The number of “unhealthy air” days in the Phoenix area has markedly decreased. But the Phoenix Metro area still is classified as a serious ozone non-attainment area. These improving air quality trends, resulting from control programs at the federal, state and local levels, have improved the respiratory health of the population.

**Public policies and pollution control measures include:**

- accelerate transition to cleaner diesel fuels and engines;
- reduce unnecessary diesel emission through local anti-idling ordinances;
- encourage cleaner automobiles through state and federal incentives; and
- reduce vehicle miles traveled by requiring or promoting land use and development measures that encourage denser and more pedestrian-friendly residential and commercial development near mass transit services. Invest in better public transportation.

**RECOMMENDED SOLUTIONS FOR INDOOR AND OUTDOOR AIR QUALITY**

- Reduce indoor allergens and irritants by thoroughly cleaning — removing dust mites, animal dander and other triggers.
- Indoor environments should be free of mold, pests such as cockroaches, and tobacco smoke.
- Reduce hazardous diesel emissions by reducing school bus and delivery truck idling near schools.
- Ban smoking in public areas.
- Continue to reduce ozone, including engine modifications, better engineered fuel tanks, and the vehicle inspection program already in place.
- Implement measures to reduce particulate matter, including watering construction sites to reduce dust.



## ASTHMA IN SCHOOLS & CHILD CARE SETTINGS

In a U.S.-wide survey conducted in 2003, 28 percent of children and adolescents under the age of 18 were estimated to have asthma.

### School-Based Health Centers Offer Effective Solutions

*Asthma is a frequent diagnosis in the more than 100 School-Based Health Centers (SBHCs) located in eight counties in Arizona. Most SBHCs in Arizona are located in elementary schools, where the need for prevention and management of asthma is the greatest.*

*During the 2002-2003 school year, 26 percent or almost 5,000 visits to SBHCs were for respiratory problems including asthma, a slight increase over the 2001-2002 rate. SBHCs provide an ideal setting for on-site prevention, assessment, and monitoring of asthma of elementary school children in Arizona. Parents accompanied children on visits to SBHCs 85 percent of the time, allowing family asthma education to occur.*



A separate survey found that asthma was more disruptive of school routines than any other chronic illness and had a significant impact on absenteeism. School staff lacked an awareness of asthma management. The survey also reported that 85 percent of school nurses believed there were students with undiagnosed asthma in their schools. Child care settings experience similar impact.

Asthma is the leading cause of school absenteeism due to chronic illness and the third leading cause of hospitalizations in children under 15 years of age. The cost in school days and missed educational opportunities from these absences is estimated at 14 million days per year. For children under the age of 15, asthma accounts for more than 3 million visits to physician offices and 570,000 visits to the emergency room each year.

### Arizona Data

Data related to asthma and schools in Arizona is limited. One recent study of students in Yuma County's three school districts shows between 9 and 15 percent of school children have had at least one health care system contact

for asthma. Four to 5 percent of these children suffer chronic asthma.

In a separate statewide survey of Arizona schools:

- Less than half of schools required parents to notify school personnel if a child had asthma.
- About 80 percent of public and charter schools reported at least one child/youth with asthma attending classes.
- 71 percent of child care centers administer asthma treatments.
- Nearly 60 percent of schools do not maintain a readily accessible care plan for children/youth with asthma.



- 24 percent of schools did not allow students to carry asthma medications. In these schools, 80 percent of students received medications from school nurses, and 13.9 percent went to the principal's office for medications.
- Most schools took some action to eliminate environmental triggers. However, 16 percent still cleaned during school hours; 27 percent painted during school hours; and 35 percent did not routinely change air filters.

Students with asthma present challenges to schools. Unfortunately, due to school budget cuts, school nurses may no longer be consistently available throughout the day.



### Strategies Schools and Child Care Providers Can Use

1. Develop policies and procedures for asthma education and management.
2. Provide appropriate school and mental health services for students with asthma.
3. Provide asthma education and awareness programs for students, families and staff.
4. Provide safe and healthy indoor environments to reduce triggers.
5. Provide opportunities for safe and enjoyable physical education.
6. Coordinate school, family, and community efforts to better manage asthma and reduce absences.

### RESOURCES & RECOMMENDED SOLUTIONS FOR SCHOOLS & CHILD CARE SETTINGS

Schools are in the perfect position to make a significantly positive impact on the lives of asthmatic children. Because school nurses often are the primary or only contact a child with asthma has, the school nurse can guide families toward treatment, and help educate them once treatment has begun. In addition to the medical resources available, schools can follow the best practices used by other schools that have successful programs in place.

#### Indoor Air Quality Tools for Schools

- Visit [www.epa.gov](http://www.epa.gov) to find simple steps for schools to improve indoor air quality

#### The Green Zone

- A toolkit for initiating an asthma management program in a SBHC or for expanding the depth and breadth of programs already in place. Visit [www.healthinschools.org](http://www.healthinschools.org) for more information.





## ASTHMA IN THE WORKPLACE

Occupational Asthma (OA) occurs in about 15 percent of adults diagnosed with asthma. More than 200 substances have been reported to cause occupational asthma; this list continues to grow. Despite the long list of potential irritants, occupational asthma is a preventable illness. Anyone with a history of asthma may be at risk for worsening of their asthma at work, depending on the amount and type of substance to which they are exposed. People with allergies may have very sensitive airways, making them more prone to develop asthma when exposed to chemicals or irritants on the job.

### *Victoria's Story \**

*Victoria's new job as a cable assembler with an electronics firm involved soldering electrical connections. She hoped that the job would allow her to spend more time with her family. Little did she know that the new job would damage her health so badly that she would need to rely on an oxygen cylinder, even to hold a conversation, for the rest of her life.*

*Victoria remembers beginning to feel ill just three months into her new job. "I had what I thought was a cold," she said. "But I couldn't get rid of it. I had a horrific cough, and went to and fro to the doctor. First, he said I had hay fever, then 'flu, then hay fever again. Then I had a chest infection."*

*Then Victoria had an attack, which sent her to the hospital. It was the doctor there who said he thought she had asthma. Armed with an inhaler, she went back to work, but her asthma just got worse.*

*The following year, after four or five hospitalizations, a doctor finally asked her where she worked. "I told him I was a solderer, and he didn't say anything," she said. "He walked away and was gone for about half an hour. When he came back he said that he knew what my problem was."*

There are three mechanisms to explain the development of asthma in the work force: allergic, irritative, and pharmacologic.

Irritative occupational asthma is caused by exposure to certain chemicals. These chemicals, after sufficient exposure, may irritate or even damage lung tissue. There have been occasions when even a one-time exposure to very volatile chemicals may lead to persistent asthma.

Early diagnoses of occupational asthma can lead to lower health care costs, and reduced absenteeism, disease and death rates. Workers in high-risk environments should have regular check-ups and be screened for any signs of asthma at one month, three months, six months and eventually annually.

### **Issues:**

1. Lack of knowledge of potential asthma triggers and irritants in the workplace.
2. Difficulty diagnosing asthma.
3. Uncontrolled asthma resulted in hospitalization.



## RECOMMENDED SOLUTIONS FOR THE WORKPLACE

### Occupational Asthma Can Be Controlled By:

- following OSHA guidelines for chemical exposure levels;
- using proper ventilation and extraction systems;
- using specific masks capable of filtering substances; and
- encouraging regular health care check-ups.

## AN OVERVIEW: KEY FINDINGS & IMPLICATIONS

The Arizona Asthma Coalition was formed in 1996 because public health and managed care professionals were concerned that asthma was more prevalent and serious in Arizona than in other states. Numerous studies have been conducted and have shown the following data.

### Key Findings

- Arizona has one of the highest asthma rates in the country.
- In 2004, an estimated 600,000 Arizonans will identify themselves as asthmatic.
- Seventy two Arizonans died from asthma in 2003.
- There is a lack of standardized care for asthma patients.
- Patients often use Emergency Departments for uncontrolled asthma.
- There is a high incidence of hospitalizations due to uncontrolled asthma.
- Arizona has one of the highest rates of uninsured people in the country. Uninsured people with asthma lack the support system to treat their disease.
- While outdoor air quality has improved substantially in recent years, there is room for more improvement.

### Key Implications for Arizona — If We Don't Take Action Now

- There will continue to be unnecessary asthma-related deaths.
- Children diagnosed with asthma will continue to miss, on average, at least one week of school each year, resulting in less federal dollars for schools
- Arizona will continue to see a negative impact on its economy. According to the American Lung Association Epidemiology and Statistics Unit (2002), in the United States, \$4.6 billion is spent annually on indirect costs (loss of work, etc.).
- Costly Emergency Department visits to treat asthma will continue to increase, rather than being handled by a primary care physician.
- Costly and avoidable hospitalizations will continue to increase.
- Many asthma patients will continue to go without proper care and medication.
- Our air quality can become increasingly unhealthy.



## HOW YOU CAN HELP: AN ACTION PLAN FOR SUCCESS

There are many reasons for the increasing number of people with asthma in Arizona. However, with better education, prevention, and standardized asthma care, asthma can be controlled.

### PRACTITIONERS MUST:

- educate patients about asthma, including demonstration and use of asthma equipment;
- adopt the chronic illness model approach;
- follow the NIH asthma guidelines, which are considered “best practice;” and
- make a habit of staying current on asthma treatment practices.

### POLICYMAKERS MUST:

- pass legislation that will improve air quality;
- provide access to health care for more Arizonans;
- allow students to carry their medications in school; and
- pass legislation to ban smoking.

### EDUCATORS MUST:

- find the dollars to hire enough school health nurses to provide adequate care for students. Every school should have a nurse.; and
- establish School-Based Health Care Centers and teach staff how to identify asthma.

### OUR HEALTH CARE SYSTEM MUST:

- be interconnected to make use of technology that links clinical data from various domains; and
- institute asthma education and intervention programs.

### EMPLOYERS MUST:

- provide a safe work environment, by following OSHA Guidelines; and
- reduce allergens and irritants in the workplace.



The Arizona Asthma Coalition recommends the following incremental steps that specifically address access to primary care and consistent asthma management in Arizona:

- Strengthen the health care safety net with public funding to increase access to care. Provide funding to expand the number and capacity of community health centers and school-based clinics. For programs that receive public funding, require documentation of case management and coordination with other providers for patients with ambulatory-sensitive conditions like asthma.
- Reduce barriers to entry: simplify AHCCCS and KidsCare enrollment and reenrollment forms and procedures.
- Develop a systematic, ongoing outreach process to recruit uninsured people into public programs. Add state funding for marketing and outreach workers. Develop private - public partnerships to publicize services to schools, community groups and high-risk populations.
- Improve communication and coordination among safety net providers so they link uninsured asthma patients into a system of coordinated, consistent care.
- Health insurance providers should focus on similar indicators of quality care.
- Establish community wide policies, which are conducive to better asthma control, for example, allow children to carry and use asthma and allergy medications in school.
- Support initiatives to measure provider asthma care delivery and quality improvement initiatives in provider's practices to achieve greater adherence to the NIH guidelines.



*The Arizona Asthma Coalition believes that through patient and family education, prevention, quality care and new legislation, we can improve the lives of people with asthma living in Arizona.*



## PROJECTS AND PROGRAMS THAT WORK!

1. The American Lung Association's Open Airways in Schools teaches children to recognize asthma and its triggers. Phoenix Children's Hospital, the Arizona Lung Association, and ADHS implemented this program through the creation of the Maricopa County Allies Against Asthma Coalition.
2. The Inner City Asthma Intervention Program — currently underway at St. Joseph's Hospital in Phoenix and El Rio Health Center in Tucson — is a behavioral intervention for children with moderate to severe persistent asthma that is proven to reduce patient symptoms and reduce emergency room visits and hospitalization.
3. A large-scale public media campaign effort for asthma (Smoke-Free Public Health Awareness Campaigns) has been ongoing since 1988. Evaluation of the campaign found that 45 percent of adults recalled the 1992 campaign, with half of these individuals reporting the asthma message accurately.
4. In addition to statewide activities, four counties are developing local approaches to addressing asthma.
  - Pima County is the most senior in its efforts and has been successful in affecting policy (e.g. the county school board was convinced to eliminate evaporative coolers and only use air conditioning) and implementing programs to educate providers and families.

### *A Model That Works*

*From the director of a school-based health center:*

*There are kids who are having difficulty taking part in physical education and after-school sports because they start exercising and have trouble with coughing or shortness of breath.*

*They end up missing time in PE as well as classes after PE because they are having trouble breathing. They are sent to the school nurse's office. With some questioning, the nurse realizes the student may have some problems with asthma. She then makes an appointment with the school-based clinic and the student gets an inhaler.*

*At one high school where I have a School-Based Health Center (SBHC), a student was in the school nurse's office 3-4 times each week with asthma problems. She missed classes frequently. She had frequent upper respiratory infections and sinus infections. Though she tried not to miss school, she was definitely under-performing in her classes. She told the school nurse her parents were both heavy smokers. There was no insurance. She was referred to the SBHC where she received medication for asthma, allergies, upper respiratory infections, sinus infections, etc. The parents' smoking prevented her from getting well even with medications. The school nurse was able to give her breathing treatments at school when she developed problems.*

*The school nurse and the nurse practitioner from the school-based clinic worked closely to make both the student and parents aware of effects on student's present and future health and school performance. This year we have seen very little of this student. She told the school nurse her mom finally stopped smoking.*

- Stakeholders in Maricopa County are collaborating to obtain funding for community-based asthma programs forging strong bonds among local providers.
- The Pinal County Department of Public Health is conducting education programs and doing case finding.
- Public and private providers in Yuma County held their first meeting in February 2004 to develop a local coalition to address asthma issues.
- The Centers for Disease Control and Prevention (CDC) awarded a grant to the Arizona Department of Health Services for the implementation of innovative programs in Yuma, Cochise and Santa Cruz counties and the Tohono O’odham Nation. The STEPS grant funds the development of programs that will better prevent and manage asthma, diabetes and obesity in these three counties and the Tohono O’odham Nation.
- The University of Arizona Respiratory Center of Excellence provides advanced medical training, medical care in rural areas, education and advocacy.

There are many organizations in Arizona collaborating to provide programs addressing asthma. The majority of the focus is on children with asthma in Arizona.

5. The following states have developed strategies to improve access to care:
  - Illinois, New Jersey and New York offer public health asthma programs for hard-to-reach at-risk populations and the homeless.
  - California developed a Childhood Asthma Initiative, which provides clinical demonstration projects at eight community clinics for low-income uninsured children with persistent asthma.
6. An innovative program, which has been developed and was implemented in October/November 2004 is a program through Bashas’ United Drugs. It is in collaboration with Schaller Anderson, who medically manages Mercy Care Plan, GlaxoSmithKline, and The University of Arizona, College of Pharmacy. The program is a collaborative care program focusing on education. Pharmacists make individual appointments with patients, discussing various topics, including inhaler technique, spacer use/technique, triggers, medications and asthma action plans.
7. The list continues.

**THROUGH PARTNERSHIP DEVELOPMENT AND  
COALITION BUILDING, THE ARIZONA ASTHMA COALITION WILL  
CONTINUE TO CREATE AWARENESS AND ADVOCATE FOR BETTER  
SERVICES AND IMPROVED QUALITY OF LIFE FOR ASTHMATICS.**

**PLEASE HELP US BY DOING YOUR PART.**

*Together, we can control asthma.*



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