

Helping Children Breathe Easy

By Julia Ross

Taking a breath of fresh air is something that most people take for granted, but for the millions of children around the world who suffer from asthma, even one breath can be a battle. From Atlanta, Georgia in the US to Almaty, Kazakstan to Zagreb, Croatia, health care professionals are searching for new ways to help their young patients win this fight.

As the leading serious chronic disease in children in the US, asthma affects an estimated 4.8 million American kids. Although anecdotal evidence points to increasing rates of pediatric asthma over the last 10 to 15 years, long-term statistics on the disease are scarce because little formal asthma surveillance has been carried out, both in the US and worldwide, and the definition of asthma keeps changing. But epidemiologists do know that the disease has become deadlier. In fact, the American Lung Association (ALA) estimates that the number of US deaths attributable to asthma (in both adults and children) has jumped 98.9 percent since 1979.

In part, this rise can be attributed to a growing prevalence of asthma in urban areas, where limited access to health care may mean children receive no treatment for the disease or undertreatment with over-the-counter medications. Inner-city residents are exposed to more environmental triggers for asthma as well: poor air quality and a high concentration of rats and cockroaches can lead to allergic reactions.

In Atlanta--host to the Fifth Annual NIS Partnership Conference October 6-8--an innovative, community-based program that aims to control and prevent pediatric asthma in the inner-city is underway. Called "ZAP Asthma," the initiative is being financed and implemented by a consortium of 17 community partners, including AIHA partner Grady Memorial Hospital, the US Centers for Disease Control and Prevention (CDC), several local universities, the ALA, health maintenance organizations and the county health department.

"The goal is to carry out a community-based intervention trial to diminish exacerbation of asthma in children in Atlanta," said Tom Sinks, associate director for science at CDC's National Center for Environmental Health. "What makes this a truly unique setting is that it is a partnership with the community."

The public-private initiative, which was launched in August, identifies high-risk pediatric asthma patients as they are admitted to the emergency room at Grady Memorial. After a patient is enrolled in the program, community health workers are sent to the child's home to test for environmental triggers, such as cigarette smoke, dust, pollen, mold and animal dander. Based on what types of allergens are found, workers will recommend and carry out appropriate interventions--using bed and pillow encasements, extermination services or special high-efficiency vacuum cleaning are a few such options. Coordinators hope to enroll 300 kids in "ZAP Asthma" over the next three years.

A Problem for Kids Worldwide

Half a world away, physicians and nurses at the Kazak Scientific Research Center of Pediatrics and Children's Surgery in Almaty, Kazakstan have been working with partners at the Tucson/Almaty Health Care Coalition in Tucson, Arizona to ease the restrictions that asthma imposes on kids' lives.

Research center director Kamal Ormantaev, MD, said official Kazak statistics indicate a four percent increase in the incidence of pediatric asthma from 1991 to 1996, with a much steeper rise in the Eastern region of the country. "Some specialists connect the increased incidence of

this disease in industrial areas with the presence of toxic substances in industrial waste, with air pollution and with smoking since there are numerous smokers in Kazakhstan," he said.

Ben Wilfond, MD, assistant professor of pediatrics at the University of Arizona College of Medicine, traveled to Almaty two years ago, bringing with him approximately \$100,000 worth of partnership-donated equipment and asthma medications, including inhalers and peak flow meters, which are used to measure lung capacity. He said the primary goal of the partnership's asthma initiative has been to educate Kazak health care practitioners on current methods of asthma treatment. Two types of medications are regularly used to treat asthma: bronchodilators, which open the lungs' airways by relaxing the bronchial muscles, and anti-inflammatory agents, which stop the development of bronchial inflammation.

"Our major initial objective was to bring [the Almaty partners] up to speed on treatments for asthma. They were treating it primarily with bronchodilators, not with anti-inflammatory drugs," Wilfond noted. "Increasing use of anti-inflammatory drugs, such as inhaled steroids, has been a goal for us in the US in recent years as well. Bronchodilators make some people less responsive to anti-inflammatory therapy, and we think that the underlying cause of asthma is really the inflammation." In the US, he noted, bronchodilators primarily are used when asthma patients suffer symptoms; anti-inflammatory drugs are used to manage the disease on an ongoing basis.

The partnership has also made an effort to let kids speak for themselves. In March, physicians and nurses helped coordinate a real-time "asthma chat" between children in Tucson and Almaty via the Internet. During the one-hour session, kids ages 9 to 14 discovered that they had a lot in common. They talked about what causes asthma attacks--exercise, cigarette smoke and pets were the main culprits, they said--and how to cope with schoolmates who ask to use their inhalers as if they were toys (see Spring 1997 CommonHealth, page 15).

Better asthma management is a priority for partners at Srebrnjak Children's Hospital for Respiratory Diseases in Zagreb, Croatia as well. With the help of partners at Dartmouth-Hitchcock Medical Center in Lebanon, New Hampshire, a comprehensive asthma program has been established at Srebrnjak to improve child and family education about the disease, medical and nursing practice, and education of primary care practitioners.

According to Srebrnjak's Rosana Svetic-Cisic, RN, the collaboration with Dartmouth has resulted in a host of innovations: development of an "asthma school" for inpatients and their parents, taught by physicians two nights a week; introduction of individual patient education during hospital treatment; introduction of nurse-physician meetings with parents; and plans for Croatia's first "asthma camp," which would be modeled on two US camps visited by Srebrnjak staff last summer. Translated materials for children, such as a booklet entitled "So You Have Asthma, Too" donated by GlaxoWellcome pharmaceutical company, are now available in the hospital's asthma resource center.

"We are conducting a more ambulant approach to the treatment of asthmatic children. There has been a reduced number of hospital treatments, and connected with that is a decrease in health care costs," said Svetic-Cisic. A 1996 study of 100 asthmatic patients at Srebrnjak found that, of 37 pediatric inpatients treated at the hospital, the average length of stay was 11.1 days. And among the 82 patients over age 6, absence from school over a six-month period averaged 10.4 days per child. Partners hope to make a dent in these numbers.

"Srebrnjak has done a tremendous job improving its overall education program for children and families with asthma," said Ann Christiano, RN, of the Children's Hospital at Dartmouth-Hitchcock. "Clearly the nurses and physicians are working together as a team in the management of their patients, and nurses are utilized more for their expertise in dealing with the families."

Christiano added that, over the last two years at Srebrnjak, physicians have begun ordering more preventive medication for asthmatic patients and peak flow meters are used more frequently for daily monitoring of patients.

The successes of Srebrnjak's asthma program will be discussed this October at a two-day Croatian national conference on asthma and tuberculosis management, sponsored by the Zagreb-Lebanon partnership. During the conference, Croatian and US health care professionals will give presentations on the pathophysiology of asthma, as well as on diagnosis, education and treatment of the disease.