



ASTHMA MANAGEMENT™

The Complete Asthma Disease State Management Resource

INSIDE

- **A Bronx tale:** A clinic gives young patients a Passport to better asthma management. 75
- **Oral prednisone:** How it can save staff time and money treating hospitalized youngsters 77
- **Day care aides:** A South Carolina program educates facility workers about asthma 79
- **AMA Quality Care Alert:** Advisory includes pulmonary patients among those who benefit from the pneumococcal polysaccharide vaccine 81-82
- **BREATHE lessons:** How Zeneca focuses asthma education on urban audiences 83

**JULY
1999**

**VOL. 2, NO. 7
(pages 73-84)**

American Health Consultants® is
A Medical Economics Company

Use Olympic athletes as role models for your patients

Their motivation to manage asthma is as good as gold

Patients with asthma can do anything — including win Olympic medals. In fact, according to a University of Iowa study, the number of asthma sufferers among world-class athletes is higher than the estimated prevalence in the general population.

The study of 699 U.S. athletes who competed in the 1996 Summer Olympics in Atlanta showed that one in six had a history of asthma and one in 10 had active asthma.

Yet the study's lead author, **John M. Weiler, MD**, a sports medicine and allergy specialist and professor of internal medicine at the University of Iowa in Iowa City, found that 10.4% of the U.S. Olympic athletes were taking asthma medications on a permanent or semi-permanent basis.

Asthma numbers may have been higher

Weiler says he thinks the actual incidence of asthma among the 1996 Olympic athletes was actually closer to 20% if symptoms of exercise-induced asthma were taken into account, including wheezing and coughing with exercise. The only athletes categorized as having asthma for purposes of Weiler's study were those who had been told they have asthma or who have taken asthma medications. Researchers found their performance was in no way impaired by their asthma.

KEY POINTS

- Asthma did not prevent U.S. athletes from participating in the 1996 Olympics.
- Asthmatic athletes not only qualified for the U.S. team, but excelled by winning a disproportionate number of medals.
- Adjusted rate for athletes on the 1984 U.S. Olympic team show a 20% prevalence of asthma among team members.
- Athletes in 1996 preferred cycling (45%) to any other event.

Slightly more of those who had been diagnosed with asthma or who had taken asthma medications — 29.9% — won individual or team medals, while 28.7% of the non-asthmatic team members won medals. Those with active asthma did even better, with 32.9% winning medals.

What does this mean to anyone who did not compete? “Doctors shouldn’t discourage patients from exercising,” Weiler says. “In fact, this shows that the presence of asthma should not prevent patients from vigorous exercise, even on a world-class level.”

Treat the asthma, says **Paul Thompson, MD**, president of the American College of Sports Medicine and director of preventive cardiology at Hartford (CT) Hospital, but don’t prohibit participation in sports. “It’s a very, very rare kind of kid, with all the drugs that are available today, who can’t be fixed enough to participate in sports,” he says.

Solid data to study

Weiler studied the detailed medical questionnaires submitted by the athletes to determine how many suffered from allergies and asthma and how many required medications.

“We looked at the actual questions they answered as a requirement for Olympic participation,” says Weiler, author of *Allergic and Respiratory Disease in Sports Medicine* (1997, Marcel-Dekker). “It was real data because if they misrepresented anything on the questionnaire, they would be disqualified.”

Sixteen of the 60 medical questions on the 1996 questionnaire were related to allergy and asthma. Among them:

Have you ever been told you have had asthma or exercised-induced asthma? Yes — 15.3%.

Do you take any prescribed medications on a permanent or semi-permanent basis (steroids, birth control pills, anti-inflammatories, antibiotics, etc.)? Yes — 37.8%. On further questioning, 13.9% said they had taken an asthma medication.

Do you ever have chest tightness? Yes — 8.4%.

Do you ever have wheezing? Yes — 10.2%.

Does running ever cause chest tightness, coughing, wheezing, or prolonged shortness of breath? Yes — 7.9%.

Have you ever had chest tightness, cough, wheezing, asthma, or other chest (lung) problems that made it difficult for you to perform in

sports? Yes — 10.2%.

Have you ever missed school or work or practice because of chest tightness, coughing, wheezing, or prolonged shortness of breath? Yes — 3%.

Asthma affected 19.9% of the female athletes, compared to 14.9% of the males. The vast majority (68 of 117 or 58% of those with a diagnosis of asthma or a history of using asthma medication) used short-acting β_2 -agonists and 31 (26%) used inhaled corticosteroids. Other used cromolyn, antihistamines, long-acting β_2 -agonists; only two athletes used prednisone or ipratropium.

Enigmatic events

Weiler also studied the events in which asthmatic athletes competed. His findings surprised him; he has no real explanation why 45% of those with asthma or taking asthma medications were cyclists or mountain bikers, both sports that provide wide exposure to allergens and potential asthma triggers.

Not as surprisingly, Weiler says, swimming was the second-favorite event, attracting 25% of the asthma sufferers. Water events like canoeing, kayaking, rowing, and sailing attracted 13.8% of asthma sufferers, followed closely by track and field events with 12.6%.

“The warm, moist environment of swimming and other water events are good ones for kids with asthma,” says Thompson. None of them chose diving or weight lifting, and only about 9% were basketball players.

Results hold true for 1984 athletes

Members of the U.S. Olympic team in 1984 had equal or even greater asthma-related challenges, Weiler says. Based on their responses to the medical questionnaire given at the time, of 597 athletes on the U.S. delegation to the Los Angeles games, 67 or 11.2% were described as having exercise-induced bronchospasm with:

a history of asthma (38.8%);

use of a bronchodilator (61.2%);

a request to the International Olympic Committee for approval of medications (19.4%);

a history of chest tightness, wheezing or cough related to strenuous exercise (62.3%).

Performance among the 1984 asthmatic athletes was even better than in 1996: 41 or 61.2% won medals.

While Weiler studied only U.S. athletes because that were the only data available to him, international studies have reflected similar results.

A Finnish study published in the February 1997 issue of *Thorax* concluded, "The prevalence of physician-diagnosed asthma is high in elite athletes." A Swedish study noted that "asthma may be even more prevalent among those engaged in endurance sports (than in the general population). And a 1992 Australian study concluded that the use of asthma medications did not give an athlete any advantage, "but merely removes the respiratory disadvantage under which he/she competes."

Those results lead some experts to believe that youngsters with asthma are particularly motivated to overcome their shortcomings.

Before the 1996 Games, the Allergy Clinic of Milwaukee published a study in the *Wisconsin Medical Journal* that concluded, "Education, warm-up exercises, and pre-treatment with the appropriate medications can enable an athlete to excel and even win a gold medal in the 1996 Olympic Games."

IOC rules

While the International Olympic Committee permits athletes with asthma to use the general range of medications used to treat the disease and prevent exacerbations, there has recently been some discussion that the IOC might consider banning inhaled corticosteroids and perhaps even β_2 -agonists, Weiler says.

"To the international Olympic movement, I would say, 'Don't play around with drugs that don't have any impact on performance,'" says Weiler.

On the other hand, Thompson notes, the IOC is now considering permitting the use of long-banned sympathomimetics, the drugs that caused U.S. swimmer Rick Damont to lose his gold medal in swimming at the 1972 Munich Olympics.

Several high-profile Olympic athletes with asthma have gone public to show their asthma did not hinder them in any way. Among them, Amy Van Dyken, who won four gold medals in swimming events in 1996.

The message is clear for health care professionals treating patients with asthma or even those 3% to 4% who have exercise-induced asthma, says Weiler: "Don't tell them to sit on

the sidelines and root for their favorite team. Tell them to get out there and participate in their favorite sport."

The next step, according to both Weiler and Thompson: a survey of asthmatic athletes participating in the Winter Olympics and their performance, since it is well-documented that vigorous exercise in cold air aggravates breathing difficulties.

[John Weiler can be reached at (319) 356-1616 and Paul Thompson at (860) 545-5000.] ■

Montefiore issues passport to better outcomes

Partnership with primary care improves confidence

Managing asthma is never an easy task, but in the Bronx, which some clinicians say could have the highest prevalence of asthma in the United States, health care providers are particularly challenged to find ways to help their patients avoid symptoms of their disease.

Since 10% of the children living in New York City's inner-city borough have asthma symptoms and the vast majority of them wind up in the clinic at Montefiore Medical Center, doctors there decided to look for ways to improve outcomes.

Preliminary results presented at the Pediatric Academic Societies' annual meeting in San Francisco in May showed that Montefiore Asthma Passport Program works.

Karen Warman, MD, a pediatrician at Montefiore and assistant professor of pediatrics at Albert Einstein College of Medicine in the

KEY POINTS

- Bronx hospital discovers individualized care improves outcomes, reduces emergency department visits.
- Montefiore "asthma passport" program emphasizes preventive care, improved patient-family-physician relationships.
- Better case management results in higher percentages of patients who received flu shots, used spacers and peak flow meters and had written treatment and care plans.

Bronx, found that patients in the intensive preventive care program had fewer hospitalizations than those under standard care and had a better understanding of appropriate asthma management at home.

In addition, participants had a better relationship with their doctors, which gave patients and their families higher confidence in their ability to manage their asthma and prevent acute exacerbations.

“I think what the program has taught us, so far, is how important it is for families to feel like they have a partnership with the entire health care team,” Warman says. “We found that primary care-based interventions can improve some aspects of asthma care for inner-city children.”

Continuity of care is key element

What is key to developing that sense of partnership, Warman says, is continuity of care. Unlike many managed care and inner-city clinic settings where patients have to take pot luck depending on which physician is on duty when they come in, Montefiore patients have one physician they see on a regular basis.

“What changed as a part of the intensive primary care component of the Passport program was that families were more likely to rely on a doctor to answer questions,” Warman says. “They felt the doctors really cared and were there for them. They knew they were not alone.”

She notes that her previous research showed that only about 5% of parents know when to start medications and fewer than 1% would use a peak flow meter to determine the child’s asthma status. “It’s so important that they know what to do when an attack begins,” she says.

Warman and her colleagues began with 220 children ages 2 to 12 in January 1995 and randomized them — half to the Passport program and half to standard care. All children had at least one hospitalization in the previous year. Warman says they were pleasantly surprised when 90% of the children completed the year-long program.

The results: Passport program participants had:

- **fewer hospitalizations** (65.5% vs. 83%);
- **more received flu shots** (62% vs. 40%);
- **more had written plans** (66% vs. 44%);
- **more reported using spacers** (63% vs. 47%);
- **more reported using peak flow meters** (53% vs. 29%);
- **more reported using mattress casings**

(49% vs. 35%);

• **reported use of long-term control agents and responses to acute exacerbations did not differ**, nor did symptom days, number of asthma attacks, ill visits, ED visits, or school absences.

At the beginning of the program, patients received a “passport,” a heavy cardboard-type trifold document similar to an immunization record, that contained information necessary for prompt and effective emergency treatment: the name of the patient’s doctor, contact phone numbers, medications, and warning signs.

It also contains the patient’s individualized home management program and an asthma learning record that shows which asthma management educational modules they completed. “We found that a written plan signed by all parties, a contract, improves adherence,” Warman says.

The passport plan relies on the green, yellow, and red zone concept, a simple road map to help parents determine when peak flows are diminishing to a point where medical intervention is necessary. (See box, p. 77.)

Those enrolled in the passport program received a strong educational component based on the National Asthma Education and Prevention Program’s (NAEPP) guidelines — with a few modifications.

“We modified the NAEPP teaching worksheets for our population by simplifying the language, streamlining the information, and creating a Spanish language version,” Warman says.

Montefiore Passport Program Curriculum

1. Common questions/signs of asthma/warning signs.
2. Understanding medications.
3. Giving inhaled medications, spacers, nebulizers.
4. Asthma trigger control plan.
5. Peak flow meters.
6. When to seek emergency care.
7. Summary of steps to manage an attack.

Green-Yellow-Red Alerts

Green: Everything is fine on present medications. Peak flows are 80% or more of target agreed upon by patient, family and physician.

Yellow: Caution. Peak flows are 50% to 80% of what the plan prescribes.

Red: Emergency. Peak flow is less than 50% of what action plan specifies.

Source: Karen Warman, MD, Montefiore Medical Center Asthma Passport Program director, Bronx, NY.

For example, in discussing the use of anti-inflammatories, Warman thinks the word is a long one and the concept is complicated. "Instead, we bring home the idea of preventive medications or asthma controllers vs. rescue medicines," she says.

The team also re-designed the NAEPP worksheets to make them more culturally applicable and visually interesting using their own graphics and highlights of important concepts.

An asthma nurse educator met with each participating family to introduce the program, help devise a management program, and demonstrate the proper use of equipment. Families were encouraged to see their primary care providers to review the passport plan over the next 12 months.

"Our most recent data show that 55% of the passport plan kids' visits to a primary care physician were preventive, as opposed to 38% for the control group," Warman says. "That is significant because it shows they are using the doctors as a resource, as they should."

Data were collected by telephone at baseline, six months, and 12 months into the program.

"We barraged them with letters, too. I think that helped," Warman says. Basically, Warman's plan was to "get the message out" to patients in whatever ways they can. "There's a lot of learning to do," she says. "We need to help them understand how important it is to prevent acute attacks. We need to increase their confidence and change medications when necessary."

Warman's study won the Ambulatory Pediatric Association's 1999 Ray E. Helfer award for innovation in pediatric education.

"Everybody is talking, and not much is helping

so far to educate families and prevent kids from deteriorating," notes **Tom Humphries**, MD, MBA, chairman of the North Carolina Asthma Board and a practicing pediatric pulmonologist and allergist in Charlotte, NC.

Humphries, whose practice follows 5,000 patients with asthma, says the guidelines are out there, but says he is frustrated because "something is not working" in terms of asthma education. He applauds the Passport program but says the intensive intervention and the large amount of time spent with primary care physicians is probably not practical in the everyday world of medical practice.

Humphries is working with fellow physicians and the American Lung Association to formulate standards for the certification of asthma educators, similar to those which govern certified diabetes educators.

"We're trying to come up with something that will work in the real world. A nurse educator is less expensive and can be the asthma activist in a primary care office and can pick up warning signs early," says Humphries. "If it makes economic sense, then it will work."

[Contact Karen Warman at (718) 405-8090 and Tom Humphries at (704) 338-9818.] ■

Oral prednisone works best for asthma patients

Study shows alternative cuts hospital stays

Young asthma patients hospitalized with acute asthma attacks improve as well — or even faster — with oral corticosteroids as with intravenously administered methylprednisolone, according to a first-of-its-kind study from St. Christopher's Hospital for Children in Philadelphia.

Children experiencing acute asthma exacerbations who received oral prednisone left the hospital eight hours earlier (70 hours vs. 78 hours) than those who received intravenous methylprednisolone. Those who required supplemental oxygenation used it for 22 hours less (30 hours vs. 52 hours) than those receiving what has long been viewed as the standard treatment.

Furthermore, children in the prednisone group

KEY POINTS

- The use of oral corticosteroids rather than methylprednisolone in the inpatient setting produces better results for hospitalized children with asthma, study shows.
- Hospital stays were shortened and supplemental oxygenation time was reduced with use of oral prednisone.
- Cost of such treatment is one-tenth of that of intravenously administered methylprednisolone.

were successfully weaned to β_2 -agonists after 59 hours, compared to 68 hours in the methylprednisolone group.

What's more, hospital treatment with oral corticosteroids costs one-tenth the price of the IV-administered medication and has the obvious benefit of being less-invasive and relatively simple to administer to frightened children.

That should make the use of oral corticosteroids the standard for care for inpatient treatment of acute asthma attacks, says **Jack Becker**, MD, lead author of the study, published in the April issue of the *Journal of Allergy and Clinical Immunology*, and chief of the section of allergy and professor of pediatrics at St. Christopher's.

"Now there is no reason to use an IV in the average asthma patients," Becker says.

Bob Miles, MD, a Lynchburg, VA allergist and president of the American College of Allergy Asthma and Immunology is enthusiastic about Becker's findings, but he is a little more cautious.

A new perspective

"It's a landmark study because it has changed the idea that prednisone was too slow-acting to be a first choice in an acute situation," Miles says. "It's a good study and should be considered applicable in practice, although we need more studies on this matter."

Miles says he is particularly enthusiastic about the possibility intravenous methylprednisolone will no longer be necessary for sick kids. "It will make it much nicer with no IVs."

Becker said he was surprised by the results of the randomized double-blind, double-placebo study conducted in 66 patients ages 2 to 18 admitted through the St. Christopher's emergency department in late 1995 and early 1996

because, like Miles, he did not expect prednisone to be as effective as methylprednisolone.

"I thought this was a no-brainer. I went into this study thinking I would prove that intravenous methylprednisolone was better," Becker says. "I was a fan of that approach, but it didn't turn out that way."

In fact, Becker estimates the reduction in hospital time from going the IV route would have been even greater, as much as half a day, if the group of subjects had been larger.

Even though this is the first inpatient study comparing the two forms of therapy, since 1997, the National Institutes of Health has recommended oral prednisone for hospitalized patients, apparently based on similar studies showing the two medications were at least equivalent but were not tested by randomized controlled trials.

"I am guessing they just extrapolated those studies," says Becker.

Becker's study

Researchers compared prednisone, administered orally with a 2 mg/kg/dose b.i.d., up to a 120 mg/dose with intravenous methylprednisolone 1 mg/kg/dose q.i.d., up to a 60 mg/dose.

Children who had received oral corticosteroids in the previous five days or who had pneumonia or chronic lung disease were excluded.

All test subjects received either the prednisone or a sucrose pill and an intravenous solution either containing saline solution or methylprednisolone.

Supplemental oxygen was given to patients with a pulse oximetry of less than 95% and was discontinued when the patient's pulse oximetry readings were 95% or above when the patient was breathing room air.

Nebulized ipratropium was given to patients who had received albuterol treatments in the 12 hours before they arrived in the emergency department and still were in significant distress.

The oral prednisone was mixed with either chocolate syrup or applesauce, if necessary, to make it more palatable to the young patients. Those who vomited the oral medication twice, complained of nausea or abdominal pain, or objected to the taste of the prednisone were removed from the study.

Becker says the cost savings in oral medication is significant. Based on cost data he obtained

from four community hospitals and three university-based healthcare networks, costs for a 120 mg dose of prednisone ranged from \$2 to \$22, while the charges for 60 mg, considered an equipotent dose of methyprednisolone costs between \$14 and \$252.

Becker noted the limitations of his study. It included dosages of prednisone that are double the standard dosage. He says this allowed for nearly equipotent oral and intravenous dosages of corticosteroids. "Four milligrams of methyprednisolone has anti-inflammatory activity equal to 5 mg of prednisone," Becker wrote.

"Patients tolerated the higher dose of oral corticosteroid without significant side effects." He agrees that further studies will be required to determine optimal doses and frequency of administration of oral prednisone in the hospital setting.

[Jack Becker can be reached at (215) 427-8800.] ■

When day care also means caring for asthmatic kids

SC group's program focuses on prevention

A South Carolina managed care trade group is developing a program to teach workers how to take care of the asthmatic children who come to their day care centers. The hope is to help the youngsters stay in control of their condition when parents can't be on hand.

"The cornerstone of managed care is prevention," says **Larry Marchant**, executive director of the South Carolina Business and Health Alliance for Managed Care, which is organizing the program. "We want to save costs in health care by putting more money up front in prevention."

The program's curriculum focuses on identifying asthma triggers in the day care facility. Things as common as mold and cockroaches can make the day care setting hostile to kids who are sensitive to these triggers.

The advice is simple and inexpensive, such as advising employees to be careful about children carrying around crackers and cookies that can spread crumbs and attract roaches.

"I really believe this is something that needs to be done," says **Laura Szadek**, RN, BSN, and

master's degree candidate who oversees the program for the alliance.

Second-hand smoke can also be a problem. Szadek advises not only avoiding smoking around the children but also wearing a "smoker's jacket." This is an item of clothing worn over an aide's outfit to absorb the lingering smoke, much like a smock for finger painters. The garment can be removed after the cigarette break so the trapped smoke never comes in contact with the kids.

Workers also learn how to recognize asthma attacks and when to call a physician. They learn to ask if children have been using their medicine and get a basic understanding of how it works.

Szadek also is compiling a range of written materials and a Web site where directors of day care centers can access information and review it with their staff. Manuals and posters are being designed to hang onsite as reminders to be aware of asthmatic kids.

Szadek says she spends an hour or two at each center. "We're going out and hand-delivering this education," Szadek says.

The pilot project has taken training to employees at about 50 day care centers around Columbia, SC, the state's capital. So far, the hands-on training isn't available in other areas of the state, but Szadek hopes eventually to train nurses in other regions who can teach the classes.

But employees from 51 centers across the state recently got an earful about asthma at the day care association's annual meeting, which includes time for continuing education that employees must receive.

In South Carolina, the only health-related education child care workers must receive is in first aid and CPR. That's why Szadek is pushing

KEY POINTS

- An educational program is training day care workers how to be more attentive to the needs of asthmatic children in their care.
- Similar programs are being developed in other states and are funded from both the pharmaceutical industry and the federal government.
- Asthma training is generally not part of requirements to work in a day care center.
- Observers say aides need to recognize when children are in trouble and need medical help.

Tips for Day Care Workers

Asthma Management asked **Frederick Leickly**, MD, associate professor of medicine at the Indiana University School of Medicine and a pediatric pulmonologist at Riley Hospital for Children about what day care workers should be taught about watching children who have asthma.

"The day cares will need to know what to look for and how to respond to an acute attack," Leickly says, noting day care employees may have asthmatic children in their care for eight hours a day or more.

"Subtle warning signs, overt respiratory distress, or even impending respiratory failure must be identified and proper action taken." ■

to make asthma education part of that course. "This whole other area isn't getting addressed," Szadek says. But Szadek recognizes this will be an ongoing process because child care workers tend to turnover quickly.

Szadek says she is focusing first on day care centers that care for low-income or minority children because they are more at risk for developing asthma. Because it's funded by a \$30,000 grant from Merck and Co., the training is free to the centers.

She worked with the state's ABC (day care for low-income families) voucher system that provides funding for low-income children to attend day care. The ABC program gave Szadek a list of approved providers in their system, which she used to contact facilities directly.

For now, she doesn't know if the program will have the means to track outcomes. Instead, she gives workers a test before and after the training and then makes follow-up phone calls to see how the training is helping.

The South Carolina program is modeled after a similar effort in Maryland, where the state chapter of the Allergy and Asthma Foundation of America wants to take its initiative nationwide. The Maryland effort began in 1994 and so far has taken training to about 400 licensed day care providers in the state.

That training counts as three credits toward licensure requirements. The training takes three hours and includes hands-on education about anatomy and physiology, environmental controls, emergencies, and information to get from

parents, says Maryanne Ellis, executive director of the Maryland chapter.

About half of the Maryland program's funding comes from Merck and half from U.S. Environmental Protection Agency. Each donated about \$25,000. This year, the chapter will launch 16 pilot programs that target at least 25 providers each. Individual pilots will be aimed toward different audiences, such as child care centers and Head Start programs, in various regions of the state.

"We want to touch on different types of environments," Ellis says. "We'd like a good mix."

After the pilots have begun, providers will receive a survey to gauge changes they made as a result of the training and retention of the material taught. The pilots should run through next April or May. After that, Ellis hopes to take the effort nationwide where it's not available now.

"We're trying to see what's out there," says Ellis, who has heard from other states interested in programs aimed at day care centers. "We don't think there are any really very organized ones." Yet, she stresses the importance of training for those who care for children under age 5.

"They kind of get lost," Ellis says, "but it's important to target them. The earlier on there's better control then there is better compliance."

According to the American Lung Association, the estimated annual number of emergency room visits for children under age 5 is 120.7 per 100,000 children, the highest of all age groups. That's a major reason why managing the disease is so important.

Yet, when the managed care alliance went in search of programs that target these younger children, Marchant and Szadek found none. Instead, programs were aimed at school-aged kids. ■

Alert from the American Medical Association

The AMA recently released this advisory on offering the pneumococcal polysaccharide vaccine to many different groups of patients who could benefit from the protection.

The elderly, pulmonary patients, and those suffering comorbidities like diabetes are all included. (See copy of the alert, pp. 81-82.) ■

Quality Care

ALERT

Important New Developments in Patient Care



American College of
Emergency Physicians®



ACPM
American College of
Preventive Medicine



Prevention of Pneumococcal Disease: Use of the Pneumococcal Polysaccharide Vaccine

The Issue: Pneumococcal disease, caused by the *Streptococcus pneumoniae* bacterium, kills 10,000 to 20,000 people a year in the United States—typically resulting in more deaths per year than any other vaccine-preventable bacterial disease—and annually accounts for approximately 225,000 cases of hospitalized pneumonia, 52,000 cases of bacteremia, and 3,000 cases of meningitis.¹ Moreover, resistance of *S. pneumoniae* to antibiotics, especially penicillin, has increased dramatically,^{2,3,4,5} and strains resistant to oral antibiotics have been identified. While a safe and effective vaccine is available,^{2,4} pneumococcal immunization rates remain as low as 45% in the vulnerable over-age 65 population.^{2,6}

This *Quality Care Alert*, developed collaboratively by physician members of relevant medical specialty societies and the American Medical Association, provides a synthesis of the most recent evidence/recommendations for use of the pneumococcal polysaccharide vaccine. In this era of antimicrobial resistance,³ the importance of pneumococcal immunization cannot be overstated.

Recommendations: All persons at *increased risk of invasive pneumococcal disease should be immunized*, including:

- Immunocompetent persons aged ≥ 65 years.^{2,7}
- Immunocompetent persons aged 2-64 years with chronic illnesses, including persons with: cardiovascular or pulmonary disease, including congestive heart failure, cardiomyopathies, chronic obstructive pulmonary disease, recurrent bronchitis, and emphysema, diabetes mellitus, alcoholism, chronic liver disease, including cirrhosis, cerebrospinal fluid leaks, and functional or anatomic asplenia, including sickle cell disease and splenectomy.^{2,4,5,7}
- Immunocompetent persons aged 2-64 years in special environments, including: persons in nursing homes or other long-term care facilities, and certain Native American populations and the Alaskan-American population.^{2,4,5,7}
- Immunocompromised persons aged ≥ 2 years, including persons with: functional or anatomic asplenia, including sickle cell disease and splenectomy, Hodgkin's disease, lymphoma, leukemia, multiple myeloma, chronic renal failure, other conditions, such as organ transplantation, or drug regimens causing immunosuppression, and HIV infection.^{2,4,5,7}
- Persons in identified risk groups whose vaccination status is unknown or uncertain.²

Revaccination: Because the benefits and safety of the vaccine appear to outweigh its risks, in the absence of firm evidence/consensus to support or refute revaccination, *revaccination* is recommended *once* for the following high risk individuals:

- Immunocompetent persons ≥ 65 years of age, if the person received his/her first vaccination before age 65 and if more than 5 years have elapsed since that first dose.^{2,4}
- Immunocompromised persons and persons with asplenia, if the person is >10 years of age and more than 5 years have elapsed since the first vaccination; if the patient is ≤ 10 years of age, consider revaccinating once after 3 years have elapsed since the first vaccination.²

continued

The following clinical experts participated in the development and review of this Alert:

Samuel Crockett, MD
American Association of
Clinical Endocrinologists

Alan M. Fein, MD
American College of
Chest Physicians

Stanley A. Gall, MD
American College of
Obstetricians and
Gynecologists

Pierce Gardner, MD
American College of
Physicians/
American Society of
Internal Medicine

Bruce Gellin, MD
Infectious Diseases Society
of America

Neal Halsey, MD
American Academy of
Pediatrics

Kevin P. High, MD
American Geriatrics
Society

William Schaffner, MD
American College of
Preventive Medicine

David Slobodkin, MD,
MPH
American College of
Emergency Physicians

Richard K. Zimmerman,
MD, MPH
American Academy of
Family Physicians

Other Considerations:

- In order to minimize **missed opportunities**,^{8,9,10} pneumococcal immunization status should be assessed—whenever feasible—during any health care encounter. **NOTE:** If appropriate, health care personnel should avail themselves of the same opportunities to inquire about other immunizations, especially influenza.
- **Pregnant women** at increased risk of invasive pneumococcal disease (risk categories noted above) may be vaccinated, preferably during the second and third trimesters of pregnancy.^{4,11}
- The effectiveness of the current polysaccharide vaccine has not been demonstrated against non-invasive (non-bacteremic) pneumococcal disease—upper respiratory tract infections, otitis media, sinus infections—in the elderly and other adults at increased risk (risk categories noted above).^{2,4}
- The currently available vaccine is **not** recommended for children less than two years of age because it has not been demonstrated to be immunogenic in this population.^{2,5}
- The vaccine is covered by **Medicare**.¹²

For additional information, call your specialty or local medical society, the National Immunization Program (404 639-8254), or the National Center for Infectious Diseases (404 639-2215).

In addition, the following references may be useful:

1. Personal Communication: Benjamin Schwartz, MD, Assistant Chief, Epidemiology Section, National Center for Infectious Disease. Centers for Disease Control and Prevention. August 20, 1998.
2. Centers for Disease Control and Prevention. Prevention of pneumococcal disease: recommendations of the Advisory Committee on Immunization Practice (ACIP). *MMWR*. 1997;46(RR-8):1-24.
3. Klugman KP, Feldman C. The clinical relevance of antibiotic resistance in the management of pneumococcal pneumonia. *Infect Dis Clin Pract*. 1998;7:180-184.
4. ACP Task Force on Adult Immunization and Infectious Diseases Society of America. Guide for Adult Immunization. 3rd ed. Philadelphia, PA: American College of Physicians; 1994:107-114.
5. American Academy of Pediatrics. In: Peter G, ed. 1997 Red Book: Report of the Committee on Infectious Diseases. 24th ed. Elk Grove Village, IL: American Academy of Pediatrics; 1997:410-419.
6. Centers for Disease Control and Prevention. Influenza and pneumococcal vaccination levels among adults aged ≥ 65 years—United States, 1997. *MMWR*. 1998;47(38):797-802.
7. American Academy of Family Physicians. Summary of Policy Recommendations for Periodic Health Examination. 1997:5-8.
8. Centers for Disease Control and Prevention. Missed opportunities for pneumococcal and influenza vaccination of Medicare pneumonia inpatients—12 western states, 1995. *MMWR*. 1997;46(39):919-923.
9. Kind EA, Craft C, Fowles JB, McCoy CE. Pneumococcal vaccine administration associated with splenectomy: Missed opportunities. *Am J Infect Cont*. 1998;26(4):418-422.
10. Slobodkin D, Zielske PG, Kitlas JL, et al. Demonstration of the feasibility of emergency department immunization against influenza and pneumococcus. *Ann Emerg Med*. 1998;32:537-543.
11. Personal Communication: Stanley A. Gall, MD, Professor and Chair, Department of Obstetrics and Gynecology, University of Louisville School of Medicine. November 10, 1998.
12. Centers for Disease Control and Prevention. Use of clinical preventive services by Medicare beneficiaries aged ≥ 65 years—United States, 1995. *MMWR*. 1997;46(48):1138-1143.

This *Quality Care Alert* is an educational mailing that recommends the use of pneumococcal vaccine for select patients. It is not a fixed medical regimen; it identifies a course of vaccination as recommended by experts in the field and researchers in the medical literature. Individual patients may require different treatment. Treatment must be based on individual patient needs and professional judgment. No information contained herein should be construed as medical advice constituting the practice of medicine. This *Quality Care Alert* should be viewed as an important communication from the medical community, which may prompt the physician to investigate the appropriateness of pneumococcal vaccination for his/her patients. Publication herein does not suggest an endorsement of content or a validation of conclusions by the AMA or any of the referenced organizations or individuals.

American Medical Association

Physicians dedicated to the health of America



© 1999 American Medical Association. All Rights Reserved. This *Quality Care Alert* is a public service of the American Medical Association (AMA). It may be reproduced noncommercially by physicians and other health care providers to share with patients. Any other reproduction is subject to AMA approval.

Volume 2, Number 1. February 1999

KEY POINTS

- Zeneca Pharmaceuticals is working with the Magic Johnson Foundation to bring its national BREATHE (Bringing Education on Asthma to Homes Everywhere) program to urban communities.
- An interactive Web site for the program can be found at www.breatheinfo.com.
- Socioeconomics, access to primary care, and air quality are major contributors to high urban asthma rates.

Zeneca promotes its BREATHE program

Reaching urban children is a priority

Throughout 1999, Zeneca Pharmaceuticals will be rolling out its BREATHE Program, a national education campaign aimed at teaching children and parents in urban environments about prevention and treatments. The campaign, unveiled last November in Philadelphia, will be introduced in major urban regions throughout the year. The program stands for Bringing Education on Asthma to Homes Everywhere.

The company is partnering with the Magic Johnson Foundation, which has expanded its scope to include programs for youth, especially those living in inner cities.

Destination: Atlanta

The BREATHE Program was introduced in Atlanta in March. Zeneca donated 1,000 peak flow meters to help asthmatics improve the way they monitor their condition. Zeneca also awarded grants to fund educational programs by the state and local Atlanta chapter of the Georgia School Nurses Association and Inman Middle School and the Hughes Spalding Children's Hospital, both also in Atlanta.

Zeneca President Robert C. Black has noted his firm's commitment to patient education.

Urban areas also represent huge potential markets for its products, including ACCOLATE, a leukotriene receptor antagonist prescribed nearly 3.5 million times in the United States for patients ages 12 and younger.

Among the BREATHE Program's components:

- **Bilingual education materials.** This includes bilingual print and interactive on-line materials targeted at children, adolescents, and their families. The goal is to distribute the materials widely through community health groups, family physicians, respiratory specialists, and other providers and delivery systems.

- **An interactive Web site at www.breatheinfo.com.** This offers viewers electronic versions of the printed materials and an opportunity to receive updates on the BREATHE Program through an e-mail link. Materials also can be ordered through the Web site.

- **Education grants.** These will help fund local health initiatives and regional- and community-based events in cities where Zeneca introduces new elements of the program.

- **An art competition.** This is open to urban children and adolescents who create asthma-related artwork. As the BREATHE Program

Asthma Management™ (ISSN# 1098-6022) is published monthly by American Health Consultants®, 3525 Piedmont Road, Building Six, Piedmont Center, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Application to mail at periodical rates is pending at Atlanta, GA 30304. POSTMASTER: Send address changes to **Asthma Management™**, P.O. Box 740059, Atlanta, GA 30374.

Subscriber Information

Customer Service: (800) 688-2421 or fax (800) 284-3291, (customerservice@ahcpub.com). Hours: 8:30-6:00 Monday-Thursday; 8:30-4:30 Friday.

Subscription rates: U.S.A., one year (12 issues), \$297. Outside U.S., add \$30 per year, total prepaid in U.S. funds. One to nine additional copies, \$173 per year; 10 to 20 additional copies, \$104 per year. For more than 20 copies, call for special arrangements. Missing issues will be fulfilled by customer service free of charge when contacted within 1 month of the missing issue date. **Back issues**, when available, are \$50 each. (GST registration number R128870672.)

Photocopying: No part of this newsletter may be reproduced in any form or incorporated into any information retrieval system without the written permission of the copyright owner. For reprint permission, please contact American Health Consultants®, Address: P.O. Box 740056, Atlanta, GA 30374. Telephone: (800) 284-3291. World Wide Web: <http://www.ahcpub.com>.

American Health Consultants is accredited as a provider of continuing education in nursing by the American Nurses Credentialing Center's Commission on Accreditation. Provider approved by the California Board of Registered Nursing, Provider Number CEP 10864, for approximately 18 contact hours.

American Health Consultants is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians. American Health Consultants designates this continuing medical education activity for approximately 18 credit hours in Category 1 of the Physician's Recognition Award of the American Medical Association. Opinions expressed are not necessarily those of this publication. Mention of products or services does not constitute endorsement. Clinical, legal, tax, and other comments are offered for general guidance only; professional counsel should be sought for specific situations.

Group Publisher: **Brenda Mooney**, (404) 262-5403, (brenda.mooney@medec.com).

Executive Editor: **Park Morgan**, (404) 262-5460, (park.morgan@medec.com).

Managing Editor: **Valerie Loner**, (404) 262-5536, (valerie.loner@medec.com).

Associate Managing Editor: **David Flegel**, (404) 262-5537, (david.flegel@medec.com).

Production Editor: **Ann Duncan**.

Copyright © 1999 by American Health Consultants®.

Asthma Management™ is a trademark of American Health Consultants®. The trademark **Asthma Management™** is used herein under license. All rights reserved.

Editorial Questions

For questions or comments, call **David Flegel** at (404) 262-5537.

travels across the country, so will asthma information and artwork from the contest.

• **Peak flow meters:** Zeneca is donating thousands of peak flow meters, as the program travels across the country.

Asthma is the No. 1 reason for school absences due to chronic illness. And it's a problem that disproportionately strikes minorities and people living in urban environments. The problem probably touches on shortcomings in health care delivery, psychosocial influences, environment, cultural issues, and adherence to treatments, says **Frederick Leickly, MD**, associate professor of medicine at the Indiana University School of Medicine in Indianapolis.

In 1993, African-American children and adults were three to four times more likely than whites to be hospitalized for asthma. They were four to six times more likely to die from it, according to the National Institute of Allergy and Infectious Diseases, a part of the National Institutes of Health.

"It's unacceptable that hospitalizations and deaths have risen, especially in minority communities," says **Floyd J. Malveaux, MD, PhD**, and College of Medicine dean at Howard University in Washington, DC.

Possible culprits: pollution, cigarette smoke, dust mites, cats, cockroaches, and molds — all of which are more prevalent in urban areas with large minorities populations.

In many urban environments, cockroaches may play a major role, says **Allan Rashford, MD**, a pulmonologist in private practice in Charleston, SC., where the combination of hot, humid weather and old structures makes roach infestations common. Yet, practitioners may be hesitant to discuss with patients the fact that they may have cockroaches in their homes, Rashford adds.

CE objectives

After reading *Asthma Management*, health care professionals will be able to:

- Identify management, clinical, educational, and financial issues relevant to the care of patients with asthma.
- Explain how those issues affect asthmatic patients and the providers who care for them.
- Describe practical ways to solve problems commonly encountered by care providers in their daily activities. ■

EDITORIAL ADVISORY BOARD

Kay Ball
RN, MS, CNOR, FAAN
Perioperative Consultant/Educator
K & D Medical Lewis Center, OH

Nicola Hanania, MD
Assistant Professor of Medicine
Baylor College of Medicine
Houston

John J. Hill, RRT
Technical Director,
Respiratory Care
Deborah Heart and Lung Center
Browns Mills, NJ

William Kelley, PharmD
Professor of Pharmacy
and Pediatrics
College of Pharmacy
University of New Mexico
Albuquerque

Hal B. Richerson, MD
Division of Allergy/Immunology
Department of Internal Medicine
The University of Iowa
Iowa City

Steven A. Scott, PharmD
Purdue University
Pharmacy & Pharmacal Studies
Purdue University
West Lafayette, IN

Thomas F. Plaut, MD
Asthma Consultants
Amherst, MA

Richard S. Shames, MD
Assistant Professor
of Pediatrics
Division of Allergy and
Clinical Immunology
Stanford University
Medical Center
Stanford, CA

Marianna M. Sockrider, MD
Assistant Professor
Baylor College of Medicine
Texas Children's Hospital
Houston

Mark A. Ward, MD
Assistant Professor of Pediatrics
Texas Children's Hospital
Houston

Barbara L. West, MD
Assistant Professor
of Pediatrics
Baylor College of Medicine
Houston

Higher percentages of African-Americans and Hispanics than whites also live in areas that don't comply with national air quality standards for particulate matter, carbon dioxide, ozone, sulfur dioxide, and lead. For example, about 52% of all whites live in counties with high ozone concentrations compared to 62% of African-Americans and 71% of Hispanics, according to the American Lung Association.

Then there are issues such as access to education, inadequate access to health care and failure to take medications properly. "There is no one problem to account for it all," says Leickly, a principal investigator of the National Cooperative Inner-City Asthma Study.

In 1991, the National Institute of Allergy and Infectious Disease launched the first inner-city study. After reviewing the results, it began a second multicenter study that involves disseminating the results of the first study.

The first study found the presence of risk factors including high levels of indoor allergens, especially cockroach allergens; and high indoor levels of nitrogen dioxide, a respiratory irritant produced by poorly vented stoves and heating appliances. Many patients also reported trouble getting follow-up care for their asthma. ■