

ASTHMA MANAGEMENT™

The Complete Asthma Disease State Management Resource

INSIDE

- **Asthma diary:**
How this record aids effective disease management 16
- **Patient preparation:**
Asthma education should begin before the first office visit 17
- **Steps of change:**
Assessing when Medicaid patients are ready to adopt healthy practices 18
- Recognize the stages of readiness to change . . . 19
- **Self-management:**
Glaxo program gets good results 21
- Glaxo self-management program results 23
- Sample diary Insert

**FEBRUARY
1999**

**VOL. 2, NO. 2
(pages 13-24)**

American Health Consultants® is
A Medical Economics Company

Hospital's asthma program results in lower readmission rates

Pediatric education program covers all bases

Hospital clinicians at Ball Memorial Hospital in Muncie, IN, say they suspected they had a problem with too many children needing hospital care to control their asthma. Admission data collected between March 1997 and March 1998 confirmed their suspicions: Asthmatic children were frequent users of medical services, representing one in four pediatric patients at the hospital. It was a problem the facility's pediatrics committee needed to address as part of the health care system's formal program for annual improvement in the way it delivers its services.

"It seemed the majority of our patients had respiratory problems, and in conversations with each other, we realized there was no formal patient teaching," says **Joni Bertsch**, RN, performance improvement coordinator for the pediatric and teen unit, which occupies 14 of the hospital's 400 beds.

The committee formed a subcommittee to plan and implement an educational program. The results have been promising since the program was implemented. In the past six months, the unit's staff gave formal asthma education to 88 patients, about 15% of the patients admitted to the pediatrics floor. Seven of these patients have been readmitted, which is a readmission rate of 8%. This is a 33% decrease from the initial readmission rate of 12%, she says.

KEY POINTS

- A hospital found its frequent pediatric asthma visits stemmed from inconsistent patient education and treatment.
- The facility's five-point response identified problems, researched solutions, developed a protocol, provided inservices, and started a formal asthma program.
- Responsibility for teaching patients about their asthma may fall to specialized asthma educators, much the way counselors teach patients about diabetes.

Here are the steps Ball Memorial Hospital took to achieve these outcomes:

☐ **Identify the problems.**

The pediatrics unit had been renovated recently and was in good shape, so the pediatrics committee decided to focus on a performance improvement issue. A look at admissions data confirmed the staff's perceptions that too many patients were admitted for asthma-related problems.

Research on these patients revealed their education and treatment were inconsistent. Some patients were sent home with nebulizers; some weren't. Some received peak flow meters, and others didn't. Further, committee members were not confident the staff knew about all of the proper medicines for these patients. And patients asked questions staff sometimes didn't know how to answer. "We'd see some children who we thought were doing a good job with their asthma, but then they'd come in again — so what was the problem?" she asks.

The unit formed an asthma committee, which included Bertsch and other nurses, to investigate the problem and develop a performance improvement plan.

☐ **Meet with experts and conduct research.**

The unit asked pediatricians and an allergist to attend asthma committee meetings. The asthma committee also met with respiratory therapists to find out what they were teaching patients. Committee members consulted the pharmacy staff to find out what they were teaching patients, such as using inhalers.

A pediatric asthma program needs this multidisciplinary approach says **L. Jane McDowell**, MD, asthma committee member and practicing allergist with the Muncie Allergy Center. She says the program should include allergists because they spend a lot of time treating asthma patients.

The committee also included emergency department (ED) staff for the same reason. "We asked for someone from our emergency department to be there because so many children with asthma were going through the ED," Bertsch says, adding that staff from the hospital's patient education department rounded out the group.

Committee members found a variety of educational materials to teach children and adult asthma patients how to manage their disease. "We chose the ones we felt were the most educational, and we tried to not use any books that were above a grade-six reading level so that all of our patients would be able to understand it," she says.

The committee agreed on using videos and literature that fell into three different age groups: birth to 4; 5 to 14; and 14 to 18. Since children under 5 are not able to use a peak flow meter by themselves, all of the education for that age group is geared toward the parents. **(For a list of resources the committee selected, see box, p. 15.)**

☐ **Develop a protocol.**

Committee members developed a detailed outline for each age group. The outlines explain how every child inpatient admitted and placed on a bronchodilator would be educated about their disease. The committee determined there were a few exceptions, such as a child with respiratory syncytial virus (RSV) or bronchiolitis because usually these cases are isolated incidents not due to uncontrolled chronic illness.

"We tried to include the children on the basis of their treatment as much as on the basis of what the doctor called the malady he was admitting them for," McDowell says. "That way we got around the problem of only teaching kids diagnosed with asthma."

The educational program included children with reactive airway disease (RAD), asthma, and those who have a problem with wheezing that has not been diagnosed as asthma, Bertsch says.

Included in the protocol was an automatic referral to a nicotine counselor at the hospital if the parents of an asthmatic child smoked or if a teen-age asthma patient was a smoker.

Nurses and respiratory therapists educate patients and families, and they follow a checklist from a teaching plan. Each segment of the teaching plan includes a place for the nurse or therapist to check, date, and initial once it's been taught. For example, respiratory therapists will teach patients how to use peak flow meters and then check off that segment.

COMING IN FUTURE MONTHS

■ Partnering with the primary care physician

■ Three important days in a life with asthma

■ How yoga contributes to asthma management

■ Corticosteroids reduce hospitalization

■ How excitement, stress, and depression can complicate asthma control

Education Resources

These are the resources the pediatrics committee at Ball Memorial Hospital in Muncie, IN, selected for its asthma education program:

- Kids Breathe Free*, for children 5 to 14, published by Pritchett & Hull Associates Inc. in Atlanta.
- One Minute Asthma*, for ages 14 and up, written by Thomas S. Plaut, MD, and published by Pedipress Inc. in Amherst, MA.
- Managing Childhood Asthma — A Parent's Guide*, a video by Medcom Inc. of Garden Grove, CA.
- I'm a Meter Reader*, a video by Nancy Sanders, supported by an educational grant from Allen & Hanburys Respiratory Institute and the National Allergy & Asthma Network in Fairfax, VA.
- Essence of Life*, a video by the Allen & Hanburys Respiratory Institute.
- So You Have Asthma Too*, a video by Sanders and also from the National Allergy & Asthma Network and from Mothers of Asthmatics in Fairfax, VA.
- Wheeze World*, a video by the National Allergy and Asthma Network and Mothers of Asthmatics in Fairfax, VA.

"Before the child can go home, this entire form and each segment needs to be taught, and each segment is initialed and dated," Bertsch says. If the patient is going to be sent home on a home nebulizer, then the home care respiratory therapist will come into the hospital before the child is discharged, bring in the nebulizer, and show the parent how to use it.

McDowell and other physicians reinforce the patient instruction when they see their patients at the hospital. "Our next major goal is to see if we can make patient education a little more uniform, not only in the hospital, but through the entire health care system."

"I think it's awfully hard to absolutely mold everybody's education into a total cookbook, but it's so much better, what the hospital is doing with the pediatric department now," McDowell says. "Patients are using the peak flow meters now instead of just putting them up in the medicine cabinet and not looking at them again."

Hold inservices and practice teaching sessions.

The committee held two days of inservices for nurses, home care staff, and other employees who work with asthma patients. The hospital's

audio-visual department taped the sessions so people who couldn't attend could learn about the new program. The 25-minute video also is available to physician offices and other providers.

Part of the staff education included an educational demonstration. Bertsch's daughter pretended to be a patient, and a nurse portrayed the patient's mother in a hospital room. Then Bertsch entered the room and told the mother the child would receive some instruction. She taught some of the lessons from the checklist. Next the respiratory therapist came in and taught the patient how to use a peak flow meter and inhalers.

After the mock patient was taught how to use that equipment, the home care respiratory therapist taught her how to use the home nebulizer machine, she says.

The program began a week after the formal inservices were held. "We've been really pleased with how it's been received so far," Bertsch says. "The majority of parents are grateful for the education." Since each hospital room has its own VCR, it's very easy for the staff to show children and their parents the teaching videos. Nurses give patients and parents the asthma books to read while the child is in the hospital, and then they take the materials home for future reference.

Assess the program and provide follow-up.

The pediatrics unit has been conducting the uniform patient education long enough to measure outcomes and check to see how frequently patients are readmitted. Plus, what began as a pediatrics unit project has springboarded into a hospitalwide asthma project, Bertsch says.

Now there's a 20-member hospital asthma committee that has a social services member along with physicians, nurses, therapists, and representatives from various departments, including hospital education, medical-surgical, and pharmacy. "We're discussing at that committee how we can follow up the patients' care with physicians to find out if the education was helpful," she says. The hospital already faxes the patient teaching checklist to each patient's physician's office so the physician is aware of the instruction patients have received.

Also, the hospitalwide committee will begin to work on expanding the education program to include adult asthma patients. "Asthma education is pretty important," McDowell notes. "I think many family physicians look forward to the day when asthma is going to be in the hands of asthma educators, like diabetes is in the realm of diabetes educators." ■

Convince patients to keep a diary for better outcomes

It gives clinicians better picture of the patient

It isn't easy to get patients to record their peak flow readings in a daily diary. Many would find that about as much fun as balancing a check-book. But clinicians can get a better picture of the symptoms a patient reports today when they are backed up by what has been recorded in the diary over time. And this, in turn, will result in better outcomes.

"My experience is that if someone is willing to keep one of the charts for us, he tends to fare a lot better in terms of managing his asthma," says **Wilma Light**, MD, an allergist in Latrobe, PA.

"The diary gives us an indication if we're heading for trouble so we can intervene with medicine before it gets too bad," she explains.

Some patients will be quite compliant, but others will not be willing to put time into writing things down, Light says. "Usually, we try to introduce the diary when someone is a new patient so we can learn how [that person] is doing. We tell them it takes some time and effort, but we can learn a lot from this, and many people will be willing to do it for a few weeks."

Light uses a tri-colored diary published by Pedipress Inc. in Amherst, MA. **(A sample of the diary for patients age 5 to adult is inserted in this issue.)** The diary has two versions: One is for children under age 5, and the other is for a patient age 5 to adult.

The young child's diary is divided into these four sections:

KEY POINTS

- Keeping an asthma diary provides doctors and patients with an organized record of medication, symptoms, and peak flow.
- Asthma diaries can be used to track progress in controlling the disease as well as give early warnings about times when it may be necessary to change medication.
- Faxing an asthma diary to a physician gives a quick update of a patient's condition, reducing the amount of telephone time needed to discuss symptoms before a treatment response can be determined.

1. Signs.

This is a place to record asthma indicators such as coughing, wheezing, breathing rate, and chest skin. Parents rate signs from either 0-3 or 0-5 for each of these. Then they add up the numbers in the column and record the total on a separate line.

2. Zones.

Here is where scores are recorded from using the peak flow meter. Green (0) means the current treatment is working. High yellow (1-4) is a signal to avoid triggers and change medication routine. Low yellow (5-8) means you should intensify treatment, and the red zone (9) means the child should receive emergency medicines and see a physician or go to the emergency department.

3. Medicines.

In this section, patients record daily dosages of cromolyn, inhaled steroid, albuterol, oral steroid, and theophylline.

4. Daily.

Parents record the quality of their child's activity and sleep. The diary also has a place to record the date and to check whether a symptom appeared during the day or night. And patients can mark an "X" if the symptoms appeared after using a bronchodilator. There's also a blank space to enter comments about triggers and other items.

The diary for older patients has an asthma care zone for patients to mark peak flow rates, both before taking an inhaled bronchodilator and after taking one. Medicines and signs are also charted on the diary.

Diaries are a timesaver for physicians and a way to make asthma treatment more cost-effective, says **Thomas Plaut**, MD, a pediatrician and the director of Asthma Consultants in Amherst, MA. Plaut has written four books and pamphlets on asthma and founded Pedipress, which publishes pediatric health information.

Physicians simply do not have enough time to spend with their patients to obtain all the information they need. "So the solution is to get the patient to do a lot of the data collecting," he says. "We have to figure out ways that patients can become more involved in their care."

Plaut's own patients readily use their diaries and sometimes will fax him a copy when they're traveling overseas. "Instead of talking on an international call for 30 minutes, we'll settle the problem in five minutes because the diary gives you information that people cannot hold in their brains," he says.

Most patients who use the diary better understand how their symptoms and peak flow relate to their medications, Plaut says. "I tell patients to use the diary twice daily for the first two months, then every morning for two months, and then as often as they find it helpful."

When patients experience symptoms, change their medications, or enter an environment that might exacerbate their asthma, they should start keeping a diary until they have a full understanding of their situation. In addition, Plaut asks patients to keep a diary for the week before they see him. "This is the best way for me to review their current status."

Physicians will have to make some extra effort when they start getting patients to use the diary. But once doctors teach their patients to use the diary, it saves a huge amount of time, Plaut says.

Light says she has experienced this benefit. "It's almost like an early warning system for some patients. Patients chart their medications and rate how they're doing in terms of wheezing, coughing, activity level, and sleeping," she adds. "This tells you a lot about what's going on." For example, a patient's peak flow readings drop before his symptoms start to appear. The chart will indicate this trend, and the physician might see that the patient has to be cautious, perhaps taking an

additional medication to relieve symptoms. Or the physician may increase the dosage, making any adjustments necessary to prevent the patient from returning to the emergency department.

"It tells us more about how they're doing at different time periods," Light adds. "Often when patients come in for a visit it's at the best time for asthma symptoms, but we want to know how they do in the morning and evening."

The diary provides the trend data, which are especially important. Light says she usually introduces the concept of an asthma diary when she meets a new patient. It's a good way to see how the patient is doing. It also establishes a baseline, so the patient knows what a good reading is.

She also will encourage patients to begin charting their peak flow readings when they change medications. (Although, ideally, all patients who have moderate to severe asthma would fill out the diary continuously.) "If they can make it a part of their daily routine, it can really help them," she adds.

(A copy of the asthma peak flow diary is enclosed in this issue. For more samples and a home treatment plan, send a self-addressed, stamped, business envelope to Pedipress Inc., 125 Red Gate Lane, Amherst, MA 01002.) ■

Patients should prepare for their office visits

Education adds to appointment effectiveness

Patients should be learning about asthma even before their first doctor appointment. Pediatrician **Thomas Plaut**, MD, says the early start makes patient education more efficient. At the very least, the doctor's waiting room could be the first place to introduce the patient to asthma booklets before an appointment.

Plaut requires parents of his asthma patients to read a 304-page book he wrote, *Children with Asthma: A Manual for Parents*, before he will see them. Then they have to fill out a two-page questionnaire and write a story about their child's asthma.

"If they don't do it, it doesn't make sense for them to see me," he says. "I work at a routine, assuming patients have done that."

While most physicians probably won't make such formal requirements, Plaut recommends

they at least provide educational material in the waiting room. This way, patients or parents can do a quick study of asthma terms and medications before they meet with the physician.

"You want your patients to come in knowing something, so you work out a decent plan with them," he says.

Plaut contends this advance education could have a significant impact on the physician visit because the patient will be able to better communicate symptoms and problems.

To test his theory, he has sent out copies of another book he has written, *One Minute Asthma*, to a few physicians he knows. He asked them to participate in this project: First their receptionists hand out the 56-page booklet to patients and ask them to read four specific pages and any other pages that interest them, while they wait for their consultation.

During the physician's exam, the doctor will ask the patient these three questions:

- ✓ Once your asthma is under control will you be able to run as long and as hard as you want?
- ✓ During an asthma episode, does the lining of your airways swell due to inflammation?

✓ What major types of asthma medicines can you name (preventers, maintainers, and relievers)?

The physician will ask the patients for any comments they have on the booklet. Physicians also fill out a one-page survey about whether they found any difference in communication tone, attitude, or understanding between these patients and three patients chosen at random who did not receive the booklet.

The survey, which began in late 1998, is not yet complete but Plaut reports he has received positive feedback so far.

"The interesting thing is the doctors are noticing that the people who have read these four pages are much easier to communicate with than the people who have not read them," he says. "They said it changed the visit."

L. Jane McDowell, MD, a practicing allergist in Muncie, IN, who has used Plaut's asthma booklet for years, says she has found it to be very effective for patient education. "It's an excellent teaching tool," she says. McDowell often uses the booklet as part of her consultation with patients and reads portions to them. "I have found it is much more effective to read some portions of the book to the patient. I read to them so I can underline things in the book and explain techniques."

Also, she gears the patient teaching to what most interests a particular patient, such as discussing exercise or dust allergies.

McDowell read the entire book to an 83-year-old patient, who spent a morning with her after a blizzard kept her other patients at home. "Her son had brought her to the office in his four-wheel-drive vehicle," she says.

"I called her back a couple of days later to report on lab tests, and she said, 'If I had had that book 30 years ago, I don't think I would be in as bad of shape as I am now,'" McDowell adds.

[For more information contact:

Joni Bertsch, RN, Performance Improvement Coordinator for the Pediatric and Teen Unit, Ball Memorial Hospital, 2401 W. University Ave., Muncie, IN 47303. Telephone: (765) 757-3342.

Wilma Light, MD, Allergist, 1100 Ligonier St., Latrobe, PA 15650. Telephone: (724) 539-4551.

L. Jane McDowell, MD, Practicing Allergist, Muncie Allergy Center, 4505 N. Wheeling Ave., Muncie, IN 47304. Telephone: (765) 284-4050.

Thomas Plaut, MD, Pediatrician, Director of Asthma Consultants, Pedipress Inc. 125 Red Gate Lane, Amherst, MA 01002. Telephone: (413) 549-3918. Fax: (413) 549-4095. Web site: www.pedipress.com.

For information about One Minute Asthma, which sells for \$5 per copy for 1-9 copies or \$2 per copy for 10-99 copies, and other similar publications, contact Pedipress Inc., 125 Red Gate Lane, Amherst, MA 01002. Telephone: (800) 611-6081.] ■

Peers help Medicaid patients manage asthma

First step is understanding readiness to change

It's difficult enough to get mainstream group-health patients to comply with an asthma management program. Imagine how much more difficult developing an effective asthma management program would be if your patients were homeless. One health plan finds recruiting community members to work as peer outreach specialists reduces barriers to care in Medicaid populations.

"To get people to comply with disease management plans, you have to establish a strong bond with them," says **Gabrielle Reed, PhD, RN**. Reed is an instructor of medicine in the division of health behavior research at the Washington University School of Medicine in St. Louis, which runs an asthma management program for Medicaid patients. "You can't walk into the community we serve and be white and middle-class and hand down a medical prescription from on high," she says. "The people simply won't hear you. Some are even homeless. They're not ready to talk about asthma. We have to help them find housing first."

Washington University recruited young African American women with children to work with its asthma management program. "We hire interested women right out of the community. It's neighbors helping neighbors, and it begins with the enrollment stage."

When children are admitted to the hospital for

KEY POINTS

- Program carefully selected reasonable goals to increase possibility of compliance.
- Peer specialists are trained to educate Medicaid population about asthma.
- Peer specialists determine caregiver's readiness to follow an asthma management plan before offering educational materials.

Learn to recognize the stages of readiness

Most asthma management programs operate on the assumption that patients know why they should follow the asthma management plan their physician has devised for them. However, patients aren't always ready to adopt a formal regimen to regain and maintain control over their asthma.

"People in general are bad at regular routines," says **Mark L. Robbins**, PhD, a fellow in clinical and health psychology at the Cancer Prevention Research Center at the University of Rhode Island in Warwick. "We vary in our readiness, or motivation, to change. If clinicians understand their patients' stage of readiness, they can guide their interventions and increase their chances of success."

Robbins and his colleagues at the University of Rhode Island have applied the Transtheoretical Model of Health Behavior Change to several substance abuse and health promotion programs. The model includes these five stages:

1. Precontemplation.

This is noted when the patient:

- is not ready to act and has no intention of taking action in the next six months;
- avoids reading, talking, and thinking about the behavior that needs to be changed;
- is pressured by others to take action, but often has developed defenses to cope with those pressures.

"These patients may avoid reading, talking, or thinking about the changes they need to make," says Robbins. "Pressuring them to changes probably will backfire. Instead, encourage them to think about change and read about their condition."

2. Contemplation.

This is determined when the patient:

- intends to take action within the next six months;
- substitutes thinking for action;
- appears to be waiting for the right time to take action;
- is unprepared to change;
- remains ambivalent about changing.

"Patients at this stage should be encouraged to weigh the pros and cons of their treatment plan and encouraged to make small action steps," he notes.

3. Preparation.

This stage is present when the patient:

- begins practicing the behavior;
- intends to start changing behavior in the next 30 days;
- is more confident and less tempted;
- is most likely to participate in a program and most likely to benefit from that program.

"Encourage patients at this stage to plan adequate time, energy, and support for change and help them set reasonable goals," suggests Robbins.

4. Action.

The patient recently started to change behavior.

5. Maintenance.

The patient has changed behavior consistently for more than six months.

Patients in both action and maintenance stages may benefit from stimulus controls, Robbins says. For example, you might provide beepers to remind patients to take their medications. ■

asthma, their names and telephone numbers are given to two older African American women who call the children's families to explain the program and invite participation. "The voice on the phone is a recognizable voice. It's comfortable to our moms," says Reed.

To encourage caregivers of asthmatic children to participate in the program, Washington University pays caregivers \$10 for answering the program's questionnaire.

"We randomize half the group into a treatment group," Reed says. Members in the treatment group are assigned a peer specialist. The peers visit caregivers at home and gather information to determine the caregiver's stage of readiness to change.

Physicians and nurses from Washington

University train the asthma management program's peer outreach specialists in basic asthma management, signs and symptoms of an asthma episode, and the stages of readiness model of health behavior change pioneered by researchers at the University of Rhode Island in Warwick. **(For a description of the five stages of readiness, see box, above. For ideas on determining a patient's readiness stage, see story, p. 20.)**

"When we first explain the stages of readiness to our peer specialists, they immediately respond to it. They say it's so intuitive," notes Reed. "They easily sense which caregivers are ready to receive educational materials and make changes in their child's asthma management and which aren't. If they aren't ready, we work on eliminating barriers to behavior change and moving them forward."

The Transtheoretical Model of Health Behavior Change cites five stages of readiness to make health-conscious changes in behavior. "If we pay attention to how ready people are to change, we don't run the risk of patients tuning us out," says Reed.

Most of the research on the stages of readiness has revolved around health promotion programs. The key to successfully applying the model to disease management is carefully selecting the behaviors you target for change, notes Reed. "You have to select behaviors that will actually produce health changes in your population."

She suggests using focus groups to select those behaviors and also to "get your vocabulary right. When you finally get your patients to the point where they are interested in managing their asthma, it's great to have teaching materials appropriate to the population," she continues. "And not only should the reading level and the language used be appropriate, but the illustrations should look like your target population."

Washington University targeted seven behaviors for its asthma management program. They include:

- ♥ Primary caregiver has a copy of child's asthma action plan.
- ♥ All other caregivers have been made aware of the child's asthma action plan.
- ♥ Primary caregiver gives rescue medications according to asthma action plan.
- ♥ Primary caregiver brings child in after four months for regular follow-up care.
- ♥ Primary caregiver eliminates or reduces child's exposure to secondary smoke and cockroaches.

"Our moms recognize their child's asthma symptoms," Reed says. "They know when their child is going to get bad, but they wait too long to give prescribed rescue meds, and the children end up in the emergency room."

To encourage caregivers to take action to prevent a severe asthma episode, peer specialists often accompany caregivers to their child's physician's appointment. "The peer specialist's a role model to help caregiver's communicate better with their child's doctor," explains Reed. "Many of our caregivers have a tendency to go to their child's appointments without really dialoguing with the doctor. They may hear all the asthma information and still go home and ask their grandmother what to do. The doctor may never know that the advice was never followed."

To make change even more difficult, Reed

Is your patient ready to change?

Finding out may be easier than you think

HealthPartners in Minneapolis integrates the Transtheoretical Model of Health Behavior Change into all of its health promotion programming. "We use the stages of readiness to find a leverage point to move members up the ladder from pre-action to action stages," says **Nico Pronk**, PhD, senior director of the Center for Health Promotion for HealthPartners.

HealthPartners determines a member's stage of readiness with a few simple questions asked over the telephone, he explains. "The questions link the behavior we're targeting, such as establishing an exercise routine, to the time frames suggested by the model. For example, we might ask, 'How likely are you to begin exercising in the next six months?' The objective is to put the patient in a certain stage and target your interventions based on that stage."

Pronk adds that willingness to communicate is an accurate predictor of a health plan member's willingness to change. "We've found that if a member is willing to talk about health improvement, it's a great gateway to readiness to change."

HealthPartners has also found the stage of readiness model is an effective tool for changing managed care members' health behaviors. **(For a description of the five stages of readiness, see box, p. 19.)** Here are some results from a random sample of telephone counseling sessions used to assess if a member was ready to start regular exercise:

- In the course of eight telephone calls during the six-month intervention period, 38% of precontemplators moved into action.
- Of 53% of members beginning in the action stage, 91% remained in action stages at six-month follow-up.
- Members in a control group moved in and out of readiness changes with no across-the-board changes maintained.

"We not only moved members from pre-action stages to action stages, but more importantly, we prevented members in action stages from relapsing," says Pronk. ■

admits that many caregivers of children in the asthma management program have little control over their child's physical environment. "We know we're sometimes fighting an uphill battle with issues like secondhand smoke. Even if the mom doesn't smoke, she may leave her child with a grandmother who smokes while she

Resources: Transtheoretical Model

- Prochaska JO, Velicer WF. The transtheoretical model of health behavior change. *American Journal of Health Promotion* 1997; 12:38-48.
- Prochaska, JO. Strong and weak principles for progressing from precontemplation to action on the basis of 12 problem behaviors. *Health Psychol* 1994; 13:47-51.
- Prochaska JO, Rossi JS, Velicer WF, et al. Stages of change and decisional balance for twelve problem behaviors. *Health Psychol* 1994; 13:39-46.
- DiClemente CC, Norcross JC, Prochaska JO. In search of how people change: Applications to addictive behaviors. *Am Psychol* 1992; 47:1,102-1,114.

Researchers at the Cancer Prevention Research Center at the University of Rhode Island at Warwick developed and continue to conduct ongoing research on the five stages of readiness. Descriptions of current research programs on the stages of readiness and a review of literature on the model are available at www.uri.edu/research/cprc.

works. She needs her mother to baby-sit, and we come in saying, 'Don't you realize that second-hand smoke is bad for your child?'" she says. "If peer specialists look at that mom's face and see from her expression that she's not ready to make that change, they start talking around that issue. They plant seeds of information. They challenge the moms to figure out how to make things work.

"Nobody makes changes unless they think they're going to work," adds Reed. "Facts and figures don't go over well until somebody believes you." ■

Asthma outcomes study focuses on function

Self-management program improves productivity

Looking for a patient education program that really works? You might consider one developed by Glaxo Wellcome Care Management in Research Triangle Park, NC. Called the Asthma Self-Management Program (ASMP), the 12-month outcomes study showed participants improved their productivity and general well-being while

significantly reducing their use of the health care system.

Comprised of eight hour-long asthma education sessions, ASMP showed a return of \$1.85 for every dollar invested after 12 months, not counting indirect cost savings due to reduced absenteeism and increased productivity. **(For specific outcomes data, see graphs of results, pp. 22, 23.)**

"We know the program works. What we're changing now is the way we recruit and retain patients," says **Mark Santry**, director of the respiratory management group for Glaxo Wellcome Care Management. "We commissioned research to help us understand what motivates people to participate in disease management programs and incorporated what we learned into our recruiting materials and methods."

Tailoring material for target group

The new materials are tailored to the program's target audience, he notes. "We've identified people as 'high utilizers' or 'light utilizers' based on their use of the health care system. The new recruiting messages are targeted to appeal to potential participants based on their use of the health care system."

Glaxo Wellcome has also changed the methods it uses to reach potential ASMP participants. "We've moved away from print and video messages to a telephone outreach approach," he says.

"We use both live and passive outreach," he adds, explaining that "passive outreach" includes providing a toll-free number participants can call for more information about ASMP.

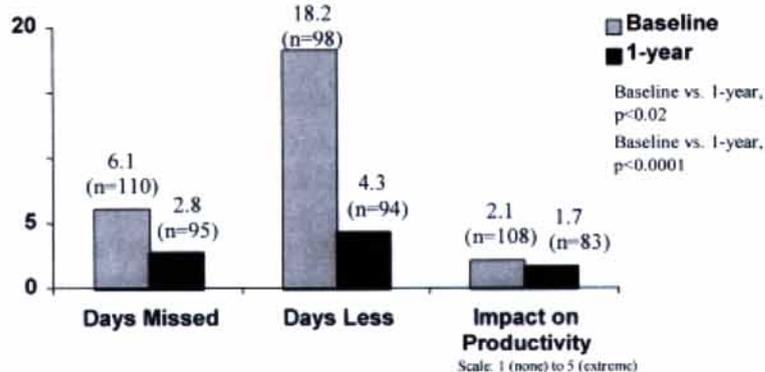
Most of the evidence demonstrating this new, more-tailored approach is working has been anecdotal, notes Santry. "We think the impact has been significant and will continue to show

KEY POINTS

- A program using eight 60-minute asthma education sessions produced a \$1.85 return for every dollar invested after 12 months, excluding reduced absenteeism and increased productivity.
- A patient education program can be even more successful if staff find ways to get more patients to participate.
- Future surveys will assess the relationship of self-confidence and positive outcomes.

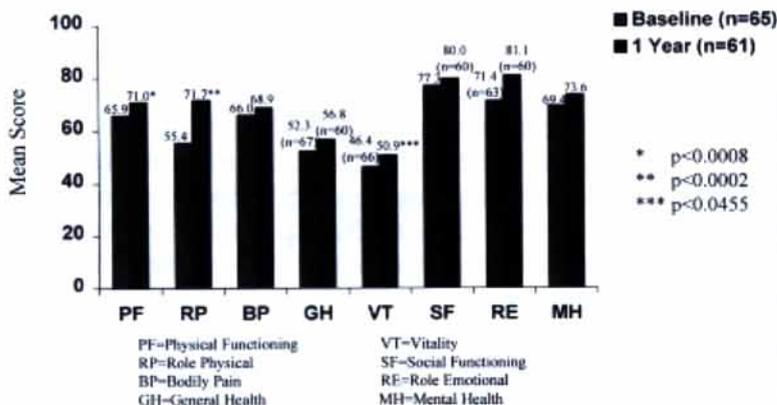
Productivity Measures

Recall Period = 12 months



Source: Glaxo Wellcome Care Management, Research Triangle Park, NC.

Mean SF-36 Scores at Baseline and 1 year



Source: Glaxo Wellcome Care Management, Research Triangle Park, NC.

increases in participant recruitment and retention."

Glaxo Wellcome also applies a tailored approach to the outcomes reports it prepares for its customers.

"If I'm an employer, I want to hear about productivity and absenteeism, not just health care utilization. We've employed a number of instruments so that we can provide a wide range of outcome variables that apply to most of the customers we serve," he explains.

In addition to utilization data, Glaxo Wellcome measures SF-36 results for each participant and a functional status instrument that measures improvements in productivity. Outcomes for

each participant are measured at these five points:

- prior to the participant's first ASMP class;
- following the last ASMP class;
- at three months after completing the class;
- at six months;
- at 12 months.

"We tailor our outcomes presentations based on our preliminary implementation meeting with the clients. Maybe all they want to hear is how many hospital admissions there have been," he says. "If that's the case, that's what we report back. We let the customers dictate the level of detail based on internal needs, but the data are there if they want it."

Glaxo Wellcome also provides dedicated Web sites so customers can access data at any time. "The Web site is maintained by a data warehousing organization. Glaxo Wellcome doesn't have access to it. We only see aggregate reports," explains Santry.

Customers can visit the Web site and select the report they want to view from a table of contents. "They can get on the Web and see that John Doe attended ASMP classes one, two, five, and six. They can check John Doe's utilization. That level of detail is available if the customer wants it," he says.

The ASMP includes eight weekly education sessions using a behavioral modification support group model. It was designed to go beyond looking at just utilization to include productivity and the ability to perform activities of daily living. The program

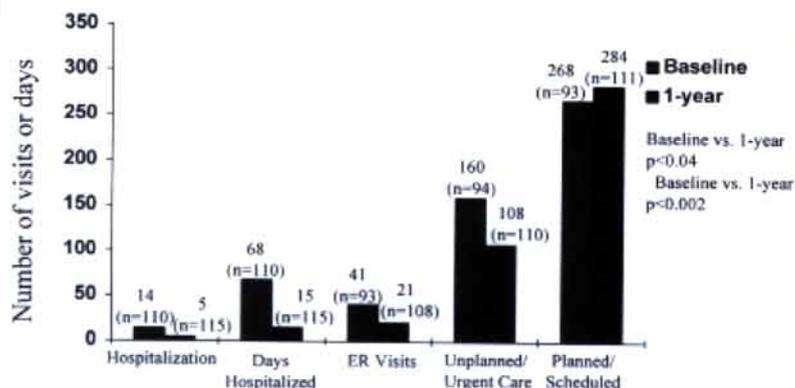
is taught by nurses, case managers, pharmacists, and respiratory therapists. It includes sessions on the following topics:

- principles of asthma management;
- nature of asthma medications;
- attack prevention and management;
- problem solving;
- relapse prevention;
- communication with health care providers.

Patients in the ASMP complete a questionnaire during the first weekly session for baseline data prior to any asthma education. In addition to the questionnaire completed in class, patients are given a questionnaire on medical history and previous health care

Health Care Visits Due to Asthma: Number of Each Type of Visit

Recall Period = 12 months



utilization to take home and return at the next class session. (See Glaxo's patients' questionnaire findings, below.)

Patients complete the same questionnaire at the last eight-week session. "We then begin following patients quarterly from the date of their last class," says Deborah O. Lucas, MPH, manager of clinical economics and outcomes assessment for Glaxo.

Three- and six-month follow-up surveys are conducted by an interactive voice response (IVR) system, she says. "However, we contract with a third-party data vendor to contact patients who don't respond to the IVR. We have an overall

Asthma Self-Management Program Spring 1996 Program Findings

QUESTIONS	BASELINE (n=63)	3-MONTH (n=31)	6-MONTH (n=62)
How often do asthma episodes wake you up at night?			
Never	27.0	77.4	41.7
Less than once a week	52.4	19.4	43.3
1-4 nights a week	7.9	3.2	13.3
5 or more nights a week	6.3	0.0	1.7
Usually more than once a night	6.3	0.0	0.0
In the past 4 weeks, did your asthma limit your physical activities?			
Not at all	30.2	58.1	52.5
Somewhat	42.9	41.9	37.5
A lot	26.9	0.0	9.8
In the past 4 weeks, did your asthma cause emotional problems (such as feeling anxious, depressed, or irritable)?			
Not at all	42.9	90.3	75.0
Somewhat	46.0	9.7	18.3
A lot	11.1	0.0	6.7
In the past 4 weeks, did your asthma cause you difficulty in doing your daily work, both inside and outside the house?			
Not at all	31.7	58.1	62.3
Somewhat	57.2	41.9	29.5
A lot	11.1	0.0	8.2
In the past 4 weeks, how much did your asthma interfere with your normal social activities with other people?			
Not at all	46.0	67.7	65.0
Somewhat	46.1	32.3	25
A lot	8.0	0.0	10.0
In the past 4 weeks, how much time have you missed from work, school, or your usual activities because of your asthma?			
Did not miss any	73.0	83.9	80.3
1 day or less	0.0	12.9	13.1
More than 1 day but less than 1 week	25.4	3.2	16.6
1 to 2 weeks	1.6	0.0	0.0

Source for both charts: Glaxo Wellcome Care Management, Research Triangle Park, NC.

response rate of 90%," she says.

In addition, Glaxo Wellcome mails patients questionnaires at 12 months. "We also use the third-party vendor to contact patients by phone who didn't mail back their questionnaires," says Lucas.

Glaxo considers its three-, six-, and 12-month follow-up contacts part of the intervention. Follow-up questionnaires are as much for learning re-enforcement as for data collection. If patients are asked if they are using their metered dose inhaler or keeping a diary of asthma triggers, the program administrators say the mere asking will serve as a trigger for renewed positive behaviors.

Glaxo Wellcome relies on standardized, validated outcomes measurement tools, which allow disease management programs to compare their outcomes to those of other programs.

The next issue Glaxo Wellcome hopes to measure is whether self-confidence is a strong predictor of positive outcomes in asthma management, says Lucas.

"We have built the whole concept of self-confidence into the program. We feel strongly that if patients believe they know how to manage their asthma it will reduce serious complications and improve outcomes," she says.

"We don't have any data for that yet, but we've designed the instruments to measure them and plan to capture that data in the future," Lucas explains. ■

CE objectives

Asthma Management will give readers a concise, dependable way to track the latest developments in the field, thus helping health care professionals improve patient care by using the latest management and care techniques, particularly for high-risk, high-cost patients.

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

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

EDITORIAL ADVISORY BOARD

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

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

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

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, Pediatrics
Texas Children's Hospital
Houston

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

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), \$259. Outside U.S., add \$30 per year, total prepaid in U.S. funds. One to nine additional copies, \$155 per year; 10 to 20 additional copies, \$104 per year. Call for more details. 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 \$43 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 Karen Wehwe at American Health Consultants®. Address: P.O. Box 740056, Atlanta, GA 30374. Telephone: (404) 262-5491. World Wide Web: <http://www.ahcpub.com>.

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.

Hours of operation:
8:30 a.m. - 4:30 p.m.

Editorial Questions

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