

# DISEASE STATE MANAGEMENT™

*Managing Chronic Illness Across the Continuum*

## INSIDE

- Four components of successful disease management programs . . . 75
- Study finds allergies are the most expensive medical condition . . . . . 77
- Figuring the costs of lost productivity . . . . . 77
- **Compliance update:**  
Is your patient noncompliant or suffering from social disorder? . . . . . 78
  - Resources and literature review to help you learn more about social phobias. . . . . 78
  - Profile of a phobia . . . . . 79
- Aggressive discharge plan cuts readmissions . . . . . 80
- How does acid reflux trigger asthma? . . . . . 82

■ **Inserted in this issue:**  
Tool helps screen for social anxiety disorder

**JULY  
1999**

**VOL. 5, NO. 7  
(pages 73-84)**

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## Don't develop your next DM program without these guidelines

*Here's how to define DM and what you need to do it right*

The term *disease management* (DM) has been part of the health care vocabulary in the United States for nearly a decade, but how it's defined varies widely from one organization to the next. In fact, your organization may be one of many that jumped on the DM bandwagon in the early 1990s without clearly defining the meaning or the scope of this now-common managed care concept.

It's not too late to go back to square one and assess how you now define and develop DM initiatives and correct any missteps, if necessary, say experts interviewed by *Disease State Management*.

Writing a concise working definition of disease management is the first step.

"Your definition of disease management should reflect the focus of your organization or business," notes **John C. McDonald**, RN, MS, CPHQ, administrator for general medicine and adult primary care at Vanderbilt University Medical Center in Nashville, TN. "A pharmaceutical company may have one definition and an acute-care facility may have another."

### **Defining DM**

Many organizations focus on one service or product, such as case management or health education, when they define and implement disease management programs, but Vanderbilt uses a more comprehensive definition, adds **Laurel Fuqua**, RN, MSN, administrator of the Gastrointestinal Liver and Nutrition Care Center and director of disease management at Vanderbilt University Medical Center.

"We are trying to evolve all of our disease management programming around a more comprehensive definition. We define disease management as proactive intervention in the identification, management, and treatment of disease to organize services and products to address the total care of the patient and reduce costs."

The key to Vanderbilt's definition is a focus on "population

management,” adds McDonald. “Your focus has to be to keep your population as healthy as possible. If you are healthy, let’s work to keep you healthy. If you have a disease, let’s keep you as healthy as possible by decreasing complications associated with that disease.”

“You can’t just say, ‘We have a lot of asthmatics. Let’s manage asthma.’ What will you do with the asthmatic who is also diabetic?” says **Peggy Pardoe**, RN, CCM, CPHQ, product development analyst for University Care with the University of Maryland Medical Center in Baltimore. “You have to understand the population you manage, not just the illness. Are your patients from a particular employer group? What does that employer do? Does the employer have specific population-based challenges?”

Also, find out where your patients live and which backgrounds they represent, Pardoe adds.

Pardoe notes that it’s also important to understand the popular medical culture of your patients. “Have a clear understanding of the current best practices for diabetes. Then, look at how your patients currently manage their diabetes. You have to understand what people are doing and why they are doing it, so that you can address those issues in your disease management programs.”

Another key step in developing effective disease management programs is to use a “patient-centric” approach, argues **Sanjaya Kumar**, MD, MSc, MPH, clinical project specialist with the Baton Rouge-based Louisiana Health Care Review, a peer review organization contracted by the Health Care Financing Administration in Baltimore to improve quality of care for Medicare recipients in Louisiana. “The individual patient — not the disease process or cost containment — must be the focal point of all attention in terms of interventions that will be carried out in your disease management programs,” he notes.

“I see disease management as the provision of coordinated, comprehensive care via a multidisciplinary team across the continuum of care to achieve improvement in identified outcomes,

such as functional status, quality of life, and medical costs,” says Kumar. “Disease management is no more than good clinical care across the continuum, if that is feasible under the current American health care system.”

### ***Are you ready?***

Whether you’re sitting down to rewrite or refine your definition of disease management or starting from scratch, you can’t just write your definition and then set it aside, cautions Pardoe. “You have to develop a definition that everyone in your organization agrees with. You can’t have renegades,” she says. “You must have a party line. That party line is going to drive every disease management program you develop. It’s the philosophy that determines everything else you do.”

Your definition of disease management forms the framework of the programs you develop, she notes. “Does your organization define disease management as pharmacy management? Do you look at disease management as health education? Do you separate disease management in your mind from case management? Or, do you want to meet all the needs of the patient with a comprehensive approach that includes all of those services and more?”

Fuqua and McDonald suggest that you ask the following questions to assess your organization’s readiness to develop and manage its own disease management programs:

- **What are your partnering capabilities and philosophies?**
- **How cost-conscious are your employees?**
- **What are your current quality efforts and how effective are those efforts?**
- **What data collection and monitoring capabilities do you currently have?**
- **What are your network relationships?**
- **What are your supplier relationships?**
- **What is your current financial exposure or risk?**

“These are key questions to answer to determine

## ***COMING IN FUTURE MONTHS***

■ The role of vaccination beyond disease prevention

■ Who is qualified to run your disease management initiatives?

■ Facing the menace: The newest treatments for hepatitis

■ High-powered help: Spirituality and coping with chronic illness

■ CF central: How a clinic model helps manage cystic fibrosis

your readiness to take on the development of effective disease management,” says Fuqua. “The answers to these questions will help you decide whether you should build your own programs or outsource. Every organization must answer those questions honestly. Most programs that fail do so because they haven’t given enough thought to those questions.”

Kumar suggests you add one more question to that list. “You must determine the boundaries or scope of your proposed disease management efforts,” he explains. “For example, do you want to intervene with all diabetics, or only those who need specific types of interventions, or only those with extremely high costs?”

### *Too good to be true?*

Homegrown disease management programs are often more valuable than vendor carve-outs, because once you build the infrastructure and developed your DM philosophy and methodology, you can apply those elements to any future disease management efforts, say Kumar and Pardoe.

However, if your organization’s infrastructure lacks the necessary elements to conduct effective disease management initiatives, you may consider turning to a disease management vendor. **(See related story, at right, for components of an effective disease management program.)**

Just remember, if it sounds too good to be true, it is, warns Kumar. “If the vendor shows you a dramatic decrease in terms of admission rates for a given population within a short time span, then I can assure you that there’s some fallacy built into the data.”

Don’t be swept away by a glossy brochure, adds Pardoe. “Look at the fine print, and ask lots of questions.”

Pardoe and Kumar suggest you ask vendors the following questions:

- **What studies were done?**
- **What scientific rigor was used in those studies?**
- **What was the study design methodology?**
- **What analytical methodology was used?**

“If you don’t examine what you are being shown, you may be tempted to jump into a risky arrangement,” Kumar cautions.

You may find a vendor can provide specialized services that your organization can’t. However, even when you use a vendor, you must stick to your own definition of disease management and

your own strategic goals, notes Pardoe.

“You develop that definition. From the definition comes the strategic plan for each of your disease management initiatives. You stick to it. If you don’t, you will be at the whim of vendors and you may end up with a disjointed approach to your entire disease management effort,” she says.

The key to successful partnerships with vendors is to clearly define the characteristics of your DM initiatives and make sure that the vendor commits to your philosophy, says Pardoe. “You must also establish exactly what you are purchasing and see if it fits that philosophy. Does the vendor offer the services your disease management strategy requires? For example, does the vendor provide case management, or just health education?”

The same holds true for outcomes. “If you chose a vendor, make sure that they are willing and able to gather the outcomes you need, not the outcomes that make the vendor look good,” she says.

Don’t be afraid to ask the vendor which software they are using to gather and analyze their data, adds Pardoe. “You may find that the software is commercially available and costs less to buy than the vendor’s services,” she notes. ■

## Know the DM essentials

### *Experts say you need these four components*

If your organization is already committed to developing disease management (DM) programs, there are some essential components necessary to successfully implement those programs. If your internal infrastructure lacks any of these components, your disease management programs may be destined for failure. They are:

**1. Leadership.** “You must have buy-in and support from the top down. Organizations who are truly doing disease management are creating a change in philosophy from fee-for-service, episodic care to comprehensive preventive care,” says **Laurel Fuqua**, RN, MSN, administrator of the Gastrointestinal Liver and Nutrition Care Center and director of disease management at Vanderbilt University Medical Center in Nashville, TN.

“If you can get your top people to buy into a disease management philosophy, then you can develop programs that are successful in the long

term, not just stop gap measures. Disease management that meets the needs of patients also meets the needs of organizations,” says **Peggy Pardoe**, RN, CCM, CPHQ, product development analyst for University Care with the University of Maryland Medical Center in Baltimore. “But you can’t save money without spending money. Disease management programs are costly. You must have support at the top.”

You must also have your providers on board, cautions **Sanjaya Kumar**, MD, MSc, MPH, clinical project specialist with the Baton Rouge-based Louisiana Health Care Review, a peer review organization contracted by the Health Care Financing Administration in Baltimore to improve quality of care for Medicare recipients in Louisiana. “Every time you develop a new disease management program, you must allow your providers a period of comment. Let your providers have input. They may add something you’ve overlooked. And, they are more likely to comply with your protocols.”

**2. Disease management mindset.** “You must ask some key questions to help you understand where your organization stands right now, today, in terms of disease management,” says Fuqua.

Questions you should consider include:

- **What percentage of our daily efforts focus now on disease prevention?**
- **What percentage of our services are available in outpatient and other alternative settings?**
- **To what extent have we carefully evaluated our current efforts at prevention and costs?**

“If the answer to any or all of those questions is 0%, then you have a lot of groundwork to do before your disease management programs succeed,” notes Fuqua.

**3. Integrated case management.** “Case management is the tool that assures that your standards of care for disease management are translated during the delivery of care,” explains **John C. McDonald**, RN, MS, CPHQ, administrator for general medicine and adult primary care at Vanderbilt University Medical Center. “If your disease management protocol calls for certain lab tests to be performed at regular intervals, case management is the tool you use, whether you are a primary care physician, physician extender or nurse, to make sure those tests are performed on schedule.”

Most organizations have some type of case management, notes Kumar. “Find out what is currently being done for patients in your organization. You may find that many of the functions you want to include in your disease management programs, in terms of care received and follow-up

after inpatient discharge, may already be taking place,” he says. “You may be able to coordinate your disease management efforts with those of the case management staff and work with them to coordinate your programs.”

You may need to change some of the operations of the case management department to better support your disease management programs, adds Kumar. “That’s when you realize again the importance of that top down buy-in for your disease management efforts.”

**4. Outcomes management capability.** “You have to be able to gather data that shows you’ve had an impact on patient health,” says McDonald. “That requires determining certain indicator points and tracking them. For example, we know that diabetics are less likely to develop chronic complications if their Hemoglobin A1C is kept as close as possible to 7%.”

“You have to figure out which outcomes will help prove the effectiveness of your efforts and then determine what systems you need to measure them,” Pardoe explains. “You don’t have to start out with a sophisticated information system. You can start small and expand as your program expands.”

### *How do you use your data?*

One way to determine your data analysis capabilities is to write a request for proposal (RFP) to your own organization, says Kumar. “Too many times, the right hand doesn’t know what the left hand is doing in large organizations,” he notes. “Have your disease management team perform a needs assessment, then send out a RFP to see what is already available in your own organization. In addition to data analysis, you’re going to need analytical support. You need to understand and interpret the data once it’s gathered. Check to see if your organization has an academic affiliation you can tap into. Publicize your needs. There are hidden people within your organization. Don’t reinvent the wheel.”

And, if you are going to the time and expense of gathering data, make sure it’s data you can really use, adds Kumar. “Don’t collect it if you’re not going to use it. Go back to your clinical goals and program parameters. Does the data you plan to gather support them?”

“Many of the functions you’ll want to perform can be done with readily available business software, like Microsoft™ Excel. Don’t let the need for information systems hold back your disease

management efforts,” says Kumar.

It's also important to determine a consistent approach to collecting outcome data for each disease management initiative you develop, says Pardoe. “This will save time and establish a uniform way of looking at outcomes, while comparing the effectiveness of your various disease management programs.” ■

## Survey finds allergies most expensive condition

*Productivity toll: \$1.4 million per 1,000 employees*

If you're debating what your next disease management initiative should be, you may want to look closely at the findings of a recently released study of health care costs in Florida.

The study found that allergies cost employers nearly \$1.4 million per 1,000 employees annually in lost productivity alone, more than any other medical condition. The recently released “Healthy People/Productive Community” survey was conducted by two Tampa-based companies, the Employers Health Coalition and the Employers Purchasing Alliance. The eye-opening data gathered from more than 3,500 employees of eight large Tampa-based employers have those employers looking to their health plans and local providers for help with allergy management.

Surveys often measure health plan member satisfaction or track medical claims. The Healthy People survey relied on employees to report what ails them and how much they are affected by those ailments, notes **Frank Brocato**, MSHA, DMin, president and CEO of the Employers Health Coalition. The survey is a second-generation tool, which followed an earlier measurement that identified the most prevalent diseases among employers, he adds.

### ***Sneeze-away productivity***

Allergies topped all other conditions in costs due to lost productivity. Nearly 28% of employees surveyed reported suffering from allergies. Those employees reported losing an average of 3.2 days every four weeks due to lowered productivity caused by allergy symptoms, and

### **How the Cost Formula Works**

**Annual costs = Productive days lost for a four-week period X 13 weeks**

**Example:** Annual costs due to allergy for an employer with 1,000 employees = 3.2 days lost to productivity X 279 employees affected by allergy X \$120 per day salary X 13 four-week periods = \$1,436,292 annual costs due to lost productivity.

another one-tenth of a day every four weeks for sick days associated with allergies. That means if the average employee earns \$15 per hour, companies are losing \$1.4 million per 1,000 employees annually due to allergies alone. (See box, above, for cost calculation formula.)

Other survey findings include:

- **Depression costs employers \$880,152 annually in lost productivity and affects roughly 9.1% of employees surveyed.**
- **Hypertension costs employers \$520,884 annually in lost productivity and affects roughly 15.9% of employees surveyed.**
- **Other, non-allergy related, respiratory conditions cost employers \$398,580 annually in lost productivity and affects 7.3% of employees surveyed.**
- **Asthma costs employers \$275,808 annually in lost productivity and affects 5.2% of employees surveyed.**
- **Diabetes costs employers \$187,200 annually in lost productivity and affects 5% of employees surveyed.**
- **Heart disease costs employers \$148,512 in lost productivity annually and affects 3.4% of employees surveyed.**
- **Hepatitis costs employers \$36,504 annually in lost productivity and affects 1.3% of employees surveyed.**
- **High-risk pregnancy costs employers \$46,644 in lost productivity annually and affects 2.3% of employees surveyed.**
- **Breast cancer costs employers \$25,272 annually in lost productivity and affects .6% of employees surveyed.**

*For more information on the survey, contact the Employers Health Coalition, 1111 N. Westshore Blvd., Suite 608, Tampa, FL 33607-4702. Telephone: (813) 281-5665. Fax: (813) 286-2730. ■*

# Do your patients have social anxiety disorders?

*Study finds 8.2% of HMO members affected*

Your patient consistently refuses to attend a disease specific support group.

Another appears unwilling to keep follow-up appointments or schedule routine checkups.

If one of these scenarios strikes a familiar chord, it may be time to ask yourself whether your noncompliant patient may be suffering in silence from a disabling psychiatric disorder.

More than 10 million Americans suffer from social anxiety disorder. It is the third most common psychiatric illness in the United States, following closely behind depression and alcoholism. Yet, despite its prevalence, only 5% of patients with social anxiety disorder receive some form of treatment. (See box, below, for studies on social anxiety disorder.)

"Most patients with social anxiety disorder go untreated because the symptoms don't shout at you like those of depression, or panic attacks," notes **Jonathan R.T. Davidson, MD**, professor in the department of psychiatry and behavioral science at Duke University Medical Center in Durham, NC, and director of the Anxiety and Traumatic Stress Program. "These people are

quiet and reticent. Doctors aren't trained to take them seriously."

Yet, left untreated, social anxiety disorder can be both socially and economically devastating to individuals and society. In addition, from a disease management perspective, one study found that 70% to 80% of patients with social anxiety disorder suffer from additional psychiatric conditions that add to the cost of treatment.

## **Presentation in Puerto Rico**

A study of more than 9,000 members of a large health maintenance organization (HMO) presented by Davidson and several colleagues at the 37th annual meeting of the American College of Neuropsychopharmacology in Puerto Rico late last year found an 8.2% prevalence rate of generalized social phobia (GSP). Compared with HMO members without GSP, patients with social phobia had significantly more missed work hours, lower work and home productivity, greater overall disability, and more limitations on education. (See box on p. 79 for more data on this study.)

There are some behaviors which should cause providers to investigate the possibility of social anxiety disorder, notes Davidson. (See assessment tool, inserted in this issue.)

They include:

- **Absenteeism at critical times.** "If you have a patient out on disability due to a chronic illness

## More information on social phobias

The following associations have educational material available on social phobias:

- **Anxiety Disorders Association of America**, 1900 Parklawn Drive, Suite 100, Rockville, MD 20852. Telephone: (301) 231-9259. Web site: [www.adaa.org](http://www.adaa.org).
- **American Psychiatric Association**, 1400 K St. N.W., Washington, DC 20005. Telephone: (202) 682-6000. Web site: [www.psych.org](http://www.psych.org).
- **Freedom From Fear**, 308 Seaview Ave., Staten Island, NY 10305. Telephone: (718) 351-1717. E-mail: [FFFADSD@aol.com](mailto:FFFADSD@aol.com).

The three associations form the Social Anxiety Disorder Coalition and manage an informational Web site at [www.allergictopeople.com](http://www.allergictopeople.com).

## *Literature review*

Providers also may want to review the following articles:

- Ballinger JC, Davidson JR, Lecrubier YU, et al. Consensus statement on social anxiety disorder from the International Consensus Group on depression and anxiety. *J Clin Psychiatry* 1998; 59 (suppl 17):56.
- Schneier SR, Johnson J, et al. Social Phobia: Comorbidity and morbidity in an epidemiologic sample. *Arch Gen Psychiatry* 1992; 49:285.
- Stein MB, Liebowitz MR, Lydiard BR, et al. Paxoetine treatment of generalized social phobia. *JAMA* 1998; 280(8):709.
- Van Ameringen M, Mancini C, et al. Relationship of social phobia with other psychiatric illnesses. *J Aff Disord* 1991; 21:93-99. ■

## Profile of a phobia

A study of more than 9,000 members of a large health maintenance organization (HMO) presented recently at the 37th Annual Meeting of the American College of Neuropsychopharmacology in Las Croabas, Puerto Rico, revealed the following profile of individuals with generalized social phobia (GSP):

- Mean age of patients was 42.81 years.
- Mean age of onset was 12.71 years.
- Nearly 29% of GSP patients had a mental health visit in the past 12 months.
- Nearly 30% of GSP patients had filled at least one antidepressant prescription.
- GSP patients were 10% less likely to graduate from college than HMO members without GSP.
- Nearly 25% of GSP patients reported a lifetime history of suicide attempts, compared to 5% of HMO members without GSP.
- Patients with GSP had total health care costs of \$2,466, compared to \$1,959 for HMO members without GSP during the same reporting period, for a difference of \$507.
- Roughly 44% of GSP patients had a comorbid diagnosis on tool to measure mental health and substance abuse. In 70% of GSP patients, the onset of GSP preceded the onset of the comorbid disorder.
- Only .5% of the 8.2% of HMO members identified with GSP had a diagnosis of social phobia in the HMO's administrative database.

Another study presented in May at the annual meeting of the American Psychiatric Association in Washington, DC, found that most individuals with social anxiety disorder wait more than 10 years to seek treatment.

Researchers from the New York State Psychiatric Institute in New York City examined help-seeking patterns in a sample of people with social anxiety disorder who participated in the 1998 National Anxiety Disorders Screening Day.

A telephone follow-up survey of 200 screening participants who screened positive found the following:

- Average delay from anxiety onset to first professional contact for treatment was 12.7 years.
- Average delay to confide in a friend or family member about social anxiety was 7.7 years.
- Most commonly cited reasons for not seeking treatment were uncertainty of where to go for help (46%); problems affording treatment or lack of mental health benefits (51%); a belief that anxiety could be controlled without professional help (21%); and a fear of what others might think (16%).
- Only 20% of patients who sought treatment were diagnosed with social anxiety disorder.
- More than half of those who did receive a diagnosis of social anxiety disorder were prescribed medications or received psychotherapy. Of those receiving medication, 70% felt their therapy was helpful in relieving their anxiety. Of those receiving psychotherapy, 86% felt their treatment was helpful in relieving their anxiety.

*Source:* Katzelnick DJ, Kobak KA, Helstad CP, et al. The direct and indirect costs of social phobia in managed care patients. Presented at the 37th annual Meeting of the American College of Neuropsychopharmacology. Las Croabas, Puerto Rico; December 1998. ■

such as congestive heart failure who fails to show up for an important evaluation or return-to-work conference, it may be a form of avoidance that is the hallmark of this disease.”

- **Excessive sweating.**
- **Nervous trembling.**
- **Blushing easily.**
- **Avoidance of eye contact.** “People with social anxiety disorder feel very uncomfortable making eye contact, especially with authority figures,” says Davidson.
- **Substance abuse.** “People with this disorder

often use alcohol as a form of self-treatment. This tends to be more prevalent in men than women.”

The good news is that social anxiety disorder is easily treatable, notes Davidson.

“These patients are easy and pleasant to work with. They want to please others and are grateful for any improvement,” he notes.

There are several classes of drugs that are very effective in the treatment of social anxiety disorder, including selective serotonin reuptake inhibitors (SSRIs), monamine oxidase inhibitors (MAOIs), and benzodiazepines. In addition,

patients sometimes benefit from cognitive or behavioral therapy, says Davidson.

Not only are effective treatments available, but most patients have remarkable improvement within three months of treatment. "If you have a patient who has been on drug therapy for social anxiety disorder for more than 12 months without improvement, you need to investigate why," he notes.

"There are great economic advantages in providing maximum health benefits and facilitating access to treatment for patients with social anxiety disorder," Davidson notes. "We must treat this as a real illness." ■

## Aggressive discharge plan cuts readmissions, costs

*Advance practice nurse supervises care*

It's a familiar situation that often becomes a slippery slope: Elderly patients with congestive heart failure (CHF) and other diseases become unable to control their conditions. They end up in the hospital and need intensive treatment to get a better grip on their declining health.

But when these patients are stabilized and ready to be discharged, what happens next? What does it take to make that hospitalization an isolated incident and not the first in a string of admissions?

A new study reports breaking the chain of acute hospital visits requires more than treating immediate conditions during the first hospital stay. An aggressive discharge plan — beginning soon after the patient is admitted, continuing while the patient is in the hospital, and leading to follow-up from a specially trained caregiver — gets more control over chronic diseases. The intense intervention during the month after a hospital stay brings benefits for five more months: a higher quality of life for patients, shorter initial stays, fewer subsequent hospitalizations, and potential savings of thousands of dollars per patient.

Researchers from the University of Pennsylvania in Philadelphia say they used advanced practice nurses (APNs) to track hospital care, to anticipate what patients would need once discharged, and to follow up at their homes. The benefit, besides saving a bundle of money, is establishing a game plan

for these fragile patients that can be tailored to fit individual needs.

"It really requires creating systems that traditionally didn't exist," says lead researcher **Mary D. Naylor**, PhD, FAAN, RN, an associate professor at Penn's School of Nursing.

Naylor explains this approach answers two major problems with these types of cases. First, she says, when these patients come into the hospital, there often isn't a protocol for assessing what it will take to keep them from coming back. And second, after a patient is discharged, the physician often isn't right at the bedside to watch for problems and treat them. The patient would usually have to get sick enough to warrant another trip to the hospital, where the cycle begins again with the patient losing ground and the meter running.

The study was published in the Feb. 17 issue of the *Journal of the American Medical Association*.

Naylor and her team studied two groups of these patients. The control group took the traditional route of hospital treatment and follow-up, according to what Medicare would approve. The study group received these special interventions:

- **An APN visited the patient within the first 48 hours of hospital admission.**
- **APN visits were made at least every 48 hours of the stay.**
- **After discharge, an APN visited within 48 hours, then seven to 10 days later.**
- **Additional visits could be added without limit.**
- **APNs were available by telephone seven days a week, 8 a.m. to 10 p.m. during the week and until noon on weekends.**
- **APNs called patients at least once a week.**

### *Details of the study*

Participants of both groups were at least 65 years old and were hospitalized between 1992 and 1996 for CHF, angina, myocardial infarction, respiratory tract infection, coronary artery bypass graft, cardiac valve replacement, a major procedure on either the small or large bowel, or orthopedic procedures of lower extremities.

The two groups of about 200 people each were randomized to this route or the traditional hospitalization and discharge. The savings from keeping the APN group out of the hospital were significant. This group saved about half of the \$1.2 million Medicare reimbursements needed to treat the control group in return hospital trips, averaging about

\$3,000 per patient. The researchers say the intervention group had these benefits up to six months after they first got out of the hospital:

- **Patients had 17% fewer single readmissions.**
- **Multiple readmissions were reduced 8%.**
- **Length of stay was reduced (1.53 vs. 4.09 days).**
- **The time between hospitalizations grew longer.** (One in four control-group patients was rehospitalized within 48 days of the first stay. It took 133 days for a fourth of the intervention group to require admission.)

The report notes patients without CHF had more success with the intervention than the patients with the disease.

To take part in the study, all participants had to speak English, be alert or oriented at admission time, and be reachable by phone as well as have at least one of these indicators associated with poor discharge outcomes:

- **age 80 or older;**
- **inadequate support systems;**
- **multiple, active chronic health problems;**
- **history of depression;**
- **moderate to severe impairment in function;**
- **multiple hospitalizations during the prior six months;**
- **hospitalization in the last 30 days;**
- **fair or poor self-rating of health;**
- **history of noncompliance to a treatment plan.**

Naylor says the benefits of the intervention did not last beyond six months after discharge. From this point in the study, the numbers in acute trips to the doctor or emergency department were not statistically different between the study and traditional groups.

“What we’ve learned in this trial is the improved outcomes weren’t long-term,” Naylor says, noting next she will look at CHF patients by themselves as well as study patients without intact cognitive skills, to determine if such an intervention can be helpful to them.

“I think it will probably work,” says **Peter A. Boling**, MD, associate professor of internal medicine at the division of general medicine at Virginia Commonwealth University’s Medical College of Virginia campus in Richmond. Boling, immediate past president of the American Academy of Home Care Physicians and author of the commentary to the *JAMA* study, says the key is working with the patients’ support system at home.

By the time these types of patients develop

extensive chronic illnesses, chances are good that there are either family members or a nursing home staff caring for the patients on a long-term basis, and they can be the ones who receive instruction, Boling says.

“The patient doesn’t have to be the target with educational materials,” he says.

Boling, who has worked with nurse practitioners for 12 years to deliver similar inpatient and outpatient services, contacted Naylor for advice on ways to provide short-term interventions in Virginia. Because both Philadelphia and Richmond are urban areas, Boling says much of Naylor’s techniques are applicable to his practice.

Naylor is now testing outlying areas to see if such follow-up is as helpful to suburban and rural communities. She adds that some people in urban areas have “terrible general health,” and much of the work needed to transition patients out of the hospital focuses on helping change the lifelong habits of elderly patients. They may have “fundamentally poor nutrition.” Many do not have good sleep habits or know anything about exercise.

Naylor says when the patient is in the hospital, it’s a good time to look at the coordination of care while teaching family members about what they need to do to help keep their loved ones in better condition. But after the patient leaves, the APNs have to make sure patients understand how to stay out of the hospital.

“We do things like go to the patient’s home and go through the medicine cabinet,” she says. It will likely contain medications used to treat the patient before the trip to the hospital. But chances are good the situation and treatment strategy has changed since those drugs were prescribed. Here is where the new treatment strategy may begin to break down very quickly.

### ***All involved should know routine***

Everyone involved with the patient’s care needs to know the new treatment strategy. Should the patient continue taking all the medicine in the cabinet? Which drugs should be stopped or have a change in dosage? Are there any medications that should be discontinued because a replacement has been prescribed?

The patient needs to be kept on track. In this case, the APNs often know how to advise patients to rectify drug routines or are connected to other team members such as physicians or pharmacists so the program stays on course.

Being able to afford the prescriptions also is an important issue, Naylor notes. Where appropriate, the APN can get patients involved with local programs that offer financial aid.

As the studies continue, Naylor says her team is developing a protocol to help guide caregivers through a hospital discharge and follow-up. The care team has to watch out for situations such as the patient returning to the family physician for treatment and ensuring the patient receives only one set of prescriptions and instructions.

"It's critical to talk about having one plan before you make changes," she says. "It seems like simple things, but this is where patients can lose continuity." The nurse intervention can find those trigger points and identify when the patient is vulnerable.

Situations can be as straightforward as understanding a particular CHF patient insists on eating a big bowl of soup with Sunday dinner. An intervention in this case would have to take this dietary habit into account and find a way to keep fluids within healthy limits by restricting everything else in the diet on that day.

Being adaptable means having access to a multispecialty team. Beside physicians and nurses, intervention teams include pharmacists, nutritionists, physical therapists, and others. "We think we have an understanding here," Naylor adds. "We can apply it to personal cases." ■

## Acid reflux: How does this condition trigger asthma?

Gastroesophageal reflux disease (GERD), commonly known as acid reflux, is common among asthmatics and can trigger attacks. But scientists and clinicians continue to debate how often the two are related, the precise pathophysiology, and its clinical significance.

Most likely, stomach contents back up, irritating the esophagus. Neuroreflexes cause bronchoconstrictions and, in turn, breathing problems.

The digestive tract is one of the most threatening systems to the lungs, says **David Henke**, MD, pulmonologist and associate professor of medicine at the University of North Carolina in Chapel Hill. "Just refluxing up into the esophagus is enough to cause problems."

Many of the 15 million Americans who suffer heartburn every day don't consult their doctors,

and therefore, never learn their problem may be the much more serious GERD.

Yet, without proper treatment, acid reflux can cause serious problems, including asthma symptoms, severe chest pain, a narrowing or obstruction of the esophagus, bleeding, and a pre-cancerous condition known as Barrett's esophagus.

In response, the American College of Gastroenterology has embarked on a national education campaign, hoping to alert people to the potential problem and educate them about the dozens of over-the-counter medications available for heartburn.

### *How acid reflux occurs*

Acid reflux occurs when the muscle valve at the lower end of the esophagus fails to function properly, allowing acid from the stomach to back up into the esophagus. Reflux is more common after meals, especially those high in fat, since fat delays gastric emptying. Typical symptoms of acid reflux include recurrent heartburn that radiates around the chest, that worsens when lying down or bending over, or that's eased by consuming water or antacids. Other symptoms include a sensation of acid refluxing into the windpipe, causing shortness of breath. Patients also may feel a sense of food being trapped behind the breastbone, black bowel movements, and blood in vomit.

"It really causes some significant problems in people," Henke says. "In pulmonary practices, it's a pretty important concern in patients that have asthma."

If over-the-counter or prescription medications don't alleviate persistent heartburn, the problem may be GERD.

### *The relationship between asthma and GERD*

A relationship between asthma and GERD was first found in the 1960s when patients reported their asthma symptoms were eliminated after surgery for acid reflux.

Researchers and clinicians believe there are two mechanisms at play:

- In the leading theory, the acid reflux erodes the epithelial layer of the mucosa, exposing vagal nerve endings. The esophageal receptors become more sensitive to refluxed acid. The receptors then trigger bronchospasms.

"Acid reflux is an important trigger for asthma,"

says **Benjamin Interiano**, MD, associate professor of medicine in the pulmonary section at Baylor College of Medicine in Houston. In fact, reflux may be the sole cause of symptoms in some asthmatics.

- In a less-common theory, patients aspirate gastric acid into the lungs. Recent research shows this is not likely to be a primary cause of reflux-triggered asthma.

Coughing also may promote reflux. It weakens the sphincter, allowing for reflux, says **Frederick Leickly**, MD, associate professor of medicine at the Indiana University School of Medicine and a pediatric pulmonologist at Riley Hospital for Children, which is affiliated with the School of Medicine in Indianapolis.

### ***When asthmatics also have GERD***

Just how many asthmatics also suffer from GERD remains unclear. Identifying acid reflux has become much more effective, so clinicians diagnose more people with it.

“Now it’s so common that it’s hard to make for a convincing association,” says **Peyton Eggleston**, MD, professor of pediatrics and pediatric immunologist at Johns Hopkins Children’s at Johns Hopkins University in Baltimore.

Recent studies show that up to 80% of asthmatics will have an abnormal lower sphincter, say physicians and researchers who produce an asthma Web site for *The Journal of the American Medical Association* ([www.ama-assn.org/special/asthma/treatmnt/updates/gerd.htm](http://www.ama-assn.org/special/asthma/treatmnt/updates/gerd.htm)).

Experts point to these clues that GERD may be aggravating asthma:

- **Asthma occurs for the first time during adulthood.**
- **Asthma gets worse after meals, lying down, or exercise.**
- **Asthma gets worse at night.**

“Questions regarding symptoms of GERD should become standard in the evaluation of patients with asthma,” wrote William G. Simpson, MD, in his April 24, 1995, study about the asthma-GERD connection in the journal *Internal Medicine*.

Patients with nocturnal asthma or who develop nighttime coughing, choking, wheezing, or hoarseness upon waking also suggest GERD is occurring while they sleep. Asthma also may worsen after events that also affect GERD such as eating meals, drinking alcohol, reclining, and using bronchodilators such as theophylline and systemic beta-adrenergic agonists.

Doctors suggest testing asthma patients for acid reflux if their symptoms are tied to factors known to cause GERD, namely reclining, consuming alcohol, and using the drug theophylline.

And patients whose asthma routinely worsens at night “is one of the first things I look for in their history to suggest reflux may be playing a role,” Henke says.

Testing all asthmatics, however, isn’t cost-effective today. Yet, doctors note that the cost of treating severe GERD-related problems, such as Barrett’s esophagus, could easily outweigh the cost of evaluating patients.

“If the asthma is not going as it should go, it’s one of the things you should look for,” Leickly says.

Some physicians go ahead and treat patients for presumed GERD, but that can cause problems

**Disease State Management™** (ISSN# 1087-030X) is published monthly by American Health Consultants®, 3525 Piedmont Road, Building Six, Piedmont Center, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodical postage paid at Atlanta, GA 30304. POSTMASTER: Send address changes to **Disease State Management™**, P.O. Box 740059, Atlanta, GA 30374.

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**Subscription rates:** U.S.A., one year (12 issues), \$429. Outside U.S., add \$30 per year, total prepaid in U.S. funds. One to nine additional copies, \$257 per year; 10 or more additional copies, \$172 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 \$72 each. (GST registration number R128870672.)

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#### **Editorial Questions**

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with patients complying with medication and lifestyle changes, Henke says. It helps to confirm the problem so patients understand the existence and severity of the problem.

There are several testing options, but none can prove definitively that a patient's asthma is caused by acid reflux. In order to find out if a person has reflux and if it is causing any problems, including asthma, one common test measures the amount of acid that escapes from the stomach into the esophagus. This involves a 24-hour pH monitoring of the esophagus. A pH value of less than 4 for more than 4% of the test time indicates GERD.

Asthmatics also keep a diary of wheezing to see if it relates to changes in pH. Respiratory symptoms that develop either during an episode of acid reflux or within 10 minutes after are considered correlated and suggest GERD is triggering them. However, developing acid reflux after the onset of pulmonary symptoms suggests the opposite, Simpson wrote.

Another reliable method in evaluating an asthma patient for reflux is endoscopy. If endoscopy shows mucosal erosion, GERD can be the problem.

Experts note the most simple treatment is to advise patients to elevate the heads of their beds using a brick, block of wood, or something similar. The idea is to use gravity to help keep stomach contents from backing up.

This often reduces the problem and may even eliminate it. In fact, it's nearly as useful as therapy with histamine<sub>2</sub>-receptor blockers, or H<sub>2</sub> blockers.

Henke also suggests overweight patients lose weight and that all patients not eat late at night or drink carbonated beverages before bed. Patients also should avoid foods that cause them heartburn.

### **Considerations for drug therapy**

When a patient suffers erosive esophagitis, only drugs that reduce the output of hydrogen by the parietal cell will heal erosions. These include H<sub>2</sub> blockers and omeprazole, which is usually effective in patients whose erosive esophagitis is resistant to H<sub>2</sub> blockers.

Acid reflux treatments may benefit asthmatics — and vice versa — further evidence supporting a relationship between bronchospasms and GERD.

“In some patients, once you stop the reflux, the

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asthma goes away,” says **Allan Rashford, MD**, a pulmonologist and internal medicine specialist in private practice in Charleston, SC.

Several studies also have shown that surgery to correct severe reflux may alleviate asthma, perhaps more than long-term treatments. Surgery may be needed if medical therapy isn't effective, if the patient is noncompliant, or when a patient is young and faced with a lifetime of medical therapy. However, surgery may not benefit patients suffering allergic asthma.

On the other hand, some asthma treatments can worsen acid reflux. Both systemic and oral bronchodilators relax the lower esophageal sphincter and can lead to GERD. The risk to patients is winding up in a therapy cycle of asthma, bronchodilator therapy, and reflux.

For instance, theophylline relaxes the lower esophageal sphincter and stimulates gastric secretion. The reduced sphincter pressure generally lasts about four hours. Eggleston said that use of theophylline is fading due to toxicities, although it's still used to treat about 15% to 20% of children. ■