

# CHF DISEASE MANAGEMENT™

*The Complete Congestive Heart Failure Resource*

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## Aggressive discharge plan cuts readmissions, slashes costs

*Will the advanced practice nurse lead the charge to intervene?*

**I**t's a familiar situation that often becomes a slippery slope: Elderly patients with 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,

### KEY POINTS

- A study shows when elderly patients are hospitalized for CHF and other morbidities, an aggressive discharge plan that begins in the hospital and continues with home visits from advanced practice nurses, cut readmission rates and saved \$600,000 in associated costs.
- The study underscores the need to create a discharge plan long before the patient is ready to leave the hospital and to use an advanced practice nurse intervention to supervise transitions of care when the patient goes home.
- Benefits were seen in patient outcomes until six months after discharge, when the rates of readmission no longer differed with the control group receiving traditional 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.

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

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■ Five effective strategies for reducing readmissions

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.

### ***Pay attention to the transitions***

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.” ■

# It takes a nurse . . . but what kind?

*Nurses vary as much as patients*

A recent study from the University of Pennsylvania in Philadelphia shows how supervision from advanced practice nurses (APNs) during an initial hospitalization and after discharge can help keep more elderly patients from being readmitted to treat chronic illness. Lead researcher **Mary D. Naylor**, PhD, FAAN, RN, says her control group of similarly aged and debilitated patients often needed more admissions because they did not receive such aggressive disease management.

In his commentary in the *Journal of the American Medical Association* about Naylor's study, **Peter A. Boling**, MD, notes "medicine is entering an era of chronic disease management." Boling is associate professor of internal medicine at the division of general medicine at Virginia Commonwealth University's Medical College of Virginia campus in Richmond and immediate past president of the American Academy of Home Care Physicians.

In the formal hospital setting, nurses track symptoms and tell their patients what to do to keep their conditions under control. And they do the same in a visit to a patient's home.

"Nurses' history had their roots in home care," Naylor says, noting nurses are "probably the predominant focus group."

But while many agree that a nurse truly belongs in this role, it still isn't clear on how much training is needed to be the disease management supervisor.

Naylor's study used five APNs; they have master's degrees in gerontologic nursing. In the

study, the team credited their clinical acumen and expertise working with physicians and other professional caregivers as benefiting the intervention efforts.

Some participants in the control group had access to home visits through the Visiting Nurse Association (VNA). In the study, these nurses are described as mostly generalists with bachelor's degrees.

Naylor says the APN is the right choice for the study's cases not only because of clinical experience, but because of "a fair level of risk" in terms of how much responsibility the nurse is taking when helping to make the decisions for the patient's care. And in the dynamic of working with doctors, the APNs "create a collaborative relationship." They "negotiate a plan of care," and physicians and APNs have "a great deal of respect in each other's judgment."

Not every elderly patient with heart failure may need this degree of care, however. "Traditional hospitalization and follow-up by VNA may be just fine," she says. "For some, it's not adequate."

A big consideration is getting access to nursing at home, she says. In her study, six in 10 patients did not qualify for referral for a traditional home visit, although the study suggests they could get a lot of help from them. If patients can get around on their own, Naylor says, they are not eligible for a visiting nurse through Medicare, though they may still need a lot of medical attention.

Not all agree with Naylor when it comes to determining who is able to provide home services to chronically ill patients in order to keep them out of the hospital. "This is nothing new," says **Pamela Sawyer**, RN, MHA, vice president of business development and contracts for the Visiting Nurse Associations of America, the national organization that supports state VNA programs from its Boston headquarters. "VNA invented the profession 110 to 120 years ago."

Sawyer, who says she was "a bit taken aback" by the study, says the intervention sounds a lot like what VNA members do. "They described the patient we all see," she says, referring to the subjects in Naylor's study. "These were the people we took care of. We called up on the weekends to ask 'are you OK, Mrs. Smith?'"

As far as financing, Sawyer says she sees problems in keeping the number of visits open to the discretion of the nurse, which is hard to manage if a hospital works on a budgeted dollar amount per patient, as VNA operates. Further, Sawyer says the VNA has even tougher financial restrictions

## KEY POINTS

- The recent study of CHF patient follow-up after hospital discharge used advanced practice nurses to do the patient interventions.
- Opinions vary on how much training is enough to perform CHF patient interventions at home.
- Formal CHF programs could use a variety of nurses to treat a CHF patient at home, depending on the financial profile of individual medical systems and the patient's needs.

imposed on it than the study implies because of changes in reimbursement rules that went into effect a year after the study began. Under the Health Care Financing Administration's interim payment system, VNA must use 1993 reimbursement rates to fund 1999 programs.

It is financial restriction that forces VNA to cut back on experienced personnel, Sawyer says — but highly trained nurses do work for VNA, she says, as many have come from cardiac care units and the intensive care units, which have shown them how to provide sophisticated care at home.

And aside from the formal training, Sawyer notes VNA nurses know the communities where the patients live. These nurses, she says, know the community services in the area such as churches and support groups that can help when resources run short. “They know all that,” Sawyer says, adding, “They work with all these things at their fingertips.

“I agree that home care keeps people out of the hospital.” She says. “I question if you need an APN to do it.”

“I don't think the VNA could do this,” says Boling. He notes whoever performs this sort of care has to know what's going on with the patient while he or she is still in the hospital. If treatment changes need to be made, such as with medication, this caregiver could either do it personally or arrange for it to be done. VNA nurses usually do not have pharmacotherapy training and would not be appropriate.

Also, the caregiver needs to be working with doctors and pharmacists in the hospital, and most of the time, the VNAs don't have those connections. But Boling notes: “I could be proved wrong by another study.”

He says in order to pay for Naylor's type of intervention, individual health systems will have to develop their own programs, analyzing their own costs and determining how much the program could save. Naylor, whose study was funded by grants from the National Institutes of Health, says savings such as those in her study will justify funding individual programs. The price of the advanced practitioner will cost more than the VNA nurse, she says. In the study, for example, the APN's fee was 20% more than Medicare reimbursement for a VNA nurse.

Filling in the details on which nurse to use for each situation will be good for the health care industry, says **Sharon L. Merritt**, RN, MSN, EdD, associate professor at The University of Illinois-Chicago College of Nursing. More people will

realize that the title “nurse” is used for a spectrum of caregivers. They range from two-year junior college graduates with a year of clinical experience to the advanced practice nurses who may hold a doctorate and trained beside medical residents in their third or fourth year of their clinical programs.

“What drives me absolutely crazy is the thought that a nurse is a nurse is a nurse,” Merritt says. She adds that determining which nurse is used will eventually come down to the need of the patient. “The sicker the patient, the more advanced person you need.”

“It depends on what's being done,” adds **Ellen Daroszewski**, RN, PhD, ACNP, nurse practitioner for the advanced heart failure clinic at Cedars-Sinai Medical Center in Los Angeles. The nurses who are prepared with an associate's or a bachelor's degree have some wonderful skills, she says, but evaluating a CHF patient's needs and determining the proper comprehensive treatment is best done by someone at the advanced practice level.

Many of these experts note nurses will be able find their niche in treating CHF patients — whether it be in planning, delivering, or administering the treatment. But since the advanced practice caregiver has some degree of authority to prescribe medication, these nurses (and pharmacists in some cases) will handle this aspect of care with physicians. ■

## Study sees intriguing CHF findings Down Under

*One intervention showed benefits 18 months later*

Researchers in Australia report in the *Archives of Internal Medicine* when CHF patients received one home care intervention a week after they were discharged from the hospital, the benefits could be seen 18 months later.

**Simon Stewart**, BA, BN; **David Horowitz**, MBBS, PhD; and the rest of their research team from the cardiology unit at Queen Elizabeth hospital in Woodville, South Australia, compared two groups of about 50 CHF patients. One group was randomized to usual care, and the other received a home care intervention by a nurse and a pharmacist a week after getting out of the hospital.

In the 18 months following the hospitalization,

## KEY POINTS

- An Australian study showed CHF patients receiving a home visit intervention a week after leaving the hospital benefited up to 18 months later, compared to a control group receiving usual care without an intervention.
- Researchers believe aiding compliance, motivating family members to give better home care, educating patients, and improving use of available medical care contributed to the intervention's success. The authors are not certain what exactly kept the study group out of the hospital longer than the control group.
- Interventions were performed together by nurses and pharmacists.

the intervention group had nearly half the number of unplanned readmissions (64 vs. 125) and a fourth of the out-of-hospital deaths (two vs. nine). Among patients who were admitted to the hospital again, patients who received the home visit had shorter stays and had fewer readmissions. The intervention group also had half the hospital costs as the patients who went the usual route.

The patients in the control group (who received usual care) were reviewed by their regular physician post-discharge and received a planned hospital outpatient review by a cardiologist within four weeks of discharge.

The authors wrote that getting family members to step up their supervision of the patient at home, improving compliance, teaching about the goals of treatment, and getting better use out of available medical care may help account for the differences in outcome of the two groups. But what exactly the visiting practitioners did to get the results "is unlikely to be elucidated."

"We cannot dissect out mechanisms of benefit easily, but suspect that improved patient understanding and compliance are critical factors, as is appreciation of any early clinical deterioration post-discharge," Horowitz says, responding to questions from *CHF Disease Management* by e-mail. "Obviously, old age, decreased mentation, and infirmity, as well as polypharmacy and poor understanding may all be relevant here."

Patients in both groups are described as receiving proper pharmacotherapy of diuretics, digoxin, and ACE inhibitors and presented these symptoms of CHF:

- left ventricular ejection fraction of 55% or lower;

- NYHA Class II, III or IV status;
- a history of at least one admission for acute heart failure.

The goals of the single intervention were:

- Optimize medication management.
- Identify early clinical deterioration.
- Intensify medical follow-up and caregiver vigilance where appropriate.

The report notes that almost all of the visited patients showed they didn't know enough about why they were taking the medications, as well as what the desired and undesired effects were. About half of the patients were not complying with their medication regimen. At the time of the visit, a third of the patients were referred to their primary care physician because they seemed to be deteriorating or having adverse effects to their medication.

Horowitz notes the study group was not limited to one visit because of cost constraints. But they were conscious of cost-effectiveness considerations to make it easier to implement if the practice is accepted in the future. (A study intervention costs \$190 Australian, or about \$295 U.S.)

The nurses who participated in the intervention were experienced in cardiac patient management, such as those who had an extensive coronary care unit background.

Unlike the recent study from the University of Pennsylvania, there was no interaction between the intervention staff and the patients when they were still in the hospital before discharge. (See cover story for more on **Mary D. Naylor's study at the University of Pennsylvania.**)

In terms of the mental status of patients, Horowitz says "cognition was not necessarily normal, but patients were discharged home rather than to a nursing home, etc."

In the study, the authors listed three ways to refine the intervention:

- Provide specific education materials about diet, fluid management, and exercise for CHF patients.
- Identify which patients showed the highest potential to suffer recurrent admissions.
- Offer repeated visits to patients who had recurrent admissions despite having had the initial intervention.

Horowitz says work is continuing. "The hospital has no formal ongoing support program. But we will shortly be presenting the results of a larger and more detailed study performed by Simon Stewart."

## Suggested readings

1. *Archives of Internal Medicine* 1999; 159:256-261
2. Rich MW, et al. Effect of a multi-disciplinary intervention on medication compliance with CHF. *Am J Med* 1996; 101:270-276.
3. Alessi C, et al. The process of care in preventive in-home comprehensive geriatric assessment. *J Am Geriatr Soc* 1997; 45:1,044-1,050.
4. Stewart S, et al. Effects of a home-based intervention on unplanned readmissions and out-of-hospital deaths. *J Am Geriatr Soc* 1998; 46:174-180. ■

## New Cedars-Sinai clinic to specialize in CHF

### *A new heart failure center under construction*

*(Editor's note: The following article features the start of a heart failure clinic in an urban California setting. See CHF Disease Management, January 1999, p. 26, for more on a fully operational CHF management center at the University of Michigan in Ann Arbor.)*

Another urban medical center is taking a multispecialty approach to treating CHF patients, with the hopes of joining the ranks of established centers at the University of Michigan and the Mayo Clinic.

Nurses, doctors, pharmacists, physical therapists, social workers, dietitians, and other caregivers are banding together with health care scientists to form the Advanced Heart Failure Clinic at Cedars-Sinai Medical Center in Los Angeles.

"The idea of this specialty clinic really, really works," says **Ellen Daroszewski**, RN, PhD,

ACNP, a Cedars nurse practitioner. Caregivers get a full picture of each patient's illness and can get him or her involved with controlling symptoms.

"Essentially, we're trying to take care of the largest reason for hospitalization," adds **Americo Simonini**, MD, cardiologist for Cedars' new CHF clinic. When patients lose control of their condition, they often end up in the local emergency department (ED) for help.

"Ninety percent of these patients who go to the ED will be admitted," Simonini says. In the next 10 years, the number of CHF patients could double from today's count of about four million; assembling caregivers into multiprofessional CHF centers could be a growing trend for big city hospitals.

An even greater concern than readmission, Daroszewski says, is getting a quick jump on the disease when it is developing. Half of the CHF patients would be expected to die within five years of the onset of the disease unless aggressive action is taken. When the condition gets a head start on a patient of 40 or 50, "that's a young person dying," she says.

The key is to get patients involved with a heart failure program. Cedars, like other centers, may get patients on referral from local primary care physicians, cardiologists, or HMO. Patients may have been told by their doctors they have CHF and come in on their own.

### **Patient workup: Getting to know you**

Once the patient comes through the door and communication is established with the current physician, Daroszewski says an extensive orientation period begins. Here are the major stages:

#### **1. Get a full picture of the patient's disease.**

Daroszewski first collects all the tests, records, files, and other information that the patient already has. Sometimes, a patient's symptoms suggest an echocardiology study is needed to look for a malfunctioning valve, for example. If there are signs of arrhythmia, a Holter monitor may be required.

"We fill in the blanks," she says. Perhaps the patient never had an exercise stress test, and one could be helpful to determine the extent of heart failure. "This test really gives us a good indication of functional status." Cedars also does pharmacologic stress tests with Persantine or Dobutamine for patients who are unable to do any exercise for the traditional test.

### **KEY POINTS**

- Cedars-Sinai Medical Center in Los Angeles is launching a CHF clinic.
- The hospital's 100 CHF patients are being extensively assessed by a nurse practitioner as the program should become operational by the end of this summer.
- It will take a year-long pilot program to determine how the clinical protocol should be refined.

## 2. Get an initial evaluation of the patient.

“Here’s where we get a good idea of the status of the patient’s heart,” Daroszewski says. First comes an attempt to determine what caused the CHF, and it also gives hints on what corollary services may be needed.

Since eight in ten cases are caused by some sort of ischemic heart disease, there may be need to control the basics like cholesterol, obesity, or smoking. Alcohol-related cases may indicate other programs are needed to stop habitual drinking. Family history of heart disease is checked as well as other causes of CHF such as determining if it’s idiopathic.

A major part of this evaluation is risk stratification, where the staff tries to determine if the heart failure is stable, improving, or getting worse. This is where caregivers try to determine how long the patient could be expected to live without intensifying treatment.

It’s a lot of collecting. “But that is only the start of the job,” she says.

Once the team knows what’s going on with the patient and what will happen if the CHF is left uncontrolled, Daroszewski talks the patient through the proper course of treatment. But whether the case calls for drug therapy, transplantation, or other surgery, the follow-up to the risk assessment has to be comprehensive.

“We look at the patient’s whole life,” she explains. **(See related story for more details about following up on patient assessment, at right.)** All these factors have to be taken into account to make sure the patient understands the treatment strategy and will continue to help keep the CHF under control:

- ♥ level of education;
- ♥ financial situation and health care coverage;
- ♥ willingness to comply with the treatment and adjust lifestyle;
- ♥ current quality of life;
- ♥ comorbidities;
- ♥ cultural or ethnic background;
- ♥ cardiorehab;
- ♥ home assessment;
- ♥ dietary requirements.

Daroszewski says Cedars is developing a program where a staff member goes to the patient’s home to assess what may be needed, like accurate scales.

Patients also are managed by phone and receive at least one monthly call from the Cedars staff who will ask about these factors:

- ♥ ability to walk;
- ♥ weight fluctuations;
- ♥ sleep patterns;
- ♥ heart failure concepts.

The nurse may ask “Tell me about your medicines. Do you remember what they do?”

“Some patients are very good on their own,” she says. “Others need a lot of coaching. We also tell patients that we care about them, that we want them to stay well and do what they need to do, and that all this stuff matters.”

### *Status of the program*

Daroszewski says Cedars has 100 patients to assess and work into the system. The staff are continuing to develop clinical protocols. She and Simonini are scheduled to have the program fully operational by the end of this summer, although they probably will be refining it for the rest of the year. ■

## Following up on patient assessment

Nurse practitioner **Ellen Daroszewski, RN, PhD, ACNP**, at Cedars-Sinai Medical Center in Los Angeles, says initial patient assessment often indicates what is needed beside medical care. Here is where the nurse connects the patient to other caregivers and services, while continuing to collect important personal information. Here are some details to consider:

### □ **Special programs.**

If the patient is obese, weight loss plans could be provided. Smoking cessation programs may be needed — whatever may be indicated to help keep the patient as healthy as possible.

Perhaps the family members would like to learn CPR or how to check blood pressure. Besides the patient, nurses look for who else needs to be educated about what the medication does and how it is to be taken.

Other issues are discussed such as sex counseling, since beta-blockers could cause erectile dysfunction.

Patients may need additional social interaction such as a support group. A social worker can be called in to help patients connect with the local resources available or perhaps talk about advance directives. Patients and their families may need to

## Research another goal of Cedars CHF center

The staff of the new heart failure clinic at Cedars-Sinai medical center hopes the facility will be a source of information to professional caregivers as well as to patients and their families, says **Ellen Daroszewski**, RN, PhD, ACNP.

"Our primary responsibility is to take care of these people, but we also want to contribute to the knowledge," says Daroszewski, nurse practitioner at the facility.

The site will have several different databases to track the developments of treating these patients. Daroszewski says she hopes to learn the behind-the-scenes pictures of CHF treatment such as if one ethnic group seems to do better than another. The data also will allow staff to chart specifics like  $VO_2$  Max from an exercise stress test vs. survival.

"We're learning more and more," says **Americo Simonini**, MD, CHF clinic cardiologist for Cedars. The site will also be studying these aspects of heart failure:

♥ **Left-ventricular assist devices, or LVADs.**  
By 2001, Cedars expects to be the site to test an implanted artificial heart.

♥ **Medications.**  
— intravenous medications that fight inflammation;  
— endothelium antagonists;  
— tumor necrosis factor;  
— new pharmaceutical trials.

♥ **Basic science.**  
Understanding the biochemistry of the failing heart and agents that can be used to block hormonal responses.

Formal CHF centers also are good places to test new uses on older medications. Simonini notes Heparone (spironolacrone), which inhibits aldosterone: For years doctors used it to treat liver patients whose cirrhosis caused them to have a severely bloated abdomen from fluid retention. The RALES II study found it could reduce CHF mortality by 30%. ■

learn more coping strategies. "Sometimes, just talking to someone is needed," she says.

Daroszewski says here is where nurses and other caregivers excel. Doctors don't have time to sit down and explain how to read a food label, but there are nurses and other educators available to help. Patients bond with team members this way, she says. The doctors build rapport with their patients as well, but usually over a longer period of time.

### □ **Cardiorehab.**

Cedars is developing its own program specifically for CHF patients. "Medicare and Medical doesn't pay for it," she notes, adding "Private insurance is getting much better at it.

"If patients can find \$500, they can get an extensive heart failure cardio rehab course," she says, noting it is 12 weeks long and has trained staff to monitor participants (but not with telemetry). If patients cannot afford the course, the staff give instructions on how to exercise at home.

The exercise goals are different for CHF patients. "These patients just aren't as active," she notes. The objective is to maintain muscle tone and endurance to be able to function in everyday life activities. Doing leg extensions while wearing shoes for added weight may be sufficient. If muscles like the thighs atrophy, it makes it difficult for patients to do every day activities like getting out of a chair or on and off a toilet. **(For more on exercise routines, see *CHF Disease Management*, March 1999, pp. 32-36.)**

### **Determine cultural differences**

Daroszewski says there are many cultural issues to consider when treating CHF patients, according to differences in the customs a patient may have. Cultural backgrounds tell the nurse a lot about how the patient was raised and the environment where he or she grew up. It's an important consideration.

"The medication these patients will go on to use will be about the same," Daroszewski says. "But the attitudes for taking them and the motivation to keep going may need a different emphasis."

Here are some of her general guidelines she uses to help advise patients:

**1. Hispanics**, she says, seem to live life in the present and may not make the future a big priority. Explaining CHF treatment may often show them why what happens here and now affects their health.

## The family physician's role in treating CHF

*Generalists should identify patients at risk*

As more medical centers break ground on their heart failure clinics, specialists say the general practitioner will have an important role: identifying patients at risk, so aggressive treatment can be started before advanced disease develops.

"The biggest message is prevent, prevent, prevent," says **Americo Simonini**, MD, cardiologist for the CHF clinic being assembled at Cedars-Sinai Medical Center in Los Angeles.

"The risk factors are there — high BP, cardiographic evidence, an enlarged heart," Simonini says, but too often patients go on to develop heart disease that is difficult to reverse.

### *Find and treat patients quickly*

"It's important to identify these patients and modify their risk," he says. When patients are found with low ejection fraction or other signs of abnormal function, they can be referred to a heart failure center. These centers are more likely to do the following to get patients on a fast track to control their disease:

- ♥ The right regimen can be determined.
- ♥ Symptoms can be handled.
- ♥ Patients can get into clinical protocols.

"That's very important," he says.

Simonini notes the perspectives change with treating CHF patients and many generalists may not be comfortable with the parameters of this type of care.

"The patients are a challenge," he says. Most have systolic blood pressure of 80, 85, or 90. "Most internists are not comfortable with that."

Treatment often requires doctors "to know what to push." That's why only 30% of patients who could benefit from ACE inhibitors get them — and only a fraction of these patients get optimal doses. ■

2. To **Native Americans**, diabetes is an especially prevalent comorbidity. Obesity may be an issue as well.

3. Weight control is often important when assessing **African-Americans**, too, as well as watching out for high-salt diets.

There are plenty of socioeconomic issues associated with exercise. There are also cultural influences as well. "The concept of going out to the gym to exercise is a pretty white, middle-class phenomenon," she notes, so special emphasis on exercise may be needed for some minority groups.

4. The term "**Asians**" represents an enormous number of different cultures, such as Koreans, Japanese, Chinese, Vietnamese, Laotians, and many others. They all have different traditions. But as a general rule, compared to people from other parts of the world, they basically are future-oriented.

For these cultures, the nurse often can emphasize the benefits of controlling the disease in order to be around to see grandchildren grow up, for example. Their diets also have high-salt considerations, as soups and soy sauce can cause problems with hypertension.

It may also be important to determine a bit about the patient's American heritage — as well as how the person was raised. First-generation Americans being raised by their immigrant parents will have different diets and customs from third-generation Asian-Americans who have lived on their own since their early adulthood. ■

## Ensure success by tying in the pharmacist

There are plenty of reasons to get the pharmacist directly involved with the treatment of heart failure patients. Drug therapy regimens can call for multiple medications to be used at one time, such as digoxin, ACE inhibitors, beta-blockers, and diuretics.

It's likely that patients have comorbidities and are taking medication to control these conditions as well. Someone has to help the patient keep track of medication schedules, to be sure no drugs have been prescribed that could have harmful interactions with each other and get a

sense if the patient will comply with the drug regimen.

"I believe that a pharmacist is the one most suited for this," says **Emmanuel Saltiel**, PharmD, FCSHP, a clinical pharmacist at Cedars-Sinai Medical Center in Los Angeles.

It's not yet clear how the pharmacists at Cedars will be communicating with other team members and even the patients. The pharmacists could be available to speak to patients directly, which has an advantage of being more seamless and getting answers quickly, he says. But to do it, the pharmacists would have to have quick access to patient files. Pharmacists would not want to make recommendations without having all information available to them. "Partial information could be dangerous," he says. ■

## Digitalis revisited

*Still helpful, after all these years*

**D**igitalis has a longer clinical history than the stethoscope. But its role in treating heart failure wasn't formally defined until about two years ago.

"'Didge' is a great story," says **Americo Simonini**, MD, cardiologist at Cedars-Sinai Medical Center in Los Angeles. For hundreds of years, everyone knew it could help CHF patients; stories recounting how a woman's CHF symptoms were eased after she chewed foxglove leaves are nearly legendary. But from that point, experts say it was good enough to know digitalis could help. Details — such as how much was most effective or how it affected survival — went unstudied.

"No one really did a randomized study until the multicenter DIG trial," he says. Doctors knew it was helpful for controlling arrhythmia and increasing exercise performance but didn't really get the specifics until 1997, when the Digitalis Investigation Group (DIG) published its report in the *New England Journal of Medicine*. This trial showed:

- Digitalis, or digoxin, had no effect on patient survival.
- It did reduce CHF hospitalization by 28% and general hospitalizations by 6%.

Digoxin's defined role is to help patients deal with the effects of their disease — even when they are being maintained on complex schedules of diuretics, ACE inhibitors, and beta-blockers.

"People on maximal therapy can also benefit symptomatically from digoxin," says **Stephen S. Gottlieb**, MD, a cardiologist at the University of Maryland in Baltimore and one of the 150 authors of the ACTION HF guidelines for treating heart failure, published in the *American Journal of Cardiology* in January.

### *'Everyone with symptoms' should take it*

"Everyone with symptoms of heart failure should be on digoxin," adds Simonini. Just look at the DIG trial, he says. There was less pump failure, improved quality of life, and reduced hospitalization. "That's not a bad deal for a drug so cheap, it's a generic."

So while ACE inhibitors and beta-blockers get a lot of press about their ability to lower patient mortality, digoxin still makes the list of recommended drugs because it improves a patient's quality of life, although it doesn't add any more days to it.

"It's quality of life rather than quantity of life,"

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#### Editorial Questions

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

says **David Roffman**, PharmD, BCPS, associate professor at the University of Maryland's School of Pharmacy. "Digoxin is dumped down to a lower rung of increasing exercise tolerance."

Consider however, for patients over 65, CHF is the No. 1 cause of hospitalization and rehospitalization, notes **Emmanuel Saltiel**, PharmD, clinical pharmacist at Cedars-Sinai. Digoxin can reduce those numbers. "That's not a trivial outcome."

Roffman, who is also a CCU therapeutic consultant, says that as an inotropic agent, digoxin is used to increase the muscular contractility of the heart. The better squeeze increases cardiac output, so patients can do things such as walk longer without symptoms.

"It's tempting to make that leap of faith that it will improve survivability," Roffman says. In fact, no inotropic has been shown to improve survival of CHF patients. Several drugs have been shown to do the opposite — they were found to increase mortality, he says. In testing the hypothesis of the stronger inotropic improving survival, the opposite was true — the stronger the agent, the shorter the survival. Here are some of the drugs and the studies that were done with them:

- **Milrinone:** Packer M, et al. Effect of oral milrinone on mortality in severe chronic heart failure. *N Engl J Med* 1991; 325:1,468.
- **Vesnarinone:** Cohn J, et al. A dose-dependent increase in mortality with Vesnarinone among patients with severe heart failure. *N Engl J Med* 1998; 339:1,810-1,816.

Other drugs such as Flosequinan and Manoplax had similar findings. ■

## Closing in on the ideal digoxin dosage

When treating CHF patients with digoxin, small doses are good, notes **David Roffman**, PharmD, BCPS, associate professor at the University of Maryland's School of Pharmacy in Baltimore. To alleviate symptoms, 0.125 mg to 0.25 mg per day usually brings good results, even for elderly patients. Signs of toxicity are gastrointestinal distress, anorexia, nausea, and rhythm changes.

"We don't know what the optimal dose is," adds University of Maryland cardiologist **Stephen S. Gottlieb**, MD. Finding the lowest dose that could still bring the benefits could help control the cases of toxicity.

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(Editor's note: For a comprehensive description of the use of digoxin in CHF patients, according to a consensus of 150 U.S. physicians, see the ACTION HF guidelines, published as a supplement to the American Journal of Cardiology in January.) ■

## CE objectives

**CHF Disease 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 patients.

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

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