

CHF DISEASE MANAGEMENT™

The Complete Congestive Heart Failure Resource

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Heart failure's shifting paradigms outpace changes in clinical practice

New concepts about CHF are changing treatment

Can patients avoid the cascade of cardiac changes that come with a failing heart? And when those changes already have occurred, can they be reversed?

Some surgeons say it can happen. Patients may have advanced disease, yet still qualify for a procedure that reinforces the mitral valve. The technique can improve circulation through the heart, and possibly, the patient's condition over time as well.

It may not end there. Getting a handle on the right neurohormonal cues could allow clinicians to single out candidates who show earlier signs of the disease. Then the valve operation may be able to stop the chain of events that lead to lower ejection fraction and reduced quality of life.

The excitement for this procedure comes at a time when other techniques are raising more questions than providing answers. Surgeons had hoped partial left-ventriculectomy (PLV) could be offered to a spectrum of CHF patients. But the different outcomes associated with hypertrophy, fibrosis, and stiffness suggest the procedure is more appropriate to develop as an option for patients in end-stage disease who are not transplantation candidates or when a new heart is not available.

Both the potential to prevent morbidity and the scarcity of transplant hearts can drive research in new directions. One possible goal is making transplantation the final surgical option, taken after surgeons first have tried — literally — to get more out of the patient's own heart.

KEY POINTS

- Surgeons, cardiologists, and physical therapists are changing some of their views on CHF treatments.
- It takes time for new techniques to make it into clinical practice, and observers hope acceptance comes more quickly.
- Keeping prescriptions as consistent and simple as possible can help control costs while aiding compliance.

Meanwhile, cardiologists say they find themselves in a paradigm shift of their own. Reports have suggested beta-blockers can reduce patient mortality, but physicians have been reluctant to use them, as patients can have increased symptoms of CHF before long-term improvement can be seen.

Some hope the reports now in from larger studies will reassure clinicians the agents are part of the preferred course of drug therapy, despite what they may have learned in their early training.

In January, a group of 150 physicians published their recommendations in the *American Journal of Cardiology* that proper drug therapy includes not only a beta-blocker, but an ACE inhibitor, diuretics, and digitalis.

Recent studies also prompted The American Medical Association to release a Quality Care Alert. The two-page report outlines the benefits of beta-blockers as a preventive measure after myocardial infarction.

Heart failure is listed as a relative contraindication once considered to preclude beta-blocker use. But for some patients, the therapy may be appropriate. The individual practitioner should decide whether a beta-blocker could be helpful to a specific patient and if consultation should be sought. (See a copy of the alert, inserted in this issue.)

When it comes to treating CHF patients, physical therapists say that they are revising their training as well. No longer should stable CHF patients be discouraged from activity. Rehabilitation specialists note even debilitated patients with comorbidities can become more active when they are armed with the right workout strategy as part of their treatment.

New paradigms or not, observers say the real test is how long it will take the practices to make their way into everyday care of CHF patients. In this issue of *CHF Disease Management*, you will find articles providing more details on changing attitudes toward patient management. ■

Surgeons focusing on the mitral valve

A change of heart for appropriate patients

A new surgical procedure may focus more attention on the role of the mitral valve in treating patients with heart failure.

The technique uses a ring to reinforce the valve so it can keep more blood from flowing backward into the left atrium. With a more efficient blood flow through the heart, patients may be able to regain cardiac performance over time.

For now, the procedure may help some patients in advanced heart failure live longer, even if they are not candidates for a transplant. Researchers hope that as they learn more about who is right for the procedure, they can use it to help their patients avoid the downward spiral of heart failure.

“We think this is a viable alternative,” says **Steven Bolling**, MD, a cardiothoracic surgeon at the University of Michigan Medical Center in Ann Arbor.

He says when the heart enlarges during failure, its inner walls pull at the mitral valve. The pressure causes a problem, not in the organic makeup of the valve, but in the way it functions. Because it can't stay closed when it should, regurgitation develops. Half of the blood that should be exiting the heart goes back into the atrium. This reverse flow becomes yet another obstacle to circulation the heart has to overcome.

Going in to replace the valve has meant robbing the heart of some pumping power. Because the patients were already compromised by heart failure, the loss was too much. Bolling says these patients just “have nothing more to give.” Surgeons learned to leave the valve alone when the ejection fraction (EF) was low.

He says this procedure is different than traditional attempts to replace the mitral valve. Instead

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of replacing it, his procedure involves “scrunching it down” and keeping it in place so the heart won’t pull it open when it should stay closed. Better flow is restored without the loss in power.

“We are taking no function away from the heart,” he says, which could make the procedure available to a broader spectrum of CHF patients.

“We have to change our thinking about these patients,” he says, noting traditionally, patients qualified for surgery if they had an EF of at least 40%. He recently operated on a patient with an EF of 5. The patient came into the surgical program after living with CHF for years. Bolling says he wishes he could have performed the operation on her 10 years ago, before her quality of life declined to a point where she had to spend most of her day sitting in a chair.

It will take about two years to be more certain of the long-term benefits, Bolling says. Right after surgery, her EF probably was the same as before. But without the regurgitation, her heart has a better chance of regaining some lost ground.

Changing the way doctors think about these patients, he says, begins with understanding the relationship of valve and ventricle. Both elements are working together and should not be seen as separate parts. “We are not treating a ventricular problem with a valve solution,” he says. “We are treating a ventricular problem with a ventricular solution.”

Bolling says another conceptual change is accepting that damaged heart muscle, like other tissue, can heal if it can be rested. Finding a way to give the myocytes some down time is tough, however, because surrounding tissue continues to be worked on and has to keep pumping. Bolling says that helping blood flow efficiently through the failing heart can make tasks easier on the organ. Also, he notes left-ventricular assist devices (LVADs) may also find a role in helping the heart rest and heal. In this case, a combination therapy may be developed that uses the mitral valve procedure and an implanted LVAD. **(For more information on LVADs, see *CHF Disease Management*, February 1999, p. 13.)**

In the first phase of his study, Bolling says he operated on nearly 100 patients, and 70% to 80% were alive two years after surgery (compared to about 10% if the patient didn’t have the surgery). He reported his findings at the American Heart Association conference in November.

“He is getting some marvelous results,” says **Mehmet C. Oz, MD**, a cardiothoracic surgeon at Columbia-Presbyterian Medical Center in New

York City. Oz says his hospital has performed a dozen mitral valve procedures with similar outcomes.

Bolling notes the first stage of the study was to determine the feasibility of the surgery and if it should be studied against traditional drug therapy. That’s the next step, randomizing patients to medication and surgery.

“We need to identify patients who would do well,” he notes. Being able to get to them for a quick surgical intervention may keep many from going on to develop serious disease requiring extensive treatment like transplantation.

“Could we go upstream and head them off at the pass?” Bolling asks. “The patient would then never go down the inevitable cascade of CHF.”

The researcher notes that in the first study, patients were at advanced stages of the disease. The second part of the study, dubbed the PREMIUM trial, will include patients in New York Heart Association Class III disease. Because patients are not as sick with heart failure, Bolling says it may take longer to determine the benefit of the surgery. Unlike the first study, most patients would be expected to survive longer than a year without the intervention.

The PREMIUM trial also could hint at which patients may be at a stage of failure that cannot be reversed. “Which patients are these, where the heart muscle is too far gone?” Bolling asks. “We don’t know yet.” ■

More good news for drug therapy with beta-blockers

Success in Europe may mean acceptance at home

American physicians are hoping a European study of beta-blockers will help the medications gain more support in the United States.

The report of the Cardiac Insufficiency Bisoprolol Study II (CIBIS-II), published in the Jan. 2 issue of *Lancet*, showed a 32% drop in mortality and hospitalization among CHF patients who were stable and in Class III or earlier disease.

“This is a real breakthrough,” says **Harlan M. Krumholz, MD**, of Yale University School of Medicine in New Haven, CT, who wrote the commentary on the study. “It builds on studies that have been in existence for a long time.”

It is significant that the older generation of

beta-blockers was found to be very effective. Before the study, there were questions about how they would stack up against the newer generation products, says Krumholz, an assistant professor of internal medicine and cardiology as well as epidemiology and public health.

“The essential thinking is not to delay in translating it to the bedside,” Krumholz adds, noting similar problems are going on with drugs like ACE inhibitors. “We want to get this going as soon as possible. In a year we want to go from 10% of the appropriate patients getting it to 80% or 90%.”

To make sure that translation happens, he says doctors need to do two things:

1. **Establish systems to remind them to use beta-blockers when appropriate.**
2. **Develop treatment plans that start patients on beta-blocker therapy when they are stable, slowly titrating them up gradually from a low dose.**

In his commentary, the author notes that clinical practice guidelines need to be updated for beta-blockers, since giving them to heart failure patients may contradict how doctors have been trained.

“It’s kind of an about-face,” explains **Tarik M. Ramahi**, MD, Yale’s director of heart failure and transplant cardiology. He says while the study comes as no surprise to those who are following the research, phasing out old concepts brings anxiety. “The challenge is translating clinical trials to clinical practice.”

Ramahi says these changes take more than education. “You need to push the thinking for it. It doesn’t happen very often. It takes a paradigm shift.”

Changing physician attitudes about beta-blockers, he adds, will come only if doctors are comfortable with the concept of what is happening with the physiology of the heart during drug therapy, and if patients receive education as a part of their treatment.

“It boils down to how much the patient is dependent on the sympathetic nervous system for circulation,” he says.

The failing heart responds by getting larger to try to keep up with its pumping task. In the short run, it works. But eventually, it becomes a destructive path. Beta-blockers are an attempt to stop the heart from going into its panic mode.

“What you are trying to do is withdraw the response slowly. But if patients are dependent on it, it’s harder to do.”

Ramahi notes patients need to be stabilized before they are put on this therapy. But the patients who are referred to his facility often aren’t stable. “Surprisingly enough, most patients are not getting proper diuresis — that is usually key to getting someone ready,” he says. “They either get too much or too little.” **(For more on diuretic regulation, see *CHF Disease Management*, February 1999, pp. 16-18.)**

Drug therapy then continues with proper beta-blockers, ACE inhibitors, and other medication as needed.

Another facet of this therapy is teaching the patients why the treatment is needed as well as what they should and should not expect from it. “Patients may expect to be feeling better, but this is a long-term goal,” he says. In the short term, the patients may actually feel worse for the first few weeks as the therapy begins to reverse the changes in the heart that were triggered by failure.

During this time, patients can become more congested and may need their blood pressure adjusted. Ramahi says when these changes happen, the doctor also may need to adjust the patient’s ACE inhibitor or diuretics, as the elevated fluid retention may bring on more shortness of breath, edema, dizziness, and fatigue.

Ramahi says patients start feeling better and show improvement in heart function in two to three months. ■

Limitations of the study

Both **Harlan M. Krumholz**, MD, of Yale University School of Medicine in New Haven, CT, and **Tarik M. Ramahi**, MD, Yale’s director of heart failure and transplant cardiology, note the study is not useful as a guide to treating patients in severe heart failure.

Ramahi says to follow the lead of this study requires proper patient selection. Patients in class II to early class III are appropriate — but only if they have been stable for at least a few weeks, and their blood pressure is not too high. ■

Some points to remember about drug therapy

The science behind CHF medication may be getting even more sophisticated, yet experts say keeping prescription strategies simple for your patient is as important as ever. Here are some guidelines worth revisiting, says **Sean M. Jeffery**, PharmD, assistant clinical professor at the University of Connecticut's School of Pharmacy.

These tips are adapted from a published report you might find useful. (See *Journal of Clinical Epidemiology* 1992; 45:1,045-1,051.)

Is there an indication for the drug?

A recent recommendation for treating heart failure published in the *American Journal of Cardiology* calls for four different prescriptions for patients:

- a diuretic;
- a beta-blocker;
- an ACE inhibitor;
- digitalis.

Is it effective?

Recent reports have zeroed in on this question lately, especially for angiotensin II receptor blockers and Digoxin.

Is the dosage correct?

"Start low, and go slow" is especially true for treating elderly patients, Jeffery says. He notes that he recently saw a CHF patient require hospitalization because she began beta-blocker therapy at a dose that was too high.

Is it prescribed properly?

Does the patient know how to take the prescriptions?

Are the directions practical?

Jeffery says he sees a lot of confusing regimens for patients to follow, particularly with diuretics. He notes that even if you "start low and go slow," make sure you reassess therapy and titrate as needed. Studies show compliance can decline significantly when dosages are more than twice a day, he says. (For more on compliance issues, see *CHF Disease Management*, January 1999, pp. 8-12.)

Is the duration of therapy acceptable?

Heart failure patients probably will be taking

their medication for the rest of their lives. There are some considerations, however, such as if the patients in end-stage disease with renal insufficiency still need an iron supplement.

Try to choose the least expensive medications where appropriate.

Watch drug interactions.

For example, bradycardia can occur from too much beta-blocker and Digoxin combined.

Watch clinical disease interactions.

For example, Jeffery says beta-blockers may blunt a hypoglycemic response in diabetic patients.

Watch out for duplication.

If patients are being treated by more than one doctor at a time, there's a greater chance of duplicate prescriptions.

"You'd be amazed," Jeffery says, noting that he has seen patients taking two of the same diuretic or two beta-blockers. Beside the extra cost for the redundant medicine, the chances for side effects escalate. ■

Drug decisions affect at least three groups of people

This strategy of using guides (see story, above) to gauge decisions about what a physician prescribes is called evidence-based medicine, says **Frank Ascione**, PharmD, PhD, associate professor of pharmacy administration at the University of Michigan in Ann Arbor. It's a good way to check for quality of care. When it comes to costs, however, you'll need to consider all who have a stake in your clinical decision.

Each drug decision a doctor makes affects at least three different groups of people — the patient, the doctor, and the organization paying for the service.

The drug backed by new clinical trials for treating a condition may be the doctor's choice, and in turn, the patient's choice. But the payers may not agree with the decision because it goes against a formulary or accepted practice.

"Physicians have to understand these factors and defend their position," he says. "Individual physicians need to make the best possible decisions and be able to articulate that to the people who are paying the bill." ■

A note about generic medications

Choosing the generic brand of a drug you prescribe is a good way to control costs, says **Daniel C. Malone**, PhD, an assistant professor of pharmacy practice at the University of Colorado in Denver. But you should know the specifics about how a generic could affect your patient.

An example is Lanoxin. Levels of the drug may vary greatly according to who makes it. You may want to determine which version is right for your patient and request that each time the pharmacist dispenses the drug it's made by the same manufacturer, he says. ■

Use adult day care facilities to full advantage

Consider the medical oversight potential

How much interaction do you and your patients have with adult day care facilities? Chances are good that it will be on the rise.

With so much of the care for heart failure focusing on watching symptoms and following a daily medication regime, caregivers at home may need help when they have to work five days out of the week. Dropping off a loved one at a day-time facility may one day be as common as driving the kids to school.

"It's a huge, growing area," says **Elinor Ginzler**, senior programs specialist for the American Association for Retired Persons in Washington, DC. "It will only continue to grow."

Special care for heart failure patients

But for specialized customers — such as those with heart failure — Ginzler says adult day care can be a way to help patients and their caregivers keep on top of managing their conditions, possibly putting off more costly options such as long-term nursing home care.

"Truly, as an option, it's one designed to provide medical oversight," she says. In order for a facility to be licensed, it must have on-site medical staff, such as a full-time nurse. Members of this

staff often are skilled in taking care of patients with chronic disease and can supervise medication, weighing, and daily symptom assessment.

As these centers become more popular, Ginzler and others note that physicians can help make this option feasible for their patients if they keep a few points in mind:

- **Give specific instructions all around.**

This goes for your patient and his or her family, the facility, and your office staff. Everyone must know how to handle problems before they happen.

Where is the facility housed?

Ginzler notes it helps to understand the structure of the particular centers your patients will use. Some facilities are housed in medical complexes. Others are physically on the grounds of nursing homes, assisted living centers, or medical clinics. Still others may be independent of these other care settings. In case staff are not available to handle emergencies themselves, give specific instructions about critical situations and how they should respond.

A facility's staff should know, for example, when to call the physician for instructions or when they need to get the patient over to you and how — whether to call a family member or an ambulance. If the facility keeps files on day care patients, your instructions could be included for quick access.

Instruct your telephone staff that a patient with heart failure may not be able to wait for the next available appointment. Callers may need your quick instructions on how to deal with the changing symptoms of heart failure.

"Some office staff are wonderful," says **Lisa Delvasto**, LVN, at the Casa Colina Centers for Rehabilitation Adult Day Health Care program in Pomona, CA. "But some are real bulldogs to get

KEY POINTS

- Adult day care can help monitor CHF patients when home caregivers are unavailable due to work or other responsibilities.
- If patients take this option, facility staff, family members, and even physician office personnel need specific instruction on how to handle changing symptoms.
- Medicaid may pay in some cases.

A word about costs

A day at Casa Colina Centers for Rehabilitation Adult Day Health Care program in Pomona, CA costs \$66, according to director **Kimberly Mory**.

In ballpark figures, that's about a third to a half of what families would pay for long-term nursing care per day, says **Elinor Ginzler**, senior programs specialist for the American Association for Retired Persons in Washington, DC.

Some will qualify for Medicaid

Ginzler says Medicaid will pay for the service, if patients meet the low-income requirements and if the particular state has applied for the community-based waiver that allows funds to be applied to this type of care. Calling the state Medicaid office will let families know if their state is participating.

Some clients may have insurance policies with set amounts that will pay for these services, while other patients pay out of pocket. After these personal funds are used, Ginzler says more patients may then qualify under Medicaid. ■

past in order to get a message to the doctor," she says. "They don't understand the importance of letting the doctor know what is going on with the patient."

When those calls are made to the patient's doctor, the staff there should be able to take the right message to the physician and get the right response if the doctor is not available to talk directly, says the facility's staff nurse, **Ervin Vergara, RN**.

He says that staff may notice common symptoms that show CHF may be developing or getting worse. Some of the common signs include:

1. sweating in the lower extremities;
2. shortness of breath;
3. edema;
4. coughing.

Vergara recalls a 66-year-old man with Down syndrome in the weekly care of the facility. The man had been diagnosed with CHF 20 years earlier and was stable with the disease for 15 years. Then he started to show worsening symptoms

and complained of chest pain.

The patient went on to develop pneumonia and needed to see his physician quickly.

• **Teach families how to make smooth shift changes — especially on Friday night.**

Vergara says when families come to pick up their patients at the end of the day, the caregiver may need to pay extra attention to symptoms that could be getting worse. (It's a good idea for them to ask the facility staff if there have been any changes in the condition.)

And remember, a center that is not open on Saturday and Sunday puts the family on duty all weekend long.

Unless the family members can contact the physician or a partner on call, or can follow predetermined instructions, they probably will wind up taking the patient to the emergency department or urgent care center. This step can add expense and complications to managing the disease.

(For information about choosing a facility, The Aging Parent Handbook by Virginia Schomp may be helpful.) ■

Consider hospice when other options fail

CHF makes appropriateness difficult to determine

Tim Gallegos says when it comes to treating chronically ill patients, hospice care doesn't get much discussion time, compared to high-profile clinical trials, procedures, and medication.

"There are tremendous breakthroughs," he says. "But the question no one wants to deal with is 'What happens if some of these options can't help a particular patient?'"

The area administrator for Hospice of Integrated Health Services (HIHS) in Dallas says families should know about this option. It's a good idea to know it's available, should treatment priorities change from getting an upper hand on the disease to making patients feel comfortable.

Do doctors view hospice as 'giving up'?

"It's real hard to get doctors on board with the option," says **Carol Dux, RN**, hospice team manager with HIHS. She notes doctors can be reluctant to stop trying to improve a patient's condition, continuing different types of treatment.

Physicians may consider referring a patient to a hospice as giving up on the patient.

Michael Galazka, director of the Hospice Education Institute in Essex, CT, says the nature of cardiac illness makes it more difficult to prepare for long-term outcomes. Hospice care usually is offered to patients with a life expectancy of six months.

For CHF patients, it is not always clear when a patient has entered that time frame. Fortunately, he says, if CHF patients have a crisis, they often can be treated aggressively and return to a health status “with some good life left.”

In his conversations with patients and families about hospice care, Galazka says the cardiologist may be the one who advises the family: “It’s not time yet.” But he says the doctors have a good idea of when that time is coming.

“The good cardiologists are very well aware of when it’s time to sit down with the patients and discuss it — and they do,” he says. For the subset of CHF patients at this point in their disease, it may help to assess if patients are willing to be treated aggressively if their condition declines.

Even debilitated patients can improve conditioning

When patients are stable, get them active

A 75-year-old man was admitted to the hospital with fatigue, shortness of breath, and a history of myocardial infarction. He has had cardiac bypass surgery and is obese. As far as chronic illness, he has CHF, hypertension, diabetes, renal insufficiency, and osteoarthritis in one knee. His ejection fraction is less than 30%.

This patient may be presenting you with more red flags than a construction crew working on a 60-mile stretch of highway. But experts say it’s important not to give up on helping patients become more functional, even when they have extensive comorbidities.

“What everything may look like on paper doesn’t equate to rehab potential,” says **Chris Wells**, PT, a doctoral candidate in physical therapy at the University of Pittsburgh. “Given the right prescription, you can take a patient who is very disabled and help him into something he wants to do.”

This case is one Wells has handled and presented to the American Physical Therapy

“We all have individual goals,” Galazka says. Some patients may be very specific in wanting to be able to be present for upcoming family events or holidays, which can help set goals as well.

But when hospice care is appropriate, Gallegos says there are many included services, like counseling, that can be helpful to the patient and family. Medicare and most insurers have hospice benefits, he says, and facilities usually provide all care with what they get from the payer on a per-diem basis.

Gallegos says that HHS cares for patients who are in nursing facilities or the homes of family members.

That’s how 85% of the nation’s 3,000 hospice providers operate, according to Galazka. Relatively few own their own facilities, and those that do have limits on the patients they can accommodate on-site.

[Michael Galazka is part of a national information and referral service available for advice about hospice care. For more information, call Hospicelink at (800) 331-1620.] ■

Association’s Combined Sections Meeting in Seattle in February, during one of the pre-conference programs.

When this patient was released from the hospital, he could walk only about 40 feet at a time and used a walker. He could not take stairs and kept a toilet at his bedside. But through an activity program that began with supervised physical therapy at home, he now walks on a treadmill for 30 to 40 minutes. Wells says after she assessed his condition, she returned to his doctor for a suggested schedule of activity. “In this case, we set up for a home care setting.”

Therapy began with a lower-extremity routine. While the man sat at his kitchen table, Wells brought over stationary bike pedals the patient could use from his chair. As he gained mobility, he could progress to aerobic ambulation and eventually upper-extremity exercise. Combining the lower and upper exercises is less stressful to the patient, Wells notes. Arms and legs were worked to 20% or 30% of their maximum capacity, which allowed the heart to work on a better preload and afterload. **(For more information on determining maximum exercise capacity, see related story, p. 34.)** Today, the patient may now be able to work up to lifting light weights and doing other routines.

Wells says that just like any other aspect of the

patient's treatment, exercise has to be tailored to the individual.

"He was too dysfunctional to go to a cardiorehab program," she says. "Just getting that guy out and into the car would have been all the exercise he could do for that day." Now that he can tolerate more exercise, he has more options open to him.

Wells says right from the start, the patient has to set goals for what he or she wants to do. And these preparations are key in getting insurers to pay for the care. Because physical therapists identify deficits in what the patient can do, set goals, show progress, assess potential, and reassess every 30 days, most payers are willing to cover the costs.

"Insurance may have to pay for an ambulance to get patients back and forth to see the doctor," she says. "It's costing the insurance company less to go this route. If you can make these kinds of arguments, insurers usually will agree to pay."

Other patients may look great at rest, but when they become active, their status changes. Assessment here could mean discussing with the physician if activities should be broken up into more manageable parts or even if patients need to be pretreated with a nitroglycerine tablet before physical therapy. The key is to establish goals with the doctor and patient, then find out what will help patients achieve these goals, such as:

- improve the way they get around the house;
- condition themselves to be able to shop at the mall;
- reduce their shortness of breath.

"It's a misconception that people with heart failure shouldn't be exercising," says **Ross Zimmer**, MD, a cardiologist with the joint heart failure program of Presbyterian Medical Center and the Hospital of the University of Pennsylvania in Philadelphia. If a patient remains inactive, it can lead to decompensation and detriment to the lungs and muscles.

Zimmer says an activity routine can begin after these important steps happen with the patient:

- evaluation by the physician, where the CHF etiology can be established;
- education about his or her particular condition;
- recovery from procedures or operations;
- administration of the right medication (and patient is stable on them);
- other factors (such as blood pressure) addressed and under control.

"Exercise may be some stretching or may be a

The Right Stuff

Here's what a physical therapist should know about your patient before an exercise program can be recommended, according to **Scot Irwin**, DPT, professor of physical therapy at North Georgia College in Dahlonega.

- ♥ Exercise test results (either formal or baseline functional test like walking)
- ♥ Ejection fraction
- ♥ Medications
- ♥ Pathology
- ♥ NYHA Class

"If we have these things, pretty much, the physical therapist will be able to give a fuller picture to the physician," Irwin says.

How patients can approach physical therapists varies from state to state.

In Pennsylvania, for example, patients must be referred by a physician, says **Chris Wells**, PT, a doctoral candidate at the University of Pittsburgh. Other states, like Georgia, give patients direct access to them. (Insurers, however, may vary on their requirements for referral.)

Irwin says a general physical therapist probably could handle patients in class I and II disease. But when patients enter class III, that's the time a specialist should be consulted.

This is especially important if the patients have an ejection fraction of 25% or suffer from comorbidities like arrhythmia, neurologic conditions, or angina. These physical therapists need to be able to recognize symptoms with patients who have a limited activity threshold. Patients in class IV won't be looking for exercise. Therapy here focuses on learning to live with the energy cost in simple movement.

Balance programs for patients' conditions

As far as knowing which program a doctor could recommend, Irwin notes heart failure presents a dynamic that a program should address: There needs to be a balance between stimulating patients for improvement without pushing them into heart failure. "It's a touchy spot," he says.

If you go the formal cardiorehab center route, make sure the patients can get into programs tailored for their specific needs. Irwin says that not all of them are individualized to meet the needs of every patient. That may not be helpful to a heart failure patient, who probably will have specific needs and concerns. ■

combination of activities that can help them around the house,” Wells says. It’s important to look at the physical status and the medical status and try to set goals.

Whether patients get their exercise in their homes, can get out to walk, or go to a gym or cardiorehab program, it’s important to stay active. Stop exercising, and those gains will decline. Even an extensive cardiorehab program, complete with supervision, education, and equipment, lasts about 12 weeks. What happens after that is up to the patient.

“Make a contract with your patients,” urges **Scot Irwin**, DPT, professor of physical therapy at North Georgia College in Dahlonega. “Tell them if they are coming into a program, they are going to do it for life.”

Irwin notes the heart itself is not getting better from exercise. “You are targeting peripheral muscles so they become better adept at using what the heart can pump to them.” If those muscles don’t continue to stay busy, they lose their ability to extract oxygen. “What rehab does is spiral them up. But if they are not going to stay there if they don’t keep it up,” he says.

Irwin says only 10% of the patients who leave formal cardiorehab are still exercising on their own in a year. Part of the problem may be that patients may find it too difficult to keep things going on their own. They may not have access to the same equipment or lack the motivation when they are not being supervised anymore.

What’s the follow-through?

Right from the start, Irwin says it’s important to answer the question of what comes next. “Patients have to be taught how to exercise and how to monitor symptoms,” he says. That makes patients able to continue on their own after formal programs end.

Wells helped to organize walking routines on the boardwalk at the Jersey shore so patients would have something to go to after their insurance benefit ran out for formal physical therapy. During the events, volunteers were available to take blood pressure as they made their way down the boards.

“I tell everyone they should be walking,” Zimmer says, noting that people should take a common sense approach. Competitive sports and heavy exertion may be out, but if the patient can tolerate it, using the stairs may be appropriate. He notes that after his patients have been optimized,

he will suggest they head out to the mall or some other public place. Having other people around may be reassuring to the patient and the numerous benches provide places to rest when they are needed.

Irwin says patients can learn to keep their exercise practical. That way, activity remains accessible and patients are more likely to stay motivated to do it.

“Patients have to be taught how to exercise and how to monitor symptoms, or else they’ll just revert back again in about the same time it took to build them up,” Irwin says. He says his patients often begin with monitored sessions of aerobic exercise and functional activities like step-ups. He also teaches his patients about walking and other aerobic activity and then, perhaps, working on muscle strength. ■

Gentle activity gets patients moving

Starting out easy

Catherine Certo, ScD, PT, has worked with cardiovascular patients for 30 years. Along the way, she helped write the guidelines for cardiorehab and says clinicians need to change the way they think about CHF patients.

“Even patients who are severely compromised can show an exercise level,” says the physical therapy professor at the University of Hartford in Connecticut. Last month in Seattle, she presented strategies for helping CHF patients at the APTA Combined Sections Meeting.

Whether these patients will get supervised sessions with a physical therapist or not, she can suggest exercises you can pass on to your patients to do at home. But first, she gives some signs that tell you a patient will need to be extra careful about activity and may require more supervision from you or a physical therapist:

- ♥ low angina threshold;
- ♥ resting tachycardia;
- ♥ excessive shortness of breath;
- ♥ slow recovery from activity;
- ♥ fall in systolic blood pressure more than 20 mm Hg;
- ♥ excessive fatigue lasting more than one or two hours;
- ♥ increased arrhythmia during activity;

♥ lack of heart rate response or extreme response to activity;

♥ lower extremity pain/ Claudication.

The key is to start slowly, making exercise a gentle — not intense — activity.

First, find their maximum heart rate by starting with the number 220 and subtracting the patient's age. Preliminary routines should shoot for achieving a heartbeat of 20% to 40% of this maximum value. Later on, they may be able to work up to higher percentages of the maximum heart rate, but for now, 20% to 40% is the goal.

Debilitated patients will hit this mark with simple activity like straight-leg raises from a comfortable position. They should try to do it five times, making movement slow and rhythmical. Gradually, they work up to 10. Certo notes that it's best to alternate legs reciprocally. (The first leg is raised and lowered, then the other one. When both sides have had a turn, that's one repetition.)

"It seems to help when you give the muscles a chance to rest between repetitions on each side," she says.

Adding light weights

As patients improve, and it gets easier to do 10 alternating repetitions, the patient may go on to do the same motion with light resistance. Certo says the commercially available weighted ankle straps are useful, but should not be heavier than one or two pounds. Elastic resistance bands also are available.

If patients are walking, they can be improving the strength and range of motion in their ankles as well. Slow, simple side steps back and forth, and steps forward and back, can make patients more stable on their feet. The idea is not to make it an aerobic exercise here, but to cover short distances that can gradually lengthen as the patient improves.

Patients who are starting out probably should stick to exercising once a day. Gradually, they can work up to five times a day. Certo says it is important for CHF patients to give themselves time for exercise and rest. It's a good idea to alternate the activities the patient is doing each day, so the muscles are not overworked and have a chance to recover. For this reason, patients should do the leg raises on one day and the stepping the next, especially when they are just starting to exercise.

When the lower extremities are improving, patients can try working their arms and upper

body as well. Alternating straight arm raises are useful, first without weights, and then later with them when their conditioning improves. But only do three reps in the beginning.

Certo says it's important to remind your patients not to bear down with the Valsalva reflex, or to hold their breath. That can worsen their CHF symptoms. Also, remind them the intention is not to work to exhaustion. Train your patients to look out for the warning signs that say it's time to rest. These signals include:

- ♥ moderate dizziness or feeling faint;
- ♥ angina;
- ♥ nausea;
- ♥ marked dyspnea;
- ♥ unusual/severe fatigue/feelings of doom;
- ♥ mental confusion/doesn't feel well but doesn't know why;
- ♥ staggering or persistent unsteadiness;
- ♥ cyanosis;
- ♥ heart rate over percentage of maximum (or 80% to 90% maximum for advanced exercisers);
- ♥ development of pulmonary rales.

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

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

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

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

Production Editor: **Ann Duncan**.

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Editorial Questions

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

Certo says staying active is good for patients' spirits, too. "If they can perform some activities, they'll be delighted that they don't have to spend the rest of their life sitting in a chair." An exercise program often can give them hope that they will be able to do more for themselves.

She adds that a flexible routine, like this one, helps in many ways. Because patients with CHF may feel good one day and terrible the next, it is good to have a routine that can be adjusted or gives plenty of time for rest. This also is true when patients suffer setbacks in controlling their condition.

They may have been doing well, then need more diuresis or had to go to the hospital to treat a comorbidity. Then they find their conditioning has suffered.

Certo says when that happens, patients can begin the exercise pattern again by starting out slowly with low repetitions. They can work themselves back up again by adding repetitions, stepping across longer distances, or walking at the same rate for longer periods. Remember that the intensity of the exercise should not increase, only the duration or number of reps.

Also, it may be helpful to teach patients a way to gauge and express how intensely they are working by using the Borg Scale of Perceived Exertion or another method that can assess the impact of their routine.

Program tips

♥ It's generally good to exercise in the morning, when the body is best rested. But any early medications should be taken 30 minutes before beginning to exercise.

♥ If patients eat before exercising, they should wait 45 minutes before they begin activity. Blood can't aid digestion and deliver more oxygen to the body at the same time. "It's like double-dipping," she says.

♥ Watch the weather. Hot, humid, or windy days make it hard for the patient to breathe. When it's cold, patients should wear a scarf in front of their mouth to warm the air they breathe. If they take in cold air, their blood vessels can respond by constricting.

♥ Monitor daily weight and pulse.

♥ Take time to rest after activities like showering, which can take a lot of energy on their own. "Heart patients have to work twice as hard to do something simple," she notes. The threshold can change, but it comes gradually. ■

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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. ■