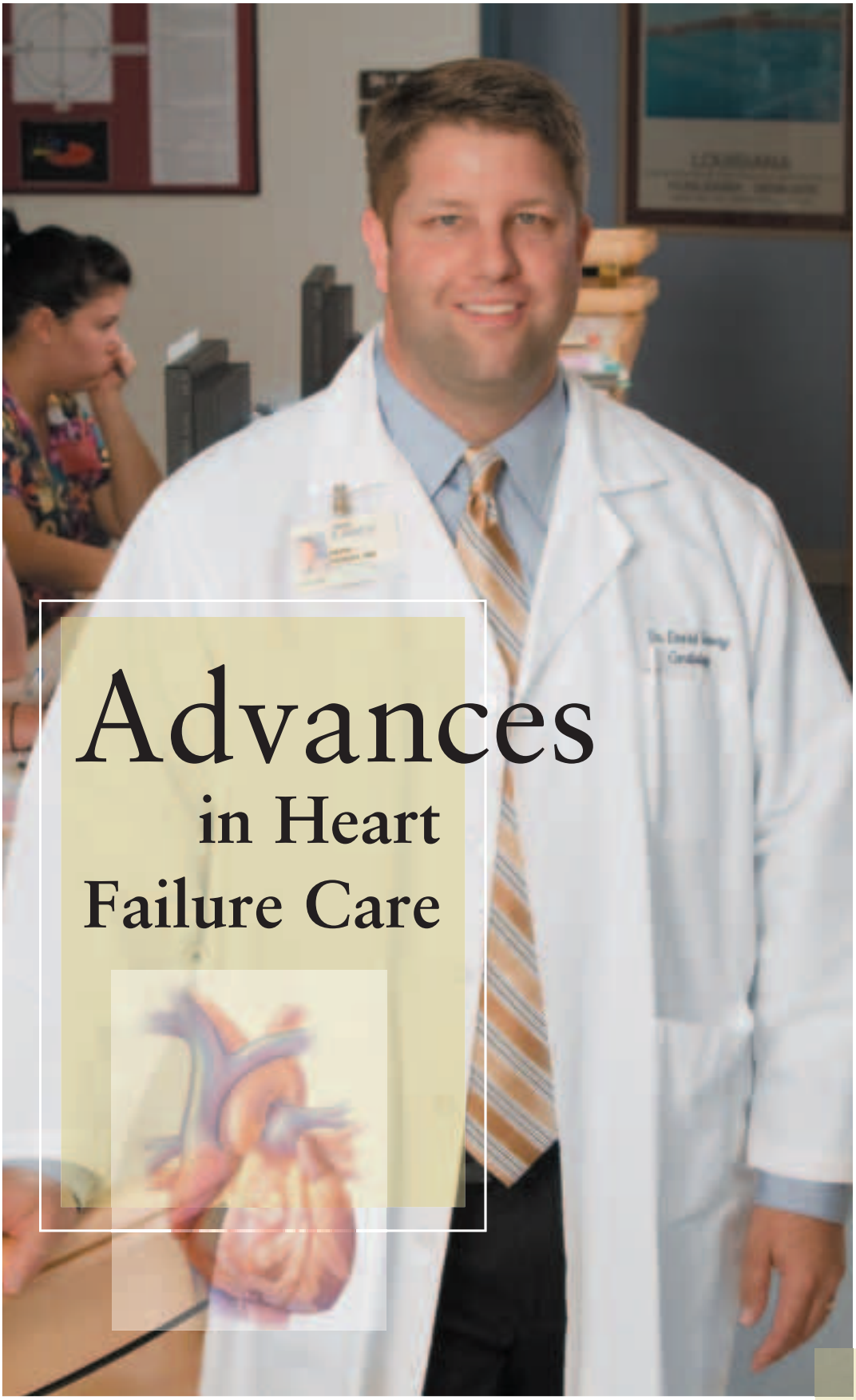
Advances in Heart Failure Care



While getting ready for work one morning in August 1994, 52-year-old George Arkalis felt that he couldn't breathe. His wife summoned an ambulance, which brought him to Lahey Clinic. Here, the Burlington resident was diagnosed with congestive heart failure, a condition in which the heart pumps inefficiently and blood pools in the lungs and legs.

Heart failure means that the heart fails to meet the body's constant demand for oxygen-rich blood, not that the heart is about to stop. In fact, according to the American Heart Association, nearly 5 million Americans currently live with heart failure.

Due to either a weakened or a stiff heart muscle, heart failure can result from coronary artery disease (narrowing of the arteries), a heart attack, high blood pressure, leaky heart valves or infections of the heart. Congenital heart defects, diabetes or excessive alcohol consumption may also lead to this chronic condition. Symptoms include shortness of breath, fatigue and swelling in the belly, legs or ankles.

While Lahey internists and cardiologists care for most patients with heart failure, those with more severe or hard-to-treat cases are referred to the specialized Heart Failure Clinic. One of the first such disease management programs in the country, its goals are to improve each patient's health and quality of life and to minimize the need for emergency room visits or hospitalizations. Heart Failure Clinic services include intensive patient education, the latest therapies and, when necessary, heart transplant evaluations.

"Treatment for heart failure is not just pills anymore," says David M. Venesy, MD, medical director of Lahey's Heart Failure Clinic.

In 2006, Lahey received the Premier Award for Quality for its excellent heart failure care. Ranked 11 out of 300 facilities eligible for this award, Lahey came in third in the category of teaching hospital with full interventional cardiology programs (cardiac catheterization lab and angioplasty).

New Treatments, New Hope

"Heart failure can be a devastating disease," says nurse practitioner Nancy Todd, manager of the Heart Failure Clinic. "The symptoms can be very disabling, and patients worry about taking—and paying for—pills, and being a burden to their family."

In the Heart Failure Clinic, Todd closely monitors more than 300 patients and works to help them to feel their best. She makes sure they take the right doses of medications regularly and eat a healthy, low-salt diet. She also emphasizes weighing-in daily (a sudden weight gain can indicate fluid retention), exercising moderately, quitting smoking, and managing stress. Follow-up phone calls are made to patients at home.

Today heart failure is more treatable than ever thanks, in part, to medications that counter the body's natural responses—which ironically worsen the condition. Key to heart-failure treatment are angiotensin-converting-enzyme, or ACE, inhibitors, which ease the heart's workload by blocking hormones that constrict blood vessels. Also important are beta blockers, which relieve strain on the heart by blocking adrenaline and other hormones that increase the rate and force of the heart's contractions and damage heart muscle. Still commonly used are diuretics, which help remove excess water and sodium from the body.

Those who continue to have disabling symptoms despite taking medication may be candidates for implantable devices that control heart contractions and prevent potentially deadly heart rhythms. About a third of people with heart failure have unsynchronized contractions of the heart, which result in a loss of pumping power. These patients may benefit from new biventricular pacemakers that electrically signal both lower chambers of the heart to contract in unison, helping the heart to pump more efficiently. In some cases, a pacemaker may be combined with an implantable defibrillator to stop erratic heart rhythms.

"The treatment for heart failure is not just pills anymore," says cardiologist David M. Venesy, MD, medical director of the Heart Failure Clinic. "Medical care has improved over the last 5 to 10 years with the development of special devices like implantable heart pumps and defibrillators. These advances allow most heart failure patients to do very well and to continue to live at home."

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Implantable pumps, known as ventricular assist devices (VADs), act as a bridge to transplant. In other words, they help keep patients alive who are waiting for a suitable heart donor. These mechanical devices, surgically inserted in the Clinic's cardiac catheterization lab, pump blood through the body, allowing the heart to rest. In the future, Lahey may also use VADs for long-term therapy for patients who are too old or sick to receive transplants.

Care Close to Home

When George Arkalis's heart failure worsened despite drug therapy, he received a pacemaker, and later a pacemaker and defibrillator combination. "I went from a Ford to a Cadillac," Arkalis says with a chuckle.

But for him, the drugs and medical devices were not enough. His heart continued to weaken, enlarge and deteriorate to the point that he needed the ultimate treatment—a heart transplant.

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Heart transplants, first performed in 1967, are now the fourth most common transplant operation (after cornea, kidney, and liver) but still relatively rare. Each year approximately 2,200 Americans undergo this long, intricate surgical procedure in which a healthy heart obtained from a donor is put in place of the diseased heart. To be eligible, patients must be younger than 70 and have no other life-threatening diseases, such as kidney disease or advanced diabetes.

Nancy Todd, NP, manager of the Heart Failure Clinic, examines one of her many patients.

"The good news is that treatments for heart failure have improved so much that many patients won't need a transplant," says Venesy. "But for patients who have severe heart failure, we can evaluate them to see if they are candidates."

An affiliation with the Cardiac Transplantation Program at Tufts-New England Medical Center (NEMC) in Boston allows Lahey to offer on-site heart transplant evaluations. David DeNofrio, MD, the program's medical director, visits Lahey's Heart Failure Clinic once a month and, in collaboration with Venesy and Todd, determines which patients may be candidates for transplant surgery.

"We have partnered with Lahey's heart failure program to provide advanced care locally," says DeNofrio. "It gives patients the ability to stay in one place and get all their care at Lahey, except for the transplant procedure. I think that's of real value to patients and their families."

"This is a way to offer another service to Lahey patients," adds Venesy. "It means they can continue to come to their familiar medical center, be seen by many of their own doctors, and have all the testing [for a heart transplant] and follow-up care done here."

Through the partnership, DeNofrio, Venesy and Todd co-manage Lahey patients who are candidates for heart transplants or other advanced therapies, such as home intravenous medical therapy or mechanical assist devices. In addition, Venesy attends rounds on the inpatient cardiac transplant service at Tufts-New England Medical Center.

"Our relationship with Tufts-New England Medical Center," says Venesy, "not only allows us to give Lahey patients access to subspecialty care that was previously not available, but also brings some of that technology and know-how back to Lahey."

Being linked to the NEMC transplant program also allows patients to be assessed quickly when needed. "If someone is very sick and needs an urgent evaluation, he or she can be transferred to New England Medical Center right away," says Venesy.

In an effort to provide optimal care to its patients, Lahey has become a charter member of a newly formed regional consortium, known as the New England Heart Failure/Transplant Network. This collaboration of heart failure specialists is dedicated to research and education. By sharing best treatment practices and examining new approaches to care with other heart failure programs throughout New England, physicians hope to learn from each other and improve the quality of life for patients.

A Successful Transplant

In November of 2000, George Arkalis received a new heart at NEMC. "It knocked me off my feet physically and emotionally," he says. "But after a couple years with doctors, medication and support from family and friends, it was like nothing happened.

"Today I'm able to do what a 65-year-old person can do. I thought I might be like an 18-year-old," he confesses, "but it doesn't happen that way."

Now, every three months, he comes to Lahey to meet with Todd and DeNofrio to review his blood work and adjust his medication accordingly. Once a year, he has a complete physical examination, including an electrocardiogram and a chest X-ray.

He has a daily regimen of medications, some of which prevent organ rejection. "I have a little pharmacy at home," he jokes. "I take four pills in the morning, six in the afternoon and eight at night. I still take the immunosuppressant pills, blood pressure pills, and cholesterol pills."

Once wheelchair bound, he now enjoys playing with his three young grandsons who live next door to him. "The oldest one is 10," he says proudly. "The others are 5 and 2. If it wasn't for the transplant, I wouldn't have been around to see the younger ones."

To make an appointment with a cardiologist, call 781-744-3250.