

MARKET MEMO

Heart failure clinics improve patient care, bottom line

By Maria Finarelli

Today, nearly five million Americans suffer from heart failure and between 400,000 and 500,000 new cases are diagnosed each year. Over the next five years, as baby boomers continue to age, estimates indicate that an additional 15 to 20 million people will develop the disease.

To try to better meet the health care needs of this rapidly growing population, hospitals and health systems are developing congestive heart failure (CHF) clinics and programs that can improve the quality of life for patients who have been diagnosed with heart failure or those who are at risk of developing the condition.

Improved patient care is also translating into cost savings. Health care providers with CHF programs typically experience reduced hospitalizations and emergency department visits for CHF patients. Because reimbursement for CHF patients is often lower than the cost of care, reduced hospitalizations and ED visits lead to cost savings as well as improved patient care.

The disease and its impact

Heart failure occurs when the heart is no longer able to pump enough blood through the body to meet its needs. This chronic, long-term condition develops slowly and is closely associated with the major cardiac risk factors, including smoking, high cholesterol levels, hypertension, diabetes, and obesity. The presence of a single risk factor is enough to cause heart failure, but the risk increases significantly when a combination of factors is present.

High blood pressure or hypertension is a pre-existing condition in 75% of congestive heart failure cases. The risk of heart failure increases by 200% for individuals with uncontrolled high blood pressure, and diabetics have a two- to eight-fold greater risk of heart failure.

The National Heart, Lung and Blood Institute considers congestive heart failure—which is the fastest growing cardiovascular disorder worldwide—to be a new epidemic. Each year it is the cause of 39,000 deaths and a

factor in the deaths of another 225,000 people. Between 1970 and 1990, there was a 64% increase in the death rate attributed to heart failure while the death rate from coronary heart disease declined by 49%.

The amount of pumping capacity that has been lost determines the severity of the condition and its impact on a person's life. (See Figure 1, below, for a description of the stages of heart failure.) Because the most common symptoms of heart failure are often mistaken for normal signs of aging, many individuals with the disease don't realize they have it. But even the mildest form of heart failure is a serious health problem that must be treated. Reversing the damage to the heart's function is not often possible, but medication and lifestyle changes can minimize the effects of heart failure.

For individuals over the age of 65, congestive heart failure is the leading cause of hospitalization. The discharge rate for congestive heart failure increased nearly 28% between 1990 and 2000, from 28.1 per 1,000 popu-

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lation to 35.9 per 1,000 population, according to the Centers for Disease Control. In 2000, congestive heart failure patients accounted for nearly 1 million hospital discharges, and annual hospital days for patients with this condition are approximately 6.5 million.

Due in part to high readmission rates, heart failure admissions generated nearly \$7.7 billion in Medicare inpatient charges in 2000, making it the third costliest DRG. Nationally, the 30-day readmission rate for patients with heart failure is about 25%, and 45% of patients return to the hospital within 90 days. The American Heart Association estimates that the costs associated with the discharges for heart failure were \$24.3 billion in 2000. Expenditures for drugs to treat heart failure are estimated to be \$500 million.

Incidence and survival rates

The Framingham Heart Study is a prospective epidemiologic study sponsored by the National Heart, Lung and Blood Institute. Since 1948, the study has followed two generations of Framingham, Mass., residents. Researchers now have data on incidence and survival rates for men and women in four time periods: 1950-1969, 1970-1979, 1980-1989 and 1990-1999.

The study's findings indicate that after the age of 65, the incidence of congestive heart failure approaches 10 per 1,000 population. The lifetime risk for congestive heart failure is one in five for both men and women at age 40 and at age 80. Among participants who developed congestive heart failure without a prior heart

attack, the lifetime risk at age 40 is 11.4% for men and 15.4% for women (see Figure 2).

The most significant risk factors for congestive heart failure are different for men and women. Hypertension is the key risk factor among women while a heart attack plays a lesser role. Thus, data from the study indicate that there is little difference in the lifetime risk for all women and women who have not had a heart attack. For men, a heart attack is the most significant risk factor. The lifetime risk for men without history of a heart attack is nearly half of the lifetime risk for all men.

Over the course of the study, survival rates after the onset of heart failure have improved. The age-adjusted survival rates in the most recent period for both men and women are about one-third lower than for the period 1950-1959. Much of the improvement in survival rates occurred during the 1990s after the use of ACE-inhibitors became standard practice.

Although survival rates have improved, those diagnosed with congestive heart failure still experience high mortality. In the first year after diagnosis, 20% of patients will die, although survival is poorer for men than women. For individuals under the age of 65 who are diagnosed with congestive heart failure, 20% to 30% will live with the disease for more than eight years. This puts a premium on the development of effective treatments and the ability to improve patients' quality of life.

Figure 1. Stages of heart failure

Class	Patient symptoms	% of total
Class I (mild)	No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, or shortness of breath.	35%
Class II (mild)	Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in fatigue, palpitation, or shortness of breath.	35%
Class III (moderate)	Marked limitation of physical activity. Comfortable at rest, but less than ordinary physical activity results in fatigue, palpitation, or shortness of breath.	25%
Class IV (severe)	Unable to carry out any physical activity without discomfort. Symptoms of cardiac insufficiency at rest. If any physical activity is undertaken, discomfort is increased.	5%

Source: New York Heart Association (classification system); HeartCenter online

Treatment alternatives and benefits: Making the case for congestive heart failure programs

Sometimes congestive heart failure can be cured by treating the underlying cause, such as anemia. In other cases, heart defects can be surgically corrected or mechanical devices, including heart pumps and certain types of pacemakers, are implanted. For some patients, a heart transplant is the only alternative.

However, there is no known cure for the most common forms of heart failure, which occur when the heart muscle is damaged. Therefore, most congestive heart failure patients are treated with two or more medications. The mainstay treatment includes a prescription for ACE-inhibitors, which lower blood pressure and decrease the heart's workload. Unfortunately, there have been recent setbacks in the development of new drugs as two Phase III clinical trials were discontinued and the FDA failed to approve another drug.

Congestive heart failure clinics or programs present an opportunity to more aggressively manage the treatment of the disease. Hospitals across the country have developed these programs that teach patients self-management skills such as monitoring daily weight and blood pressure, medication management, and dietary responsibility. Following the initial education sessions, the patient's condition is monitored through either regularly scheduled clinic visits or telephone calls by nurse coordinators. Support groups also provide reinforcement for patients.

There are several different models for congestive heart failure clinics depending upon the level of resources committed. Education and monitoring are the two major components in all programs, but some programs also include a clinical setting and medication management. Most congestive heart failure clinics are staffed by multidisciplinary teams that include physicians, nurses, social workers, home care staff, and nutritionists. A referral from a primary care physician or a cardiologist is required by most congestive heart failure clinics, although a few allow self-referrals.

Some hospitals are using more sophisticated monitoring systems to help manage their congestive heart failure patients. Computerized scales measure a patient's vital signs and transmit the data over telephone lines where it is monitored by a nurse. The scales also ask questions about the patient's condition, and some provide medication reminders.

One Ohio hospital enrolled 91 congestive heart failure patients in a monitoring program that used a computerized scale. Hospital admissions dropped from 182 in the 12 months prior to their participation in the program to 107 during the 12 months afterward. The hospital's cost for the care of these patients dropped from \$1.3 million annually to \$723,000. Medicare reimbursement is typically lower than the cost of care for congestive heart failure patients, so

Figure 2. Lifetime risk for cardiovascular disease

	Men	Women
Lifetime risk at age 40	21.0% (1 in 5)	20.3% (1 in 5)
Lifetime risk at age 80	20.2% (1 in 5)	19.3% (1 in 5)
Lifetime risk without a prior heart attack	11.4% (1 in 9)	15.4% (1 in 6)

Source: Framingham Heart Study

reducing hospitalizations improves the hospital's bottom line while improving the patient's quality of life.

Many major insurers have developed disease management strategies, and virtually all include programs for congestive heart failure. One Ohio insurer, which started a program four years ago, reduced emergency room visits for participants by 31% and hospital inpatient days by 72%. The plan has achieved savings of \$200,000 to \$300,000 per quarter.

Critical success factors for development of a congestive heart failure program include the involvement of a physician champion and corporate support for the program as well as information systems to build and maintain the patient database.

Conclusion

Given the epidemic status assigned to congestive heart failure, health care organizations should evaluate their current handling of these patients and consider providing expanded and enhanced heart failure programs and services. The financial health of hospitals and systems and the quality of life for patients can benefit from more aggressive attention to the needs of this growing patient population. ■

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