



**Taking aim at**



**Nearly 5 million Americans are living with heart failure, and 550,000 new cases are diagnosed each year. Learn how initiating best practices for managing heart failure in your patients can lessen the toll of this dangerous and increasingly prevalent problem.**

# heart failure



**2.0**  
CONTACT HOURS

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*The author has disclosed that she has no significant relationship with or financial interest in any commercial companies that pertain to this educational activity.*

HOSPITAL DISCHARGES FOR the diagnosis of heart failure (HF) increased a whopping 175% between 1979 and 2004, with 30% to 60% of patients being readmitted within 6 months. Increasingly prevalent as the population ages, HF is a looming health crisis. This explains why the Institute for Healthcare Improvement (IHI) has included better care for patients with HF in its ambitious 5 Million Lives Campaign, which aims to dramatically reduce incidents of medical harm in a 2-year period ending in December 2008. (For more information on the Campaign, see “Saving 5 million lives, 1 patient at a time” in the September/October issue of *LPN2007*.)

In the text that follows, you'll learn how to apply best practices for managing HF to help achieve this IHI goal: deliver reliable, evidence-based care for congestive heart failure to avoid readmissions. See *Key components of care* for a summary of IHI recommendations.

### Trouble brewing

Heart failure is a complex syndrome resulting from impaired ventricular filling or ejection due to a structural or functional cardiac disorder. Statistics in the 2007 update from the American Heart Association (AHA) show why it's such a serious problem:

- More than 5 million adults in the United States had an HF diagnosis in 2004 (the latest year for which statistics are available).

- While deaths overall decreased 2% between 1994 and 2004, deaths from HF increased 28%.
- During 2007, care for patients with HF in the United States was expected to cost \$33.2 billion, with a significant amount spent on inpatient care.

In 2005, the American College of Cardiology (ACC) and the AHA updated their guidelines for the evaluation and management of chronic HF. Classifying the development and progression of HF in four stages, the guidelines include strategies to

prevent and slow the disease process. As HF progresses, treatments aim to continue stabilizing the patient's condition and delaying progression until HF becomes resistant to treatment and care goals are redirected. (See *Managing the stages of HF*.)

According to the ACC/AHA staging, a patient in a certain stage of HF would be expected to remain in that stage or move to a more advanced stage if his disease progresses. Complete recovery or dropping back a stage would be highly unusual. For example, suppose someone with HF in stage C gets appropriate maximum therapy and stabilizes with some ventricular recovery and without further HF symptoms. His condition is still classified as stage C and treated accordingly.

### Be subjective and objective

Your nursing care for a patient with HF should be directed at the chronic nature of the disease with ongoing assessments of his functional ability, volume status, and the effectiveness of treatments. Assess for changes and trends in his condition to modify his plan of care and determine his education needs.

Ask similar and individualized questions each time you see the patient to assess his subjective reaction to these factors:

- *Activity.* Ask your patient to describe his activity level and any associated symptoms. Find out about his ability to perform activities of daily living, such as showering, shaving, climbing stairs, and shopping. As you become more familiar with his routines, target your questions to those activities. Refer to the New York Heart Association functional classification system (available at [http://www.abouthf.org/questions\\_stages.htm](http://www.abouthf.org/questions_stages.htm)) to quantify symptom severity for these activities.

- *Medications.* Perform medication reconciliation and assess your patient's adherence to therapy by asking specific questions about his medication regimen and habits. For example, ask about the timing of doses, missed doses, his response to diuretics, adverse reactions to therapy, and his use of nonprescription products such as over-the-counter medications, herbal preparations, and vitamins.

- *Diet.* Review his eating habits, including sodium and fluid intake, and find out if he's following a recommended regimen such as a low-fat or sodium-restricted diet.

- *Smoking and substance use.* Ask your patient if he smokes, drinks alcohol, or uses recreational drugs and get details on how often and how much. If he smokes or uses illicit or recreational drugs, encourage him to stop and tell him about resources at the hospital or in the community that are available to help him. If he drinks alcoholic beverages, ask the practitioner what amounts, if any, are acceptable.

Objective evaluation of a patient with HF should include his body weight and height and his vital signs in sitting and standing positions. A 6-minute walk (noting the distance he can walk in 6 minutes in a preset area and his tolerance of the activity) may provide further information on

### Key components of care

The IHI recommends these components of care for all patients with HF unless contraindicated or the patient can't tolerate them:

- assessment of left ventricular systolic function
- ACE inhibitor or angiotensin receptor blockers at discharge when left ventricular ejection fraction is less than 40%, indicating systolic dysfunction
- anticoagulant at discharge if the patient has chronic or recurrent atrial fibrillation
- smoking cessation counseling
- discharge instructions addressing activity, diet, medications, follow-up appointment, weight monitoring, and what to do if symptoms worsen
- seasonal influenza immunization
- pneumococcal immunization
- *optional:* beta-blocker therapy at discharge for stabilized patients with left ventricular systolic dysfunction, without contraindications.

his functional status. Assess the patient for liver enlargement (hepatomegaly), pulmonary crackles, and peripheral edema. A skilled practitioner should evaluate his volume status by measuring jugular vein

pressure and assessing for hepatojugular reflux.

Your patient interview and assessment provide teaching opportunities for the patient and his family or caregivers. Take these opportunities to

reinforce their understanding of the disease process, recommended diet, medications, and activity.

To encourage your patient to manage his HF effectively, provide tips on adhering to his medication regimen. For example, explain when to take his diuretic to minimize waking at night to urinate or how to modify his activities to conserve energy. General health measures to discuss are encouraging exercise, managing other chronic disorders such as diabetes or hypertension, and making sure he's up-to-date on pneumonia and yearly influenza vaccines. (For a high-risk patient who isn't vaccinated, the IHI recommends administering them during hospitalization.)

Help your patient develop a routine for weighing himself daily (same time every morning, after urinating and before meals while wearing the same type of clothing), vital signs if indicated, and medications. Give him a plan for contacting his health care provider about symptoms or weight changes.

If your patient is being discharged from the hospital, make sure he has a follow-up appointment with his primary care provider or cardiologist and give him detailed discharge instructions, including what to do if his symptoms change. Engage the support services that helped him during hospitalization to help with discharge teaching about physical and occupational therapy, nutrition, social services, and pharmacy.

### The six key areas

The chronic care model that IHI has used for many years in its work to improve chronic illness care helps achieve goals of reliable, evidence-based care and fewer hospital readmissions. In accord with the ACC/AHA practice guidelines, this model emphasizes patient participation in

### Managing the stages of HF

The ACC/AHA 2005 guideline update classifies HF in four stages and makes specific recommendations for each.

**Stage A** identifies patients at high risk for HF because of conditions such as hypertension, diabetes, and obesity.

- Treat each comorbidity according to current evidence-based guidelines.

**Stage B** includes patients with structural heart disease such as left ventricular remodeling, left ventricular hypertrophy, or previous myocardial infarction, but no symptoms.

- Provide all appropriate therapies in stage A.
- Focus on slowing the progression of ventricular remodeling and delaying the onset of HF symptoms.
- Strongly recommended in appropriate patients: Treat with ACE inhibitors or beta-blockers unless contraindicated; these drugs delay the onset of symptoms and decrease the risk of death and hospitalization.

**Stage C** includes patients with past or current HF symptoms associated with structural heart disease such as advanced ventricular remodeling.

- Use appropriate treatments for stages A and B.
- Modify fluid and dietary intake.
- Use additional drug therapies, such as diuretics, aldosterone inhibitors, and angiotensin receptor blockers in patients who can't tolerate ACE inhibitors, digoxin, and vasodilators.
- Treat with nonpharmacologic measures such as biventricular pacing, an implantable cardioverter defibrillator, and valve or revascularization surgery.
- Avoid drugs known to cause adverse reactions in symptomatic patients, including nonsteroidal anti-inflammatory drugs, most antiarrhythmics, and calcium channel blockers.
- Administer anticoagulation therapy to patients with a history of previous embolic event, paroxysmal or persistent atrial fibrillation, familial dilated cardiomyopathy, and underlying disorders that may increase the risk of thromboembolism.

**Stage D** includes patients with refractory advanced HF having symptoms at rest or with minimal exertion and frequently requiring intervention in the acute setting because of clinical deterioration.

- Improve cardiac performance.
- Facilitate diuresis.
- Promote clinical stability.

Achieving these goals may require I.V. diuretics, inotropic support (milrinone, dobutamine, or dopamine), or vasodilators (nitroprusside, nitroglycerin, or nesiritide). As HF progresses, many patients can no longer tolerate ACE inhibitors and beta-blockers due to renal dysfunction and hypotension and may need supportive therapy to sustain life (a left ventricular assist device, continuous I.V. inotropic therapy, experimental surgery or drugs, or a heart transplant) or end-of-life or hospice care.

Source: Hunt SA, et al. ACC/AHA 2005 guideline update for the diagnosis and management of chronic heart failure in the adult: A report of the American College of Cardiology/American Heart Association task force on practice guidelines. *Journal of the American College of Cardiology*. 46(6):e1-e82, September 20, 2005.

care, commitment by clinical providers, and making resources available as necessary for success. This approach focuses on six key areas: self-management, decision support, delivery system design, clinical information system, organization of health care, and community.

**Self-management.** The scientific literature supports the view that patients with chronic conditions such as diabetes, asthma, and HF benefit from getting involved in their own care. Understanding their condition and learning complex regimens to manage it over time leads to better outcomes.

Encourage collaboration between clinicians, the patient, and his significant others to help him solve problems and adapt a routine of daily activities to maintain his independence. For example, if he wants to attend a special social event, he should know how to plan ahead to modify his meals and activities to accommodate the change in his routine.

**Decision support.** Many patients with HF are older and have other chronic conditions. Primary care providers who manage their care should be using the current guidelines as standard practice and consult with specialized HF teams if standard therapy becomes difficult or if the patient's signs and symptoms don't improve.

Evidence-based guidelines for managing HF are continually being reviewed and revised, and anyone with Internet access can get the latest information. For example, clinical trials with angiotensin-converting enzyme (ACE) inhibitors and beta-blockers have clearly demonstrated improved survival rates, reduced risk of hospitalization, and improved function in patients with HF. Yet despite a wealth of research on the significant benefits of certain medications, many patients in both hos-

## Tracking trends with registries

Accumulating data on many people with HF helps identify trends and advance treatment recommendations.

The Acute Decompensated Heart Failure National Registry (ADHERE) is to date the largest clinical database of patients with acute HF. The goal of this registry is to evaluate data including the relationships of sex, clinical characteristics, clinical management, and outcomes of more than 105,000 hospitalized HF patients. The findings are notable for the impact of associated renal dysfunction in these patients, the fact that many patients admitted with HF had preserved left ventricular function and clinical hypertension, and the presence of sex differences in clinical presentations. The registry identified a noticeable gap in the actual patient mix and the population in clinical trials for HF, with females and patients with preserved left ventricular function underrepresented. This has provided direction for future research and focus.

The ADHERE registry also looked at management through the quality of care measures mandated by The Joint Commission, and the statistics revealed a clear need for improvement. Hospital documentation showed that assessment of left ventricular function was available to 82.7% of the patients, that only 66% of patients eligible for ACE inhibitor therapy were receiving it at discharge, that 40% of active smokers were counseled on cessation, and that 32.3% of patients received instruction on medications, weight, and follow-up care.

Another registry of note is the Organized Program to Initiate Lifesaving Treatment in Hospitalized Patients with Heart Failure (OPTIMIZE-HF), which examined characteristics and care of patients with HF in more than 250 hospitals and during up to 90 days of follow-up. The results support pre-discharge initiation of evidence-based therapies and highlight clinical presentations and associated trends in mortality.

pital and outpatient settings still aren't getting optimal drug therapy.

Since 2001, the ACC/AHA guidelines for managing HF have emphasized early detection and treatment of risk factors. Recent studies have shown the benefit of using the standard of care for decision support. For example, a study by the Mayo Foundation reviewed medical record information for a random cross section of more than 2,000 residents over age 45 in a community. Highlighting the significant number of people identified at risk for progression to HF, researchers found that 56% were in stage A (with risk factors) or stage B (with asymptomatic ventricular dysfunction). The records showed a fivefold increase in mortality risk for both men and women whose HF transitioned from stage B to stage C.

Studies also have shown that many patients with cardiovascular disease who were prescribed evidence-based

therapies while hospitalized continued therapy after discharge and often avoided readmission. In the IMPACT-HF trial, initiation of beta-blocker therapy before discharge didn't increase length of stay and the patients who continued beta-blockers after discharge had no increased risk of HF deterioration.

With the IHI campaign intervention aiming to decrease hospitalizations and improve care for patients with HF, health care providers must consistently use the available—and very accessible—standards of care.

**Delivery system design.** The chronic care model calls for a committed team approach to care over time. Clinical management, patient education, and resource assessment should be critical components in the patient's discharge plan. A structured plan and the provision of resources and tools reinforce the self-management concept.

A meta-analysis of posthospital

nursing interventions and their effects on patients with HF showed positive results. Reviewing studies from 1999 to 2004, researchers evaluated four types of nursing interventions: nursing-home care, nurses on multidisciplinary teams providing home health care, nurses in HF clinics, and nursing interventions by telephone or other technologies. Some studies followed patients for up to 4 years. In most, the following components of care were noted to help reduce hospital readmissions, decrease mortality, and improve quality of life:

- access to a specialized HF team with a systematic plan for nursing and medical follow-up
- the patient and his significant others having an ongoing relationship with nurses who provide ongoing education and support
- appropriate medication therapy, particularly with ACE inhibitors and beta-blockers as indicated.

This research showed that having a specialized HF nurse involved in patient care and a cardiologist available for consultation provided clinical support and led to early detection of complications. The structure of this type of system also reinforces self-management as patients continue to adapt to complex regimens of diet, self-care, medications, and exercise. Outpatient costs increase, but hospitalization expenses are reduced.

Follow-up for patient care and documentation are essential for a successful team approach. As technology plays a greater role in record keeping, some clinics and hospitals have systems that let clinicians access electronic medical records at every acute or outpatient encounter so they can review the most current patient information, including medications. Some health care systems make this access to information

available around the clock.

**Clinical information system.** A registry to track information on the medical care and outcomes of individual patients and the HF population in general provides essential feedback for use in an evidence-based approach to care. (See *Tracking trends with registries* for notable examples.) Clinicians should be encouraged to participate in HF registries associated with clinical trials, within health systems, and on the national and international levels.

**Organization of health care.** The chronic care model emphasizes the need for health care organizations to commit to quality improvement and ongoing evaluation of the clinical effectiveness of patient care. Government and regulatory agencies such as

requires an economic commitment by health care systems to hire clinical staff, including nurses, with expertise in managing HF and to develop programs that promote evidence-based care as the standard of care for these patients.

**Community.** The chronic care model approaches patient care from a perspective that patients need support from multiple sources to maintain their complex regimens with everyday resources. The availability of community organizations and outreach programs varies across the country, but even in communities with limited health care resources, Internet access provides opportunities for education on HF. Options include the AHA Web site, search options for qualified providers and

**Applying best practices for managing HF will help achieve the goal of delivering reliable, evidence-based care for congestive HF to avoid readmissions.**

the Centers for Medicare and Medicaid Services and The Joint Commission have mandated some monitoring from the perspectives of economics and standards of care.

To enhance their performance initiatives and review the health care practices they provide, some organizations hire quality assurance monitors or become involved in supportive programs such as the AHA's *Get With the Guidelines* program. This Internet-based program provides data registry information and resources to ensure that the patient's discharge education and management plan is complete. For more information, visit <http://www.americanheart.org/presenter.jhtml?identifier=1165>.

Specialized, advanced HF care

HF programs, and the ability to network with others who have chronic diseases.

As the population in general grows older and the number of people with HF increases, the need for more community resources and medication access programs also grows. Some health care systems further demonstrate their commitment to quality patient care by incorporating social workers into their multidisciplinary HF teams. Some facilities also offer support groups for patients with various chronic diseases and their families.

### **Seizing opportunities**

The opportunities to improve patient health and slow the progression of HF are clear, and the IHI



# Heart failure

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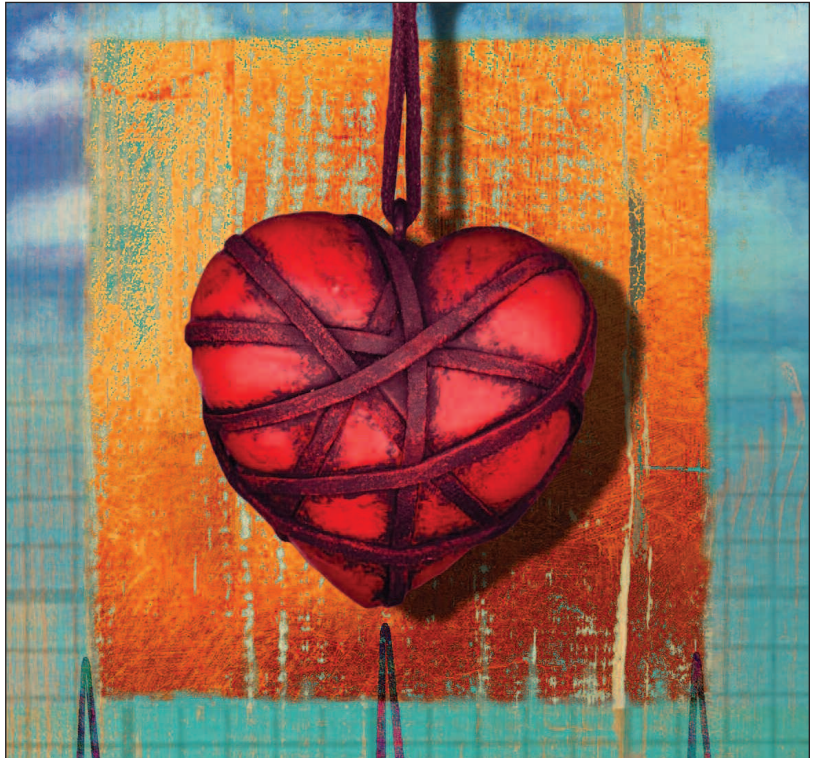
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## What is heart failure?

Heart failure means that your heart can't fill with blood or pump blood to the rest of your body as well as it should. The heart muscles have to work harder to do their job.

When your heart can't pump as it should, blood and fluids back up in your body, which may cause swelling in your belly, legs, hands, and feet and make you gain weight. You may feel tired, dizzy, or short of breath, especially at night or when you lie down. Too much fluid in your lungs may make you cough.

Heart failure can be caused by a narrowing of arteries that carry blood to the heart, high blood pressure, or damage to the heart muscle from a heart attack. Diseases of the heart muscle or heart valves also can cause heart failure. Chronic lung disease and pregnancy may put you at higher risk for heart failure.



## How will my health care provider know I have heart failure?

Your health care provider will take your medical history, perform a physical exam, and order tests to see how well your heart works. These tests usually include blood tests and a painless echocardiogram to look at the heart's valves and pumping chambers. A stress test can help him determine what's causing your heart failure. You don't need to be hospitalized for these tests.

Your health care provider may order cardiac catheterization to look at the blood flow and pressures in your heart and to take a closer look at the valves and pumping action of your heart. Performed in the hospital, this test involves putting dye in your blood and taking X-rays of your heart as the dye travels through it.

## How will my health care provider treat my heart failure?

Your health care provider will advise you to make

lifestyle changes, such as getting more exercise and changing your eating habits. You may also need to take medicine. (*See How does this medicine help me?*)

Your health care provider may suggest a daily exercise plan that won't make you too tired or strain your heart. Even getting a little exercise will help you feel better.

Follow the diet your health care provider recommends. Avoid fats such as shortening, butter, and margarine; olive and vegetable oil are okay in small amounts. Also avoid fried foods; eat baked or broiled foods instead. Stay away from foods with more than 400 mg of salt (sodium) per serving. Read labels so you don't eat more than 2 grams (less than a teaspoon) of salt per day.

Don't drink more than two alcoholic drinks a day if you're a man or more than one if you're a woman.

If you have high blood pressure or diabetes, follow your health care provider's plan to keep your blood pressure and blood sugar under control.

If you're overweight, lose weight. Being too heavy

## How does this medicine help me?

Here are the most common medicines people take for heart failure. If you don't see your medicine on this chart, ask your health care provider for more information.

Examples	Drug type	What it does	Things you should look out for
<ul style="list-style-type: none"> <li>Eplerenone (Inspra)</li> <li>Spirolactone (Aldactone)</li> </ul>	Aldosterone antagonist	Helps the kidneys get rid of excess fluid in your body	Eplerenone interacts with many drugs, including non-steroidal anti-inflammatory drugs (NSAIDs) and herbs such as St. John's wort. Tell your health care provider about any other drugs or supplements you're taking. Your health care provider may order blood tests to check potassium levels and kidney function.
<ul style="list-style-type: none"> <li>Captopril (Capoten)</li> <li>Enalapril (Vasotec)</li> <li>Lisinopril (Prinivil, Zestril)</li> <li>Quinapril (Accupril)</li> </ul>	Angiotensin-converting enzyme (ACE) inhibitor	Opens up your blood vessels; helps your kidneys work better; blocks a chemical that harms the heart; helps lower your blood pressure	If you get a dry cough while taking your medicine, your health care provider may order blood tests to check potassium levels and kidney function. If you have signs of an allergic reaction (itchy eyes, swelling of the face, lips, or tongue), stop taking the medicine and call your health care provider. If you have trouble breathing, call 911.
<ul style="list-style-type: none"> <li>Losartan (Cozaar)</li> <li>Valsartan (Diovan)</li> </ul>	Angiotensin receptor blocker	Opens up your blood vessels; helps your kidneys work better; blocks a chemical that harms the heart; helps lower your blood pressure	Your health care provider may order blood tests to check potassium levels and kidney function. If you have signs of an allergic reaction (itchy eyes, swelling of the face, lips, or tongue), stop taking the medicine and call your health care provider. If you have trouble breathing, call 911.
<ul style="list-style-type: none"> <li>Atenolol (Tenormin)</li> <li>Carvedilol (Coreg)</li> <li>Metoprolol tartrate (Lopressor)</li> </ul>	Beta-blocker	Keeps your heart from working so hard; helps control your heart failure symptoms	These medicines may make you tired and make your cholesterol level go up. If you're a man, you may have problems having or keeping an erection. If you feel dizzy or lightheaded, call your health care provider.
<ul style="list-style-type: none"> <li>Digoxin (Lanoxin)</li> </ul>	Digitalis glycoside	Helps your heart pump better	If you have heart rhythms that aren't normal, feel nauseated or vomit, or see yellow halos around objects, tell your health care provider. He may lower the dose.
<ul style="list-style-type: none"> <li>Bumetanide (Bumex)</li> <li>Furosemide (Lasix)</li> </ul>	Diuretic	Gets rid of extra water in your body	You may need to take potassium pills.

causes high blood pressure and makes your heart work harder. If you smoke, ask your health care provider about ways to help you quit.

Join a heart failure support group to help you deal with these lifestyle changes. Make sure family or caregivers read this guide and ask them to support you during treatment.

### When should I call my health care provider?

Notify your health care provider immediately if:

- you feel bloated or dizzy
- your heart beats faster than normal or you have chest pain

- you feel more tired or short of breath than usual
- you gain 2 or more pounds (1 kg) within a few days, which may indicate a fluid buildup. Weigh yourself each day at the same time and record the results.

This patient-education guide has been adapted for the 5th-grade level using the Flesch-Kincaid and SMOG formulas. It may be photocopied for clinical use or adapted to meet your facility's requirements. Selected references are available upon request.

# LPN2008



campaign intervention aims to enhance them. By participating in research and performance initiatives and consistently applying the latest information to managing HF, you and your colleagues can help patients with HF avoid hospitalization and improve their quality of life. **LPN**

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### On the Web

American College of Cardiology: <http://www.acc.org>  
American Heart Association: <http://americanheart.org>  
Institute for Healthcare Improvement 5 Million Lives Campaign: <http://www.ihc.org/IHI/Programs/Campaign>

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### Taking aim at heart failure

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**Taking aim at heart failure**

**GENERAL PURPOSE:** To provide the nurse with information about evidence-based care for patients with heart failure (HF). **LEARNING OBJECTIVES:** After reading the preceding article and taking this test, you should be able to: **1.** Describe the pathophysiology and incidence of HF. **2.** Identify the ACC/AHA stages and guidelines for HF. **3.** Discuss the IHI model of care and evidence-based strategies for treating HF patients.

- 1. Heart failure results from**
  - a. impaired atrial filling or ejection.
  - b. impaired ventricular filling or ejection.
  - c. acid-base imbalances.
  - d. sodium and potassium imbalances.
- 2. Statistics about HF in the United States show that**
  - a. between 1994 and 2004, deaths from HF decreased 2%.
  - b. in 2007, care for patients with HF was expected to cost \$3 billion.
  - c. between 1994 and 2004, deaths from HF increased 28%.
  - d. in 2004, 7 million adults had a diagnosis of HF.
- 3. Which condition is *not* identified as a risk factor for HF?**
  - a. hypertension
  - b. liver failure
  - c. diabetes
  - d. obesity
- 4. Which drug can delay symptom onset and decrease the risk of death and hospitalization for patients in stage B HF?**
  - a. nesiritide
  - b. milrinone
  - c. dopamine
  - d. an ACE inhibitor
- 5. According to the ACC/AHA 2005 guideline update, diuretics or aldosterone inhibitors are first recommended in stage**
  - a. A.
  - b. B.
  - c. C.
  - d. D.
- 6. According to the ACC/AHA 2005 guideline update, nonpharmacologic measures recommended in stage C include all of the following *except***
  - a. a heart transplant.
  - b. biventricular pacing.
  - c. an implantable cardioverter defibrillator.
  - d. revascularization surgery.
- 7. For patients in stage C with a history of paroxysmal atrial fibrillation, the ACC/AHA 2005 Guideline update recommends**
  - a. continuous I.V. inotropic therapy.
  - b. nesiritide.
  - c. anticoagulation therapy.
  - d. dobutamine.
- 8. According to ACC/AHA staging, patients with refractory advanced HF who have symptoms with minimal exertion are in stage**
  - a. A.
  - b. B.
  - c. C.
  - d. D.
- 9. In stage D, inotropic support may be necessary using**
  - a. milrinone.
  - b. nesiritide.
  - c. heparin.
  - d. nitroglycerin.
- 10. According to the ACC/AHA guideline update, patients are expected to**
  - a. remain at each stage for at least 1 year.
  - b. drop back in staging when treated.
  - c. remain in the stage or move to a more advanced stage.
  - d. recover completely.
- 11. When assessing the patient, you should obtain his subjective reactions to**
  - a. activity level.
  - b. stress level.
  - c. body weight.
  - d. vital signs.
- 12. Typically, which dietary recommendation should be reviewed with patients in HF?**
  - a. no sugar, low fat
  - b. low fat, sodium restricted
  - c. low potassium, high carbohydrate
  - d. low potassium, high protein
- 13. Which of the following provides information about the patient's functional status?**
  - a. liver size
  - b. jugular vein pressure
  - c. lung auscultation
  - d. 6-minute walk
- 14. Using a self-management approach to care can lead to**
  - a. reduced costs.
  - b. better outcomes.
  - c. increased use of acute care hospitals.
  - d. inappropriate use of outpatient care.
- 15. Research on patients with cardiovascular disease who began evidence-based therapies while hospitalized have shown that**
  - a. many continued therapy after discharge and avoided readmission.
  - b. hospital length of stay was shortened.
  - c. health care expenditures were reduced.
  - d. complications were less severe.
- 16. In the IMPACT-HF trial, patients who were given beta-blocker therapy**
  - a. before discharge had an increased length of stay.
  - b. after discharge had an increased morbidity rate.
  - c. before and after discharge had a risk of thromboembolic events.
  - d. before and after discharge had no increased risk of HF deterioration.
- 17. What is the largest clinical database of patients with HF?**
  - a. Organized Program to Initiate Lifesaving Treatment in Hospitalized Patients with Heart Failure
  - b. The New York Heart Association functional classification system
  - c. IHI chronic care model
  - d. The Acute Decompensated Heart Failure National Registry



**ENROLLMENT FORM LPN2008, March/April, Taking aim at heart failure**



**A. Registration Information:**

Last name \_\_\_\_\_ First name \_\_\_\_\_ MI \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_  
 Telephone \_\_\_\_\_ Fax \_\_\_\_\_ E-mail \_\_\_\_\_

**Registration Deadline:** April 30, 2010  
 Contact hours: 2.0 Pharmacology hours: 0.0 Fee: \$21.95

LPN  RN  CNS  NP  CRNA  CNM  other \_\_\_\_\_  
 Job title \_\_\_\_\_ Specialty \_\_\_\_\_  
 Type of facility \_\_\_\_\_ Are you certified?  Yes  No  
 Certified by \_\_\_\_\_  
 State of license (1) \_\_\_\_\_ License # \_\_\_\_\_  
 State of license (2) \_\_\_\_\_ License # \_\_\_\_\_  
 From time to time, we make our mailing list available to outside organizations to announce special offers. Please check here if you do not wish us to release your name and address.  
 Please fax my certificate to me.

**B. Test Answers: Darken one circle for your answer to each question.**

- |  |   |   |   |
|--|---|---|---|
| 1. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 6. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d  | 11. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 16. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d |
| 2. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 7. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d  | 12. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 17. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d |
| 3. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 8. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d  | 13. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d |   |
| 4. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 9. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d  | 14. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d |   |
| 5. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 10. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 15. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d |   |

**C. Course Evaluation\***

1. Did this CE activity's learning objectives relate to its general purpose?  Yes  No
2. Was the journal home study format an effective way to present the material?  Yes  No
3. Was the content relevant to your nursing practice?  Yes  No
4. How long did it take you to complete this CE activity? \_\_\_\_\_ hours \_\_\_\_\_ minutes
5. Suggestion for future topics \_\_\_\_\_

**D. Two Easy Ways to Pay:**

- Check or money order enclosed (Payable to Lippincott Williams & Wilkins)
- Charge my  Mastercard  Visa  American Express
- Card # \_\_\_\_\_ Exp. date \_\_\_\_\_
- Signature \_\_\_\_\_

\*In accordance with the Iowa Board of Nursing administrative rules governing grievances, a copy of your evaluation of the CE offering may be submitted directly to the Iowa Board of Nursing.