Heart failure is the only cardiovascular disease with escalating mortality despite advances in treatment (Ahmed, Jones, & Hays, 2008; Heidenreich, Sahay, Kapoor, Pham, & Massie, 2010). The Centers for Medicare & Medicaid Services (CMS) (2008) report heart failure as the most common inpatient discharge diagnosis in older adults and one of the most expensive diseases to treat in the long-term care (LTC) setting (Hunt, 2005). Readmission rates average 25% within the first 30 days after inpatient heart failure discharge (CMS, 2008). Frequent readmission rates for heart failure care are potentially avoidable and directly correlated with increased mortality rates (Bueno et al., 2010; Heidenreich et al., 2010; Jencks, Williams, & Coleman, 2009).

Interventions focusing on preventative care for vulnerable older adults in LTC facilities are crucial to prevent hospitalization and subsequent irreversible decline in function. Direct caregivers—primarily certified nursing assistants (CNAs)—provide 80% to 90% of the care for residents of LTC facilities and thus have the greatest potential to influence their care (Caspar & O’Rourke, 2011; Lerner, Resnick, Galik, & Russ, 2010; Vickery, 2004). Licensed caregivers assess residents on routine schedules or when direct caregivers alert them that a resident is in distress. Studies have shown that when all LTC facility staff members, especially direct caregivers such as CNAs, are given an active role in carrying out the plan of care, employee turnover declines and patient quality of care and outcomes improve (Bryant, Heineman, & Stone, 2008; Lerner et al., 2010; Vickery, 2004). Because direct caregivers who provide basic daily care will have the largest impact on nursing home residents’ quality of life, their formal involvement in early recognition of heart failure exacerbation is pivotal in long-term settings (Bryant et al., 2008; Harrington, 2008).

Use of evidence-based resources and creative approaches to care provision are critical to the survival and quality of life for nursing home residents. First and foremost, education for nurses, direct caregivers, families, and older adults should be provided. Staff in-service education using turnkey programs from the Heart Failure Society of America is a novel method to teach nurses and CNAs about the signs and symptoms of heart failure exacerbation (Heart Failure Society of America, 2011). Such programs can improve and standardize the quality of information provided. Moreover, assessment tests and process evaluation monitors in the guideline featured in this article can be used to fulfill requirements for nursing assistant certification and nursing license continuing education hours. The educational materials from the Heart Failure Society of America can be downloaded at http://www.hfsa.org/hfa_materials.asp. The evidence-based practice guideline Assessing Heart Failure in Long-Term Care Facilities (Harrington, 2012), which is summarized in this article, is available for purchase from The Univer-

**PURPOSE**
The *Assessing Heart Failure in Long-Term Care Facilities* guideline (hereafter referred to as “the HF guideline”) outlines a systematic approach for assessing heart failure and early recognition of worsening heart failure symptoms in older adults in LTC settings, post-acute care units, and short-term rehabilitation units. A central feature of the guideline is teaching LTC direct caregivers the observation skills necessary to be a key part of the health care team in this effort.

**DEFINITIONS**
For purposes of this article and the HF guideline, *long-term care settings* refer to skilled nursing care facilities (SNFs) and intermediate care facilities (ICFs); and *direct caregivers* are CNAs who provide care in LTC facilities. Other pertinent definitions are listed below.

- **Heart failure**—Clinical complex syndrome that can result from structural or functional cardiac disorders that impair the ability of the heart to pump or eject blood (Hunt, 2005).

- **Dyspnea**—Shortness of breath or increased effort in breathing, either at rest or with activity (Dains & Scheibel, 2003).

- **Edema**—The bilateral accumulation of fluid in the tissues commonly known as swelling (Dains & Scheibel, 2003).

- **Orthopnea**—Inability to breathe except when sitting up (Dains & Scheibel, 2003).

- **Orthostatic hypotension**—A drop in systolic blood pressure of more than 16 mmHg upon changing positions from lying to sitting or sitting to standing, accompanied by dizziness or fainting (Dains & Scheibel, 2003).

- **Paroxysmal nocturnal dyspnea**—Sudden attacks of dyspnea that occur when sleeping. Characterized by sudden awakening, gasping for breath, and attempting to sit up or get out of bed to relieve the dyspnea (Dains & Scheibel, 2003).

**INDIVIDUALS AT RISK FOR HEART FAILURE**
Residents of LTC facilities with a previous diagnosis of heart failure, coronary artery disease, myocardial ischemia, myocardial infarction, diabetes, hypertension, left ventricular dysfunction, or cardiomyopathy are at risk for heart failure, repeated hospitalizations, and high morbidity and mortality rates (American Medical Directors Association [AMDA], 2010; Hunt, 2005; Ouslander, Díaz, Hain, & Tappen, 2011). Residents with obstructive sleep apnea, chronic lung disease, or chronic kidney disease also have increased risk for heart failure and related complications (AMDA, 2010; Hunt, 2005). In addition, residents taking non-steroidal anti-inflammatory drugs (NSAIDs) are at risk for initial or recurrent episodes of heart failure due to precipitous effects on renal function and cardiac function (Feenstra, Heerdink, Grobbee, & Stricker, 2002).

Knowing who is at risk for heart failure and its serious consequences is important to help identify older adults who would benefit most from use of the HF guideline. Older adults who would benefit include those who have known risk factors for heart failure, and older adults residing in LTC settings with classification II, III, or IV heart failure according to New York Heart Association criteria (II = slight limitation of activity, III = marked limitation of activity, and IV = unable to carry out any physical activity without discomfort) (Hunt et al., 2009). In addition, older adults with chronic conditions such as coronary artery disease, diabetes, hypertension, myocardial ischemia, previous diagnosis of heart failure, myocardial infarction, left ventricular dysfunction, or cardiomyopathy would also benefit from use of the HF guideline (AMDA, 2010; Hunt, 2005).

**ASSESSMENT**
**The LTC Heart Failure Assessment**
Several tools and forms are available to aid in the assessment of older adults with heart failure; however, unlike the LTC Heart Failure Assessment (Figure 1), they do not address the specific characteristics of residents in LTC facilities. This tool is composed of three profiles that address activities of daily living (ADLs), quality of sleep, and dyspnea (Harrington, 2012). Following the baseline assessment and scoring, assessment is done on a monthly basis or as indicated by the resident’s symptoms. The nurse assesses for decline indicated by the need for more assistance with ADLs, lower quality of sleep, or an increasing number of problems with dyspnea. Regarding the quality of sleep component, residents may report difficulty getting quality sleep, difficulty getting to sleep, frequent awakenings, and/or daytime sleepiness (Harrington, 2012).

The higher the score in the ADL profile, the lower the level of function. This score is compared with previous section totals at each assessment interval monitoring for deterioration in functional status over time. For the dyspnea component, any score of one or greater in this section indicates a need for evaluation by the primary care provider (PCP) (Martinen & Freundl, 2004; Ouslander et al., 2009). Should the resident have a score of zero in the dyspnea section but the functional status score indicates a decline, the nurse should refer the resident to the interdisciplinary team to assess for other causes in functional decline and schedule a visit with the PCP (Bryant et al., 2008).
### Activities of Daily Living Profile

Instructions: Check the appropriate level of functioning and total the points

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Able to groom and dress unaided</td>
</tr>
<tr>
<td>2</td>
<td>Someone must assist with grooming and dressing activities</td>
</tr>
<tr>
<td>3</td>
<td>Resident depends totally on someone else for grooming and dressing</td>
</tr>
<tr>
<td>1</td>
<td>Able to bathe and get to and from toilet unaided</td>
</tr>
<tr>
<td>2</td>
<td>Requires assistance with bathing or toileting activities (for supervision, transfers, or washing difficult-to-reach areas)</td>
</tr>
<tr>
<td>3</td>
<td>Resident depends totally on another person for toileting or bathing activities</td>
</tr>
<tr>
<td>1</td>
<td>Needs no human assistance to ambulate and does so without fatigue or dyspnea</td>
</tr>
<tr>
<td>2</td>
<td>Is chair fast</td>
</tr>
<tr>
<td>3</td>
<td>Is bedfast—unable to sit up in chair</td>
</tr>
</tbody>
</table>

Total points: (This number is used as a baseline and comparison of functional status from previous assessments)

### Quality of Sleep

Instructions: Check all applicable components of Quality of Sleep

- Resident reports difficulty getting quality sleep
- Resident reports frequent awakenings
- Resident reports difficulty getting to sleep
- Resident reports daytime sleepiness

Total (1 point for each checked box in Quality of Sleep)

### Dyspnea

Instructions: Check all applicable components of Dyspnea

- Resident reports or exhibits dyspnea at rest
- Resident reports or exhibits waking up feeling short of breath at night
- Resident reports or exhibits dyspnea walking on flat surfaces
- Resident reports or exhibits dyspnea when bending or carrying objects
- Resident reports or exhibits dyspnea when hurrying or walking on inclines
- Resident reports or exhibits dyspnea when lying flat
- Resident reports or exhibits dyspnea while sitting up
- Resident reports or exhibits edema in extremities or sacral area
- Resident reports or exhibits decreased appetite or feelings of fullness/bloating
- Resident reports or exhibits feelings or signs of restlessness
- Resident reports or exhibits feelings or signs of anxiety

Total (1 point for each checked box in Dyspnea)

### Interpretation of Scores:

Any score greater than 1 in the Dyspnea or Quality of Sleep section indicates need for primary care provider evaluation. If all components of Dyspnea and Quality of Sleep are negative, assess and look for causes of decline other than HF.
A NEW LEAF pocket card was developed as a reference for facility nursing assistants to help them know when to alert nursing staff of possible worsening heart failure in older adults (Harrington, 2012). A NEW LEAF is an acronym for the major signs and symptoms indicating exacerbation of heart failure (Figure 2).

Assessment of Heart Failure
Assessment by an RN using the LTC Heart Failure Assessment tool, described below, is recommended upon admission to a LTC facility to provide baseline information for residents with:

- Documented diagnosis of heart failure, any cardiac diagnosis, hypertension, chronic kidney disease, or diabetes in the health record.
- Echocardiogram results suggestive of heart failure with reduced or preserved left ventricular ejection fraction.

The admission nurse should consult with the PCP to initiate the HF guideline for LTC residents who meet any of the above criteria and add the resident to the scheduled interdisciplinary team meetings for care plan update. All nursing assistants are given A NEW LEAF pocket card to carry with them at all times to institute the HF guideline and to screen for symptoms of heart failure exacerbation during routine resident care (Bryant et al., 2008; Hutt, Frederickson, Ecord, & Kramer, 2003). When any signs or symptoms are detected, nursing assistants are instructed to notify the primary nurse and also provide current vital signs and weight graphic information (Martinen & Freundl, 2004; Ouslander et al., 2009).

Once heart failure signs or symptoms are reported along with current vital signs and weight graphic data, the assessment nurse should then perform an assessment using the LTC Heart Failure Assessment tool and contact the PCP for evaluation if positive findings of possible heart failure exacerbation are detected. This includes observation of (Dains & Scheibel, 2003):

- Respiratory effort.
- Bulging neck veins.
- Extremity edema.
- Auscultate anterior and posterior breath sounds.
- Auscultate heart sounds for extra beats and/or irregular rhythm.

Nurses should have vital signs (blood pressure, pulse, respiration, and pulse oximetry) and weight graphic information available when contacting the PCP (Dains & Scheibel, 2003; Ouslander et al., 2009). The nursing staff should then continue to monitor vital signs according to the PCP’s discretion or the LTC facility’s procedure and policy in the ongoing management of heart failure for the older adult being assessed and treated.

INTERVENTIONS
Weight Monitoring
Residents are placed on a weight regimen by the nursing staff using a weight graphic. Weights are obtained as ordered until the resident’s weight is stable, defined by a weight gain of less than 2 pounds for three measurements to maintain weight within a specified shaded area on the weight graphic (Martinen & Freundl, 2004). Any weight gain of more than 2 pounds triggers an assessment using the LTC Heart Failure Assessment tool, vital signs with oxygen saturation, and notification of the resident’s PCP (Martinen & Freundl, 2004). After the resident’s weight is stable, the resident is then weighed every week at the same time of day, with

---

“A NEW LEAF” pocket card was developed as a reference for facility nursing assistants to help them know when to alert nursing staff of possible worsening heart failure in older adults. It serves as a mnemonic for recognizing signs and symptoms of heart failure exacerbation during routine daily resident care. Upon recognition of any of the symptoms, the certified nursing assistant should notify the primary nurse for further assessment and follow up.

A NEW LEAF

**A N-E-W L-E-A-F**

**Screening Tool for Direct Caregivers**

- **A**: Acute Agitation/Anxiety
- **N**: Nighttime shortness of breath or increased nighttime urination
- **E**: Edema in lower extremities
- **W**: Weight gain (2 to 4 pounds per week)
- **L**: Lightheadedness
- **E**: Extreme shortness of breath lying down
- **A**: Abdominal symptoms (nausea, pain, decreased appetite, distension)
- **F**: Fatigue

Figure 2. Screening tool for direct caregivers. ©2005, 2011, C. Harrington. Reprinted with permission.
the same scale, and similar clothing (Martinen & Freundl, 2004). If at any time the resident’s weight registers outside the shaded area on the weight graphic in a 4-week period, heart failure assessment is initiated and the PCP should be notified.

**Dietary Management**

Including dietary measures to control exacerbation of heart failure symptoms is an important aspect of managing heart failure in older adults. A registered dietician should be consulted upon initiation of the HF guideline. Reduction in fluid intake in patients with symptomatic advanced heart failure is recommended (American College of Cardiology/American Heart Association grade III, IV) (AMDA, 2010). Use of herbal seasonings should be encouraged in lieu of salt or potassium-based salt substitutes (AMDA, 2010).

**Immunizations**

Vaccinations are recommended to prevent respiratory infections, which may be detrimental to older adults with heart failure (Moherley, Holden, Tatham, & Andrews, 2008). Therefore, influenza vaccines should be given every fall if not contraindicated, and pneumococcal vaccines should be administered as recommended based on current Centers for Disease Control and Prevention (1997) recommendations, if not contraindicated.

**Exercise**

Maintaining activity and exercise on a regular basis is an important part of managing heart failure supporting quality of life for older adults. Residents should be encouraged to perform ADLs and leisure activities that do not induce heart failure symptoms (Institute for Clinical Systems Improvement [ICSI], 2011). Exercise should be encouraged in older adults with stable heart failure within the limits of the disease severity. In addition, weight reduction should be included in the treatment of obese patients with chronic heart failure (ICSI, 2011).

**Education**

Patient and family education should be provided on topics related to heart failure (Martinen & Freundl, 2004). In particular, alcohol intake should be discouraged in patients with severe heart failure (Hunt, 2005); smoking should always be discouraged; and smoking cessation aids such as nicotine replacement therapies should be actively encouraged as needed (Hunt, 2005). Patients and families should be taught that NSAIDs have deleterious effects on renal and cardiac function. Nursing staff should be alerted to avoid administering NSAIDs to residents with cardiovascular disease (Feenstra et al., 2002).

**Evaluating the Effectiveness of Heart Failure Management**

The successful implementation of the HF guideline requires a structured monitoring system that should be tailored to the needs of the individual with heart failure and to the setting (Harrington, 2008). Outcome indicators are those expected to change or improve from consistent use of the guideline. The major outcome indicators that should be monitored over time are:

- Heart failure hospitalizations or emergency department visits.
- Quality of life and functional status as indicated by scores on the Minimum Data Set or Minnesota Living with Heart Failure Questionnaire (http://www.license.umn.edu/Products/Minnesota-Living-With-Heart-Failure-Questionnaire_Z94019.aspx).
- Number of clinical exacerbations of heart failure.
- Symptom management.
- Disease progression.
- Transition to palliative care or hospice.

Periodic evaluation and ongoing continuing education will ensure successful implementation and improved resident outcomes. There is a Process Evaluation form and an Outcome Monitoring tool included in the complete guideline to help evaluate the effectiveness of heart failure management efforts.

**CONCLUSIONS AND IMPLICATIONS FOR GERONTOLOGICAL NURSES**

Concerns about gaps in quality of chronic disease management for high risk conditions, such as heart failure, have led to identifying the need for legislation to improve quality and value in health care through incentive-based reform measures (Averill, Hughes, & Goldfeld, 2011; Stone & Hoffman, 2010). Legislation of this type in turn provides opportunities for implementing innovative care models that will positively impact heart failure management across health care settings. The *Assessing Heart Failure in Long-Term Care Facilities* clinical practice guideline is one example of an evidence-based guideline that provides a systematic and multidisciplinary approach to heart failure management in LTC facilities, post-acute care units, and short-term rehabilitation units. The guideline provides gerontological nurses and direct caregivers with the necessary tools to improve outcomes, quality of life, and health care expenditures for vulnerable older adults with heart failure.

Because direct caregivers, mostly nursing assistants, spend a majority of their time with residents, they have a significant impact on nursing home residents’ quality of life (Caspar & O’Rourke, 2011; Lerner et al., 2010; Vickery, 2004). Direct caregivers should be recognized as valuable members of the interdisciplinary team, as their formal involvement in the early recognition of heart failure exacerbation is crucial to the health and well-being of older adults in their care (Bryant et al., 2008; Har-
ocurrence of heart failure and with relapsing heart failure: The Rotterdam Study. Archives of Internal Medicine, 162, 265-270. doi:10.1001/archinte.162.3.265


ABOUT THE AUTHORS

Dr. Harrington is Adult and Gerontological Nurse Practitioner, Clinical Assistant Professor, Adult/Gerontological and Family Nurse Practitioner Programs, East Carolina University College of Nursing, Greenville, North Carolina. Dr. Schoenfelder is Associate Clinical Professor and Editor, John A. Hartford Center for Geriatric Excellence, The University of Iowa, Iowa City, Iowa.

The authors have disclosed no potential conflicts of interest, financial or otherwise. Copyright © 2012 The University of Iowa John A. Hartford Foundation Center for Geriatric Nursing Excellence.

Address correspondence to Candace C. Harrington, DNP, ANP-BC, GNP-BC, Adult and Gerontological Nurse Practitioner, Clinical Assistant Professor, Adult/Gerontological and Family Nurse Practitioner Programs, East Carolina University College of Nursing, 3143 Health Sciences Building, Greenville, NC 27858-4353; e-mail: harrington@ecu.edu. doi:10.3928/00989134-20130415-03