

# IN-HOME QUALITY IMPROVEMENT

## **BEST PRACTICE: DISEASE MANAGEMENT** **Heart Failure**

## **NURSE TRACK**



Best Practice Intervention Packages were designed for use by any In-Home Provider Agency to support reducing avoidable hospitalizations and emergency room visits. Any In-Home care nurse/clinician can use the educational materials.

Best Practice Intervention Packages were designed to educate and create awareness of strategies and interventions to reduce avoidable hospitalizations and unnecessary emergency room visits.

# Nurse Track

This best practice intervention package track is designed to educate nurses in disease management and to provide an update on symptom management of high-risk diagnosis.



Heart failure is presented as the primary resource for this Disease Management package. You or your agency management may want to elect to pursue the Chronic Obstructive Pulmonary Disease (COPD) as an associated package.

## Objectives

After completing the activities included in the Nurse Track of this Best Practice Intervention Package, *Disease Management*, the learner will be able to:

1. Identify the role of In-Home Services in disease management and reducing avoidable acute care hospitalizations
2. Apply current assessment and symptom management modalities in daily practice
3. Describe two nursing actions that support an effective disease management program

Complete the following activities:

- Read Disease Management and In-Home Services.
- Read “Polish Your Practice: Heart Failure”.
- Visit the Web site below to listen to normal and abnormal heart and lung sounds. Heart and Lung Sounds by 3M:  
[http://solutions.3mindia.co.in/wps/portal/3M/en\\_IN/Littmann/stethoscope/education/heart-lung-sounds/](http://solutions.3mindia.co.in/wps/portal/3M/en_IN/Littmann/stethoscope/education/heart-lung-sounds/)
- Review the Decision Support Tool: Heart Failure.
- Complete the Nursing Post Test.

Disclaimer: Some of the information contained within this Best Practice Intervention Package may be more directed and intended for an acute care setting, or a higher level of care or skilled level of care setting such as those involved in Medicare. The practices, interventions and information contained are valuable resources to assist you in your knowledge and learning.

Disclaimer: All forms included are optional forms; each can be used as Tools, Templates or Guides for your agency and as you choose. Your individual agency can design or draft these forms to be specific to your own agency’s needs and setting.

# Disease Management and In-Home Services

## Definition:

**Disease Management** is a system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant (DMAA, 2007).

## Acute Care Hospitalization Connection:

Formal disease management programs were one of the top 15 strategies used for agencies that had the lowest acute care hospitalization rates of 19 percent or less (Briggs National Quality Improvement Reduction Study of 2006). **Heart failure** is the number one diagnosis for hospitalizations in people over the age of 65. This nurse track offers a refresher in management of heart failure.

## Patient Education:

Disease management's success will lie within patient and caregiver education and patient self-management. The Institute for Healthcare Improvement (IHI) identified typical failures found in patient and caregiver education, which included the following:

- Assuming the patient is the key learner
- Poor discharge planning instructions
- Patient and caregiver confusion about patient self-care instructions and medications
- Non-adherent patients, resulting in unplanned readmissions

IHI's recommended changes included the following:

- Identify the key learner(s) on admission (e.g. patient, specific caregiver)
- Redesign patient education process to improve patient and family understanding of self-management
- Use **Teach Back** during visits and phone calls to assess patient's and caregivers' understanding of instructions and self-care.

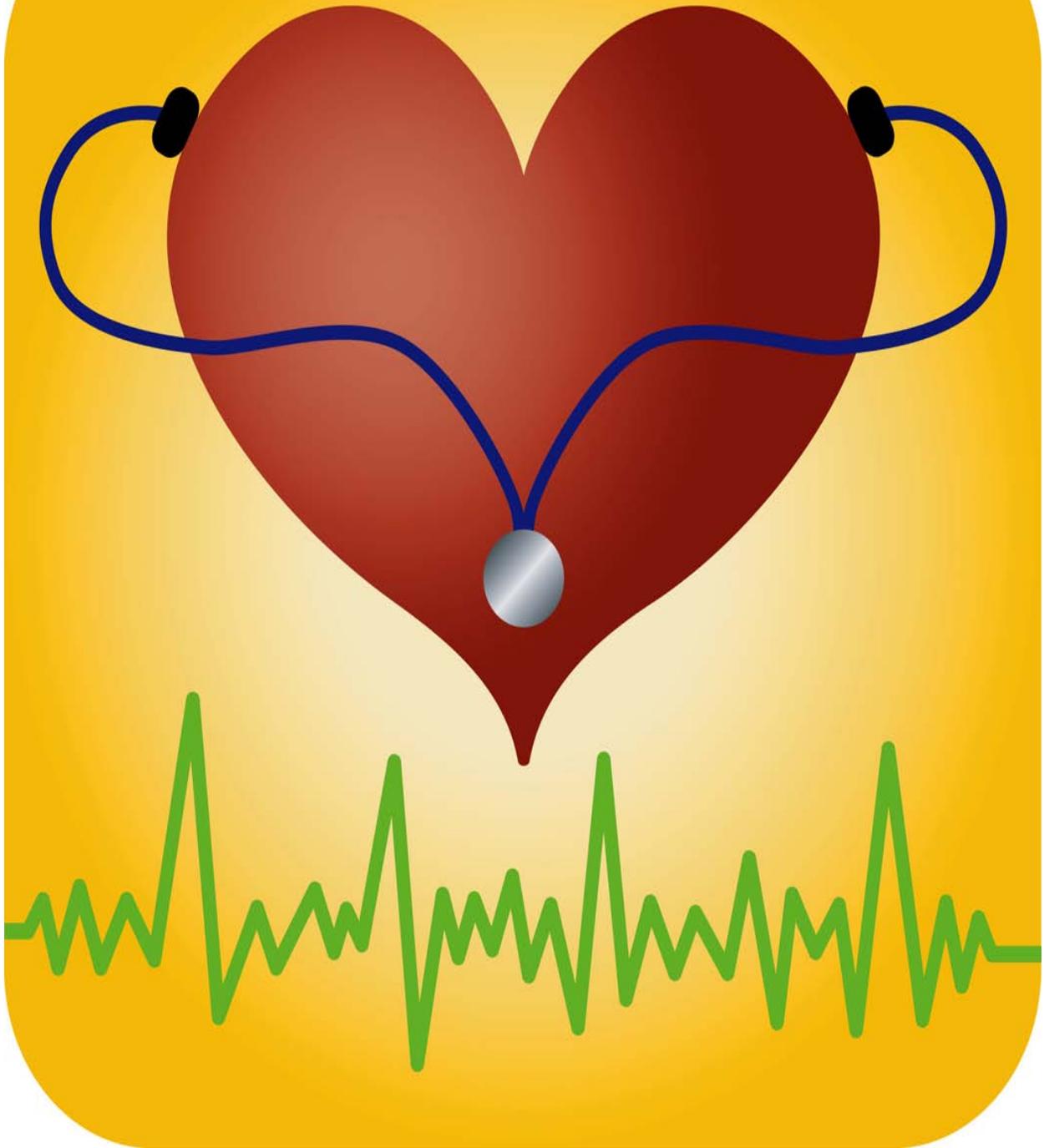
### Teach Back

After teaching has occurred ask patient and/or caregiver to repeat it back or **teach back** the information to the clinician to evaluate that appropriate learning occurred.

## Transitional Care Coordination:

Disease management is not an inclusive intervention for home care. Ideally disease management goes across the continuum from home to hospital to physician office, etc. Transitional Care has been defined as a set of actions designed to ensure the coordination and continuity of health care as patients transfer between different locations or different levels of care.

# **Polish Your Practice: Heart Failure**



## Polish Your Practice: Heart Failure

### Incidence

There are currently 5 million cases of heart failure (HF) in the United States with an additional 500,000 new cases diagnosed annually. Heart failure is the number one diagnosis, primary or secondary, for hospitalizations of people over the age of 65. The 5-year mortality rate for heart failure is 50 percent.

### Pathophysiology

Heart failure can occur when there has been some type of damage done to the heart that prevents it from pumping blood adequately, such as hypertension, MI, renal failure, diabetic large and small vessel disease or coronary artery disease.

Heart Failure means that the heart is unable to pump sufficient blood to the tissues to meet metabolic needs. Blood carries oxygen and nutrients, so decreased blood flow deprives tissues of essential energy and nutrition. As a result, the body compensates by causing a cascade of chemical reactions that 1) stimulate the sympathetic nervous system (fight or flight response) in an attempt to increase heart rate and blood pressure to deliver increased blood and oxygen, and 2) cause vasoconstriction within the kidneys that raises blood pressure, and retention and re-absorption of sodium and fluid in the kidneys, increasing vascular volume, again, raising blood pressure. This is very effective in the short term, such as during an episode of cardiogenic shock, however in the long term, it can decompensate and worsen HF symptoms.

### Types of HF: Systolic and Diastolic

**Systolic HF** typically is the inability of the **left** side of the heart to pump blood adequately and is defined primarily by Left Ventricular Ejection Fraction (LVEF) of 40 percent or less. As LVEF is measure using an echocardiogram, cardiac catheterization or trans-esophageal echo (TEE), and is measurement of the amount of blood ejected form the left ventricle with each beat. A normal LVEF is 50-60 percent.

**Diastolic HF** typically occurs when there is obstruction or enlargement of the **right** side of the heart that does not allow blood to get into the heart adequately. Diastolic HF is most commonly seen in patients with hypertension, COPD or pulmonary hypertension. The LVEF may be normal, because there is nothing wrong with the heart's pumping ability, and these patients may actually exhibit a slightly higher LVEF of greater than 60 percent.

(Polish Your Practice: Heart Failure)

## Symptoms (Acute worsening occurs during exacerbations)

✓ Shortness of breath	✓ Increased weakness or fatigue
✓ Decreased urination	✓ Confusion, agitation or restlessness
✓ Chest pain or heaviness	
✓ Edema of the feet, hands, abdomen, sacrum or generalized (anasarca)	
✓ Increase weight of 2-3 lbs. in 24 hours or 3 lbs. in one week	
✓ Dry, hacking cough or cough producing white, foamy sputum	
✓ Orthopnea (the number of pillows needed to prop up to breath comfortably)	
✓ Paroxysmal nocturnal dyspnea (feeling of smothering or fullness in chest when lying down, will resolve when sitting up)	

## Assessment Parameters

<p>1. Obtain weight, abdominal girth, blood pressure, heart rate and oxygen saturation  <b>Note:</b> Identify changes from baseline data.            Early reporting of changes in symptoms can lead to early intervention and decreased ACH rates.</p>
<p>2. Assess activity level, perceived dyspnea and sleep patterns  <b>Note:</b> Decreased activity tolerance, increased dyspnea and poor sleep patterns can be early signs of fluid retention.</p>
<p>3. Assess edema  <b>Note:</b> Be sure to evaluate all areas of potential edema, including feet/ankles, hands, triceps area, sacrum, the back, scrotal area, abdomen and periorbital areas, edema may even be generalized (anasarca).</p>
<p>4. Assess heart sounds for additional sound (S3 or S4), new or recurrent dysrhythmias or murmurs  <b>Note:</b> Changes in heart rhythm can lead to poor cardiac output and worsening heart failure symptoms. Extra heart sounds can be a warning sign of impending heart failure exacerbation.</p>
<p>5. Assess lung sounds  <b>Note:</b> Identify changes, including the presence of wheezes, crackles, rhonchi or diminished breath sounds.</p>
<p>6. Assess appetite  <b>Note:</b> Poor appetite, feelings of abdominal fullness (in absence of constipation) and early satiety (get full quickly) are all signs of potential fluid retention in the abdomen. Correlate patient complaints with abdominal girth measurement to validate.</p>
<p>7. Assess for increases in orthopnea or the presence of paroxysmal nocturnal dyspnea  <b>Note:</b> <b>Orthopnea</b> can be determined by asking the patient how many pillows he/she needs to breathe comfortably, when lying down. <b>Paroxysmal nocturnal dyspnea</b> is represented as a smothering feeling when lying down. These are <b>intermediate</b> signs of fluid retention, but intervention at this point could still prevent re-hospitalization.</p>
<p>8. Obtain thoracic impedance reading (ZO) if equipment is available  <b>Note:</b> Changes in fluid status can be an early indicator of fluid retention, and can allow for early intervention.</p>
<p>9. Assess psychosocial coping and the presence of depression  <b>Note:</b> Poor family or home support can lead to self-management adherence issues. Depression can be a major barrier to teaching self-management techniques. Depression may need to be treated before patient will be able to participate in a plan of care, eat properly, take medications as ordered and engage in meaningful learning about the disease process.</p>
<p>10. Assess mental status  <b>Note:</b> Changes in mental status, new onset confusion or restlessness may be indicators of poor cerebral perfusion from inadequate cardiac output, and may be a sign of worsening heart failure. Also may be due to electrolyte imbalance, which is common especially with increasing diuretic doses.</p>
<p>11. Assess urinary output  <b>Note:</b> Decreases in urinary output may indicate that patient is experiencing renal failure, or it may be an indication of heart failure decompensation, as the body retains fluid in an attempt to increase blood pressure and cardiac output.</p>

## Treatment

- Primary supportive treatment begins with decreasing fluid overload; this can be done with an increase in oral diuretics or by parenteral administration of diuretics (either IM or IV)
- Administer oxygen to maintain oxygen saturation above 90 percent. If identified early, changes in diuretic therapy may be adequate. In severe cases, hospitalizations may be required for more aggressive diuresis and cardiac monitoring, and in worst case scenarios, BiPAP, CPAP or mechanical ventilation may be necessary
- After obtaining an order from a physician, get a portable chest x-ray to determine if patient is suffering from heart failure, COPD or pneumonia
- Elevate legs to decrease edema. If there has been an order to increase diuretic therapy, obtain natriuretic peptide (BNP) level for baseline, and re-evaluate BNP and a basic metabolic profile (BMP) following the increase in diuretics to evaluate effectiveness of increased diuretic therapy and to evaluate for electrolyte imbalances that may occur following diuresis
- Consider institution of daily telemonitoring if the patient is not already being monitored daily
- Hospice or palliative care programs may be most appropriate level of care

## Patient Education

- Instruct patient to limit sodium intake and adhere to any physician prescribed fluid restriction
- Instruct patient to adhere to prescribed medication regimen

## Pharmacologic Management of Heart Failure

Medication	Action	Observation Parameters
<b><i>ACE Inhibitors (ACE-I) or Angiotensin Receptor Blockers (ARB's)</i></b>	<ul style="list-style-type: none"> <li>• Causes vasodilation within the kidneys</li> <li>• Lowers blood pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor blood pressure</li> <li>• Monitor electrolytes, as ACE-I and ARBs can cause hyperkalemia (contraindicated in renal failure)</li> </ul>
<b><i>Diuretics</i></b> (loop or thiazide-type)	<ul style="list-style-type: none"> <li>• Causes removal of excess fluid from the blood stream and body tissues</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor daily weights</li> <li>• Monitor lab values for BNP, electrolytes and renal function</li> </ul>
<b><i>Beta Blockers</i></b>	<ul style="list-style-type: none"> <li>• Slows heart rate down, allowing for greater filling time of the heart, improving cardiac output</li> <li>• Lowers blood pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor heart rate</li> <li>• Notify physician of a heart rate less than 60</li> <li>• Monitor blood pressure</li> <li>• Monitor blood glucose if patient has diabetes; beta blockers can block sympathetic nervous system response to hypoglycemia and patient may have asymptomatic hypoglycemic episodes</li> </ul>
<b><i>Nitrates</i></b> (short-acting, long acting or nitroglycerine patches/ointment)	<ul style="list-style-type: none"> <li>• Causes vasodilation, which increases oxygen-rich blood to the tissues</li> <li>• Decreases blood pressure and threats angina pain</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor blood pressure as vasodilation can cause a hypotension</li> <li>• Assess for orthostatic hypotension, which increases risk for falls</li> </ul>
<b><i>Digoxin</i></b> (positive inotropic agent)	<ul style="list-style-type: none"> <li>• Help regulate irregular heart rhythm, especially related to atrial fibrillation</li> <li>• Increases the squeeze of the myocardium, resulting in improved cardiac output</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor heart rate and rhythm, notify physician of heart rate less than 60</li> <li>• Teach patient to check heart rate daily prior to taking digoxin</li> <li>• Monitor lab values to prevent digoxin toxicity</li> </ul>

## Self-Management Activities

Patient Self-Management	Provider Self-Management Support
<p>1. Obtain daily weights at approximately the same time <b>each day</b>:</p> <ul style="list-style-type: none"> <li>• After emptying bladder</li> <li>• Before eating or drinking</li> <li>• Obtain weight while wearing approximately the same amount of clothing each day</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct patient to obtain a scale if they do not have one. If the patient is indigent, consider providing patient with a scale</li> <li>• Instruct patient to report a weight gain of 2-3 lbs. in 24 hours or 3 lbs, in 1 week (or as defined by physician for each particular patient)</li> <li>• Utilize telemonitoring, if available, to help establish a daily routine</li> </ul>
<p>2. Adhere to physician prescribed sodium restriction (typically 2 gram sodium diet)</p>	<ul style="list-style-type: none"> <li>• Demonstrate to patient how to read a food label to identify sources of sodium and actual sodium content</li> <li>• Provide patient with a list of foods to avoid</li> <li>• Provide patient with a list of seasoning alternatives (Do <b>NOT</b> instruct to use salt substitute unless approved by physician due to high potassium content)</li> </ul>
<p>3. Take all medications as prescribed by the doctor</p>	<ul style="list-style-type: none"> <li>• Provide patient with appropriate information about the actions, benefits and side effects of medication, while discerning patient's ability to manage the regimen</li> <li>• Complete medication reconciliation (increased knowledge leads to improved medication adherence)</li> </ul>
<p>4. Identify changes in condition early and report them to the nurse or physician</p>	<ul style="list-style-type: none"> <li>• Provide patient with disease-specific education by developing an emergency care plan that is reinforced at every visit</li> <li>• Provide patient with a disease-specific zone tool to help him/her identify which symptoms should be reported and the appropriate action to take</li> </ul>
<p>5. Obtain abdominal girth daily</p>	<ul style="list-style-type: none"> <li>• Provide patients with a measuring tape to enable them to measure abdominal girth for early identification of fluid retention in the abdomen for diastolic (right-sided) heart failure patients</li> </ul>

Polish Your Practice: Heart Failure resource was developed by Sandy Sanderson, RN, The Sanderson Group, Inc.; Educational & Consulting Services, Thompson's Station, TN



Nurse Name: \_\_\_\_\_

Date: \_\_\_\_\_

## NURSING POST TEST

### Disease Management

**Directions: Choose the ONE BEST response to the following questions. Circle the answer that identifies the ONE BEST response.**

1. Disease management is a system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant.
  - A. True
  - B. False
  
2. Essential clinical components of disease management include all of the following **except**:
  - A. Utilize clinical specialists in specific disease area (e.g. heart failure or COPD)
  - B. Optimize medication therapy and assess for appropriateness
  - C. Provide intensive comprehensive patient education
  - D. Use specialized outpatient clinics for disease management instead of home care
  - E. Provide early attention to signs and symptoms of exacerbation
  - F. Address barriers
  
3. “Polish Your Practice” (heart failure and COPD) encourages brushing up on the following areas to improve disease management:
  - A. Pathophysiology and symptom management
  - B. Assessment parameters
  - C. Current and appropriate treatment
  - D. Self-management and self-management support
  - E. All of the above
  
4. A decision support tool can assist a clinician in determining how to respond to abnormal signs and symptoms.
  - A. True
  - B. False
  
5. Three significant ways to improve chronic disease management include all of the following **except**:
  - A. Provider coordination across the continuum
  - B. Communication with patient and all providers
  - C. Patient empowerment
  - D. Using specialized outpatient clinics for disease management instead of home care