

Typical Patient Case and Comprehensive Guide for Holistic Assessment
for a Congestive Heart Failure Population

Jennifer George, RN

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The University of Arizona

Video Link of Assessment: <https://youtu.be/Z-9xxlfQ--s>

Patient Case Study

Mrs. C is a 63-year-old Caucasian female who in the past month has been having increasing episodes of shortness of breath, fatigue and dizziness. Her past medical history includes irritable bowel syndrome, mild hypertension, morbid obesity, and pre-diabetes. She has no prior history of pulmonary conditions or cardiac dysfunction. She manages her blood pressure and blood sugar levels through a low-sodium, low carbohydrate diet and walking 3 times a week as directed by her primary care physician. Her daily medications include folic acid, Naproxen and a multi-vitamin. She has a fair knowledge of her health literacy and general health related topics.

Mrs. C lives at home with her husband of 42 years. She refrains from drinking alcohol and has a past history of tobacco use while in her twenties. Her husband was a heavy smoker for the majority of their marriage but has recently stop smoking 2 years ago. She has close ties with her family. Her mother passed away 15 years ago from colon cancer and her father, 85 years old, resides in his own home two doors down. Her family history includes cancer and alcoholism on her maternal side along with hypertension, cardiac disease, atrial fibrillation and heart failure on her paternal side. She has two living sisters, one living brother and two children; a daughter who lives in the same town and a son who lives across the country.

Mrs. C is employed full time as a local gift shop manager at one of the area hospitals. When not at work, she cares for her father. She is generally healthy for her age. Patient is consistent in adhering to recommended medical screenings, however has missed her last two appointments on account of being too busy at work. Mrs. C attempts to be active within her community and socializes occasionally with friends in her free time. She actively drives herself to work and around town to complete errands without expressed concerns or complaints. Outside

of walking short distances 3 times per week, she does not participate in any other forms of exercise. She is enrolled in health benefits through Tri-Care and has a local pharmacy close by home if prescriptions are needed. While at home, she relaxes by watching her favorite television shows and playing games online by using her iPad. Although Mrs. C does not have a religious preference, she admits to being spiritual.

A recent emergency room visit occurred where Mrs. C described her health as “not feeling well” and believed she was coming down the flu. She reported her symptoms as getting tired easily, feeling short of breath in performing errands or housework and becoming dizzy if she didn’t take frequent resting periods. She mentions that she hasn’t been sleeping very well over the past couple of weeks, and some days she has trouble wearing her shoes because they feel too tight. At night while she relaxing, she reports elevating her legs to help with the swelling and throbbing in her lower extremities.

Mrs. C’s emergency room visit records report she was bringing in groceries from her vehicle when she became very short of breath walking back and forth from the car. She felt as if her heart was beating too hard/fast, became dizzy and needed to rest. Her husband called EMS due to her breathing being labored and skin being pale and diaphoretic. Vital signs recorded upon her arrival were a blood pressure of 171/97, heart rate 121, respiratory rate 34, SPO2 95 on room air, temperature 98.9 F with a Glucose of 191. An electrocardiogram performed showed Sinus Tachycardia without ST elevation with occasional PAC’s and PVC’s. Corresponding labs resulted as follows: Troponin 0.01 with repeat of 0.00, Na 130, K 3.8, HCO3 20, BUN 18, CREA 1.0 and BNP 453. A chest x-ray showed small abnormalities in the size of her heart along with the presence of diffuse pulmonary infiltrates. An echocardiogram revealed mild hypertrophy of the ventricles with an ejection fraction of 53 percent. After she was stabilized,

she was sent home with the recommendation to follow up with her primary care for further evaluation.

Mrs. C visit today is based on the recommendation she received from the physicians from the emergency room. Today's visit finds her height at 5-feet 3-inches, weight 231 pounds, blood pressure 173/81, heart rate 118, respiratory rate 28, oxygen saturation 95 percent and temperature of 98.3. She is alert, oriented and appropriate for age. Patient denies episodes of chest pain, abdominal pain, nausea, vomiting, diarrhea, constipation, and hematuria. Patient reports continued shortness of breath, especially during activity, swelling in her feet and ankles, a dry cough and intermittent episodes of dizziness and fatigue which are markers indicative of congestive heart failure (Yancy et al., 2013).

Upon auscultation of her chest, heart sounds indicate a faint S3 murmur which the patient reports not having before along with crackles present in bases of her lungs. Evidence reports that presence of an S3 murmur and lung sounds consistent with pulmonary congestion to include the sound of rales, wheezing or crackles are common findings seen in heart failure (Mayo Clinic, 2012). Edema of 2+ pitting is present in her lower extremities and appear cool to the touch.

Peripheral edema along with cool extremities is indicative of poor circulation resulting from the hearts decreased capacity to distribute blood flow throughout the body effectively (Lewis, Dirksen, Heitkemper & Bucher, 2014). Assessment of her neck for jugular vein distention is unremarkable even though the recent echocardiogram reports her ejection fraction at 53 percent.

Based on the current findings during Mrs. C visit today and the findings during her emergency room visit, her primary care provider consults with Dr. Ong, a cardiologist affiliated with Tampa General Hospital. Based on the patient's findings and presentation, Dr. Ong recommends a repeat B-type Natriuretic Peptide (BNP) to determine what level or stage of heart

failure Mrs. C may be in. Evidence indicates the BNP to be an effective assessment tool in its ability at 83% in diagnosing heart failure. (Cleveland Clinic, 2015). Furthermore, Dr. Ong (June 06, 2015) suggest to discuss medication options with a pharmacist to determine if they would be beneficial in her symptom management. On the recommendation of Dr. Ong, a consultation with clinical pharmacist, J.J. (June 09, 2015) occurred where she recommended the use of a potassium sparing diuretic along with an angiotensin-converting enzyme (ACE) inhibitor or beta blocker to aid in the management of symptoms.

Based on the recommendation from colleagues, the plan of care was discussed with Mrs. C regarding her symptoms to include the use of medications along with a referral to follow up with Dr. Ong within two weeks for further evaluation and treatment options for her cardiac dysfunction. Mrs. C verbalized understanding of her diagnosis and recommended plan of care moving forward.

Comprehensive Assessment Guide

<p>General Survey</p>	<p>Assess for: appearance, skin color, respiratory effort with ambulation, attention/mentation, restlessness, anxiety and vital signs including weight, fatigue.</p> <p>The general assessment survey as described by Fang & O’Gara (2015) includes the evaluation of a patient’s overall appearance, mental status, vital signs including weight (gain or loss), their disposition and knowledge of personal health history as a precursor in the determination of patient’s current health status in order to guide specific assessment criteria during evaluation. Specific aspects pertaining to skin color, abnormal vital signs, and effort of breathing at rest, during ambulation and while holding a conversation can be indicators of cardiovascular disorders that can affect one’s health status (Fang & O’Gara, 2015). Presence of hypotension and hypertension with assessment of the width of pulse pressure provides a noninvasive analysis of cardiac output (Yancy et al., 2013). Presence of orthostatic hypotension can indicate volume depletion (Yancy et al., 2013). Abnormal vital signs, such as tachycardia should be investigated further as a</p>
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	<p>rise in heart rate could be indicative of underlying mechanisms compensating for a cardiac malfunction (Kellerman, 2015).</p>
Neurological	<p>Assess mental status, coordination, symmetry, dizziness, numbness/tingling in extremities.</p> <p>The assessment of neurological function and symptoms can indicate concerns with circulation and oxygenation within the body as a result of cardiac dysfunction. Assessment of mental status, confusion, dizziness, attention and concentration deficits have the occurrence in appearing in approximately 25-80% of congestive heart failure cases (Hausler, Laufs & Endres, 2011). In addition a decrease in cerebral blood flow can produce symptoms such as cognitive impairment with lethargy, confusion, memory problems, and dizziness which increase morbidity in congestive heart failure cases (Gruhn et al., 2001).</p>
Cardiac	<p>Assess for chest pain/pressure, heart sounds, chest symmetry, perfusion throughout body (cap refill, clubbing of nails, discoloration or cool extremities), distended neck veins, hypo/hypertension, cardiac rhythm (tachycardia, bradycardia, arrhythmias' or dysrhythmias'), pulses, syncope or dizziness, fatigue.</p> <p>The assessment of the cardiac system includes the inspection of the chest for symmetry, auscultation of heart sounds, rhythm, palpation of pulses and circulation of blood flow throughout the body. Normal heart sounds are described as S1 and S2. The presence of extra heart sounds, such as gallops, rubs, clicking or murmurs are considered abnormal and warrants further investigation. Extra heart sounds as described by Frank & Bernharash (2015), such as a S3 murmur can lead to weakened or delayed peripheral pulses along with altered circulation leading to discoloration or cyanotic nail beds and extremities which can be present in patients with cardiac disease and congestive heart failure. In addition, the patient's rate and rhythm should be assessed to check for the presence of irregularity. Evidence shows that an irregular heart rhythm can cause symptoms such as dizziness, poor circulation of blood to vital systems and can increase the mortality rates in the CHF patient (Huikuri & Stein, 2013). The assessment of jugular vein distention or jugular vein pressure during an examination of the neck provides an approximate estimate of left ventricle filling pressure which is abnormal in the CHF patient (Fang & O'Gara, 2015). Assessment of cardiac function to include an evaluation of ejection fraction will indicate how effectively the heart is pumping and circulating blood throughout the body (Lipsky, Mendelson, Havas & Miller, 2008).</p>
Respiratory	<p>Assess lung sounds, respiratory effort, rate and rhythm, confusion (gas exchange), presence of cough, symmetry of chest during inspiration/exhalation, dyspnea, perfusion, and oxygen saturation.</p>

	<p>Assessment of lung sounds for presence of wheezing, crackles or rales and work of breathing to assess for dyspnea with or without exertion should be examined. Inspection of the torso should check for symmetry in rise and fall with inspiration and exhalation. Abnormal respiratory sounds to include wheezing, crackles or rales indicate possible pulmonary congestion, especially in the CHF patient (Mayo Clinic, 2012). Shortness of breath or dyspnea which occurs when lying down or sleeping and during minimal daily activity is an indicator of possible cardiac dysfunction (Lipsky et al., 2008). Pulmonary congestion, which occurs with volume overload, impairs lung function and gas exchange and can produce an altered mental status and unexplained coughing producing a pink tinged phlegm (Lipsky et al., 2008).</p>
<p>Gastrointestinal</p>	<p>Assess for abnormal pain, nausea, emesis, diarrhea, constipation, weight loss, appetite, nutrition</p> <p>Gastrointestinal factors such as obesity, weight loss and appetite factors such as premature satiety can present in CHF cases (Yancy et al., 2013). Nausea and abdominal tenderness may be present due to swelling of the liver and intestines in the abdominal cavity (Lipsky et al., 2008). During the inspection and palpation of the abdomen, the finding of an enlarged liver, also known as Hepatomegaly, could indicate volume overload as a result of heart failure (Yancy et al., 2013).</p>
<p>Musculoskeletal</p>	<p>Assess for posture, coordination, range of motion, swollen joints, muscle aches, weakness, symmetry</p> <p>The presence of muscle aches and joint swelling can be caused by an inflammatory markers such as C-reactive protein (CRP) which is increased in chronic disease processes (Eustice, 2014). With heart failure, hepatomegaly can occur leading to the increased production of CRP, increasing the inflammation process and decreasing the immune system (Anker & von Haehling (2004). In addition, an increase in the inflammatory process and associated markers can produce tissue wasting and muscle atrophy, which can produce episodes of weakness in the extremities and decreased physical activity (Piepoli & Coats, 2013).</p>
<p>Genitourinary</p>	<p>Assess for flank pain, lower abdominal pain, urination pattern (anuria, nocturia)</p> <p>Assessment of the genitourinary system examine factors involving renal function. Inquire about anuria and/or oliguria. In the heart failure patient, decrease circulation of blood flow affects systems causing them to function less. With the presence of decreased urine output as a result from altered renal function, fluid volume overload can occur causing peripheral and</p>

	<p>pulmonary edema, along with hypertension in the chf patient (Lewis, Dirksen, Heitkemper & Bucher, 2014). Weight gain should be monitored as it can be contributed to fluid overload from decreased urinary output in cases of heart failure (Lewis et al., 2014).</p>
Integumentary	<p>Assess skin color (pallor, cyanosis), turgor, abnormalities (bruising, clubbing of nails), peripheral edema, perfusion, diaphoresis</p> <p>Assessment of the integumentary system includes examination for pallor, cyanosis, decreased capillary refill, edema, cool diaphoretic skin (Lewis et al, 2014). As indicated by Yancy et al. (2013) the occurrence of peripheral edema, especially in the lower extremities or central ascites suggest volume overload.</p>
Psychological	<p>Assess for stress, coping, depression, anxiety, hopelessness, restlessness.</p> <p>As described by Stoll, Csaszar, Szoke & Bagdi (2014), psychological factors such as depression, anxiety, stress, anger and social isolation have a significant impact in the health status, either the recovery or the exacerbation symptoms of a heart failure patient. Individuals diagnosed and living with heart failure are more prone to episodes of anxiety and depression (Lewis et al., 2014). Uncontrolled anxiety can manifest an elevation in a sympathetic nervous system response and increases the cardiac workload (Lewis et al., 2014). Depressive symptoms have the propensity to mitigate functional capacity leading to a less than optimal quality of life (Heo, Lennie, Moser & Kennedy, 2014).</p>
Social	<p>Assess for support system and self-efficacy</p> <p>Examine self-efficacy and social support for activities of daily living. Social support incorporates positive relationships in order to foster healthy behaviors and mitigate stress (Gallagher, Luttik & Jaarsma, 2011). Heo et al (2014) promote social support in chronic disease management as it lessens the stress felt by patients, may augment symptoms and improve one's health related quality of life. Evidence indicates a link between decreased self-efficacy when little to no social support in chronic disease management is available (Gallagher et al., 2011).</p>
Spiritual	<p>Assess for hope, strength, comfort, peace. What role does faith or spiritual belief have in their life?</p> <p>The spirituality beliefs of patients with chronic disease processes affects not only their coping capacity but contributes to the manifestation of anxiety and depressive symptoms (Johnson et al., 2011). In addition, evidence shows that spiritual beliefs influence factors in treatment decisions (Johnson</p>

	<p>et al., 2011). The quality of life that patient’s experience with chronic illness forces them to question one’s faith in a higher power and may create a significant spiritual struggle (Naghi, Philip, Phan, Cleenewerck, & Schwarz, 2012). Having a sense of well-being and peace during illness is imperative when understanding a patient’s and the family’s expectations in designing and implementing mutually agreed upon goals of care (Whelan et al., 2014).</p>

Summary of expected findings

Congestive heart failure (CHF) is a chronic disease process that appears to affect more women than men. Evidence reported by Mozaffarian et al. (2015) supports a prevalence more in females seeing that women are diagnosed, live and have more deaths related to CHF than men. In addition, Pierce (2012) reports that women tend to experience more symptoms in heart failure than men, affecting their quality of life and activities of daily living. In this case study, the patient has applicable risk factors which predispose her in developing CHF. The patient has a family history of cardiac dysfunction, uncontrolled hypertension, presence of a murmur, is morbidly obese, has a sedentary lifestyle and is borderline diabetic. Evidence shows that CHF can be contributed to genetics, underlying heart and/or valve disease, uncontrolled hypertension, arrhythmias and comorbidities (Kemp & Conte, 2012). In addition, lifestyle behaviors such as smoking, diet, physical inactivity and obesity all play key aspects by weakening the heart muscle (Mayo Clinic, 2012).

Hallmark symptoms of shortness of breath, pulmonary congestion, decreased ejection fraction, peripheral edema, weight gain, fatigue and dizziness are indicators that the patient may be in heart failure (Konte & Conte, 2012). Due to the risk factors and symptoms present, the heart is unable to easily alter the ability to pump causing the heart to tire and weaken (Mayo

Clinic, 2012). Furthermore, based on symptoms, presentation and diagnostic findings, the patient fits the profile of Stage C heart failure. Stage C heart failure as described by Yancy et al. (2013), consist of structural heart disease with either prior or current symptoms that result in slight limitations in activity are indicative of heart failure. Participation in health promotion behaviors and activities along with symptom treatment will benefit the patient and improve her health related quality of life. Pierce (2012) describes the promotion of healthy behaviors includes the incorporation of mild daily exercise, modification to diet, adherence to physician appointments and prescribed medications, life style changes to include a reduction in stress and work activities, a positive attitude and utilizing a support system. Overall, if an effective plan of care is implemented and adherence is sustainable, an optimal quality of life for this patient can be achieved.

References:

Anker, S. D., & von Haehling, S. (2004). Inflammatory mediators in chronic heart failure: an overview. *Heart*, 90(4), 464-470.

Cleveland Clinic (2015). B-type Natriuretic Peptide (BNP) blood test. Retrieved from:

<http://my.clevelandclinic.org/services/heart/diagnostics-testing/laboratory-tests/b-type-natriuretic-peptide-bnp-bloodtest>.

Eustice, C. (2014). What is CRP (C-Reactive Protein)? Retrieved from:

<http://arthritis.about.com/cs/diagnostic/a/crp.htm>

Fang, J. & O’Gara, T., (2015). The History and Physical Examination. In Mann, Zipes, Lippy, Bonow, & Braunwald (Eds), *Braunwald’s Heart Disease: A Textbook of Cardiovascular Medicine* (pp. 95-113). Philadelphia, PA: Saunders, an imprint of Elsevier, Inc.

Frank, P. N., & Benharash, P. (2015). Chest Pain and Syncope. In *Surgery* (pp. 57-64). New York, NY: Springer.

Gruhn, N., Larsen, F. S., Boesgaard, S., Knudsen, G. M., Mortensen, S. A., Thomsen, G., & Aldershvile, J. (2001). Cerebral blood flow in patients with chronic heart failure before and after heart transplantation. *Stroke*, 32(11), 2530-2533.

Gallagher, R., Luttik, M. L., & Jaarsma, T. (2011). Social support and self-care in heart failure. *Journal of Cardiovascular Nursing*, 26(6), 439-445.

Häusler, K. G., Laufs, U., & Endres, M. (2011). Neurological aspects of chronic heart failure. *Der Nervenarzt*, 82(6), 733-742.

- Heo, S., Lennie, T. A., Moser, D. K., & Kennedy, R. L. (2014). Types of social support and their relationships to physical and depressive symptoms and health-related quality of life in patients with heart failure. *Heart & Lung: The Journal of Acute and Critical Care*, 43(4), 299-305.
- Huikuri, H. V., & Stein, P. K. (2013). Heart rate variability in risk stratification of cardiac patients. *Progress in Cardiovascular Diseases*, 56(2), 153-159.
- Johnson, K. S., Tulsy, J. A., Hays, J. C., Arnold, R. M., Olsen, M. K., Lindquist, J. H., & Steinhauser, K. E. (2011). Which domains of spirituality are associated with anxiety and depression in patients with advanced illness? *Journal of General Internal Medicine*, 26(7), 751-758.
- Juniper, J. (2015). Personal communication with Jennifer George on June 09, 2015.
- Kellerman, R. (2015). The Cardiovascular System. In *Conn's Current Therapy 2015* (pp. 431-510). Philadelphia, PA: Saunders, an imprint of Elsevier, Inc.
- Kemp, C. & Conte, J. (2012). The pathophysiology of heart failure. *Cardiovascular Pathology*, 21(5), 365-371.
- Lee, D., Stukel, T., Austin, P., Alter, D., Schull, M., You, J., ... Tu, J. (2010). Improved outcomes with early collaborative care of ambulatory heart failure patients discharged from the emergency department. *Circulation*, 122, 1806-1814.
- Lewis, S. L., Dirksen, S. R., Heitkemper, M. M., & Bucher, L. (2014). *Medical-Surgical Nursing: Assessment and Management of Clinical Problems, Single Volume*. St. Louis, MO: Mosby, an imprint of Elsevier Inc.

Lipsky, M. S., Mendelson, M., Havas, S., & Miller, M. (2008). *American Medical Association*

Guide to Preventing and Treating Heart Disease: Essential Information You and Your Family Need to Know About Having a Healthy Heart. Hoboken, NJ: John Wiley & Sons.

Mayo Clinic (2012). Heart failure. In Mayo Clinic (Eds.) *Heart Healthy for Life!* (pp. 156-165). New York, NY: Time Home Entertainment, Inc.

Mozaffarian, D., Benjamin, E., Go, A., Arnett, D., Blaha, M., Cushman, M., ...on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee.

(2015). Heart disease and stroke statistics—2015 update: a report from the American Heart Association. *Circulation*, *131*, e29–e322.

Naghi, J. J., Philip, K. J., Phan, A., Cleenewerck, L., & Schwarz, E. R. (2012). The effects of spirituality and religion on outcomes in patients with chronic heart failure. *Journal of Religion and Health*, *51*(4), 1124-1136.

Ong, P. (2015). Personal communication with Jennifer George on June 06, 2015.

Piepoli, M. F., & Coats, A. J. S. (2013). The ‘skeletal muscle hypothesis in heart failure’ revised. *European Heart Journal*, ehs463.

Pierce, C. S. (2012). Health promotion behaviors of rural women with heart failure. *Online Journal of Rural Nursing and Health Care*, *5*(2), 28-37.

Stoll, D. P., Csaszar, N., Szoke, H., & Bagdi, P. (2014). The Importance of Psychological Assessment and Support in Patients Suffering from Cardiovascular Disease or Undergoing Cardiac Treatment. *J Cardiovasc Dis Diagn*, *2*(161), 2.

Whellan, D. J., Goodlin, S. J., Dickinson, M. G., Heidenreich, P. A., Jaenicke, C., Stough, W. G., ... & Heart Failure Society of America. (2014). End-of-life care in patients with heart

failure. *Journal of Cardiac Failure*, 20(2), 121-134.

Yancy, C. W., Jessup, M., Bozkurt, B., Butler, J., Casey, D. E., Drazner, M. H., ... & Wilkoff, B.

L. (2013). 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Journal of the American College of Cardiology*, 62(16), e147-e239.