Heart Failure and Coronary Artery Disease

Chronic Condition Management

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UIC-CON
Learning Objectives

- Develop a basic understanding of heart failure (HF) and coronary artery disease (CAD)
- Discuss the predictors of HF and CAD, who is at risk?
- Identify the warning signs and red flag symptoms of HF and CAD
- Learn about different management interventions: tracking/monitoring compliance, and assessment of clients’ ability and willingness to self-manage HF and CAD
- Discuss care coordination/team member actions related to management of HF and CAD
Stability includes the client’s current status and the short-term prognosis (improved, getting worse, or no change)

The client’s status is determined by:

- Status of Medical Conditions (labs, medical reports)
- Care Management Strategies
- Care Coordination and Continuity
Status of Medical Conditions

Status of medical conditions is determined by:

- Medical reports/ caregiver reports
- Lab results
- Client’s ability to adhere to treatment plan or medication regimen
  (The more complex the treatment regimen, the higher the risk of noncompliance (non-adherence))

- Multiple Chronic Conditions
Care Management Strategies

- Elicit and incorporate client preferences into medical decision-making
- Provide holistic, patient-centered care
- High illness and treatment burden assessment
- Care coordination and continuity

- Incorporate other health care team members
- Consider treatment complexity and clinical feasibility when making decisions
- Client decision-making styles should be accommodated
- All clients should have the opportunity to evaluate choices and prioritize their preferences for care, within personal and cultural contexts in a collaborative care partnership model
Care Coordination and Continuity

- Identify responsible primary care provider
- Identify team member(s) responsible for care coordination
- Ensure communication to appropriate team member(s), service(s), and caregiver(s)
- Ensure timing of follow-up care and how to access future care
- Ensure care coordination across services and care environments

(Blumenthal & Glaser, 2007; Boult et al., 2011; Boyd & Fortin, 2014; Chaudry et al., 2006; Counsell et al., 2006; Harrison & Verhoef, 2002; McAllister et al., 2007; Robert Graham Center, 2007; Wagner, 1998; Weiland, 2006; Wolff & Roter, 2008)
Heart Failure
What is Heart Failure?

- The normal heart is a strong, muscular pump. Heart failure happens when the heart cannot pump enough blood and oxygen to support other organs in your body.

- Heart failure is a chronic, progressive condition in which the heart muscle has become weakened and is not able to pump effectively.

![Normal vs. Enlarged Heart]

Figure 1: Normal vs. Enlarged Heart
Heart Failure FACTS

WHO:
- Around 5.7 million people in the U.S. have heart failure*
- Heart Failure was a contributing cause in > 280,000 deaths/year or 1 in 9 deaths/year *
- Half of persons with Heart Failure will die within 5 years of diagnosis*

WHAT:
- Heart failure is a serious condition that there is no cure for
- Once diagnosed, medicines and self-management are needed for the rest of the person's life

COSTS:
- Heart Failure costs the nation an estimated $30.7 billion each year*

*http://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_failure.htm
**Unhealthy behaviors:**

- Smoking tobacco
- Eating foods high in fat, cholesterol, sodium
- Not getting enough physical activity
- Being obese

**Diseases that damage your heart:**

- Coronary heart disease and heart attacks
- High blood pressure
- Diabetes
Consequences of chronic illness
How one chronic illness causes others

• **Heart Failure** complications include: kidney damage/failure, heart valve problems, liver damage, heart attack, and stroke

• **HTN Crisis** (BP over 180/120) complications include stroke, kidney failure, heart attack, and heart failure

• **Diabetes** complications include: diabetic neuropathy, nephropathy, diabetic retinopathy, and microvascular disease
Knowing how to identify the symptoms will help you manage heart failure!

✓ Sudden weight gain
✓ Swelling in feet, ankles, or bloating of your belly
✓ Feeling light-headed or dizzy
✓ Shortness of breath, especially with activity or when lying down
✓ Loss of appetite
✓ Dry hacking cough, that is worse at night
✓ Overall tiredness or not feeling well
✓ Audible crackles on auscultation

If any of these symptoms develop, the participant should call their Medical Provider the same day they develop
Managing Heart Failure
Goals of Management

- Reduce and/or prevent acute heart failure episodes
- Control signs and symptoms to prevent hospitalization
- Maintain kidney function
- Maintain/improve quality of life, physical function (exercise training)
- Maintain/improve heart functioning
Managing Heart Failure

HF is managed with:

- Medications
- Monitoring
- Lifestyle Changes

**Medications**
Recommended for managing heart failure

**Monitoring**
Keeping track of symptoms and notifying your health care provider of any sudden changes

**Lifestyle Changes**
- Quitting smoking
- Avoiding alcohol and caffeine
- Eating a heart healthy diet
- Being physically active
- Managing stress

**Devices, Surgery**
Not frequently used to treat heart failure, but can be used to correct problems causing heart failure
How to take control of HF!

Self-Management:

1. Medications
2. Monitoring
3. Lifestyle changes
1. Medications

- Take medications exactly as prescribed
- Do NOT stop medications without consulting the provider and report any new symptoms

Commonly used medications*:

- Beta Blockers
- Angiotensin Converting Enzyme (ACE) inhibitors
- Angiotensin Receptor Blockers (ARBs)
- Aldosterone Blockers
- Vasodilators
- Digoxin (lanoxin, digitek)
- Diuretics
- Potassium
- Inotropes

*Medications prescribed are determined by the cause of the heart failure
Tell clients to keep a Log of daily **weight**, daily **blood pressure**, and **symptoms** (and take log to every MD visit)

- **Weigh DAILY**
  - Weigh every morning right when getting out of bed, after urinating, before any change in clothes, food or fluid
  - Report changes in weight to healthcare provider on same day:
    - ✓ Increase in 2 pounds overnight, or
    - ✓ Increase in 3 pounds in 5 days, 5 pounds in 7 days, or
    - ✓ Decrease of 3-5 pounds, they maybe becoming dehydrated

- **Check blood pressure daily and keep a log**

- **Log symptoms** (and/or changes in symptoms)

- **Monitor how much fluid you are drinking**
  (not all persons require a fluid restriction but if they get edema (swelling)— limit fluid to 2000 cc/day or 8.5 cups (cup = 8 ounces)
**Weight and Symptom Log for Heart Failure**

What to do:
- Weigh yourself every morning, after voiding, before eating, and wearing the same amount of clothing. Check any symptoms you have that day.
- Notify your nurse or doctor if you have more than a 2-pound weight gain in one day or if you have a 3-5-pound weight gain in 5 days.
- Bring this record with you to each visit with the doctor or nurse.

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</table>
3. Lifestyle Changes

- Quitting smoking

- Avoiding alcohol and caffeine
  - Decrease or if advance heart failure avoid alcohol.
  - Alcohol consumption should be limited to special occasions. (10 ounces of beer, 5 ounces of wine, 1.5 ounces of hard liquor)

- Eat a heart healthy low sodium diet

- Being physically active—Have an exercise plan!
  - Low level of exercise 3-4 x a week and slowly increase. After a hospitalization, person may be a candidate for cardiac rehab

- Manage stress
Low salt diet

- Sodium (salt) restriction: 2000 mg a day-- not more than 700 mg per meal
- Choose foods naturally low in salt:
  - Fresh fruits & vegetables
  - Fresh meat, poultry, fish
  - Canned vegetables that say “No Salt Added”
- Regularly check sodium content on food labels
- Most IMPORTANTLY...
  - Stop adding salt to food!!

http://www.heart.org/HEARTORG/Conditions/HeartFailure/Heart-Failure_UCM_ox030_SubHomePage.jsp
http://www.mayoclinic.com/health/heart-failure/DS0066/DSECTION=symptoms
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HF Self-Management

• What does the member need to do to self-manage their heart failure?

• What is their current knowledge of heart failure?

• How do they learn?

• Who can be involved?
• Getting tired very easily  
  Can not engage in any kind of activity (including ADLs) for very long, decreasing ability to exercise or even walk across the room  
• Muscle weakness  
• Nausea or anorexia (no appetite)  
• Early satiety  
  Becomes full when eating very early and does not eat much  
• Weight loss, unexplained  
• Feeling tired and run down all the time (malaise)  
• Sleep disturbance  
• Confusion, impaired concentration  
• Resting rapid heart rate (tachycardia)  
• Decrease urination during the day and increased at night due to gravity and positioning (Daytime oliguria with recumbent nocturia)  
• Cool extremities
## Weight and Symptom Log for Heart Failure

**What to do:**
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<td>146.3</td>
<td>118/78</td>
<td>Breathing normal, energy level good, good appetite</td>
</tr>
<tr>
<td>11/7/17</td>
<td>145.8</td>
<td>122/82</td>
<td>Breathing normal, slightly tired, good appetite</td>
</tr>
<tr>
<td>11/8/17</td>
<td>146.0</td>
<td>120/76</td>
<td>Breathing normal, energy good-rested, appetite good</td>
</tr>
<tr>
<td>11/9/17</td>
<td>146.2</td>
<td>126/84</td>
<td>Breathing normal, good energy &amp; appetite</td>
</tr>
<tr>
<td>11/10/17</td>
<td>146.4</td>
<td>120/78</td>
<td>Breathing normal, little tired, good appetite</td>
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**Weight and Symptom Log for Heart Failure**

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- Weigh yourself every morning, after voiding, before eating, and wearing the same amount of clothing. Check any symptoms you have that day.
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<td>146.8</td>
<td>122/82</td>
<td>Breathing normal, energy ok, appetite fair</td>
</tr>
<tr>
<td>11/8/17</td>
<td>148.2</td>
<td>130/88</td>
<td>Breathing normal, slightly tired, appetite fair</td>
</tr>
<tr>
<td>11/9/17</td>
<td>148.8</td>
<td>138/94</td>
<td>Short of breath with walking, tired, poor appetite</td>
</tr>
<tr>
<td>11/10/17</td>
<td>150.2</td>
<td>144/96</td>
<td>Short of breath with rest, fatigued, very poor appetite</td>
</tr>
</tbody>
</table>
Call Healthcare Provider if:

- Weight gain of 3 pounds in 1 day, or 5 pounds in a week
- Difficulty breathing at rest
- Increased shortness of breath with activity
- Finding that you have to use more pillows to sleep at night so you can breathe better
- Restlessness
- Dizziness
Requires emergency care: 911

- Trouble breathing: Shortness of breath that is worse than usual or not being relieved with rest or very rapid breathing (tachypnea)
- **Sudden** swelling in legs, feet, ankles, or hands
- Rapid heart beat
- Feeling like you might pass out, dizziness, pale and sweating
- Cough that won’t go away or produces pink foamy sputum
- Chest pain that won’t go away and is not relieved by Nitroglycerin
- Anxiety with a senses of suffocation
- Confusion
Websites with more information about Heart Failure

American Heart Association:
http://www.heart.org/HEARTORG/Conditions/HeartFailure/Heart-Failure_UCM_002019_SubHomePage.jsp

Heart Failure Society of American: www.hfsa.org

National Heart, Lung, and Blood Institute:
https://www.nhlbi.nih.gov/health/health-topics/topics/hf

Medline Plus
Located in the ‘notes’ section of each slide and:

- Chen, Michael M. & David Zieve, “Heart Failure” from A.D.A.M. Medical Encyclopedia (Pub Med)
- http://www.cdc.gov/DHDSP/library/fs_heart_failure.htm
- http://www.icsi.org/for_patients_families/heart_failure_in_adults__for_patients__families__22593.html
- http://www.icsi.org/heart_failure_2/heart_failure_in_adults__.html
- http://www.cdc.gov/DHDSP/library/fs_heart_failure.htm
- Mayo Clinic: https://www.mayoclinic.org/diseases-conditions/heart-failure/basics/definition/con-20029801
Coronary Artery Disease
Leading causes of heart failure are diseases that damage the heart such as:

**Coronary Artery Disease**
Coronary artery disease (CAD) also called coronary heart disease (CHD) is a disease in which a waxy substance called plaque builds up inside the coronary arteries. These arteries supply oxygen-rich blood to your heart muscle.

- The buildup of plaque occurs over many years.
- Plaque narrows the arteries and reduces blood flow to the heart, causing chest pain.
- The area of plaque may rupture and cause a blood clot to flow to heart muscle causing a heart attack.
CAD Risk Factors

Risk factors **you can control:**
- High blood cholesterol and triglyceride levels
- High blood pressure
- Diabetes
- Overweight and obesity
- Smoking
- Lack of physical activity
- Unhealthy diet
- Stress

Risk factors you **can’t control for:**
- Age
- Gender
- Family history of CAD
Some people with CAD have no symptoms (silent CHD)

Common Symptoms include:

- Angina (chest pain or discomfort)
- Shortness of breath
- Nausea
- Sleep problems, fatigue
Complications of CAD

- Chest pain (angina)
- Heart Attack
- Heart Failure
- Abnormal Heart Rhythm (arrhythmia)
Testing

- EKG
- Stress Testing
- Echocardiography
- Chest x-ray
- Blood tests
- Coronary Angiography and Cardiac Catheterization
Managing Coronary Artery Disease
1. Heart healthy eating
2. Maintain healthy weight
3. Managing stress
4. Physical activity
5. Quit smoking
1. Heart Healthy Eating

- Fat-free or low-fat dairy products, such as fat-free milk
- Fish high in omega-3 fatty acids, such as salmon, tuna, and trout, about twice a week
- Fruits, such as apples, bananas, oranges, pears, and prunes
- Legumes, such as kidney beans, lentils, chickpeas, black-eyed peas, and lima beans
- Vegetables, such as broccoli, cabbage, and carrots
- Whole grains, such as oatmeal, brown rice, and corn tortillas
Foods that make cholesterol rise:

- Saturated fats (found mostly in foods that come from animals)
- Trans fat (trans fatty acids)- found in food made with hydrogenated oils and fats, such as stick margarine; baked goods; crackers; frostings; and coffee creamers
Sodium:
• Use low-sodium and “no added salt” foods
• Try to eat no more than 2,300 milligrams of sodium per day (if HTN restrict even more)

Alcohol
• Limit alcohol intake:
  Men no more than 2 drinks/day
  Women no more than one drink/day
2. Maintain health weight

Know your Body Mass Index (BMI)

- Below 18.5 is sign you are underweight
- Between 18.5 and 24.9 is normal
- Between 25 and 29.9 is overweight
- BMI 30 or more is obese

Free BMI calculator:
https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm
Consider stress reducing activities:

- Stress management program
- Meditation
- Physical activity
- Relaxation therapy
- Talking things out with friends or family
4. Physical Activity

• Can lower CAD risk factors, including LDL cholesterol, HTN, and excess weight
• Lower risk for diabetes and raise HDL “good” cholesterol

Recommendation:

Moderate aerobic exercise 2.5 hours/week or vigorous aerobic exercise 1.25/week

Resource: https://www.nhlbi.nih.gov/health/health-topics/topics/phys/
5. Stop smoking

Smoking raises risk for CAD

Stop smoking resource:

- Call the Illinois Quit line at: 1-866-784-8937 and ask a nurse for information on quitting
Management/Treatment

Medications
- Statins

Procedures
- Angioplasty, bypass surgery, stents

Cardiac Rehabilitation—medically supervised program to help improve the health and well-being of people who have heart problems
- Education, counseling and trainings
- Exercise training

https://www.nhlbi.nih.gov/health/health-topics/topics/rehab/
CAD Self-Management

• What does the member need to do to self-manage their Coronary Artery Disease?

• What is their current knowledge of Coronary Artery Disease?

• How do they learn?

• Who can be involved?
Client Education on Self-Management

- Take all medicines regularly, as your doctor prescribes

- Don’t change the amount of your medicine or skip a dose unless your doctor tells you to

- You should still follow a heart healthy lifestyle, even if you take medicines to treat your coronary heart disease
Client Education on Prevention

You can prevent CAD by taking action and controlling risk factors with heart-healthy lifestyle changes and medications.
CHD raises risk for heart attack. Learn the signs and symptoms of heart attack and call 911 if you have these symptoms:

- Chest pain or discomfort
- Upper body discomfort in one or both arms, back, neck, jaw or upper part of stomach
- Shortness of breath
- Nausea, vomiting, light-headedness or fainting or breaking out in cold sweat
Heart Attack. Know the Symptoms. Take Action.

Wallet card:
https://www.nhlbi.nih.gov/health/resources/heart/heart-attack-wallet-card
CAD References

- https://www.nhlbi.nih.gov/health/health-topics/topics/rehab/
Questions