Heart Failure Across the Continuum

Barbara Huston, RN, BSN, COS-C, Quality Improvement Supervisor
Nancy Conklin, RN, BSN, Nurse Liaison
Objectives

The learner will be able to:

• Identify common evidenced-based medication therapies for heart failure
• Recognize the need for care measures across the continuum
• Describe benefits of telehealth with heart failure management
Heart Failure: Overview

• Definition
  – Condition in which the heart has lost the ability to pump enough blood to the body's tissues
  – Organs and other tissues do not receive enough oxygen and nutrients to function properly

• Chronic progressive disease

• Types
  – Systolic
  – Diastolic
  – Systolic and Diastolic
Heart Failure: Systolic

- Decreased contraction of the left ventricle
  - Weakened pump
- Decreased Left Ventricular Ejection Fraction (LVEF)
- Causes
  - Ischemic heart disease (CAD, MI)
  - Cardiomyopathy (30% familial)
  - Valvular heart disease
  - Viral endocarditis
Heart Failure: Diastolic

• Decreased contraction and relaxation during filling
• Often normal LVEF
• 50% of HF patients > age 75
• Causes
  – HTN
  – Hypertrophic
  – Restrictive cardiomyopathy
  – Pericardial constriction
Heart Failure: Congestive

- Not all heart failure is congestive heart failure (CHF)
- CHF may be due to failure of either the right or left or both ventricles
Heart Failure: Epidemiology

• Prevalence
  – Estimated 5.2 million Americans
  – Over 550,000 newly diagnosis/year
  – 1 million hospitalized/year

• Economic burden
  – $33.2 billion/year
  – Lack of adherence to diet and medication therapies most common reason for ED visits for heart failure patients

Heart Failure: Mortality

- 20% of heart failure patients die within the first year of diagnosis
- 50% die within 5 years
- >600,000 deaths/year
- >50% die suddenly – Sudden Cardiac Death
Heart Failure Hospitalizations

Number of HF hospitalizations increasing

CDC/NCHS: Hospital discharges include patients both living and dead

Adapted with permission from AHA, ASA. Heart Disease and Stroke Statistics—2004 Update. Available at: http://www.americanheart.org/downloadable/heart/1072969766940HSStats2004_Update.pdf
Heart Failure Readmission Rates

- Within 2 days: 2%
- Within 1 mo: 20%
- Within 6 mo: 50%

Aghababian RV. Rev Cardiovasc Med. 2002;3(suppl 4):S3
## New York Heart Association (NYHA) Classification

<table>
<thead>
<tr>
<th>Class</th>
<th>Patient Symptoms</th>
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<tbody>
<tr>
<td>Class I (Mild)</td>
<td>No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, or dyspnea (shortness of breath).</td>
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<tr>
<td>Class II (Mild)</td>
<td>Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in fatigue, palpitation, or dyspnea.</td>
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<tr>
<td>Class III (Moderate)</td>
<td>Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity causes fatigue, palpitation, or dyspnea.</td>
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<tr>
<td>Class IV (Severe)</td>
<td>Unable to carry out any physical activity without discomfort. Symptoms of cardiac insufficiency at rest. If any physical activity is undertaken, discomfort is increased.</td>
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</table>
### American College of Cardiology (ACC)/American Heart Association (AHA) Heart Failure Stages: Unidirectional

<table>
<thead>
<tr>
<th>Stage</th>
<th>Patient Description</th>
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</table>
| A     | High risk for developing heart failure (HF)  
No structural heart disease or HF symptoms |
| B     | Structural heart disease with no signs or symptoms of HF  
- Previous myocardial infarction  
- LV remodeling including LVH and low EF  
- Asymptomatic valvular disease |
| C     | Structural heart disease with prior or current symptoms of HF  
- Known structural heart disease  
- Shortness of breath and fatigue  
- Reduced exercise tolerance |
| D     | Refractory end-stage HF  
- Marked symptoms at rest despite maximal medical therapy |

- Hypertension  
- Coronary artery disease  
- Diabetes mellitus  
- Family history of cardiomyopathy  
- Metabolic syndrome  
- Marked symptoms at rest despite maximal medical therapy

Acute Decompensated Heart Failure (ADHF)

- Characterized by the development of dyspnea associated with the rapid accumulation of fluid within the lung's interstitial and alveolar spaces
  - Result of elevated cardiac filling pressures (cardiogenic pulmonary edema)
- Presents with elevated left ventricular filling pressures and dyspnea without pulmonary edema
- Commonly due to left ventricular (LV) systolic or diastolic dysfunction
ADHF: Signs and Symptoms

- **Dyspnea**
  - On exertion or at rest
  - Orthopnea
  - Paroxysmal Nocturnal Dyspnea (PND)
  - Cough

- **Edema**
  - Weight gain
  - Swelling in feet, ankles, legs or abdomen
ADHF: Signs and Symptoms (cont.)

• Tiredness, Fatigue
  – Constant tired feeling
  – Fatigue with everyday activities

• Memory loss
  – Confusion
  – Disorientation
  – Impaired thinking:

• Anorexia/ Nausea
ADHF: Management Settings

- Hospital
- Homecare
- ALF/PCH
- Physicians
ADHF: Management

- **Hospitals**
  - Stabilize acute episode

- **Outpatient Cardiac Clinics (non-homebound)**
  - Initiate cardiac rehabilitation
  - Instruct on acute and chronic heart failure

- **ALFs/PCHs**
  - Stabilize sub-acute episodes
  - Improve functionality (ADLS/IADLS)

- **Physician Offices**
  - Manage medication regimens and appropriate testing
ADHF: Management (cont.)

- Homecare
  - Stabilize sub-acute episodes
  - Institute telehealth
  - Instruct on chronic management
  - Utilize disease management programs
  - Provide rehabilitation services including energy conservation

- Hospice
  - Provide comfort and support end of life care
# ADHF: Overview of Treatment

<table>
<thead>
<tr>
<th>ACEI</th>
<th>ARBs</th>
<th>Beta Blockers</th>
<th>Vaso-dilators</th>
<th>Diuretics</th>
<th>Inotropes</th>
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<tbody>
<tr>
<td>RAAS inhibitor</td>
<td>RAAS inhibitor</td>
<td>Sympathetic Nervous System inhibitors</td>
<td>Decrease preload and/or afterload</td>
<td>Reduce fluid volume and congestion</td>
<td>Improves contractility</td>
</tr>
<tr>
<td>Higher doses better</td>
<td>Start low doses</td>
<td>Start very low doses</td>
<td>Start low doses</td>
<td>Start very low doses</td>
<td>Low doses</td>
</tr>
<tr>
<td>Also use beta blockers</td>
<td>Use if unable to tolerate ACEI</td>
<td>Don’t adjust ACEI/ARB and beta blocker at same time</td>
<td>Use if unable to tolerate ACEI/ARBs</td>
<td>Give with vasodilator therapy</td>
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<tr>
<th>Appropriate ACC/AHA Stages</th>
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<tr>
<td>All</td>
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Angiotensin-Converting Enzyme (ACE) Inhibitors

- Inhibit conversion of Angiotensin I to Angiotensin II
- Overall benefit
  - Reduce risk of death and hospitalizations
  - Improve clinical status
  - Slow disease progression
- Recommendations for use in Heart Failure
  - All stages
ACE Inhibitors: Interactions, Contraindications and Precautions

• Interactions
  – NSAIDS
  – Potassium supplements (and salt substitutes)
  – May increase risk of hyperkalemia

• Contraindications
  – Previous angioedema to ACEI
  – Previous anuric renal failure with ACEI

• Precautions
  – Low systemic BP (SBP < 80 mmHg)
  – Bilateral renal artery stenosis
  – Elevated serum potassium (K > 5.5 mmol/L)
ACE Inhibitors: Dosage

- Initiate therapy with low dose
- Titrate up to target dose (if possible)
  - Higher doses are better than low doses in reducing risk
  - Do not delay starting beta-blocker in patients because of failure to reach target ACE Inhibitor dose
### ACE Inhibitors

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<tr>
<th>Drug</th>
<th>Initial Dose</th>
<th>Target Dose</th>
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<tbody>
<tr>
<td>Captopril (Capoten®)</td>
<td>6.25 mg TID</td>
<td>50 mg TID</td>
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<tr>
<td>Enalapril (Vasotec®)</td>
<td>2.5 mg BID</td>
<td>10 to 20 mg BID</td>
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<tr>
<td>Lisinopril (Prinivil®, Zestril®)</td>
<td>2.5 to 5 mg daily</td>
<td>20 to 40 mg daily</td>
</tr>
<tr>
<td>Perindopril (Aceon®)</td>
<td>2 mg daily</td>
<td>8 to 16 mg daily</td>
</tr>
<tr>
<td>Ramipril (Altace®)</td>
<td>1.25 to 2.5 mg daily</td>
<td>10 mg daily</td>
</tr>
<tr>
<td>Trandolapril (Mavik®)</td>
<td>1 mg daily</td>
<td>4 mg daily</td>
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*Polish Your Practice: Heart Failure – Pharmacological Interventions, Wodlinger-Jackson, A. (2008)*
Angiotensin II Receptor Blockers (ARBs)

- Binds to AT1 angiotensin II receptor and prevents angiotensin II from binding to receptor
- Overall benefit
  - Reduce risk of death and hospitalizations
  - Improve clinical status
  - Slow disease progression
- Recommendations for use in heart failure
  - All stages for patients unable to tolerate ACEI because of cough or angioedema
ARBs: Interactions, Contraindications and Precautions

- **Drug Interactions**
  - NSAIDS
  - Potassium supplements, including salt substitutes

- **Contraindications**
  - Previous angioedema to ARB
  - Previous anuric renal failure with ARB

- **Precautions**
  - Low systemic BP (systolic BP < 80 mmHg)
  - Bilateral renal artery stenosis
  - Elevated serum potassium (K > 5.5 mmol/L)
ARBs: Dosage

- Initiate with low dose
- Can double doses for titration
- For stable patients, beta-blocker therapy can be added prior to reaching target doses
# Angiotensin II Receptor Blockers (ARBs)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Initial Dose</th>
<th>Target Dose</th>
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<tbody>
<tr>
<td>Candesartan (Atacand®)</td>
<td>4 – 8 mg daily</td>
<td>32 mg daily</td>
</tr>
<tr>
<td>Losartan (Cozaar®)</td>
<td>25 – 50 mg daily</td>
<td>50 – 100 mg daily</td>
</tr>
<tr>
<td>Valsartan (Diovan®)</td>
<td>20 – 40 mg BID</td>
<td>160 mg BID</td>
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</tbody>
</table>

Several ARBs available, however only 3 recommended for treatment of HF based on clinical studies.
Aldosterone Antagonists

- Block aldosterone binding at mineral corticoid receptors found in kidney, heart, blood vessels and brain
- Overall benefit
  - Reduce risk of death and hospitalizations
  - Improve clinical status
  - Slow disease progression
- Recommendations for use in heart failure
  - Stage C and D patients (ACC/AHA)
**Aldosterone Antagonists (cont.)**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Initial Dose</th>
<th>Target Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eplerenone (Inspra®)</td>
<td>25 mg daily</td>
<td>50 mg daily</td>
</tr>
<tr>
<td>Spironolactone (Aldactone®)</td>
<td>12.5 to 25 mg daily</td>
<td>25 mg daily or BID</td>
</tr>
</tbody>
</table>

Initiate therapy with low dose and titrate up as tolerated
All patients in studies were on concomitant diuretic therapy
Beta Blockers

- Inhibition of $B_1$-adrenergic receptors
  - Non-selective agents also inhibit $B_2$-receptors

- Overall benefit
  - Reduce risk of death and hospitalizations
  - Improve clinical status
  - Slow disease progression

- Recommendations for use in heart failure
  - Stages B, C and D (ACC/AHA)
Beta Blockers: Interactions, Contraindications and Precautions

- **Interactions**
  - Calcium channel blockers (Diltiazem or Verapamil)
  - Digoxin

- **Precautions**
  - Fluid retention
  - Hypotensive
  - Reactive airway disease

- **Contraindications**
  - Symptomatic bradycardia (heart block)
  - Severe deterioration of clinical
**Beta-Blockers: Dosage**

- Initiate with very low doses
- Increase gradually as tolerated
  - Close monitoring of BP and HF symptoms
- Titrate up to target dose
<table>
<thead>
<tr>
<th>Drug</th>
<th>Initial Dose</th>
<th>Target Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bisoprolol (Zebeta®)</td>
<td>1.25 mg daily</td>
<td>10 mg daily</td>
</tr>
<tr>
<td>Carvedilol* (Coreg®)</td>
<td>3.125 mg BID</td>
<td>25 mg (wt &lt; 85 kg) BID 50 mg (wt &gt; 85 kg) BID</td>
</tr>
<tr>
<td>Metoprolol CR/XL (Toprol XL®)</td>
<td>12.5 – 25 mg daily</td>
<td>200 mg daily</td>
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</tbody>
</table>

Not all Beta Blockers are effective in reducing risk of death in patients with HF – only these 3
Hydralazine/Isosorbide Dinitrate Combination

- Venous (nitrates) and arterial (hydralazine, nitrates) vasodilators
- Overall benefit
  - Reduces risk of death
- Recommendations for use in heart failure
  - Select stage C/D patients (ACC/AHA)
    - Unable to tolerate ACEI or ARBs
    - Continued symptoms despite ACEI and Beta Blocker therapy
<table>
<thead>
<tr>
<th>Drug</th>
<th>Initial Dose</th>
<th>Target/Maximum dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydralazine</td>
<td>10 – 25 mg QID</td>
<td>75 mg QID*</td>
</tr>
<tr>
<td>Isosorbide Dinitrate (Isordil®)</td>
<td>10 mg QID</td>
<td>40 mg QID*</td>
</tr>
<tr>
<td>BiDil (20 mg isosorbide dinitrate &amp; 37.5 mg hydralazine per tablet)</td>
<td>0.5 – 1 tablet TID</td>
<td>2 tablets TID</td>
</tr>
</tbody>
</table>

Initiate with low doses and titrate up as tolerated

Isosorbide Mononitrate (Imdur) has not been studied, however can be used (dose range 30 – 240 mg daily)

*Doses used in clinical studies
Diuretics

- Inhibit sodium reabsorption in the loop of Henle (loop diuretics) or distal tubule (thiazide and thiazide-like diuretics) resulting in increasing excretion of water

- **Overall benefit**
  - Reduce symptoms of fluid retention rapidly

- **Recommendations for use in heart failure**
  - Stages C and D (ACC/AHA)
  - Should never be used alone

  - Should be on ACEI and Beta Blocker
Diuretics: Interactions, Contraindications and Precautions

- Interactions
  - NSAIDS
    - Ibuprofen, Motrin, Advil,
    - Aleve
- Contraindications
  - No current or prior symptoms of fluid retention
- Precautions - Hypotension
Diuretics: Dosage

- Start with low dose
- Increase dose or frequency until desired response
  - Then treatment should continue with regular doses for prevention
- Response to diuretics may reduce as disease progresses
  - Continue to increase doses and frequency
  - Can use combination diuretics (eg. loop diuretic and metolazone)
<table>
<thead>
<tr>
<th>Drug</th>
<th>Initial dose</th>
<th>Maximum total daily dose</th>
<th>Duration of action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Furosemide</strong> (Lasix®)</td>
<td>20 – 40 mg daily or BID</td>
<td>600 mg</td>
<td>6 – 8 hours</td>
</tr>
<tr>
<td><strong>Bumetanide</strong> (Bumex®)</td>
<td>0.5 – 1 mg daily or BID</td>
<td>10 mg</td>
<td>4 – 6 hours</td>
</tr>
<tr>
<td><strong>Torsemide</strong> (Demadex®)</td>
<td>10 – 20 mg daily</td>
<td>200 mg</td>
<td>12 – 16 hours</td>
</tr>
<tr>
<td><strong>Hydrochlorothiazide</strong></td>
<td>25 – 100 mg daily or BID</td>
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</tr>
<tr>
<td><strong>Metolazone</strong> (Zaroxolyn®)</td>
<td>2.5 – 10 mg daily</td>
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</tbody>
</table>
**Digoxin**

- Increases contractile state of the heart
  - Also decreases sympathetic outflow and renin secretion
- Overall benefit
  - Reduce the risk of hospitalization
  - Improve symptoms and exercise tolerance
- Recommendations for use in heart failure
  - Stages C/D only (ACC/AHA)
  - Should never be used alone (should be on ACEI and Beta Blocker)
Digoxin: Interactions, Contraindications and Precautions

• Interactions
  – Other AV nodal blocking agents
    • Beta-blockers, Diltiazem/Verapamil, Amiodarone
  – Drugs that increase digoxin levels
    • Amiodarone, erythromycin, quinidine, cyclosporine, verapamil

• Contraindications - Significant sinus or atrioventricular block

• Precautions - Bradycardia

• Dosages - 0.125 – 0.25 mg daily
  – Lower doses recommended in patients age > 70 years
    • 0.125 mg daily or every other day
Heart Failure: Contraindicated Medications

- Calcium Channel Blockers (CCBs)
- Metformin (Glucaphage)
- NSAIDs
- Antiarrhythmic drugs
  - Except:
    - Amiodarone
    - Dofetilide
Other Interventions

• Lipid Management
  – “Statins,” Fish Oils
  – Diet

• Diabetic Management
  – Correction-dose insulin therapy

• Correction of electrical abnormalities
  – Implantable Cardiac Defibrillator (ICD) Therapy
  – Pacemaker
  – Cardiac Resynchronization

• Rehabilitation Therapy
Improving Medication Adherence

- Patient education
- Medication Assistant education
- Patient self-management
- Identify and address potential barriers
  - Financial issues
  - Impaired cognitive status
  - Poor medication reconciliation
  - Limited communication with healthcare providers
  - Specific medication characteristics
What are Care Transitions?

• The movement patients make between health care practitioners and settings as their condition and care needs change during the course of a chronic or acute illness.

• Set of actions designed to ensure coordination and continuity of care as patients transfer between locations or levels of care within a location

• a.k.a. – Transitional Care
Care Transitions

• Viewed as a significant intervention to reduce hospitalizations and adverse events after hospital discharge

• Current emphasis from CMS and other payers to reduce 30 day re-admissions for chronic conditions (CHF has highest incidence of re-hospitalization)
What are Care Transitions?
Nature of the Problem

- Older adults with complex care needs frequently require care in multiple settings
- Health professionals in these settings often function independent from one another
- As a result, care is often fragmented
- Patient safety and quality are compromised
- Patients require hospitalizations and higher levels of care
Home Telehealth: Components

- Patient Self-Management
- Self-Management Support
- Phone Monitoring
- Telemonitoring
- Teletriage
Patient Self-Management: Definitions

- **Patient Self-Management**
  - Tasks that individuals must undertake to live well with one or more chronic conditions.
  - These tasks include having the confidence to deal with medical management, role management and emotional management of their conditions.

Institute of Medicine (IOM, 2003)
Self-Management Support: Definition

• Self-management support (SMS)
  – Systematic provision of education and supportive interventions by health care staff to increase patients’ skills and confidence in managing their health problems, including regular assessment of progress and problems, goal setting and problem-solving support

* Institute of Medicine (IOM, 2003)
Self-Management: Tools

HEART FAILURE DIARY

This diary will help you manage your heart failure. Write yourself first thing in the morning, at the same time each day, using the same amount of clothing. Write down the date and your weight on the diary. Note: If you gain more than 2 pounds in one day, or 3-5 pounds in one week, call your home care nurse or physician. Later on in the day, record any symptoms you experience and whether you took all your medications as scheduled.

Also record your target weight and the amount of sodium you are allowed each day. If your doctor has not given you these guidelines, ask them. Take this daily diary with you every time you visit your doctor.

If you have any questions or need more information, talk with your doctor or health care team. Using this diary every day will help you manage your heart failure. Keep it with you, even when you are traveling.

MY TARGETS:

- **Weight:** lbs
- **Sodium:** mg/day
- **Limit fluid (if advised):** ounces or cups per day

<table>
<thead>
<tr>
<th>Date</th>
<th>Weight</th>
<th>Swelling (yes/no/more)</th>
<th>Short of Breath (yes/no/more)</th>
<th>Urination (less/no/more)</th>
<th>Activity As easily as usual (yes/no)</th>
<th>Meds Taken (yes/no)</th>
<th>Other Symptoms, Comments</th>
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CELTIC HEALTHCARE

1-800-335-8894

CELTIC HEALTHCARE

1-800-355-8894

CELTIC HEALTHCARE

1-800-555-8894

CELTIC HEALTHCARE

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CELTIC HEALTHCARE
Phone Monitoring: CMS Definition

- Most basic type of home telehealth
- Scheduled remote care delivery or monitoring via the telephone between a health care provider and a patient and/or caregiver
- Phone monitoring does not use electronic information processing technologies

*Home Telehealth Reference 2005
Phone Monitoring: Purpose

- Identify concerns
- Support systems
- Medication reconciliation
- Teaching
- Promote self-management
Phone Monitoring: Patient Experience

- Reduces stress
- Increases knowledge and understanding
- Creates motivation
- Improves self-management
- Results in independence
Telemonitoring: CMS Definition

- Collection and transmission of clinical data between a patient at a distant location and a health care provider through electronic information processing technologies
- Provider conducts a clinical review of the transferred data and provides a response
- Telemonitoring is the more sophisticated type of home telehealth

*Home Telehealth Reference 2005
Telemonitoring: Patient Experience

- Increases self-awareness
- Provides opportunity for early intervention
- Stabilizes chronic diseases
- Improves medical adherence
- Results in self-management
Telemonitoring: Demonstration
Home Health Teletriage

• Unscheduled, appropriate disposition of health-related problems by skilled clinicians
• Utilization of telephone or electronic information processing technologies that have been initiated by the patient/caregiver

*Home Telehealth Reference 2005
Teletriage: Patient Experience

- Provides opportunity for early intervention
- Reduces extent of disease exacerbation
- Reduces calls to physicians
- Creates care collaboration
- Reduces acute care (re)hospitalization
Telehealth: Scope

- Education
- Early identification of exacerbation
- Improves compliance
- Self-management
- Reduces acute care (re)hospitalization
Telehealth: Patient Criteria

- Heart Failure Disease Management Program
- Homecare referral
- New or exacerbating CHF
- Willing to comply
- No cost
Telehealth: Mr. J. Case Study #1

- **Reason For Hospitalization**
  - Exacerbation of CHF and Pneumonia
- **Co morbidities**
  - IDDM, HTN, Hyperlipidemia, CAD, and Mild Renal Insufficiency
Telehealth: Mr. J. Case Study #1 (cont.)

• Heart Failure Disease Management Program
• Medication reconciliation
• Nocturnal pulse oximetry test
• Daily Telemonitoring
• Phone Monitoring
• On site visits
• Education material
Telehealth: Mr. T. Case Study #2

- Hospitalized in ICU twice in 3 months
- Intubated and on ventilator both times
- History of noncompliance
- Comorbidities
  - IDDM, COPD, Morbid Obesity
  - Chronic pain due to diabetic peripheral neuropathy
  - Depression
Telehealth: Mr. T. Case Study #2 (cont.)

• Heart Failure Disease Management Program
• Daily Telemonitoring
• Phone Monitoring
• On site visits
• Education material
• Patient/family self-management
• Family support
Heart Failure: Palliative Care

- ACC/AHA Stage Late C and D
- Comfort measures
- Bridge to Hospice
Heart Failure: Hospice Care

- Heart Failure remains a progressive illness
- Unpredictable trajectory
- High mortality rate
- Optimal treatment in Heart Failure Program
- Aggressive disease management now bridges into palliative care/hospice with focus of relief and prevention of suffering and increased quality of life
**Benefits of Hospice Care**

- Treat the whole family unit
  - Physical, psychosocial, spiritual, bereavement
- Goals
  - Quality of life
  - Peaceful and dignified death in setting of choice
- IDT approach
  - SN, SW, Chaplain, Bereavement, HHA, PCP, Medical Director, Client/significant others
- Hospice Medicare Benefit
QUESTIONS???
References


REFERENCES (cont.)

• Best Practice Intervention Packages: Self-Management & Transitional Care Coordination
  – MedQIC – www.qualitynet.org


• Polish Your Practice Heart Failure Series
  – MedQIC – www.qualitynet.org
Celtic Healthcare

Barbara Huston, RN, BSN, COS-C
hustonb@celtichealthcare.com

Nancy Conklin, RN, BSN
conklinn@celtichealthcare.com

Celtic Healthcare is a leading, regional full-continuum home healthcare services provider, located north of Pittsburgh in Mars, PA.

Specializing in geriatric care management, living assistance services, home-based nursing and rehabilitation services, hospice and palliative care, Celtic Healthcare provides unmatched expertise across the wide scope of home healthcare needs.

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