Target Weight at the Center of Heart Failure

April 24, 2018
Disclosures

• None
Our Mission and Vision

Maine will be the healthiest state in the nation by putting patients and their families first, providing access to affordable care, and delivering superior service and outcomes.

Through the leadership of Maine Medical Center, MaineHealth is committed to serving our community, educating tomorrow’s caregivers, researching new ways to provide care, and in service of helping Maine become the healthiest state in the nation.

MaineHealth
Acute Heart Failure

Gradual or rapid change in HF symptoms resulting in a need for urgent therapy

~ 1.0 million annual hospitalizations for HF in US

Cost estimates: > $20 billion
Projected > $50 billion by 2030
80% of costs: hospitalizations
# Heart Failure in the MHACO

<table>
<thead>
<tr>
<th>April 2016 – March 2017</th>
<th>MHACO</th>
</tr>
</thead>
<tbody>
<tr>
<td># chronic HF</td>
<td>8713</td>
</tr>
<tr>
<td>Deaths</td>
<td>10.6%</td>
</tr>
<tr>
<td>Hospitalizations/1000 beneficiaries</td>
<td>708</td>
</tr>
<tr>
<td>Readmissions (30 day)/1000 discharges</td>
<td>166</td>
</tr>
</tbody>
</table>
What are acute HF care goals?

- Early diagnosis
- Early relief of symptoms
- Identify cause
- Triage consistently
- Integration with inpatient and/or post-acute care
What is a Target Weight?

- Target weight is the weight at which the patient has achieved intravascular euvolemia
  - Euvolemia is defined as wedge of $\leq 15$
  - Wedge pressure is roughly twice the CVP
  - Diurese to CVP of 5-8 as a goal and use that weight as a target weight
  - If exam findings are uncertain, perform right heart catheterization
Intracardiac Pressures

Normal Intracardiac Pressures

- Ao: 100-140/60-80 mmHg
- PA: 15-30/6-12 mmHg
- LA: 6-12 mmHg
- LV: 100-140/6-12 mmHg
- RA: 0-6 mmHg
- RV: 15-30/0-6 mmHg

(c) 2007, Munther K. Homoud, MD

MaineHealth
Why do we call it “Target Weight”??
The Target Weight

- **Goal weight, ideal weight, healthy weight, dry weight**

- The weight at which the patient is stable on appropriate medications
  - Established using varying levels of assessment
    - Hospital/clinic/provider office
    - SNF or home health
    - Cardiac rehab
  - Must be translated from scale to scale!
Why do we care?

• Decongesting heart failure patients:
  - Improves quality of life
  - Correlated with improved survival in the treatment of decompensated heart failure
Volume status predicts mortality and morbidity in heart failure patients

So how do we set it?

- Exam
  - Jugular Venous Distention
  - Peripheral Edema
  - Rales
  - Echocardiographic reading of IVC
  - Right heart catheterization
# Methods to assess volume status

<table>
<thead>
<tr>
<th>Method</th>
<th>Studies (References)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest X-ray</td>
<td></td>
</tr>
<tr>
<td>Blood volume analysis</td>
<td></td>
</tr>
<tr>
<td>BNP/proNT-BNP</td>
<td></td>
</tr>
<tr>
<td>Intrathoracic impedance</td>
<td></td>
</tr>
<tr>
<td>CardioMEMS</td>
<td>This is essentially a permanent right heart catheterization (gold standard)</td>
</tr>
</tbody>
</table>
Target Weight

• Serves as the basis for
  - Ongoing diuretic management
  - Patient self-management
  - SNF Heart Failure Protocol
  - Home Diuretic Protocol – Home Health
  - Emergency Room management
Acute Decompensated Heart Failure

- **Emergency Medical Services**
  - Risk stratify: nl renal function, Trop, BP
  - Early Intervention to decongest

- **Inpatient Service**
  - Precision Medicine Part 1:
    - Refine Dx, Rx, Educate

- **Outpatient Service**
  - Patient Centered, Coordinated Care

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**MaineHealth**
Breaking the Cycle of Readmission

**Admission**
- Assessment to prepare for discharge
- Reason for admission addressed
- Medication reconciliation
- Adequate diuresis
- EBT

**Hospitalization and Treatment**
- Home Health Care/SNF
- Social support
- DME for home care

**Transitional Care**
- JCAHO Core Measures
- Patient/caregiver education
- Follow up appointment scheduled
- Able to fill prescriptions

**Hospital Discharge**
- Follow up

**Discharge Planning**
- Home Health Care/SNF

MaineHealth
Tools to Assist in Care Coordination

• MaineHealth Heart Failure Toolkit:
  - Strategies and tools available in different areas in the health care system to support the treatment of heart failure patients
  - For the patient:
Healing Hearts
Living Well with Heart Failure
MaineHealth
www.mainehealth.org
## Daily Weight and Zone Log

### Check your weight and heart failure zone EVERYDAY

Write your daily weight each day and mark the zone you are in (see instructions on reverse side). Keep this near your scale. Bring it when you visit your doctor.

**MY TARGET WEIGHT IS:**

☑️ ______ POUNDS.

I will call my doctor if my weight goes up to ______ pounds or more.

I will call my doctor if my weight goes
Check Your “Heart Failure Zone” Every Day

Heart failure can cause you to feel bad, have swelling and be short of breath. Doing your daily checkup can help you catch these changes quickly so you can take action to feel better and stay out of the hospital.

Each Day:
1. Check how you feel
   - Weigh yourself
   - Are you short of breath?
   - Do you have swelling?

2. Find which Heart Failure Zone you are in using the Heart Failure Zone Chart.
   - Write the date
   - Write your weight in the “Weight” box for that day
   - Mark the zone you are in (green, yellow or red)

Heart Failure Zone Chart

Write your weight and zone on the back of this page every day.

My target weight is ______ pounds.

Every day, I will use this chart to check my weight, swelling, breathing, and energy level. I will take action if ONE or MORE of these is in the yellow or red zone.

<table>
<thead>
<tr>
<th>Green Zone</th>
<th>Yellow Zone</th>
<th>Red Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>You are doing OK and in control.</td>
<td>Take action—call today.</td>
<td>Take action—call NOW!</td>
</tr>
<tr>
<td>Dr. ______ Phone ______</td>
<td>My weight is ______ pounds or more.</td>
<td>My weight is ______ pounds or less.</td>
</tr>
<tr>
<td>No change in my weight.</td>
<td>My weight is ______ pounds or more.</td>
<td>My weight is ______ pounds or less.</td>
</tr>
</tbody>
</table>
| I do not have swelling. | I have swelling in my: | I have swelling in my:
  • foot, ankle or shin
  • knee or thigh | • belly, I feel boatsed or pants are tighter
  • hands or face |
| I do not feel short of breath. Breathing is normal. Sleep is normal. | I feel short of breath or cough while: | I feel short of breath or wheeze at rest.
  • walking or talking
  • eating
  • bathing or dressing | I feel less alert.
  I need to sleep sitting up to breathe. |
| My energy level is normal. | I am too tired to do most of my normal activities. | I am so tired that I can hardly do any of my normal activities. |

Tear this page out and keep it next to your scale.
How to Eat the Right Amount of Salt

- Salt is also called “sodium” and is found in many foods.
- Many foods you eat have salt even if you can’t see it or taste it or you have not added it yourself.
- Choose foods that are low in salt.
- Don’t add salt when you cook.
- Take the salt shaker off the table.
- Take in between 2000 and 2500 milligrams (mg) of sodium each day unless your doctor recommends a different amount for you.

Eating the right amount of salt will help you feel better.

- Salt makes your body hold water, sort of like a sponge.
- Eating too much salt can make your legs, feet and belly swell up and make you hold water in your lungs, making you short of breath.
- Low salt does not mean no salt. Your body and heart need some salt to work normally.

Remember

Most of the sodium we eat comes from prepared or packaged foods and eating out. Fresh foods are naturally low in sodium.
**Water Pill Guide**

Please fill out this form together with your doctor.

My target weight is ________ pounds.
My Water Pill name and strength is __________________ mg.

If I am in the **YELLOW ZONE** or **RED ZONE** I will call:

Call Dr. ___________ Phone ___________

If symptoms are **severe** I will call **911** or go to the emergency room.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Number of pills in morning</th>
<th>Number of pills in afternoon</th>
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</table>

**Red Zone**
Take action—call your doctor NOW!
If symptoms are severe call 911 or go to the emergency room.

**Yellow Zone**
Take action—call your doctor today.

**Green Zone**
You are in control.
This is your Target Weight.
You are doing OK and are in control.

**Yellow Zone**
Take action—call your doctor today.

**Red Zone**
Take action—call your doctor NOW!
If symptoms are severe call 911 or go to the emergency room.

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**MaineHealth**
There is no cure for heart failure. It is often a progressive heart disease that can be managed with treatment for many years. Heart failure often gets worse over time. It is important that your loved ones understand your wishes for care. Then if you become more ill your health care proxy can work with your healthcare team so you get the care that you want. Advance care planning helps your healthcare team and loved ones know and support your wishes for care. It is best to start advance care planning early when you are doing okay.

Palliative Care, which includes advance care planning, works with you, your family and your healthcare team to support you during a serious illness. What matters to you guides the care you receive. Palliative Care includes symptom management and pain control and helping you to live in a way that is most meaningful to you. Palliative Care can improve your quality of life and can even lead to a longer life.

Five Steps for Advance Care Planning

1. Think about what “living well” means to you
   - What gives your life meaning?
   - What matters to you?
   - For instance, think about a good day: What would you be doing?
   - Who would you talk to?
   - What would you do?

2. Talk with your doctor, healthcare team, and loved ones about your future healthcare and goals
   - What fears or worries do you have about your heart failure?
   - If you get sicker, what kind of treatments would you want if it might help you live longer?
   - If your heart stops or you stop breathing, will you want cardiopulmonary resuscitation (CPR)? Will you want to be placed on a breathing machine?
   - Where will you want to be cared for if your heart disease gets worse?
   - Who else should be part of this conversation such as chaplain, care manager or others who care for you?
Tools to Assist in Care Coordination

• MaineHealth Heart Failure Toolkit:
  - Strategies and tools available in different areas in the health care system to support the treatment of heart failure patients
  - For different patient areas:
Heart Failure Standing Orders for Home Health
FAX TO: MaineHealth Care at Home: 207-775-5521
(Rev 1/4/17)

Patient Name: ___________________________ Date of Birth: __________

Patient Weight at Home on Morning after Discharge _______ lbs. Measured via (choose one):
□ patient home scale  □ telehealth scale

Allergies: ____________________________________________

Provider: Complete Sections 1-4

1. Target Weight:
   • Call provider if A) weight > 4 lbs below target or B) weight below _________ lbs. Circle A) or B)
   • Activate protocol if A) weight > 4 lbs above target or B) weight above _________ lbs. Circle A) or B)
   • Hold protocol and notify provider if BUN/Creatinine: _________ Baseline: _________

2. Order from patient’s pharmacy:
   • Metolazone 2.5 mg PO disperse #4, 2 refills
   • Potassium 20 mg PO disperse #8, 2 refills

3. Check and complete all that apply—Note: IV dosing at 2.5X usual oral daily dose
   • IV furosemide 40 ml. Administer as directed; 2 refills
   • IV bumetanide 16 mg. Administer as directed; 2 refills
   • Normal saline for IV flush disperse #8; 2 refills

Orders
- Install Telehealth monitor
- Draw baseline BMP and Mg++ if not available within last 7 days. Draw follow up labs every other day during activation.
- Repeat labs one day after start of activation and one week after completion of protocol.
- Urgent Diuretic Kit to be kept in the patient’s home and clearly marked to only be opened if instructed by the home health nurse. See above for kit medications.
- Weigh patient each day
- Recheck vital signs at 6 and 24 hours after diuretic administration
- Fluid restriction 1500 ml, 2 gm Na+ diet
- Telehealth RN - notify provider at initiation and of the outcome of the protocol.
- If K+ less than 3.7 during any part of this protocol, give potassium per chart on reverse

Diuretic Protocol  Cross off any orders that should not be followed

Step A
• Double daily oral loop diuretic dose or increase to maximum daily dose if doubled dose exceeds maximum. If already at maximum dose, then skip to Step B. (Max daily doses are: furosemide 320 mg, bumetanide 10 mg, torsemide 200 mg)
  • If weight the next day is decreased by ≥ 2 lbs, continue increased diuretic dose until target weight is reached, then have patient resume usual dose of diuretic. Notify provider of outcome.
  • If weight the next day is decreased by < 2 lbs, continue increased diuretic dose and continue to Step B

Step B
• Add metolazone 2.5 mg (if already on metolazone 2.5 mg daily maintenance dose, give additional 2.5 mg for 5 mg total)
  • If already taking 5 mg of metolazone daily then skip to Step C
  • If weight the next day is decreased by ≥ 2 lbs, continue increased diuretic dose plus metolazone from Step B until target weight reached. When target weight reached have patient resume usual dose of diuretic. Notify provider of outcome.
  • If weight the next day is decreased by < 2 lbs, discontinue all oral diuretics and continue to Step C

Step C
• Administer IV loop diuretic:
  • Furosemide 120 mg, administer at 40 mg/min
  • Bumetanide 4 mg, administer at 0.5-1 mg/min
  • If usual oral dose is BID, administer IV dose BID

Step D
• If weight decreased by ≥ 2 lbs but not yet at target, continue IV medication per step C until target weight is reached. When target weight is reached have patient resume usual dose of diuretic. Notify provider of outcome.
• If target weight not reached after 3 days IV diuretics, notify provider to consider admission.
• If after 24 hours with IV medication weight not decreased by ≥ 2 lbs, call provider for orders.

4. Provider
   Signature: ___________________________ Date: __________

For questions contact Richard Veilleux, Program Manager, 661-7557, VeilleuxR@MaineHealth.org or Ann Cannon, Clinical Specialist, CannanA@MMC.org. (See Potassium Replacement Chart on Reverse)
Heart Failure ED Early Discharge Protocol
(adapted from CHP-CDU Protocol developed by Dr. Samantha Wood March 2016)

Consider past medical and social history to explain presentation, prior cardiac evaluation, timing of last known LVEF. Review prior patient weight and any precipitants of volume retention, i.e., diet, medication nonadherence.

#1: If no contraindications* to Early Discharge then Initiate Early Discharge Protocol (* see P. 2 "Contraindications to Early Discharge")

Early Discharge Protocol
1. Telemetry and pulse oximetry monitoring
2. Check Electrolytes
3. Patient weight
4. Diuresis using acute diuretic algorithm (see page 2)
5. Blood pressure control
6. 2000ml fluid restriction, no-salt added diet
   a. 1500mL fluid restriction if renal failure patient
7. Strict input and output documentation
8. Heart failure education program using Healing Hearts patient booklet
9. Call outpatient cardiologist/PCP to discuss change in diuretic dosing and t/u as outpatient
10. Care management, dietary consult as indicated
11. Smoking cessation counseling as indicated
12. Prescribe home dose of diuretic (See "Diuretic Dosing" section P. 2)
13. Scripts for D/C meds filled at Retail Pharmacy

Symptoms resolved or stable symptoms adequately addressed**

Discharge to Home from ED with follow up Appointment within 7 days
for applicable communities: Home health referral for Telehealth Nursing, next day admission

Hospital admission or Transfer for escalation of care if indicated

** Symptoms resolved or stable symptoms adequately addressed
- Established HF diagnosis – acute on chronic exacerbation
- Known etiology of HF exacerbation
- Acceptable vital signs
- Negative or unchanged serum marker of cardiac injury
- No new clinically significant arrhythmia
- Acceptable electrolyte profile
- Heart failure education, including Healing Hearts booklet and Target Weight
- Follow-up plan established
- Appropriate social/family support
- Referral for home visit
- Discharge medications
Tools to Assist in Care Coordination

• MaineHealth Heart Failure Toolkit:
  - Strategies and tools available in different areas in the health care system to support the treatment of heart failure patients
  - For medical staff:
Current Inpatient HF Order Set

• Specialty OS used in conjunction with Gen Med Adult Admission OS
• Revised to be stand-alone OS
  » Provide clearer guidance better aligned to needs of HF patient and eliminate redundancy
• Add guidance on
  • Target Weight
  • Iron levels & supplementation
• Revised dietary guidance
• Palliative care referral, “surprise question”
• Cardiac Rehab referral
• Care Management referral
• Home Diuretic Protocol referral
# CARD Heart Failure [1354]

To complete an inpatient admission, this disease-specific order set should be used in conjunction with an admission order set, such as the Gen Med Adult Medicine Admission Order Set.

### Low Sodium Diet Plan


### Sodium Fluid Chart


## General

### Notify provider

- **Notify provider if Urine Output is less than 1L between 0700 & 1700**
  - Routine, Until Discontinued, Starting today

## Diet/Nutrition - CHF

- **IP consult to nutrition: Pt. education**
- **Diet sodium 2000 - 2500 mg/day**
  - Details
  - Diet effective now, Starting today
  - Additional restrictions:
    - Fluid restriction:
    - Liquids:
    - Diet modifiers:
    - Sodium 2000 - 2500 mg/day; Fluid restriction - 1.5L/day or 2 L/day

## Nursing

- **Inpatient consult to Nursing: Heart Failure Teaching**
- **Strict intake and output**
- **Obtain standing weight on admission**
  - Reason for Consult? Education using Teach-back, Healing Hearts Guide
  - Routine, Until Discontinued, Starting today
  - Routine, Upon admission
  - Obtain standing dry weight and record in flowsheet on admission
  - Routine, Daily AM
  - Use standing scale if patient able to stand. Chart if not standing weight.
## Medications

### Electrolytes

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Dosage/Route/Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>magnesium sulfate IV</td>
<td>2 gm, Intravenous, As needed, for magnesium less than 1.7 mg/dL Notify provider</td>
</tr>
<tr>
<td>magnesium gluconate tablet</td>
<td>500 mg, Oral, 2 times daily</td>
</tr>
<tr>
<td>potassium chloride CR tablet</td>
<td>20 mEq, Oral, As needed, PRN for K+ less than 3.7 mEq</td>
</tr>
<tr>
<td></td>
<td>* Do not crush. If patient has difficulty swallowing, may break tablets in half or place in 60 mls water. Notify provider.</td>
</tr>
</tbody>
</table>

### Diuretics

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Dosage/Route/Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bumetanide injection</td>
<td>Intravenous, 2 times daily (diuretics)</td>
</tr>
<tr>
<td>Furosemide injection</td>
<td>Intravenous, 2 times daily (diuretics)</td>
</tr>
<tr>
<td>Metolazone tablet</td>
<td>5 mg, Oral, Daily</td>
</tr>
<tr>
<td>bumetanide 25mg/100mL (0.25mg/mL) infusion</td>
<td>1 mg/hr, Intravenous, Continuous Normal range 0-2mg/hr</td>
</tr>
<tr>
<td>furosemide 500 mg/50 mL (10 mg/mL) infusion</td>
<td>10 mg/hr, Intravenous, Continuous Normal range 0-25 mg/hr</td>
</tr>
</tbody>
</table>

### Aldosterone Antagonists

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Dosage/Route/Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spironolactone tablet</td>
<td>25 mg, Oral, Daily</td>
</tr>
</tbody>
</table>

### Beta blockers

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Dosage/Route/Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carvedilol tablet</td>
<td>3.125 mg, Oral, 2 times daily with meals</td>
</tr>
</tbody>
</table>
Effective Date: Currently Available
Role: Clinical Users

New Lifestyle Activity!! (CHF Target Weight is found here)
An Activity Opens with two sections, Lifestyle-Healthy Habits & Cardiology

Lifestyle-Healthy Habits
This sections follows the MaineHealth Healthy Habits guidelines.
Document the patient’s rest, fluid intake, eating, and physical activity habits.
Click on “New Reading” to record data.
SeHR System Update

MaineHealth
SeHR System Update

Lifestyle-Healthy Habits

New Reading

No data found.

Cardiology

New Reading

No data found.
### Move More-Physical Activity

**How many days a week are you physically active?**
- None
- 1-2 times per week
- 2-3 times per week
- 3-4 times per week
- > 4 times per week

**On those days, how many minutes are you usually active?**

### Eat Real-Current Diet

**Current Diet**
- 1000 cc
- 1500 cc
- 2000 cc
- 2500 cc
- 3000 cc
- regular diet without modifications
- weight reduction diet
- calorie restriction diet
- carbohydrate restriction diet
- low cholesterol diet
- low sodium diet (less than 2 gm)
- low fat diet
- low triglyceride diet
- low fiber diet
- high fiber diet
- renal failure diet
- vegetarian diet
- vegan diet
- fluid restricted diet

**How many fruits and vegetables do you eat each day?**

**How often do you eat while you are doing other things? (TV, phone, computer, reading)**
- Never
- Some of the time
- Most of the time
- Always

**How many coffee drinks do you have each day?**

**How many sodas do you have each day?**

**How many sports drinks do you have each day?**

**How many juices do you have each day?**
SeHR System Update

Cardiology
Open the Cardiology section to record data. CHF Target Weight (along with prescribed diet and a physical activity question) is now available for documentation!

Once recorded, the CHF Target Weight will populate the patient header.

PCP: Powell, Amanda K, MD  
Care Team:  
Primary: MEDICARE A AND B  
Secondary: BLUE CROSS NATI...  
Needs Interp, Lang: No, English  
Deaf, HOH: No, No

Height: 1.753 m (5' 9")  
Weight: 77.3 kg (170 lb 6.4 oz)  
BMI and %: 25.16 kg/m²  
Complexity Score: 2  
Adv Directives: None  
POLST: NO  
POA: Power of Attorn...  
CHF Target Weight: 95.3 kg (21...
• My Diagnosis: ***

• Today's Weight: *** Target Weight: ***

• Today's Resting Heart Rate: *** Target Resting Heart Rate: ***

• Today's Blood Pressure *** Target Blood Pressure: ***

• If my weight goes up or down 4 pounds and/or my swelling, breathing or energy level gets worse, I need to call: ***
A Mandate

*The ACC/AHA HF Guidelines*

11.1. Coordinating Care for Patients With Chronic HF: Recommendations

**CLASS I**

1. Effective systems of care coordination with special attention to care transitions should be deployed for every patient with chronic HF that facilitate and ensure effective care that is designed to achieve GDMT and prevent hospitalization (80, 82, 793, 870–884). *(Level of Evidence: B)*
2. Every patient with HF should have a clear, detailed, and evidence-based plan of care that ensures the achievement of GDMT goals, effective management of comorbid conditions, timely follow-up with the healthcare team, appropriate dietary and physical activities, and compliance with secondary prevention guidelines for cardiovascular disease. This plan of care should be updated regularly and made readily available to all members of each patient’s healthcare team (13). (Level of Evidence: C)

3. Palliative and supportive care is effective for patients with symptomatic advanced HF to improve quality of life (30,885–888). (Level of Evidence: B)
2. Every patient with HF should have a clear, detailed, and evidence-based plan of care that ensures the achievement of GDMT goals, effective management of comorbid conditions, timely follow-up with the healthcare team, appropriate dietary and physical activities, and compliance with secondary prevention guidelines for cardiovascular disease. This plan of care should be updated regularly and made readily available to all members of each patient’s healthcare team (13). (Level of Evidence: C)

3. Palliative and supportive care is effective for patients with symptomatic advanced HF to improve quality of life (30,885-888). (Level of Evidence: B)
Heart Failure Disease Management Program

- Medical experience/knowledge
- Dedicated multi-disciplinary specialist team:
  - Heart failure trained cardiologists
  - Heart failure certified nurses
  - Dedicated social worker, chaplain, palliative care specialist, etc.
- Streamlined process for inpatient, outpatient, and transitions of care
- Accessible for referrals/questions/communication
- System can be adopted by another institution
MH SNF Protocol

• Plan is to educate the nurses, daily weights, adjusting diuretics, education for the patients prior to discharge.

• Home health diuretic protocol.

• The 4 pathways: ED, inpatient, SNF, home health.

• Increased satisfaction in CNAs and nurses. Currently gathering data on outcomes.
Left Ventricular Assist Device

HeartMate II
Axial Rotary Pump

HeartWare HVAD
Centrifugal Rotary Pump
Heartmate III
Cardiomems

MaineHealth
Cardiomems

MaineHealth
Transplant Shared Care
Acknowledgements

- HF team
- EPIC team
- Administrative team
- Service line team
System-wide heart failure management

• Thank you!

• Let us know how to help!