UCI Health Memorandum of Agreement Regarding Heart Failure Patients Between Hospital Medicine, Cardiology and Emergency Programs

I. Admission Criteria for Patients with Heart Failure Presenting to the ED or Ambulatory Clinics

A) The following patients should be admitted to the ***Cardiology Service Team,*** on CVICU or Telemetry units (DH78) as appropriate per level of care:

1. Newly identified acute heart failure decompensation without other acute non cardiac medical problems.
2. Currently regularly followed by a member of the cardiology department and without other acute non cardiac medical problems.*

"Regularly followed" is defined as ≥ 2 visits within the last 12 months (defined in the CV HF registry).
"Without other acute non cardiac medical problems" are defined by best clinical judgment and decision of the ED Attending.

B) The following patients should be admitted to the ***Cardiology Service*** **Team,** on CVICU versus Telemetry units (DH78) as appropriate per level of care:

1. Acute heart failure who have a high In-patient hospitalization mortality risk:
    i. NYHA Class III-IV HF,BUN > 43, SBP < 100, and serum creatinine >2.75mg/dl (excluding patients on hemodialysis).
    ii. *NOTE: In-hospital mortality risk is 12-22% with the defined clinical features.*
2. Suspected or diagnosed Acute Coronary Syndrome (unstable angina, acute myocardial infarction, aborted sudden cardiac death).
3. Patients with newly identified and/or potential life-threatening symptomatic arrhythmia (sustained ventricular tachycardia, high grade a-v block, symptomatic Atrial Fibrillation, persistent symptomatic Brady or tachyarrhythmia).
4. Acute decompensated Heart failure requiring or at risk of requiring invasive ventilatory support.
5. Cardiogenic shock or otherwise requiring chemical or mechanical circulatory support (dopamine, dobutamine, milrinone, adrenergic agonists, IABP counterpulsation, LVAD).
6. Multisystem failure where the cause is secondary to Heart Failure and/or cardiogenic shock.
    i. Cardiology to consult pulmonary or anesthesia critical care
7. **Acute heart failure with ejection fraction ≤ 35%**
8. Heart transplant history
9. Ventricular assist devices (VAD) placement

C) Any request to transfer HF patients to Cardiology Service from another service needs to be relayed to the cardiology attending physician by the cardiology fellow.

1. The patients need to be seen by the cardiology consult service (fellow and attending physician) before any final decision is made.
2. Rejection of patient's transfer to the cardiology service can only be made by the cardiology attending physician.

D) The following patients should be admitted to the ***MICU Service Team*** on call, as appropriate:

1. Multisystem failure where cause is not secondary to Heart Failure and/or cardiogenic shock.
2. Requiring or at risk of requiring invasive ventilatory support, excluding acute decompensated Heart Failure patient.

E) Discharged Heart Failure patient readmitted within 30 days should be readmitted under the ***previous admission discharge team*** unless condition requires different admission services as decided by the best clinical judgment of the ED Attending.

F) ADHF who do not meet above criteria should be admitted to the ***Hospitalist team*** on call.

II. Hospitalist Service Criteria for In-patient Heart Failure Team with Cardiology Consultation

A) ***ALL Acute Decompensated*** HEART FAILURE PATIENTS admitted or transferred to the Hospital Medicine Service **require** a Heart Failure ***Cardiology Consultation***.

B) Additional criteria for requesting an ***urgent Cardiology Consultation***:

1. Patients with persistent or worsening symptoms despite aggressive and sustained intervention.
2. Patients requiring CCU/ICU transfer.
3. Patients with diastolic dysfunction of unclear etiology.
4. Patients with inadequate diuresis.
5. Patients on inotrope or vasodilator infusion with worsening of heart failure.
6. Patients with suspected acute coronary syndrome (i.e. unstable angina, acute myocardial infarction, aborted sudden cardiac death, unexplained abnormal cardiac enzymes).
7. Patients with newly identified serious arrhythmias (e.g. ventricular tachycardia, symptomatic bradycardia, tachyarrhythmia, high grade a-v block, Symptomatic Atrial Fibrillation).
8. Patients with destabilized chronic/known arrhythmias (e.g. Atrial fibrillation).
9. Patients with suspected significant coronary artery disease who are candidates for diagnostic angiography/percutaneous or surgical coronary intervention.
10. Patients with abnormal provocative stress-test who are candidates for diagnostic angiography/percutaneous or surgical coronary intervention.
11. Patients who are being evaluated for or are post Cardiac Transplant.
12. Patients with implanted mechanical devices (e.g. LVADs).
13. Patients with implanted electrical devices that require interrogation or are suspected of malfunction (e.g. pacemaker, AICD)
14. Patients who are candidates for cardiac resynchronization (i.e. persistent symptoms + EF <35% + QRS interval >0.12 ms).

III. Optimal Standard of Care for Patients Admitted with Heart Failure

A) **Refer to the HF ED Algorithm, the HF Clinical pathway, the HF ED order set and HF admission order set.**

B) **LV Function Documentation**

1. MUST **document LV EF in the chart**.
2. LV EF assessment performed during hospitalization or must have been assessed within 1 year prior to presentation
3. **Must provide clear documentation in the medical record** why EF assessment was not performed during this admission.
4. **Must provide clear documentation in the medical record** an ECHO is scheduled as part of the patient's follow-up
    i. *BEST PRACTICE: ECHO appointment made and provided in the discharge instructions given to the patient.*

C) **ACE-I/ARB/ARNi Therapy**

1. **MUST be initiated/continued on an ACE-I or ARB or ARNi, if EF<40%**, **UNLESS** contraindicated.
2. If ACE-I/ARB/ARNi contraindicated, document clearly the contraindication.
    i. Contraindication must be documented at time of admission and throughout the hospitalization, including discharge.
3. Specific ACE-I/ARB/ARNi must be listed in the medication section of the discharge instructions given to the patient.

D) **Evidenced-based Beta Blocker Therapy:** (Carvedilol, Carvedilol CR, Metoprolol Succinate CR/XL, Bisoprolol)

1. **MUST be initiated/continued on an evidence-based (EBT) Beta Blocker** if EF<40%unless contraindicated.
2. If B-Blocker is contraindicated, document clearly the contraindication.
3. If the patient is on an EBT B-blocker, document clearly the contraindication.
    i. Contraindication must be documented at time of admission and throughout the hospitalization, including discharge.

E) **Aldosterone Receptor Antagonist Therapy:** Spironolactone, Eplerenone

1. Acute heart failure and EF≤ 35% or EF≤ 40% and AMI should be considered for low dose **Aldosterone Receptor Antagonist therapy** prior to discharge if monitoring of renal function and potassium is possible post discharge.
2. If Aldosterone Receptor Antagonist is contraindicated, document clearly the contraindication.
    i. Contraindication must be documented at time of admission and throughout the hospitalization, including discharge.

F) **Other pharmacologic interventions**

1. *All medications MUST be listed in the medication section of the discharge instructions (DIS) given to the patient.*
2. *Medication "INDICATIONS" MUST be listed for EVERY medication (including PRN) on the patient's discharge instructions.*
3. All HF patients with atrial fibrillation should be discharged on an anticoagulation medication.
    i. If anticoagulation is contraindicated, document clearly the contraindication.
4. All HF patients with CAD, artherosclerosis or hyperlipidemia should be placed on aspirin and statin therapy as appropriate.

G) **Consultations & Referrals for all acute decompensated HF admissions**:

1. Dietary consult within 24-48 hours of admission
2. Palliative Care if admitted with Acute Heart Failure
3. Home Health Referral if meet homebound criteria and insurance approval for:
    i. Disease management education
    ii. Medications reconciliation and education
    iii. And other needs (IV med, telemonitoring, OT/PT, etc.)
4. Electrophysiology/Cardiology consult for:
    i. Cardiac Resynchronization Therapy (CRT) candidacy:
        a. LVEF ≤35%, sinus rhythm, with QRS ≥120 ms and survival with good functional capacity >1yr
    ii. Intra Cardiac Defibrillator (ICD) candidacy
        a. LVEF ≤35%, and ≥1 year expected survival

H) **Discharge Criteria:**

1. **Patient should be without heart failure complaints**
2. Resolution of clinical signs of volume overload: JVD, LEE, PND, orthopnea.
3. NYHA-HF Classification reduced by >= one.
4. SOB improved with ambulation around nursing station.
5. DISCHARGE BNP with a minimum reduction of 30% and optimally reduced by 50% less than admit BNP.
6. ST2 drawn 48hours after admission with a minimum reduction of 30% from admit ST2.
    i. Optimize to a ST2 of less than 35. ***
7. Sodium >130
8. No creatinine rise:>0.5 from baseline or for elderly >0.3 from baseline AND creatinine is not continuing to rise at time of discharge.
9. Successful transition from intravenous to oral diuretic
    i. On P.O. for a minimum of 12 to 24 hours prior to discharge.
10. Comorbid condition controlled & treated.
11. Pain and mood adequately controlled. Patient should NOT have uncontrolled acute pain or mood disorder at time of discharge.
    i. HF-Palliative care clinic appointment < 2 weeks from discharge if pain or mood medications titration/monitoring required.
12. Patient verbalizes understanding of discharge instructions and follows up care with physician/health care providers.

- ***Patient who have one or more of the above have increased risk of mortality.***
- ***If discharged with one or more of the above criteria, patient should be seen by the PCP or the UCI Health HF clinic within 1 to 3 days post discharge,***
    - ***Confirm appointment prior to discharge***
        - ***NOTE: not all patients can be seen in the UCI Health HF clinic.***

I) **Discharge Instructions**

Patient's discharge instruction MUST include **ALL** of the following:

1. **Hospital follow-up appointment SCHEDULED**:
    i. **Make appointment prior to discharge**.
    ii. Post hospital follow-up appointment with either PCP and/or HF Clinic ***LESS THAN 7 days*** of discharge
    iii. Document the dates, times and location of follow-up appointments in the discharge instruction.
2. **Diet**: Low sodium (≤2000mg), low fat, low cholesterol) and any other diet restrictions
3. **Self-Care**: Weigh yourself daily AND notify your doctor if you gain more than 3 pounds overnight or 3-5 pounds in a week.
4. **Activity**: Indicate the appropriate activity level based on all medical conditions.
5. **Medications**:
    i. **ALL** medications, including all PRN medications; list all medication (and PRN meds) **indications.**
    ii. **State ALL medication INDICATIONS (including PRN meds),** per Epic Best practice Alert (BPA).
6. **Symptoms**: Specific instructions on what to do if symptoms occur/worsen and whom to call.
7. **Risk factor reduction**: List instruction elements on how to reduce the patient's specific cardiovascular risk factors.

J) **Complete the "HF/AMI Quality" measure section prior discharge**

i. Located as an action task on the Epic's discharge tab, per BPA.

K) **Patient Education**

1. At the time of discharge, patients should be **referred to the following Health Education** classes and/or support groups:
   i. Heart Failure Overview
   ii. Healthy Heart Diet
   iii. Heart Failure Support Group
2. Patients who are active smokers or who have smoked in the last 12 months should be given smoking cessation counselling and/or referral prior to discharge.
   i. MUST document smoking cessation counselling and/or referral in the medical record.

Dr. Alpesh Amin, MD, Hospital Medicine: _____ (Signature) 6/10/19 (Date)

Dr. Pranav Patel, MD, Cardiology: _____ (Signature) 5/31/2019 (Date)

Dr. Chris Fox, MD, Emergency: _____ (Signature) June 5, 2019 (Date)