

# ED/EACU Protocol for the Management of Acutely Decompensated Heart Failure (ADHF)

Patient diagnosed with Acutely Decompensated Heart Failure

- Does patient have any of the following high risk features:**
- Unstable vital signs including fever
  - Needs >6L of oxygen or bipap / cpap or intubation  
Evidence of poor perfusion including: Altered mental status, poor urine output, cool extremities, pallor, increased BUN/Cr or lactate
  - Sodium <125 meq/L
  - Clinically significant arrhythmia
  - Troponin  $\geq 0.06$  ng/ml or above baseline for patients with chronic elevation
  - Needs Nitroprusside, Dobutamine, Dopamine or Milrinone
  - Presented with syncope
  - First episode of CHF
  - ECG with AMI or ischemic changes
  - Critical aortic stenosis on history
  - Other competing diagnosis eg: infection, PE, COPD exacerbation, new a.fib etc

YES → Hospitalization

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**ED / EACU ADHF Management Pathway**

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Administer Lasix (Patient's total daily dose as single IV bolus [160mg maximum] or 40 mg IV if not on lasix). Consider IV nitrates. Repeat labs (see notes and pathway orders)

2 hour Total Urine Output goal: 400cc if Cr<2.5; 250 cc if Cr> 2.5

Administer double the initial Lasix dose (160mg maximum dose)

4 hour Total Urine Output goal: 400cc if Cr<2.5; 250 cc if Cr> 2.5

6 hour Total Urine Output goal: 600cc

NO → Hospitalization

6 hour check: Symptomatic improvement

YES → Discharge

- Discharge Screening**
- Able to wean off IV nitroglycerin
  - K > 3.5meq
  - CHF Ambulatory O2 sat>94%
  - Patient's HR < 100
  - Patient back to functional baseline

- **Medication non-compliant:** Educate, place on usual dose, case management as needed
- **Medication compliant:** Increase standing diuretic dose, as informed by ED dose they responded to. Consider K+ supplementation.
- **Dietary non-compliance:** Outpatient nutrition consultation if feasible.
- **Low K+ or Mg++:** Initiate or increase supplemental dose
- **Follow-up:** Arrange follow-up with heart failure clinic in 1 week.

Has Lasix been administered 3 or more times?

YES → Hospitalization

Consider repeating last Lasix dose or continue to observe if diuresing adequately

Repeat 6 hour check: Symptomatic improvement

Has patient been managed for 18 hours or more

YES → Hospitalization

- Notes**
- **LASIX:** Lasts SIX hours. Peak diuresis 1-2 hours. If patient does not meet goal urine output after max lasix dose, admit.
  - **Nitrates:** Start at initial dose of 5-10 mcg/min IV, and titrate in increments of 5-10 mcg/min every 3-5 minutes to max dose of 200 mcg; Hold for SBP<100 or any for other contraindications. Patients with acute pulmonary edema or severe hypertension may benefit most. If BP becomes elevated when weaning off nitrates, start home BP meds.
  - **Pathway orders:** Strict I & O, 1800 cc fluid restriction, Patient weight. Repeat K+, BMP, Mg ~q8-12 hrs as appropriate
  - **Replete K+:** Serum K+ is 3.5-4.0, administer 80 meq. Serum K+ is 4-4.5, administer 40 meq.
  - **Education:** Provide heart failure education materials.

