ICU Admission Guidelines - TMH

Intensive level of care is appropriate for any cardiology medical or surgical patients with the following conditions/ treatments/status, and need for nurse monitoring:

- *Vital signs minimum of every 2 hours and full systems assessments minimum of every 4 hours*
- *RN : Patient Ratio 1:2 OR 1:1 if necessary**
- **(Crrt/Neuroproctective hypothermia/IABP (if unstable on pressors, intubated etc)/Impella/Proning Protocol and as patient status indictates)*
- *Uncomplicated IABP may be 1:2*
- **The exact RN to Patient ratio should be based on patient acuity of illness*

Primary Attending Team:

All patients are to be admitted to ICU attending and managed by ICU team.
EXCEPTION: Patients with ** and no other co-morbidities may be admitted to cardiology attending, managed by CCU team and maintained physically in ICU. The ICU and CCU team will discuss each of these patients to decide which team would be the appropriate management team.

EXPRESS ACCEPTANCE POLICY TO THE ICU (FROM THE ED)

1. In ED patients who are:
    a. Newly intubated (N.B. — all "fresh" intubations
        b. On pressors,
        c. Meet criteria for severe sepsis with lactate ≥ 4
2. Discuss the patient with the ICU (resident, fellow or hospitalist) over the phone and make sure they accept the patient
3. Place admit order
4. Actively manage patient until they leave the department.

CAVEATS:

1. In the above patients, the ED must rule out:
    Cardiac etiology (CHF, MI, cardiogenic shock)
    Need for emergent surgery
    Primary neurological etiology (bleed, stroke).
2. Not all patients qualify, and most ICU-bound patients will still require an ICU resident/fellow bedside evaluation.
3. All patients turned down from an ICU bed require bedside evaluation by the ICU team and will be discussed with either the ICU attending or ICU hospitalist.

Admission Criteria to ICU

CARDIAC/HEMODYNAMIC: All cardiac, medical or surgical conditions with evidence of acute hemodynamic instability as demonstrated by:

a. Continuous hemodynamic monitoring by invasive means
b. Need for frequent titration of vasoactive drugs
c. Systolic BP < 90mmHg unresponsive to immediate fluid resuscitation of 30 cc/kg
d. Cardiopulmonary arrest with intubation with or without Hypothermia (HACA)
e. Patient management with intra-aortic balloon pump or Impella Ventricular Assist**
f. Peripheral vascular disease requiring EKOSonic® with thrombolytic therapy**
g. Patient requiring initial placement and care of new Transvenous or transcutaneous pacemaker until hemodynamically stable.
h. Sustained tachycardia >150 despite intervention
i. Sustained bradycardia <30 despite intervention
j. Hypertensive emergency with active titration of IV medications
k. Hypothermia <92 deg F or hyperthermia >107 deg F
l. Drug desensitization (ie, aspirin, antibiotics), during initial medication therapy

RESPIRATORY: All cardiac, medical or surgical condition with or evidence of **acute respiratory distress or failure** by:

a. Inability to maintain adequate ventilation and/or oxygenation on available high flow O2 delivery devices (for example 100% FM or >10 L O2) as evidenced by
   i. spO2 <90% or PO2 < 60mmHg unless chronic
   ii. PCO2 > 50mmHg requiring initiation of BIPAP unless chronic (uses at home or stable regimen established in hospital)
b. Need for respiratory therapy treatments, pulmonary toilet, tracheostomy care more frequently than **q2H**
c. Need for Invasive continuous Mechanical Ventilation
d. Concern for acute airway compromise (ie, patients with severe angioedema or epistaxis)
e. Chronic mechanically ventilated patients
f. All patients with venous thromboembolic disease (DVT or PE) who was received thrombolytic agents, first 24 hours.

NEURO: All cardiac, medical or surgical condition with evidence of **acute change in level of consciousness**:

a. Acute change in mental status with Glasgow coma scale < 10
b. Frequent monitoring of neurologic status **<=q2H**
c. Acute stoke that has been treated with thrombolytic agents, first 24 hours
d. Need for neuromuscular blocking agents (NMBA)
e. Toxic ingestions leading to any of the above
f. Severely agitated patients (ie alcohol withdrawal) requiring escalating doses of sedatives or continuous infusion of sedative

ELECTOLYTE/METABOLIC: All cardiac, medical or surgical condition with evidence of **life-threatening fluid and electrolyte imbalances.**

a. Metabolic acidosis with pH <7.10
b. Serum sodium < 115 or > 170
c. Serum potassium < 2.0 or > 6.0 with EKG abnormalities or potassium > 8
d. Serum calcium < 4.0 or > 13.0
e. Serum phosphorus < 1.0

ENDOCRINE:

a. DKA or hyperglycemia requiring continuous infusion of insulin and pH <7.1
b**.** DKA or hyperglycemia requiring continuous infusion of insulin and any other acute organ failure (eg acute renal failure, sepsis, MI, severe electrolyte abnormalities etc…

GASTROINTESTINAL: All cardiac, medical or surgical condition with evidence of **life-threatening gastrointestinal abnormalities**

a. Evidence of GI bleeding and Hemodynamic instability
 SBP < 90 mmHg; HR > 120 despite 30 cc/kg resuscitation.
b. Acute ongoing active blood loss (hematemesis, melena, bright rectal blood) of moderate to severe volume
c. GI bleed with strong clinical suspicion for esophageal variceal bleeding

SEVERE SEPSIS AND SEPTIC SHOCK:

a. Two of four SIRS criteria, suspected infection and systolic blood pressure <90 mmHg despite 30 cc/kg initial resuscitation
b. Two of four SIRS criteria, suspected infection and serum lactate ≥ 4.0

INVASIVE PROCEDURES required to assess physiologic function or for emergent therapies or which may have potential for causing any of the above system failures (e.g., arterial lines, PA catheters, acute placement of dialysis catheters for urgent dialysis or plasma exchange, etc.)

INTERMEDIATE PATIENTS IN THE ICU Intermediate Level patients may be admitted to the ICU when there is bed availability. Intermediate patients are those that do not meet any of the specific admission criteria above but do require additional medical and/or nursing care than provided on the general wards as per TMH intermediate criteria. In no case should a ICU level patient be moved out of the ICU in order for an Intermediate Patient to be admitted.
If there is no bed availability in the SCU or CCU Intermediate patients can be managed by either the Critical Care service (ie, the "ICU team") or the floor team or the CCU team. In all cases that an intermediate patient is admitted to the ICU, there will be an interdisciplinary discussion between the ICU team, floor or CCU team and nursing to discuss which admitting service is most appropriate for the individual patient.

Patients “flagged down” to intermediate level or floor level from ICU level of care will remain on the ICU service until patient is assigned to another bed on the general wards or the CCU or SCU. At that time, full nursing and provider sign out will occur before patient is physically moved. Very rarely, a patient that is flagged down to intermediate care can be signed out to the floor team and remain physically in the ICU, but in this case the ICU team, floor team and nursing must all discuss and agree.