

POTENTIAL CRITICAL CARE INDICATORS

Admit to Critical Care Unit or Transfer to Higher Level of Care

Procedures/Management Options That May Suggest Critical Care

- BiPap, CPAP, High Flow Oxygen mask (100% non-rebreather or > 40% Venti-mask)
- Bolus of two (2) liters of IV fluids *in adult* or Bolus of 20ccs/kg *in a pediatric patient*-could indicate volume depletion from whichever cause (ex. bleeding or dehydration).
 - Bolus/fluid resuscitation refers to the very rapid infusion or large amount of fluid consecutively to correct a loss or decrease in blood volume
- Cardioversion
- Central Line/Non-tunneled catheters
- CPR (Cardiopulmonary Resuscitation)
- Cricothyrotomy
- Endotracheal Intubation
- Intraosseous IV (IO)
- Lumbar Puncture (LP, Spinal Tap)
- Pacemaker Insertion
- Pericardiocentesis
- Thoracostomy tube (Chest Tube)
- Transfuse blood or blood products in ED [Fresh Frozen Plasma (FFP), Platelets, Factor VIII]
- Universal (O-) blood infusion

Clinical Scenarios That May Suggest Critical Care

- Abdominal Aortic Aneurysm (AAA) requiring emergency surgery or patient is admitted and AAA is the reason for admission
- Accelerated (Malignant) Hypertension: with IV vasoactive drugs (see medication list)
- Acidosis: Ph <7.25 (ABG or venous)
- Activated Charcoal for poison or drug ingestion
- Acute Coronary Syndrome (ACS): with Heparin and/or Integri[™] or ReoPro[™]
- Airway Control Concern/Compromise: i.e., Epiglottitis, angioedema, adult croup, Ludwig's angina, retropharyngeal abscess, airway edema, smoke inhalation, intubation, foreign body (partial or complete)
- Anaphylactic Shock: Patient hypotensive requiring fluid boluses **OR** IM/IV Epinephrine (not SQ)

Clinical Scenarios That May Suggest Critical Care

- Anemia with active bleeding
- Angina (unstable) with IV nitro drip **OR** IV Heparin **OR** SQ or IV lovenox
- Angioedema of airway: Airway swelling aggressive treatment (IM/IV/racemic epinephrine)
- Angulated fracture/dislocation of ankle with skin tenting
- Aortic Dissection: Requiring immediate surgery, transfer or IV BP meds to control BP
- Arterial Occlusion: Requiring immediate surgery, transfer, or infusion of blood thinners
- Asthma with BiPap **OR** ≥ 3 respiratory treatments **OR** respiratory acidosis with CO₂ retention
- Atrial Fibrillation (A-Fib): new onset with continuous IV meds **OR** Ventricular rate >150 with treatment **OR** chest pain, dyspnea, or lightheadedness
- Cardiac Tamponade: hypotension with IV fluid bolus **OR** Pericardiocentesis
- Cervical Fracture/subluxation: requiring admission, transfer, or has a neurological deficit (i.e., weakness, paresthesia)
- Chemical Cardioversion: if CP, SOB, diaphoresis
- Chest pain: with *TWO or more of the following*: Nitro drip **OR** transfer to cardiac center **OR** TPA or Integrilin administered **OR** new changes on EKG (i.e., Ischemia or injury) **OR** CT scan **OR** Cath Lab, **OR** pulmonary edema, **OR** positive troponin (acute not chronic)
- Congestive Heart Failure (CHF): BiPap (elevated pCO₂ >60) (Respiratory acidosis) **OR** *one of the following*: IV Nitroprusside, IV Nitro, IV Dobutamine or IV Dopamine
- COPD: Review vital signs. BiPap **OR** Continuous nebulizers but still in distress
- Croup: Multiple Racemic Epinephrine nebs with documentation of airway distress after the first nebulizer treatment.
- Dehydration: BP <80 Treated with more than 1 liter of NS.
- Depressed Skull Fracture
- Diabetic Ketoacidosis (DKA) pH <7.25 , respirations decreased
- Drug Overdose/Poisoning:
 - o With use of Activated Charcoal
 - o Substance Specific Intervention:
 - Tylenol (Acetaminophen): IV Acetadote™(NAC) **OR** Oral Mucomyst™
 - Digoxin: Use of IV Digibind
 - Ethylene Glycol (Anti-Freeze): Use of Formeprizole (Antizol)
 - Salicylate: Treated with Emergent dialysis
 - Snake Bite: Use of IV Crofab
 - Carbon Monoxide (CO) Poisoning: Requiring hyperbaric chamber use or transfer for hyperbaric chamber use.
- Dysrhythmia: with *ONE or more of the following*: Ventricular Tachycardia **OR** Ventricular fibrillation, **OR** 3rd degree heart block, **OR** pacemaker (inserted in ED or External pacer used in ED), **OR** Use of Atropine/Lidocaine, Amiodarone IV, Procainamide IV, **OR** Synchronized cardioversion

Clinical Scenarios That May Suggest Critical Care

- Ectopic Pregnancy (rupture): To OR or requiring admission, transfer, or blood transfusion in the ED
- Electrical cardioversion
- Elevated troponin (not chronic)
- Epidural Abscess: Critical care if clinical condition and criteria met and documented
- Epiglottitis: Critical care if clinical condition and criteria met and documented
- Esophageal perforation: Critical care if clinical condition and criteria met and documented
- Endotracheal Tube (ET tube): with or without ventilator management
- Fasciotomy or Escharotomy (compartment syndrome)
- Foreign body airway obstruction: partial or complete
- Fractures due to trauma: Femur, tibia, pelvis or humerus, dislocation/angulated fracture with skin tenting
- Free air or blood in abdomen
- Gangrene: Extremity or Fournier's
- Glasgow Coma Score (GCS) ≤ 12
- GI Bleed (acute): *ONE or more of the following*: Hypotensive, NG or gastric lavage, blood, platelet or plasma transfusion or fluid boluses, emergency surgery scheduled within the next 12 hours or EGD colonoscopy, pressors, Dopamine, Hemoglobin $<(7)$, mental status change.
- Greater than ($>$) one (1) IV or IM dosage of Haldol™ or Ativan™ for significant agitation or violent behavior control
- Head injury: GCS ≤ 12
- Hemorrhagic CVA intracerebral, subdural (not chronic), subarachnoid, epidural/subdural
- Hemothorax: chest tube placement, tension or large
- Hyperkalemia: Key indicators are treated with (calcium, bicarb and/or insulin and D50W)
- Hypokalemia: potassium ≤ 2 with IV potassium ordered
- Hypotension: *ONE or more of the following*: Blood pressure <80 , multiple fluid bolus 3L or greater, dopamine or other pressors, central line, respiration >32
- Hypothermia with warming blanket (Bair Hugger)
- Hypoxia/Hypoxemia: O₂ sat ≤ 90 on usual O₂
- Immediately to OR for urgent stabilization or exploration
- Injured liver or spleen: with tachycardia > 100 or systolic BP < 100
- IV Fluid Bolus of two (2) liters in adult or bolus of 20ccs/kg in a pediatric patient

Clinical Scenarios That May Suggest Critical Care

- Malignant (Accelerated) Hypertension: with IV vasoactive drugs (see medication list)
- Meningitis (Bacterial): Critical care if clinical condition and criteria met and documented
- Meningitis (Viral): with encephalopathy
- Mesenteric Ischemia: Critical care if clinical condition and criteria met and documented
- Mesenteric Thrombosis
- Myocardial Infarction (MI):
 - o STEMI:(ST segment elevation) to Cath lab
 - o NSTEMI (non-ST segment elevation) to Cath lab
 - o STEMI or NSTEMI MI with thrombolytic meds
 - o Elevated troponin (not chronic),
 - o Emergent to Cath lab/TPA,
 - o Transfer to a Cath lab facility for emergent cardiac cath.
- Neonatal Fever: 30 days or younger w/ fever ≥ 100 & full septic workup including LP
- NG or Gastric lavage for GI bleed/ingestion if abnormal vital signs (e.g., BP <80/50 or pulse >100).
- Obtunded due to trauma or medical reason
- Ovarian/Testicular Torsion
- Pacemaker for bradyarrhythmia (e.g., heart rate < 40.)
- Perforated Viscus
- Pneumonia: Review vital signs
- Pneumothorax: with chest tube placement, tension or large
- Post-traumatic quadriplegia or paraplegia or cord hematoma with neurologic complaints such as numbness or paresthesia
- Provider preventing further deterioration
- Pulmonary Embolism (PE): Treated with Heparin or Lovenox or other treatment provided
- Sepsis, bacteremia, meningitis other severe infection with IV Antibiotics
- Significant mental status change from trauma or medical reason
- Spinal tap or Lumbar Puncture (LP)
- Stab or gunshot wounds to chest, abdomen and neck or other areas necessitating near immediate operating room exploration and/or repair
- Status Epilepticus
- STEMI or non-STEMI MI to Cath lab
- STEMI or non-STEMI MI with thrombolytic meds

Clinical Scenarios That May Suggest Critical Care

- Subdural or epidural hematoma, depressed skull fracture
- Suicide attempt
- Tension or large pneumothorax or hemothorax
- Thrombotic CVA with thrombolytic meds
- Time before and after successful CPR if 30 minutes of “full attention”
- Torn thoracic or abdominal aorta, pulmonary vasculature, or bronchus
- Treatment of Significant electrolyte imbalance (See Lab Values Section)
- Unstable vital signs (See Vital Signs section)
- Upper airway obstruction with stridor (Severe Croup or Epiglottitis)
- Venomous Snake or Scorpion Bite

Vital Signs That May Suggest Critical Care

Unstable vital signs consistent with organ system failure

O ₂ Sat (pulse ox)	≤ 90%
Respiratory Rate (adult/child)	≤ 5 or ≥ 30
Respiratory Rate (Infant)	≥ 40
Respiratory Rate (Newborns)	≥ 44
Temperature (adult)	≤ 95° or ≥ 104°F
Heart rate/pulse (adult)	≤ 40 or ≥ 150
Systolic BP (top #) (adult)	≥ 230 or ≤ 70
Diastolic BP (bottom #) (adult)	≥ 130 or ≤ 40
Glasgow Coma Score (GCS)	≤ 12

Electrolyte Imbalance That May Suggest Critical Care

Sodium (Na)	< 120 or > 150
Potassium (K)	< 2 or > 6
Calcium (Ca)	< 6 or > 13 mg/dl
Magnesium (Mg)	< 1.5 or > 5 meq/L
Bicarbonate (CO ₂)	< 10 or > 40 meq/L

Other Labs That May Suggest Critical Care

Arterial Blood Gases (ABG's)	
▪ pH	< 7.25 or >7.6
▪ pO ₂	< 60 mm Hg
▪ pCO ₂	< 20 or > 60 mm Hg
▪ O ₂ Sat (pulse ox)	≤ 90%
Creatine Kinase-MB (CK MB)	> than or = 5%
Hematocrit (Hct)	<21
Hemoglobin (Hgb)	<7
Troponin (TNI) (Not a stand-alone criteria)	≥ 0.04
Creatine Kinase-MB (CK MB)	> than or = 5%
Platelet Count	< 20,000
White Blood Cell (WBC)	< 2K or > 20K/μl

Medications That May Suggest Critical Care

Medications administered IV unless otherwise noted. (List is not all inclusive)

- Abciximab (ReoPro™)
- Adenosine/Adenocard™ (> one (1) dose)
- Acetadote™ (N-Acetyl Cysteine), IV Aggrastat™
- Amiodarone
- Apresoline™
- Atropine
- Ativan™ IM or IV (> one (1) dose)
- Brethine™
- Calcium Chloride or Calcium Gluconate
- Cardene™
- Cardizem™ (> one (1) dose or drip)
- Corlopan™
- CroFab™
- D50W (> one (1) dose)
- Diazepam for status epilepticus
- Diazoxide
- Diltiazem (> one (1) dose or drip)
- Digibind™
- Dobutamine
- Dopamine
- Enalapril (> one (1) Dose)
- Epinephrine or Adrenalin
- Epinephrine SQ for anaphylaxis or severe allergic reaction
- Fenoldopan
- Furosemide (> one (1) dose)
- Eptifibatide (Integrillin™)
- Esmolol

Medications That May Suggest Critical Care

- Glucagon
- Haldol™ IV or IM (significant agitation with > one (1) dose)
- Haldol IV or IM one dose and additional anti-psychotics IV or IM including Abilify, Geodon, Risperdal, and/or Zyprexa).
- Heparin for PE, ACS, R/O MI
- Hydralazine (>1 dose or 1 dose plus additional anti HTN)
- Hyperstat (>1 dose or 1 dose plus additional anti HTN)
- Insulin drip with or w/out initial bolus
- D50/IV insulin and/or IV calcium (for hyperkalemia)
- Isuprel
- Kayexalate oral combined with IV (for hyperkalemia)
- Lasix (> one (1) dose)
- Labetalol (> one (1) dose)
- Levophed™.
- Lidocaine (IV not subcutaneous)
- Lopressor™ (three (3) doses)
- Lorazepam (for actively seizing pt, status epilepticus, or significant agitation with > 1 dose)
- Lovenox™ subq for PE or ACS
- Lovenox for chest pain dx (admitted)
- Magnesium
- Mannitol (Hexan™)
- Metoprolol (three (3) doses)
- Mucomyst (N-Acetyl Cysteine), PO
- Nalaxone™
- Narcan™
- Natrecor™
- Neosynephrine
- Nesoritide
- Nicardipine
- Nipride™
- Nitroglycerine
- Nitroprusside
- Norepinephrine
- Normodyne
- Octreotide
- Oxytocin
- Phenobarbital for status epilepticus
- Phenylephrine
- Pitocin
- Potassium (for severe hypokalemia)
- Procainamide

Medications That May Suggest Critical Care

- Pronestyl
- Propanolol
- ReoPro™
- Romazicon
- Sodium Bicarbonate
- Streptokinase
- Terbutaline
- Theophylline
- Thrombolytics (Retavase™, TNKase™)
- Tirofiban
- Trandate (three (3) doses)
- Tridil™
- Valium (for actively seizing pt, status epilepticus, or significant agitation with > 1 dose)
- Vasotec (>1 dose or 1 dose plus an additional anti HTN)

Anti-hypertensives:

- Apresolilne
- Diazoxide
- Enalapril
- Hydralazine
- Hyperstat
- Labelatol
- Lopressor
- Metoprolol
- Normodyne
- Trandate
- Vasotec

Anti-Psychotics:

- (can be used in combination with Haldol to fulfill >1 dose requirement)
- Abilify
- Geodon
- Risperdal
- Zyprexa
- Thorazine

RSI (Rapid Sequence Intubation) Drugs:

- Succinylcholine (Anectine™)
- Vecuronium
- Etomidate
- Rocuronium
- Norcuron