SICU Critical Information

NEUROLOGIC:

- **Analgesics – control pain prior to starting sedation:**
  - **1st Line:** acetaminophen, NSAIDs (ketorolac x48hrs)
  - **2nd Line:** opioids PRN and consider APS for locoregional blocks
  - **3rd line:** PCA, ketamine, lidocaine or opioid infusions
  - **Continuous infusions should be discontinued ASAP, utilize adjunctive pain medications to help wean**
- **Sedation**: Propofol is the preferred first line agent for sedation in stable patients. If patients are in early resuscitation, unstable, on pressors, or have dysrhythmias, you can start with IV push lorazepam/midazolam instead of a gtt; results in earlier wean from vent; propofol or dexmedetomidine are the preferred sedatives when rapid awakening is important (e.g., for neuro assessment or extubation) – check triglycerides if > 2d of propofol & discuss lipid content of nutrition with dietician.
- All intubated patients should be considered for **spontaneous awakening trial (SAT)** every nursing shift, this should be coordinated with a **spontaneous breathing trial (SBT)** with RT.
- **Neuromuscular blockade:**
  - **Preferred Agent:** Atracurium
  - **Indications:** Ventilator synchrony, increased ICP; only if other means have been exhausted and pt adequately sedated (RASS -4 to -5)
- **ICH/TBI**: q1 neurochecks, SBP 100-140, sodium >135 (use NS as MIVF), Keppra for seizure ppx x 7 days; avoid hyperthermia (goal Temp <38)
- **Paroxysmal Sympathetic Hyperactivity**:
  - PSM-AM <8 unlikely
  - PSM-AM 8-16 Possible
  - PSM-AM >16 Probable
- Abortive Management: Morphine 4-8mg PRN
- Non-urgent symptom control
  - Fever, HTN, Tachycardia, agitation: Propranalol 10mg q8h (1st line), Clonidine 0.1mg q8h.
  - Pain, hypersensitivity non-noxious stimuli: Gabapentin 300mg q8h
  - Posturing, Dsytonia, Spasticity: Baclofen 5mg q8h
- **Elevated ICP**: goal ICP < 22; can treat with pain meds, sedation, NMB; mannitol/hypertonic saline (3% vs. 23.4%); goal PaCO2 35; consider stat CT head; ?EVD
  - Refer to DH TBI guidelines
- **C-spine clearance**: patients without focal neurological exam (i.e. no extremity weakness) and a normal CT c-spine can safely have their collar removed, unless high mechanism/concern for ligamentous injury. If abnormal exam, keep collar until MRI evaluation. When in doubt, wait and discuss as a team.

PULMONARY:

- **ARDS:** definition PaO_2/FIO_2 <300 (on FiO2 60% and PEEP 10) with acute bilateral infiltrates on CXR in appropriate clinical context.
- **P:F ratio** = PaO_2/FiO_2
  - **Mild:** 200-300
  - **Moderate:** 100-200
  - **Severe:** <100

PULMONARY (cont'd):

- **ARDS**: lung protective goal TV = 6-8 cc/kg (based on PBW) with goal Pplateau <30
- Predicted body weight (**PBW**):
  - Male = 50 + 2.3[height (inches) -60]
  - Female = 45 + 2.3[height (inches) – 60]
- Present vent numbers in this order: Vent Mode: Rate/Tidal Volume (cc/kg)/FiO_2/PEEP with ABG (pH/pCO_2/pO_2/BD/Sat).
- The Pplateau is XX and compliance is XX.
- **Compliance** = [TV / (Plateau – PEEP)]
- **Refractory hypoxemia**: obtain CXR
  - ETT position
  - Pneumothorax or Pleural Effusions: chest tube
  - Pulmonary edema: Diuresis, PEEP
  - Atelectasis/Lobar collapse: bronch, optimize PEEP (keep DP <15), recruitment maneuvers
  - ARDS: optimize sedation, prone, NMB
  - New infiltrate: ?febrile >> culture, abx
  - None of the above: consider CTPE
- **Bronch:** lobar collapse despite CPT/suctioning or BAL
- **Weaning/Extubation**: SOAAP (Secretions, Oxygenation, Airway, Alertness, Parameters); for parameters look at RR, TV, VE, RSBI (RR/TV in liters, <105), NIF, FVC

CARDIOVASCULAR:

- **Resuscitation/Hypotension:** review resuscitation algorithm. POCUS (PTX, tamponade, IVC). If A-line in place, consider Flotrac (intubated and in NSR).
- **Pressors** (norepinephrine, vasopressin, epinephrine): NE 1st line; add low dose vaso when NE gtt ≥0.2mcg/kg/min for septic shock and other forms of vasodilatory shock; 0.03 U/min gtt (see TEG card for dosing)
- **Trauma resuscitation**: follow trend of base deficit/lactate as indicators, TEG-based resuscitation (see TEG card)
- **Stable Atrial fibrillation**: see SICU AFib guideline; metoprolol vs. diltiazem vs amiodarone (less hypotension with amio and dilt)
- Consider ETOH, benzo, & opioid w/d with tachycardia.
- **PRN antihypertensives** (preferable over nicardipine gtt): labetalol 5-20 mg q2h PRN hypertension if HR > 70 OR hydralazine 10 mg q4h PRN hypertension if HR < 70 or blood pressure not at goal despite max labetalol
  Consider other etiologies of HTN: ETOH w/d, pain, agitation, anxiety.

GASTROINTESTINAL:

- **IAH:** bladder pressure >18 mmHg
- **ACS:** IAH + one of the following: incr PAP > 40 mmHg, decr UOP < 0.5 ml/kg/hr, decr cardiac output, elevated ICP; "secondary ACS"- routinely check bladder pressures when resuscitation volumes > 8-10 L of crystalloid or 10U of pRBCs
- Remember bowel regimen, do not use docusate
- **TFs**: start at 25 mL/hr, titrated per guidelines; hold for OR ***ONLY*** if GI tract procedure or prone position and patient with advanced airway (ETT or trach).

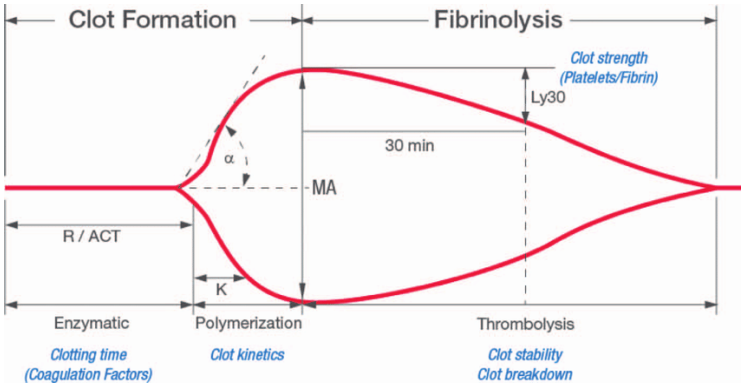
GENITOURINARY:

- **ARF/decreased UOP**: think pre-renal, intrinsic, post-renal; check urine sodium; U Na < 20 (prerenal) vs > 40 (intrinsic);

SICU Critical Information

GENITOURINARY (cont'd):
- check FeNa (unless received lasix, then check FeUrea); FeNa < 1 (prerenal) vs >3% (intrinsic).
- **Indications for acute dialysis:** AEIOU (acidosis, electrolyte disarray, intoxicants, overload, uremia). Be cautious in acute post-trauma setting, ensure not due to under-resuscitation.
- **Continuous renal replacement therapy (CRRT)**: advantage over intermittent hemodialysis (iHD) with decreased incidence of hypotension/arrhythmias and decreased exacerbation of cerebral edema in TBI pts.
- Q6 BMP when receiving CRRT

HEMATOLOGY:
- **TEGs:** active bleeding use the rapid TEG for transfusion decisions
- **pRBCs**: transfuse **ONE** unit at a time (except in active resuscitation); RBC transfusion only when Hb < 7.0 g/dL
- **FFP**: for prolonged R > 9.1 or elevated INR
- **Cryo**: MA_{CFF} <15 or fibrinogen < 133
- **Platelets:** for MA_{CRT} < 52



FLUIDS/ELECTROLYTES/NUTRITION:
- Prior to enteral support – need complete shock resuscitation: (base excess < 5, lactate < 2.5, stable/weaning vasopressors)
- Early enteral feeds preferred, consider early TPN if patient baseline malnourished
- **Gastric vs jejunal**: only diff is risk of GERD/gastric distention
- Read DHMC SICU Enteral Nutrition Protocol
- **Insulin gtt** for intubated patients to keep BG 140-180; start with glucose levels persistently >200
- **Albumin:** see DH albumin use criteria.

INFECTIOUS DISEASE:
- **Fever = Temp ≥ 38.5:** Follow fever workup algorithm
- **Only send respiratory culture if 2+ clinical signs of PNA** (infiltrate on CXR, increased secretions, increased FiO2/PEEP)
- **Empiric PNA treatment**: must get cultures BEFORE starting (miniBAL or BAL, not tracheal aspirate); antibiotic choice determined by ICU day:
  <5 = ceftriaxone, 5-9 = cefepime, ≥10 = cefepime + vanco
- **Have RN change foley BEFORE sending UA**
- **Hold bowel regimen x48 hours BEFORE sending c.diff**
- **GPC** = Staph (clusters) → S.aureus (coag pos); S.epi (coag neg) *VS* Strep (chains) → Alpha-hemolytic (S.pneumo, S.viridians), Beta-hem (GAS, GBS), Gamma (Enterococcus)
- **GNB** = lactose ferm (GI bugs: Klebsiella, Ecoli, Enterobacter); non-lactose ferm (Pseudomonas, Acinetobacter, Proteus)
- **MRSA:** treat with vancomycin, utilize "Pharmacy to dose vancomycin" order; monitor renal function and vanco levels (goal trough 15-20, AUC:MIC >400); daptomycin is preferred if bacteremia and no pulmonary involvement
- **Pseudomonas/MDRO GNRs:** cefepime preferred empirically; if in septic shock double cover with aminoglycoside
- **Antifungal:** consider in high-risk surgical pts (recurrent GI perforation or anastomotic leak); fluconazole for most, micafungin if hemodynamically unstable
- **Candida in urine:** don't need to treat unless you find in two sources

LINES:
- Change all OSH/ED lines upon presentation
- No lines should be changed over a wire…ever!
- Use ultrasound for all lines!

SICU PROPHYLAXIS:
- **Stress Ulcer Prophylaxis** (GI ppx): only intubated patients that are not receiving 50% of TF goal; NPO alone is not an indication
  - **Sucralfate 1g q6**: 1st line
  - **H_2 blocker or PPI**: if home med or strict NPO
- **VTE prophylaxis**:
  - **Enoxaparin 40 BID**: 1st line
  - **SQH**: if epidural catheter in place or CrCl < 30
  - Review VTE prophylaxis guidelines for TBI patients
    - Do not start until 24 hrs after stable scan
    - Delay 72 hrs after trauma if any expansion

RESOURCES:
SICU Director: Mandi Roberts, MD
Surgical Critical Care Specialists (SCCS):
Candice Preslaski, PharmD
Lauren Rich, PA
Surgical Critical Care Fellows:
Alexandrea Ferre, MD
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TACS Fellow: Jennifer Baker, MD
Surgical Critical Care APPs:
Emily Perkins-Pride, NP
Kim Hardin, NP
Larissa Fritts, PA
Chelseigh Newkerk, NP
SICU Nurse Manager: Heather Escudero, RN
SICU Nurse Educator: Molly Fox, RN
Nurse/Physician Liaison: Christy Rose, RN
Clinical Pharmacist: Katie Dionne, PharmD

SICU PHONE NUMBERS:
SICU MAIN DESK: 2-5800
A POD 2-5810 (Doc Box 2-5815)
B POD 2-5820
C POD 2-5830 (Doc Box 2-5840)
D POD 2-5850 (Neurosurgery Doc Box 2-5860)
SICU Fax Number: 303-602-5801
SICU Emergent Transfers (carried by fellow or SCCS during day, night resident overnight): 2-4774

SICU Critical Information

READING MATERIALS:
Marino's ICU book
DHMC Handbook of SCC
Trauma
All ICU journal articles are located on the Tdrive. Ask for access:
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