Critical Care
Treatment
Guidelines

WEST VIRGINIA
Department of
Health
Human
Resources
BUREAU FOR PUBLIC HEALTH
Office of Emergency Medical Services





CCT Guidelines

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CCT GUIDELINES

INITIAL TREATMENT / UNIVERSAL PATIENT CARE

- Utilize Appropriate BSI / Universal Precautions
- Obtain Transfer Information from Sending Facility
 - Bedside report information from sending facility
 - Review appropriate clinical and diagnostic data
 - o (i.e. vital signs, EKG, labs)
 - Review and confirm all interventions intended to be continued during transport
 - (i.e. medications, procedures, interventions)
 - Review ventilator settings if possible

****NOTE – in the event a patient has a life sustaining medication, device, or other complication that is not directly addressed and approved by state guidelines or is not on state approved CCT Medication/Procedure List, the sending physician must provide an inservice and the crew must verbalize understanding of the medication / procedure, and that they are comfortable transporting the patient ***

The transport medication / procedure should be documented with signatures from both the transferring physician and the crew and then attached to the patient's chart.

In the event there is any change in initial transporting diagnosis, consider diverting from original destination to appropriate alternate destination (i.e. ER from direct admit, stable to unstable, non-STEMI to STEMI).

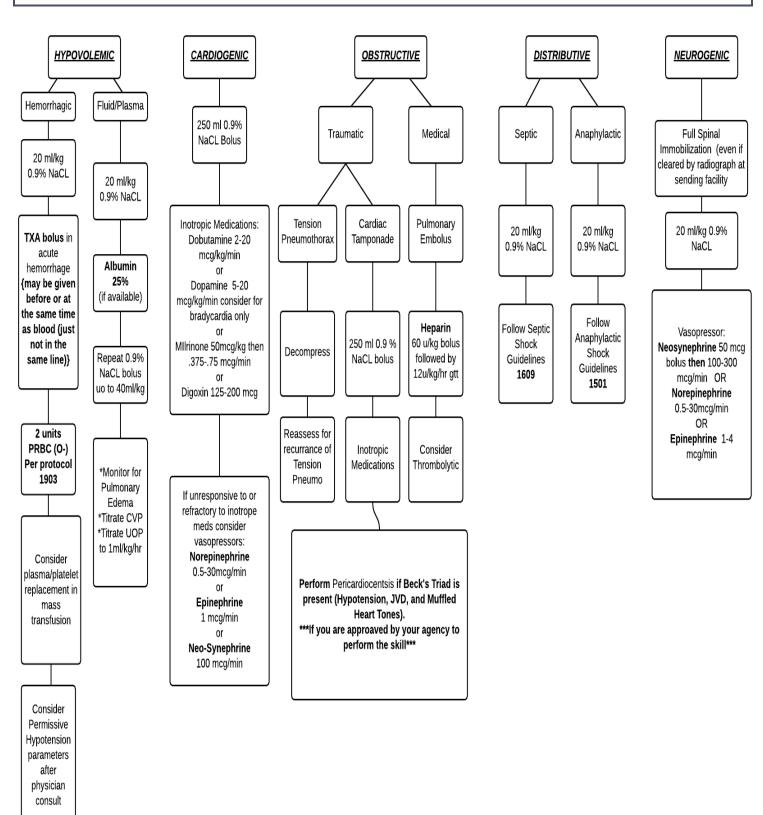
****NOTE – if the CCT crew needs medical direction, contact receiving physician, sending physician, agency CCT medical direction, and/or MCP****

- Contact Medical Command or MCP:
 - Any class 0 (Zero) transports
 - CCT Intercepts if unable to arrange CCT transport initially, contact Medical Command to arrange CCT intercept between sending and receiving facility.
 - Significant patient deterioration that causes the patient to become hemodynamically unstable despite ongoing intervention



1108

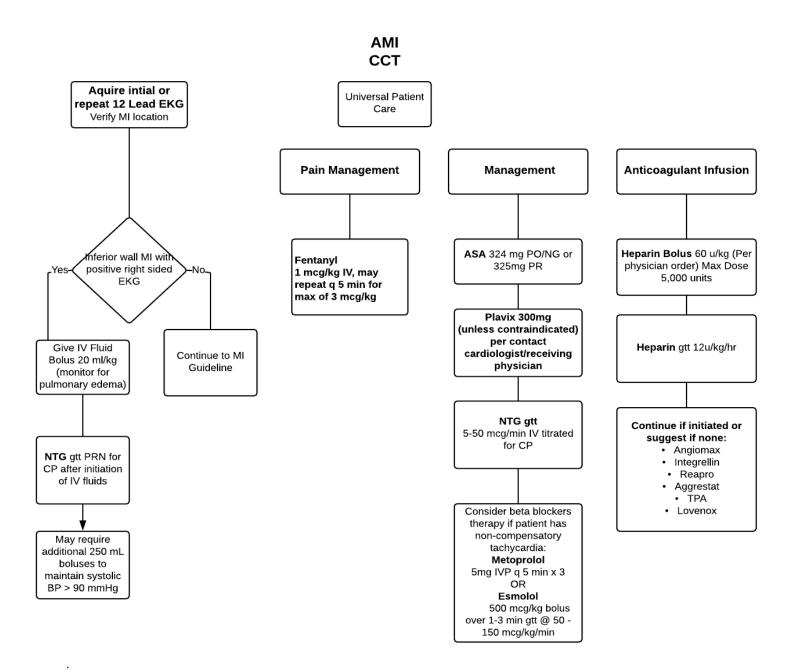
SHOCK





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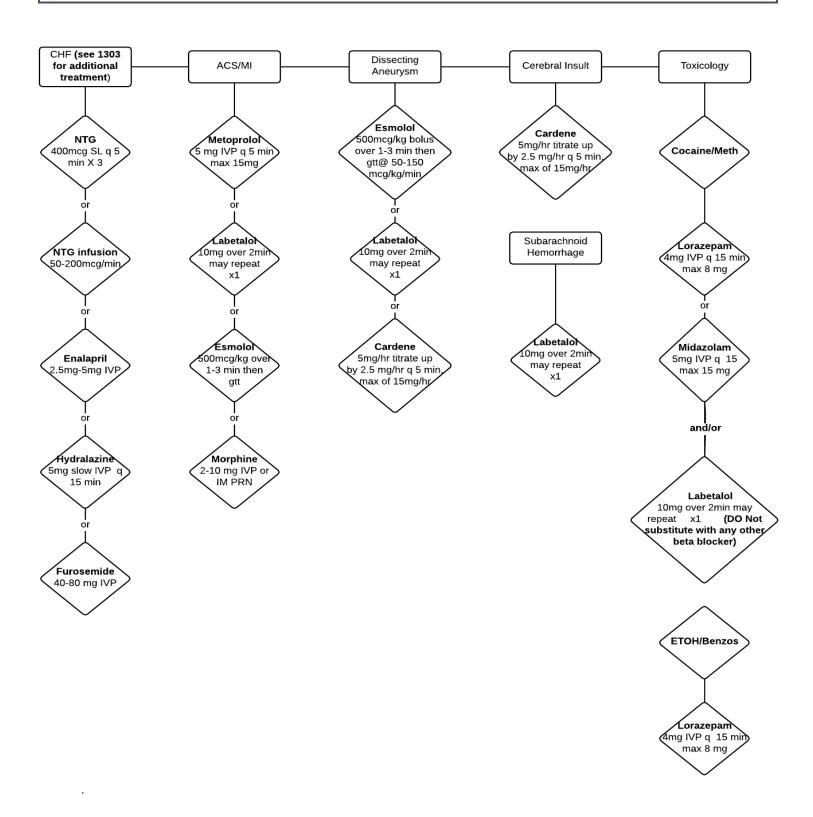
ACUTE MYOCARDIAL INFARCTION





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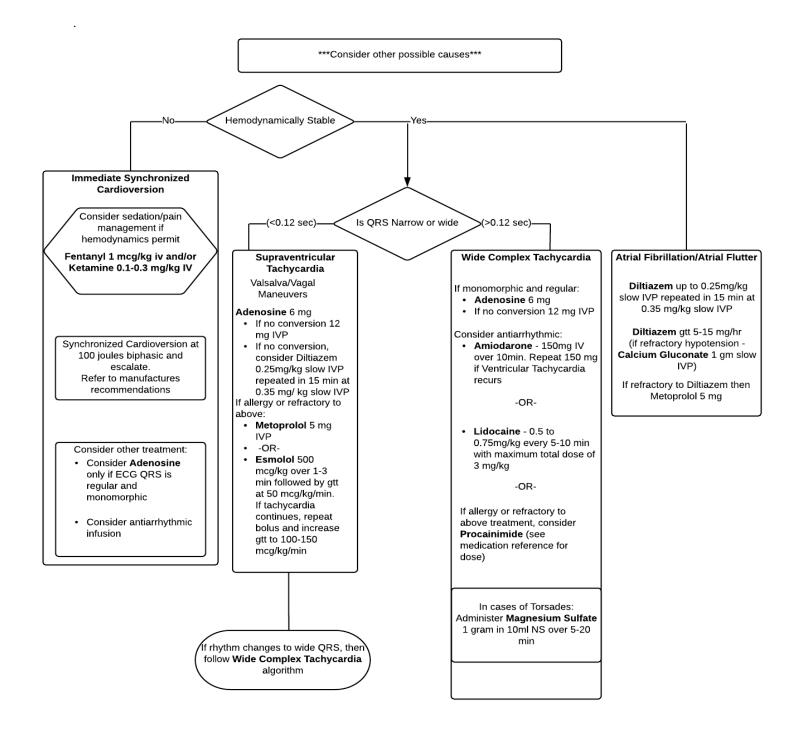
HYPERTENSIVE EMERGENCIES





1213

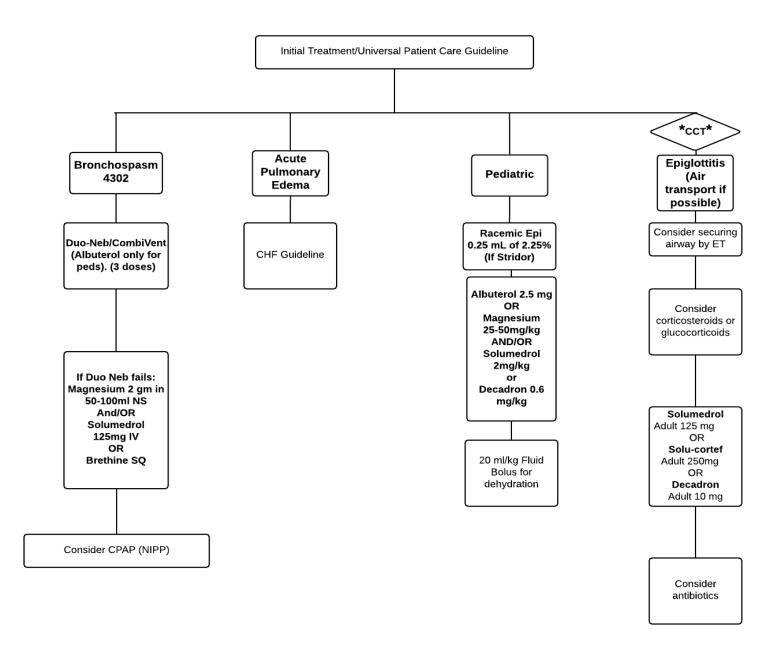
ADULT TACHYCARDIA





1301

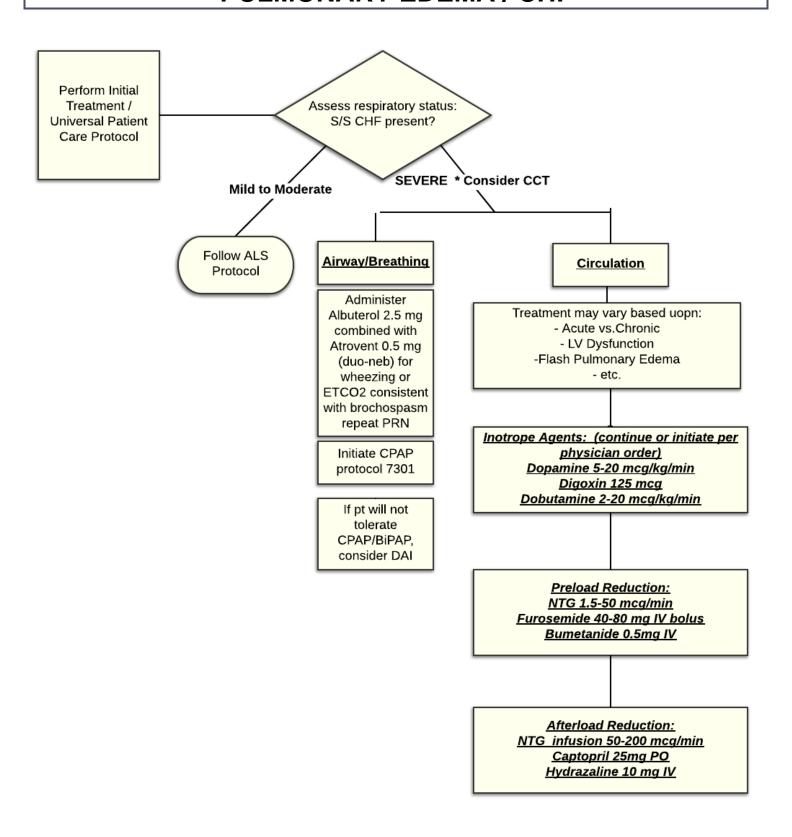
RESPIRATORY DISTRESS





1303

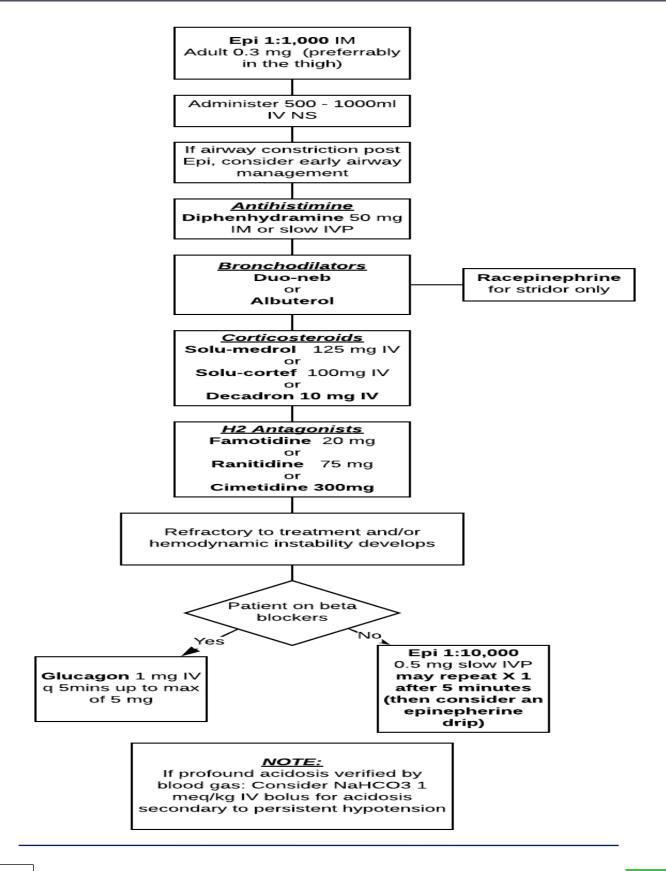
PULMONARY EDEMA / CHF





1501

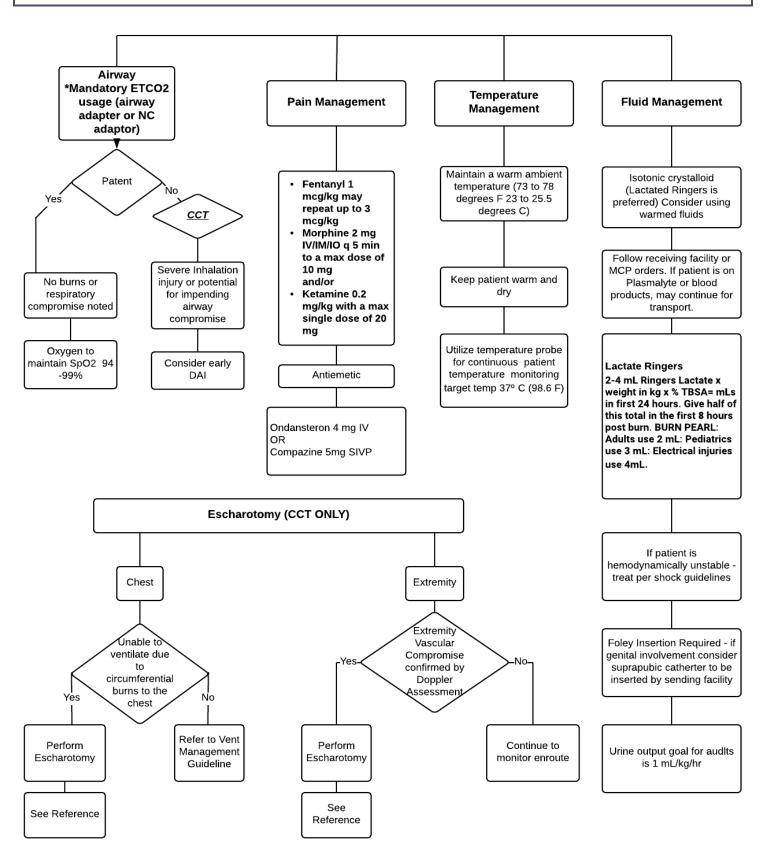
ANAPHYLAXIS





1506

BURNS

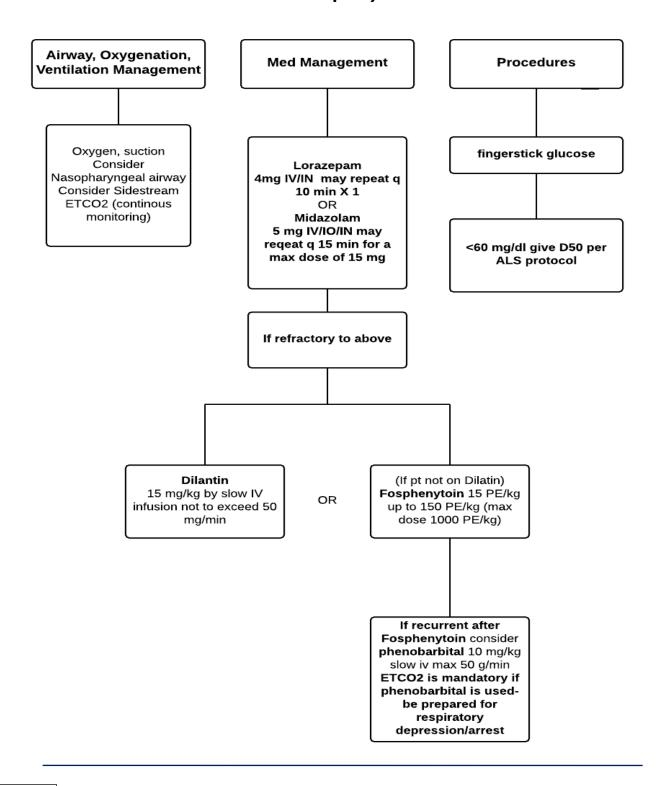




1603

SEIZURES

Seizure (prolonged or recurrent not related to eclampsia)

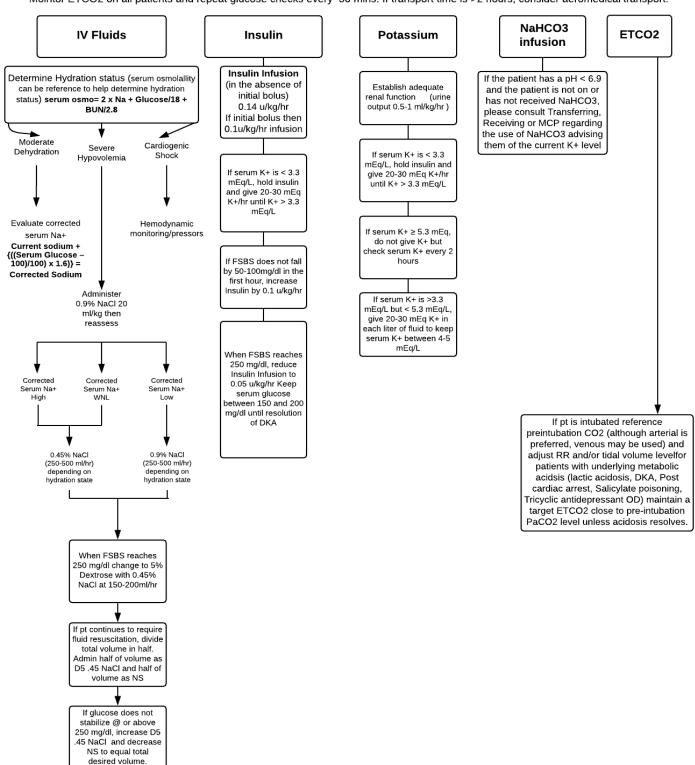




1604

ADULT DKA

Complete Initial evaluation. Ensure labs are <30 mins old or repeat labs and request staff call results to transport crew. Check capillary glucose and serum/urine ketones to confirm hyperglycemia and ketonemia/ketonuria. Start IV fluids: 1.0 L of 0.9% NaCl per hour. Mointor ETCO2 on all patients and repeat glucose checks every 30 mins. If transport time is >2 hours, consider aeromedical transport.

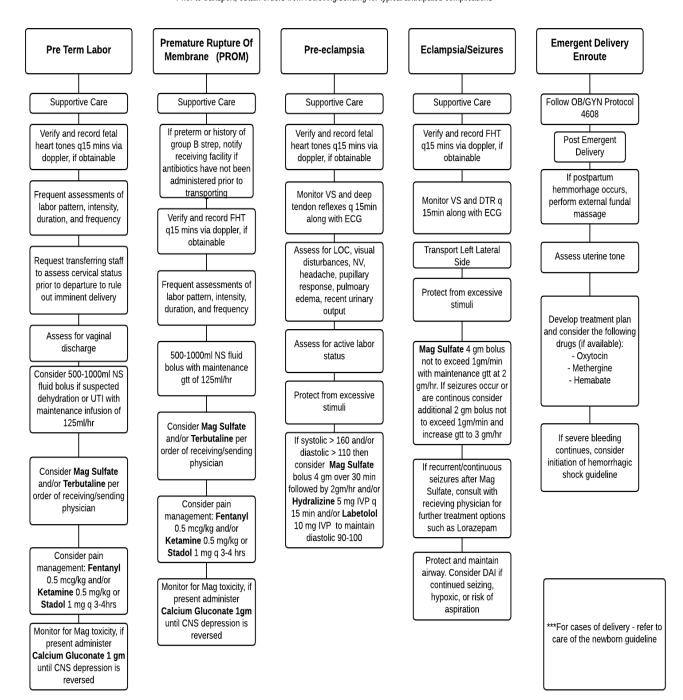




1608

OBSTETRIC EMERGENCIES

Prior to transport, obtain orders from recieving/sending for typical anticipated complications





2018 Edition

CRITICAL CARE TRANSPORT GUIDELINES

1609

SEPSIS

Temperature < 96.8 or > 100.4 (<36 or > 38.0 C)
Respiratory
Rate > 20
Heart Rate > 90
WBC < 4,000 or > 12,000
Bands > 10%
Glucose > 120
mgdL (in a nondiabetic pt).

Sepsis
A known or suspected infection with 2 out of the 5 SIRS

infection that is affecting distant organs

Lactic acid 2.0 to 3.9 administer fluids

CV= SPB < 90 mmHg <u>OR</u>

MAP < 65 mmHg AFTER ADEQUATE IVF resusication

Metabolic = Direct Billirubin > 2

Hepatic= doubling of liver enzymes

Renal = Creatinine > 2 or doubles from baseline

Hematologic = Platelets < 100.000

CNS = Siginificant mental

Septic Shock

criteria

A lactic acid of
4.0 or greater with
a known or
suspected
infection <u>OR</u> the
patient is
hypotensive after
<u>ADEQUATE</u>** IVF
boluses



1609

SEPSIS

Determine sepsis/severe sepsis/septic shock based on treatment provided and patient presentation. Verify how much IVF intake the patient has had in the last 4 hours. Find out what the patients original MAP/BP was. How much urine output has the pt had (minus what pt had out at initial insertion of catheter)

septic patients with
Lactic acid >2 or
patient with S/S of
shock:

Minimum bolus of 30 mL/kg** isotonic saline until perfusion

Begin antibiotic therapy if bacterial in nature. Do not delay antibiotic therapy as this increases mortality by 8% every hour there is a delay If the patient does not respond to fluid boluses (Patient should have a minimum of 30 mL/kg on board), continue fluids and begin Levophed drip at 5 mcg/min and titrate up to 30 mcg/min in 2.5 mcg/min increments.

Consider monitoring CVP and attempt to maintain between 8-12. If the patient is intubated then maintain CVP around 12 to account for PEEP Monitor lactic acid every 1 hour if available to trend progress and response to treatment/ther apy* Maintain urine output of 1ml/kg/hr

May add
Dobutamine drip
to begin at 5
mcg/kg/min up
to 20
mcg/kg/min for
patients with
cardiogenic
shock.

May consider adding a Vasopressin drip (Only to be used as a secondary adjunct therapy and never a first line pressor) at 0.04 units/min if perfusion is not adequate

If patient is refractory to Levophed begin Epinephrine drip at 2 mcg/min and titrate up to 10 mcg/min



Consider RBC

transfusio

n if

hemoglobi

n is \leq 9.0.

Transfuse

RBC's if

hemoglobi

n is **<**7.0

g/dl in adults

If patient is intubated and has sepsis induced ARDS maintain TV at 6 cc/kg IDEAL BODY WEIGHT to reduce the risk of barotrauma

Plateau pressures in patients with ARDS should be less than or equal to 30 cm H2O ***

(PEEP should be applied to avoid alveolar collapse.

Elevate HOB 15-30 degrees if patient tolerates with hemodynamics

Consider Insulin sliding scale subcutaneously for glucose greater than 180 g/dl and monitor closely for hypoglycemia

Perform glucose checks at least every 1 hour Consider stress ulcer prophylaxis with H2 blocker (Pepcid, Zantac...)

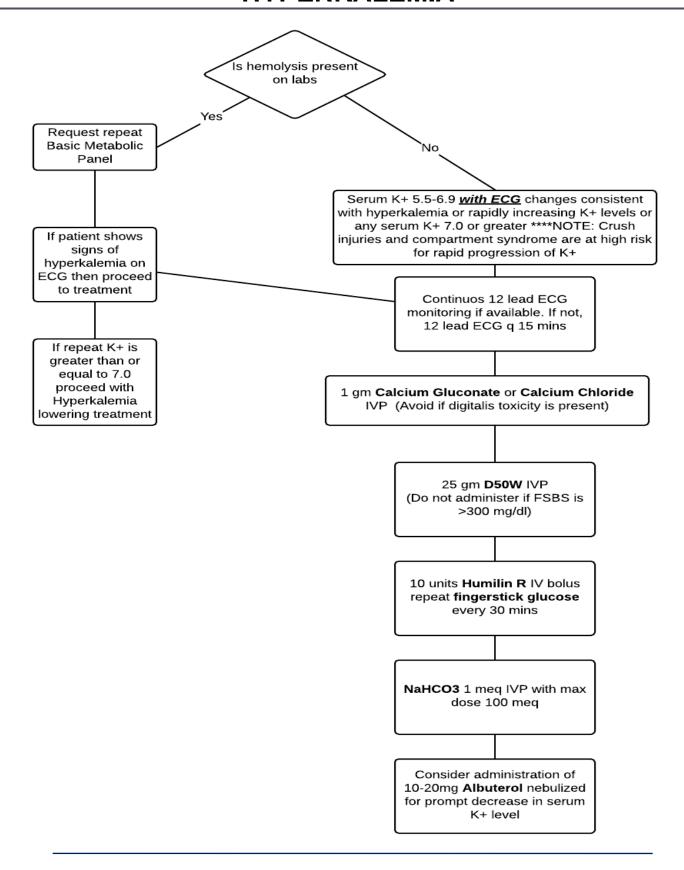
*Monitor urine output and record every 1 hour. Attempt to maintain urine output at 1 mL/kg/hr *** IVF boluses may be repeated after reaching the recommended 30-40 mL/kg as long as the boluses are effective as evidenced by: decreased HR, increased BP and or MAP, increased urine output, improved LOC—without development of Rales/Crackles or other contraindicated side effects of too much volume resuscitation. 30mL/kg of IVF should be achieved within 3 hours.

***May substitute peak airway pressure if plateau pressure is unavailable. Peak airway pressure should not exceed 40 cmH2O→ if it does then change to pressure control ventilation.



1610

HYPERKALEMIA





1901

ADVANCED AIRWAY MANAGEMENT - DAI

LEMON Assessment Back up Devices Available

REQUIRED INTUBATION

Preoxygenatate with 100% O2 via DO NOT passive oxygenation **BAG VENTILATE UNLESS NECESSARY**

PREMEDICATION: (if suspected increased ICP)

Lidocaine 1-1.5 mg/kg 3 min prior to intubation

SEDATION:

Lorazepam 1-2 mg IVP OR Midazolam 2-5mg IVP (max dose 0.1 mg/kg) OR

Diazepam 5mg IVP

PAIN MANAGEMENT Fentanyl 1-3 mcg/kg IVP OR MSO4 2-4 mg IVP OR

Ketamine 0.5 - 1 mg/kg

INDUCTION

Etomidate 0.3-0.6 mg/kg IVP OR

Ketamine 1-2 mg/kg IVP

NEUROMUSCULAR BLOCKADE

Succinylcholine 1.5-2.0 mg/kg IVP OR

Rocuronium 1 mg/kg IVP OR

Vecuronium 0.1mg/kg IVP

CONTINUED SEDATION AND PAIN MANAGEMENT

Midazolam 0.1 mg/kg IVP OR

Lorazepam 1-2 mg IVP AND

Fentanyl 1-3 mcg/kg IVP (consider infusion)

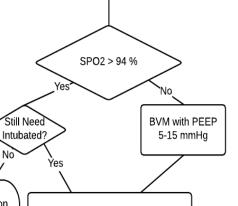
2018 Edition

CRASH AIRWAY

Preoxygenatate with 100% O2 via passive oxygenation DO NOT **BAG VENTILATE UNLESS NECESSARY**

INDUCTION

Ketamine 1-2 mg/kg IVP



NEUROMUSCULAR BLOCKADE

No

Halt Intubation

Succinylcholine 1.5-2.0 mg/kg IVP unless contraindicated then use Rocuronium 1 mg/kg IVP OR

Norcuron 0.1 mg/kg

<u>Intubate</u>

Confirm Placement with ETCO2

CONTINUED SEDATION AND PAIN MANAGEMENT

Midazolam 0.1 mg/kg IVP OR

Lorazepam 1-2 mg IVP

AND

Fentanyl 1-3 mcg/kg IVP (consider infusion)

PEDIATRIC

Preoxygenatate with 100% O2 via passive oxygenation DO NOT **BAG VENTILATE UNLESS NECESSARY**

PREMEDICATION:

Lidocaine (for suspected increased ICP) 1-1.5 mg/kg 3 min prior to intubation

Atropine 0.02 mg/kg (min dose 0.1mg max dose 1 mg) as indicated

PAIN MANAGEMENT

Fentanyl 1-3 mcg/kg IVP (use lower dosing on hemodynamically unstable patients)

INDUCTION

Etomidate 0.3-0.6 mg/kg IVP OR

Ketamine 1-2 mg/kg IVP

NEUROMUSCULAR BLOCKADE

Succinylcholine 1.5-2.0 mg/kg IVP

Rocuronium 1 mg/kg IVP OR

Vecuronium 0.1 mg/kg

CONTINUED SEDATION AND PAIN **MANAGEMENT**

Midazolam 0.1 mg/kg IVP(max 2 mg single doses) Consider Infusion OR

Lorazepam 0.1 mg/kg IVP (max single dose 2 mg each) Consider infusion

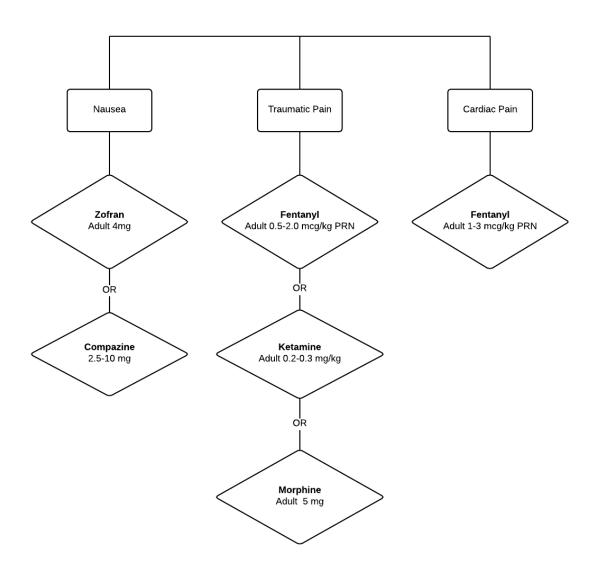
AND

Fentanyl 1 mcg/kg IVP may repeat up to 3 mcg/kg (consider infusion)



1902

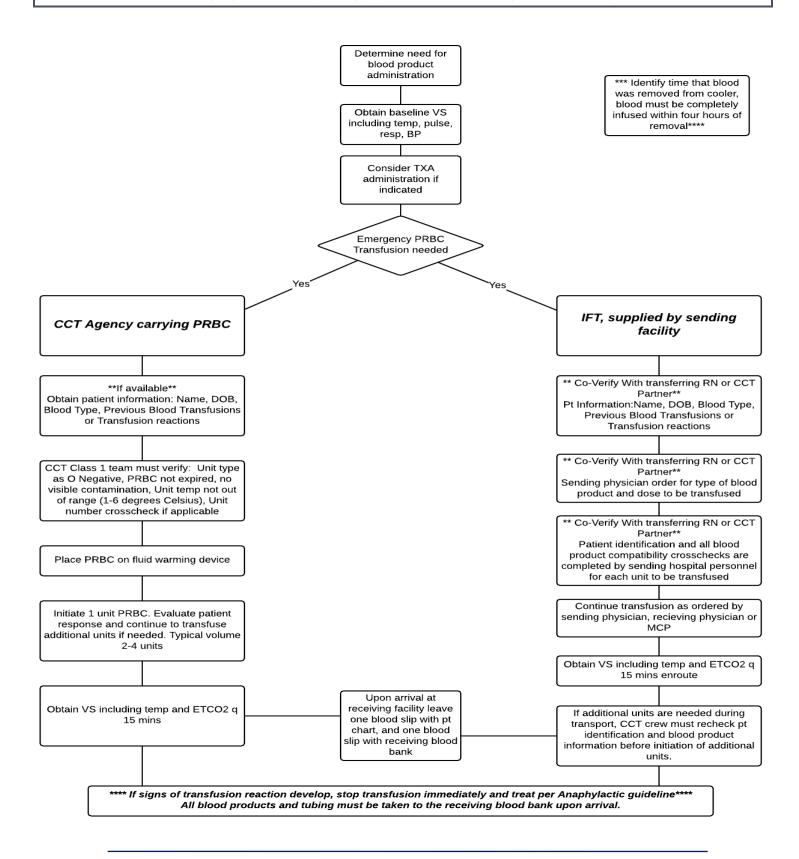
PATIENT COMFORT





1903

BLOOD PRODUCT ADMINISTRATION





1904

SEDATION AND RESTRAINT

