

# **Hypotension/Shock**

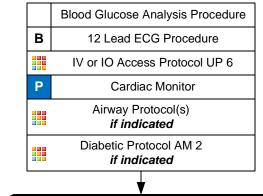
- Blood loss vaginal or gastrointestinal bleeding, AAA,
- Fluid loss vomiting, diarrhea, fever
- Infection
- Cardiac ischemia (MI, CHF)
- Medications
- Allergic reaction
- Pregnancy
- History of poor oral intake

# Signs and Symptoms

- Restlessness, confusion
- Weakness, dizziness
- Weak, rapid pulse
- Pale, cool, clammy skin
- Delayed capillary refill
- Hypotension
- Coffee-ground emesis
- Tarry stools

# Differential

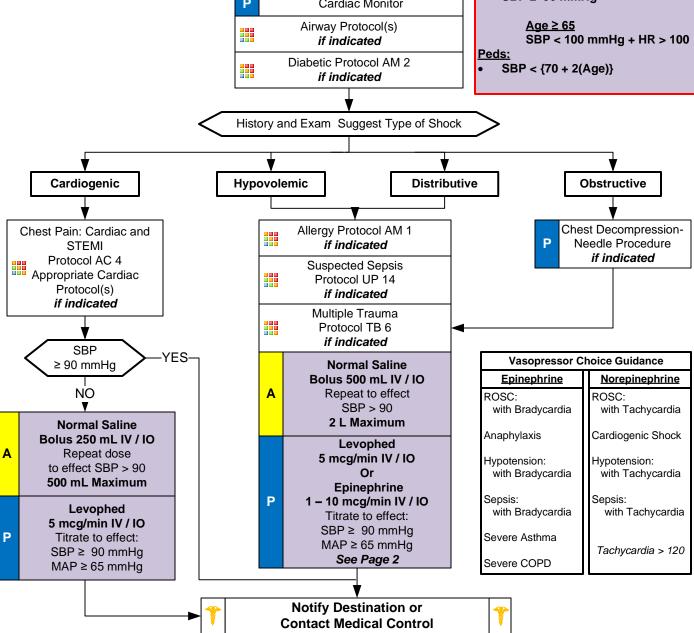
- Ectopic pregnancy
- Dysrhythmias
- Pulmonary embolus
- Tension pneumothorax
- Medication effect / overdose
- Vasovagal
- Physiologic (pregnancy)
- Sepsis



**TXA / Blood Product Indicators:** V/S parameters for blunt/ penetrating trauma:

### Adult:

SBP ≤ 90 mmHg





# **Hypotension/Shock**



### Tranexamic Acid (TXA)

- Administer 2 gm over 10 minutes
- Infuse during transport only, unless patient entrapped and can be administered without slowing extrication.

# **Push-Dose Vasopressors:**

- Epinephrine: Mix 1:1000 (1mg in 1mL) into 1000 mL of NS or LR.
- Norepinephrine: Mix 1 mg into 1000 mL of NS or LR
- Yields a concentration of 1 mcg/mL of Epinephrine or Norepinephrine.
- Give 5 10 mcg every 2 3 minutes to effect SBP ≥ 90 and/or MAP of ≥ 65 mmHg.
- Use push-dose vasopressors, in conjunction with fluid resuscitation, with RSI procedure when hypotensive.
- Use push-dose vasopressors with hypotension unresponsive to fluid resuscitation.
- Use push-dose vasopressor as you are setting up a Epinephrine or Levophed drip.
- If patient requires ≥ 2 push dose vasopressors, start vasopressor infusion.

# Levophed:

If patient requires ≥ 2 push dose vasopressors or has suspected sepsis, initiate Levophed drip.

Levophed 5 mcg/min IV / IO and titrate by 2 mcg/min every 2 – 3 minutes to effect

SBP ≥ 90mmHg and/or MAP ≥ 65 mmHg.

(1 mcg / mL) 10 drop set		
re	Dose 1 mcg/min 2 mcg/min 3 mcg/min 4 mcg/min	gtts / min 10 gtts/min 20 gtts/min 30 gtts/min 40 gtts/min
	5 mcg/min 6 mcg/min	50 gtts/min 60 gtts/min

7 mcg/min

8 mcg/min 9 mcg/min

10 mcg/min

Epinephrine and Norepinephrine DRIP

1 mg of drug in 1000 mL NS or LR

70 gtts/min

80 gtts/min

90 gtts/min

100 gtts/min

#### **Pearls**

- Recommended Exam: Mental Status, Skin, Heart, Lungs, Abdomen, Back, Extremities, Neuro
- Hypotension is defined as a systolic blood pressure less than 90. This is not always reliable and should be interpreted in context and consider patient's typical BP if known.
- Shock may be present with a normal blood pressure initially or even elevated blood pressure.
- Shock is often present with normal vital signs and may develop insidiously. Tachycardia may be the first and only sign.
- Consider all possible causes of shock and treat per appropriate protocol.
- Hypovolemic Shock;

Hemorrhage, trauma, GI bleeding, ruptured aortic aneurysm or pregnancy-related bleeding.

# **Tranexamic Acid (TXA):**

Agencies utilizing TXA must submit letters from the their receiving trauma centers for approval by the OEMS Medical Director.

Receiving trauma centers must agree to continue TXA therapy with repeat dosing.

TXA is NOT indicated and should NOT be administered where trauma occurred > 3 hours prior to EMS arrival.

# Cardiogenic Shock:

Heart failure: MI, Cardiomyopathy, Myocardial contusion, Ruptured ventrical / septum / valve / toxins.

# • <u>Distributive Shock:</u>

Sepsis/ Anaphylactic/ Neurogenic/ Toxins

Hallmark is warm, dry, pink skin with normal capillary refill time and typically alert.

# • Obstructive Shock:

Pericardial tamponade. Pulmonary embolus. Tension pneumothorax.

Signs may include hypotension with distended neck veins, tachycardia, unilateral decreased breath sounds or muffled heart sounds.

# Acute Adrenal Insufficiency or Congenital Adrenal Hyperplasia:

Body cannot produce enough steroids (glucocorticoids/ mineralocorticoids.)

May have primary or secondary adrenal disease, congenital adrenal hyperplasia, or more commonly have stopped a steroid like prednisone. Injury or illness may precipitate.

Usually hypotensive with nausea, vomiting, dehydration and/ or abdominal pain.

If suspected, Paramedic should give Methylprednisolone 125 mg IM / IV / IO or Dexamethasone 10 mg IM / IV / IO. Use steroid agent specific to your drug list.

May administer prescribed steroid carried by patient IM / IV / IO. Patient may have Hydrocortisone (Cortef or Solu-Cortef). Dose: < 1y.o. give 25 mg, 1-12 y.o. give 50 mg, and > 12 y.o. give 100 mg or dose specified by patient's physician.