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WVEMS Protocols 2026

Protocols, Procedures, Policies & Medications
of the Western VA EMS Medical Direction Committee

Editors: Drs. Ekey, LePera, and Stanley



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Protocol Flow and Intervention Symbols

Indications

Use Judgement

Don't Forget

Important Note

Concept
• And Details

WARNING

Basic Life Support (BLS)

EMR

EMT

AEMT

Advanced Life Support (ALS)

I Intermediate

P Paramedic

P Critical Care Paramedic

Welcome

- Think of this like a **tool box**, not a **cookbook**.
- You should **use several protocols** at the same time on every call.
- You may use any intervention marked for your level or lower.

Basic

- Basic procedures are assumed for every call.
- Don't forget: scene safe, BSI, ABC's, call for **ALS**, notify the ED, etc.
- Every patient should have a full assessment including vital signs.
- Ask about **medical allergies** and **pregnancy** before giving meds.

Call

- Call for online **Medical Direction** at any time for advice on:
- Any questions, problems, or if uncertain for any reason.
- Getting permission to **deviate** from these protocols.
- If unable to contact, remember: **get the patient to the hospital**.

Protocols

- Protocols mean you **can**, but not always that you **should**.
- Use only enough to stabilize and/or improve. Don't follow blindly.
- Skip anything unnecessary. Not every box needs to be completed.
- The listed **order suggests importance**, but it is not absolute.

Severity

- Severity is a **subjective judgement** that requires thought.
- Not all decisions are black and white. Use this text as a guide.
- **Reassess and restart** protocols as needed during a call.
- Use good clinical sense to decide what takes precedence.

Presume

- Presume routine things when appropriate, like:
- SpO₂, EKG, EtCO₂, glucometer, saline lock, phlebotomy, etc.
- Regular layperson **first aid** treatments like splinting & band-aids.
- Note: protocols may also include reminders (like "12-Lead").

Pediatric

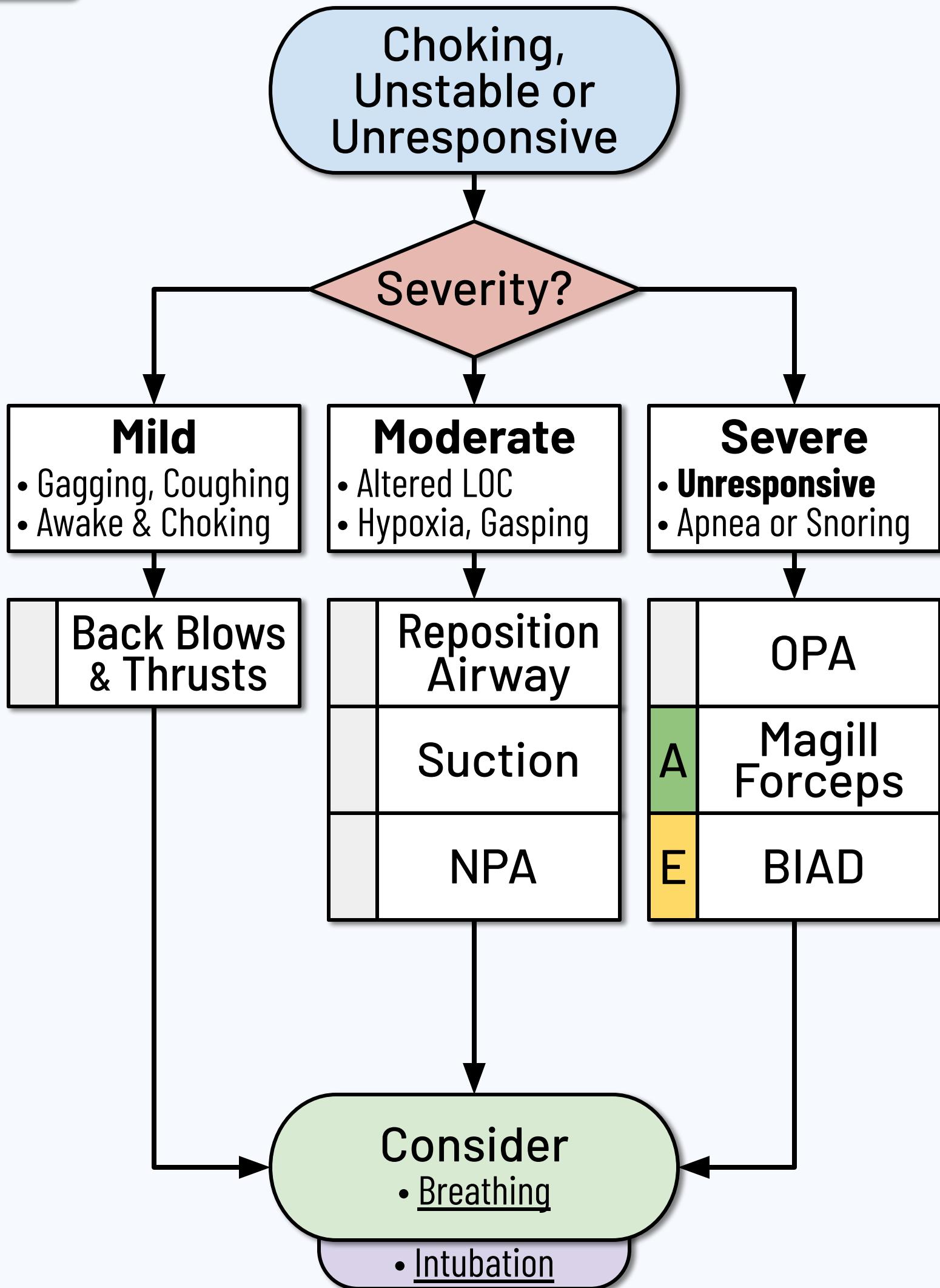
- Pediatric considerations are **included** in every protocol.
- Patients 14 y/o and over (14+) are generally given **adult** therapy.
- Children (1 - 13 y/o) and Infants (<1 y/o) are considered **peds**.
- Use Peds Reference for peds dosing & **adults under 110 lbs** (50 kg).

Critical Care

- Critical Care (CC) is for credentialed **paramedics only**.
- Provider's responsibility to maintain **mandatory prerequisites**.
- Must be approved **for that specific protocol** by the agency OMD.
- All deadlines expire on the last day of the month (a grace period).

References

- References are included. This text is not comprehensive.
- Medications may appear as **brand name®** or **generic**.



Airway Imperatives

- Maintain the simplest effective airway. **Escalate only if needed.**
 - Consider **elevating the head** of cot to reduce aspiration risk.
- If **BIAD** fails, **try again with a different size.**
 - Most common failure of a **BIAD** is inappropriate size.
- Use several techniques to confirm airway:
 - Physical Exam: lung sounds, skin color, chest rise, etc.
 - Vitals: rising SpO₂, EtCO₂, waveform capnography (gold standard)
- Be prepared to escalate airway if signs of **Poor Perfusion**.

Poor Perfusion

- Suspect if **several** of these:
 - **Altered Mental Status**
 - Skin Pale, Cool, Diaphoretic
 - Tachycardia, Hypotension
 - Dyspnea, Tachypnea

Notes

- Encourage coughing. Use **Back Blows & Abd. Thrusts** for choking.
 - Use Chest Thrusts if pregnant or unable to encircle abdomen.
- Reposition airway with Jaw Thrust if any concern for spine injury.
 - Use Head Tilt / Chin lift if medical cause (or if Jaw Thrust fails).
- Use caution with **NPA** if any signs of skull fx. or facial trauma.
- Secure **BIAD** well. Use tape or manufactured holding device.
 - May place c-collar (even without trauma) to help stabilize BIAD.
 - **A** Consider placing an **OG-Tube** if BIAD will accommodate it.
- Consider **Intubation** if indicated and credentialed for Critical Care.

Pediatrics

- Be suspicious for an airway obstruction, especially with **stridor**.
- Use Chest Thrusts (instead of Abd. Thrusts) for infants (< 1 y/o).

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 9

Dyspnea or
SpO₂ under 95%

Provide O₂

Severity?

Mild

- Awake & Oriented
- Subjective Dyspnea

Moderate

- Resps. Inadequate
- Cyanosis, Gasping

Severe

- Respiratory Failure
- Penetrating Injury

Position of Comfort

BVM
Assist

BVM
Ventilate

E NIPPV

Chest Seal

I Pleural
Decompress

Consider
• Airway, Dyspnea

• Ventilator

Breathing Imperatives

- Dyspnea with **penetrating trauma** is a **severe** problem.
 - Apply a **chest seal** over any penetrating injury to neck or **trunk**.
 - Remove chest seal if using positive pressure (e.g. BVM, NIPPV).
- Spontaneous or traumatic **PTX** can be a **severe** problem.
 - Pleural Decompress for Hypotension or persistent hypoxia.
- BVM: Use two providers and two handed technique if able.
 - **Use EtCO₂** and **target 35-45 mmHg**. Avoid hyperventilation.
 - During CPR: alternate **30 : 2** until BIAD (or ETT) is placed.
- NIPPV: Contraindicated with agitation, vomiting, or hypotension.
 - May use if altered or unresponsive, but **monitor closely**.
 - May place EtCO₂ cannula under NIPPV mask to get waveform.

BVM Rate

- Adult: **Q 6 sec** (10 /min)
- Peds: **Q 2 sec** (20-30 /min)

Notes

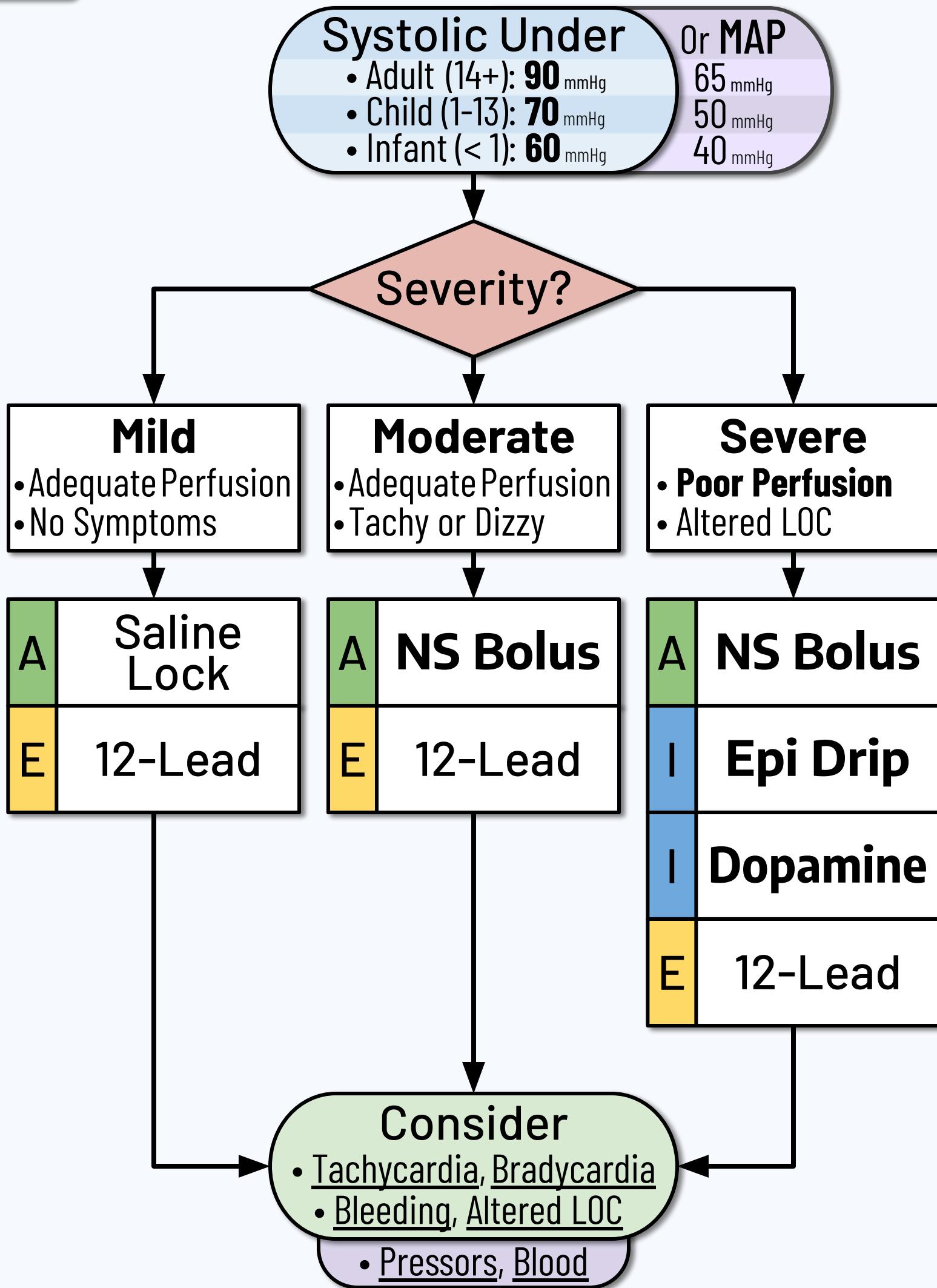
- Provide O₂ at appropriate doses. May decrease if SpO₂ above 98%.
 - Nasal Cannula (NC): **1-6 L/min**; Non-Rebreather (NRB): **10-15 L/min**
 - Hyperoxia can make some conditions worse, **especially COPD**.
 - Target SpO₂ of 88-92% for adults with isolated **COPD**.
- If SpO₂ unavailable or machine fails: use good clinical judgment.
- Drowning (or **SCUBA**) may cause hypoxia, treatment is the same.
- Consider Ventilator if indicated and credentialed for Critical Care.

Pediatrics

- Refer to Neonate for any peds **under 1 month** (≤ 30 days) old.
 - Consider a **T-piece** resuscitator (instead of BVM) for Neonates.
- Use caution and appropriately sized BVM to prevent barotrauma.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 10



NS Bolus: 500 mL	IV/IO x4	Adult Doses
Epi Drip: 1 drop per second	IV/IO Titrated Drip	
Dopamine: 5 mcg/kg/min	IV/IO Titrated Drip	

Shock Imperatives

- Consider underlying causes:
 - Bradycardia, Tachycardia
 - Cardiac, Anaphylaxis
 - Diabetic, Overdose / Tox
 - Major Trauma, Exposure

Poor Perfusion

- Suspect if **several** of these:
 - **Altered Mental Status**
 - Skin Pale, Cool, Diaphoretic
 - Tachycardia, Hypotension
 - Dyspnea, Tachypnea

Medication

- **NS Bolus** (0.9% Saline): indicated for **poor perfusion**.
 - Monitor for edema & rales before & after fluid administration.
- **Epi Drip** (Epinephrine): Mix bag of **1 mcg/mL** and use as follows:
 - Add 1 mg **Epi** into 1,000 mL bag -**or**- 0.5 mg in 500 mL bag of **NS**
 - Adults (14+ y/o): Use a macro drip (10 or 15 gtt/mL) set.
 - Peds (0-13 y/o): Use a micro drip (60 gtt/mL) set.
 - Start at 1 drop per second and **titrate as needed**.
 - Avoid **Epi** if active chest pain and confirmed STEMI.
- **Dopamine** (Intropin®): for medical causes refractory to **Epi**.
 - **Use a micro drip** (60 gtt/mL) set. May titrate **up to 4x** if needed.
 - Average adults start around **1 drop every 5 sec** (with micro set).

Notes

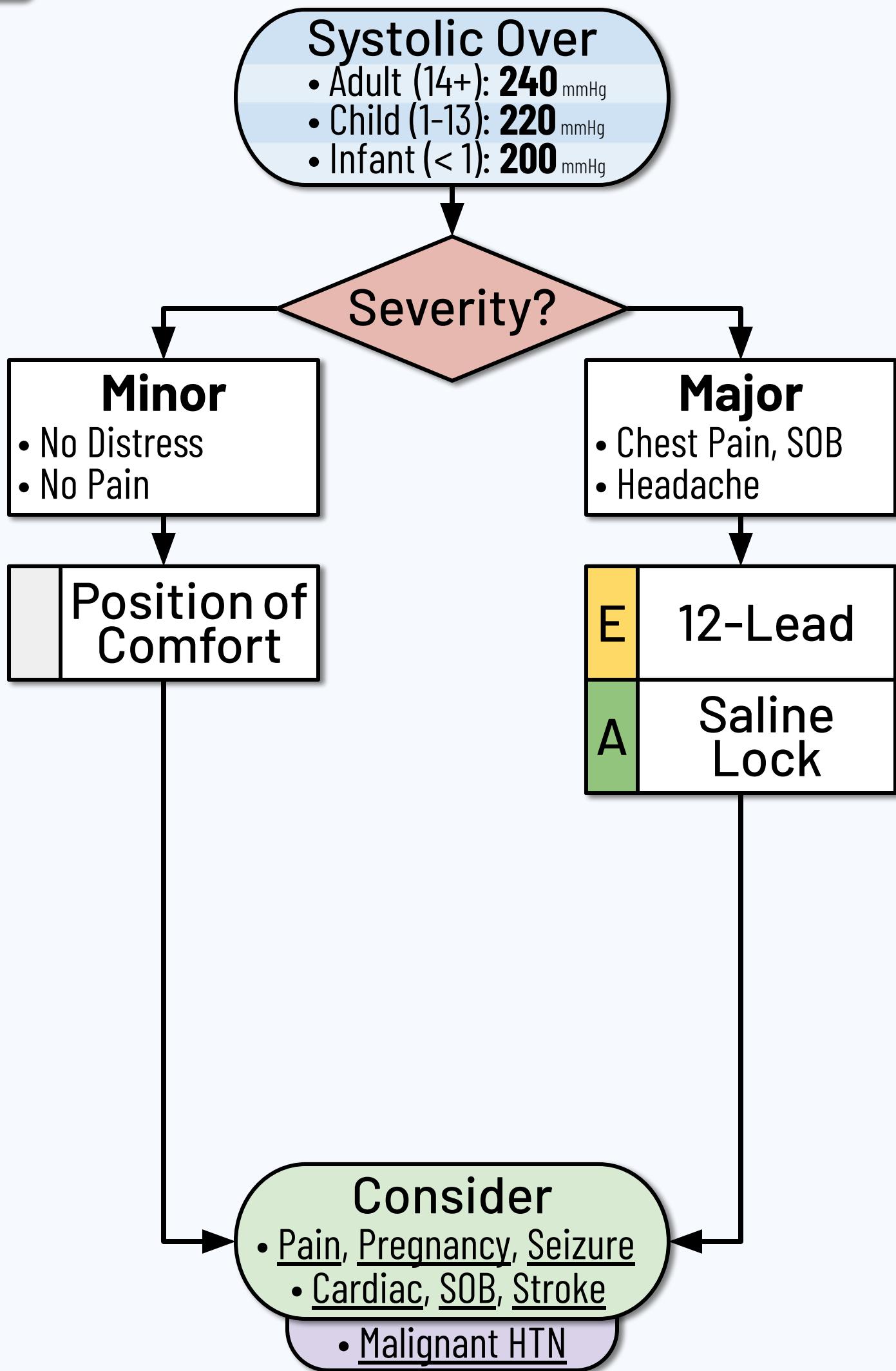
- Use **balanced** resuscitation in trauma. Pressors are a last resort.
- Mean Arterial Pressure (**MAP**) is a better indicator when available.
 - Consider Pressors or Blood if indicated and credentialed for CC.

Pediatrics

- The majority of peds decompensation is airway related.
- Fluids are important for hypotension. Pressors are a last resort.
- Use Peds Reference or other approved source for peds dosing.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Medscape Vitals: <https://emedicine.medscape.com/article/2172054> [Ver: 2/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 7, 29



Hypertension Imperatives

- Confirm elevated systolic BP with two reliable blood pressures.
- HTN is a frequent reaction to Pain and acute physiologic insult.
 - Investigate and **treat pain & underlying causes** first.
- Even mild HTN (SBP>160 mmhg) in late Pregnancy may be pathologic.
 - It may progress to **eclampsia**. Be ready to treat for Seizures.
 - Consider Preeclampsia if indicated and credentialed for CC.
- Inappropriate use of antihypertensives can **cause harm**.
 - Lowering BP during a stroke can **cause harm**.

Notes

- Many other **underlying causes** can result in significant HTN.
 - Consider Cardiac pathology if any chest pain.
 - Consider Dyspnea and CHF if any rales or pedal edema.
 - Consider OD/Tox if any recent stimulant or illicit drug use.
 - Consider Stroke if any acute focal neurologic deficits.
 - Consider Behavioral if anxiety from recent emotional triggers.
 - Consider Head Injury if any history of trauma or signs of injury.
- Ask about new or recent changes to cardiac or **BP medications**.
- Consider Malignant HTN if indicated and credentialed for CC.
- Consider Pulmonary Edema if indicated and credentialed for CC.

Pediatrics

- Pathologic HTN is unlikely in peds. Treat underlying causes.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Medscape Vitals: <https://emedicine.medscape.com/article/2172054> [Ver: 2/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 13

Pulse Under

- Adult (14+): **60** /min
- Child (1-13): **70** /min
- Infant (< 1): **80** /min

Severity?**Mild**

- Adequate Perfusion
- Minimal Symptoms

Moderate

- Adequate Perfusion
- Chest Pain, Weak

Severe

- Poor Perfusion
- Unresponsive

E 12-Lead**A** Saline Lock**E** 12-Lead**I** Atropine**I** Pacing**Epi****Peds****E** 12-Lead

- Consider**
- Pain, Breathing, Hyper K⁺
 - Shock, N/V, OD / Tox

Atropine: 1 mg

IV/IO Q 5 min x3

Adult**Epi:** Use Peds Reference

IV/IO Q 5 min

Peds

Bradycardia Imperatives

- Investigate & consider tx of underlying causes, like Hypothermia.
 - Consider Overdose if appropriate (many meds cause brady).
 - Slow, wide complex bradycardia may be due to Hyperkalemia.
- **I** May try **pacer magnet** to improve rate. Do **not** use on AICD.

Poor Perfusion

- Suspect if **several** of these:
 - **Altered Mental Status**
 - Skin Pale, Cool, Diaphoretic
 - Hypotension, Orthostasis
 - Dyspnea, Tachypnea

Medications

- **Atropine**: less effective with: heart transplant, 3° heart block
- **Epi** (Epinephrine): Preferred agent over **Atropine** in peds.

Notes

- Consider placing pacing (defib) **pads** on any unstable patient.
- **Pacing**: Can start at **80 bpm / 80 mA**. Escalate mA as needed.
 - Treat Pain and/or Anxiety from pacing as soon as appropriate.

Pediatrics

- Refer to Neonate for any peds **under 1 month** (≤ 30 days) old.
- Frequently a Breathing problem: **don't forget O₂ and BVM**.
- Even a **single pill** of some meds can cause severe bradycardia.
 - Consider opiate, Ca²⁺ or β-blocker Overdose.
- Consider effects of maternal medication in breast milk.
- Use Peds Reference or other approved source for peds dosing.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Medscape Vitals: <https://emedicine.medscape.com/article/2172054> [Ver: 2/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 13, 20

Tachycardia

Pulse Over

- Adult (14+): 100 /min
- Child (1-13): 130 /min
- Infant (< 1): 160 /min

Severity?

Mild

- Adequate Perfusion
- Simple Tachycardia

Moderate

- Adequate Perfusion
- **Critical Arrhythmia**

Severe

- Poor Perfusion
- **Critical Arrhythmia**

E 12-Lead

A NS Bolus

E 12-Lead

A NS Bolus

I Cardiovert

E 12-Lead

I Magnesium
If Torsades

A NS Bolus

I Adenosine
If QRS ≤ 120 msI Amio
If QRS > 120

Adult

Consider

- Circulation, Pain
- Fever, Bleeding

NS Bolus: 500 mL IV/10 x4**Adenosine:** 12 mg IV/10 Q 5 min x2**Amiodarone:** 150 mg IV/10 over 10 min**Magnesium:** 2 grams IV/10 x1Adult
Doses

Tachycardia Imperatives

- **Simple Tachycardias** (e.g. Sinus Tach) occur for many reasons.
 - Reactive causes like: Shock, Pain, Fever or Bleeding, etc.
 - Hidden causes like: OD / Tox, Behavioral or Anaphylaxis, etc.
 - Cardiac causes like: SSS, A-Flutter or A-Fib w/ RVR, etc.
 - Treat the cause. Avoid anti-arrhythmics or cardioversion.
- **Critical Arrhythmias** (e.g. SVT, V-Tach w/pulse) are usually **faster**.
 - But a fast pulse is not always critical. Judgement is necessary.
 - **I** May try vagal maneuvers (e.g. modified valsalva).

Critical Arrhythmia

- Suspect if pulse over:
 - Adult (14+): **150** /min
 - Child (1-13): **180** /min
 - Infant (<1): **220** /min

Poor Perfusion

- Suspect if **several** of these:
 - **Altered Mental Status**
 - Skin Pale, Cool, Diaphoretic
 - Tachycardia, Hypotension
 - Dyspnea, Tachypnea

Medications

- **Adenosine** (Adenocard[®]): Give **rapid IV push**.
 - Use caution in patients with a history of WPW, COPD or asthma.
- **Amiodarone** (Pacerone[®]): Give **over 10 min** IV drip.
 - Prehospital **Amio** is **not indicated** for pediatric tachycardia.

Notes

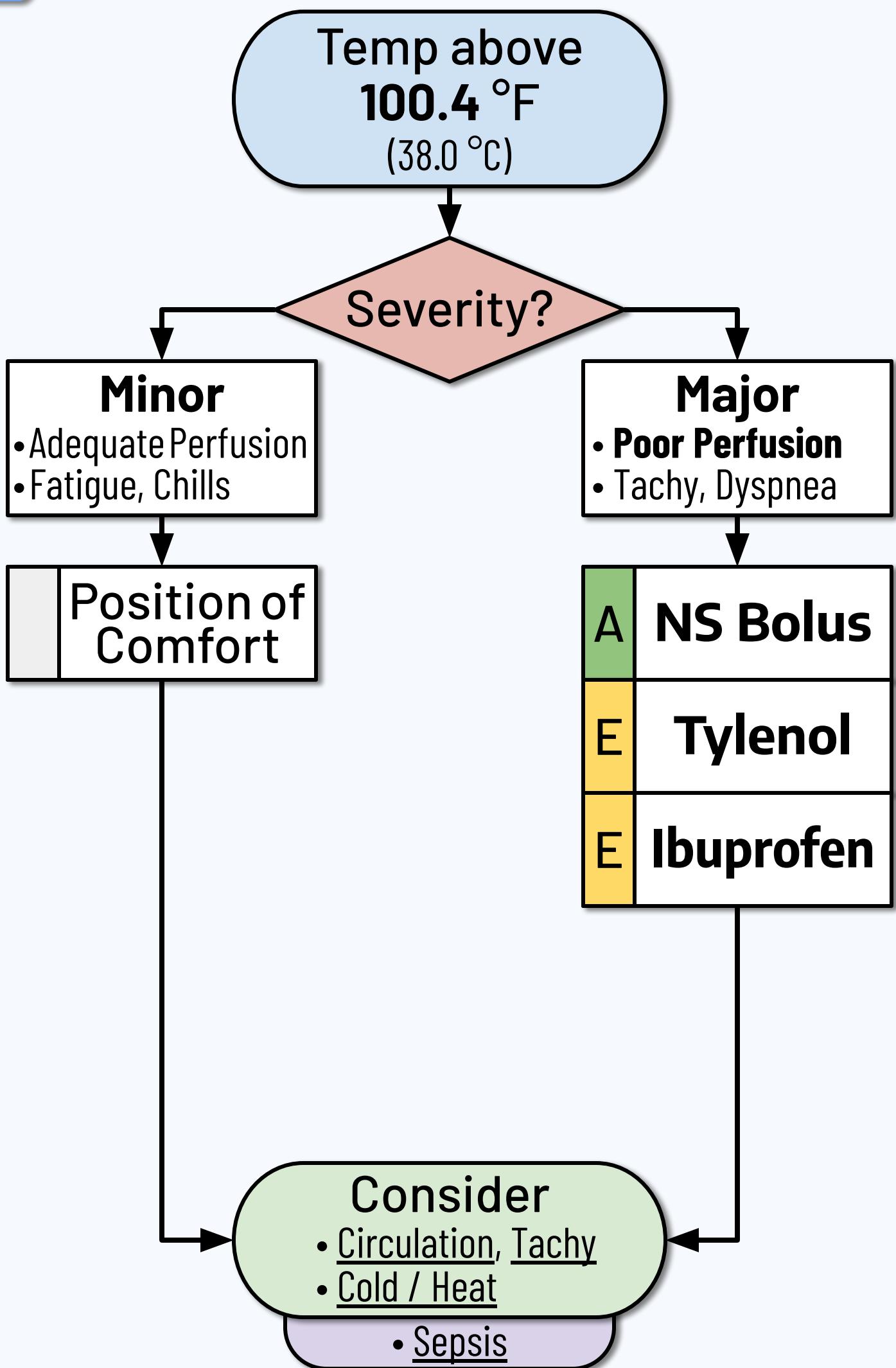
- Consider placing cardioversion (defib) **pads** on any unstable pt.
- Cardiovert: Enable **SYNC**. Start at **200 J**. Defib if unable to SYNC.
 - Alternative: follow manufacturer's or OMD's dosing guidance.

Pediatrics

- Use Peds Reference or other approved source for peds dosing.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Medscape Vitals: <https://emedicine.medscape.com/article/2172054> [Ver: 2/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 13, 20



NS Bolus: 500 mL	IV/IO	x4	Adult Doses
Tylenol: 1,000 mg	PO, IV/IO	x1	
Ibuprofen: 600 mg	PO	x1	

Fever Imperatives

- Use a **mask** for any cough or respiratory disease (URI, Flu, etc).
 - Consider enhanced PPE for known pathogens (COVID, Ebola, etc).
- Fever is a response to an **infection**. Hyperthermia is different.

Medications

- **Tylenol**[®] (Acetaminophen): avoid if end stage liver disease
 - **E** May only give PO - use OTC tabs, caps, powder or liquid
 - **A** May give PO or IV/IO - for IV/IO, **give slowly over 10 min**
- **Ibuprofen** (Advil[®], Motrin[®]): avoid if **active** GI bleeding
- Max daily dose of **Tylenol** is 3,000 mg & **Ibuprofen** is 2,400 mg.

Poor Perfusion

- Suspect if **several** of these:
 - **Altered Mental Status**
 - Skin Pale, Cool, Diaphoretic
 - Tachycardia, Hypotension
 - Dyspnea, Tachypnea

Notes

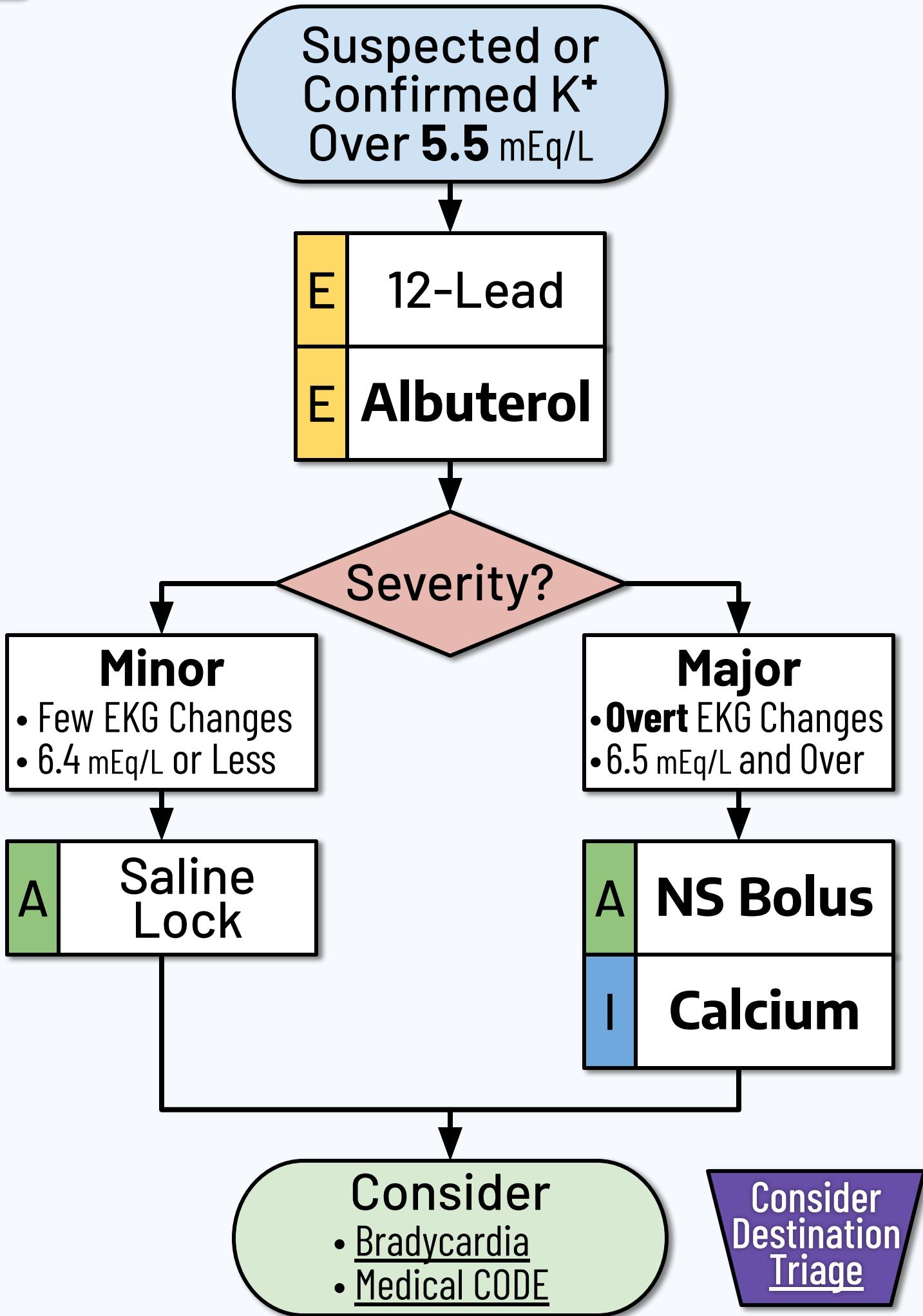
- Temporal thermometers are inaccurate on sweaty skin.
- Consider Sepsis if indicated and credentialed for CC.

Pediatrics

- Peds under 5 y/o may have a Seizure caused by fever.
 - It is usually self limiting and does not require intervention.
 - Consider intervention if longer than 5 min or Seizure reoccurs.
- Breaking tablets in half is appropriate. Do not break capsules.
- Consider removing excessive clothing. Dress children normally.
- Use Peds Reference or other approved source for peds dosing.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Medscape Vitals: <https://emedicine.medscape.com/article/2172054> [Ver: 2/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 13

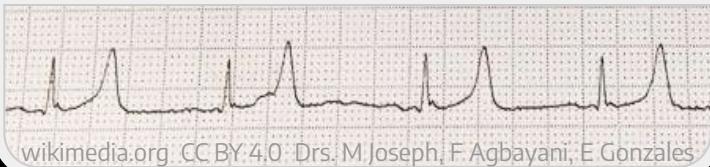


<u>Albuterol:</u> 10 mg	NEB	x1 (4 nebs)	Adult Doses
<u>NS Bolus:</u> 500 mL	IV/IO	x4	
<u>Calcium:</u> 1 gram	IV/IO	over 10 min	

Hyperkalemia Imperatives

- Be aggressive with treatment and transport if any **EKG changes**.
- Consider hyperkalemia during any **crushing** type extremity injury.

Hyper K⁺ EKG



K⁺ EKG Changes

- From minor to life threat:
 - Peaked T-waves
 - Long PRI / Loss of P-wave
 - Wide QRS (over 120 ms)
 - Slow IVR (then **sine wave**)

Medications

- **Albuterol** (Ventolin[®]): Appropriate even if EKG unavailable.
 - Give **four** (4x) standard nebulizer treatments back-to-back.
- **NS Bolus** (0.9% Saline): Aggressive fluids help dilute potassium.
 - Consider aggressive fluids even without Hypotension.
 - Avoid aggressive/prophylactic fluids for **dialysis** patients.
- **Calcium** (Chloride): **Avoid** with **Rocephin**[®] or Digoxin[®] (fatal).
- Consider **Bicarb** if acidotic and/or wide QRS (> 120 ms) on EKG.
 - **I** **Bicarb** (Sodium Bicarbonate): give **50 mEq IV/IO x1**

Notes

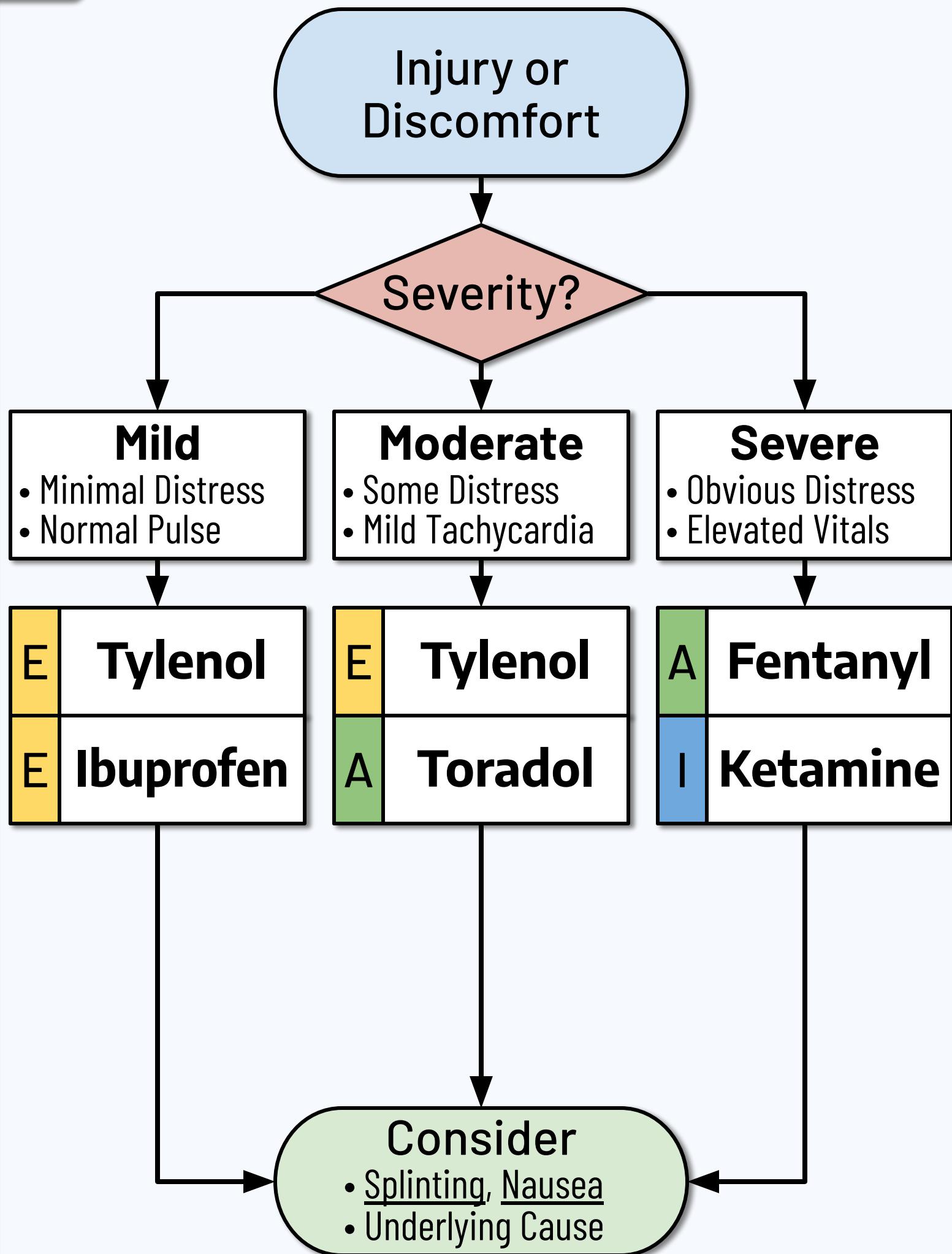
- Consider hyperkalemia in any **dialysis** or renal failure patient.
 - If called to a dialysis center, inquire about the last K⁺ level.
 - Avoid NIBP and/or IVs in the same extremity as dialysis access.
 - Consider transport to a hospital with **dialysis capability**.

Pediatrics

- Use Peds Reference or other approved source for peds dosing.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Medscape Hyperkalemia: <https://emedicine.medscape.com/article/240903> [Ver: 5/25]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 28



<u>Tylenol: 1,000 mg</u>	PO, IV/IO	x1	Adult Doses
<u>Ibuprofen: 600 mg</u>	PO	x1	
<u>Toradol: 15 mg</u>	IV/IO, IM/IN	x1	
<u>Fentanyl: 50-100 mcg</u>	IV/IO, IM/IN	Q 5 min x4	
<u>Ketamine: 20 mg</u>	IV/IO, IM/IN	Q 15 min x2	

Pain Imperatives

- EMS pain control is indicated for recent injury or sudden pain like:
 - Major trauma, obvious fractures, acute abdominal or chest pain
- Pain meds (even PO) **are beneficial** despite short transport times.
- Use weight based peds dosing for small adults under 110 lbs (50 kg).

Medications

- **Tylenol**[®] (Acetaminophen): avoid if end stage liver disease.
 - **E** May only give PO - use OTC tabs, caps, powder or liquid
 - **A** May give PO or IV/IO - for IV/IO, **give slowly over 10 min**
- **Ibuprofen** (Advil[®], Motrin[®]): Avoid if **active** GI bleeding.
- **Toradol**[®] (Ketorolac): Avoid if **active** GI bleeding.
- **Fentanyl** (Sublimaze[®]): Use judgement, target **0.5 - 1 mcg/kg**.
 - Start lower (50 mcg) for narcotic naive and/or smaller patients.
- **Ketamine** (Ketalar[®]): For IM/IN use: give as undiluted bolus.
 - For IV/IO use: dilute in NS and **give slowly over 10 min**.
- May give **eye drops** for abrasions or welder's flash (UV keratitis).
 - **E** **Tetracaine** (0.5% Ophthalmic): 1-2 gtt into affected eye

Notes

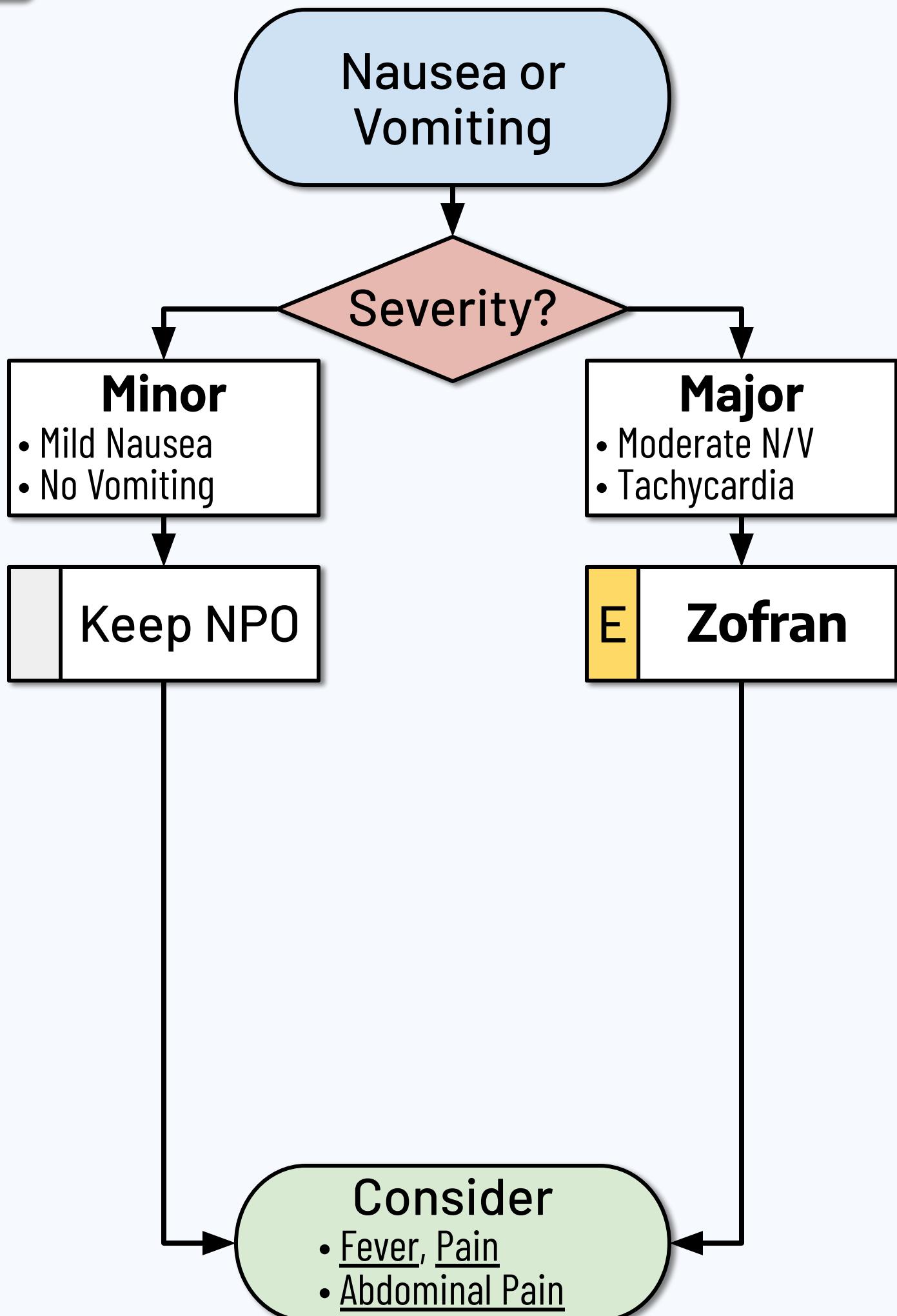
- **Tylenol** and **Ibuprofen** are good for **sub-acute** pain like:
 - Toothache, headache (migraine), sciatica, fibromyalgia, etc.
 - Avoid **Fentanyl** and **Ketamine** for sub-acute pain.
- Pain is subjective. May try another medication if pain continues.
 - Do not use **Toradol** with **Ibuprofen** (choose one or the other).
- Max daily dose of **Tylenol** is 3,000 mg and **Ibuprofen** is 2,400 mg.

Pediatrics

- Use Peds Reference or other approved source for peds dosing.

References

- EBG for Prehospital Pain: <https://pubmed.ncbi.nlm.nih.gov/34928760/> [Ver: 1/22]
- Medscape Pain: <https://emedicine.medscape.com/article/310834> [Ver: 7/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 14, 16



Zofran: 4 mg

IV/IO, IM/IN, PO

Q 5 min x2

Adult

Nausea / Vomiting Imperatives

- It is appropriate to **pre-treat for nausea** before symptoms start.
 - Consider before any intervention (or meds) that cause nausea.
 - Especially if vomiting would cause serious complications.
 - Strongly consider **Zofran** with any invasive airway device.
- **Avoid oral** food and fluids. (Oral meds are OK.)
 - Keep patients **NPO** (*Nil Per Os*: Lat. "nothing through the mouth")

Medications

- **Zofran**[®] (Ondansetron): Use for all causes of nausea & vomiting.
 - Use caution with Bradycardia, and Overdose / Tox.
 - Consider 12-Lead if hx/risk of **Long QT** or electrolyte imbalance.
 - **E** May only give PO - use **Orally Disintegrating Tabs** (ODTs)
 - **A** Alternate 4-10y/o dose: break ODT in half and give 2 mg PO

Notes

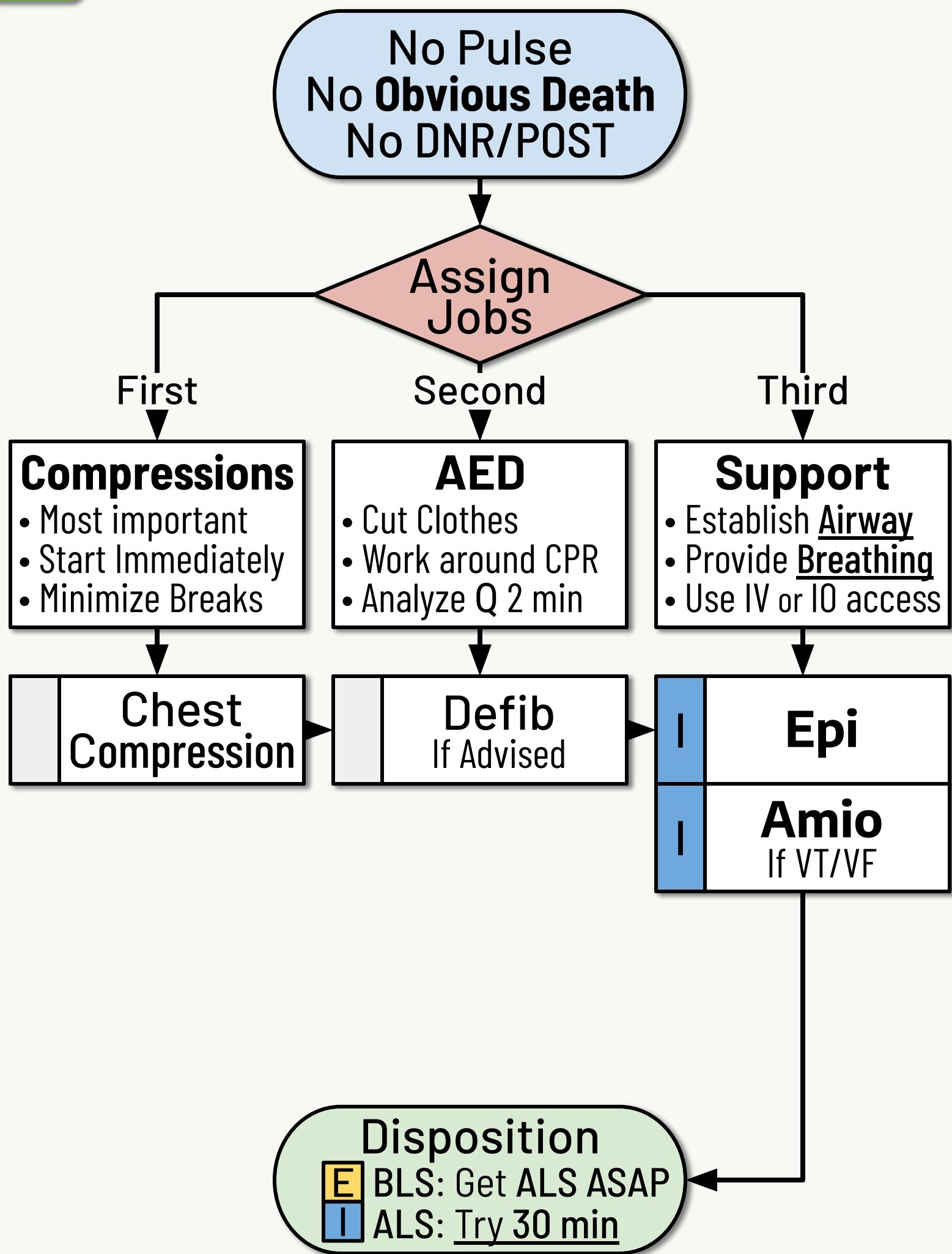
- Consider an atypical Cardiac cause in diabetics and the elderly.
- Sniffing an alcohol prep may also provide minor nausea relief.
- Vomiting is a protective mechanism in overdose (such as EtOH).
 - But intentionally inducing vomiting (i.e. ipecac) is not indicated.
 - May consider **Zofran** for dry heaving after stomach is empty.

Pediatrics

- Use Peds Reference or other approved source for peds dosing.

References

- Medscape Vomiting: <https://emedicine.medscape.com/article/933135> [Ver: 5/25]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 25, 26



<u>Epi:</u> 1 mg	IV/IO Q 5 min	Adult
Amiodarone: 1 st 300 → 2 nd 150 mg	IV/IO Q 5 min x2	
<u>Epi:</u> 0.01 mg/kg	IV/IO Q 5 min	Peds
Amiodarone: 5 mg/kg	IV/IO Q 5 min x3	

CODE Imperatives

- Start compressions in place.
 - Transport ASAP if **ROSC**, or **peds**, or **pregnant**, or any Special Case.

Compressions

- Adult/Peds: **120** /min
- OPA/NPA: **30:2** w/ BVM
- BIAD/ETT: **Continuous**

E **BLS:** Get ALS ASAP. Transport if witnessed by EMS or any shock.
I **ALS:** Try for **30 min.** If no ROSC: Call for Termination.

Medications

- **Amiodarone** (Pacerone[®]):
 - For adults, give twice (x2) Q 5 min
 1st **300** mg, → 2nd **150** mg
 - For peds, give **5** mg/kg three times (x3) Q 5 min
- Consider adjunct meds for pulseless polymorphic VT arrest:
 - **I Magnesium** (Sulfate): **2** grams IV/IO x1 for Torsades

Obvious Death

- Pooling Lividity or
- Rigor Mortis or
- Body Decomposition

Notes

- Use caution with **compressions** and **defib** in a moving vehicle.
- **EtCO₂** can help identify ROSC and guide termination decision.
- A well run CODE should operate like a **pit crew**. Focus on your job.
- Consider causes: Shock, OD/Tox, Hypoglycemia, Hyperkalemia, etc.

Pediatrics

- Use 15:2 compression ratio for dual rescuer BLS resuscitation.
- Refer to Neonate for any peds **under 1 month** (≤ 30 days) old.
- Use Peds Reference or other approved source for peds dosing.

References

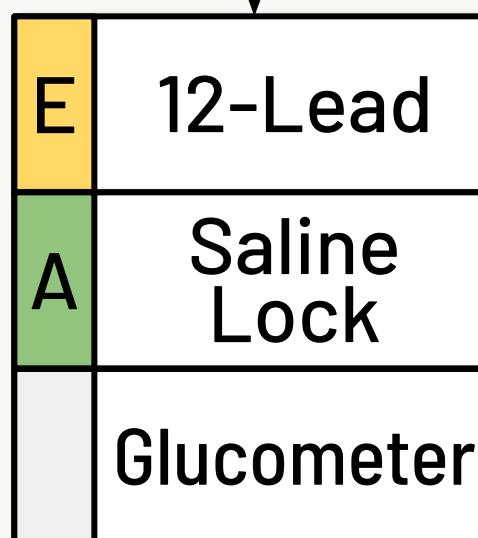
- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Medscape CPR: <https://emedicine.medscape.com/article/1344081> [Ver: 8/21]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 20, 21

Return of Pulse



Stabilize

- Establish Airway
- Provide Breathing
- Treat Circulation



Ketamine
If Agitated

Consider

- Fever, Altered LOC
- Diabetic, Overdose
- Intubation, Vent

Consider
Destination Triage

Ketamine: 20 mg

IV/IO

Q 5 min x2

Adult

Medical ROSC Imperatives

- Ensure adequate resuscitation **before** attempting transport.
 - Move expeditiously but with caution. **Don't sacrifice stability.**
- Monitor closely for **Hypotension**. Be ready with fluids & pressors.
- Avoid hyperventilation. It can cause Hypotension & repeat arrest.
- Monitor body temp and treat any **Fever** aggressively with meds.

Medications

- **Ketamine** (Ketalar[®]): Dilute in **NS** & **give slowly over 10 min.**
 - Use weight based peds dosing for adults **under 110 lbs** (50 kg).
- Consider maintenance drip if **prior VT/VF & transport > 30 min:**
 - **I** **Amiodarone** (Pacerone[®]): **1 mg/min IV/IO, adult only**

Notes

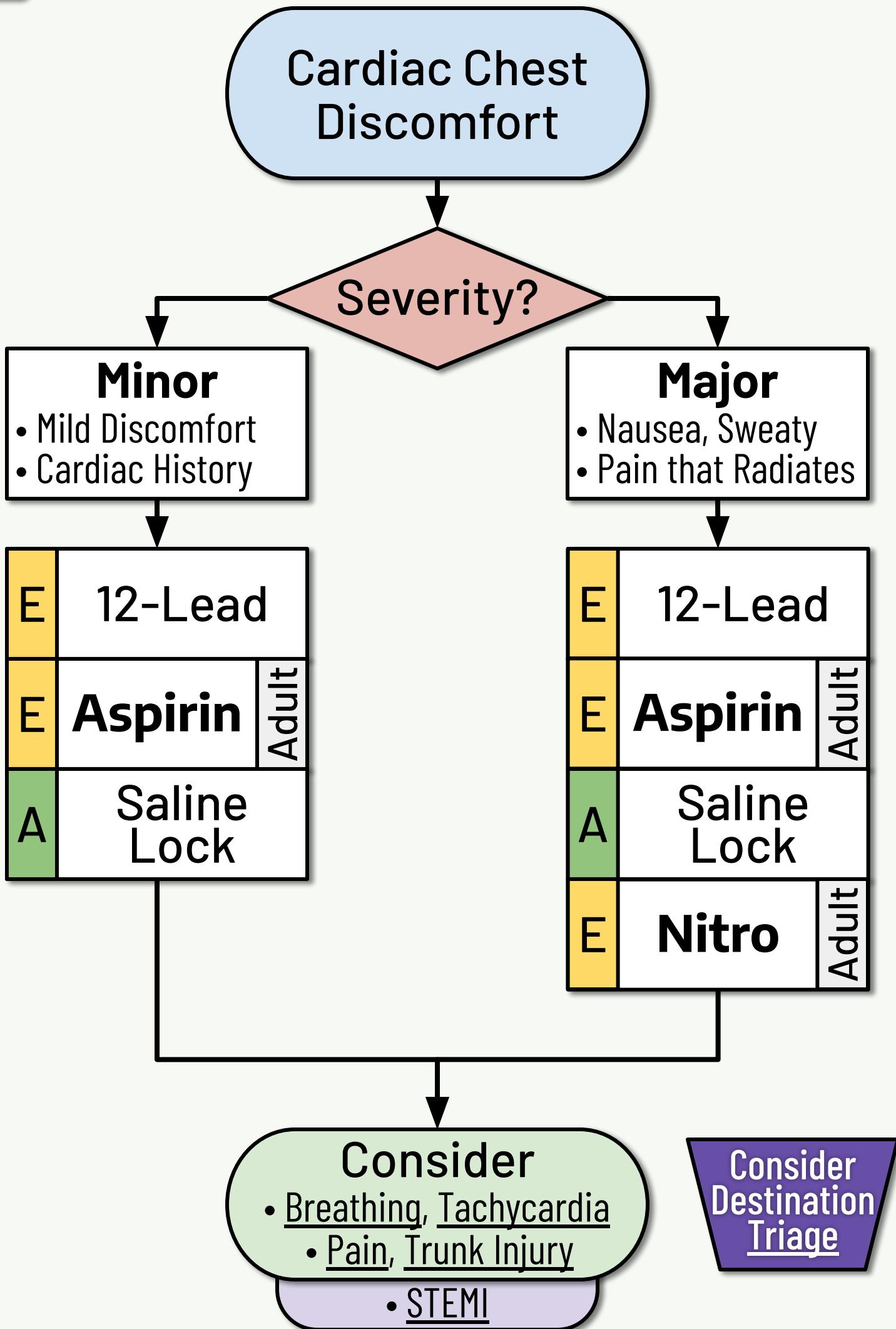
- EtCO₂ can help identify ROSC. Monitor during resuscitation.
- Consider Intubation and/or Vent if indicated & credentialed for CC.
- Therapeutic hypothermia is **not included** in this protocol.
 - Also known as "targeted temperature management".

Pediatrics

- Arrhythmias are common after ROSC, but are usually self-limited.
- Use Peds Reference or other approved source for peds dosing.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Medscape ROSC: <https://www.medscape.com/viewarticle/762373> [Ver: 2012]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 20, 21



Aspirin: <u>4x 81 mg</u>	PO x1 (chewed)	Adult Doses
Nitro: <u>0.4 mg</u>	SL Q 5 min x3	

Chest Pain Imperatives

- This protocol is for suspected **cardiac** (ACS) emergencies only.
 - For pain resulting from chest trauma, refer to Trunk Injury.
 - For palpitations refer to Tachycardia or Bradycardia.
- For all patients with an identified **STEMI**: place **defib pads** on.
 - Also expose and shave groin during transport if time allows.

Medications

- **Aspirin** (Baby ASA): Contraindicated with **active** GI bleeding
 - Have patient **chew four** (4) 81 mg tabs (not enteric coated).
- **Nitro** (Nitroglycerin): May cause Hypotension.
 - Use caution if Hypotensive or suspected inferior/right STEMI.
 - Contraindicated if SBP under 110 mmHg **without IV/IO** access.
 - Contraindicated if recent (36 h) use of any **PDE5 inhibitors**:

- If you see a STEMI
- Or EKG says ****AMI****
- Call a **STEMI Alert**



PDE5 Inhibitors

- Sildenafil (Viagra®)
- Tadalafil (Cialis®)
- Vardenafil (Levitra®)
- Avanafil (Stendra®)

Notes

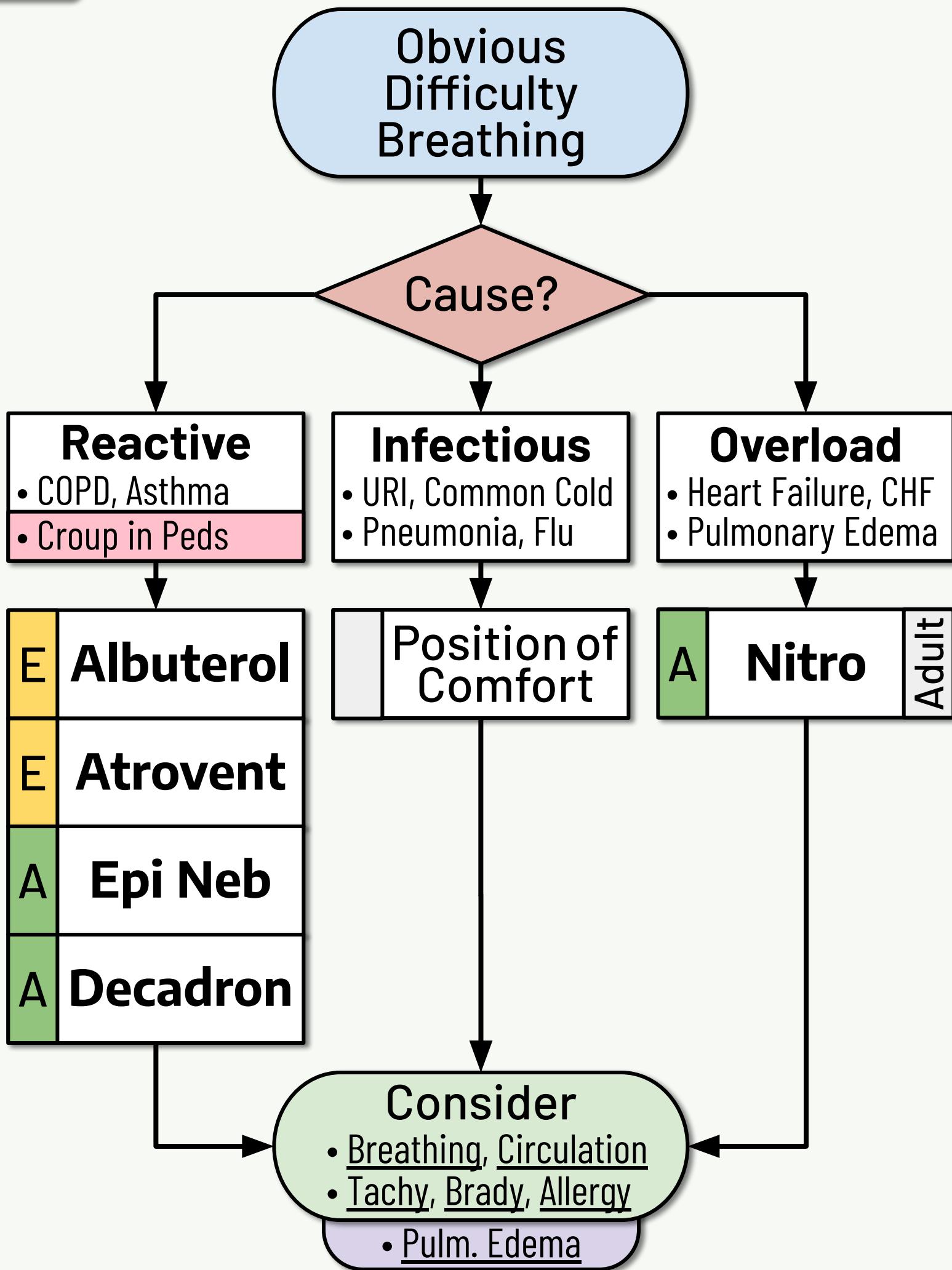
- Consider an atypical cardiac presentation in **diabetics** & **elderly**.
 - Actual chest pain is not always present. Ask about cardiac hx.
 - May have SOB or "discomfort" or nausea or be weak & sweaty.
- Consider advanced STEMI care if indicated & credentialed for CC.

Pediatrics

- Cardiac chest pain is unlikely in peds. Consider other causes.
- **Aspirin** and **Nitro** are contraindicated in peds chest pain.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Medscape ACS: <https://emedicine.medscape.com/article/1910735> [Ver: 9/25]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 20



Albuterol: 2.5 mg	NEB	Q 5 min x4	Adult Doses
Atrovent: 0.5 mg	NEB	x1	
Decadron: 10 mg	IV/IO, IM	x1	
Epi Neb: 5 mg	NEB	x1	
Nitro: 0.4 mg	SL	Q 5 min x3	

Dyspnea Imperatives

- Breathing (O_2 and NIPPV) should take precedence over meds.
 - SpO₂ and EtCO₂ should be used **extensively** for dyspnea.

Medications

- **Albuterol** (Ventolin[®]) & **Atrovent**[®] (Ipratropium bromide):
 - May combine in same nebulizer. May cause palpitations.
- **Epi Neb** (Epinephrine): Use **1 mg/mL vial** (not 0.1 mg/mL prefill).
 - Good choice for severe croup, bronchiolitis or asthma in peds.
- **Decadron**[®] (Dexamethasone): Alternate dose: 8 mg IV/IO, IM x1
- **Nitro** (Nitroglycerin): May cause Hypotension.
 - May use **double dose** (0.8 mg) if hypertensive & requiring NIPPV.
 - Contraindicated if recent (36 h) use of any **PDE5 inhibitor**.
- May consider **Magnesium** for severe asthma and/or wheezing.
 - **I Magnesium** (Sulfate): **1 gram IV/IO over 10 min**

Notes

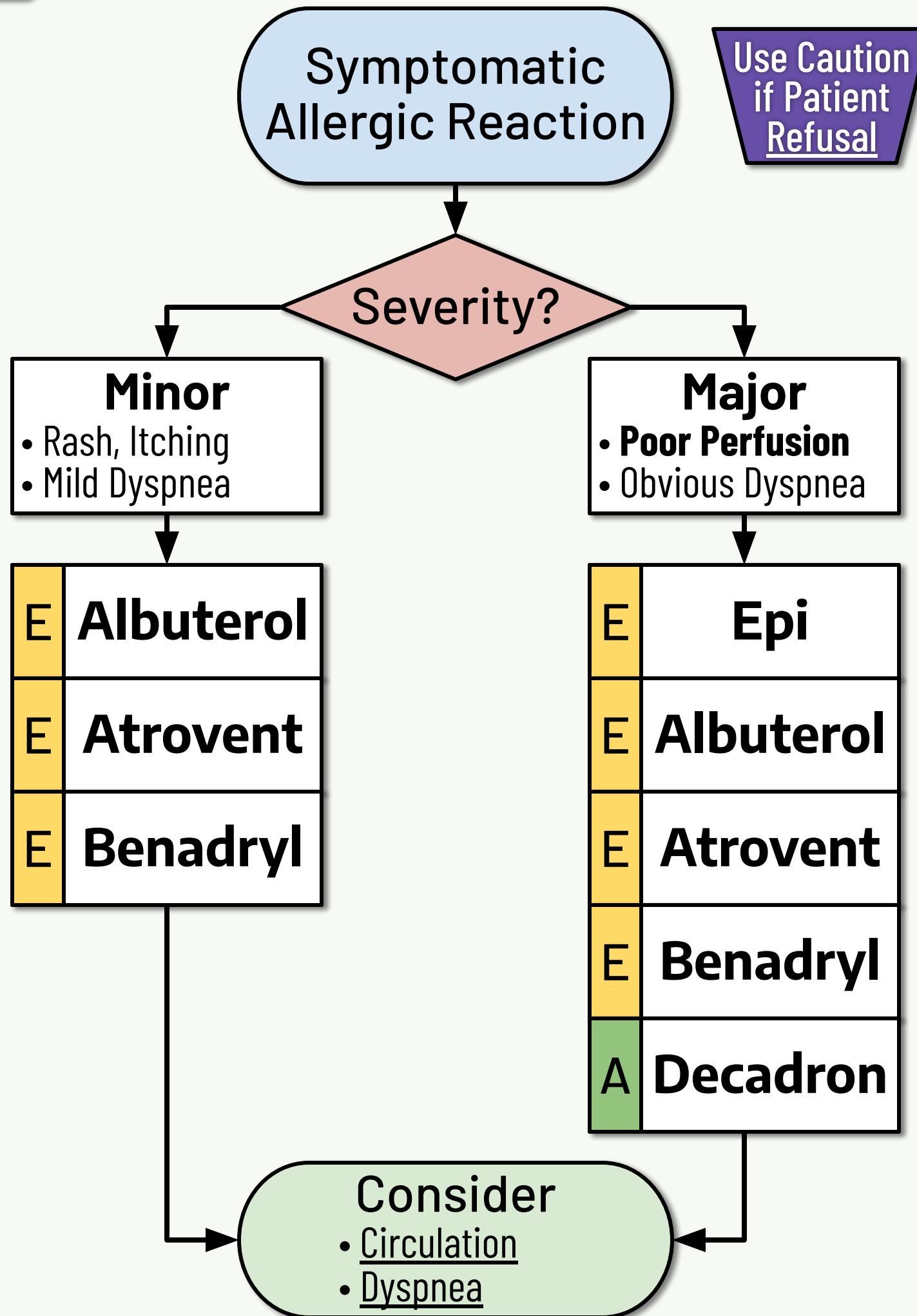
- Consider an atypical Cardiac cause in diabetics and the elderly.
- Anxiety can also cause dyspnea and hyperventilation.
 - Consider simple reassurance for obvious benign anxiety.
- Consider Pulmonary Edema if indicated & credentialed for CC.

Pediatrics

- Defer aggressive evaluation if any concern for **epiglottitis**.
 - Agitation can make it much worse. (Unlikely if vaccinated.)
- **Croup** is an infection that is best treated like a reactive cause.
 - **Stridor** may be present (but choking may also cause stridor).
- Use Peds Reference or other approved source for peds dosing.

References

- Medscape COPD: <https://emedicine.medscape.com/article/297664> [Ver: 7/25]
- Medscape Asthma: <https://emedicine.medscape.com/article/296301> [Ver: 8/24]
- Medscape CHF: <https://emedicine.medscape.com/article/163062> [Ver: 9/25]
- Medscape Croup: <https://emedicine.medscape.com/article/962972> [Ver: 1/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 10, 19



Albuterol: 2.5 mg	NEB	Q 5 min x4	Adult Doses
Atrovent: 0.5 mg	NEB	x1	
Benadryl: 25 mg	IV/IO, IM, PO	Q 15 min x2	
Epi: 0.3 mg	auto, IM	Q 5 min x3	
Decadron: 10 mg	IV/IO, IM	x1	

Allergic Reaction Imperatives

- Airway symptoms and facial swelling indicate a **major reaction**.
 - Lip and tongue swelling can be an immediate life threat.
- **A** Use IM meds (or IV/IO if available) for any patient in extremis.

Medications

- **Epi** (Epinephrine): **Use IM**. Treat major reactions **aggressively**.
 - Use for any major Airway, Breathing or Circulation problems.
 - **Be cautious** in patients over 50 y/o or with CAD or chest pain.
 - **EpiPen Jr.**[®]: Use for 3-8 y/o. **EpiPen**[®]: Use for 9+ y/o.
 - **E** May only use auto-injector or color coded admin system.
 - **I** Consider an **Epi Drip** for persistent dyspnea or shock.
- **Albuterol** (Ventolin[®]): Use for any dyspnea or wheezing.
 - Unlikely to help with rash or itching. May cause palpitations.
- **Decadron**[®] (Dexamethasone): Alternate dose: 8 mg IV/IO, IM x1
- **Benadryl**[®] (Diphenhydramine): May give adults **50 mg PO x1**.
 - **E** May only give PO (may use OTC formulation and dosing).

Poor Perfusion

- Suspect if **several** of these:
 - **Altered Mental Status**
 - Skin Pale, Cool, Diaphoretic
 - Tachycardia, Hypotension
 - Dyspnea, Tachypnea

Notes

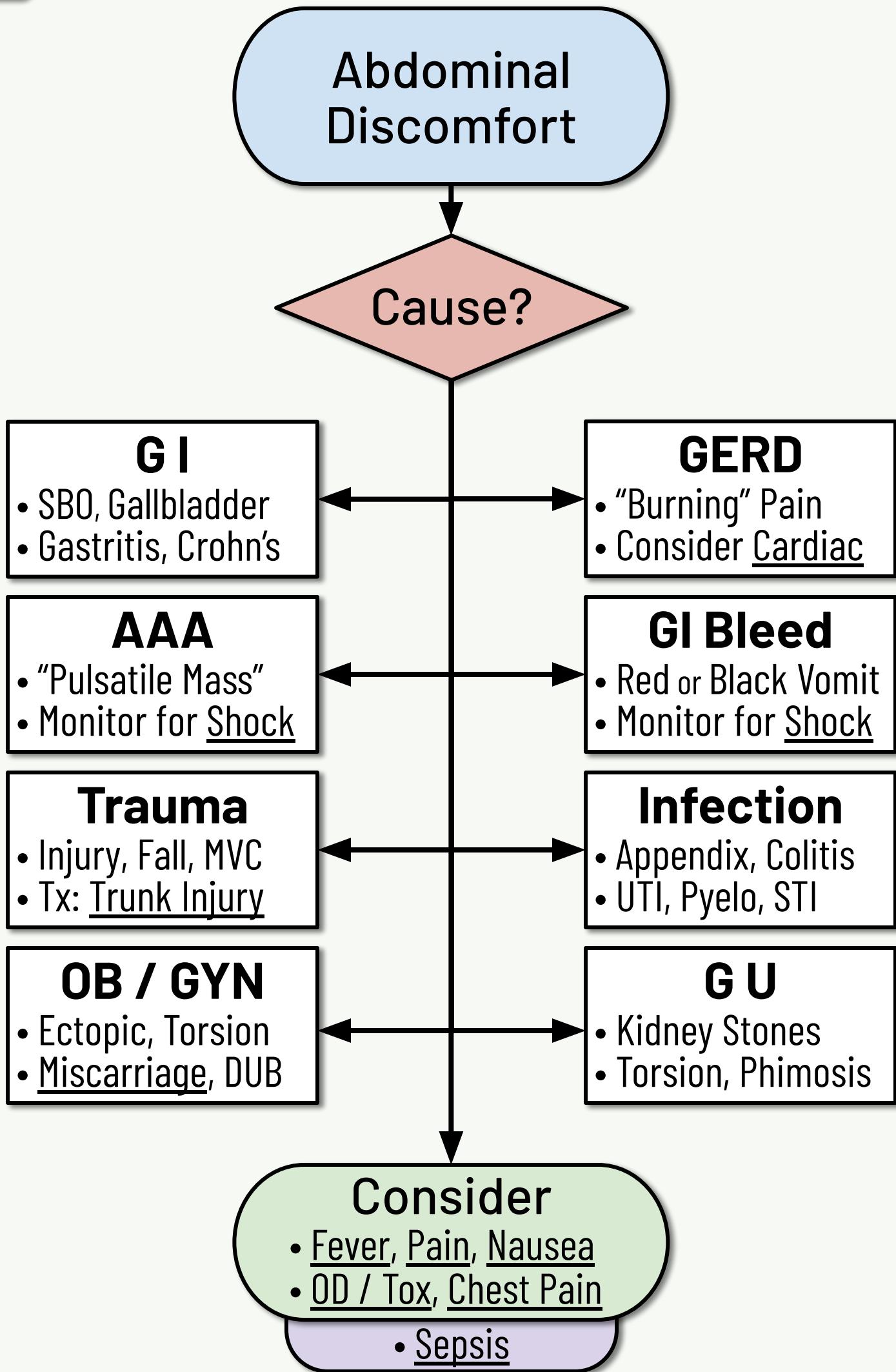
- Rapid onset of symptoms indicates a more severe reaction.
- Severe food allergies may also induce N/V and abdominal pain.

Pediatrics

- Use Peds Reference or other approved source for peds dosing.

References

- Medscape Hives: <https://emedicine.medscape.com/article/137362> [Ver: 4/25]
- Medscape Anaphylaxis: <https://emedicine.medscape.com/article/135065> [Ver: 8/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 23



Abdominal Pain Imperatives

- This protocol is for **medical** causes of abdominal pain.
 - For traumatic abdominal pain, refer to Trunk Injury.
- Prepare for Hypotension if any reported blood loss, or suspected:
 - **AAA:** Midline "pulsatile mass" in the elderly
 - **GI Bleeding:** Black stool (melena) or "coffee ground" emesis
- Inquire about Pregnancy and consider complications.
 - Consider an **ectopic** in any pregnant female, watch for shock.
- **Avoid oral** food and fluids. (Oral meds are OK.)
 - Keep patients **NPO** (*Nil Per Os*: Lat. "nothing through the mouth")

Notes

- Consider an atypical Cardiac cause in diabetics and the elderly.
- Many common causes do not require specific EMS intervention.
 - E.g. gastroenteritis, gallbladder, appendix, colitis, SBO, etc.
 - Do consider treatment of the symptoms: Fever, Pain, Nausea
- Consider Sepsis if indicated and credentialed for Critical Care.

Pediatrics

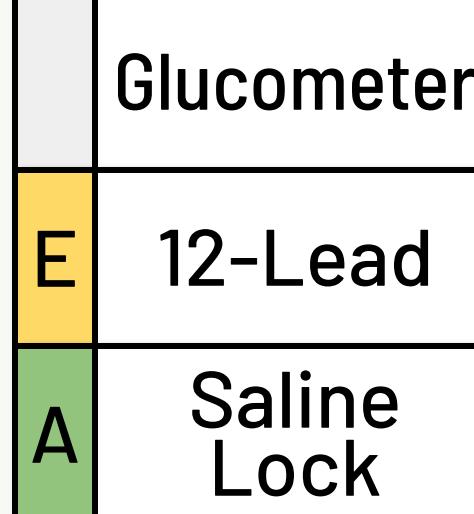
- Simple constipation is a common cause in peds.
 - It does not require aggressive EMS intervention.

References

- Medscape Abd Pain: <https://emedicine.medscape.com/article/776663> [Ver: 4/25]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 26

Use Caution
if Patient
Refusal

Confused or
Unresponsive
(but breathing)



Cause?

Diabetic

- Hx: Diabetes
- Abnormal Glucose

Behavioral

- Suicidal, Homicidal
- Delusions, Psychosis

Overdose/Tox

- Hx: Ingestion/Exposure
- Obvious Drugs/Alcohol

Injury

- Head Injury, Bleeding
- Cold / Heat Exposure

Seizure

- Hx: Epilepsy
- Shaking, Confused

Stroke

- Facial Droop, Weakness
- Slurred Speech

Fever

- Hx: Illness or Malaise
- Skin Flushed, Hot

Cardiac

- Brady, Tachy
- Shock, Chest Pain

• Sepsis

Altered LOC Imperatives

- Altered LOC and syncope are **complex** problems.
 - Most important step is to consider and **search for the cause**.
 - Investigate the scene and take a **careful history**.
- Unstable patients should be treated aggressively.
 - Be prepared for a Medical CODE.
- Alcohol and drugs can mask other causes of altered LOC.
 - **Don't assume** Intoxication is the only problem.
- Syncope may be caused by or result in **trauma**.
 - Maintain a high index of suspicion.

Notes

- Consider an atypical Cardiac cause in diabetics and the elderly.
- Consider Sepsis if indicated and credentialed for Critical Care.
- Check for **medical jewelry**.
- May investigate pt's GCS:
 - Check each response
 - Repeat **as needed**
 - Record the **best effort**
 - Add the three numbers
 - Normal score is **15**
 - Worst score is **3**

Glasgow Coma Scale

Eyes	Verbal	Motor	
none	none	none	1
pain	moaning	extensor	2
verbal	words	flexor	3
normal	confused	withdraw	4
	normal	localizes	5
		normal	6

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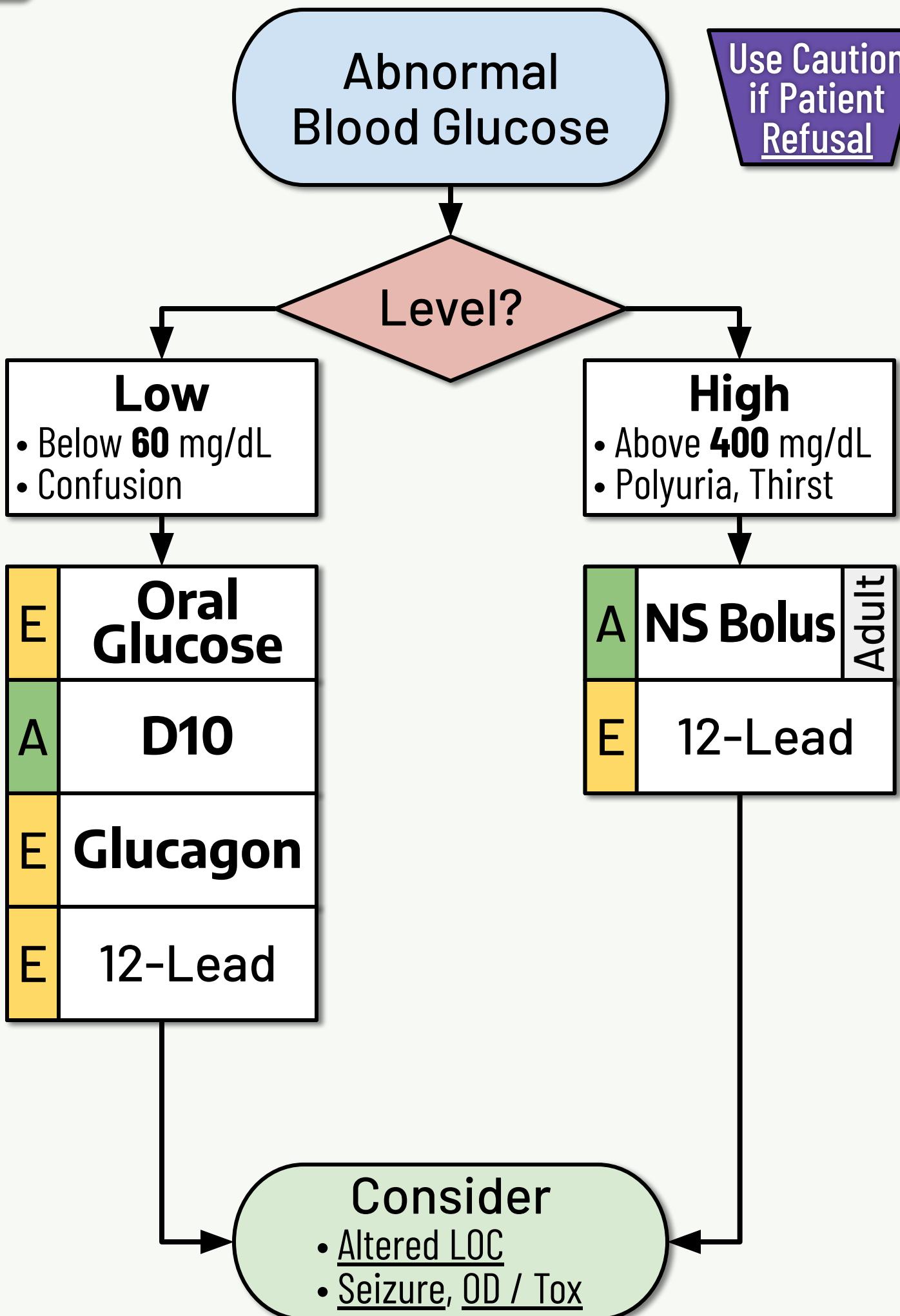
Pediatrics

- Many causes of transient syncope are benign, but:
 - Prolonged altered LOC indicates potentially serious pathology.
 - Syncope **during exertion** can be a true cardiac emergency.

References

- Medscape Syncope: <https://emedicine.medscape.com/article/811669> [Ver: 9/24]
- Medscape Delirium: <https://emedicine.medscape.com/article/793247> [Ver: 4/24]
- Medscape Hypoglycemia: <https://emedicine.medscape.com/article/122122> [Ver: 5/25]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 22

Use Caution
if Patient
Refusal



<u>Oral Glucose:</u> 15 grams	PO	Q 5 min	x3	Adult Doses
<u>D10:</u> 100 mL	IV/IO	Q 5 min	x5	
<u>Glucagon:</u> 1 mg	IM †	x1		
<u>NS Bolus:</u> 500 mL	IV/IO	x4		

Diabetic Imperatives

- EMS intervention is not required for mild asymptomatic patients.
- Consider a concurrent Cardiac emergency in the elderly.
 - Many diabetic emergencies benefit from a **12-Lead if able.**
- Consider other causes of Altered LOC even with hypoglycemia.
- Hypoglycemia from **sulfonylureas** can be refractory & profound.
 - E.g. glipizide (Glucotrol®), glyburide, glimepiride (Amaryl®)
 - **Call Medical Control** for any refusal if taking **sulfonylureas**.

Medications

- **Oral Glucose** (Glutose 15™): Avoid if patient cannot swallow.
 - Consider **regular food** as an alternative if available.
 - Prioritize food & drink with **simple sugar** (like juice & candy).
 - Also provide complex carbs/protein (like **peanut butter**).
- **D10** (Dextrose 10%): Recheck glucose prior to repeat dosing.
 - May attempt without glucometer if hypoglycemia is likely.
- **Glucagon** (Glucagen®): Caution - improvement is temporary!
 - **Must provide additional glucose** or **D10** after admin.
 - **Call Medical Control** for any refusal after **Glucagon**.
 - Can substitute intranasal prefill device (instead of IM dosing):
 - † **E Baqsimi**® (Glucagon IN prefill): **3 mg IN x1 for ≥ 1 y/o**

Notes

- Avoid starting an IV in the **legs or feet** of a diabetic patient.
- Hyperglycemia with fruity odor may be **DKA** - emphasize IV fluids.
- Look for an **insulin pump**. May unplug the tube if **hypoglycemic**.

Pediatrics

- Only use **NS Bolus** for shock. Hypervolemia can **cause harm**.
- Use Peds Reference or other approved source for peds dosing.

References

- Medscape Hypoglycemia: <https://emedicine.medscape.com/article/122122> [Ver: 5/25]
- Medscape DKA: <https://emedicine.medscape.com/article/118361> [Ver: 3/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 22



Symptomatic Toxic Exposure or Overdose

Use Caution if Patient Refusal

Severity?

Minor

- Adequate Perfusion
- Minor Symptoms

A

Saline Lock

Major

- Poor Perfusion
- Toxic Effects

E

Narcan
If hypoxic

A

12-Lead

NS Bolus

Administer
Antidote

Ensure
Patient
DECON

Consider

- Co-ingestions, Brady, N/V
- Shock, Hyperthermia

Narcan: up to 4 mg	IV/IO, IM/IN	PRN
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Adult
Doses

NS Bolus: 500 mL	IV/IO	x4
-------------------------	-------	----

Overdose / Tox Imperatives

- Collect a detailed history and **SDS** (Safety Data Sheet) if able:
 - Substance, quantity and **time** of ingestion or exposure
- Consider an **Antidote** for critical symptoms from a **known toxin**.
 - Minor exposures with few symptoms do not require an **Antidote**.
 - Stable patients should be monitored and transported.
 - Supportive care is sufficient for **alcohol** (ethanol) intoxication.
- Monitor Airway closely with all **caustic ingestions**.

Medications

- **Narcan**[®] (Naloxone): Should only be used to treat **Hypoxia**.
 - May try for any substance OD or exposure w/ dyspnea or shock.
 - Call **Medical Control** for any refusal after **Narcan**.
 - May provide premeasured **intranasal** doses only.
 - Titrate dose to resps & SpO₂; May start as low as **0.04 mg**.
- **NS Bolus** (0.9% Saline): Fluids may help dilute toxins.
 - Consider even without Hypotension. Avoid with CHE or dialysis.

Notes

- If poison is known, consider **Poison Control**: 800-222-1222.
 - Most Antidotes require **online orders** (and dosing instructions).
- This protocol includes **poisoning** and toxic ingestions.
 - For **chemical burns** and skin exposures, refer to Burns.
 - For **gasses** and smoke inhalation, refer to Inhalation.

Pediatrics

- Just a **single pill** of some adult meds can cause profound shock.
 - Ingested **cigarettes or vape fluid** (nicotine) can be **fatal**.
- Use Peds Reference or other approved source for peds dosing.

References

- Medscape Opioids: <https://emedicine.medscape.com/article/815784>
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 25

[Ver: 6/25]



Convulsions or Posturing

Active?

Not Seizing

- Recent Convulsion
- Postictal Confusion

Glucometer

A

Saline Lock

Seizing

- Hx: Epilepsy
- Protect From Harm

A

Versed

A

Keppra
If Refractory

I

Magnesium
If Pregnant

Consider

- Altered LOC, OD/Tox
- Fever, Head Trauma
- Preeclampsia

Versed: 2.5-5 mg IV/IO, IM/IN Q 2 min (max 10)

Adult
Doses

Keppra: 3,000 mg IV/IO over 10 min

Magnesium: 4 grams IV/IO x1

Seizure Imperatives

- Active convulsions with Altered LOC should be treated promptly.
 - Meds are contraindicated without active convulsions.
 - Aggressively treat seizures due to alcohol or benzo **withdrawal**.
- Shaking while awake and responsive is unlikely to be a seizure.
 - Consider other causes such as Behavioral or OD / Tox.
 - Non-epileptic **pseudoseizures** do not require EMS intervention.

Medications

- **Versed**[®] (Midazolam): Only appropriate for active convulsions.
 - Start lower if IV and/or smaller patient. Total dose: **10 mg max**.
 - **Use caution with IM** - increased risk of provider injury.
- **Keppra**[®] (Levetiracetam): Second line if seizures continue.
 - Use weight based peds dosing for adults under 110 lbs (50 kg).
- **Magnesium** (Sulfate): May cause Hypotension and Dyspnea.
 - Only useful for seizures in **late Pregnancy** (20 weeks & over).
 - Do not provide in early pregnancy. Eclampsia is unlikely.
 - Consider Preeclampsia if indicated and credentialed for CC.

Notes

- Obtain details of patient's **seizure meds** if immediately available.
- Seizures can come in groups, be prepared to treat another seizure.
- Confusion after seizure is common and may last over 30 min.
 - Transient stroke-like paralysis is also possible but is **not** a CVA.

Pediatrics

- Peds under 5 y/o may have a seizure caused by Fever.
 - It is usually self limiting, consider meds if >5 min or multiple.
 - Aggressively treat any peds seizure not associated with Fever.
- Use Peds Reference or other approved source for peds dosing.
 - A **Versed**: max peds dose is Q 2 min **x4 doses**

References

- Medscape Seizure: <https://emedicine.medscape.com/article/1184846>
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 22

[Ver: 7/22]

Acute Focal Neuro Deficits

	Ask Time Last Normal
	Do Stroke Survey
	Elevate Head of Bed

	Glucometer
E	12-Lead
A	Saline Lock

- Consider
- Breathing, Shock, Seizure
 - Altered LOC, Head Inj.

Consider
Destination
Triage

Stroke Imperatives

- Treatment is time sensitive. Do not delay transport for procedures.
- **Time Last Normal** is not necessarily when symptoms started.
 - If noticed upon waking up: last normal is when they went to bed.
 - If altered LOC: last normal is when someone saw them normal.
- **Stroke Survey:** Start with the **Cincinnati Stroke** FAST exam.
 - Consider additional screening if able (Stroke VAN or NIHSS).
- **Elevate** head of bed approximately 30° (helps prevent aspiration).
- Attempt a Saline Lock **only once**. Leave other sites for ED staff.

Cincinnati Stroke

- Facial Droop?
- Arm Drift?
- Slurred Speech?
- Time Last Normal?

Stroke VAN

Must have Arm Drift

- Vision: Partial / Total Loss?
- Aphasia: Trouble Speaking?
- Neglect: Ignoring One Side?

- If you suspect a CVA
- & Last Normal < **6 h**
- Call a **STROKE Alert**



Notes

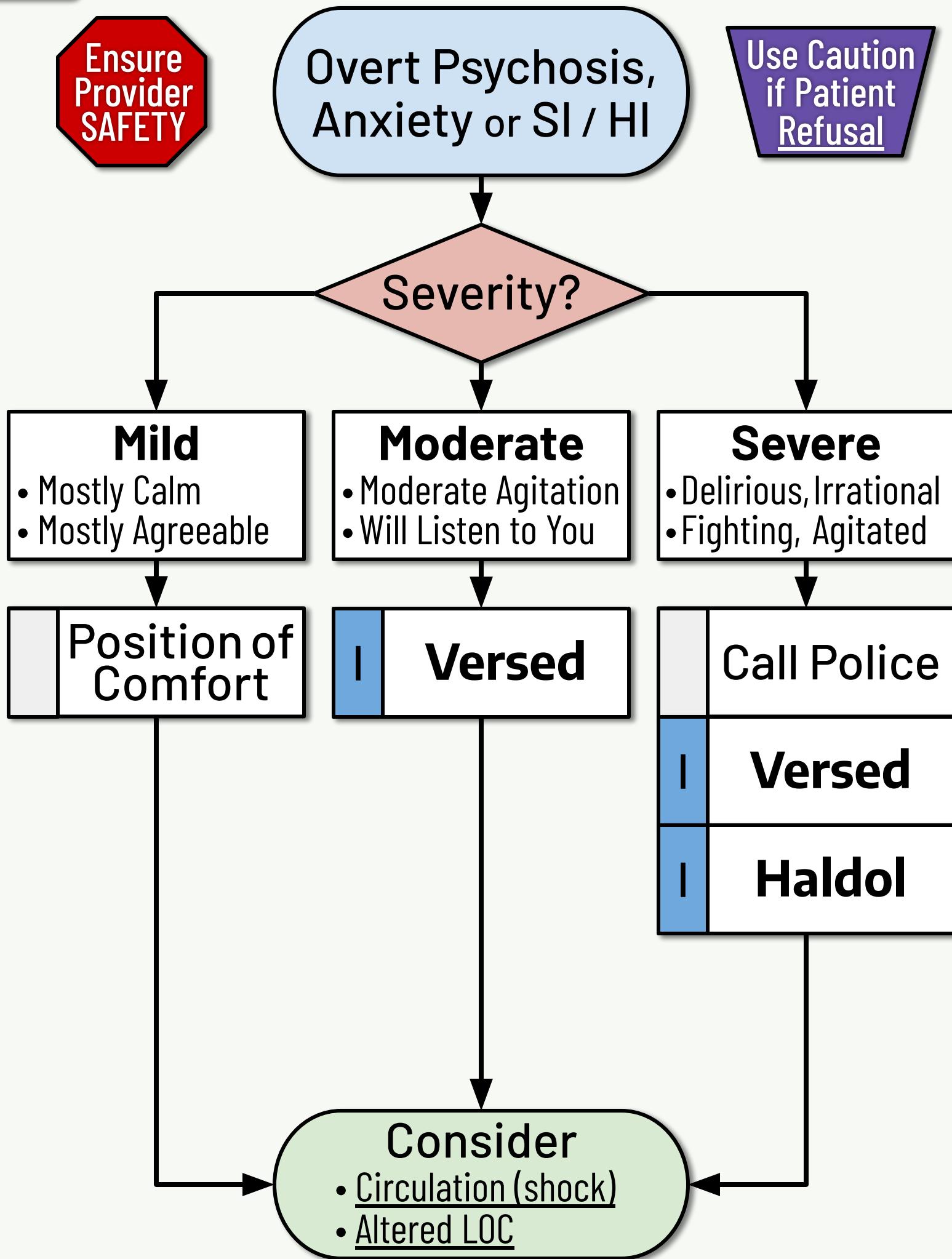
- Systemic thrombolysis (tPA, TNK) must occur **within 3-6 hours**.
 - Vascular neuro-intervention may be possible out to 24 hours.
- Encourage family or guardian to accompany patient.
 - There are important decisions to be made quickly at the ED.
 - Record phone number for family or guardian if possible.

Pediatrics

- Stroke is unlikely in peds. Consider other causes of Altered LOC.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- Medscape Stroke: <https://emedicine.medscape.com/article/1916852> [Ver: 2/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 22



Versed: 2.5-5 mg	IV/IO, IM/IN	Q 2 min (max 10)	Adult Doses
Haldol: 5 mg	IM	x1	

Behavioral Imperatives

- **Do not assume** psychosis. Evaluate and treat for other causes.
- Behavioral patients may not have the capacity to refuse.
 - Involve Police and call **Medical Control** for any SI / HI refusal.
- Use of any restraint presents significant medical (and legal) risk.
 - **Attempt de-escalation first.** Restraint should be a **last resort**.
 - Use **only to ensure safety** of patient and providers.
 - Use only when risk of harm is greater than risk of restraint.
 - Peds, elderly or frail patients are **unlikely** to need restraint.
- Physical restraint should only be used in conjunction **with Police**.
 - **Ask for Police** help if the patient is physically combative.
 - Beware any physical or verbal threats, aggression, or agitation.
 - Never use hobble restraints. Never restrain a patient prone.
- **Use caution with needles** - increased risk of provider injury.

Medications

- **Versed**[®] (Midazolam): Use with caution with peds and elderly.
 - Start lower if IV and/or smaller patient. Total dose: **10 mg max.**
- **Haldol**[®] (Haloperidol): Requires transport and **ALS** monitoring.
 - May potentiate dystonic muscle jerking & spasms (not seizure).
 - Consider treatment with **Benadryl** if spasms are severe.
 - **I** **Benadryl**[®] (diphenhydramine): 25 mg PO, IV/IO, IM x1

Notes

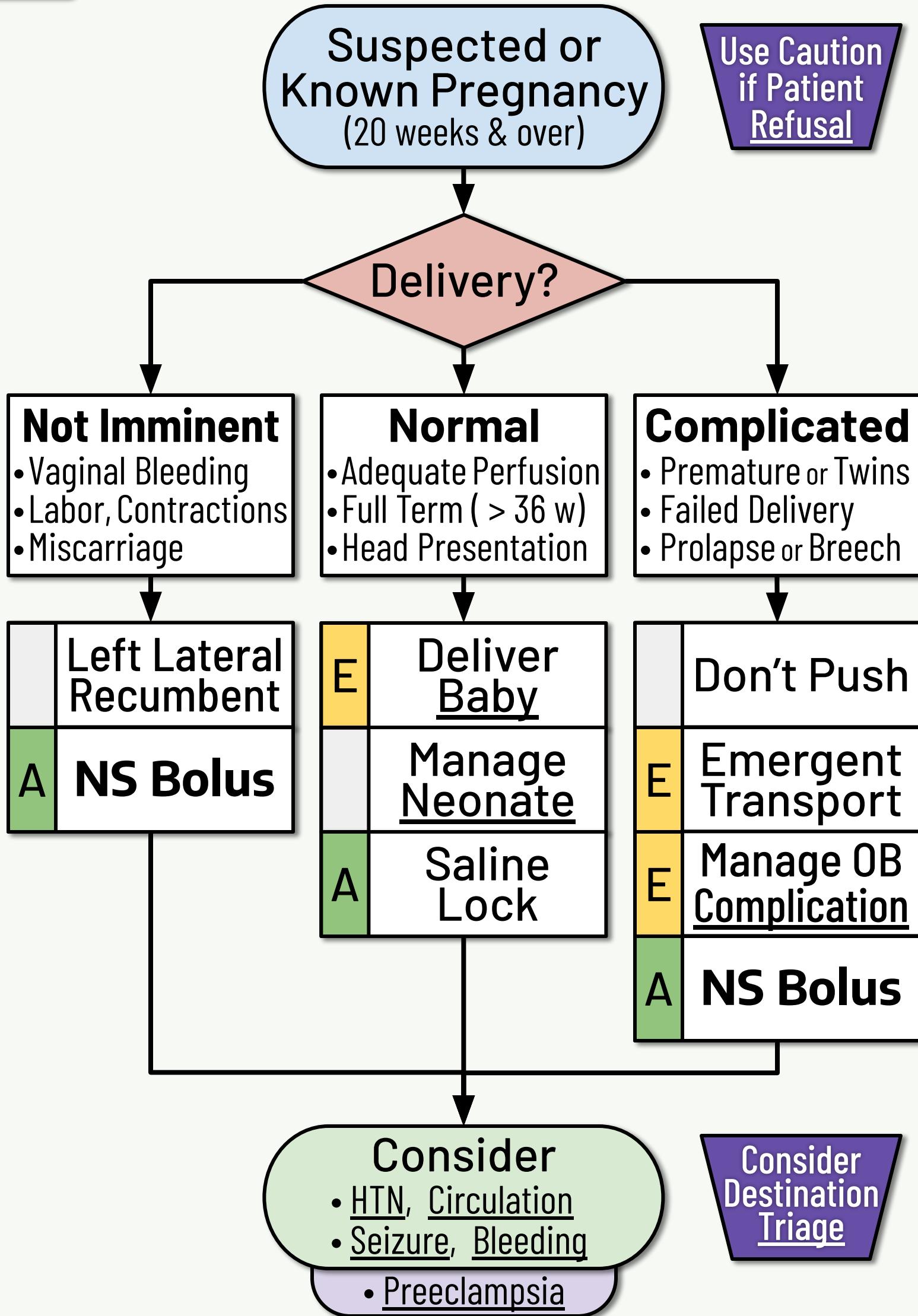
- SI / HI: Suicidal or Homicidal Ideation (any recent thoughts or acts)

Pediatrics

- Use Peds Reference or other approved source for peds dosing.
 - **I** **Versed**: max peds dose is Q 2 min **x4 doses**

References

- Medscape Suicide: <https://emedicine.medscape.com/article/2013085> [Ver: 1/24]
- Medscape Aggression: <https://emedicine.medscape.com/article/288689> [Ver: 11/22]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 27

**NS Bolus: 500 mL**

IV/IO

x4

Adult

Pregnancy / Delivery Imperatives

- This protocol applies to **late pregnancy** (20 weeks & over).
 - There are no specific EMS interventions for early pregnancy.
 - Uterus palpable **above the umbilicus** suggests late pregnancy.
- Any SBP reading **above 160** mmHg may be **preeclampsia**.
 - Prioritize transport. Call **Medical Control** for any refusal.
 - Consider Preeclampsia if indicated and credentialed for CC.
- Aggressively treat any Seizure as **eclampsia**.
- Any **maternal trauma** after 20 weeks should be transported.
 - Fetus may have injury that is not immediately obvious.
 - Even minor trauma (simple falls, etc) can cause fetal harm.
- **Prioritize transport if any complications** (to facility **w/ OB/GYN**).
 - **Reduce cord** over the head if found around the neck.
- **Manage OB Complications** during transport:
 - Failed Delivery / Shoulder Dystocia: transport knees to chest
 - Prolapse: don't handle cord, relieve pressure using fingers in vagina
 - Breech: do not pull; elevate presenting part if pressing on cord

Notes

- Consider **destination triage** to a facility **with OB/GYN** services.
- Call **Medical Control** with questions regarding medication safety.
- **Postpartum bleeding** can be severe; **fundal massage** can help.
 - **A** If poor perfusion: **TXA** (Tranex. Acid): **2 g IV/IO over 10 m**
- May attempt **home delivery** if uncomplicated and imminent.
 - Crowning and urge to push suggest delivery is imminent.
- Attempt to have a **chaperone** present for any genital evaluation.

Pediatrics

- Refer to **Neonate** for management of the newborn baby.

References

- Medscape Delivery: <https://emedicine.medscape.com/article/260036> [Ver: 2/24]
- Medscape Eclampsia: <https://emedicine.medscape.com/article/253960> [Ver: 8/25]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 36

Use Caution
if Patient
Refusal

Infant
Under 1 Month Old
(≤ 30 days)

Stimulate,
Warm & Dry

Pulse?

Over 100

- Warm, Pink Skin
- Active Cry

100 - 60

- Cyanosis, Dyspnea
- Weak Cry

Under 60

- **Floppy Baby**
- Low / Zero APGAR

APGAR

Encourage
Breastfeeding

Provide O₂

T-piece
Assist

Glucometer

Provide O₂

T-piece
Ventilate

Chest
Compression

Epi

Peds

Consider

- Bradycardia
- Circulation / Shock

Epi: 0.5 mL (of 1 mg per 10 mL) IV/IO Q 5 min

Peds

Neonate Imperatives

- Most respond to simple stimulation.
 - **Dry off** & place on mom's chest.
 - Wait 60 sec before clamping cord.
 - Leave 6-10 inches of viable cord.
- **SpO₂ rises slowly** after birth.
 - Consider a sensor on **right hand**.
- May **try 30 sec of ventilation** before starting compressions.
 - If **T-piece Resuscitator** is unavailable: may use neonatal BVM.
 - **I EKG** can provide rapid & reliable pulse rate & response.
- Less common causes of distress: PTX, Hypoglycemia, Shock

Compressions

- Neonate: **120 /min**
- OPA/NPA: **3:1 w/ BVM**
- BIAD: **Continuous**

BVM Rate

- Neonate: **Q 2 sec (30 /min)**

APGAR:

	2	1	0
• Appearance	pink	blue	gray
• Pulse	100+	99-1	0
• Grimace	good	poor	none
• Activity	kicks	weak	limp
• Respiration	cry	gasp	0

Normal SpO₂:

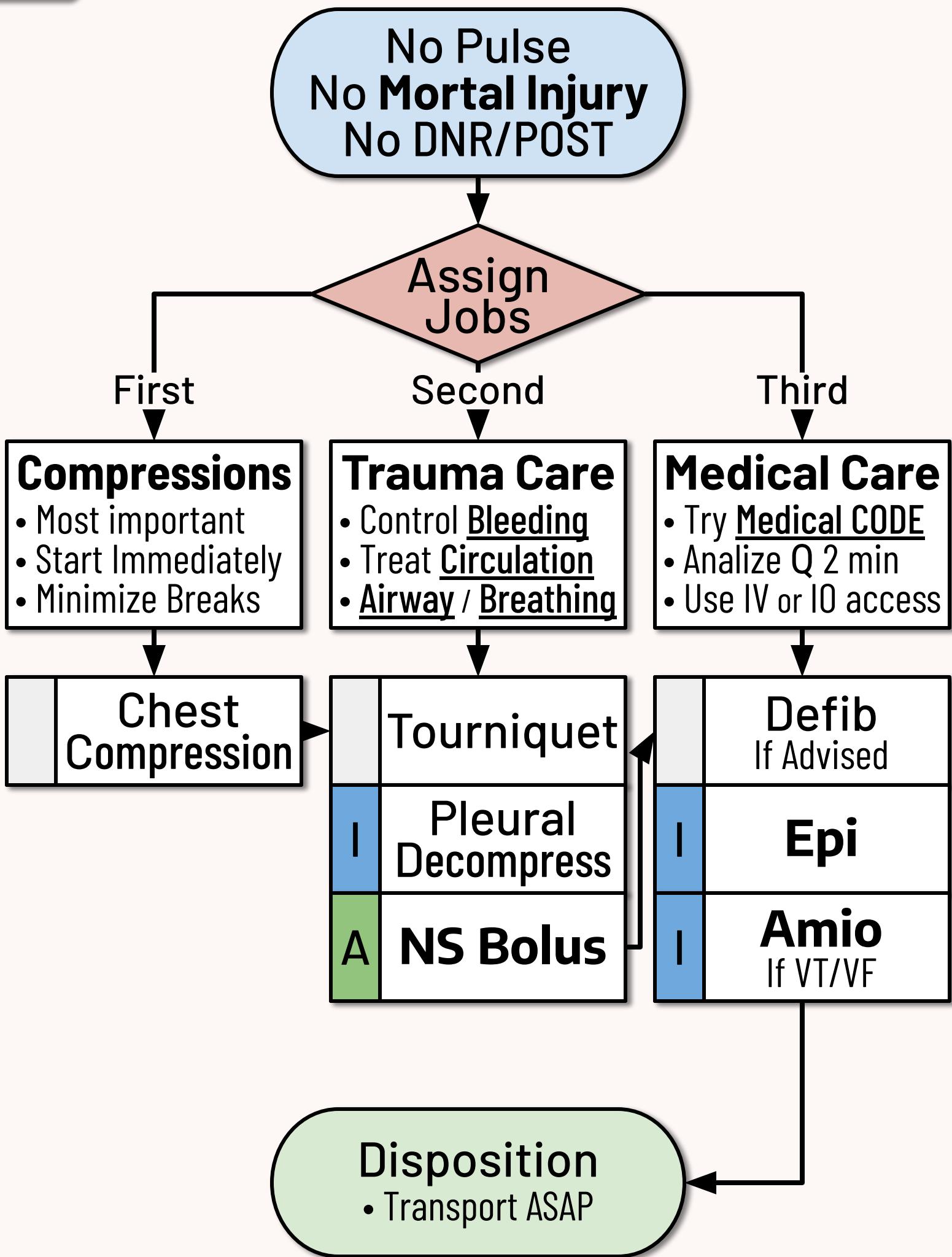
1 min	60-65%
2 min	65-70%
3 min	70-75%
4 min	75-80%
5 min	80-85%
10 min	85-95%

Notes

- Document 1 and 5 minute **APGAR** scores - add up the total points.
- May place newborn directly on mom's bare chest to **keep warm**.
 - Encourage breastfeeding. Place mom & baby **ID bands** if avail.
- **Meconium suction** is not included in this protocol.
- Avoid high flow O₂ into a newborn's eyes.
- This protocol is for infants under 1 month (≤ 30 days) old only.

References

- NALS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001367> [Ver: 2025]
- Medscape Delivery: <https://emedicine.medscape.com/article/260036> [Ver: 2/24]
- Medscape Neonate: <https://emedicine.medscape.com/article/977002> [Ver: 10/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 36



NS Bolus: 500 mL	IV/IO x4	Adult Doses
Epi: 1 mg	IV/IO Q 5 min	
Amiodarone: 1 st 300 → 2 nd 150 mg	IV/IO Q 5 min x2	

CODE Imperatives

- Place **Tourniquets** if needed.
 - Limiting blood loss is critical.
- Try bilateral **Pleural Decompression**.
 - Hidden tension pneumothorax may cause traumatic arrest.
- This protocol applies to cardiac arrest caused by **severe trauma**.
 - Refer to Medical CODE for arrest with only incidental injuries.
- Definitive treatment for traumatic arrest is the operating room.
 - Prioritize compression, tourniquets and **transport ASAP**.

- If Any Trauma CPR
- Or Unstable Vitals
- Call a **TRAUMA Alert**



Compressions

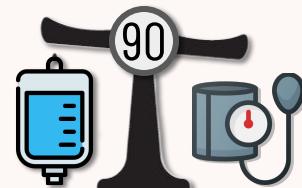
- Adult/Peds: **120 /min**
- OPA/NPA: **30:2 w/ BVM**
- BIAD/ETT: **Continuous**

Mortal Injuries

- Decapitation or Exposed Brain
- Destruction of Trunk or Organs
- Burned Beyond Recognition
- Massive Blunt Force, Explosion
- Over 30 min Since Arrest

Medications

- **NS Bolus** (0.9% Saline): **Target SBP of 90 mmHg**
 - Use **balanced** resuscitation in hemorrhagic shock
(Target higher if any head/spine injury or pregnancy.)
- **Amiodarone**: Adults give twice (x2) Q 5 min **300 mg → 150 mg**
 - For peds, give **5 mg/kg** three times (x3) Q 5 min



Notes

- Use caution with **compressions** and **defib** in a moving vehicle.
- EtCO₂ can help identify ROSC and guide termination decision.
- A well run CODE should operate like a **pit crew**. Focus on your job.

Pediatrics

- Use Peds Reference or other approved source for peds dosing.

References

- ATLS®: www.facs.org/quality-programs/trauma/education/advanced-trauma-life-support/ [Ver: 11th]
- NAEMSP Mortal Injuries: <https://doi.org/10.3109/10903127.2012.755586> [Ver: 1/13]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 29, 34

Return of Pulse

Stabilize

- Control Bleeding
- Treat Circulation
- Airway / Breathing

E **Emergency Transport**

Tourniquet

I **Pleural Decompress**

E **12-Lead**

A **Saline Lock**

I **Ketamine**
If Agitated

Consider

- Bleeding, Shock
- Medical ROSC
- Intubation, Vent

Consider Destination Triage

Ketamine: 20 mg

IV/IO

Q 5 min x2

Adult

Trauma ROSC Imperatives

- Most important aspect is to prioritize emergent transport.
 - **Get the patient to the hospital.**
- Reassess and repeat Pleural Decompression as needed.
 - Repeat immediately if decompensation after initial success.
- Reassess and apply additional Tourniquets as needed.
 - Apply pressure and pack wounds for junctional bleeding.
- Consider a concurrent medical cause preceding the trauma.



- If Any Trauma CPR
- Or Unstable Vitals
- Call a **TRAUMA Alert**

Poor Perfusion

- Suspect if **several** of these:
 - **Altered Mental Status**
 - Skin Pale, Cool, Diaphoretic
 - Tachycardia, Hypotension
 - Dyspnea, Tachypnea

Medications

- **Ketamine** (Ketalar[®]): Dilute in NS and **give slowly over 10 min.**
 - Use weight based peds dosing for adults **under 110 lbs** (50 kg).

Notes

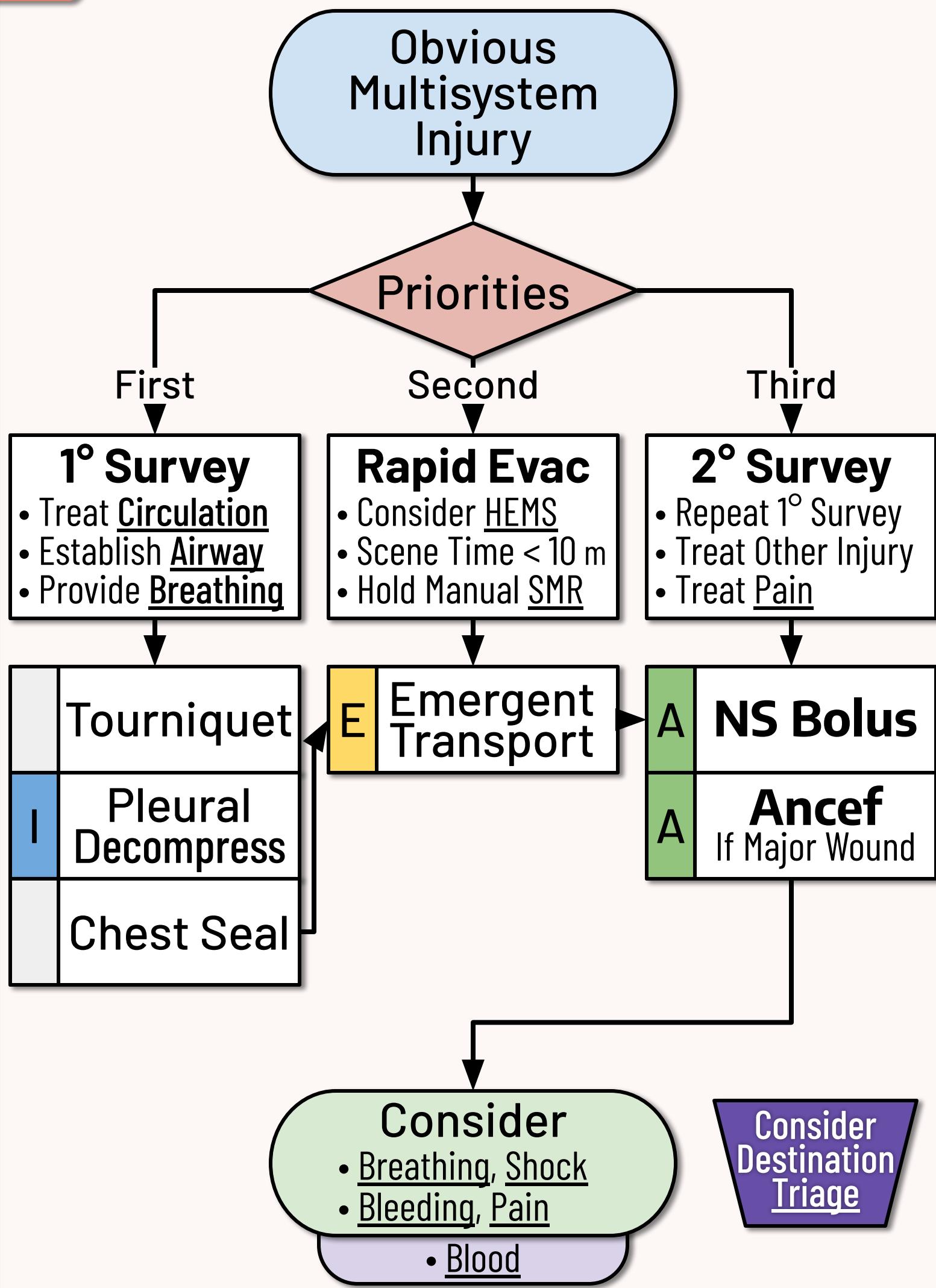
- Keep **normothermic** (hypothermia causes coagulopathy & bleeding)
- Consider Intubation and/or Vent if indicated & credentialed for CC.

Pediatrics

- Use Peds Reference or other approved source for peds dosing.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- ATLS[®]: www.facs.org/quality-programs/trauma/education/advanced-trauma-life-support/ [Ver: 11th]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 29, 34



NS Bolus: 500 mL	IV/IO	x4	Adult Doses
Ancef: 2 grams	IV/IO, IM	x1	

Major Trauma Imperatives

- Rapid transport is **critical** for massive life threatening injury.
 - **Get the patient to the hospital.** Definitive care is **in the OR**.
 - Delay transport only to address major threats to life.
 - Secondary survey and treatment can occur during transport.
- It is appropriate to start with rapid **manual immobilization** only.
 - You may defer placing a c-collar to the secondary survey.
 - You should defer extremity splinting to the secondary survey.

- If Major Intervention
- Or Major Mechanism
- Call a **TRAUMA Alert**

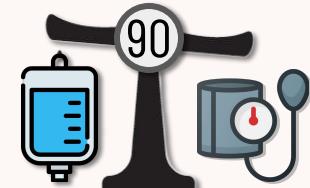


Poor Perfusion

- Suspect if **several** of these:
 - **Altered Mental Status**
 - Skin Pale, Cool, Diaphoretic
 - Tachycardia, Hypotension
 - Dyspnea, Tachypnea

Medications

- **NS Bolus** (0.9% Saline): **Target SBP of 90 mmHg**
 - Use **balanced** resuscitation in hemorrhagic shock
(Target higher if any head/spine injury or pregnancy.)
- **Ancef®** (Cefazolin): Provide for any major **open wound**.
 - Monitor closely if PCN allergy; avoid if cephalosporin allergy.
 - Reconstitute powder with normal saline and **shake well** to mix.



Notes

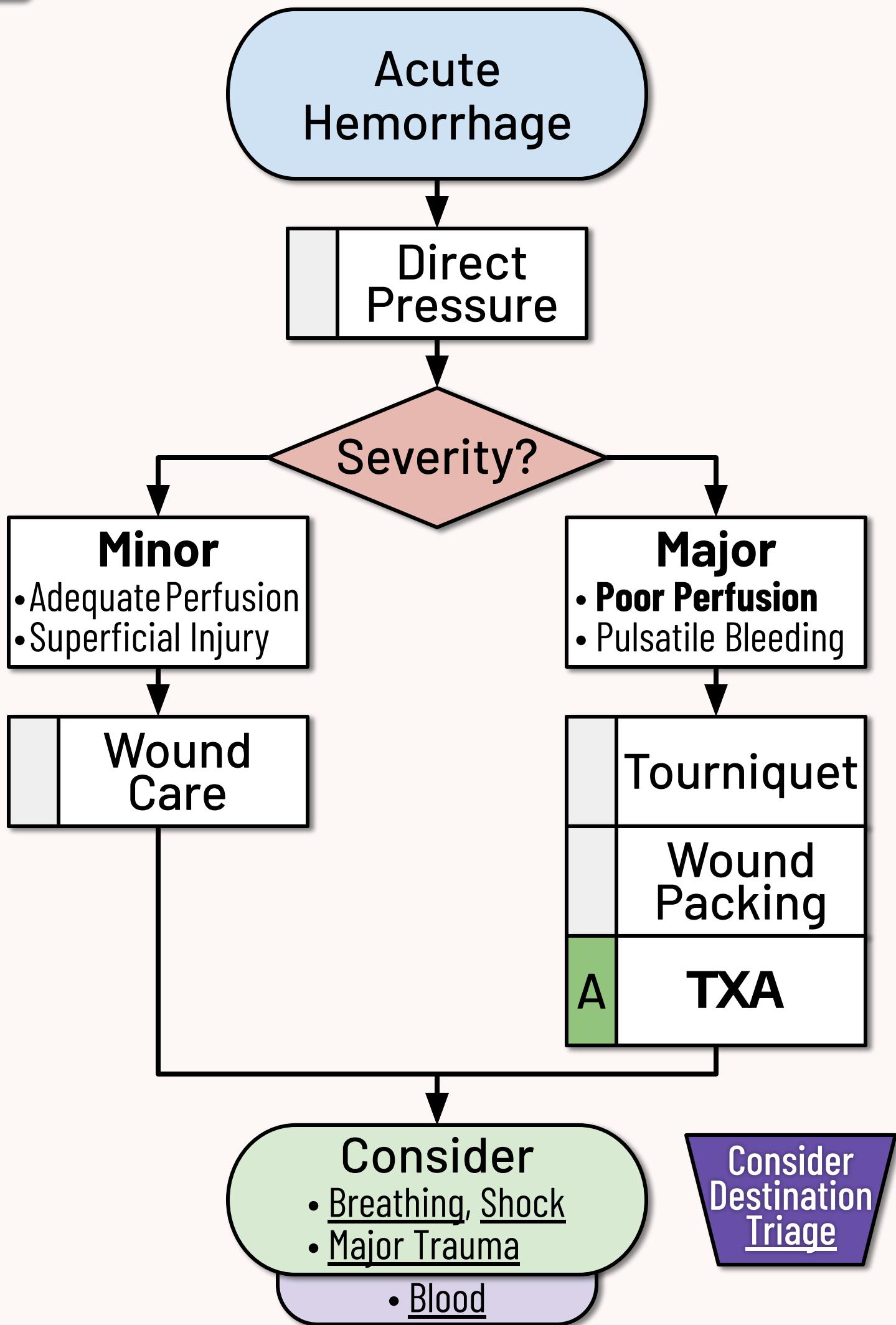
- Consider IV **fluid warmers** and/or **rapid infusers** if available.
- Splint **impaled objects** as found (cut wreckage to free patient).
 - May remove only if interfering with airway or resuscitation.
- Consider **Blood** if indicated and credentialed for Critical Care.

Pediatrics

- Use Peds Reference or other approved source for peds dosing.

References

- Medscape Polytrauma: <https://emedicine.medscape.com/article/434707> [Ver: 7/22]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 29, 34



TXA: 2 grams

IV/IO

over 10 min

Adult

Bleeding Imperatives

- Advance to a **Tourniquet** rapidly for any major arm / leg bleeding.
 - Write the time of **Tourniquet** application on the patient.
- **Packing** may also help (especially junctional bleeds). **Do not** pack:
 - Unstable, depressed or open skull fractures; chest wounds
 - Bleeding from body orifices: vagina, rectum, ear, mouth, etc.



- If Major Intervention
- Or Major Mechanism
- Call a **TRAUMA Alert**

Poor Perfusion

- Suspect if **several** of these:
 - **Altered Mental Status**
 - Skin Pale, Cool, Diaphoretic
 - Tachycardia, Hypotension
 - Dyspnea, Tachypnea

Medications

- **TXA** (Tranexamic Acid): Avoid if injury 3+ hours old or known PE.
 - Use for any major **external traumatic bleeding**.
 - Use for suspected **intra-abd/thorax bleed** w/ poor perfusion.
 - May also use for severe **postpartum** (non-traumatic) bleeding.
 - Avoid for other forms of suspected internal or medical bleeding.

Notes

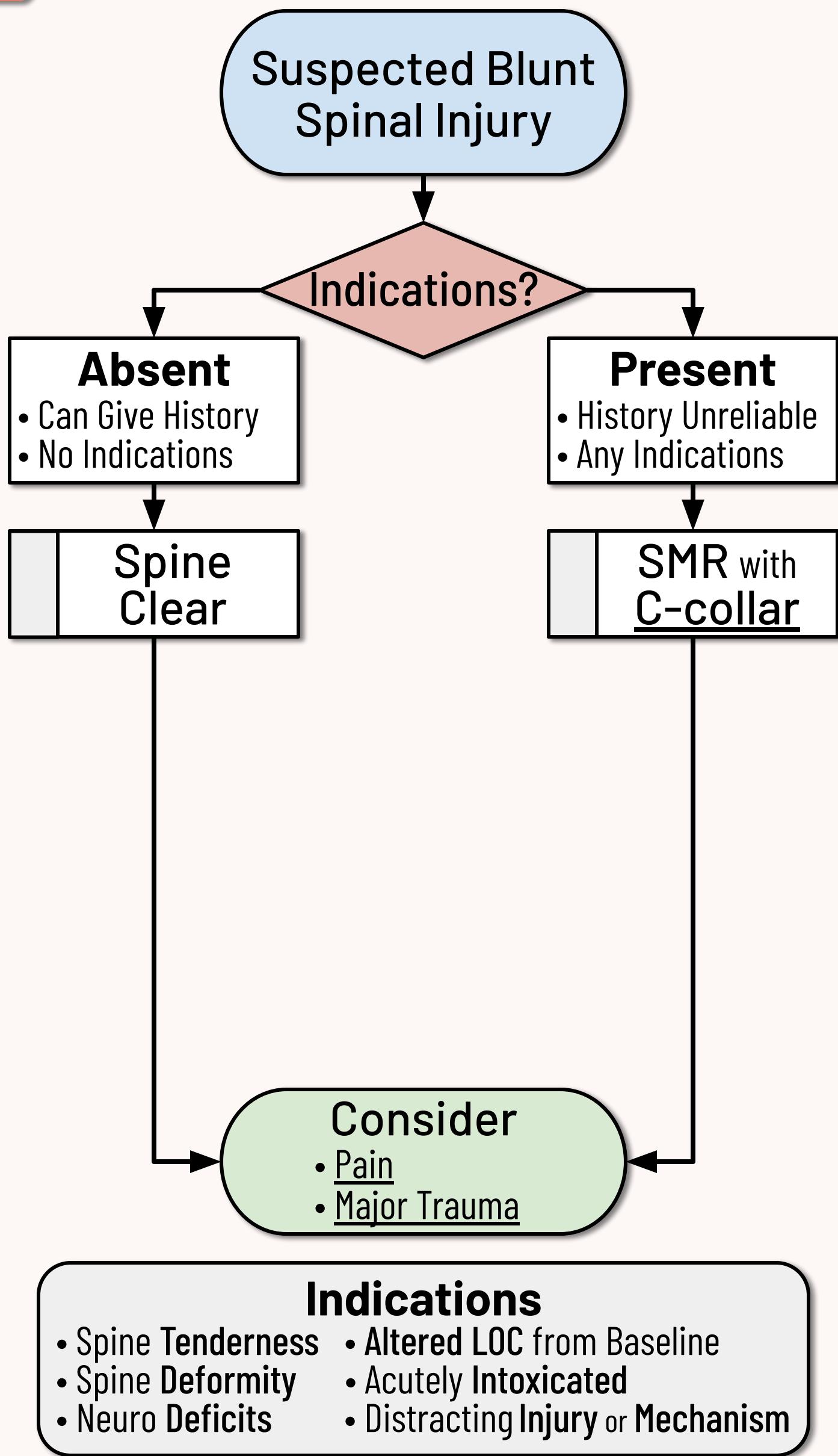
- Anticoagulation meds ("**blood thinners**") increase bleeding risk.
- Consider removing bystander dressings to investigate severity.
- Bandage wounds after bleeding is controlled.
- Consider Blood if indicated and credentialed for Critical Care.

Pediatrics

- Hypotension is a late sign of hemorrhagic **Shock** in peds.
- Use Peds Reference or other approved source for peds dosing.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- ATLS®: www.facs.org/quality-programs/trauma/education/advanced-trauma-life-support/ [Ver: 11th]
- Stop the Bleed®: <https://www.stopthebleed.org/> [Ver: 2025]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 29



Immobilization Imperatives

- While backboards have historically been used to attempt spinal immobilization, **SMR** may also be achieved by use of a scoop stretcher, vacuum splint, **ambulance cot**, or other similar device to which a patient is safely secured. †
- Awake, compliant patients may be safely secured with seat belts.
- SMR requires **supine positioning** and a **c-collar**.
- A long spine board, a scoop stretcher, or a vacuum mattress is recommended to assist with **patient transfers** ... to minimize flexion, extension, or rotation of the possibly injured spine. †
 - May try gentle **self-extrication** from a vehicle (with a c-collar).
- There is no role for **SMR** in penetrating trauma. †

Notes

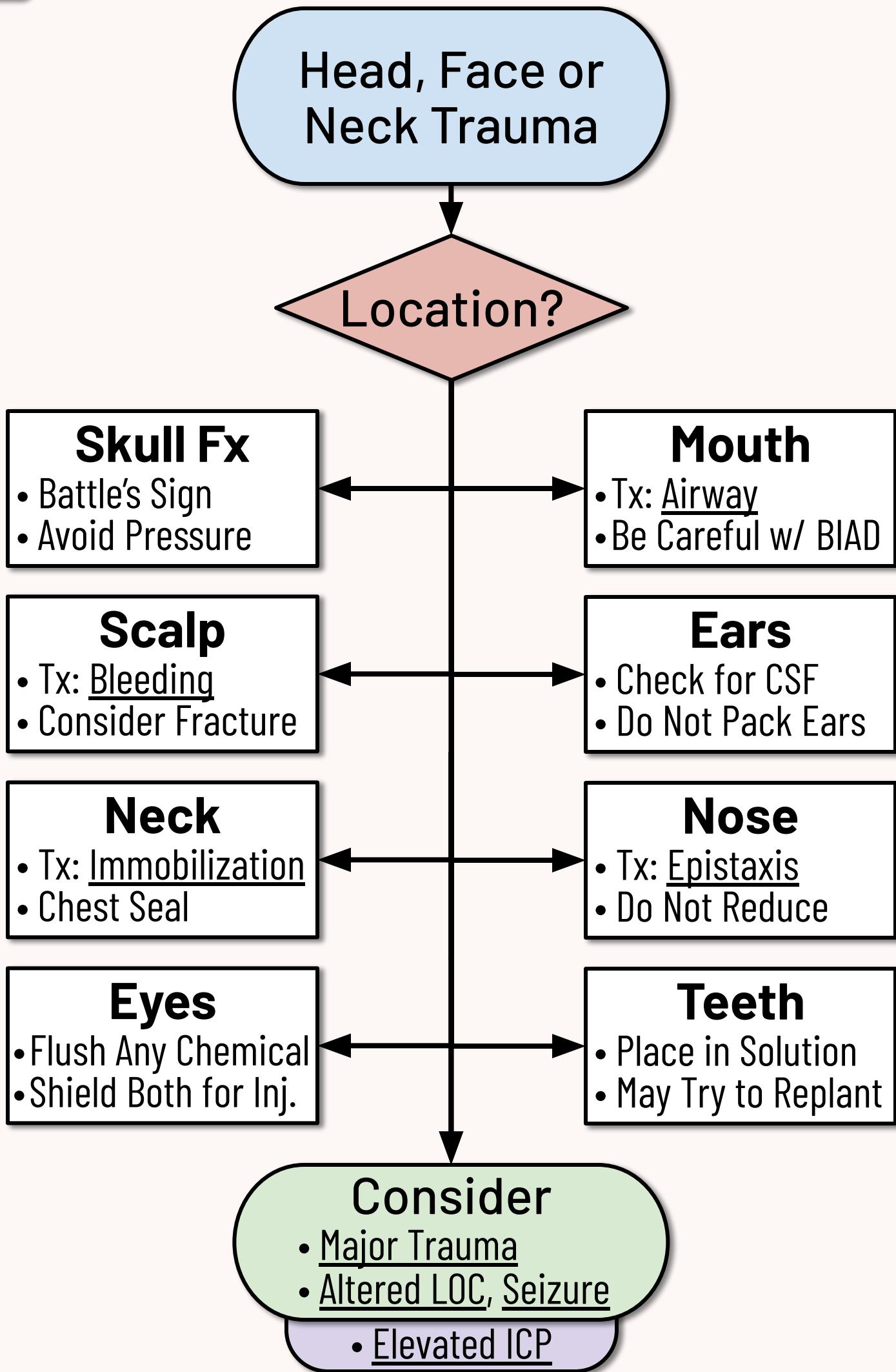
- **Spine Tenderness or Deformity** includes any:
 - Midline neck or back pain, tenderness, crepitus, step off, etc.
- **Neuro Deficits** include any new symptoms of neurologic injury:
 - Unconscious greater than 1 min, or seizure
 - Paralysis, weakness, numbness, or vision changes
 - Shooting 'electric' pain, or tingling in any extremity
- **Altered LOC from Baseline** includes any change in mentation:
 - Glasgow Coma Scale less than baseline, new confusion
- **Acute Intoxication** includes any alteration in mentation due to:
 - Alcohol, medications, recreational or illegal drugs
- **Distracting Injury or Mechanism** may include:
 - Unstable vitals, airway trauma, blast injury, shallow water diving
 - Fall > 10 ft, flail chest, unstable pelvis, 2° or 3° Burn > 10% BSA
 - Major fracture/bleed, crushed/mangled or amputated extremity
 - High risk MVC: > 60 mph, ejection, roll over, death, struck by car

Pediatrics

- Any child that cannot provide a reliable history should have **SMR**.

References

- ACS-COT, ACEP, NAEMSP: SMR in Trauma - Joint Statement † [Ver: 2018]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 33



Head Injury Imperatives

- Transport emergently if sudden changes in LOC.
 - Consider Elevated ICP if indicated & credentialed for Crit Care.
- **Hypoxia** and **Hypotension** are associated with poor outcomes.
 - Investigate and treat for Hypoxia and Hypotension aggressively.
- Anticoagulation meds ("**blood thinners**") increase risk of ICH.
- **Lacerations** benefit from repair within the first few hours.
- **Mechanism** predicts severity.

- If Major Intervention
- Or Major Mechanism
- Call a **TRAUMA Alert**



Notes

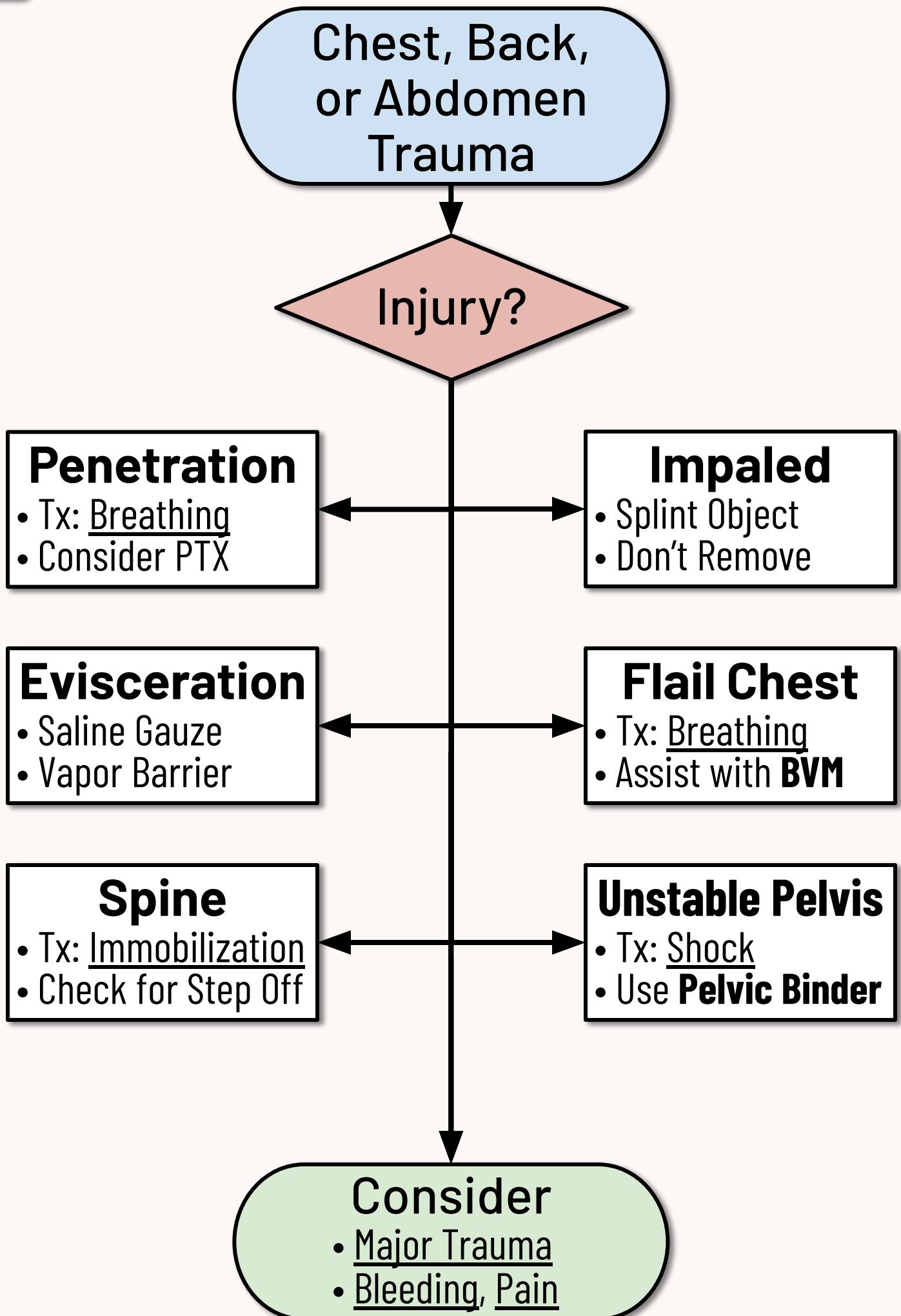
- **Skull Fx:** May cause bruising behind ears or around both eyes.
- **Scalp:** Direct pressure for brisk bleeding (unless skull crepitus/fx).
- **Neck:** All penetrations should have a chest seal.
- **Eye:** Use copious saline or water to flush out any contamination.
 - **E** Tetracaine (0.5% Ophthalmic): 1-2 gtt prior to flushing
 - Do not flush penetrating injury. Place **eye shield** over both eyes.
- **Mouth:** May remove **impaled objects** that compromise Airway.
- **Ear:** Check any discharge for CSF by dropping on white paper.
 - A yellow / clear halo suggests CSF leak from skull fracture.
- **Nose:** Do not attempt to reduce. Treat for Epistaxis.
- **Teeth:** Transport avulsed teeth in Hank's solution or NS.
 - Attempt replantation only in uncomplicated & isolated injury.
- **Concussion:** Usually does not require EMS intervention.

Pediatrics

- Do not attempt replantation for primary (baby) teeth.
- Use Peds Reference or other approved source for peds dosing.

References

- Medscape Head Injury: <https://emedicine.medscape.com/article/1163653> [Ver: 12/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 33



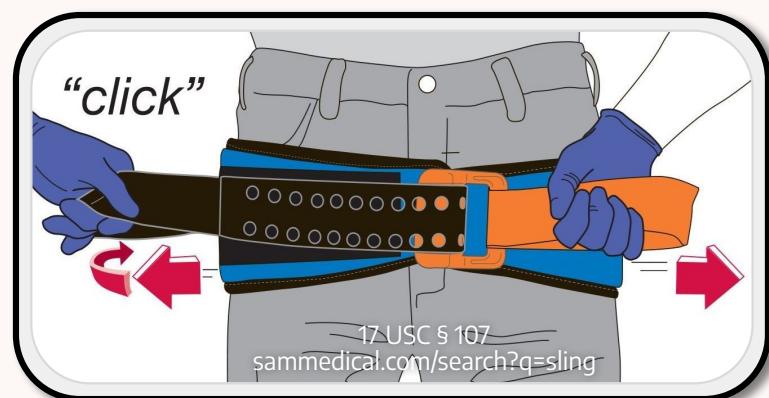
Trunk Injury Imperatives

- Splint **impaled objects** as found (cut wreckage to free patient).
 - May remove only if interfering with airway or resuscitation.
- **Lacerations** benefit from repair within the first few hours.
- **Mechanism** is an important indicator of injury severity.



Notes

- **Penetration:** All penetrations should have a chest seal.
 - Remove chest seal if using positive pressure (e.g. BVM, NIPPV).
- **Evisceration:** Cover with saline gauze and vapor barrier.
- **Spine:** Monitor for neuro. deficits and provide Immobilization.
- **Impaled:** Cut object free of wreckage. Do not remove from patient.
- **Flail Chest:** Monitor for Pneumothorax. Use BVM for Dyspnea.
- **Unstable Pelvis:** Assess **only once** (with gentle compression).
 - Consider a **pelvic binder**:
 - Place **BELLOW the belt line**
 - Over greater trochanters
 - Internally rotate the feet
 - Secure feet & legs together

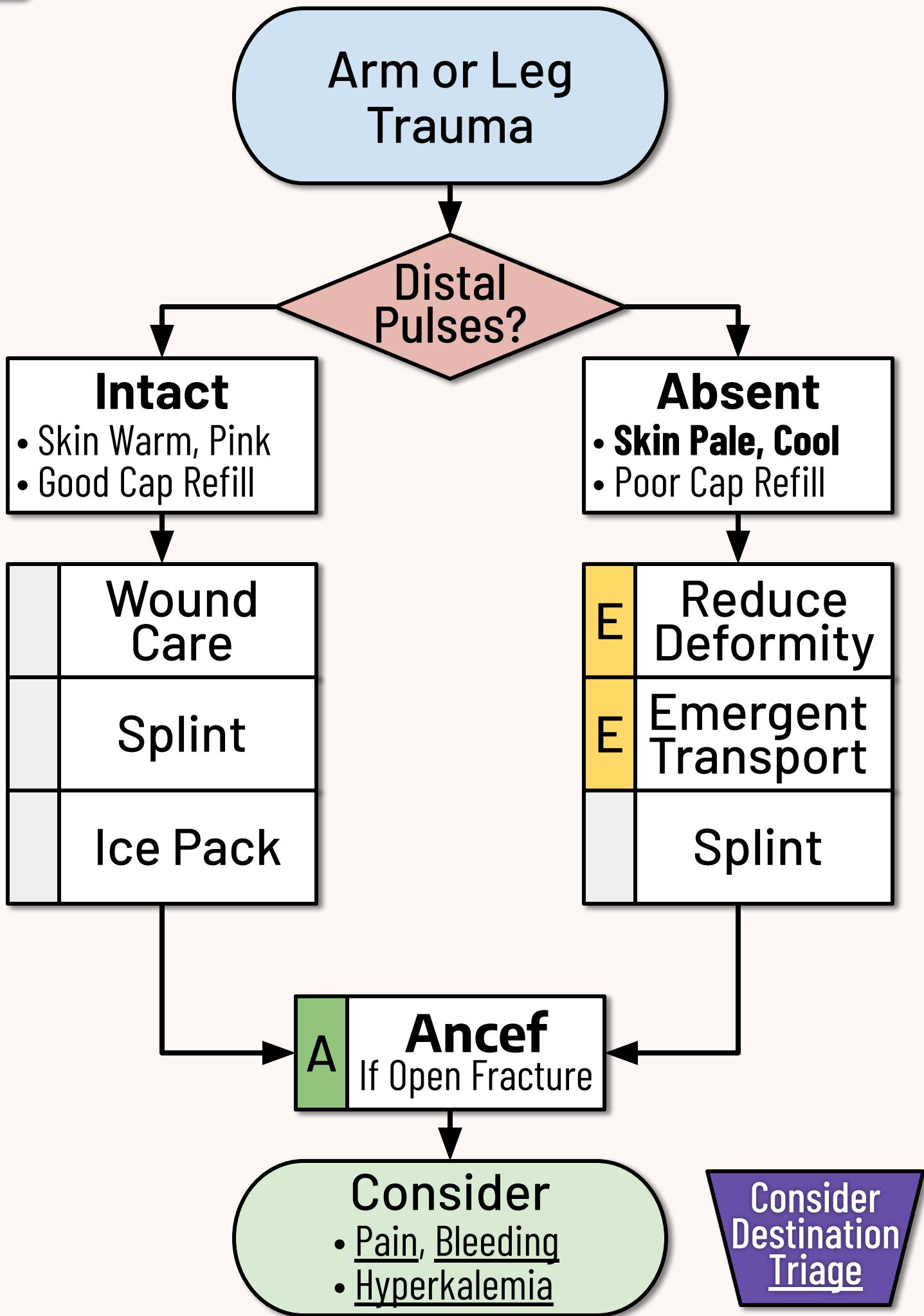


Pediatrics

- Trunk injury is more likely in peds struck by a car.

References

- Medscape Blunt Chest: <https://emedicine.medscape.com/article/428723> [Ver: 11/22]
- Medscape Penetrating Abd: <https://emedicine.medscape.com/article/2036859> [Ver: 3/22]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 31

**Ancef:** 2 grams

IV/IO, IM x1

Adult

Extremity Injury Imperatives

- Advance to a **Tourniquet** rapidly for any major arm / leg bleeding.
 - Write the time of Tourniquet application on the patient.
- **Pulseless extremities** and **amputations** are true emergencies.
 - Record time of injury. Reduce any deformity. Transport ASAP.
 - Wrap amputated parts in saline gauze and place in sealed bag.
 - Place bag on ice if available. Record time placed on ice.
- Beware **Hyperkalemia** in any **limb crush** or **suspension** injury.
 - **Limb crush**: may start tx (if rapidly available) before release.
 - **Harness hang**: immediately extricate & place supine.
- **Lacerations** benefit from repair within the first few hours.
- **Mechanism** is an important indicator of injury severity.



Medications

- **Ancef®** (Cefazolin): Provide if an **open fracture** is suspected.
 - Monitor closely if PCN allergy; avoid if cephalosporin allergy.
 - Reconstitute powder with normal saline and **shake well** to mix.

Notes

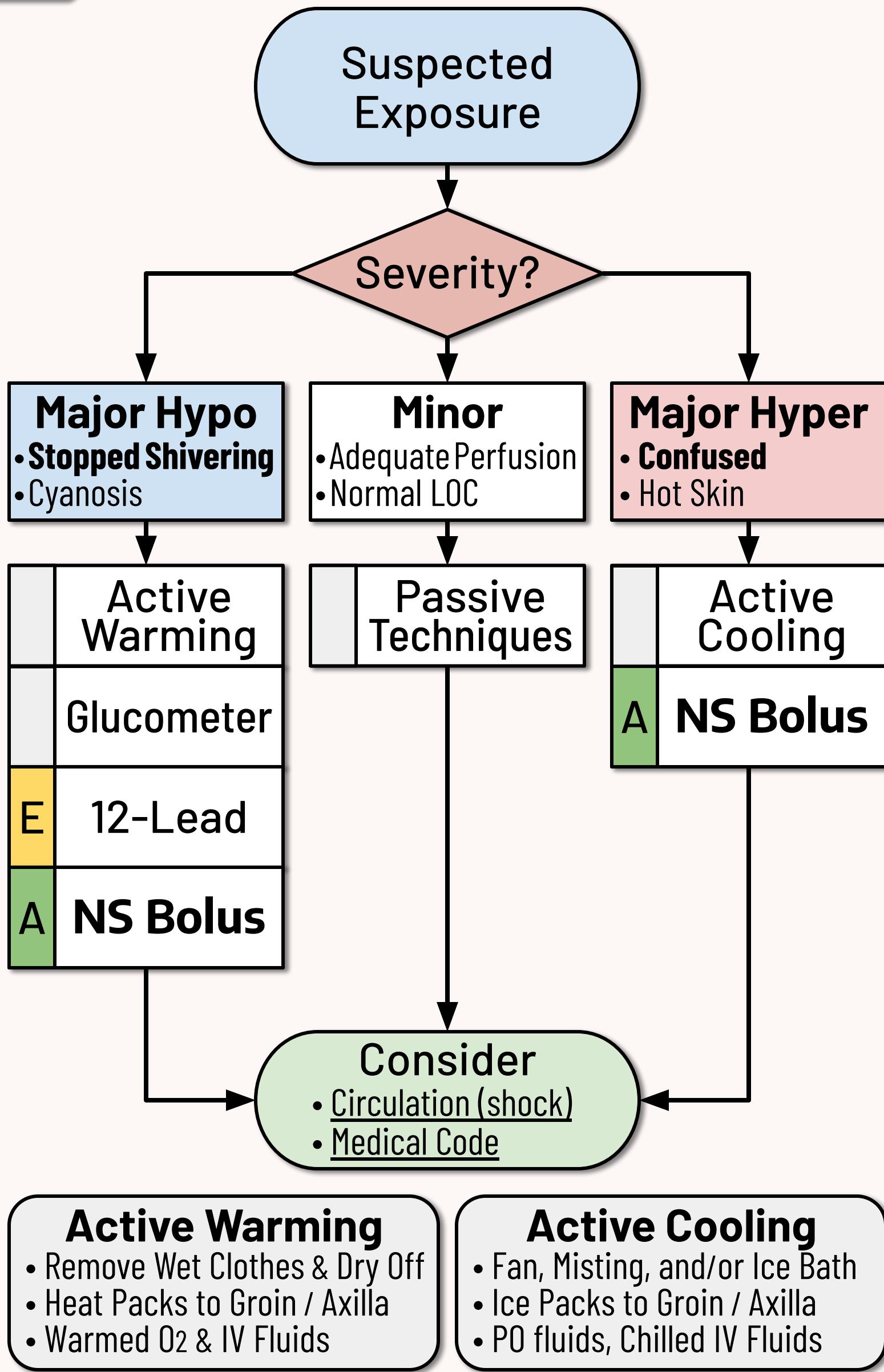
- Remove adjacent and distal jewelry if able.
- High **pressure injections** may cause subtle but devastating injury.
- A traction splint may help pain & bleeding from isolated **femur fx**.

Pediatrics

- Consider **Child Abuse** for injuries that do not match the history.

References

- Medscape Fracture Care: <https://emedicine.medscape.com/article/1270717> [Ver: 4/24]
- Medscape Vascular Trauma: <https://emedicine.medscape.com/article/462752> [Ver: 10/23]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 29, 30

NS Bolus: 500 mL

IV/IO x4

Adult

Cold / Heat Imperatives

- **Hyperthermia** is **not** the same as a Fever from infection.
 - Meds for Fever **worsen hyperthermia** and are contraindicated.
- **Confusion** is the hallmark of major **hyperthermic** emergencies.
 - Aggressively & actively cool anyone that is **hot & confused**.
 - **A** If shivering from active cooling: **Versed®** 2.5 mg IV/10 x1
- **Resuscitation** of major **hypothermia** is a special case:
 - Most important intervention is **active rewarming**.
 - Check carefully for pulse. If present, it will be **very** faint.
 - Provide **defib** and **ACLS meds** as per normal Medical Code.
 - Call **Medical Control** before termination of resuscitation.
- **Pad** heat & ice packs. Do not place directly against the skin.

Notes

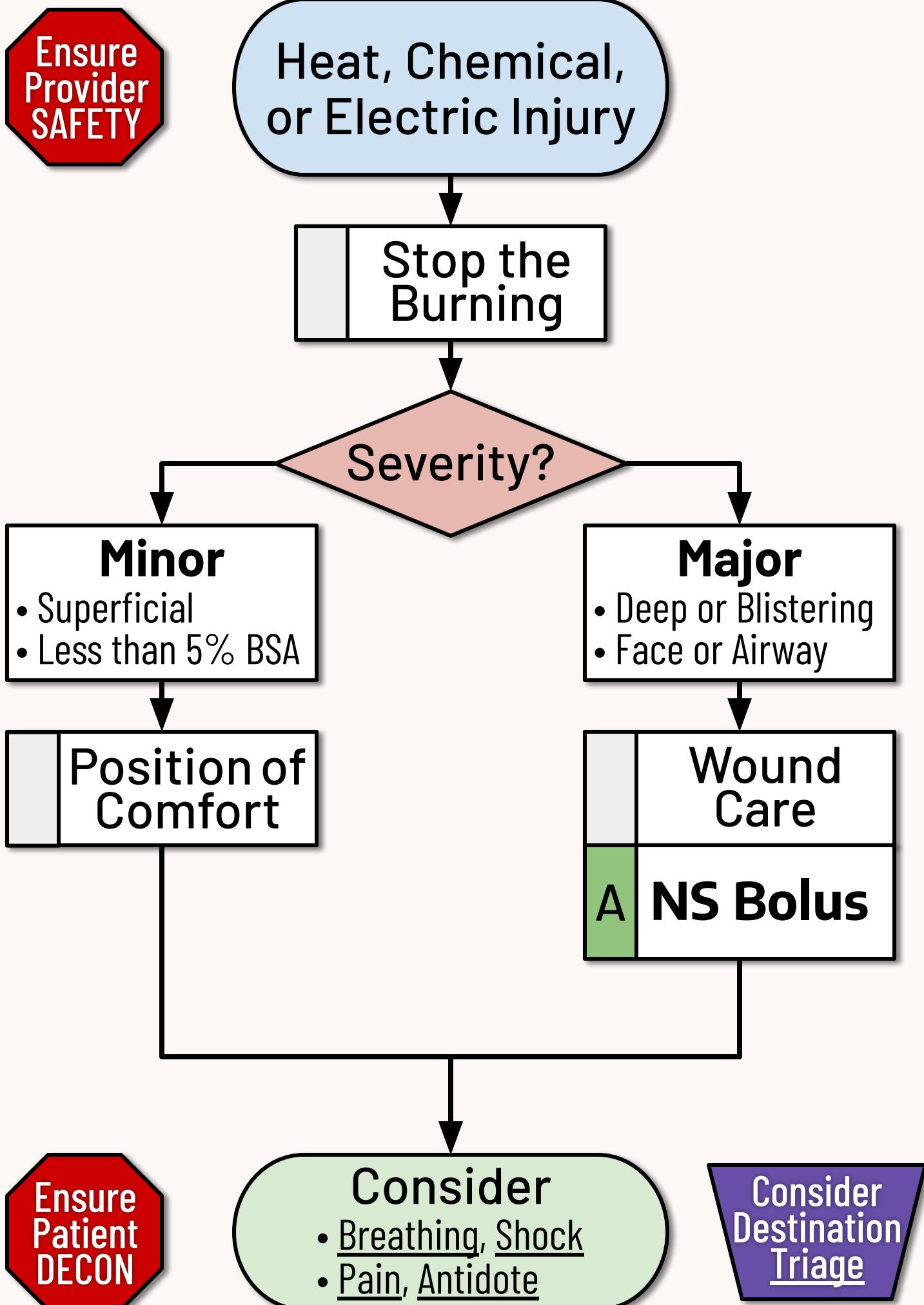
- **Passive techniques** include clothing and environment changes.
- Special thermometers or **core temp** monitors may be helpful.
 - Major **hyperthermia** is likely above: **104°F (40°C)**.
 - Major **hypothermia** is likely below: **86°F (30°C)**.
- Some drugs may also cause **hyperthermia**. Treatment is the same.
- Excessive movement of **hypothermic** patients can cause **V-Fib**.
- Splint any extremity with **frostbite** to limit movement (do not rub).
 - Delay rewarming **frostbite** if there is potential for re-freezing.
 - **E Ibuprofen** (Motrin®): Give **600 mg PO x1** for **frostbite**

Pediatrics

- Small children (and the elderly/frail) will decompensate faster.
- Use Peds Reference or other approved source for peds dosing.

References

- ATLS®: www.facs.org/quality-programs/trauma/education/advanced-trauma-life-support/ [Ver: 11th]
- Medscape Hypothermia: <https://emedicine.medscape.com/article/770542> [Ver: 10/21]
- Medscape Heat Stroke: <https://emedicine.medscape.com/article/166320> [Ver: 7/22]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 35

**NS Bolus: 500 mL**

IV/10

per hour

Adult

Burn Imperatives

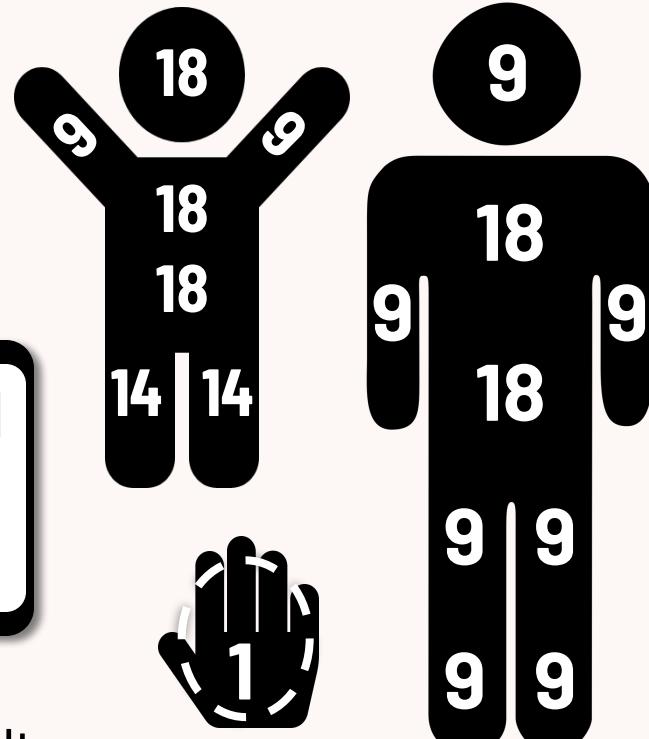
- Use **ABLS fluid rate** (may use **NS** or **LR**). Watch for Hypothermia.
- Monitor Airway closely with any facial, nasal or oral burns.
- Some chemical burns (e.g. **HF acid**) may benefit from an Antidote.
- Monitor EKG for electrical burns > **1,000 v**.
- Remove adjacent and distal jewelry if able.

BSA percentage
(front and back)

ABLS rate:

- 14+ y/o: **500 mL/hr**
- 6-13 y/o: **250 mL/hr**
- 0-5 y/o: **125 mL/hr**

- If Major Intervention
- Or Major Mechanism
- Call a **TRAUMA Alert**



Notes

- Rule of 9's can estimate BSA in adults.
 - Patient's palm (**with** fingers) is about 1% BSA.
 - Consider only partial and full thickness when calculating BSA.
- This protocol includes **chemical burns** and skin exposures.
 - For **gasses** and smoke inhalation, refer to Inhalation.
 - For **poisoning** and toxic ingestions, refer to OD / Tox.
- If chemical is known, consider calling **CHEMTRAC**: 800-424-9300.
- This does not include **radiation** exposure (call **Medical Control**).
- Consider aeromedical Destination Triage if major burn > 20% BSA.
 - There are no ABA verified burn centers near the WVEMS region.

Pediatrics

- Use Peds Reference or other approved source for peds dosing.

References

- Medscape Burns: <https://emedicine.medscape.com/article/1278244>
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 30

[Ver: 10/23]



Toxic or Anoxic Gas Exposure

Remove from Harm

Assess for:
• Airway, Breathing
• Burns, OD / Tox

Provide O₂

Consider
• Breathing, Shock
• OD / Tox, Antidote
• Intubation



Inhalation Imperatives

- Monitor Airway closely with any facial, nasal or oral burns.
 - Check the mouth for **soot** and the nose/face for **singed hairs**.
 - Consider Intubation if indicated and credentialed for CC.
- Provide **100%** oxygen by NRB for carbon monoxide (CO) exposure.
 - SpO₂ may read **false normal**. (CO can fool the SpO₂ monitor.)
 - Symptoms may include: headache, confusion, red skin, N/V.
 - Oxygen is critical for **pregnant females** exposed to CO.
- Some industrial gas (e.g. **Cyanide**) may benefit from an Antidote.
- WMD nerve gas (e.g. **Sarin, VX**) may benefit from an Antidote.
- Even non-toxic gases can produce Hypoxia & Dyspnea. Give O₂.

Notes

- SpCO monitors are available and work like SpO₂ monitors.
 - Normal: less than 3% (may be up to 6% in heavy smokers)
 - Exposure: 3% - 10%
 - Toxic: above 10%
- Most law enforcement **riot agents** are potent respiratory irritants.
 - Common agents include **tear gas (CS)** and **pepper spray (OC)**.
 - Flush eyes and move to fresh air. Beware cross-contamination.
 - There are no specific antidotes. Provide supportive care.
- This protocol includes **gasses** and smoke inhalation.
 - For **chemical burns** and skin exposures, refer to Burns.
 - For **poisoning** and toxic ingestions, refer to OD / Tox.

Pediatrics

- Small children (and the elderly/frail) may exhibit symptoms faster.

References

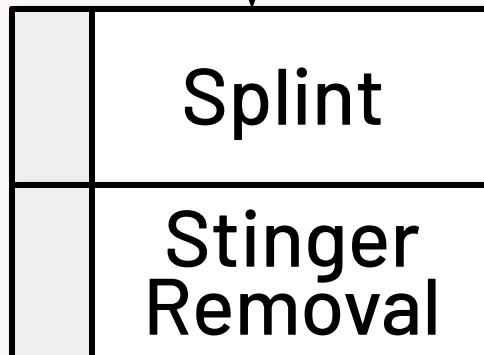
- ATLS®: www.facs.org/quality-programs/trauma/education/advanced-trauma-life-support/ [Ver: 11th]
- Medscape CO: <https://emedicine.medscape.com/article/2085044> [Ver: 7/25]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 9, 25



Animal or Insect Trauma

Use Caution
if Patient
Refusal

Assess for:
• Allergic Reaction
• Bleeding



Consider
• Pain
• Underlying Injury

Sting / Bite Imperatives

- **Don't bring** animals, snakes or bugs with you to the ED.
 - May photograph from a **safe distance**, but do not try to catch.
 - Law enforcement can assist with animal control if needed.
 - Inquire about the **rabies status** of any domestic mammal.
- Remove adjacent & distal jewelry; circumscribe any erythema.
- Venous tourniquets and wound suction are not indicated.
- Serious or deep bites (especially human & cat) need physician eval.

Notes

- Consider **ice** for animal bites & insect stings, but avoid for snakes.
- Venomous **bites in VA**: Rattlesnake, Copperhead, and Black Widow
 - May also encounter venomous bites from **exotic pets**.
 - **Tick** bites do not usually require EMS intervention.
 - This protocol does not apply to **marine** stings or bites.
- If animal is known, consider calling **Poison Control**: 800-222-1222.

Rattlesnake



Copperhead



Black Widow

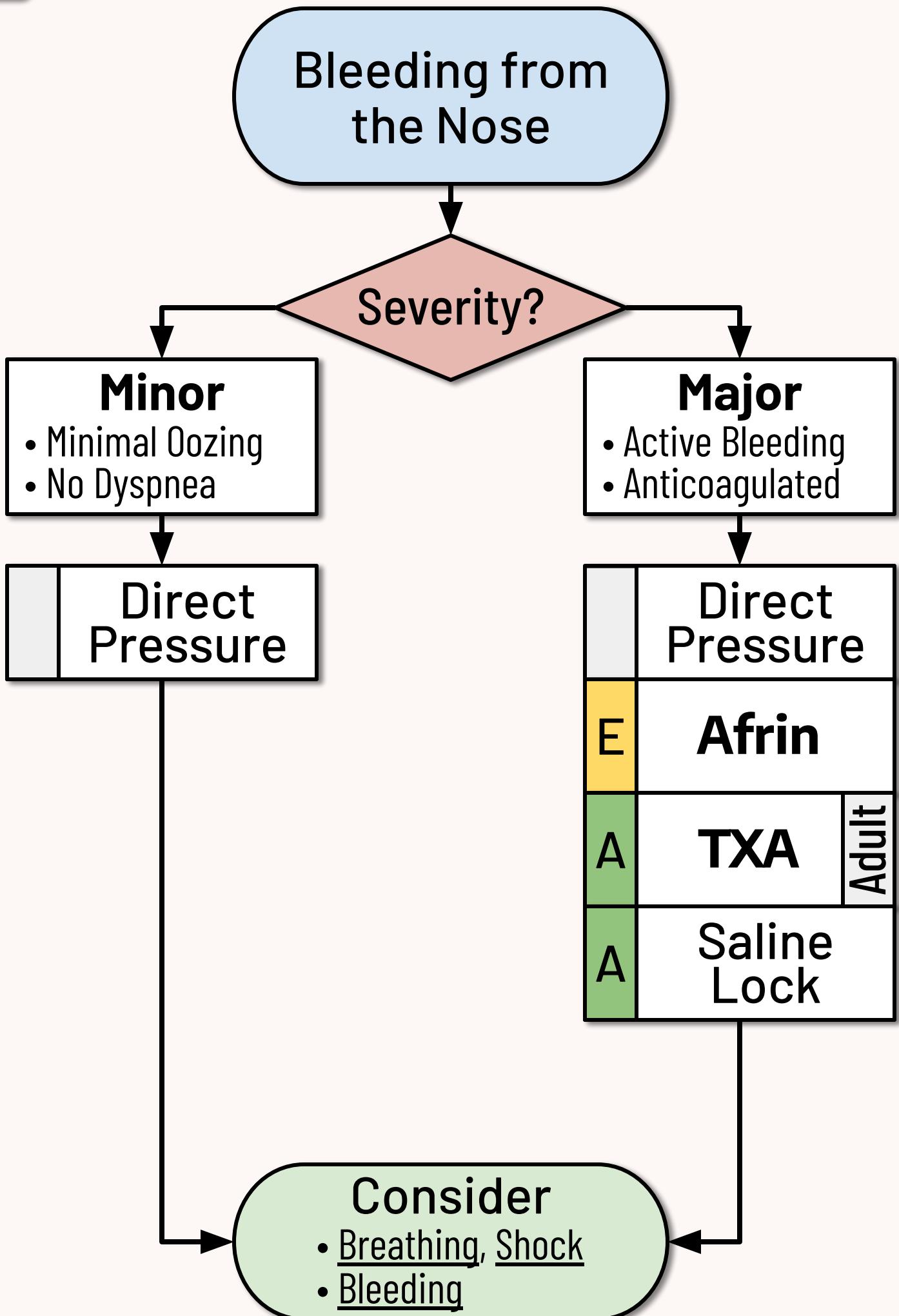


Pediatrics

- Beware Anaphylaxis with any voice changes (i.e. hoarseness).

References

- Medscape Snakebite: <https://emedicine.medscape.com/article/168828> [Ver: 5/25]
- Medscape Spiders: <https://emedicine.medscape.com/article/772196> [Ver:10/21]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 35



Afrin: 1 spray IN Q 5 min x3

TXA: 150 mg IN x1

Adult
Doses

Epistaxis Imperatives

- Have the patient lean forward & **squeeze soft part of nose** firmly.
- **If still bleeding** - instruct patient to blow clots out before meds.
- Apply meds **into affected nostril** and squeeze nose firmly again.
- **May repeat doses** of meds in other nostril if bleeding continues.

Medications

- **Afrin**[®] (Oxymetazoline): Do not use if any cardiac chest pain.
- **TXA** (Tranexamic Acid): Use **atomizer**. Avoid if known PE or DVT.

Notes

- Not all nose bleeds are traumatic. The treatment is the same.
- Check pharynx for possible **posterior bleeding**.
 - Bleeding may be **significant**.
 - More common in the elderly.
 - Anticoagulants increase risk.
 - Be ready to treat for shock.
- Anticoagulants ("blood thinners") also increase risk in:
 - Major Trauma
 - Bleeding
 - Head Injury

Anticoag Meds

- Aspirin (ASA)
- Coumadin[®] (Warfarin)
- Eliquis[®] (Apixaban)
- Plavix[®] (Clopidogrel)
- Xarelto[®] (Rivaroxaban)
- Effient[®] (Prasugrel)
- Pradaxa[®] (Dabigatran)
- Brilinta[®] (Ticagrelor)
- Lovenox[®] (Enoxaparin)

Pediatrics

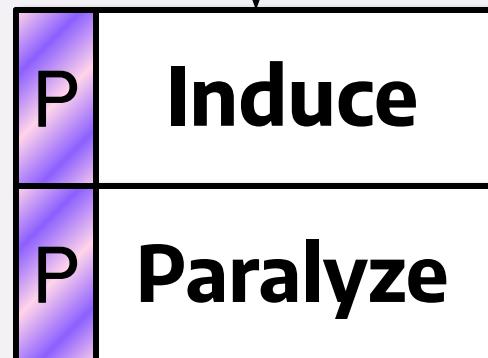
- Nose bleeds are usually from minor trauma (nose picking).
- Use Peds Reference or other approved source for peds dosing.

References

- Medscape Epistaxis: <https://emedicine.medscape.com/article/764719> [Ver: 8/23]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 29

Need
TWO RSI
Medics

Can't Oxygenate
Can't Ventilate



Primary

- Have suction ready
- Max 3 attempts

Backup

- BIAD may work better after meds

Rescue

- Be prepared for bleeding

P Intubate Adult

P BIAD

P	Bougie Cric	Adult
P	Needle Cric	Peds

Consider

- Airway, Breathing
- Sedation / Vent

Etomidate: 0.3 mg/kg IV/IO x1

Adult Doses

Ketamine: 2 mg/kg IV/IO x1

Rocuronium: 1 mg/kg IV/IO x1

RSI Mandatory Prerequisites

- In the last 12 months: pass a critical care in-service training.
 - Including **12 high fidelity** (or human) airway sims.
- In the last three months: practice **three low fidelity** airway sims.
- Ongoing **physician quality review** of all training & live attempts.
- At least two years of experience as cleared and **active ALS**.

Imperatives

- **Two (2) CC/RSI Medics** must be on scene and work together.
 - **Maximum** of two (2) attempts per provider & max three (3) **total**.
- **Monitor BP, SpO₂ and EtCO₂** with waveform. Try to maintain:
 - SpO₂ **above 90%**, EtCO₂ of **35-45 mmHg**, SBP above 90 mmHg
- **Preoxygenate** while predicting airway difficulty. Utilize **apneic O₂**.
- Utilize an **RSI Prep Checklist** and drug/vent reference materials.
- May use adjunct meds (e.g. push **pressors** if **shock index > 0.8**).
- **Video Laryngoscopy** is the standard of care; **record every case**.
 - Record the monitor/vitals and your face prior to each attempt.

Medications

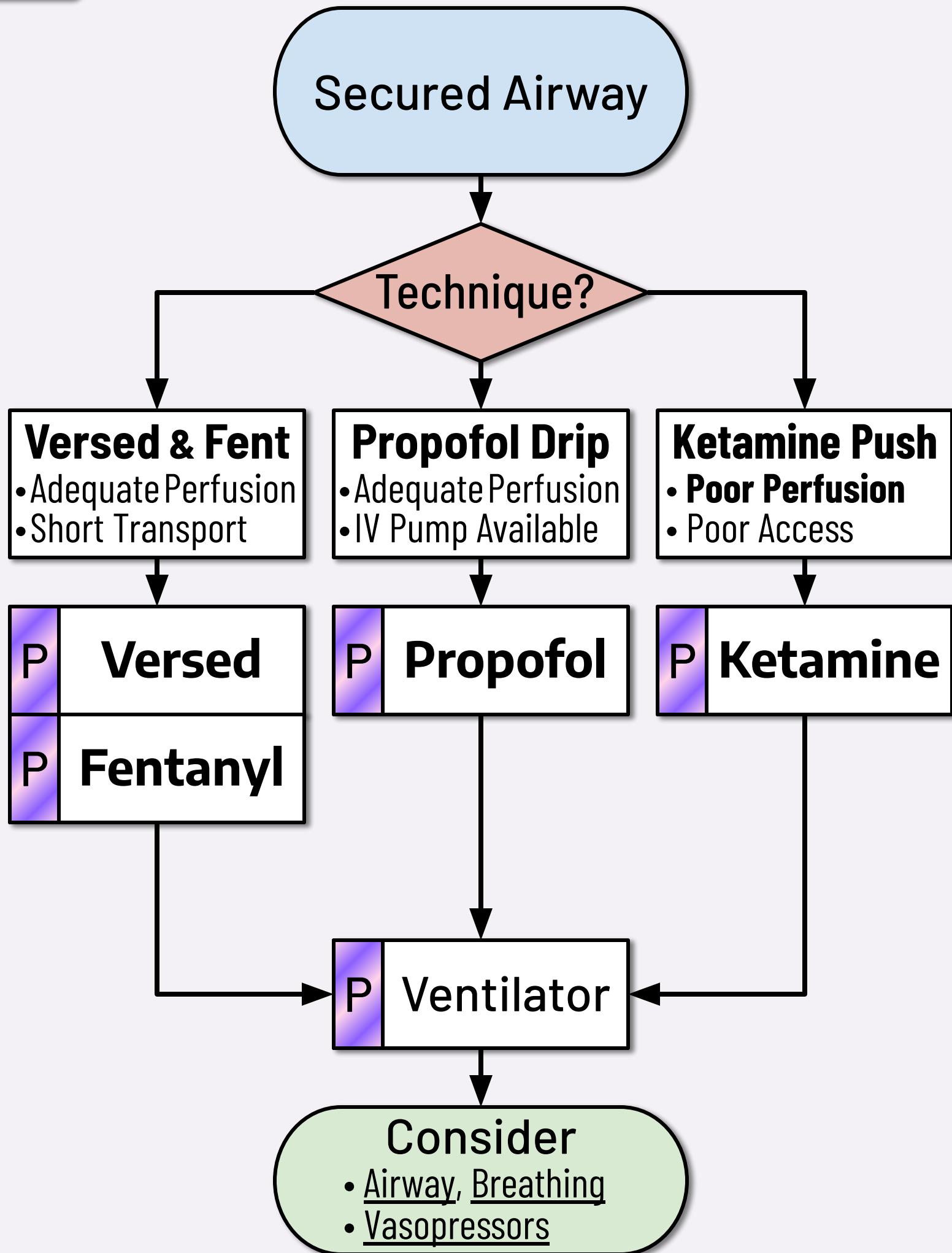
- **Etomidate** (Amidate[®]) or **Ketamine** (Ketalar[®]): Choose one.
 - Beware (uncommon) laryngospasm with **Ketamine**.
 - May give **Ketamine** & then pause for more oxygenation (**DSI**).
 - **Etomidate** is not appropriate for patients under 10 y/o.
- **Rocuronium** (Zemuron[®]): Onset - 1 min; Duration - 30 min
 - Consider a detailed **neuro exam** before paralysis

Pediatrics

- Induction & paralytics w/ a BIAD (**RSA**) is superior to ETI for peds.

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- NASEMSO Prehospital Airway: <https://nasemso.org/docs.ashx?id=1444270> [Ver: 5/23]
- NAEMSP Compendium: <https://www.tandfonline.com/toc/ipec20/26/sup1> [Ver: 2022]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 9, 10



Fentanyl: 0.5-1 mcg/kg	IV/IO	Q 30 min PRN	Adult Doses
Versed: 10-50 mcg/kg	IV/IO	Q 30 min PRN	
Ketamine: 0.5-2 mg/kg	IM,IV/IO	Q 30 min PRN	
Propofol: 50-200 mcg/kg/min	IV/IO	Titrated Drip	

Sedation / Vent Mandatory Prerequisites

- In the last 12 months: pass a critical care in-service training.

Imperatives

- Monitor patients **closely**. Sedation & vents are a delicate balance.
 - Use clinical sense and vital signs **including SpO₂ and EtCO₂**.
 - Be ready to **titrate settings** and assist with Suction and Airway.
- Use lung protective volumes w/ ventilator. Start at 4-8 mL/kg IBW.
- Elevate **head of bed to 30°** to help ventilation & limit aspiration.
- May **increase I:E ratio** (1:5) for obstructive disease (COPD, Asthma)

Typical Adult Vent Settings

- Mode: **AC (V)** • Vt: **350** mL (or 450 mL if over 6' tall)
- BPM: **12-16** /min • FiO₂: **100%** (may titrate down 40-60%)
- PEEP: 5 mmHg • PIP Limit: 35 mmHg • I:E 1:3

Medications

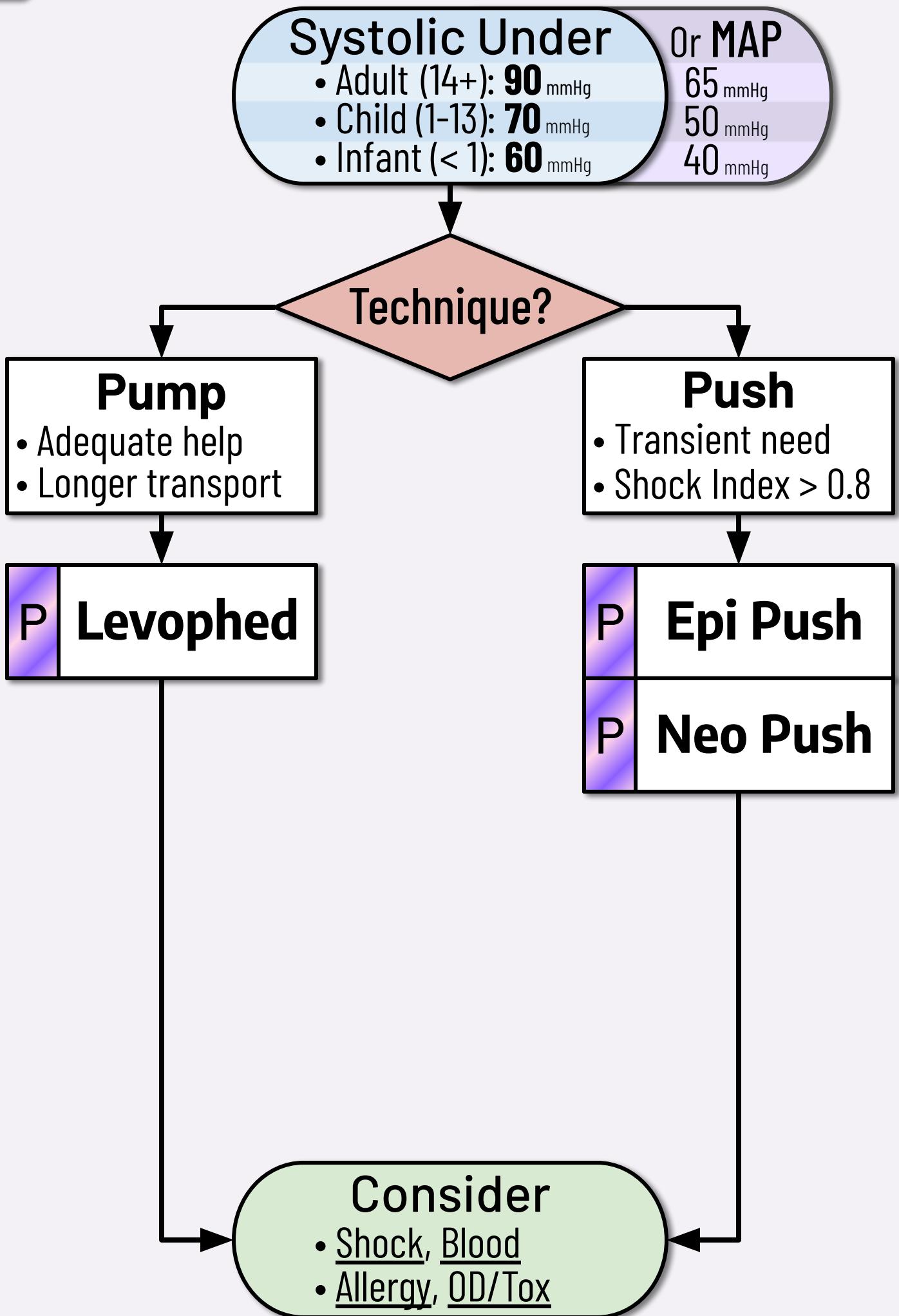
- **Fentanyl** (Sublimaze[®]), **Versed** (Midazolam[®]): Use together.
 - One without the other is unlikely to produce adequate sedation.
- **Ketamine** (Ketalar[®]): Useful for peds and asthmatics.
 - Double dose for IM (watch concentration: max 3 mL per IM inj.)
- **Propofol** (Diprivan[®]): Start gtt near **150** mcg/kg/min.
 - **Use only with an IV pump** and an accurate patient weight.
 - Titrate to effect, aim for 30-50% **reduction** in the first 30 min.
 - For elderly or debilitated: start lower (100 mcg/kg/min).
 - For peds: start higher (200 mcg/kg/min).

Pediatrics

- Use Peds Reference or other approved source for peds dosing.

References

- Medscape Sedation: <https://emedicine.medscape.com/article/809993> [Ver: 10/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 10, 27



Levophed: 5-20 mcg/min	IV/IO	Titrated Drip	Adult Doses
Epi Push: 5-20 mcg	IV/IO	Q 2 min	
Neo Push: 50-200 mcg	IV/IO	Q 2 min	

Vasopressors Mandatory Prerequisites

- In the last 12 months: pass a critical care in-service training.

Imperatives

- Anticipate & be ready for **repeat hypotension** if using push dose.
- Inappropriate use of pressors can **cause harm**.
 - Double check dose calculation (beware multiple concentrations).

Medications

- **Levophed**[®] (Norepinephrine): Good for **septic shock**.
 - **Requires a pump** - it is inappropriate to dose by gravity gtt.
- **Epi Push** (Epinephrine): Good for **anaphylactic shock**.
 - Be prepared to repeat dosing; avoid in STEMI.
- **Neo Push** (Phenylephrine): Good for elevated **shock index**.

Shock Index

$$SI = \frac{\text{Pulse}}{\text{SBP}}$$

Poor Perfusion

- Suspect if **several** of these:
 - **Altered Mental Status**
 - Skin Pale, Cool, Diaphoretic
 - Tachycardia, Hypotension
 - Dyspnea, Tachypnea

Notes

- **Shock Index** is a good predictor of hypotension from RSI.
 - Be ready with push dose pressors **if Shock Index is above 0.8**

Pediatrics

- Use **Peds Reference** or other approved source for peds dosing.
- Titrate to age-adjusted BP (vitals also listed in **Peds Reference**).

References

- ACLS: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000001376> [Ver: 2025]
- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Medscape Vasopressors: <https://emedicine.medscape.com/article/2172220> [Ver: 6/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 7, 29

Hemorrhagic Shock

Stop the Bleeding

A NS Bolus

Response?

Rapid

- Adequate Perfusion
- Good Hemostasis

Transient

- Labile Perfusion
- Poor Hemostasis

Minimal / None

- Poor Perfusion
- Internal Bleeding

A NS Bolus

P Blood

Consider

- Circulation, Bleeding
- Vasopressors

NS Bolus: 500 mL	IV/IO	PRN	Adult Doses
Blood: 1 unit	IV/IO	PRN	

Blood Mandatory Prerequisites

- In the last 12 months: pass a critical care in-service training.
- Ensure blood is **stored and maintained** per supplier's instruction.

Imperatives

- **NS vs. Blood** is a clinical decision. There is no perfect answer.
 - **NS Bolus** may be good for easily controlled external bleeding.
 - Switch to blood quickly if perfusion does not respond rapidly.
 - Providers **may start with blood** for critically unstable bleeding.
 - Use for overt massive exsanguination (**trauma**, GI, post-partum).
- **Target SBP of 90 mmHg** regardless of **NS vs Blood**.
 - Use **balanced** resuscitation in hemorrhagic shock
(Target higher if any head/spine injury or pregnancy.)

Medications

- **NS Bolus** (0.9% Saline): May skip **NS** for patients in extremis.
- **Blood** (LTOWB): **Verify** the environmental control tag.
 - Use special tubing & **heater**. Watch for **transfusion reactions**.
 - Stop immediately if any fever, dyspnea or allergic reaction.
 - **Tell the ED** about any blood administered, and any reactions.

Notes

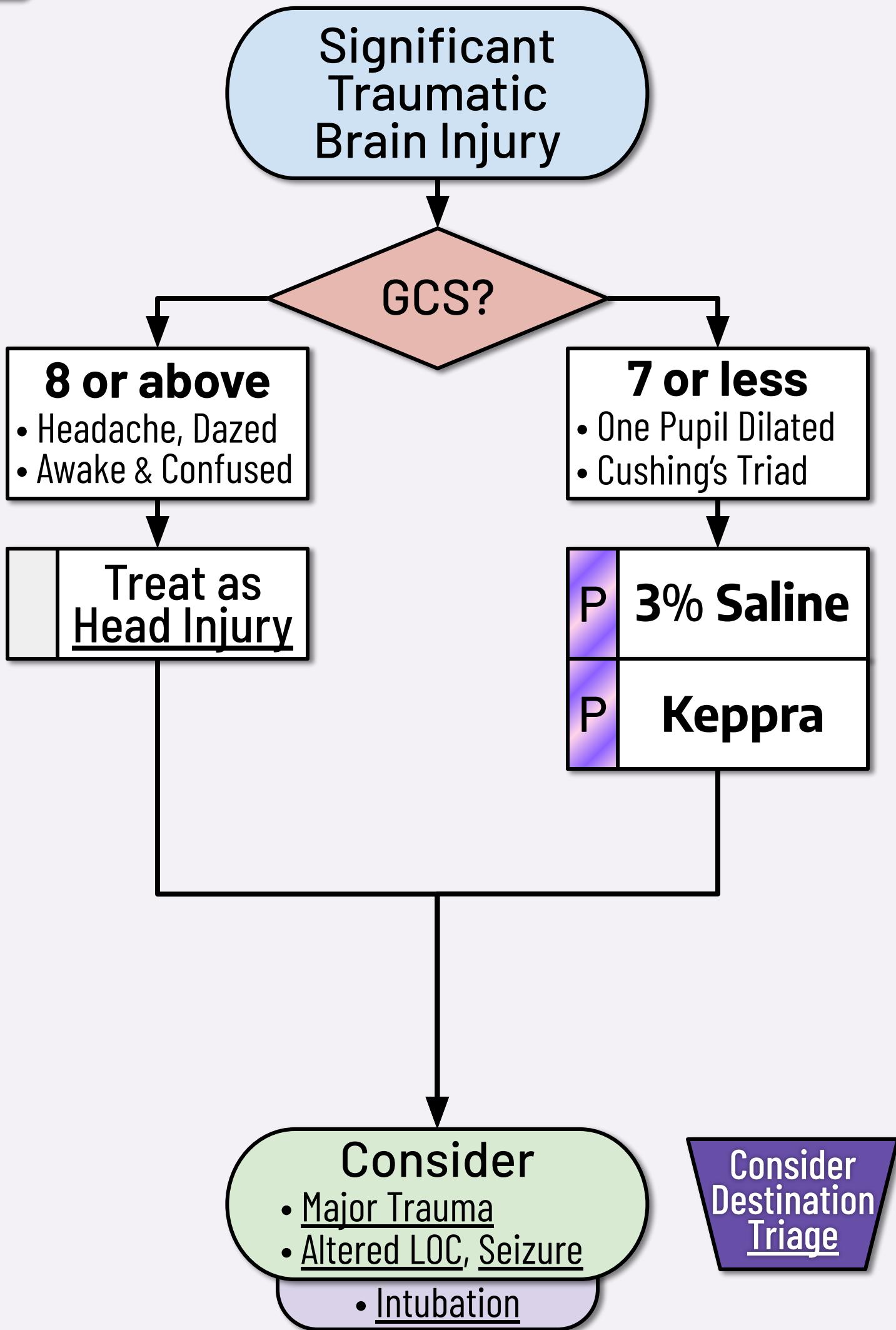
- If possible, ask about any **religious objections** before transfusion.
 - **If altered**: may check for medical jewelry or in patient's wallet.

Pediatrics

- Provide **Blood** in aliquots of **10 mL/kg**. May repeat PRN.
- Titrate to low end of age-adjusted SBP (listed in Peds Reference).

References

- PHTLS®: <https://www.naemt.org/education/trauma-education/phtls> [Ver: 10th]
- ATLS®: www.facs.org/quality-programs/trauma/education/advanced-trauma-life-support/ [Ver: 11th]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 29, 34



3% Saline: 250 mL IV/IO over 10 min

Adult Doses

Keppra: 3,000 mg IV/IO over 10 min

Elevated ICP Mandatory Prerequisites

- In the last 12 months: pass a critical care in-service training.
- Prioritize emergent transport to a Level 1 or 2 trauma center.

Imperatives

- Critical to avoid Hypoxia and Hypotension. Treat aggressively.
 - Target **SBP > 110 mmHg** and **SpO₂ 96-99%** and **EtCO₂ 35-45 mmHg**.
- Use cot to **sit patient up at 30°** if lower spine injury unlikely.
- One dilated pupil suggests herniation. Bilateral dilation is ominous.

Cushing's Triad

- Hypertension
- Bradycardia
- Irregular Resp.

Glasgow Coma Scale

Eyes	Verbal	Motor	
none	none	none	1
pain	moaning	extensor	2
verbal	words	flexor	3
normal	confused	withdraw	4
	normal	localizes	5
	normal		6

Teasdale, SG glasgowcomascale.org

Medications

- **3% Saline** (Hypertonic):
 - **Inform the ED** after use.
- **Keppra®** (Levetiracetam): May give even before any seizures.

Notes

- Seizures, Pain, Vomiting, Agitation and Fever can all increase ICP.
 - Consider symptomatic treatment but **do not delay transport**.
- Steroids, **TXA**, and/or hyperventilation are **not indicated**.
- Increased risk of intracranial hemorrhage if any anti-coagulation.

Pediatrics

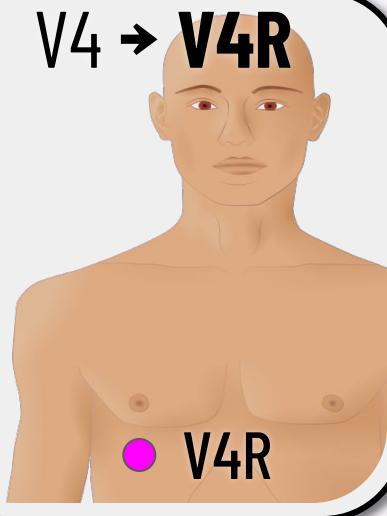
- Use Peds Reference or other approved source for peds dosing.
- Target **upper end** of age-adjusted SBP (also in Peds Reference).

References

- Medscape Head Injury: <https://emedicine.medscape.com/article/251834> [Ver: 5/22]
- ACS TBI Guidelines: <https://www.facs.org/search/?searchTerm=TBI+Guideline> [Ver: 2024]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 33, 34

**Suspected ACS
with pathologic
EKG Changes**

V4 → V4R

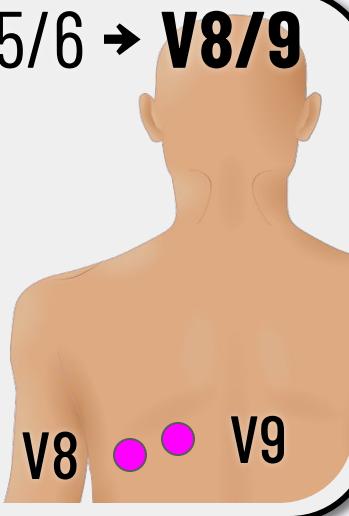


Treat for
Chest Pain

P 15-Lead
If Indicated

P Sgarbossa
V-pace or LBBB

V5/6 → V8/9



Confirm:

- Symptoms of **ACS**
- EKG with **STEMI**

P **Heparin** Adult

Consider

- Breathing, Shock
- Pain, Chest Pain

**Consider
Destination
Triage**

Heparin: 5,000 units

IV/IO

x1

Adult

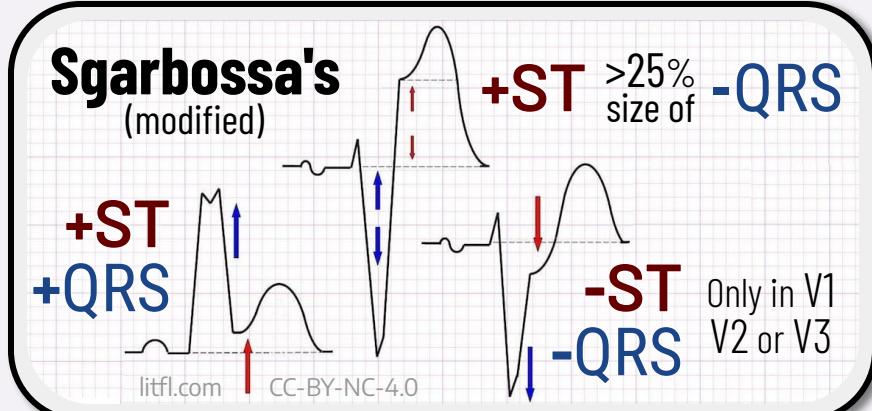
STEMI Mandatory Prerequisites

- In the last 12 months: pass a critical care in-service training.

Imperatives

- Don't forget the basics: **O₂, ASA & Nitro**. Start **IV in left hand**.
- Perform **15-Lead EKG** if: **inferior** STEMI or **septal** ST depressions.
 - ST elevation in V4R is **right sided MI** - **Nitro** may cause shock.
 - ST elevations in V8 and V9 indicates a **posterior STEMI**.
- If V-pace or LBBB: any of **Sgarbossa's** criteria suggests a STEMI.

- If **V-pace** or **LBBB**
- w/ any **Sgarbossa**
- Call a **STEMI Alert**



Medications

- Heparin** (Sodium): verify dose/concentration, give slow IV push
 - Avoid if any suspected life-threatening bleeding (UGIB, ICH, etc).

Notes

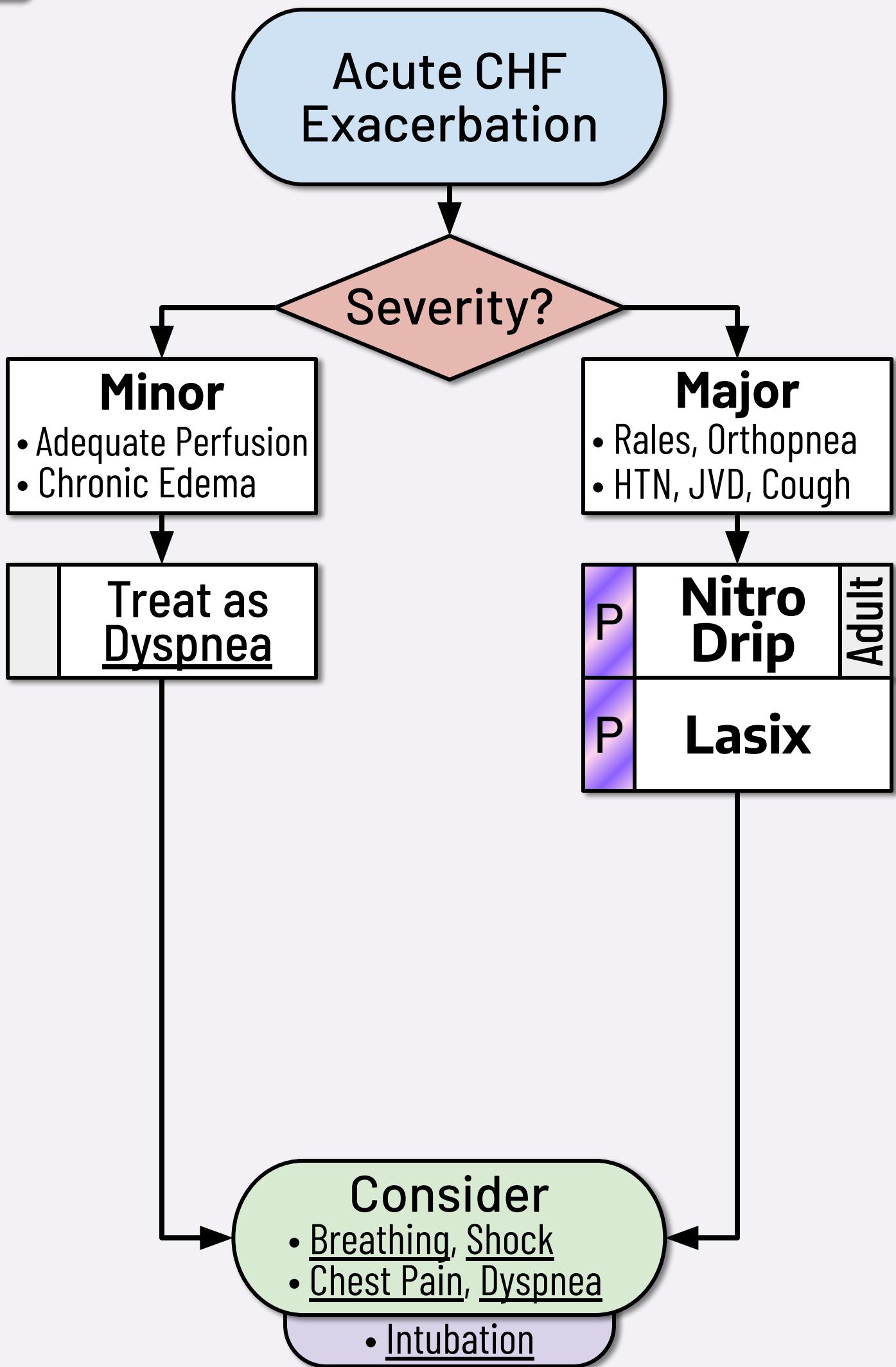
- Notify ED **ASAP**. Prepare to **go straight to cath lab** if time allows:
 - **Shave** from belt to knees, place **defib pads**, change into a **gown**

Pediatrics

- May have early repolarization on EKG that mimics ST elevations.
 - But early repolarization **does not require** EMS intervention.
- True STEMI is very unlikely in peds - search for alternate causes.

References

- Medscape AMI: <https://emedicine.medscape.com/article/155919> [Ver: 9/25]
- ACC Expert Consensus: <https://www.jacc.org/doi/10.1016/j.jacc.2022.08.750> [Ver: 11/22]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 20



Nitro Drip: 300 mcg/min	IV/IO	Titrate Down	Adult Doses
Lasix: 40 mg	IV/IO, IM	x1	

Pulmonary Edema Mandatory Prerequisites

- In the last 12 months: pass a critical care in-service training.

Imperatives

- Acute edema is usually associated with dyspnea and elevated SBP.
- Use **O₂ & NIPPV** aggressively. Be prepared to escalate airway.

Medications

- **Nitro Drip** (Nitroglycerin): Monitor very closely for hypotension.
 - **Requires a pump** - it is inappropriate to dose by gravity gtt.
 - **Titrate down** rapidly to maintain **SBP above 90** mmHg.
 - May **start with two SL tabs** (0.4 mg SL x2) while preparing drip.
 - Use caution with history of aortic stenosis or pulmonary HTN.
 - Contraindicated if recent (36 h) use of any **PDE5 inhibitor**.
 - Stop drip and consider vasopressors if persistent hypotension.
- **Lasix®** (Furosemide): Effect is delayed, but may be beneficial.

Notes

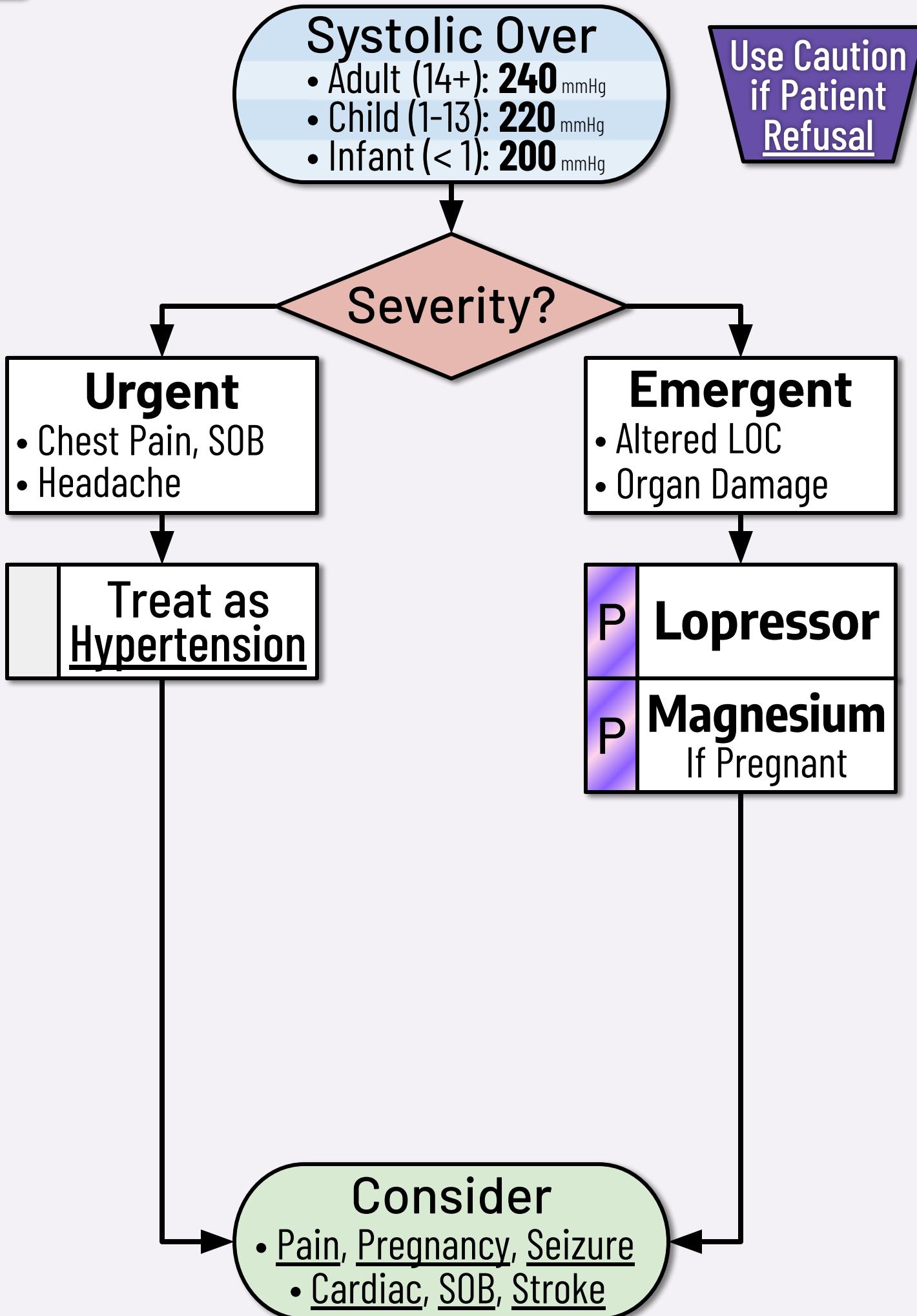
- This protocol concentrates on common **cardiac** causes of edema.
 - Non-cardiac causes still benefit from aggressive **O₂ & NIPPV**.
- Consider **Fentanyl** for chest pain or headache (or air hunger).

Pediatrics

- Use Peds Reference or other approved source for peds dosing.
- Typical CHF is unlikely. Consider structural disease or arrhythmia.

References

- Medscape Pulm. Edema: <https://emedicine.medscape.com/article/157452> [Ver: 10/25]
- ISHLT Peds HF: [https://www.jhltonline.org/article/S1053-2498\(25\)02030-3/fulltext](https://www.jhltonline.org/article/S1053-2498(25)02030-3/fulltext) [Ver: 10/25]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 20, 37



Lopressor: 5 mg IV/IO Q 5 min x2

Magnesium: 4 grams IV/IO over 10 min

Adult Doses

Malignant HTN Mandatory Prerequisites

- In the last 12 months: pass a critical care in-service training.

Imperatives

- Inappropriate use of antihypertensives can **cause harm**.
 - Consider & investigate for **underlying causes** of Hypertension.
- Focal neurologic deficits are more likely to be a Stroke.
 - Lowering BP during a stroke can **cause harm**.
- Use antihypertensives **only if organ damage** from HTN is likely.
 - Focus on underlying causes if organ damage is unlikely.

Medications

- Lopressor[®] (Metoprolol):
 - Aim for 10-20% reduction in systolic BP. Do not exceed 25%.
 - Contraindicated if SBP under 190 mmHg or pulse under 60 /min.
 - Call **Medical Control** if SBP remains elevated after two doses.
- Magnesium (Sulfate): only use for **severe preeclampsia**.
 - Severe symptoms include: HTN, HA, confusion, dyspnea, edema.
 - Consider providing for **seizure prophylaxis** if SBP > 160 mmHg.
 - Monitor **deep tendon reflexes** for toxicity - d/c if reflexes lost.

Notes

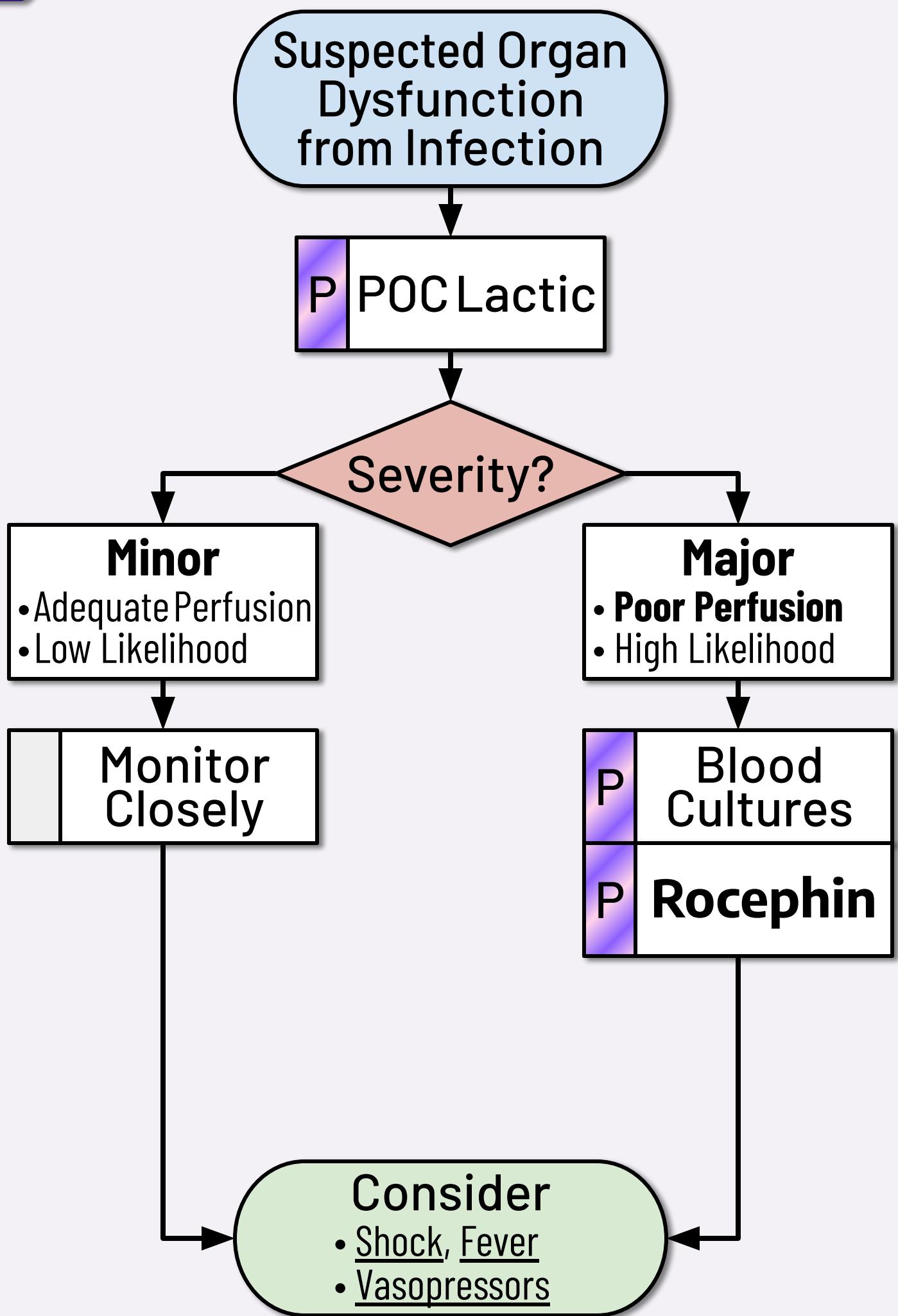
- Signs of **organ damage** from HTN may include:
 - Obvious global weakness, paralysis, seizure, encephalopathy
 - Severe headache and vomiting, mental status changes
 - Vision **loss** or blurred (not simple flashes or double vision)

Pediatrics

- Malignant HTN is unlikely in peds. Treat underlying causes of HTN.

References

- Medscape Malignant HTN: <https://emedicine.medscape.com/article/241640> [Ver: 8/24]
- Medscape Eclampsia: <https://emedicine.medscape.com/article/253960> [Ver: 8/25]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 7, 13



Rocephin: 1 gram IV/IO, IM x1

Adult

Sepsis Mandatory Prerequisites

- In the last 12 months: pass a critical care in-service training.

Organ Dysfunction

- Suspect if **several** of these:
 - Pulse > 90 /min, Lactic > 2 mmol/L
 - Resp > 20 /min, EtCO₂ < 25 mmHg
 - Temp > 100.4 °F (> 38 °C)
 - Temp < 96.8 °F (< 36 °C)
 - Decrease in mental status
 - Increased O₂ requirement

- Organ Dysfunction
- Suspected Infection
- Call a **SEPSIS Alert**



Suspect Infection

- With any **recent history** of:
 - Fever, cough, antibiotic use
 - Indwelling line / catheter
 - Open wound / decub ulcer
 - Surgery / major procedure

Imperatives

- Sepsis is life-threatening organ dysfunction caused by... infection. †
- [For possible] sepsis, we suggest measuring **blood lactate**. †
- [For] **sepsis without shock**, we recommend rapid assessment of the likelihood of infectious versus noninfectious causes... †
- [For] a **low likelihood** of infection and **without shock**, we suggest deferring antimicrobials while continuing to closely monitor... †
- [For] **septic shock** or a **high likelihood** for sepsis, we recommend administering antimicrobials immediately... †

Medications

- Rocephin**[®] (Ceftriaxone): First line for undifferentiated sepsis.
 - Monitor closely if PCN allergy; avoid if cephalosporin allergy.
 - Reconstitute with **NS** for IV/IO, and **Lidocaine** for IM.
 - Do not** use with **Calcium** - potentially fatal.

Pediatrics

- It is appropriate to **defer antibiotics** (minimal evidence for peds).

References

- Surviving Sepsis Campaign: International Guidelines 2021 †
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 24

[Ver:11/21]

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A	Saline Lock

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E	Manage OB Complication

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• Policies

1. Prepare glucometer and test strip.
2. Identify and clean site.
 - The patient may have a preference.
3. Pierce skin with lancet to obtain blood sample.
 - May alternatively obtain blood from IV attempt if meter allows.
4. Place blood in/on reagent strip per manufacturer's instructions.

Glucometer

1. Enter patient info into monitor.
 2. Prepare chest and place electrodes.
 3. Instruct pt to **lay still**. Press button on monitor to acquire 12-lead.
 4. Acquire EKG while **not moving**. Try to **minimize artifact**.
 5. Transmit EKG to ED. May contact receiving hospital to confirm.
- E** May read machine Interpretation. **I** May interpret directly.

12-Lead

1. Investigate for good site.
 - AC and wrist are common sites.
 - Try to avoid legs, forehead and jugular **unless necessary**.
 - Advance rapidly to **IO** in **emergencies**. May start w/ **IO** in a **CODE**.
 2. Clean site well. Apply a proximal venous tourniquet.
 3. Perform venipuncture with appropriate size needle/cath.
 4. Watch for flash of blood; advance catheter (do not rethread cath).
 5. Lab draw order: (culture), **blue**, (red), **gold**, **green**, **purple**, (gray)
 6. Attach lock and flush with saline. Secure well with tape.
- NOTE: It is **almost always** inappropriate for EMS to access an established indwelling central line (such as **dialysis** or **PICC line**). But EMS may consider using established lines during a **CODE**.

A **Saline Lock**



bd.com
Vacutainer
17 USC § 107

	Back Blows & Thrusts
--	-------------------------

1. Help patient **cough if able**.
2. Start with back blows (slaps) in all ages.
3. Alternate **5 back blows** (slaps) & **5 thrusts** for serious choking:
 - Adult (14+): Abdominal thrusts (Use chest thrusts if obese/preg.)
 - Child (1-13 y/o): Abdominal thrusts, Infant (<1 y/o): Chest thrusts
4. Keep going until relieved. **Begin CPR** if pt goes unresponsive.
5. Remove any overt foreign bodies from mouth before ventilation.
 - Do not perform blind finger sweeps in adults or peds.

	Suction
--	---------

1. Awake pts may suction themselves.
2. Prepare suction device with tip:
 - Oropharynx: **hard tip** (e.g. Yankauer or large bore DuCanto™)
 - **E** Nasal/BIAD/ETT/trach/stoma: **flexible cath** (french).
3. Insert tip with suction off and/or vent hole uncovered.
 - May use 2-3 mL saline to loosen secretions.
 - **E** Consider detailed trach care: remove/clean inner cannula.
4. Cover vent hole and apply suction as tip is withdrawn.

A

A	Magill Forceps
---	-------------------

1. Confirm patient is unresponsive.
2. Visualize posterior pharynx.
 - May utilize laryngoscope (average adults use Mac #3).
3. Use Magill Forceps to remove any identified foreign bodies.
 - Consider using **suction**.
4. Secure Airway with BIAD if needed.

1. Prepare appropriately sized BVM.

- Connect to high-flow **oxygen**.

- Consider a **T-piece** resuscitator (instead of BVM) for Neonates.

2. Maintain adequate mask seal. **Dual rescuers is preferred**.

- **Single**: Use E-C clamp; **Dual**: Use two handed technique.

- **Dentures** may improve seal, but remove if causing obstruction.

3. Ventilate with slow deliberate squeezing of bag.

- Assist natural rate and provide additional breaths as needed.

BVM

1. Measure appropriate OPA / NPA size:

- OPA: Corner of mouth to angle of jaw

- NPA: Tip of nose to angle of jaw (or diameter of nostril or pinky)

2a. **OPA**: Insert into mouth slowly. May use tongue blade to assist.

- Insert with **tip to nose** for adults and **tip to toes** for peds.

- Rotate into place. Remove promptly if any gagging.

2b. **NPA**: Insert into nare with slanted hole (bevel) toward septum.

- Lube tube and start on larger nare. Minor bleeding is common.

- If resistance is felt: rotate gently, try smaller NPA or other nare.

- **Use caution** if obvious facial trauma or basilar skull fracture.

E

NIPPV

1. Provide **strong** patient encouragement.

- Consider an NPA if tolerated.

2. Start the flow of oxygen to the mask. Set **basic mask at 7.5 cmH₂O**.

- Alternate: use CPAP or BiPAP mode on vent w/ OMD approval.

- Start vent **CPAP at 7.5 cmH₂O** and **BiPAP at 10/5 cmH₂O** (IPAP/EPAP)

3. Place the mask over patient's nose and mouth and tighten straps.

- Ensure **adequate seal** by adjusting placement and strap tension.

4. May use on semi-conscious patients, but must **monitor closely**.

- **Remove promptly if any vomiting** or hypotension.

5. **I** Consider treatment of anxiety to assist with compliance.

6. May titrate pressures: higher if hypoxic, lower if hypotensive.

- Likely beneficial to use **nebulizers in-line** if indicated & able.

1. Prepare appropriately sized device:
- Average adults use **iGel #4 (green)**.
2. Follow **manufacturer's guidelines**. Apply appropriate **lube**.
- Open mouth and pull jaw & tongue forward (or use jaw thrust).
3. Insert BIAD into pharynx. Follow curve of the palate and tongue.
- Stop when resistance is felt and teeth are near the **depth line**.
- May rotate to facilitate insertion. Rock gently to seat in airway.
4. Confirm placement. Secure well with tape or other device.
- Use auscultation, capnometry, EtCO₂ and SpO₂ if available.
5. If BIAD fails, **try again with a different size**.
- Most common failure of a BIAD is **inappropriate size**.

E

BIAD

1. Measure appropriate tube depth:
- Tip of nose to the stomach
2. Only place a prehospital OG-tube with an **appropriate airway**.
- Lube the OG-tube and insert into airway device as designed.
- Advance the tube gently until the appropriate depth is reached.
3. Confirm placement: inject air & listen for bubbles in the stomach
4. Secure tube and **attempt to aspirate** gastric contents.

A

OG-Tube

1. Identify side and clean best site:
- Peds: 2nd intercostal midclavicular
- Adults: **4th or 5th intercostal anterior to midaxillary line**
- Consider Finger Thoracostomy if indicated & cleared for CC.
2. Insert large (12- or 14- gauge) IV needle into the skin at 90°
- Preferably use a needle **specifically made** for decompression.
- Go just over the top of the rib to minimize bleeding.
3. Advance until a "pop" is felt and / or you hear a hiss of air.
- Hold needle in place, **advance cath only** the rest of the way.
4. Remove the needle, leaving the plastic cath. Apply a **chest seal**.
5. Vent chest seal or **repeat decompression** if dyspnea returns.
- **Remove** chest seal if using positive pressure (e.g. BVM, NIPPV).

I

Pleural Decompress

1. Confirm no pulse and not breathing.

2. Place hands on chest:

- Adult (14+): Two hands w/ fingers interlaced over center of chest

- Child (1-13): One hand over center of chest

- Infant (<1): Two hands circling chest using thumbs

3. Push hard and fast. Compress about 1/3 the depth of the chest.

- Make sure to allow full **chest recoil** between compressions.

4. **Minimize interruption.** Switch providers every 2-5 min as needed.

NOTE: May switch to a **mechanical CPR device** after the first 2 min.

Chest Compression

1. Cut clothes to expose chest.

- Consider shaving excessive hair.

- Remove any medication patches. Wipe off residue.

2. Apply defibrillator pads. Avoid implanted devices or catheters.

3. When indicated, stop compressions and analyze cardiac rhythm.

E Use AED "analyze" function. **I** May interpret directly.

4. If shock indicated: **charge defibrillator while continuing CPR.**

- Start at max, or follow manufacturer's or OMD's dosing guideline.

- Use Peds Reference or other approved source for peds dosing.

5. **Assertively state "CLEAR!"** Visually confirm everyone is clear.

6. Defibrillate by pressing **SHOCK**. **Restart CPR immediately.**

- Consider moving the defib pads (**vector change**) if refractory.

- Routine use of double sequential defib is not recommended.

Defib

1. Prepare IO device and select site.

- Consider pre-treating for Pain.

- **Tibial plateau & humeral head** are typical. Follow OMD guidance.

2. Insert IO following manufacturer's recommended procedure.

3. Secure well with bulky dressing or other manufactured device.

4. Consider admin of low-dose Lidocaine for local discomfort.

A

IO

A Lidocaine: 10 mg IO Q 5 min x3 PRN Pain **Adult**

5. Consider using a pressure bag to increase fluid rates if needed.

	Wound Care
--	------------

1. Apply **direct pressure** for bleeding.
 - Consider tourniquet or packing.
2. If bleeding is easily controlled, irrigate contaminated wounds.
 - Maximize **flushing** gross contamination out of large wounds.
 - Consider pre-treatment of Pain before significant **flushing**.
3. Cover wounds with sterile gauze and apply appropriate dressing.
 - Monitor and **document distal pulse**, movement and sensation.
 - Cover **burns** with non-adherent gauze and sterile burn dressing.
 - Apply a **chest seal** (occlusive) to any neck or trunk penetration.
 - **Remove** chest seal if using positive pressure (e.g. BVM, NIPPV).

	Tourniquet
--	------------

1. Apply **direct pressure** for bleeding.
 - May remove ineffective bystander TQs.
2. Apply tourniquet proximal to bleed per manufacturer instruction.
 - May consider purpose made device (e.g. **junctional** TQ, ITclamp)
3. **Tighten** until bleeding is controlled. **Secure windlass** in place.
 - Consider placing second tourniquet if bleeding continues.
 - Consider treatment of Pain. Do not place over bony joints.
4. **Record time** on tourniquet or directly on the patient's skin.

	Wound Packing
--	---------------

1. Apply **direct pressure** for bleeding.
 - If stable, consider simple wound care.
 - If massive bleeding from a limb, consider a tourniquet.
 - Packing is ideal for **junctional injury** (neck, axilla, groin).
 - Do not pack skull or thorax wounds. Do not pack natural orifices.
2. If bleeding continues, **wipe** gross blood and clot out of wound.
3. Insert packing inch by inch as deep as possible into wound.
 - Avoid rapidly stuffing a large wad. **Pack deep** and deliberately.
 - Insert as much packing into the wound as possible.
 - **E** May use hemostatic agents (e.g. QuikClot®, XSTAT®)
4. Re-apply **direct pressure** on top of packing. Treat for pain.

1. Provide **manual** cervical SMR.
2. Prepare appropriately sized **c-collar**.
 - Apply c-collar while maintaining manual cervical SMR.
3. **Use adjuncts** to minimize all spinal motion while transferring.
 - Such as: backboard, scoop stretcher, vacuum mattress, etc.
 - May try gentle **self-extrication** from a vehicle (with a c-collar).
4. Once on the cot, **adjuncts may be removed** if appropriate.
 - Awake, compliant patients can be safely secured with seat belts.
 - May sit up (to 30°) if no pain/tingling to maintain an airway.
5. Manual cervical SMR may be released if the patient will hold still.
 - Otherwise: secure the head to an appropriate adjunct.

NOTE: Some patients (due to size, age or anatomy) will not be appropriate for standard equipment. Never force a patient into a non-neutral position. Use alternate techniques or manual SMR.

1. Provide manual immobilization.
2. Expose area: remove or cut clothes.
3. Check and **document distal pulse**, movement and sensation.
4. May gently return to **near anatomic** alignment & secure splint.
 - Splint in position found if any significant pain or resistance.
5. Recheck and **document distal pulse**, movement and sensation.
 - Reapply or remove the splint if any decline in distal function.

NOTE: Consider a **traction splint** for an isolated femur fracture.

1. Confirm **no pulse distal to injury**.
2. Consider pre-treating for Pain if able.
3. Manually reduce injury and splint in anatomic neutral position.
4. Recheck and **document distal pulse**, movement and sensation.

1. Inspect wound for stinger.
2. If visualized, scrape stinger away.
 - Use tool with firm edge, like a credit card. Do not use tweezers.

	SMR with C-collar
--	--------------------------

	Splint
--	---------------

E	Reduce Deformity
---	-------------------------

	Stinger Removal
--	------------------------

- Some toxins have unique antidotes.
 - Only **major symptoms** need treatment.
- Most indications listed below **require online orders** (and dosing).
 - Call the **toxicologist at Poison Control** or the ED (or OMD).
- A few antidotes are included in other protocols.
 - If indicated, may follow those standing orders.
- Don't forget the basics: **O₂** for any inhaled toxins
 - **Narcan** for hypoxia; **NS Bolus** for shock.

**Administer
Antidote**



I	Atropine : <u>Bradycardia</u> , Cholinergics
I	Benadryl : <u>Dystonia</u> , Neuroleptics
I	Bicarb : <u>Hyper K⁺</u> , Wide QRS, ASA, TCA, SS/SNRI
I	Calcium : <u>Hyper K⁺</u> , Ca-Blocker OD, HF Acid burns
	Charcoal : PO Toxins (not caustics or metals)
A	CyanoKit : Cyanide (ingested or inhaled)
A	D10 : <u>Hypoglycemia</u> , Sulfonylurea OD
	DuoDote : Organophosphates, Nerve Agents (WMDs)
A	Glucagon : <u>Hypoglycemia</u> , β & Ca-Blocker OD
I	Magnesium : <u>Torsades</u> , Prolonged QTc
	Narcan : <u>Opiates</u> (only for hypoxia), Clonidine OD
A	Versed : <u>Seizures</u> , Anticholinergics

Adult Antidotes

References

- Medscape Anticholinergics: <https://emedicine.medscape.com/article/812644> [Ver: 6/24]
- Medscape ASA: <https://emedicine.medscape.com/article/1009987> [Ver: 5/24]
- Medscape β-Blockers: <https://emedicine.medscape.com/article/813342> [Ver: 9/23]
- Medscape Ca-Blockers: <https://emedicine.medscape.com/article/2184611> [Ver: 4/23]
- Medscape Cyanide: <https://emedicine.medscape.com/article/814287> [Ver: 5/25]
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- Medscape Hydrofluoric acid: <https://emedicine.medscape.com/article/769336> [Ver: 10/21]
- Medscape Organophosphate: <https://emedicine.medscape.com/article/167726> [Ver: 3/23]
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- Medscape Tricyclics: <https://emedicine.medscape.com/article/819204> [Ver: 6/24]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 25

I

Pacing

1. Place defib pads **and EKG limb leads.**
 - Consider pre-treating for Pain.
 - Wipe off any topical meds. Avoid implanted devices or catheters.
2. Place monitor in "pacing" mode.
 - Select initial rate of **80 bpm** for adults.
 - Use Peds Reference or other approved source for peds **rate**.
 - Alternate: follow manufacturer's or OMD's rate guideline.
3. Slowly increase mA output until electrical capture is noted.
 - Watch for pacer spikes with corresponding QRS on EKG screen.
 - Typical initial target energy is around **80 mA** for **all patients**.
4. Once electrical capture is noted, check for mechanical capture.
 - Pulse should correspond to electrical activity on EKG screen.
5. Continue to increase mA output if no mechanical capture.
6. Maintain a balance between pt comfort and medical necessity.
 - Treat Pain and/or Anxiety from pacing as soon as appropriate.
 - Consider reducing energy if appropriate.

I

Cardiovert

1. Place defib pads **and EKG limb leads.**
 - Consider pre-treating for Pain.
 - Wipe off any topical meds. Avoid implanted devices or catheters.
2. Enable **SYNC** mode and charge to **200 J** for adults.
 - Use Peds Reference for initial (and escalating) doses in peds.
 - Alternate: follow manufacturer's or OMD's dosing guideline.
 - If monitor unable to SYNC: disable SYNC and use regular defib.
3. **Assertively state "CLEAR!"** Visually confirm everyone is clear.
4. Cardiovert by pressing **and holding** the **SHOCK** button.
 - There may be a noticeable delay before energy is delivered.
5. Reassess patient and rhythm. Repeat (or escalate) as needed.
 - Treat Pain and/or Anxiety from shock as soon as appropriate.
 - Consider moving the defib pads (**vector change**) if refractory.

E

Deliver Baby

1. **Expose patient.** Have a chaperone.
 - Visually inspect vaginal area.
2. Identify presenting part. Prioritize **transport if not crowning.**
 - If any problems, manage complications and transport ASAP.
3. **Support & deliver head.** Try to prevent explosive birth.
4. **Check for cord around neck.** Reduce over the head if found.
5. **Deliver shoulders.** Deliver top shoulder first.
 - May flex mom's legs to chest to assist.
 - May press on mom's lower abdomen to assist.
6. Deliver body. Caution: **neonates are slippery.**
7. Manage Neonate. (Stimulate, warm, clean, dry.)
 - May place baby on mothers chest for skin-to-skin contact.
 - May encourage breastfeeding after uncomplicated delivery.
8. Keep baby level with mom and **delay cord clamping** ~60 sec.
 - Clamp about **6-10 in. away** from the baby. Cut between clamps.
 - Leave a long viable stump for the ED to use (for lines & lab draw).
9. Massage mother's lower abdomen (fundal massage).
 - This should help stop postpartum bleeding.
 - **A** If poor perfusion: **TXA** (Tranex. Acid): **2 g IV/IO over 10 m**
10. Prepare for delivery of the placenta. Do not pull on the cord.
 - Take the placenta to the hospital with mom and baby.

E

Manage OB Complication

1. **Prioritize emergent transport to a facility with OB/GYN services.**
2. Tell mom: **Do Not Push.** EMS can do very little for **preemies, twins or breech** birth.
3. Provide standard care: Breathing, Pain, etc.
4. Try to help during transport.
 - Failed Delivery / Shoulder Dystocia: transport knees to chest
 - Prolapse: don't handle cord, relieve pressure using fingers in vagina
 - Breech: do not pull; elevate presenting part if pressing on cord

Consider
Destination
Triage



RSI Prep Checklist

1. Consider a standardized checklist.
- E.g: https://bit.ly/NRVEMS_CCAirway
2. **Preoxygenate:** Give 100% FiO₂ with adjuncts, prep for apneic O₂
3. **Resuscitate Before Intubate:** IV, O₂, monitor, EtCO₂, BP, Pressors
4. **Plan & Predict:** Why not BIAD? LEMON eval, brief the team
5. **Prepare:** ETT, rigid stylet, 10 cc syringe, video scope, suction
6. **Position:** Record monitor & medic, maybe cric pressure
7. **Push Meds:** Syringes labeled, doses double checked
8. **Place Tube:** Watch ETT through cords, secure w/ tape or device
9. **Prove It:** Confirm two ways, use waveform capnography
10. **Post-Intubation Care:** Sedation & Vent, OGT to suction, document



Ventilator

1. Attach appropriate **patient circuit**.
2. Attach high pressure **oxygen hose**.
3. Inspect fresh gas & emergency air intake filters.
4. **Power on** the vent and configure operating mode & parameters.
5. Perform operational test and **attach to patient**. Monitor closely.

Typical Adult Vent Settings

- Mode: **AC (V)**
- Vt: **350 mL** (or 450 mL if over 6' tall)
- BPM: **12-16 /min**
- FiO₂: **100%** (may titrate down 40-60%)
- PEEP: 5 mmHg
- PIP Limit: 35 mmHg
- I:E 1:3

6. Use a standard **troubleshooting** algorithm like "DOPE":
 - Investigate any **warnings** promptly while monitoring pt closely.
 - Immediately remove vent and **use BVM** for any critical **alarms**.
7. Think **Dislodgement, Obstruction** or **PTX** if poor BVM response.
8. **Titrate vent** settings to patient response.
 - **Hypoxia:** increase FiO₂, and/or PEEP (and/or minute volume)
 - **Hypotension:** decrease PEEP (and/or tidal volume)
 - **Breath Stacking** (e.g. COPD, asthma): increase I:E (1:4 or 1:5)

P

Cric

1. Confirm all alternatives have failed.

2. Prepare supplies and **suction**.

3. **Locate cricothyroid** membrane. **Clean skin** if time allows.

- Visualize spot under thyroid cartilage and above tracheal rings.

4. Use **Bougie** for adults or **Needle** for peds.

4a. **Bougie**: Expect blood, this is a tactile skill.

- Make large **vertical incision** through skin.

- Find the cricothyroid membrane w/ finger.

- Stab **horizontal incision**, bubbles are good.

- **Insert a bougie**, then a **trach** over bougie.

(Or #6 ETT: advance 1-2 cm past balloon.)

- **Inflate balloon** taught. Remove bougie.

4b. **Needle**: Use small syringe with saline.

- Attach 10-12g needle & cath. Insert at 90°.

- Pull suction. Advance slowly till bubbles.

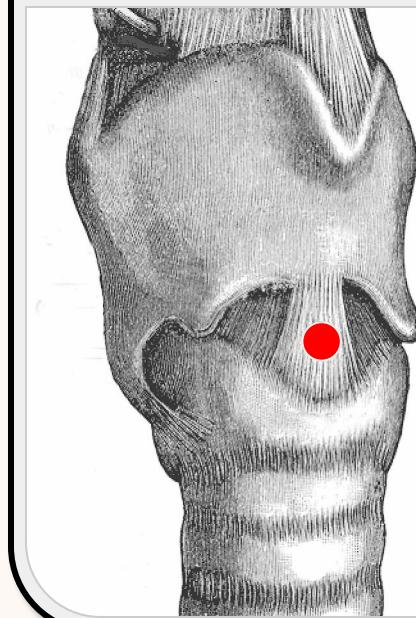
- Angle down. Advance cath. Remove needle.

- Use Transtracheal Jet Insufflation device.

5. **Confirm** placement. **Secure** well w/ tape or manufactured device.

- Use auscultation, clinical response, skin color, SpO₂ and/or EtCO₂.

Cricothyroid Membrane



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1. Confirm **pulseless and apneic**.

- **Clean skin** if time allows.

2. **Locate the rib** at the nipple (or just above).

3. Cut along the rib, all the way down to bone.

- From the anterior to mid-axillary line.

4. Press **kelly clamp** firmly through the cut.

- Go just **above the rib**, pop into pleura.

5. Spread the clamp to make a bigger hole.

- Listen for air, feel for lung, check pulse.

6. Remove the clamp and insert your finger.

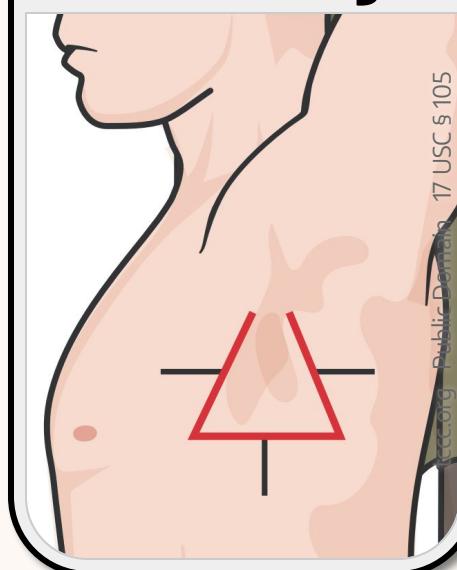
- Listen for air, feel for lung, check pulse.

7. Place vented chest seal. Give **Ancef 2 g IV**.

- Place suction in hole if massive bleeding.

Finger Thoracostomy

Safe Triangle



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Reviewed: Jun 2025

Page 110 - Abuse

- Patient Abuse and Neglect
- Infant Abandonment



Page 111 - Bystanders, Orders

- Verification of On Scene Personnel
- **Physician** Orders



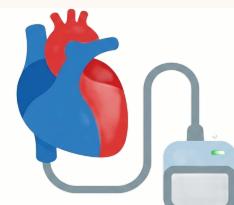
Page 112 - Termination

- Withholding Resuscitation
- **Termination** of Resuscitation



Page 113 - Cardiac Devices

- IABP, TVP, ZOLL® LifeVest
- Left Ventricular Assist Devices (**LVADs**)



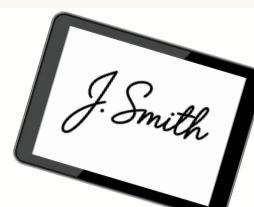
Page 114 - Standbys, Police

- EMS Standbys, Scene **Rehab**
- Law Enforcement Assistance



Page 115 - Refusals

- Patient **Refusals**
- Who is a Patient



Page 116 - Destination

- Destination **Triage** Plan
- STEMI, Stroke, Trauma



Page 117 - Deceased, MCI

- Deceased Subjects
- Mass Casualty (**MCI**s)



Patient Abuse and Neglect

- Abuse in this policy is considered any physical, sexual and / or mental injury of any child, domestic partner, senior citizen, or incapacitated adult by another person through commission or omission. Abuse may be at the hand of a partner, parent, caregiver, spouse, neighbor, or adult child of the patient. The recognition, appropriate reporting, and referral of abuse is a critical step to improving patient safety, providing quality health care, and preventing further abuse. This also ensures EMS compliance as **Mandatory Reporters** under the Code of Virginia 22 VAC 30-100-15.
- Be aware of the potential for abuse in all patients. In any case where abuse is suspected, first **protect the EMS team** and patient from harm. Collect as much information as possible and preserve physical evidence if able. Signs of abuse may include:
 - **Physical:** injuries that are inconsistent with the reported mechanism, injuries in different stages of healing, defensive injuries (e.g. to forearms), or injuries during pregnancy
 - **Psychological:** excessive passivity, compliant / fearful behavior, excessive aggression, violent tendencies, excessive crying, behavioral disorders, substance abuse, or med non-compliance
 - **Neglect:** inappropriate level of clothing for weather, inadequate hygiene, inattentive caregiver, or malnutrition
- Immediately report any suspicious findings to both the receiving hospital (if transported) and social services and/or police:
 - For **adults** contact Adult Protective Services at 888-832-3858.
 - For suspected **human trafficking**, involve the police and provide patient with the National Trafficking Hotline at 888-373-7888.
 - For **domestic violence** offer law enforcement intervention and provide the patient with the National Hotline, 800-799-SAFE.
 - For **children** contact Child Protective Services at 800-552-7096.

Infant Abandonment

- The Code of Virginia (§18.2-371.1 B.2) **allows** a new parent to **surrender their newborn** to a hospital or EMS agency under certain circumstances. EMS providers should accept without hesitation, assess, and transport any infant surrendered to them.

Verification of On Scene Personnel

- The delivery of prehospital care at the scene of an emergency is the responsibility of the **responding EMS resources**. Occasionally, bystanders may be crucial to providing or assisting with treatment. Bystanders can be considered when the immediate needs outweigh the EMS resources available, or if a bystander can provide a unique resource. EMS should never authorize or perform any intervention outside their scope **or knowledge/comfort level**.
- Bystanders may have a unique understanding of a specialized **medical condition or device**. EMS should consider the advice of patients or bystanders such as: case workers/patient aides, or mental health professionals, or caretakers managing a vent at home, or a patient with an LVAD, etc. EMS must call **Medical Control** for any orders to deviate from routine EMS care.
- **BLS procedures** are frequently taught as a component of common first aid. Appropriate bystanders may assist with common first aid when EMS resources are insufficient. EMS must direct bystanders and maintain overall responsibility.
- **ALS interventions** are only appropriate by responding ALS resources. A formal mutual aid agreement or authorization by **Medical Control** must exist prior to delivery of ALS interventions. EMS has no authority to enable non-EMS medical personnel (RN, NP, PA, CRNA, RT, etc.) to perform ALS interventions.

Physician Orders

- Physicians represent a unique resource. EMS may follow written or verbal orders from a patient's established physician. EMS may also follow **appropriate** verbal orders from a physician bystander on scene. EMS should only consider verbal orders outside these protocols **if the physician bystander accompanies EMS** to the hospital. Call **Medical Control** if there is any conflict.

Withholding Resuscitation

- Resuscitation is not appropriate if efforts are futile or against the patient's explicit wishes. **Withhold resuscitation if any signs of obvious death, mortal injury, or if the patient has a DNR / POST.**
- Ask about a DNR / POST for any **hospice or nursing home** patient.
- EMS should attempt to validate any DNR / POST with family or health care workers. Begin resuscitation and call **Medical Control** if there is any question. EMS may stop resuscitation once verified.

Termination of Resuscitation

- Transportation during resuscitation is not optimal and exposes EMS crews to significant risk. This policy balances the potential benefit of prolonged resuscitation against the risks of emergent transport.
- **Prioritize transport for any special case.** If attempting resuscitation, these special cases may benefit from resources not available in the field. Prioritize compressions and AED and transport ASAP.
- **I** ALS should resuscitate on scene for non-special cases. Call **Medical Control** if no ROSC **within 30 min.**
- **E** BLS should try to turn over care to ALS (or a hospital) within 15 min. **Prioritize transport if a hospital is within 15 min.** Extended BLS resuscitation beyond 15 min may still be successful if the arrest is witnessed by EMS or if any shock is ever advised by the AED. Prioritize **transport if witnessed by EMS or if any shock is ever advised regardless of time** to the hospital. Call **Medical Control** if not witnessed by EMS, and not shocked, and no ALS after 15 min.

Special Cases

- Suspected Traumatic Cause
- Pediatric or Pregnant Patients
- Hypothermia or Drowning
- Lightning or Electric Shock
- Overdose or Poisoning

ALS Termination

- Not a **Special Case**
- No ROSC within **30 min**

BLS Termination

- Not a **Special Case**
- Not witnessed by EMS
- Never shocked by AED
- No ALS within **15 min**
- No ROSC within **15 min**

Advanced Cardiac Devices

- EMS providers may occasionally encounter exotic devices such as:
 - Wearable defibrillator (e.g. **ZOLL® LifeVest**)
 - Intra-Aortic Balloon Pump (**IABP**)
 - Transvenous Pacemaker (**TVP**)
 - Left Ventricular Assist Device (**LVAD**)
- **Bring all device supplies** and paperwork to the ED with you.
 - **Bring all batteries**, cords, documentation and wallet cards.
 - Consider destination triage in consultation with **Medical Control**.
- Diagnosing device problems is complex.
 - **Do not unplug or remove anything.**
 - When in doubt, follow regular protocols.
 - Call **Medical Control** with any questions.
 - Consider the advice of the patient and any trained bystanders.
 - Some devices may provide **voice prompts** for troubleshooting.
- Routine management of these devices is **outside the scope** of EMS.
 - The patient's life literally depends on these complex devices.

Consider
Destination
Triage

Left Ventricular Assist Devices (LVADs)

- All **LVAD** patients will have an assigned "**LVAD center**".
 - The patient should have the emergency contact phone number.
 - EMS may try to **contact the LVAD center** with any problems.
 - Call **Medical Control** to verify any recommendations.
- LVAD patients may be alive and well **without a palpable pulse**.
 - It may be impossible to palpate or auscultate a blood pressure.
 - Do not start CPR on patients who are obviously alive and well.
- An LVAD can make **diagnosis of arrest** very difficult.
 - Look for other signs of life and listen for pump noise.
 - Chest compressions may harm a ventricular assist device.
 - Consider the advice of trained bystanders or the LVAD center.
 - Call **Medical Control ASAP** for any **unconscious LVAD** patient.

EMS Standbys

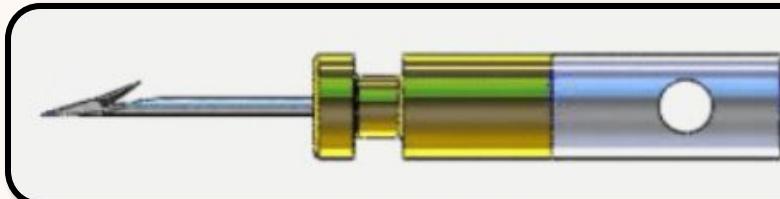
- EMS may be utilized to standby at a scene without a specific pt.
- EMS should complete a full report for any patients or treatments.
 - Consider simple interventions such as PO pain meds and ice.
 - Document a refusal if any patient declines transport.

Scene Rehab

- EMS may provide rehab for **large scenes** like structure fires, etc.
 - This may include abbreviated screening and / or treatment.
 - Rehab is **only applicable to fellow first responders**.
- EMS should coordinate all activity with incident command.
- Standard rehab includes a specific area dedicated to **medical ops**.
 - Rehab generally involves checking vital signs and simple exam.
 - Provide PO fluids and food. Monitor until back to baseline.
 - An abbreviated record may be substituted for a full report.
 - Incident command will dictate who may return after rehab.

Law Enforcement Assistance

- EMS may be called to evaluate a patient in custody.
 - Always offer transport. EMS can **never recommend** a refusal.
 - EMS can provide treatment, but cannot "clear" a patient.
 - Officers may elect to decline transport, but should sign a refusal.
 - Officers should accompany any patient in custody.
 - Call **Medical Control** if there is any conflict.
- EMS may remove CEW (**Taser™**) probes as part of wound care.
 - EMS should document a full report.
 - Officers may sign a refusal for a person under their arrest.
 - Probes are small straight barbs. Stretch skin tight and pull out.
 - The **barb is in-line with the score mark** on the probe.



←
Score Line

Patient Refusals

- Refusals represent a unique medical risk. EMS should complete a formal refusal with **2 sets of vitals**, and **a witness signature** for any patient who declines any intervention and / or transport.
- EMS should encourage treatment and transport for every patient.
 - **Never refuse transport. Never encourage a refusal.**
- All patients who wish to refuse must be **eligible** to make their own decisions. Eligible patients include:
 - Legal Adults (18 y/o and older)
 - Minors (< 18 y/o) who are married, divorced or emancipated
- The Code of Virginia (§54.1-2969 C,D) allows any **minor 14-17 y/o** to direct treatment **only if no responsible party** is reasonably available. This includes the ability to refuse treatment / transport.
- The Code of Virginia (§54.1-2969 G) allows **pregnant minors** to direct treatment **only relating to the delivery of their baby.**
- A responsible party (parent, guardian, medical POA, etc.) may have the authority to refuse for a patient who is not eligible on their own.
- Any patient (or responsible party) who wishes to refuse must also demonstrate **capacity**. This requires them to be awake, oriented, and able to demonstrate understanding of the potential risks.
 - Patients with altered LOC lack capacity and cannot refuse.
 - Suicidal patients lack capacity and cannot refuse.
- Call **Medical Control** and enlist law enforcement help for any patient who attempts to refuse, but should not be allowed to do so.

Who is a Patient?

- Any person for whom EMS is specifically summoned should be considered a patient. Every patient should have a full report completed with a transport or a refusal documented.
- Not every person on scene of an emergency needs to be considered a patient. EMS is not obligated to document a refusal for a person who declines EMS assessment, **and** is acting normally without obvious distress, **and** for whom EMS was not specifically summoned.
 - A refusal should be documented if there is any doubt.

Destination Triage Plan

- In some specific cases patients may benefit from triage directly to a more appropriate facility. Consider bypassing the closest facility and increasing transport time by **no more than 30 minutes** for:
 - Specific **emergent needs**: **STEMI**, LVO **Stroke**, or **Major Trauma**
 - Anticipated specialty services (ortho, OB/GYN, pediatrics, ENT, etc.)
 - Pre-established physician (recent surgery, oncology, dialysis, etc.)
 - System status (agency utilization, need for admission, etc.)
- Consider utilization of **HEMS** for critical illness or longer transports.



Acute STEMI with Chest Pain

- Adults should have an appropriate presentation (chest pain, etc.) and an EKG identified as *** **ACUTE MI** *** by automated analysis.
- **I ALS**: May consider STE > 1 mm in 2 or more contiguous leads.
- **P CC**: May consider advanced criteria (Sgarbossa's, posterior, etc.).
- Appropriate WVEMS cardiac hospitals (with emergent PCI) include:
 - Carilion **Roanoke** & **New River Valley** & Centra **Lynchburg**
 - Lewis Gale **Salem** & **Montgomery** & Sovah **Danville** & **Martinsville**

Acute Large Vessel (LVO) Stroke

- Patients must have a definite **time last normal under 6 hrs** and at least one positive finding on a **Cincinnati Stroke** (FAST) exam.
- Must also have **arm drift** and at least one finding on a **Stroke VAN**.
- Appropriate WVEMS stroke hospitals (PSC, TSC, or CSC) include:
 - Carilion **Roanoke** Memorial & Centra **Lynchburg** Baptist
 - Lewis Gale **Salem** & Sovah **Danville** & Sovah **Martinsville**

Major or Unstable Trauma

- Patients should meet trauma triage guidelines with **major injury** and / or **major mechanism** and / or **major burns** > 20% BSA.
- Appropriate WVEMS trauma hospitals (Level 1 or 2) include:
 - Carilion **Roanoke** & Lewis Gale **Salem** & Centra **Lynchburg**

Deceased Subjects

- EMS may occasionally encounter a deceased subject.
 - Maintain respect for the deceased and their family.
 - Always **involve law enforcement**. Always **write a full report**.
- If resuscitation was not attempted:
 - Consider all deceased subjects as a potential **crime scene**.
 - Limit EMS ingress/egress and coordinate with law enforcement.
 - Law enforcement may request EMS to confirm death.
- If resuscitation was attempted and subsequently terminated:
 - **Medical Control** should already be involved.
 - Do not remove any pads, leads, invasive lines or tubes.
 - EMS may disconnect hardware such as EKG wires and BVM.
 - Defer to the direction of law enforcement or Medical Examiner.
- In some situations law enforcement may release the body.
 - EMS should not transport the deceased to the ED.
 - After the body is released EMS may remove lines, tubes, etc.
 - EMS may offer courtesy transport to a funeral home.
 - Courtesy transport is not required. Defer to agency policy.
 - Inform Medical Control of any courtesy transports.
- **EMS may confirm death** in several ways including:
 - Lack of pulse, respirations and response.
 - **Obvious Death** or **Mortal Injury**.
 - **I** Asystole in at least two cardiac leads with EKG gain at max.
- EMS may consider assisting with last rites if requested by family.

Mass Casualty

- **Call for more help. Begin a standardized MCI triage system.**
 - Several systems are described, such as SALT and START.
- Do the most good for the most people until adequate help arrives.
 - Consider utilizing any available resources, such as bystanders.
 - Prioritize life-saving interventions.
 - Triage and prioritizing care during an MCI is not abandonment.
 - Consider "reverse triage" if a mass casualty **lightning strike**.
- **Notify the receiving hospital(s)** as soon as possible.

Protocol Medication Reference

- 119 3% Saline** (Hypertonic)
- 120 Afrin®** (Oxymetazoline)
- 121 Amiodarone** (Pacerone®)
- 122 Aspirin** (Baby ASA)
- 123 Atropine** (AtroPen®)
- 124 Benadryl®** (Diphenhydramine)
- 125 Calcium** (Chloride)
- 126 Cyanokit®** (Hydroxocobalamin)
- 127 Decadron®** (Dexamethasone)
- 128 DuoDote®** (Atropine & 2PAM)
- 129 Epi Drip, Push** (Epinephrine)
- 130 Fentanyl** (Sublimaze®)
- 131 Glucose** (Glutose 15™)
- 132 Heparin** (Sodium)
- 133 Keppra®** (Levetiracetam)
- 134 Lasix®** (Furosemide)
- 135 Lidocaine** (Xylocaine®)
- 136 Magnesium** (Sulfate)
- 137 Narcan®** (Naloxone)
- 138 Nitro** (Nitroglycerin)
- 139 Propofol** (Diprivan®)
- 140 Rocuronium** (Zemuron®)
- 141 Tetracaine** (Ophthalmic)
- 142 TXA** (Tranexamic Acid)
- 143 Versed®** (Midazolam)

- Adenosine** (Adenocard®)
- Albuterol** (Ventolin®)
- Ancef®** (Cefazolin)
- Ativan®** (Lorazepam)
- Atrovent®** (Ipratropium)
- Bicarb** (Sodium Bicarbonate)
- Charcoal** (Activated)
- D10** (Dextrose 10%)
- Dopamine** (Intropin®)
- Epi, Epi Neb** (Epinephrine)
- Etomidate** (Amidate®)
- Glucagon** (Baqsimi®)
- Haldol®** (Haloperidol)
- Ibuprofen** (Motrin®)
- Ketamine** (Ketalar®)
- Levophed®** (Norepi)
- Lopressor®** (Metoprolol)
- Morphine** (Sulfate)
- Neo Push** (Phenylephrine)
- NS Bolus** (0.9% Saline)
- Rocephin®** (Ceftriaxone)
- Succinylcholine** (Anectine®)
- Toradol®** (Ketorolac)
- Tylenol®** (Acetaminophen)
- Zofran®** (Ondansetron)

Substitutes & Options

- WVEMS maintains a **formulary list** of recommended medications, but some agencies may elect not to stock every drug. Please review the formulary for recommended options and substitutes.
- **2026 Formulary:**



Western VA EMS Council
Recommended Formulary

Medication	Size	Min	Type	\$
Acetaminophen PO	500 mg/tab	2	tab	\$
Adenosine	12 mg/ 4 mL	2	vial	\$
Albuterol	2.5 mg/ 3 mL	4	neb	\$
Amiodarone	150 mg/ 3 mL	3	vial	\$
Aspirin	81 mg/tab	4	tab	\$
Atropine	1 mg/mL	2	vial	\$
Calcium Chloride	1 g/ 10 mL	1	vial	\$
Cefazolin	1 g/ 3 mL	2	vial	\$
D10	250 mL	1	bag	\$
Dexamethasone	10 mg/mL	1	vial	\$
Diphenhydramine	50 mg/mL	1	vial	\$
Diphenhydramine PO	25 mg/tab	2	tab	\$
Epinephrine	10 mg/ 10 mL	1	vial	\$
Epinephrine *	1 mg/ 10 mL	2	prefill	\$
Fentanyl	100 mcg/ 2 mL	2	vial	\$
Glucose	15 g	1	tube	\$
Haloperidol	5 mg/mL	1	vial	\$
Ibuprofen PO	200 mg/tab	3	tab	\$
Ipratropium	0.5 mg/ 2.5 mL	1	neb	\$
Ketamine	200 mg/ 20 mL	1	vial	\$
Levetiracetam	500 mg/ 5 mL	6	vial	\$
Magnesium	1 g/ 2 mL	4	vial	\$
Midazolam	5 mg/mL	2	vial	\$
Naloxone IV *	2 mg/ 2 mL	2	vial	\$
Nitroglycerin	0.4 mg/tab	6	tab	\$
Normal Saline (0.9%)	1,000 mL	2	bag	\$
Normal Saline (0.9%)	50 mL	2	bag	\$
Ondansetron	4 mg/ 2 mL	2	vial	\$
Ondansetron ODT	4 mg/tab	2	tab	\$
Oxymetazoline	0.05%	1	bottle	\$
Sodium Bicarbonate	50 mEq/ 50 mL	1	vial	\$
Toradol *	15 mg/mL	1	vial	\$
Tranexamic Acid	1 g/ 10 mL	2	vial	\$

Approved by EMS Protocol Workgroup • v251223

2026

* Epi Notes
• Epi Neb uses 5 mL of 1 mg/mL.
• Peds CODE Epi uses 1mg/ 10 mL.
• May use CertaDose (requires 1mg/mL).
• May also carry auto-injectors

† Naloxone

• NOTE: May stock min 1x 1vial (2 mg) if also stocking IN

New Meds

• Toradol
• Ativan (optional)
• Baqsimi (optional)
• Morphine (optional)
• 3% Saline (Crit Care)
• Lasix (Crit Care)
• Nitro Drip (Crit Care)

Removed

• Thiamine

3% Saline**Hypertonic Saline****Use**

- Tx: Traumatic Brain Injury
- Adults: **250 mL IV/IO**
- Peds: 2 - 5 mL/kg
- **Give over 10 min**

Caution

- PMH: CHF, CKD, hypernatremia
- May cause: hypernatremia, seizure
- **Preg C:** safety not established

Notes

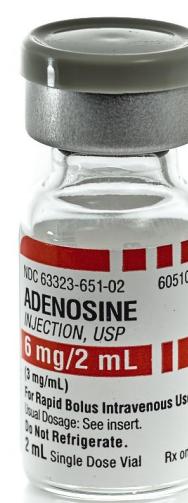
- Protocols: Elevated ICP
- Osmotic Diuretic - Onset: minutes - Duration: hours
- <https://www.medscape.com/viewarticle/548015>

**Adenosine****Adenocard®****Use**

- Tx: Supraventricular Tachycardia
- Adults: **12 mg IV/IO**
- Peds: 0.1 - 0.2 mg/kg

Caution

- **Beware asthma:** can cause attack
- PMH: WPW, bradycardia, AV block
- PMH: COPD, Theophylline, Digoxin®
- May cause: palpitations
- **Preg C:** safety not established

**Notes**

- Give **rapid IV push** followed by **rapid saline flush**.
- Protocols: Tachycardia
- Antiarrhythmic: Class V - Onset: seconds - Duration: 10 s
- <https://reference.medscape.com/drug/342295>

Afrin®**Oxymetazoline****Use**

- Tx: Nosebleeds
- Adults: **1 spray IN**
- Peds: 6 y/o and above only

Caution

- PMH: CAD, HTN
- May cause: HA, nose discomfort
- **Preg C:** safety not established

Notes

- Protocol: [Epistaxis](#)
- Adrenergic: α -agonist - Onset: seconds - Duration: 6 hr
- [https://reference.medscape.com/drug/343408](#)

**Albuterol****Ventolin®****Use**

- Tx: Wheezing, Hyperkalemia
- Adults: **2.5 mg Neb**
- Peds: 0.15 mg/kg

Caution

- PMH: antiretroviral therapy
- PMH: hypokalemia
- May cause: tremor, anxiety
- May cause: palpitation, tachycardia
- **Preg C:** safety not established

Notes

- Protocols: [Dyspnea](#), [Allergic Reaction](#)
- Four (4x) nebs back-to-back for [Hyperkalemia](#)
- Adrenergic: β -agonist - Onset: 30 min - Duration: 2 hr
- [https://reference.medscape.com/drug/343426](#)



Amiodarone**Use**

- Tx: V-Tach / V-Fib
- Adult CODE: **300**, then **150 mg** IV/IO
- Peds CODE: 5 mg/kg, Q 5 min x3
- Gtt: over 10 min (peds over 30 min)

Caution

- PMH: antiretroviral therapy
- PMH: bradycardia, hyperkalemia
- May cause: bradycardia, HA
- May cause: hypotension, dizzy
- **Preg D:** known risks

Notes

- Protocols: Tachycardia, Med CODE/ROSC, Trauma CODE
- Dilute in NS and **give over 10 min if non-emergent**
- Antiarrhythmic: Class III - Onset: mins - Duration: hours
- <https://reference.medscape.com/drug/342296>

Pacerone®**Ancef®****Use**

- Tx: Major Wounds, Open Fractures
- Adults: **2 grams** IV/IO, IM
- Peds: 10-30 mg/kg IV/IO, IM

Caution

- Monitor closely if PCN allergy
- Avoid if cephalosporin allergy
- May cause: rash/hives, dyspnea
- **Preg B:** likely safe

Cefazolin**Notes**

- Protocols: Major Trauma, Extremity Injury
- **Reconstitute:** w/ 3 mL NS for IM; dilute in 10 mL for IV/IO
- Antibiotic: 1st Gen Ceph -Onset: minutes -Duration: hours
- <https://reference.medscape.com/drug/342492>

Aspirin

Baby ASA

Use

- Tx: Angina
- Adults: **81 mg** x4 PO (chew)
- Peds: <do not use>

Caution

- PMH: GI bleeding, low platelets
- May cause: GERD, bleeding
- **Preg D:** known risks

Notes

- Protocols: Chest Pain
- Antiplatelet (and NSAID) - Onset: 5 min - Duration: 4 hrs
- <https://reference.medscape.com/drug/343279>



Ativan®

Lorazepam

Use

- Tx: Seizure, Delirium, Sedation
- Adults: **1 mg** IV/IO, IM/IN
- Peds: 25 - 50 mcg/kg

Caution

- PMH: glaucoma
- May cause: **respiratory depression**
- May cause: hypotension
- **Preg D:** known risks
- **Do not use:** for premature babies

Notes

- Alternate substitute for Versed (only with OMD approval)
- Benzo: GABA agonist - Onset: 1 minute - Duration: 8 hours
- <https://reference.medscape.com/drug/342906>



Atropine

AtroPen®

Use

- Tx: Brady, Organophosphate OD
- Adults: **1 mg** IV/IO (brady)
- Peds: 0.02 mg/kg

Caution

- PMH: Glaucoma, AV block
- May cause: palpitations
- May cause: dry mouth, HA
- **Preg C:** safety not established

Notes

- **Organophosphate OD** may require massive doses.
- Protocols: [Bradycardia](#), [Administer Antidote](#)
- Anticholinergic - Onset: seconds - Duration: minutes
- <https://reference.medscape.com/drug/343093>



Atrovent®

Ipratropium Bromide

Use

- Tx: Wheezing
- Adults: **0.5 mg** Neb
- Peds: 0.25 mg if <6 y/o (<20 kg)

Caution

- PMH: glaucoma
- May cause: HA, cough
- **Preg B:** likely safe

Notes

- Protocols: [Dyspnea](#), [Allergic Reaction](#)
- Anticholinergic - Onset: 15 minutes - Duration: 3 hours
- <https://reference.medscape.com/drug/343416>



Benadryl®**Diphenhydramine****Use**

- Tx: Allergic Reactions, Dystonia
- Adults: **25 mg** IV/IO, IM, PO
 - May give 50 mg PO for adults
- Peds: 1 mg/kg

Caution

- PMH: glaucoma, elderly
- May cause: **sedation**, delirium
- May cause: dry mouth
- **Preg B:** likely safe

Notes

- Protocols: Allergic Reaction, Behavioral, Antidote
- Antihistamine - Onset: 15 min - Duration: 4 hours
- <https://reference.medscape.com/drug/343392>

**Bicarb****Sodium Bicarbonate****Use**

- Tx: Acidosis, Arrhythmia
- Adults: **50 mEq** IV/IO
- Peds: 1 mEq/kg

Caution

- **Beware extravasation**
- Do not mix: **Calcium**
- May cause: alkalosis, CHF
- May cause: hypokalemia
- **Preg C:** safety not established

Notes

- Protocols: Hyperkalemia, Administer Antidote
- Electrolyte: alkali - Onset: 15 minutes - Duration: 1 hour
- <https://reference.medscape.com/drug/342305>



Calcium

Calcium Chloride

Use

- Tx: Hyperkalemia, Ca-blocker OD
- Adults: **1 gram** IV/IO
- Peds: 20 mg/kg
- Give **over 10 min** (or bolus in CODE)

Caution

- **Beware extravasation**
- Do not mix: **Rocephin®**, **Digoxin®**
- Do not mix: **Bicarbonate**
- May cause: tachy, brady, N/V, HA
- **Preg C:** safety not established

Notes

- Protocols: Hyperkalemia, Administer Antidote
- Dilute in NS and **give over 10 min if non-emergent**
- Electrolyte: cofactor - Onset: minutes - Duration: hours
- <https://reference.medscape.com/drug/344432>



Charcoal

Activated

Use

- Tx: Poisoning, Overdose
- Adults: **25 grams** PO
- Peds: 1 gram/kg
- May give over ice to improve taste

Caution

- May cause: vomiting, black stools
- May cause: diarrhea (w/ sorbitol)
- Do not use: caustic ingestions
- **Preg N/A:** not categorized

Notes

- Protocols: Administer Antidote
- Antidote: physical binder, not metabolized
- <https://reference.medscape.com/drug/343714>



CyanoKit®**Hydroxocobalamin****Use**

- Tx: Cyanide Poisoning / Exposure
- Adults: **5 grams** IV/I0 over 10 min
- Peds: 70 mg/kg

Caution

- May cause: HA, flushing, HTN
- PMH: CKD, renal failure
- **Preg C:** safety not established

Notes

- Protocols: Administer Antidote
- Follow kit instructions and **give over 10 min**
- Antidote: Protein binding to cyanide - Half life: 30 hrs
- <https://reference.medscape.com/drug/343734>



Doc James

D10**Dextrose 10%****Use**

- Tx: Hypoglycemia
- Adults: **100 mL** IV/I0
- Peds: 5 mL/kg

Caution

- **Beware extravasation**
- May cause: edema
- May cause: hyperglycemia
- **Preg C:** safety not established

Notes

- Protocols: Diabetic, Administer Antidote
- Glucose Monosaccharide - Onset: mins - Duration: 40 min
- <https://reference.medscape.com/drug/342705>



Decadron®**Dexamethasone****Use**

- Tx: Inflammation
- Adults: **10 mg** IV/IO, IM
 - Alternate adult dosing: 8 mg IV/IO, IM
- Peds: 0.5 mg/kg

Caution

- PMH: antivirals, anticoagulants
- PMH: **diabetics**, birth control
- May cause: hyperglycemia
- May cause: delirium
- **Preg C**: safety not established

Notes

- Protocols: Dyspnea, Allergic Reaction
- Steroid: glucocorticoid - Onset: minutes - Duration: hours
- <https://reference.medscape.com/drug/342741>

**Dopamine****Intropin®****Use**

- Tx: Shock, Hypotension
- Adults: **5 mcg/kg/min** IV/IO
- Peds: 5 mcg/kg/min
- Titrate rate (up to 4x) to effect

Caution

- PMH: tachycardia
- PMH: antidepressants
- May cause: arrhythmia
- May cause: HA, N/V
- **Preg C**: safety not established

Notes

- Protocols: Circulation / Shock
- Catecholamine - Onset: 5 minutes - Duration: 10 minutes
- <https://reference.medscape.com/drug/342435>



Duodote®

Atropine & Pralidoxime

Use

- Tx: Organophosphate poisoning
- Adults: **auto-inj** IM (2.1 mg/ 600 mg)
- Peds: safety not established ≤ 40 kg

Caution

- May require **multiple doses**
- PMH: chronic renal or liver disease
- Do not mix: **Glucagon**
- May cause: vision changes, HTN
- **Preg C:** safety not established

Notes

- Protocols: Administer Antidote
- Antidote: anticholinergic, reactivates esterase, peak: 30 m
- <https://reference.medscape.com/drug/343745>

**Epi, Epi Neb**

Epinephrine, EpiPen®

Use

- Tx: Brady, CODE, Dyspnea, Allergy
- Adults: **1 mg** IV/IO (CODE)
- Peds: 0.01 mg/kg (Brady, CODE)
- Epi Neb: 0.5 mg/kg, max 5 mg (SOB)

Caution

- PMH: CAD, HTN
- May cause: **palpitations**
- May cause: anxiety, arrhythmia
- May cause: HTN, flushing
- **Preg C:** safety not established

**Notes**

- Protocols: Brady, CODE, Dyspnea, Allergy, Neonate
- See also: **Epi Drip** (below) for Circulation / Shock
- Adrenergic: α , β agonist - Onset: 1 min - Duration: varies
- <https://reference.medscape.com/drug/342437>

Epi Drip, Epi Push Epinephrine, Adrenalin

Use

- Tx: Hypotension, Shock
- Adults: **1 gtt/sec macro** drip set
- Peds: 1 gtt/sec micro drip set
- Mix **1 mg Epi** into **1L NS**: 1 mcg/mL

Caution

- PMH: CAD, HTN
- May cause: **palpitations**
- May cause: anxiety, arrhythmia
- May cause: HTN, flushing
- **Preg C:** safety not established

Notes

- Protocols: Circulation / Shock, Vasopressors
- See also: **Epi** (above) for Brady, CODE, Dyspnea, Allergy
- Adrenergic: α, β agonist - Onset: 1 min
- <https://reference.medscape.com/drug/342437>



Etomidate

Amidate®

Use

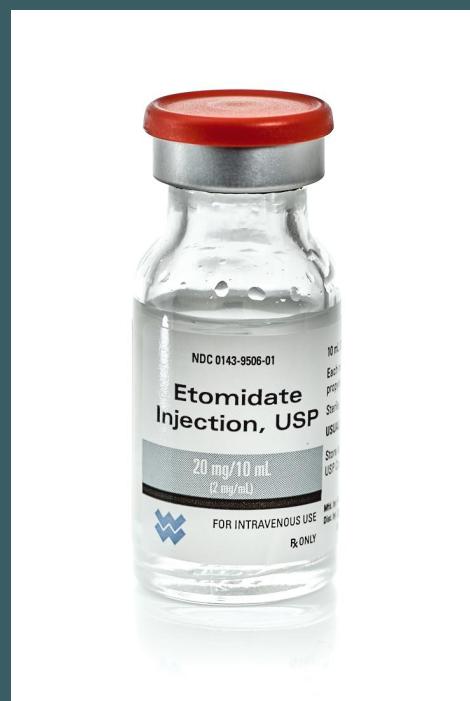
- Tx: RSI/RSA Induction
- Adults: **0.3 mg/kg** IV/IO
- Peds: 0.3 mg/kg (10+ y/o only)
- 0-9 y/o safety not established

Caution

- PMH: adrenal insufficiency
- May cause: **limb jerking**
- May cause: **eye twitching**
- **Preg C:** safety not established

Notes

- Protocols: Intubation / RSI
- Central Hypnotic - Onset: seconds - Duration: minutes
- <https://reference.medscape.com/drug/343098>



Fentanyl

Sublimaze®

Use

- Tx: Acute Pain, Sedation
- Adults: **50 - 100 mcg** IV/IO, IM/IN
- Peds: 0.5 - 2 mcg/kg

Caution

- PMH: MAOIs (antidepressant)
- May cause: **respiratory depression**
- May cause: **hypotension**
- May cause: delirium, N/V
- **Preg C:** safety not established

Notes

- Protocols: Pain
- Critical Care: Sedation / Vent
- Opioid: μ -agonist - Onset: seconds - Duration: 45 min
- <https://reference.medscape.com/drug/343311>



Glucagon

Baqsimi®, Glucagen®

Use

- Tx: Hypoglycemia, β -blocker OD
- Adults: **1 mg** IM (or 3 mg IN)
- Peds: 0.5 mg if < 6 y/o (< 20 kg)

Caution

- PMH: pheochromocytoma
- PMH: starvation, **Coumadin**
- May cause: nausea / vomiting
- Beware: **refractory hypoglycemia**
- **Preg B:** likely safe

Notes

- **β -blocker OD** may require multiple doses.
- Protocols: Diabetic, Administer Antidote
- Hepatic glycogenolysis - Onset: 10 min - Duration: 30 min
- <https://reference.medscape.com/drug/342712>



Glucose**Oral Glucose, Glutose 15™****Use**

- Tx: Hypoglycemia
- Adults: **15 grams** PO
- Peds: 0.5 g/kg

Caution

- PMH: hyperglycemia
- May cause: hyperactivity
- **Preg A:** demonstrated safe

Notes

- Protocols: [Diabetic](#)
- Monosaccharide - Onset: mins - Duration: 40 min
- <https://reference.medscape.com/drug/342705>

**Haldol®****Haloperidol****Use**

- Tx: Severe Psychosis
- Adults: **5 mg** IM
- Peds: 0.075-0.15 mg/kg (6+ y/o)
- 0-5 y/o: safety not established

Caution

- PMH: antiarrhythmics, Long QT
- PMH: Parkinson's disease
- May cause: **hypotension, NMS**
- May cause: dystonia
- **Preg C:** safety not established

**Notes**

- Protocols: [Behavioral](#)
- Antipsychotic: dopa blocker - Onset: 10 m - Duration: 18 h
- <https://reference.medscape.com/drug/342974>

Heparin

Heparin Sodium

Use

- Tx: ST-Elev. Myocardial Infarction
- Adults: **5,000 units IV/IO**
- Peds: *<do not use>*
- Double check concentration

Caution

- PMH: induced thrombocytopenia
- Do not mix: **Haldol**
- May cause: bleeding
- **Preg C:** safety not established

Notes

- Protocols: [STEMI](#)
- Anticoagulant - Onset: immediate - Peak: 2-4 hours
- [https://reference.medscape.com/drug/342169](#)



Ibuprofen

Advil®, Motrin®

Use

- Tx: Fever, Pain
- Adults: **600 mg PO**
- Peds: 10 mg/kg

Caution

- PMH: CKD, recent CABG
- Do not use: if **active GI bleeding**
- May cause: epigastric pain
- May cause: N/V, dizzy
- **Preg D:** known risks

Notes

- Protocols: [Fever, Pain, Cold / Heat](#)
- NSAID: cox inhibitor - Onset: 30 min - Duration: 4 hours
- [https://reference.medscape.com/drug/343289](#)



Keppra®**Levetiracetam****Use**

- Tx: Status Epilepticus, Seizures
- Adults: **3,000 mg IV/IO**
- Peds: 20 mg/kg (6 y/o and older)
- Dilute in NS and **give over 10 min**

Caution

- PMH: paranoid psychosis
- May cause: fatigue, weakness
- May cause: hypertension, headache
- **Preg C:** safety not established

Notes

- Protocols: Seizure, Elevated ICP
- Novel Antiepileptic - Peak: 1 hour - Half-life: 6-8 hours
- <https://reference.medscape.com/drug/343013>

**Ketamine****Ketalar®****Use**

- Tx: Severe Pain, Discomfort
- Adults: **20 mg IV/IO, IM/IN (pain)**
- Peds: 0.25 - 0.5 mg/kg
- Higher doses for Critical Care

Caution

- PMH: increased ICP, glaucoma
- May cause: **laryngospasm**
- May cause: **hypersalivation**
- **Preg N/A:** not categorized

**Notes**

- Protocols: Pain, Med ROSC, Trauma ROSC, RSI, Sedation
- Dilute in NS, **give over 10 min if used IV/IO in pain/ROSC**
- Dissociative anesthetic - Onset: 30 s - Duration: minutes
- <https://reference.medscape.com/drug/343099>

Lasix®**Use**

- Tx: Congestive Heart Failure
- Adults: **40 mg** IV/IO, IM
- Peds: 1 - 2 mg/kg

Caution

- PMH: CKD, anuria, liver disease
- May cause: **Hypotension**, tinnitus
- May cause: **Hypokalemia**, rash
- **Preg C:** safety not established

Notes

- Protocols: Pulmonary Edema
- Loop diuretic - Onset: 5 minutes - Duration: 4 hours
- <https://reference.medscape.com/drug/342423>

Furosemide**Levophed®****Use**

- Tx: Hypotension, Septic Shock
- Adults: **5 - 20 mcg/min** IV/IO
- Peds: 0.05 mcg/kg/min
- Dilute **4 mg in 250 mL**, use a **pump**

Caution

- **Beware extravasation**
- PMH: CAD, HTN, MAOI meds
- May cause: HTN, arrhythmia
- May cause: anxiety, flushing
- **Preg C:** safety not established

Notes

- Protocols: Vasopressors
- **Dilute in D5W** if available (NS is OK, but will lose potency)
- Adrenergic: β , α agonist - Onset: 1 min - Duration: 1 min
- <https://reference.medscape.com/drug/342443>

Norepinephrine

Lidocaine

Use

- Tx: pain after I/O (or V-Tach / V-Fib)
- Adult pain after I/O: 10 mg I/O
- (CODE 1st dose: 1 - 1.5 mg/kg IV/I/O)
- (CODE 2nd dose: 0.5-0.75 mg/kg IV/I/O)

Caution

- PMH: antiarrhythmics, AV block
- PMH: hyperkalemia
- Do not mix: **Digoxin**[®]
- May cause: hypotension, N/V, seizure
- **Preg B:** likely safe

Notes

- Protocols: I/O Procedure
- Antiarrhythmic: Class IB - Onset: 45 sec - Duration: 10 min
- <https://reference.medscape.com/drug/342302>

Xylocaine[®]



Lopressor[®]

Use

- Tx: HTN, Tachycardia
- Adults: **5 mg** IV/I/O
- Peds: 0.5 mcg/kg/min infusion

Caution

- PMH: CHF, AV block
- May cause: **hypotension**, syncope
- May cause: **bradycardia**, dizzy
- **Preg C:** safety not established

Notes

- Protocols: Malignant HTN
- β -blocker - Onset: minutes - Duration: hours
- <https://reference.medscape.com/drug/342360>

Metoprolol



Magnesium**Magnesium Sulfate****Use**

- Tx: TdP, Preeclampsia, Eclampsia
- Adults: **1 - 4 grams** IV/IO
- Peds: 25 - 50 mg/kg

Caution

- PMH: DKA, AV block
- Do not mix: **Digoxin**[®]
- May cause: hypoxia, edema, **shock**
- **Monitor reflexes** to avoid toxicity
- **Preg D:** known risks

Notes

- Protocols: Tachy, SOB, CODE, Seizure, OD/Tox, Malig. HTN
- Dilute in **NS** and **give over 10 min if non-emergent**
- Electrolyte - Onset: seconds - Duration: hours
- <https://reference.medscape.com/drug/344444>

**Morphine****Morphine Sulfate****Use**

- Tx: Acute Pain, Sedation
- Adults: **2 - 4 mg** IV/IO, IM/IN
- Peds: 0.1 - 0.2 mg/kg

Caution

- PMH: MAOIs (antidepressant)
- May cause: **respiratory depression**
- May cause: **hypotension**
- May cause: delirium, N/V, itching
- **Preg C:** safety not established

**Notes**

- Alt. substitute for Fentanyl (only with OMD approval)
- Opioid: μ -agonist - Onset: minutes - Duration: 4 hours
- <https://reference.medscape.com/drug/343319>

Narcan®**Use**

- Tx: Opiate OD
- Adults: **0.04 - 4 mg** IV/IO, IM/N
- Peds: 0.1 mg/kg

Caution

- May cause: **opiate withdrawal**
- May cause: N/V, Abdominal Pain
- **Preg C:** safety not established
- **Do not use:** for premature babies

Notes

- Protocols: [Overdose / Tox](#), [Administer Antidote](#)
- Opioid (μ) antagonist - Onset: 2 min - Duration: 45 min
- <https://reference.medscape.com/drug/343741>

**Neo Push****Phenylephrine****Use**

- Tx: Hypotension, Shock Index > 0.8
- Adults: **50 - 200 mcg** IV/IO
- Peds: 5 - 20 mcg/kg
- 0-1 y/o: safety not established

Caution

- **Beware extravasation**
- PMH: heart block, CHF
- May cause: HTN, **bradycardia**
- May cause: anxiety, flushing
- **Preg C:** safety not established

Notes

- Protocols: [Vasopressors](#)
- **Must dilute in NS** to concentration of 100 mcg/mL
- Adrenergic: α agonist - Onset: 10 min - Duration: 15 min
- <https://reference.medscape.com/drug/342444>



Nitro, Nitro Drip Nitroglycerin, Nitrostat®

Use

- Tx: Angina, Congestive Heart Failure
- Adults: **0.4 mg** SL
- Adult drip: 300 mcg/min, titrate down
 - Dilute 50 mg in 250 mL, use a pump

Caution

- Peds: <do not use>
- PMH: recent (36 h) **PDE5 inhibitors**
- PMH: ergot meds (pain/migraine)
- May cause: **headache**, hypotension
- **Preg B:** likely safe

Notes

- Protocols: Chest Pain, Dyspnea, Pulmonary Edema
- Systemic vasodilator - Onset: 1 min - Duration: 30 min
- <https://reference.medscape.com/drug/342280>



NS Bolus

0.9% Normal Saline

Use

- Tx: Hypotension, Hypovolemia
- Adults: **500 mL** IV/IO
- Peds: 20 mL/kg

Caution

- PMH: CHF, CKD, HTN
- May cause: **hypervolemia** & edema
- May cause: **dyspnea** & rales
- **Preg C:** safety not established

Notes

- Protocols: Shock, Tachy, Fever, HyperK⁺, Diabetic, OD/Tox, Preg, Major Trauma / CODE, Cold/Heat, Burn
- Isotonic crystalloid - Onset: seconds - Duration: varies
- <https://www.rxlist.com/normal-saline-drug.htm>



Propofol

Diprivan®

Use

- Tx: Sedation
- Adults: **150 mcg/kg/min** IV/IO
- Peds: 200 mcg/kg/min (3+ months)
- 0-2 months: safety unknown

Caution

- PMH: CKD, renal failure
- May cause: **hypotension, apnea**
- Titrate down **rapidly** in **first 30 min**
- Aim for 30-50% **reduction** quickly
- **Preg B:** likely safe

Notes

- Protocols: Sedation / Vent
- Sedative/hypnotic: GABA - Onset: secs - Duration: mins
- <https://reference.medscape.com/drug/343100>

**Rocephin®**

Ceftriaxone

Use

- Tx: Infection
- Adults: **1 gram** IV/IO, IM
- Peds: 25 - 50 mg/kg

Caution

- Monitor closely if PCN allergy
- Avoid if cephalosporin allergy
- Do not mix: **Calcium** (may be fatal)
- May cause: rash/hives, dyspnea
- **Preg B:** likely safe

Notes

- Protocols: Sepsis
- **Reconstitute:** w/ 3 mL - NS for IV/IO, or 2% Lido for IM
- Antibiotic: 3rd Gen Ceph - Onset: minutes - Duration: hours
- <https://reference.medscape.com/drug/342510>



Rocuronium

Zemuron®

Use

- Tx: RSI Paralysis
- Adults: **1 mg/kg** IV/IO
- Peds: 0.6 mg/kg (3+ months old)
- 0-2 months: safety unknown

Caution

- PMH: liver failure, ascites
- **Beware** Malignant Hyperthermia
- May cause: paralysis, apnea
- **Preg B:** likely safe

Notes

- Protocols: Intubation / RSI
- Non-depolarizing - Onset: 1 minute - Duration: 30 minutes
- <https://reference.medscape.com/drug/343109>

**Succinylcholine**

Anectine®

Use

- Tx: RSI Paralysis
- Adults: **1.5 mg/kg** IV/IO
- Peds: 2 mg/kg

Caution

- PMH: **hyperkalemia**, burns
- **Beware** Malignant Hyperthermia
- **Beware** Pediatric Myopathy
- May cause: paralysis, apnea
- **Preg C:** safety not established

Notes

- Alt. substitute for Rocuronium (only w/ OMD approval)
- Depolarizing - Onset: 30 seconds - Duration: 5 minutes
- <https://reference.medscape.com/drug/343102>



Tetracaine

0.5% Ophthalmic

Use

- Tx: Eye pain (non-penetrating)
- Adults: **1-2 gtt** into affected eye
- Peds: **1-2 gtt** into affected eye

Caution

- **Will sting** for 3-5 seconds (normal)
- **Use caution** after admin
 - Do not let pts rub or scratch eye
- **Preg N/A:** not categorized

**Notes**

- Protocols: Pain, Head Injury
- Topical anesthetic - Onset: seconds - Duration: 20 min
- <https://reference.medscape.com/drug/343373>

Toradol®

Ketorolac

Use

- Tx: Moderate Pain
- Adults: **15 mg** IV/IO, IM/IN
- Peds: 0.5 mg/kg (2+ years old)

Caution

- PMH: CKD, recent CABG
- Do not use: if **active GI bleeding**
- May cause: epigastric pain
- May cause: N/V, dizzy, itching
- **Preg D:** known risks

**Notes**

- Protocols: Pain
- NSAID: cox inhibitor - Onset: 5 min - Duration: 4 hours
- <https://reference.medscape.com/drug/343292>

TXA

Tranexamic Acid

Use

- Tx: Bleeding, Epistaxis
- Adults: **2 grams IV/IO** (or 150 mg IN)
- Peds: 10 - 25 mg/kg
- Dilute in NS and **give over 10 min**

Caution

- PMH: seizure, **known DVT/PE**
- May cause: **hypotension**
- May cause: visual changes, N/V
- **Preg B:** likely safe

Notes

- Protocols: Bleeding, Pregnancy, Epistaxis, OB Procedures
- Antifibrinolytic - Onset: minutes - Duration: 3 hours
- <https://reference.medscape.com/drug/342087>



Tylenol®

Acetaminophen

Use

- Tx: Fever, Pain
- Adults: **1,000 mg** PO, IV/IO
- Peds: 15 mg/kg
- For IV admin: **give over 10 min**

Caution

- PMH: end stage liver disease
- **Preg B:** likely safe
- **Do not use:** for premature babies

Notes

- Protocols: Fever, Pain
- Analgesic: antiprostaglandin - Onset: 1 hr - Duration: 4 hrs
- PO: <https://reference.medscape.com/drug/343346>
- IV: <https://reference.medscape.com/drug/999610>



Versed®**Use**

- Tx: Seizure, Delirium, Sedation
- Adults: **2.5 - 5 mg** IV/IO, IM/IN
- Peds: 50 - 75 mcg/kg

Caution

- PMH: antivirals, glaucoma
- May cause: **respiratory depression**
- May cause: hypotension
- **Preg D:** known risks

Notes

- Protocols: Seizure, Behavioral, Cold / Heat, Antidote
- Critical Care: Sedation / Vent
- Benzo: GABA agonist - Onset: 3 minutes - Duration: 1 hour
- <https://reference.medscape.com/drug/342907>

Midazolam**Zofran®****Use**

- Tx: Nausea, Vomiting
- Adults: **4 mg** IV/IO, IM/IN, PO
- Peds: 0.1 mg/kg

Caution

- PMH: antidepressants, Long QT
- May cause: HA, fatigue
- **Preg B:** likely safe

Ondansetron**Notes**

- Protocols: Nausea / Vomiting
- Use **injectable for IV/IO & IM/IN**; use **ODT for PO**
- 5-HT3 antagonist - Onset: seconds - Duration: hours
- <https://reference.medscape.com/drug/342052>



- WVEMS uses the **Handtevy Standard**.
 - **Age is the primary** reference.
 - This allows **preparation en route**.
- Use length/color tape if unknown age.
 - Or may use tape if very small/large.
- Weight based dosing is tertiary.
 - Estimating weight is less accurate.
- Use same route & frequency as adult.
 - **Limit NS Bolus to x3** (60 mL/kg).

E EMT Peds Dosing

- Peds med math is **not in EMT scope**.
- May give regular adult dose for ages:
 - **Afrin**[®] (Oxymetazoline): ≥ 6 y/o
 - **Albuterol** (Ventolin[®]): ≥ 2 y/o
 - **Atrovent**[®] (Ipratropium): ≥ 5 y/o
 - **Baqsimi**[®] (Glucagon IN): ≥ 1 y/o
 - **Glucagon** (Glucagen[®] IM): ≥ 5 y/o
 - **Oral Glucose** (Glutose[®]): ≥ 2 y/o
 - **Narcan**[®] (Naloxone): ≥ 1 y/o
 - **Tetracaine** (Ophth.): all ages
 - **Zofran ODT**[®] (Ondans.): ≥ 11 y/o
- May give **EpiPen Jr**[®] for 3-8 y/o, or adult **EpiPen**[®] for ≥ 9 y/o.
 - May also use color coded / dose limiting administration systems.
- May give OTC doses of **Benadryl**, **Ibuprofen**, and **Tylenol**
 - **Follow the directions** on the OTC box for age and/or weight.
 - May **not** give doses labeled as "ask (or directed by) a physician".

145	Premie
146	0-3 mo
147	4-5 mo
148	6-11 mo
149	1 year
150	2 years
151	3 years
152	4 years
153	5 years
154	6 years
155	7 years
156	8 years
157	9 years
158	10 years
159	11 years
160	12 years
161	13 years

References

- PALS: <https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001368> [Ver: 2025]
- Handtevy - Pediatric Emergency Standards: <https://handtevy.com> [Ver: 5/22]
- Limmer D, O'Keefe MF. *Emergency Care* 15th ed. Chapter 18

Normal VitalsP: **120 - 170** /minR: **40 - 70** /minSBP: **55 - 90** mmHg**Resuscitation****Defib:** 4 → 8 → 20 JPrefill (1/10) **Epi:** 0.2 mL
(50 mg/mL) **Amio:** 0.2 mL**Common**

NS Bolus: 40 mL

Afrin: < do not use >

Albuterol: 0.42 mg

Ancef: < do not use >

Atrovent: 0.25 mg

Benadryl: < do not use >

D10: 10 mL

Decadron: 1.2 mg

Epi (allergy): 0.02 mg

Epi (brady/code): 0.02 mg

Epi Neb: 1 mg

Fentanyl: < do not use >

Glucose: < do not use >

Ibuprofen: < do not use >

Keppra: < do not use >

Ketamine (pain): < do not use >

Narcan: 0.02 mg

Toradol: < do not use >

Tylenol: < do not use >

TXA: 50 mg

Versed: < do not use >

Zofran: < do not use >

Misc

IV Cath: 24 g (yellow)

iGel Airway: #1 (pink)

Pacing Rate: 145 /min

Cardiovert: 2 → 4 J

Vent: < do not use >**Less Common**

Adenosine: 0.3 mg

Atropine: 0.1 mg

Bicarbonate: 1 mEq

Calcium: 40 mg

Charcoal: 2 grams

Dopamine: drop every 60 s

Glucagon IM: 0.5 mg

Haldol: < do not use >

Lidocaine (10): < do not use >

Magnesium: 100 mg

3% Saline: < do not use >

Epi Push: 2 mcg

Etomidate: < do not use >

Ketamine (RSI): < do not use >

Lasix: 2 mg

Levophed: 0.1 mcg/min

Lopressor: 1 mcg/min

Neo Push: 20 mcg

Rocephin: 100 mg

Rocuronium: < do not use >

Normal Vitals

P: 100 - 160 /min

R: 30 - 60 /min

SBP: 60 - 100 mmHg

Resuscitation**Defib:** 8 → 15 → 50 JPrefill (1/10) **Epi:** 0.4 mL
(50 mg/mL) **Amio:** 0.4 mL**Common**

NS Bolus: 80 mL

Afrin: < do not use >

Albuterol: 0.83 mg

Ancef: < do not use >

Atrovent: 0.25 mg

Benadryl: < do not use >

D10: 20 mL

Decadron: 2.4 mg

Epi (allergy): 0.04 mg

Epi (brady/code): 0.04 mg

Epi Neb: 2 mg

Fentanyl: 5 mcg

Glucose: < do not use >

Ibuprofen: < do not use >

Keppra: < do not use >

Ketamine (pain): < do not use >

Narcan: 0.04 mg

Toradol: < do not use >

Tylenol: 64 mg

TXA: 100 mg

Versed: < do not use >

Zofran: < do not use >

Misc

IV Cath: 24 g (yellow)

iGel Airway: #1 (pink)

Pacing Rate: 130 /min

Cardiovert: 4 → 8 J

Vent: < do not use >**Less Common**

Adenosine: 0.3 mg

Atropine: 0.1 mg

Bicarbonate: 2 mEq

Calcium: 80 mg

Charcoal: 4 grams

Dopamine: drop every 60 s

Glucagon IM: 0.5 mg

Haldol: < do not use >

Lidocaine (10): < do not use >

Magnesium: 200 mg

3% Saline: < do not use >

Epi Push: 2 mcg

Etomidate: < do not use >

Ketamine (RSI): < do not use >

Lasix: 4 mg

Levophed: 0.2 mcg/min

Lopressor: 2 mcg/min

Neo Push: 20 mcg

Rocephin: 200 mg

Rocuronium: < do not use >

Normal Vitals P: 105 - 160 /min

R: 30 - 60 /min

SBP: 70 - 100 mmHg

Resuscitation**Defib:** 10 → 20 → 70 JPrefill (1/10) **Epi:** 0.6 mL
(50 mg/mL) **Amio:** 0.6 mL**Common**

NS Bolus: 120 mL

Afrin: < do not use >

Albuterol: 1.25 mg

Ancef: 166 mg

Atrovent: 0.25 mg

Benadryl: < do not use >

D10: 30 mL

Decadron: 3.6 mg

Epi (allergy): 0.06 mg

Epi (brady/code): 0.06 mg

Epi Neb: 3 mg

Fentanyl: 5 mcg

Glucose: < do not use >

Ibuprofen: < do not use >

Keppra: < do not use >

Ketamine (pain): 2 mg

Narcan: 0.06 mg

Toradol: < do not use >

Tylenol: 80 mg

TXA: 150 mg

Versed: 0.5 mg

Zofran: < do not use >

Misc

IV Cath: 24 g (yellow)

iGel Airway: #1.5 (blue)

Pacing Rate: 130 /min

Cardiovert: 6 → 10 J

Vent: < do not use >**Less Common**

Adenosine: 0.6 mg

Atropine: 0.12 mg

Bicarbonate: 3 mEq

Calcium: 120 mg

Charcoal: 6 grams

Dopamine: drop every 60 s

Glucagon IM: 0.5 mg

Haldol: < do not use >

Lidocaine (10): < do not use >

Magnesium: 300 mg

3% Saline: < do not use >

Epi Push: 4 mcg

Etomidate: < do not use >

Ketamine (RSI): 12 mg

Lasix: 6 mg

Levophed: 0.3 mcg/min

Lopressor: 3 mcg/min

Neo Push: 40 mcg

Rocephin: 300 mg

Rocuronium: 6 mg

Normal Vitals

P: 110 - 160 /min

R: 24 - 38 /min

SBP: 70 - 100 mmHg

Resuscitation**Defib:** 15 → 30 → 85 JPrefill (1/10) **Epi:** 0.8 mL
(50 mg/mL) **Amio:** 0.8 mL**Common**NS Bolus: 160 mL
Afrin: < do not use >Albuterol: 1.25 mg
Ancef: 200 mgAtrovent: 0.25 mg
Benadryl: 5 mgD10: 40 mL
Decadron: 4.8 mgEpi (allergy): 0.08 mg
Epi (brady/code): 0.08 mgEpi Neb: 4 mg
Fentanyl: 5 mcgGlucose: < do not use >
Ibuprofen: 80 mgKeppra: < do not use >
Ketamine (pain): 2 mgNarcan: 0.08 mg
Toradol: < do not use >Tylenol: 112 mg
TXA: 200 mgVersed: 0.5 mg
Zofran: 0.8 mg**Misc**

IV Cath: 24 g (yellow)

iGel Airway: #1.5 (blue)

Pacing Rate: 135 /min

Cardiovert: 8 → 15 J

Vent: Vt 50 mL @ 30 /min**Less Common**

Adenosine: 0.9 mg

Atropine: 0.16 mg

Bicarbonate: 4 mEq
Calcium: 160 mgCharcoal: 8 grams
Dopamine: drop every 30 s

Glucagon IM: 0.5 mg

Haldol: < do not use >

Lidocaine (10): < do not use >

Magnesium: 400 mg

3% Saline: < do not use >

Epi Push: 4 mcg

Etomidate: < do not use >

Ketamine (RSI): 16 mg

Lasix: 8 mg

Levophed: 0.4 mcg/min

Lopressor: 4 mcg/min

Neo Push: 40 mcg

Rocephin: 400 mg

Rocuronium: 8 mg

Normal VitalsP: **90 - 150** /minR: **22 - 30** /minSBP: **72 - 105** mmHg**Resuscitation****Defib:** 20 → 50 → 100 JPrefill (1/10) **Epi:** 1 mL
(50 mg/mL) **Amio:** 1 mL**Common**

NS Bolus: 200 mL

Afrin: < do not use >

Albuterol: 1.25 mg

Ancef: 266 mg

Atrovent: 0.25 mg

Benadryl: 10 mg

D10: 50 mL

Decadron: 6 mg

Epi (allergy): 0.1 mg

Epi (brady/code): 0.1 mg

Epi Neb: 5 mg

Fentanyl: 5 mcg

Glucose: < do not use >

Ibuprofen: 100 mg

Keppra: < do not use >

Ketamine (pain): 3 mg

Narcan: 0.1 mg

Toradol: < do not use >

Tylenol: 144 mg

TXA: 200 mg

Versed: 1 mg

Zofran: 1 mg

Misc

IV Cath: 22 g (blue)

iGel Airway: #1.5 (blue)

Pacing Rate: 120 /min

Cardiovert: 10 → 20 J

Vent: Vt 60 mL @ 28 /min**Less Common**

Adenosine: 0.9 mg

Atropine: 0.2 mg

Bicarbonate: 10 mEq

Calcium: 200 mg

Charcoal: 10 grams

Dopamine: drop every 30 s

Glucagon IM: 0.5 mg

Haldol: < do not use >

Lidocaine (10): < do not use >

Magnesium: 500 mg

3% Saline: < do not use >

Epi Push: 6 mcg

Etomidate: < do not use >

Ketamine (RSI): 20 mg

Lasix: 10 mg

Levophed: 0.5 mcg/min

Lopressor: 5 mcg/min

Neo Push: 60 mcg

Rocephin: 500 mg

Rocuronium: 10 mg

Normal VitalsP: **85 - 140** /minR: **22 - 30** /minSBP: **74 - 110** mmHg**Resuscitation****Defib:** 20 → 50 → 120 JPrefill (1/10) **Epi:** 1.2 mL
(50 mg/mL) **Amio:** 1.2 mL**Common**

NS Bolus: 250 mL

Afrin: <do not use>

Albuterol: 2.5 mg

Ancef: 333 mg

Atrovent: 0.25 mg

Benadryl: 10 mg

D10: 60 mL

Decadron: 7.2 mg

Epi (allergy): 0.12 mg

Epi (brady/code): 0.12 mg

Epi Neb: 5 mg

Fentanyl: 10 mcg

Glucose: 15 grams

Ibuprofen: 120 mg

Keppra: <do not use>

Ketamine (pain): 3 mg

Narcan: 0.12 mg

Toradol: 6 mg

Tylenol: 176 mg

TXA: 300 mg

Versed: 1 mg

Zofran: 1.2 mg

Misc

IV Cath: 22 g (blue)

iGel Airway: #2 (gray)

Pacing Rate: 110 /min

Cardiovert: 10 → 20 J

Vent: Vt 70 mL @ 28 /min

Less Common

Adenosine: 1.2 mg

Atropine: 0.24 mg

Bicarbonate: 12 mEq

Calcium: 240 mg

Charcoal: 12 grams

Dopamine: drop every 30 s

Glucagon IM: 0.5 mg

Haldol: <do not use>

Lidocaine (IO): 2 mg

Magnesium: 600 mg

3% Saline: 45 mL

Epi Push: 6 mcg

Etomidate: <do not use>

Ketamine (RSI): 24 mg

Lasix: 12 mg

Levophed: 0.6 mcg/min

Lopressor: 6 mcg/min

Neo Push: 60 mcg

Rocephin: 600 mg

Rocuronium: 12 mg

WHITE

32 - 36 lbs 15 - 16 kg

3 YR

Normal Vitals

P: 85 - 140 /min

R: 22 - 30 /min

SBP: 76 - 115 mmHg

Resuscitation**Defib:** 30 → 70 → 150 JPrefill (1/10) **Epi:** 1.5 mL
(50 mg/mL) **Amio:** 1.5 mL**Common**

NS Bolus: 300 mL

Afrin: <do not use>

Albuterol: 2.5 mg

Ancef: 400 mg

Atrovent: 0.25 mg

Benadryl: 15 mg

D10: 75 mL

Decadron: 8 mg

Epi (allergy): 0.15 mg

Epi (brady/code): 0.15 mg

Epi Neb: 5 mg

Fentanyl: 10 mcg

Glucose: 15 grams

Ibuprofen: 140 mg

Keppra: <do not use>

Ketamine (pain): 4 mg

Narcan: 0.14 mg

Toradol: 6 mg

Tylenol: 224 mg

TXA: 350 mg

Versed: 1 mg

Zofran: 1.6 mg

Misc

IV Cath: 22 g (blue)

iGel Airway: #2 (gray)

Pacing Rate: 110 /min

Cardiovert: 15 → 30 J

Vent: Vt 90 mL @ 28 /min**Less Common**

Adenosine: 1.5 mg

Atropine: 0.3 mg

Bicarbonate: 15 mEq

Calcium: 300 mg

Charcoal: 15 grams

Dopamine: drop every 20 s

Glucagon IM: 0.5 mg

Haldol: <do not use>

Lidocaine (10): 2 mg

Magnesium: 750 mg

3% Saline: 50 mL

Epi Push: 8 mcg

Etomidate: <do not use>

Ketamine (RSI): 30 mg

Lasix: 15 mg

Levophed: 0.8 mcg/min

Lopressor: 8 mcg/min

Neo Push: 80 mcg

Rocephin: 666 mg

Rocuronium: 15 mg

Normal VitalsP: **75 - 120** /minR: **22 - 26** /minSBP: **78 - 115** mmHg**Resuscitation****Defib:** 30 → 70 → 150 JPrefill (1/10) **Epi:** 1.7 mL
(50 mg/mL) **Amio:** 1.7 mL**Common**

NS Bolus: 350 mL

Afrin: <do not use>

Albuterol: 2.5 mg

Ancef: 466 mg

Atrovent: 0.25 mg

Benadryl: 15 mg

D10: 85 mL

Decadron: 8 mg

Epi (allergy): 0.17 mg

Epi (brady/code): 0.17 mg

Epi Neb: 5 mg

Fentanyl: 10 mcg

Glucose: 15 grams

Ibuprofen: 160 mg

Keppra: <do not use>

Ketamine (pain): 5 mg

Narcan: 0.16 mg

Toradol: 6 mg

Tylenol: 256 mg

TXA: 400 mg

Versed: 1.5 mg

Zofran: 2 mg

Misc

IV Cath: 22 g (blue)

iGel Airway: #2 (gray)

Pacing Rate: 95 /min

Cardiovert: 15 → 30 J

Vent: Vt 100 mL @ 24 /min**Less Common**

Adenosine: 1.8 mg

Atropine: 0.35 mg

Bicarbonate: 17 mEq

Calcium: 350 mg

Charcoal: 17 grams

Dopamine: drop every 20 s

Glucagon IM: 0.5 mg

Haldol: <do not use>

Lidocaine (10): 2 mg

Magnesium: 850 mg

3% Saline: 55 mL

Epi Push: 10 mcg

Etomidate: <do not use>

Ketamine (RSI): 35 mg

Lasix: 15 mg

Levophed: 0.9 mcg/min

Lopressor: 9 mcg/min

Neo Push: 100 mcg

Rocephin: 833 mg

Rocuronium: 17 mg

Normal VitalsP: **70 - 115** /minR: **20 - 24** /minSBP: **80 - 115** mmHg**Resuscitation****Defib:** 50 → 85 → 200 JPrefill (1/10) **Epi:** 2 mL
(50 mg/mL) **Amio:** 2 mL**Common**

NS Bolus: 400 mL

Afrin: <do not use>

Albuterol: 2.5 mg

Ancef: 600 mg

Atrovent: 0.5 mg

Benadryl: 20 mg

D10: 100 mL

Decadron: 8 mg

Epi (allergy): 0.2 mg

Epi (brady/code): 0.2 mg

Epi Neb: 5 mg

Fentanyl: 10 mcg

Glucose: 15 grams

Ibuprofen: 200 mg

Keppra: <do not use>

Ketamine (pain): 6 mg

Narcan: 0.2 mg

Toradol: 9 mg

Tylenol: 288 mg

TXA: 500 mg

Versed: 2 mg

Zofran: 2 mg

Misc

IV Cath: 20 g (pink)

iGel Airway: #2 (gray)

Pacing Rate: 90 /min

Cardiovert: 20 → 50 J

Vent: Vt 120 mL @ 22 /min

Less Common

Adenosine: 2.1 mg

Atropine: 0.4 mg

Bicarbonate: 20 mEq

Calcium: 400 mg

Charcoal: 20 grams

Dopamine: drop every 15 s

Glucagon IM: 1 mg

Haldol: <do not use>

Lidocaine (10): 2 mg

Magnesium: 1 gram

3% Saline: 60 mL

Epi Push: 10 mcg

Etomidate: <do not use>

Ketamine (RSI): 40 mg

Lasix: 20 mg

Levophed: 1.0 mcg/min

Lopressor: 10 mcg/min

Neo Push: 100 mcg

Rocephin: 1 gram

Rocuronium: 20 mg

Normal Vitals

P: 70 - 115 /min

R: 20 - 24 /min

SBP: 82 - 120 mmHg

Resuscitation**Defib:** 50 → 85 → 200 JPrefill (1/10) **Epi:** 2.2 mL
(50 mg/mL) **Amio:** 2.2 mL**Common**

NS Bolus: 440 mL

Afrin: 1 spray

Albuterol: 2.5 mg

Ancef: 666 mg

Atrovent: 0.5 mg

Benadryl: 20 mg

D10: 100 mL

Decadron: 8 mg

Epi (allergy): 0.22 mg

Epi (brady/code): 0.22 mg

Epi Neb: 5 mg

Fentanyl: 15 mcg

Glucose: 15 grams

Ibuprofen: 220 mg

Keppra: 440 mg

Ketamine (pain): 6 mg

Narcan: 0.22 mg

Toradol: 9 mg

Tylenol: 320 mg

TXA: 550 mg

Versed: 2 mg

Zofran: 2.2 mg

Misc

IV Cath: 20 g (pink)

iGel Airway: #2 (gray)

Pacing Rate: 90 /min

Cardiovert: 20 → 50 J

Vent: Vt 130 mL @ 22 /min

Less Common

Adenosine: 2.1 mg

Atropine: 0.45 mg

Bicarbonate: 22 mEq

Calcium: 450 mg

Charcoal: 22 grams

Dopamine: drop every 15 s

Glucagon IM: 1 mg

Haldol: 2.5 mg

Lidocaine (10): 4 mg

Magnesium: 1 gram

3% Saline: 70 mL

Epi Push: 10 mcg

Etomidate: <do not use>

Ketamine (RSI): 45 mg

Lasix: 20 mg

Levophed: 1.1 mcg/min

Lopressor: 11 mcg/min

Neo Push: 100 mcg

Rocephin: 1 gram

Rocuronium: 22 mg

Normal VitalsP: **70 - 110** /minR: **16 - 22** /minSBP: **84 - 120** mmHg**Resuscitation****Defib:** 50 → 100 → 200 JPrefill (1/10) **Epi:** 2.5 mL
(50 mg/mL) **Amio:** 2.5 mL**Common**

NS Bolus: 500 mL

Afrin: 1 spray

Albuterol: 2.5 mg

Ancef: 733 mg

Atrovent: 0.5 mg

Benadryl: 25 mg

D10: 100 mL

Decadron: 8 mg

Epi (allergy): 0.25 mg

Epi (brady/code): 0.25 mg

Epi Neb: 5 mg

Fentanyl: 15 mcg

Glucose: 15 grams

Ibuprofen: 240 mg

Keppra: 500 mg

Ketamine (pain): 7 mg

Narcan: 0.24 mg

Toradol: 12 mg

Tylenol: 352 mg

TXA: 600 mg

Versed: 2.5 mg

Zofran: 2.4 mg

Misc

IV Cath: 20 g (pink)

iGel Airway: #2.5 (white)

Pacing Rate: 90 /min

Cardiovert: 30 → 50 J

Vent: Vt 150 mL @ 20 /min

Less Common

Adenosine: 2.4 mg

Atropine: 0.5 mg

Bicarbonate: 25 mEq

Calcium: 500 mg

Charcoal: 25 grams

Dopamine: drop every 12 s

Glucagon IM: 1 mg

Haldol: 2.5 mg

Lidocaine (10): 4 mg

Magnesium: 1 gram

3% Saline: 80 mL

Epi Push: 10 mcg

Etomidate: <do not use>

Ketamine (RSI): 50 mg

Lasix: 25 mg

Levophed: 1.3 mcg/min

Lopressor: 13 mcg/min

Neo Push: 100 mcg

Rocephin: 1 gram

Rocuronium: 25 mg

Normal VitalsP: **70 - 110** /minR: **16 - 22** /minSBP: **86 - 120** mmHg**Resuscitation****Defib:** 50 → 100 → 200 JPrefill (1/10) **Epi:** 2.7 mL
(50 mg/mL) **Amio:** 2.7 mL**Common**

NS Bolus: 500 mL

Afrin: 1 spray

Albuterol: 2.5 mg

Ancef: 800 mg

Atrovent: 0.5 mg

Benadryl: 25 mg

D10: 100 mL

Decadron: 8 mg

Epi (allergy): 0.27 mg

Epi (brady/code): 0.27 mg

Epi Neb: 5 mg

Fentanyl: 15 mcg

Glucose: 15 grams

Ibuprofen: 260 mg

Keppra: 540 mg

Ketamine (pain): 8 mg

Narcan: 0.26 mg

Toradol: 12 mg

Tylenol: 384 mg

TXA: 650 mg

Versed: 2.5 mg

Zofran: 2.6 mg

Misc

IV Cath: 20 g (pink)

iGel Airway: #2.5 (white)

Pacing Rate: 90 /min

Cardiovert: 30 → 50 J

Vent: Vt 160 mL @ 20 /min

Less Common

Adenosine: 2.7 mg

Atropine: 0.5 mg

Bicarbonate: 27 mEq

Calcium: 550 mg

Charcoal: 25 grams

Dopamine: drop every 12 s

Glucagon IM: 1 mg

Haldol: 2.5 mg

Lidocaine (10): 4 mg

Magnesium: 1 gram

3% Saline: 90 mL

Epi Push: 10 mcg

Etomidate: <do not use>

Ketamine (RSI): 55 mg

Lasix: 25 mg

Levophed: 1.4 mcg/min

Lopressor: 14 mcg/min

Neo Push: 100 mcg

Rocephin: 1 gram

Rocuronium: 27 mg

Normal VitalsP: **65 - 105** /minR: **16 - 22** /minSBP: **88 - 120** mmHg**Resuscitation****Defib:** 70 → 120 → 200 JPrefill (1/10) **Epi:** 3 mL
(50 mg/mL) **Amio:** 3 mL**Common**

NS Bolus: 500 mL

Afrin: 1 spray

Albuterol: 2.5 mg

Ancef: 866 mg

Atrovent: 0.5 mg

Benadryl: 25 mg

D10: 100 mL

Decadron: 8 mg

Epi (allergy): 0.3 mg

Epi (brady/code): 0.3 mg

Epi Neb: 5 mg

Fentanyl: 15 mcg

Glucose: 15 grams

Ibuprofen: 300 mg

Keppra: 600 mg

Ketamine (pain): 9 mg

Narcan: 0.28 mg

Toradol: 15 mg

Tylenol: 448 mg

TXA: 750 mg

Versed: 2.5 mg

Zofran: 3 mg

Misc

IV Cath: 18 g (green)

iGel Airway: #2.5 (white)

Pacing Rate: 85 /min

Cardiovert: 30 → 70 J

Vent: Vt 180 mL @ 20 /min

Less Common

Adenosine: 3 mg

Atropine: 0.5 mg

Bicarbonate: 30 mEq

Calcium: 600 mg

Charcoal: 25 grams

Dopamine: drop every 10 s

Glucagon IM: 1 mg

Haldol: 3 mg

Lidocaine (10): 4 mg

Magnesium: 1 gram

3% Saline: 100 mL

Epi Push: 10 mcg

Etomidate: <do not use>

Ketamine (RSI): 60 mg

Lasix: 30 mg

Levophed: 1.5 mcg/min

Lopressor: 15 mcg/min

Neo Push: 100 mcg

Rocephin: 1 gram

Rocuronium: 30 mg

Normal VitalsP: **60 - 100** /minR: **16 - 22** /minSBP: **90 - 120** mmHg**Resuscitation****Defib:** 70 → 150 → 200 JPrefill (1/10) **Epi:** 3.5 mL
(50 mg/mL) **Amio:** 3 mL**Common**

NS Bolus: 500 mL

Afrin: 1 spray

Albuterol: 2.5 mg

Ancef: 1,000 mg

Atrovent: 0.5 mg

Benadryl: 25 mg

D10: 100 mL

Decadron: 8 mg

Epi (allergy): 0.3 mg

Epi (brady/code): 0.35 mg

Epi Neb: 5 mg

Fentanyl: 20 mcg

Glucose: 15 grams

Ibuprofen: 340 mg

Keppra: 700 mg

Ketamine (pain): 10 mg

Narcan: 0.36 mg

Toradol: 15 mg

Tylenol: 480 mg

TXA: 850 mg

Versed: 2.5 mg

Zofran: 3.4 mg

Misc

IV Cath: 18 g (green)

iGel Airway: #3 (yellow)

Pacing Rate: 80 /min

Cardiovert: 30 → 70 J

Vent: Vt 210 mL @ 20 /min

Less Common

Adenosine: 3.6 mg

Atropine: 0.5 mg

Bicarbonate: 35 mEq

Calcium: 700 mg

Charcoal: 25 grams

Dopamine: drop every 9 s

Glucagon IM: 1 mg

Haldol: 3.5 mg

Lidocaine (10): 6 mg

Magnesium: 1 gram

3% Saline: 125 mL

Epi Push: 10 mcg

Etomidate: 10 mg

Ketamine (RSI): 70 mg

Lasix: 35 mg

Levophed: 1.8 mcg/min

Lopressor: 18 mcg/min

Neo Push: 100 mcg

Rocephin: 1 gram

Rocuronium: 35 mg

Normal VitalsP: **60 - 100** /minR: **16 - 22** /minSBP: **90 - 120** mmHg**Resuscitation****Defib:** 85 → 150 → 200 JPrefill (1/10) **Epi:** 4 mL
(50 mg/mL) **Amio:** 3 mL**Common**

NS Bolus: 500 mL

Afrin: 1 spray

Albuterol: 2.5 mg

Ancef: 1,200 mg

Atrovent: 0.5 mg

Benadryl: 25 mg

D10: 100 mL

Decadron: 8 mg

Epi (allergy): 0.3 mg

Epi (brady/code): 0.4 mg

Epi Neb: 5 mg

Fentanyl: 20 mcg

Glucose: 15 grams

Ibuprofen: 400 mg

Keppra: 800 mg

Ketamine (pain): 12 mg

Narcan: 0.4 mg

Toradol: 15 mg

Tylenol: 480 mg

TXA: 1 gram

Versed: 2.5 mg

Zofran: 4 mg

Misc

IV Cath: 18 g (green)

iGel Airway: #3 (yellow)

Pacing Rate: 80 /min

Cardiovert: 50 → 85 J

Vent: Vt 240 mL @ 20 /min**Less Common**

Adenosine: 3.9 mg

Atropine: 0.5 mg

Bicarbonate: 40 mEq

Calcium: 800 mg

Charcoal: 25 grams

Dopamine: drop every 8 s

Glucagon IM: 1 mg

Haldol: 4 mg

Lidocaine (10): 6 mg

Magnesium: 1 gram

3% Saline: 150 mL

Epi Push: 10 mcg

Etomidate: 12 mg

Ketamine (RSI): 80 mg

Lasix: 40 mg

Levophed: 2.0 mcg/min

Lopressor: 20 mcg/min

Neo Push: 100 mcg

Rocephin: 1 gram

Rocuronium: 40 mg

Normal VitalsP: **60 - 100** /minR: **16 - 22** /minSBP: **90 - 120** mmHg**Resuscitation****Defib:** 100 → 200 → 200 JPrefill (1/10) **Epi:** 5 mL
(50 mg/mL) **Amio:** 3 mL**Common**

NS Bolus: 500 mL

Afrin: 1 spray

Albuterol: 2.5 mg

Ancef: 1,466 mg

Atrovent: 0.5 mg

Benadryl: 25 mg

D10: 100 mL

Decadron: 8 mg

Epi (allergy): 0.3 mg

Epi (brady/code): 0.5 mg

Epi Neb: 5 mg

Fentanyl: 25 mcg

Glucose: 15 grams

Ibuprofen: 400 mg

Keppra: 1,000 mg

Ketamine (pain): 15 mg

Narcan: 0.4 mg

Toradol: 15 mg

Tylenol: 480 mg

TXA: 1 gram

Versed: 2.5 mg

Zofran: 4 mg

Misc

IV Cath: 18 g (green)

iGel Airway: #3 (yellow)

Pacing Rate: 80 /min

Cardiovert: 50 → 100 J

Vent: Vt 300 mL @ 20 /min

Less Common

Adenosine: 5.1 mg

Atropine: 0.5 mg

Bicarbonate: 50 mEq

Calcium: 1 gram

Charcoal: 25 grams

Dopamine: drop every 6 s

Glucagon IM: 1 mg

Haldol: 5 mg

Lidocaine (10): 8 mg

Magnesium: 1 gram

3% Saline: 200 mL

Epi Push: 10 mcg

Etomidate: 15 mg

Ketamine (RSI): 100 mg

Lasix: 40 mg

Levophed: 2.5 mcg/min

Lopressor: 25 mcg/min

Neo Push: 100 mcg

Rocephin: 1 gram

Rocuronium: 50 mg

Normal VitalsP: **60 - 100** /minR: **16 - 22** /minSBP: **90 - 120** mmHg**Resuscitation****Defib:** 120 → 200 → 200 JPrefill (1/10) **Epi:** 6 mL
(50 mg/mL) **Amio:** 3 mL**Common**

NS Bolus: 500 mL

Afrin: 1 spray

Albuterol: 2.5 mg

Ancef: 1,800 mg

Atrovent: 0.5 mg

Benadryl: 25 mg

D10: 100 mL

Decadron: 8 mg

Epi (allergy): 0.3 mg

Epi (brady/code): 0.6 mg

Epi Neb: 5 mg

Fentanyl: 30 mcg

Glucose: 15 grams

Ibuprofen: 400 mg

Keppra: 1,200 mg

Ketamine (pain): 18 mg

Narcan: 0.4 mg

Toradol: 15 mg

Tylenol: 480 mg

TXA: 1 gram

Versed: 2.5 mg

Zofran: 4 mg

Misc

IV Cath: 18 g (green)

iGel Airway: #4 (green)

Pacing Rate: 80 /min

Cardiovert: 50 → 100 J

Vent: Vt 350 mL @ 20 /min

Less Common

Adenosine: 6 mg

Atropine: 0.5 mg

Bicarbonate: 50 mEq

Calcium: 1 gram

Charcoal: 25 grams

Dopamine: drop every 5 s

Glucagon IM: 1 mg

Haldol: 5 mg

Lidocaine (10): 10 mg

Magnesium: 1 gram

3% Saline: 250 mL

Epi Push: 10 mcg

Etomidate: 18 mg

Ketamine (RSI): 100 mg

Lasix: 40 mg

Levophed: 3 mcg/min

Lopressor: 30 mcg/min

Neo Push: 100 mcg

Rocephin: 1 gram

Rocuronium: 60 mg

#

3% Saline for:	
- Elevated ICP	86
9's (rule of) in:	
- Burns	70
12-Lead	97
15-Lead in:	
- STEMI	88
 A	
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Protocols, Procedures, Policies & Medications of the Western VA EMS Medical Direction Committee

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- WVEMS Protocols - 2025
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- VA (NEMESIS) VPHIB 3.5.0.6 - 2025
- AHA Guidelines for CPR & ECC - 2025
- NAEMSP Trauma Compendium - 2025

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- Steve LePera
- Jane Lindsay
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