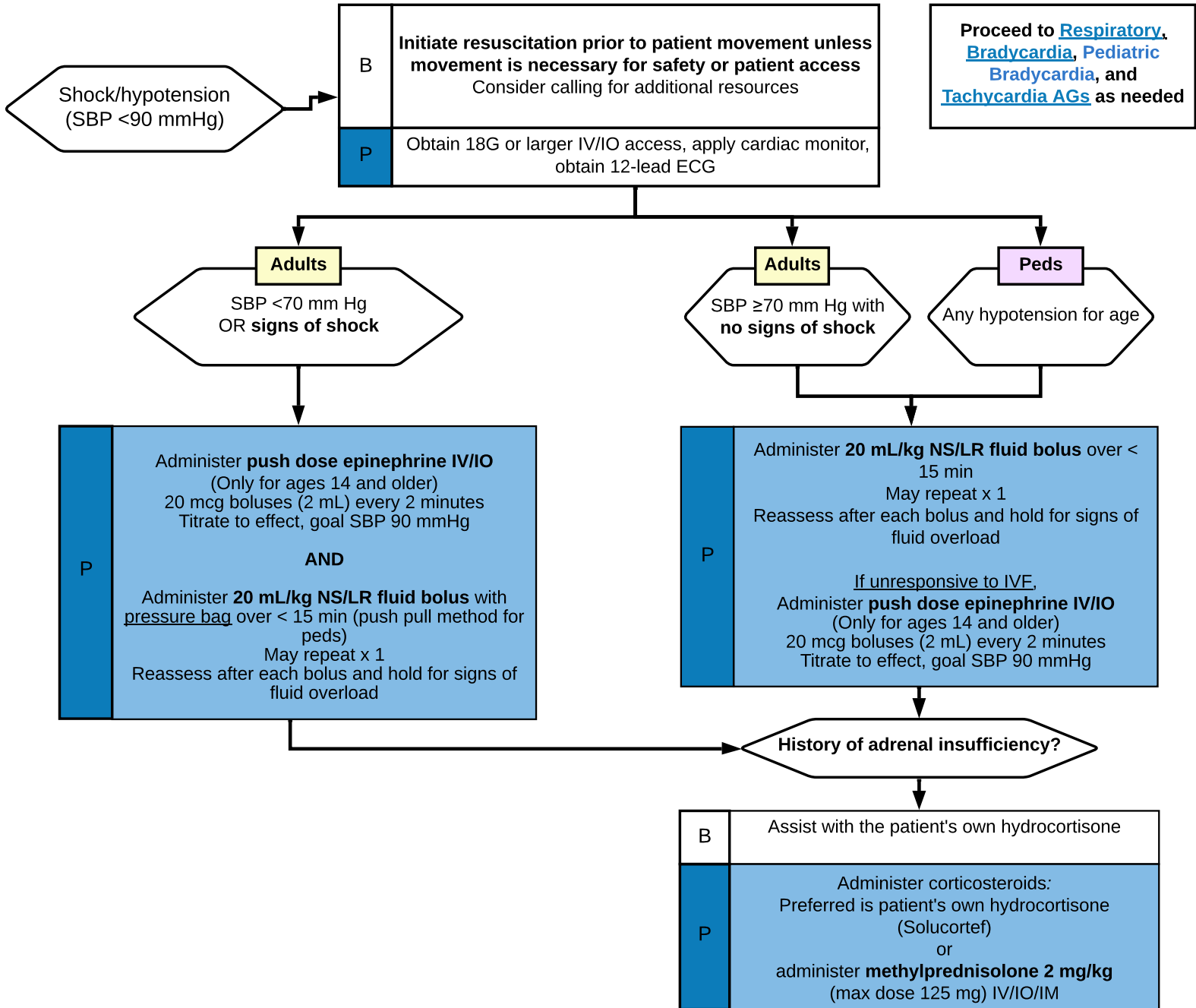


Shock or Crashing Medical Patient Administrative Guideline



History <ul style="list-style-type: none"> • Blood loss - vaginal or gastrointestinal bleeding, AAA, ectopic • Fluid loss - vomiting, diarrhea, fever • Infection • Cardiac ischemia (MI, CHF) • Medications • Allergic reaction • Pregnancy • History of poor oral intake 	Signs and Symptoms <ul style="list-style-type: none"> • Tachycardia out of proportion to temp • AMS • Delayed capillary refill >2 sec • Tachypnea • Hypotension for age • Cool/mottled or flushed/ruddy skin. • Tarry stool/GI bleed 	Differential <ul style="list-style-type: none"> • Ectopic pregnancy • Dysrhythmias • Pulmonary embolus • Tension pneumothorax • Medication effect / overdose • Vasovagal • Physiologic (pregnancy) • Sepsis
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DRUG PREPARATION:

Preparation of push dose epinephrine (14 years or older only):
Mix 1 mL of 1 mg/10 mL (CARDIAC) epinephrine with 9 mL NS. This results in a 10 mcg/mL concentration

Preferred Access

- 1st line: 18G or larger IV
- 2nd line: Proximal IO
Adults: distal femur or proximal humerus
Pediatrics: distal femur
- 3rd line: Tibial IO



Education/Pearls

Both EMT and paramedic training have traditionally emphasized the "load and go" approach for critically ill patients, often resulting in delayed resuscitation until arrival at the hospital. Historically, this was due to the lack of tools such as IOs and vasopressors in the prehospital setting, which necessitated rapid transport. However, new tools are now available, prompting a transition to a "stay and play" model for medical patients. Our goal is to reduce the incidence of EMS-witnessed cardiac arrests by prioritizing early IV/IO access, administering push-dose epinephrine, and utilizing pressure bags for intravenous fluids, which allows for patient stabilization on scene. This strategy aligns with current best practices in cardiac arrest management, as on-scene resuscitation typically yields better patient outcomes than interventions conducted in the back of a moving ambulance. It is crucial to note this approach does not extend to hypotensive trauma patients, for whom we continue to emphasize rapid transport to ensure timely, definitive care by trauma surgery.

Shock describes a state of tissue underperfusion. There are multiple etiologies of shock, including hypovolemic (e.g. dehydration, blood loss), obstructive (e.g. tension pneumothorax, cardiac tamponade), distributive (e.g. sepsis, severe burns), and cardiogenic (e.g. heart failure, acute papillary muscle rupture). Rapid vasopressors and fluid resuscitation are the mainstay of treatment, as the duration of shock coincides with the extent of tissue damage. Signs of shock are present in the diagram to the right.

Treatment priorities for hypotensive medical patients:

- 2 large bore (18 gauge) IVs are preferred.
- If unsuccessful in obtaining IV access, early IO placement is crucial. Distal femur and proximal humerus are both preferred over tibial IOs due to better flow rates.
- Push dose epinephrine should be given early in patients with SBP <70 or signs of shock present.
- Fluid resuscitation: Although often essential in shock, fluid may worsen the clinical picture in certain conditions, including cardiogenic shock. Monitor patients for signs of fluid overload when administering rapid fluid boluses.
 - Discontinue fluids if patient is developing signs of pulmonary edema or respiratory insufficiency/failure.
 - Utilize pressors early in suspected cardiogenic shock and signs of pulmonary edema.

Signs of Shock

- Altered mental status
- Respiratory distress
- Pallor
- Clammy/diaphoretic skin

Other considerations:

- **Adrenal insufficiency:** Patients may have a history of adrenal insufficiency related to congenital adrenal hyperplasia or from long-term daily steroid use. These patients may require stress dose steroids to maintain blood pressure in the setting of shock.
 - For adults the typical dose of hydrocortisone is 100 mg IM
 - For children:
 - 0-3 years 25 mg IM
 - 3-12 years: 50 mg IM
 - 12+ years: 100 mg IM
 - Methylprednisolone is the alternative treatment.
- **Pregnancy:** Pregnant patients can be assisted by shifting their gravid uterus left-ward, off of their inferior vena cava.