Treatment Protocol: SHOCK/HYPOTENSION **Ref. No. 1207-P**

Base Hospital Contact Required.

1. Assess airway and initiate basic and/or advanced airway maneuvers prn *(MCG 1302)*
   Continually assess patient's airway and ventilation status

2. Administer **Oxygen** prn *(MCG 1302)*
   High-flow Oxygen 15L/min for all patients in shock, regardless of SpO_2 ❶

3. Maintain supine if respiratory status allows ❷

4. Establish vascular access *(MCG 1375)*
   For patients with hypotension and clinical evidence of poor perfusion, establish IO catheter if unable to obtain peripheral venous access after 2 attempts ❸

   For IO placement in alert patients administer **Lidocaine 2% 0.5mg/kg (20mg/mL) slow IO push**, dose per *MCG 1309*, may repeat once for infusion pain at half initial dose

5. Initiate cardiac monitoring *(MCG 1308)*

6. Apply blanket to keep patient warm ❹

7. Consider etiology ❺
   For neonates, treat in conjunction with *TP 1216-P, Newborn/Neonatal Resuscitation*
   For patients with dysrhythmia, treat in conjunction with *TP 1212-P, Cardiac Dysrhythmia – Bradycardia* or *TP 1213-P, Cardiac Dysrhythmia – Tachycardia*
   For patients with traumatic injury, treat per *TP 1244-P, Traumatic Injury*
   For concern of overdose or toxic exposure, treat in conjunction with *TP 1241-P, Overdose / Poisoning / Ingestion*
   For patients with suspected sepsis, treat in conjunction with *TP 1204-P, Fever/Sepsis*

8. **Normal Saline 20mL/kg IV/IO rapid infusion** per *MCG 1309*

9. For patients with isolated hypotension without signs of poor perfusion and those who rapidly respond without intervention or to < 20mL/kg Normal Saline document *Hypotension (HOTN)* as Provider Impression. For patients with hypotension with poor perfusion that require addition normal saline or push-dose epinephrine document as *Shock (SHOK)*

10. **CONTACT BASE** for shock and for additional **Normal Saline 20mL/kg IV/IO** per *MCG1309*

11. If clinical evidence of poor perfusion persists despite fluid infusion or pulmonary edema develops requiring cessation of fluid administration:
    Push-dose Epinephrine – mix 9mL Normal Saline with 1mL Epinephrine (0.1mg/mL) IV formulation in a 10mL syringe; administer **Push-dose Epinephrine (0.01 mg/mL)**, dose per *MCG 1309* every 1-5 minutes as needed to maintain SBP > 70mmHg until hospital arrival ❻
    CONTACT BASE concurrent with initial dose of **Push-dose Epinephrine**

SPECIAL CONSIDERATIONS

❶ Shock is inadequate tissue perfusion, equivalent to poor perfusion for the purposes of this protocol. Consider Base Hospital Contact if hypotension/shock of unclear etiology. Use caution if the patient has known cyanotic congenital heart disease. Newborns requiring positive-pressure ventilation should receive 90 seconds of room air, and then start oxygen 15L/min if heart rate remains < 100 beats per minute and/or persistent shock.

❷ Maintaining a patient supine improves perfusion to vital organs; raising the lower limbs does not provide additional benefit. However, not all patients will tolerate a supine position, which can further compromise respiratory function and airway patency.

❸ Peripheral venous access may be difficult to obtain in infants and small children. Consider IO placement as primary vascular access in extremis patients for whom venous access is unlikely to be achieved rapidly. For older children, make two attempts at venous access and, if unsuccessful, place an IO for vascular access.

❹ Exposure to cold increases the likelihood of bleeding complications.

❺ There are many etiologies of shock. The treatment protocols referenced here contain guidance on specific interventions beyond what is contained in this treatment protocol. Although <70 mmHg is used as a generic cut-off for hypotension in pediatric patients the level of systolic blood pressure varies by age and those thresholds are found in *MCG 1309* and can be used in decisions for fluid resuscitation. Consider Base Hospital Contact if hypotension/shock of unclear etiology.

❻ **Push-dose Epinephrine** is appropriate for non-traumatic shock including cardiogenic shock. Additional doses beyond 10mL may need to be prepared for prolonged transports. For patients < 10kg, transfer the diluted **Push-dose Epinephrine** to a smaller (1mL or 3mL) syringe in order to administer the dose accurately.