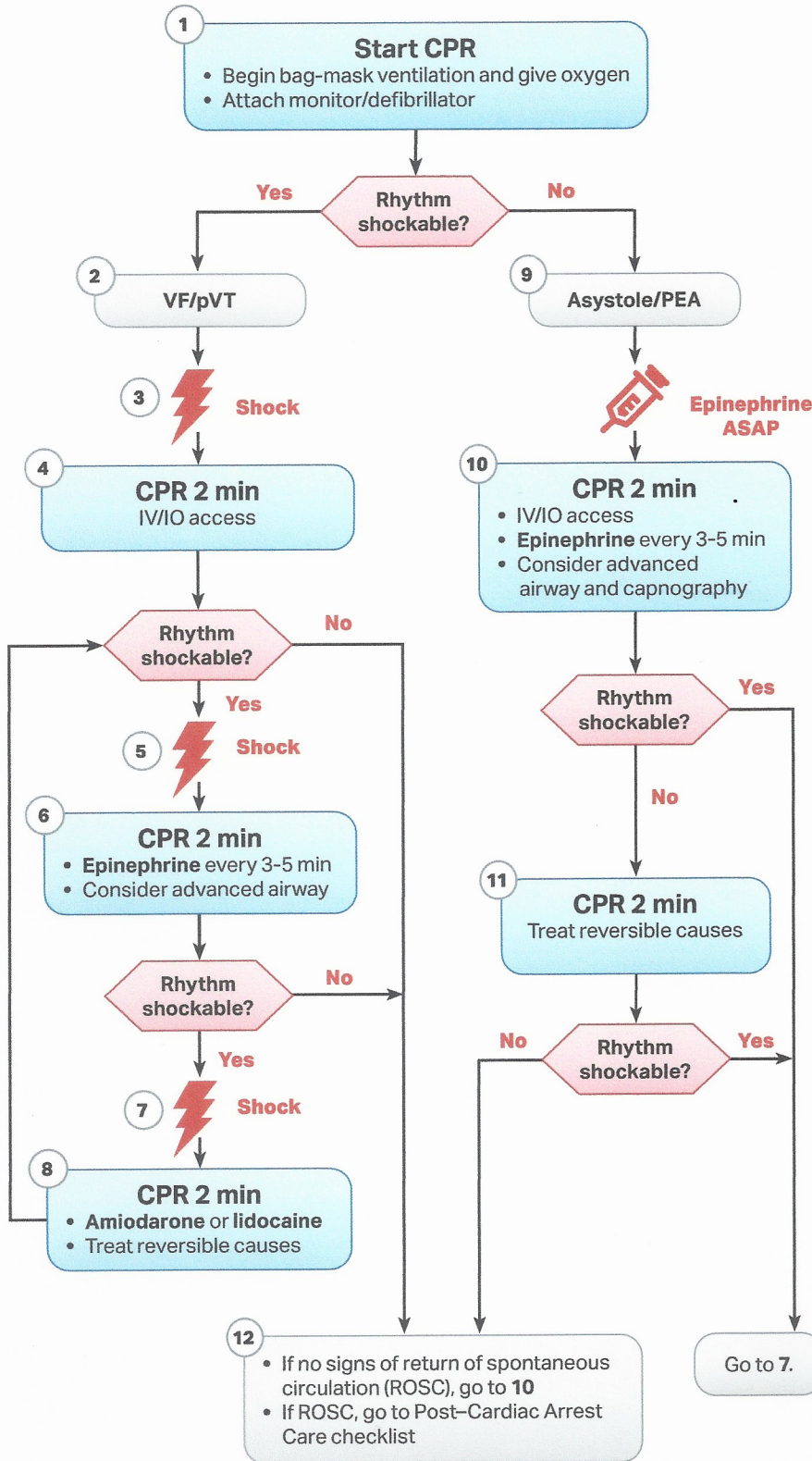
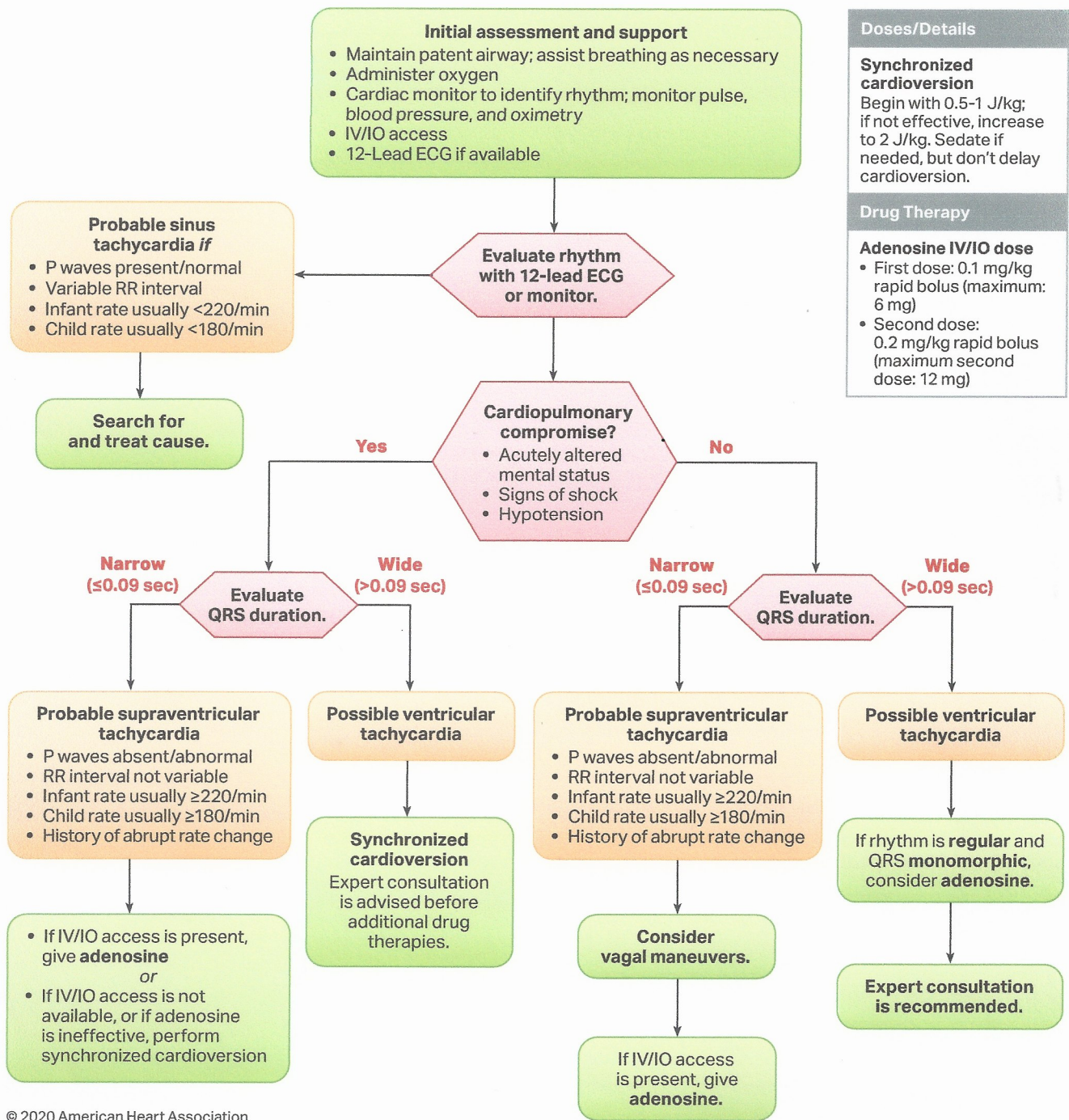


Pediatric Cardiac Arrest Algorithm



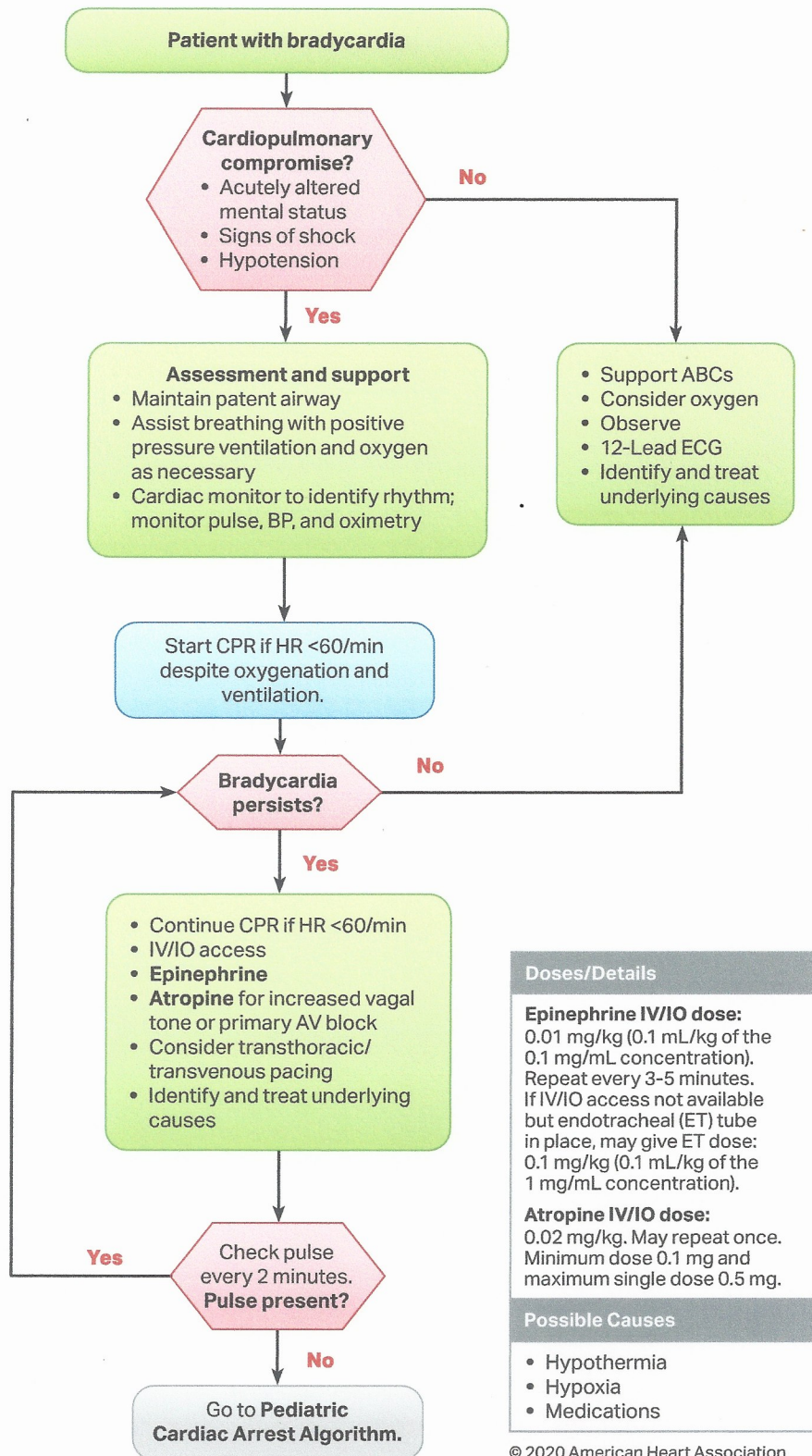
CPR Quality
<ul style="list-style-type: none"> • Push hard ($\geq\frac{1}{3}$ of anteroposterior diameter of chest) and fast (100-120/min) and allow complete chest recoil • Minimize interruptions in compressions • Change compressor every 2 minutes, or sooner if fatigued • If no advanced airway, 15:2 compression-ventilation ratio • If advanced airway, provide continuous compressions and give a breath every 2-3 seconds
Shock Energy for Defibrillation
<ul style="list-style-type: none"> • First shock 2 J/kg • Second shock 4 J/kg • Subsequent shocks ≥ 4 J/kg, maximum 10 J/kg or adult dose
Drug Therapy
<ul style="list-style-type: none"> • Epinephrine IV/IO dose: 0.01 mg/kg (0.1 mL/kg of the 0.1 mg/mL concentration). Max dose 1 mg. Repeat every 3-5 minutes. If no IV/IO access, may give endotracheal dose: 0.1 mg/kg (0.1 mL/kg of the 1 mg/mL concentration). • Amiodarone IV/IO dose: 5 mg/kg bolus during cardiac arrest. May repeat up to 3 total doses for refractory VF/pulseless VT or • Lidocaine IV/IO dose: Initial: 1 mg/kg loading dose
Advanced Airway
<ul style="list-style-type: none"> • Endotracheal intubation or supraglottic advanced airway • Waveform capnography or capnometry to confirm and monitor ET tube placement
Reversible Causes
<ul style="list-style-type: none"> • Hypovolemia • Hypoxia • Hydrogen ion (acidosis) • Hypoglycemia • Hypo-/hyperkalemia • Hypothermia • Tension pneumothorax • Tamponade, cardiac • Toxins • Thrombosis, pulmonary • Thrombosis, coronary

Pediatric Tachycardia With a Pulse Algorithm



Doses/Details
Synchronized cardioversion Begin with 0.5-1 J/kg; if not effective, increase to 2 J/kg. Sedate if needed, but don't delay cardioversion.
Drug Therapy
Adenosine IV/IO dose • First dose: 0.1 mg/kg rapid bolus (maximum: 6 mg) • Second dose: 0.2 mg/kg rapid bolus (maximum second dose: 12 mg)

Pediatric Bradycardia With a Pulse Algorithm



Doses/Details

Epinephrine IV/IO dose:
0.01 mg/kg (0.1 mL/kg of the 0.1 mg/mL concentration). Repeat every 3-5 minutes. If IV/IO access not available but endotracheal (ET) tube in place, may give ET dose: 0.1 mg/kg (0.1 mL/kg of the 1 mg/mL concentration).

Atropine IV/IO dose:
0.02 mg/kg. May repeat once. Minimum dose 0.1 mg and maximum single dose 0.5 mg.

Possible Causes

- Hypothermia
- Hypoxia
- Medications

PALS Management of Shock After ROSC Algorithm

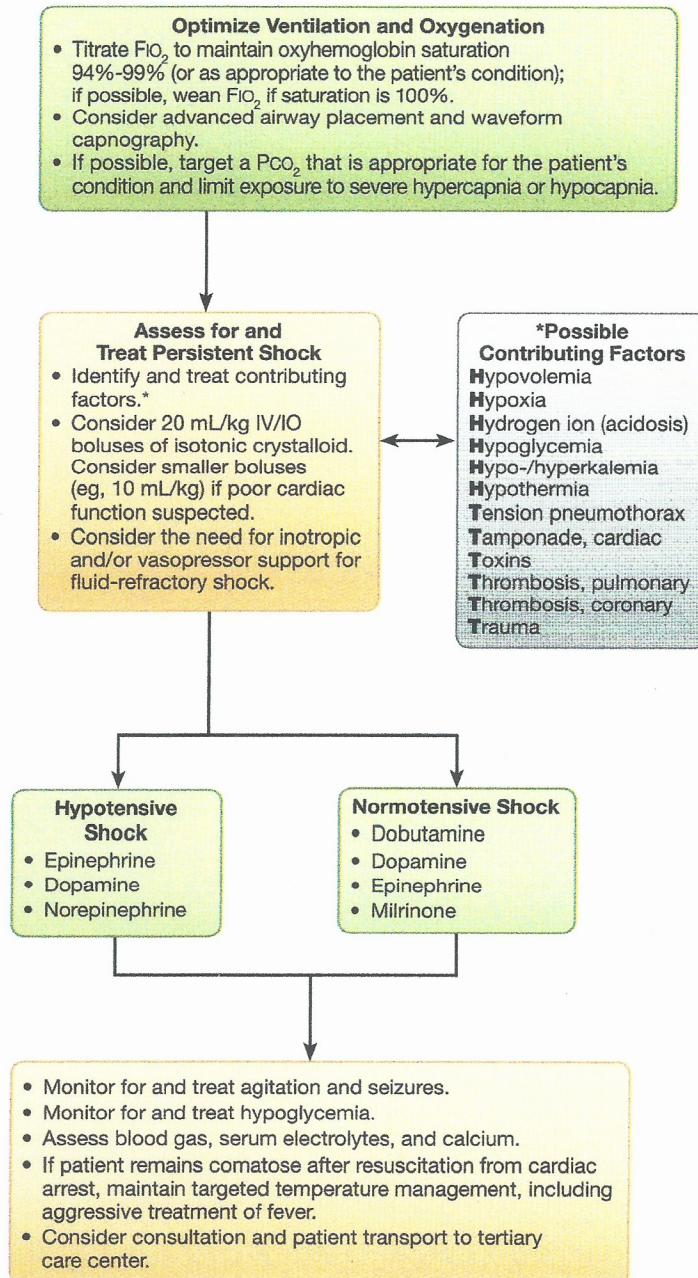


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Estimation of Maintenance Fluid Requirements

- **Infants <10 kg:** 4 mL/kg per hour

Example: For an 8-kg infant, estimated maintenance fluid rate
 = 4 mL/kg per hour × 8 kg
 = 32 mL per hour

- **Children 10-20 kg:** 40 mL per hour + 2 mL/kg per hour for each kg above 10 kg

Example: For a 15-kg child, estimated maintenance fluid rate
 40 mL per hour
 + (2 mL/kg per hour × 5 kg)
 = 50 mL per hour

- **Children >20 kg:** 60 mL per hour + 1 mL/kg per hour for each kg above 20 kg

Example: For a 28-kg child, estimated maintenance fluid rate
 60 mL per hour
 + (1 mL/kg per hour × 8 kg)
 = 68 mL per hour

After initial stabilization, adjust the rate and composition of intravenous fluids based on the patient's clinical condition and state of hydration. In general, provide a continuous infusion of a dextrose-containing solution for infants. Avoid hypotonic solutions in critically ill children; for most patients, use isotonic fluid such as normal saline (0.9% NaCl) or lactated Ringer's solution with or without dextrose, based on the child's clinical status.

Pediatric Septic Shock Algorithm

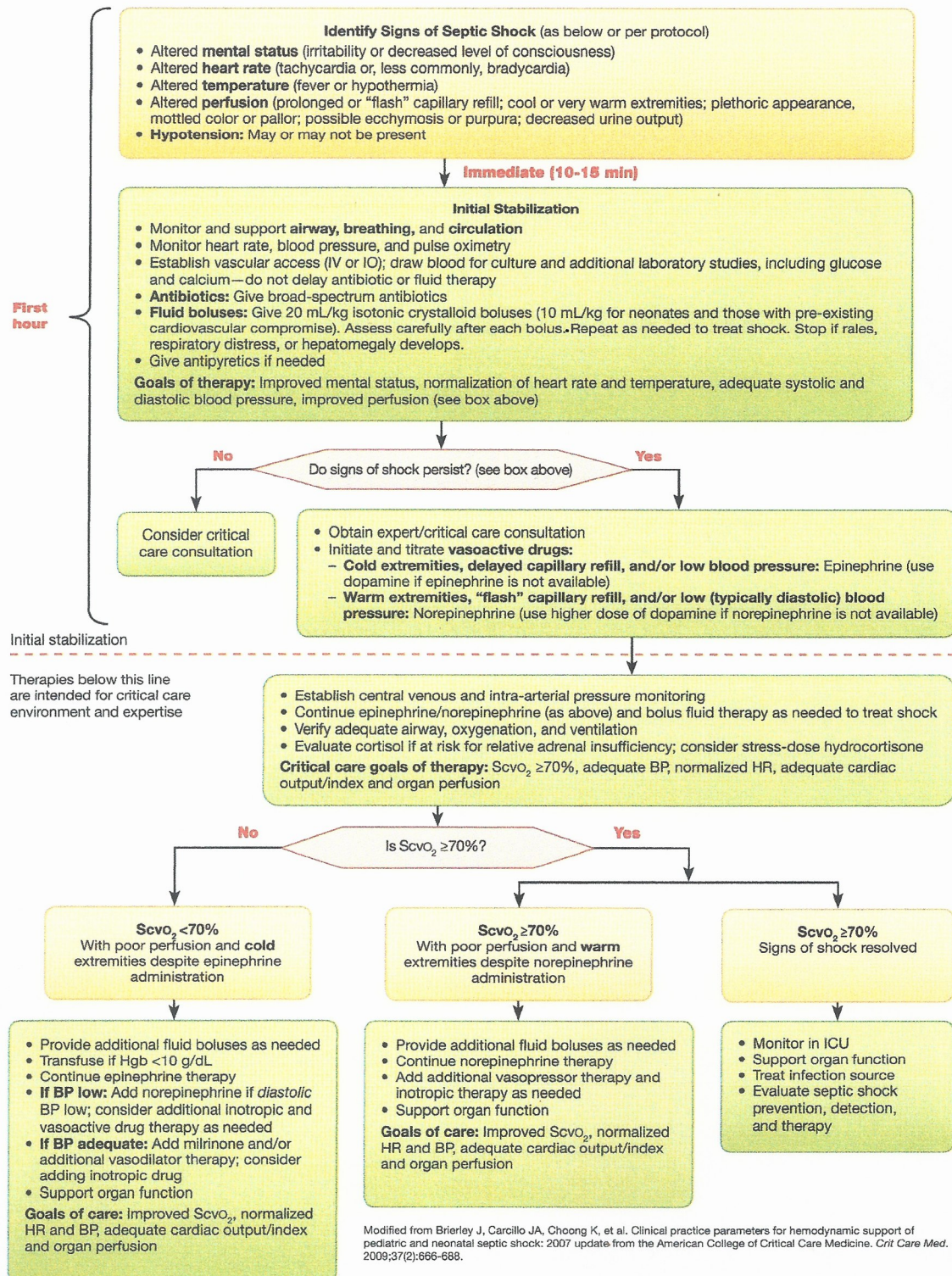


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Modified from Brierley J, Carrillo JA, Choong K, et al. Clinical practice parameters for hemodynamic support of pediatric and neonatal septic shock: 2007 update from the American College of Critical Care Medicine. *Crit Care Med*. 2009;37(2):666-688.



PALS Systematic Approach Algorithm



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