

Zone	3 kg	4 kg	5 kg	Pink	Red	Purple	Yellow	White	Blue	Orange	Green
ETT uncuffed (mm)	3.5	3.5	3.5	3.5	3.5	4.0	4.5	5.0	5.5	N/A	N/A
ETT cuffed (mm)	3.0	3.0	3.0	3.0	3.0	3.5	4.0	4.5	5.0	5.5	6.0
Lip-tip (cm)	9-9.5	9.5-10	10-10.5	10-10.5	10.5-11	11-12	12.5-13.5	14-15	15.5-16.5	17-18	18.5-19.5
Suction (F)	8	8	8	8	8	8	10	10	10	10	12
L-scope blade	1 straight	1-1.5 straight	2 straight/curved	2 straight/curved	2 straight/curved	2-3 straight/curved	2-3 straight/curved				
Stylet	6 F	6 F	6 F	6 F	6 F	6 F	10 F	10 F	10 F	14 F	14 F
OPA (mm)	50	50	50	50	50	60	60	60	70	80	80
NPA (F)	14	14	14	14	14	18	20	22	24	26	26
Bag-mask device (minimum mL)	450	450	450	450	450	450	450	450-750	750-1000	750-1000	1000
ETCO ₂ detector	Ped	Ped	Ped	Ped	Ped	Ped	Ped	Adult	Adult	Adult	Adult
LMA	1	1	1	1.5	1.5	2	2	2	2-2.5	2.5	3
Tidal volume (mL)	20-30	24-40	30-50	40-65	50-85	65-105	80-130	100-165	125-210	160-265	200-330
Frequency	20-25/min	20-25/min	20-25/min	20-25/min	20-25/min	15-25/min	15-25/min	15-25/min	12-20/min	12-20/min	12-20/min

Abbreviations: ETT, endotracheal tube; F, French; LMA, laryngeal mask airway; NPA, nasopharyngeal airway; OPA, oropharyngeal airway; Ped, pediatric. Adapted from Broselov™ Pediatric Emergency Tape. Distributed by Armstrong Medical Industries Inc., Lincolnshire, IL. Copyright 2019 Vital Signs Inc. Courtesy and © Becton, Dickinson and Company. Reprinted with permission.



American Heart Association

AMERICAN ASSOCIATION OF CRITICAL-CARE NURSES

PALS

Vital signs in Children

These 3 tables are reproduced or modified from Hazinski MF: Children are different. In: Nursing Care of the Critically Ill Child, 3rd ed. Mosby; 2013:1-18, copyright Elsevier.

Normal Heart Rates*

Age	Awake rate (beats/min)	Sleeping rate (beats/min)
Neonate	100-205	90-160
Infant	100-180	90-160
Toddler	98-140	80-120
Preschooler	80-120	65-100
School-age child	75-118	58-90
Adolescent	60-100	50-90

*Always consider the patient's normal range and clinical condition. The child's respiratory rate is expected to increase in the presence of fever or stress.

Age	Rate (breaths/min)
Infant	30-53
Toddler	22-37
Preschooler	20-28
School-age child	18-25
Adolescent	12-20

*Consider the patient's normal range. The child's respiratory rate is expected to increase in the presence of fever or stress. Data from Fleming S et al. Lancet. 2011;377(9770):1011-1018.

Normal Blood Pressures

Age	Systolic pressure (mm Hg)*	Diastolic pressure (mm Hg)*	Mean arterial pressure (mm Hg)*
Birth (12 h, <1000 g)	39-59	16-36	28-42†
Birth (12 h, 3 kg)	60-76	31-45	48-57
Neonate (96 h)	67-84	35-53	45-60
Infant (1-12 mo)	72-104	37-56	50-62
Toddler (1-2 y)	86-106	42-63	49-62
Preschooler (3-5 y)	89-112	46-72	58-69
School-age child (6-9 y)	97-115	57-76	66-72
Preadolescent (10-12 y)	102-120	61-80	71-79
Adolescent (12-15 y)	110-131	64-83	73-84

*Systolic and diastolic blood pressure ranges assume 50th percentile for height for children 1 year and older. Mean arterial pressures (diastolic pressure + 1/3 difference between systolic and diastolic pressures/3) for 1 year and older, assuming 50th percentile for height.

† Approximately equal to postconception age in weeks (may add 5 mm Hg).

Data from Gemmill M et al. Eur J Pediatr. 1990;149(3):18-320; Versmold HT et al. Pediatrics. 1981;67(5):607-613; Haque UJ, Zaitzky AL. Pediatr Crit Care Med. 2007;8(2):138-144; and National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents. The Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents. NHLBI; 2005. NIH publication 05-5267.

Drugs Used in PALS

Drug	Indications/dosages
Adenosine	<ul style="list-style-type: none"> SVT • 0.1 mg/kg IV/IO <i>rapid</i> push (max 6 mg); second dose 0.2 mg/kg IV/IO <i>rapid</i> push (max 12 mg)
Albuterol	<ul style="list-style-type: none"> Asthma, anaphylaxis (bronchospasm), hyperkalemia • MDI: 4 to 8 puffs via inhalation q 20 minutes PRN with spacer (or ET if intubated) • Nebulizer: 2.5 mg/dose (wt <20 kg) or 5 mg/dose (wt >20 kg) via inhalation q 20 minutes PRN • Continuous nebulizer: 0.5 mg/kg per hour via inhalation (max 20 mg/h)
Amiodarone	<ul style="list-style-type: none"> SVT, VT (with pulses) • 5 mg/kg IV/IO <i>load</i> over 20 to 60 minutes (max 300 mg); repeat to daily max 15 mg/kg (2.2 g in adolescents) Pulseless arrest (ie, VF/pulseless VT) • 5 mg/kg IV/IO <i>bolus</i> (max 300 mg); repeat to daily max 15 mg/kg (2.2 g in adolescents)
Atropine sulfate	<ul style="list-style-type: none"> Bradycardia (symptomatic) • 0.02 mg/kg IV/IO (max single dose 0.5 mg); may repeat dose once in 3 to 5 minutes; max total dose child 1 mg, max total dose adolescent 3 mg • 0.04 to 0.06 mg/kg ET Toxins/overdose (eg, organophosphate, carbamate) • <12 years: 0.05 mg/kg IV/IO initially; then repeated and doubling the dose every 5 minutes until muscarinic symptoms reverse • ≥12 years: 1 mg IV/IO initially; then repeated and doubling the dose every 5 minutes until muscarinic symptoms reverse
Calcium chloride 10%	<ul style="list-style-type: none"> Hypocalcemia, hyperkalemia, hypomagnesemia, calcium channel blocker overdose • 20 mg/kg (0.2 mL/kg) IV/IO <i>slow</i> push during arrest; repeat PRN
Calcium gluconate	<ul style="list-style-type: none"> Hypocalcemia, hyperkalemia, hypomagnesemia, calcium channel blocker overdose • 80 mg/kg (0.6 mL/kg) IV/IO <i>slow</i> push during arrest; repeat PRN
Dexamethasone	<ul style="list-style-type: none"> Croup • 0.6 mg/kg PO/IM/IV (max 16 mg) Asthma • 0.6 mg/kg PO/IM/IV every 24 hours (max 16 mg)
Dextrose (glucose)	<ul style="list-style-type: none"> Hypoglycemia • 0.5 to 1 g/kg IV/IO (D₅W/2 to 4 mL/kg; D₁₀W/5 to 10 mL/kg)
Epinephrine	<ul style="list-style-type: none"> Pulseless arrest, bradycardia (symptomatic) • 0.01 mg/kg (0.1 mL/kg of the 0.1 mg/mL concentration) IV/IO q 3 to 5 minutes (max single dose 1 mg) • 0.1 mg/kg (0.1 mL/kg of the 1 mg/mL concentration) ET q 3 to 5 minutes Hypotensive shock • 0.1 to 1 mcg/kg per minute IV/IO infusion (consider higher doses if needed) Anaphylaxis • IM autoinjector 0.3 mg (for patient weighing ≥30 kg) or IM junior autoinjector 0.15 mg (for patient weighing 10 to 30 kg) • 0.01 mg/kg (0.01 mL/kg of the 1 mg/mL concentration) IM q 15 minutes PRN (max single dose 0.3 mg) • 0.01 mg/kg (0.1 mL/kg of the 0.1 mg/mL concentration) IV/IO q 3 to 5 minutes (max single dose 1 mg) if hypotensive • 0.1 to 1 mcg/kg per minute IV/IO infusion if hypotension persists despite fluids and IM injection Asthma • 0.01 mg/kg (0.01 mL/kg of the 1 mg/mL concentration) subcutaneously q 15 minutes (max 0.3 mg or 0.3 mL)
Croup	<ul style="list-style-type: none"> • 0.25 to 0.5 mL <i>racemic</i> solution (2.25%) mixed in 3 mL NS via inhalation • 3 mg (3 mL of the 1 mg/mL concentration) epinephrine mixed with 3 mL NS (which yields 0.25 mL <i>racemic</i> epinephrine solution) via inhalation

Drugs Used in PALS (continued)

Drug	Indications/dosages
Etomidate	<ul style="list-style-type: none"> RSI • 0.2 to 0.4 mg/kg IV/IO infused over 30 to 60 seconds (max 20 mg) will produce rapid sedation that lasts for 10 to 15 minutes
Hydrocortisone	<ul style="list-style-type: none"> Adrenal insufficiency • 2 mg/kg IV <i>bolus</i> (max 100 mg)
Ipratropium bromide	<ul style="list-style-type: none"> Asthma • 250 to 500 mcg via inhalation q 20 minutes PRN × 3 doses
Lidocaine	<ul style="list-style-type: none"> VF/pulseless VT wide-complex tachycardia (with pulses) • 1 mg/kg IV/IO <i>bolus</i> • Maintenance 20 to 50 mcg/kg per minute IV/IO infusion (repeat <i>bolus</i> dose if infusion infused >15 minutes after initial <i>bolus</i>) • 2 to 3 mg/kg ET
Magnesium sulfate	<ul style="list-style-type: none"> Asthma (refractory status asthmaticus), torsades de pointes, hypomagnesemia • 25 to 50 mg/kg IV/IO <i>bolus</i> (max 2 g) (pulseless VT) or over 10 to 20 minutes (VT with pulses) or <i>slow</i> infusion over 15 to 30 minutes (status asthmaticus)
Methyl-prednisolone	<ul style="list-style-type: none"> Asthma (status asthmaticus), anaphylactic shock • Load: 2 mg/kg IV/IO/IM (max 60 mg); only use acetate salt IM • Maintenance 0.5 mg/kg IV/IO q 6 hours (max 120 mg/d)
Milrinone	<ul style="list-style-type: none"> Myocardial dysfunction and increased SVR/PVR • Loading dose: 50 mcg/kg IV/IO over 10 to 60 minutes followed by 0.25 to 0.75 mcg/kg per minute IV/IO infusion
Naloxone	<ul style="list-style-type: none"> Narcotic (opioid) reversal • Total reversal required (for narcotic toxicity secondary to overdose): 0.1 mg/kg IV/IO/IM/subcutaneous <i>bolus</i> q 2 minutes PRN (max 2 mg) • Total reversal not required (eg, for respiratory depression associated with therapeutic narcotic use): 1 to 5 mcg/kg IV/IO/IM/subcutaneously; titrate to desired effect • Maintain reversal: 0.002 to 0.16 mg/kg per hour IV/IO infusion
Nitroglycerin	<ul style="list-style-type: none"> Heart failure, cardiogenic shock • Initiate at 0.25 to 0.5 mcg/kg per minute IV/IO infusion; titrate by 1 mcg/kg per minute q 15 to 20 minutes as tolerated. Typical dose range 1 to 5 mcg/kg per minute (max 10 mcg/kg per minute) • In adolescents, start with 5 to 10 mcg per minute (not per kilogram per minute) and increase to max 200 mcg per minute
Nitroprusside	<ul style="list-style-type: none"> Cardiogenic shock (ie, associated with high SVR), severe hypertension • 0.3 to 1 mcg/kg per minute initial dose; then titrate up to 8 mcg/kg per minute PRN
Norepinephrine	<ul style="list-style-type: none"> Hypotensive (usually distributive) shock (ie, low SVR and fluid refractory) • 0.05 to 2 mcg/kg per minute IV/IO infusion; titrate to desired effect
Prostaglandin E₁ (PGE₁)	<ul style="list-style-type: none"> Ductal-dependent congenital heart disease (all forms) • 0.25 to 0.1 mcg/kg per minute IV/IO infusion initially; then 0.01 to 0.05 mcg/kg per minute IV/IO
Sodium bicarbonate	<ul style="list-style-type: none"> Metabolic acidosis (severe), hyperkalemia • 1 mEq/kg IV/IO <i>slow</i> <i>bolus</i> Sodium channel blocker overdose (eg, tricyclic antidepressant) • 1 to 2 mEq/kg IV/IO <i>bolus</i> until serum pH is >7.45 (7.50 to 7.55 for severe poisoning) followed by IV/IO infusion of 150 mEq NaHCO₃L solution titrated to maintain alkalosis
Vasopressin	<ul style="list-style-type: none"> Catecholamine-resistant hypotension • 0.0002 to 0.002 units/kg per minute (0.2 to 2 millunits/kg per minute) continuous infusion

Doses/Details for the Pediatric Cardiac Arrest Algorithm

CPR quality	Drug therapy <i>(continued)</i>
<ul style="list-style-type: none"> • Push hard ($\geq 1/3$ 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 	<ul style="list-style-type: none"> • Amiodarone IV/IO dose: 5 mg/kg bolus during cardiac arrest. May repeat up to 3 total doses for refractory VF/pulseless VT <i>or</i> • Lidocaine IV/IO dose: Initial: 1 mg/kg loading dose
Shock energy for defibrillation	Advanced airway
<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 	<ul style="list-style-type: none"> • Endotracheal intubation or supraglottic advanced airway • Waveform capnography or capnometry to confirm and monitor ET tube placement
Drug therapy	Reversible causes
<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). 	<ul style="list-style-type: none"> • Hypovolemia • Hypoxia • Hydrogen ion (acidosis) • Hypoglycemia • Hypo-/hyperkalemia • Hypothermia • Tension pneumothorax • Tamponade, cardiac • Toxins • Thrombosis, pulmonary • Thrombosis, coronary

Estimating Endotracheal Tube Size

The formula for estimation of proper endotracheal tube size (internal diameter [i.d.]) for children 2 to 10 years of age, based on the child's age:

$$\text{Uncuffed endotracheal tube size (mm i.d.)} = (\text{age in years}/4) + 4$$

The formula for estimation of a cuffed endotracheal tube size is as follows:

$$\text{Cuffed endotracheal tube size (mm i.d.)} = (\text{age in years}/4) + 3.5$$

Typical cuffed inflation pressure should be <20 to 25 cm H₂O.

Pharmacology Review (more in depth)

📄 Pharm-Slide-Set.ppt

<https://docs.google.com/presentation/d/14mZJCBL2JZdjYd9Ru5MJtZun9rIhkDuWouTEuSogBNI/edit?usp=sharing>

Videos to Review

▶ Physio-Control LUCAS 3 Chest Compression System - Prehospital Use

<https://www.youtube.com/watch?v=bIE-sj45DIY>

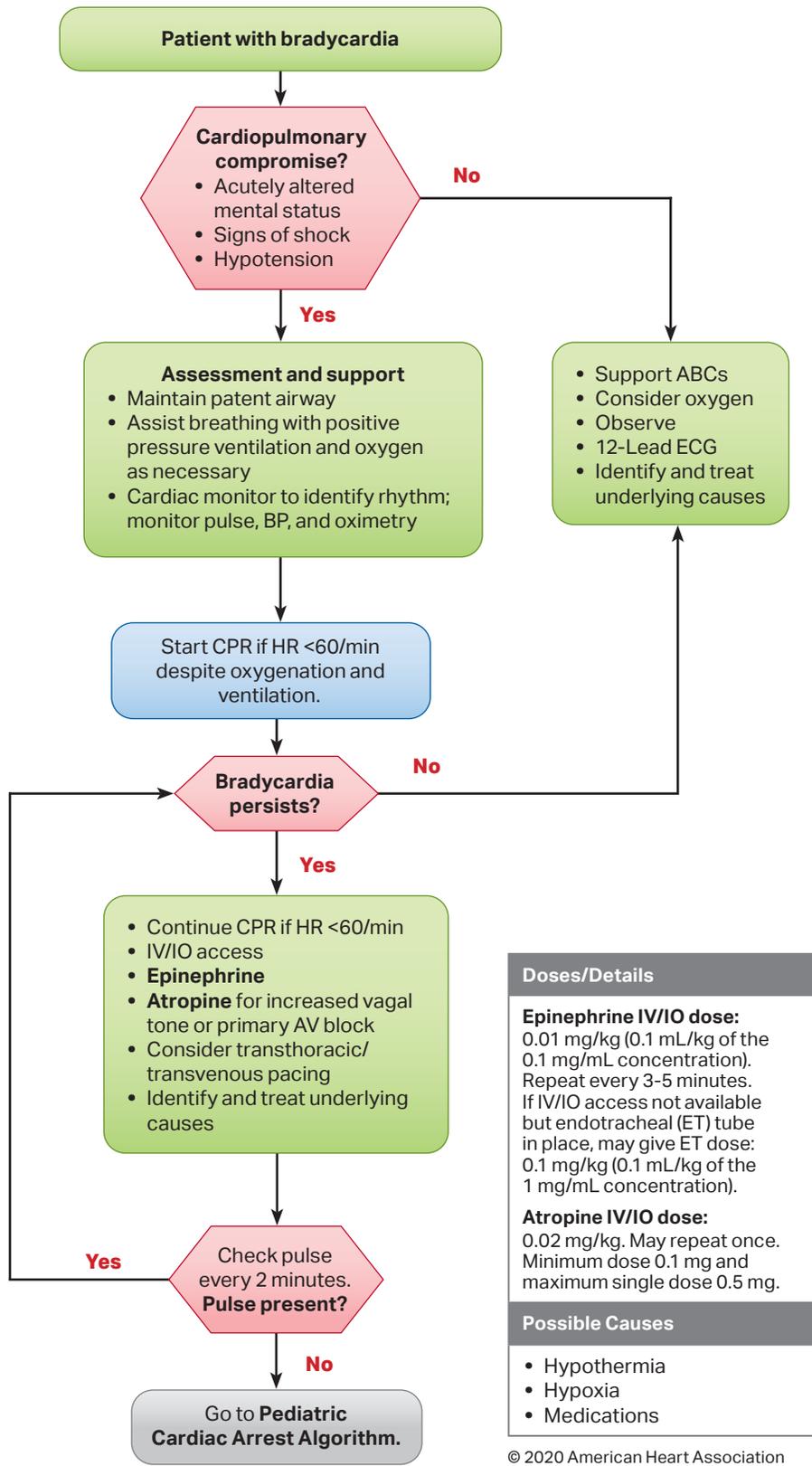
▶ Arrow® EZ-IO® System - Proximal Tibia Site Identification/Insertion (Infant/Child, Animation)

<https://www.youtube.com/watch?v=99DVtJski6k>

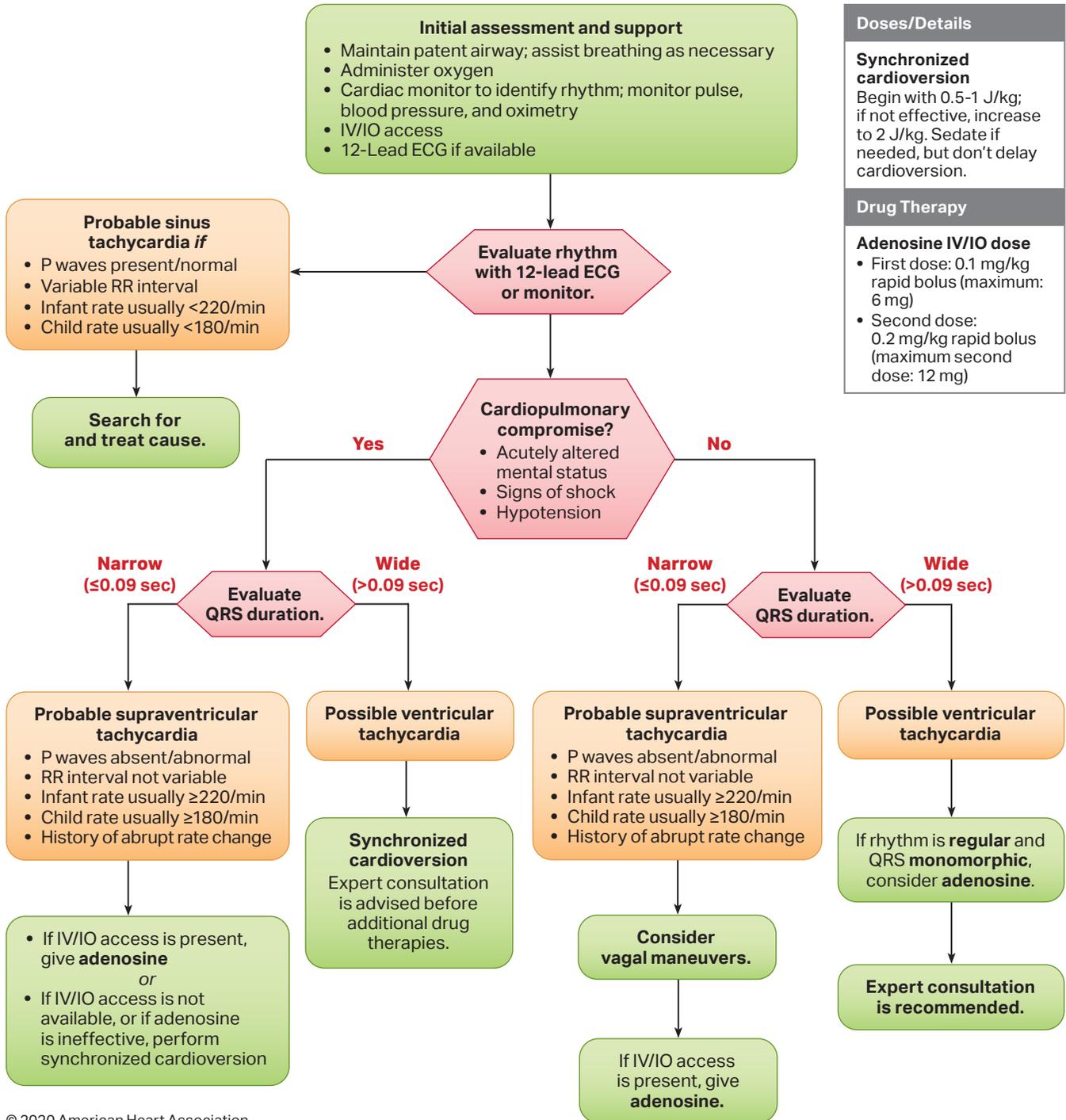
Online ECG Simulator

<https://www.skillstat.com/tools/ecg-simulator/>

Pediatric Bradycardia With a Pulse Algorithm

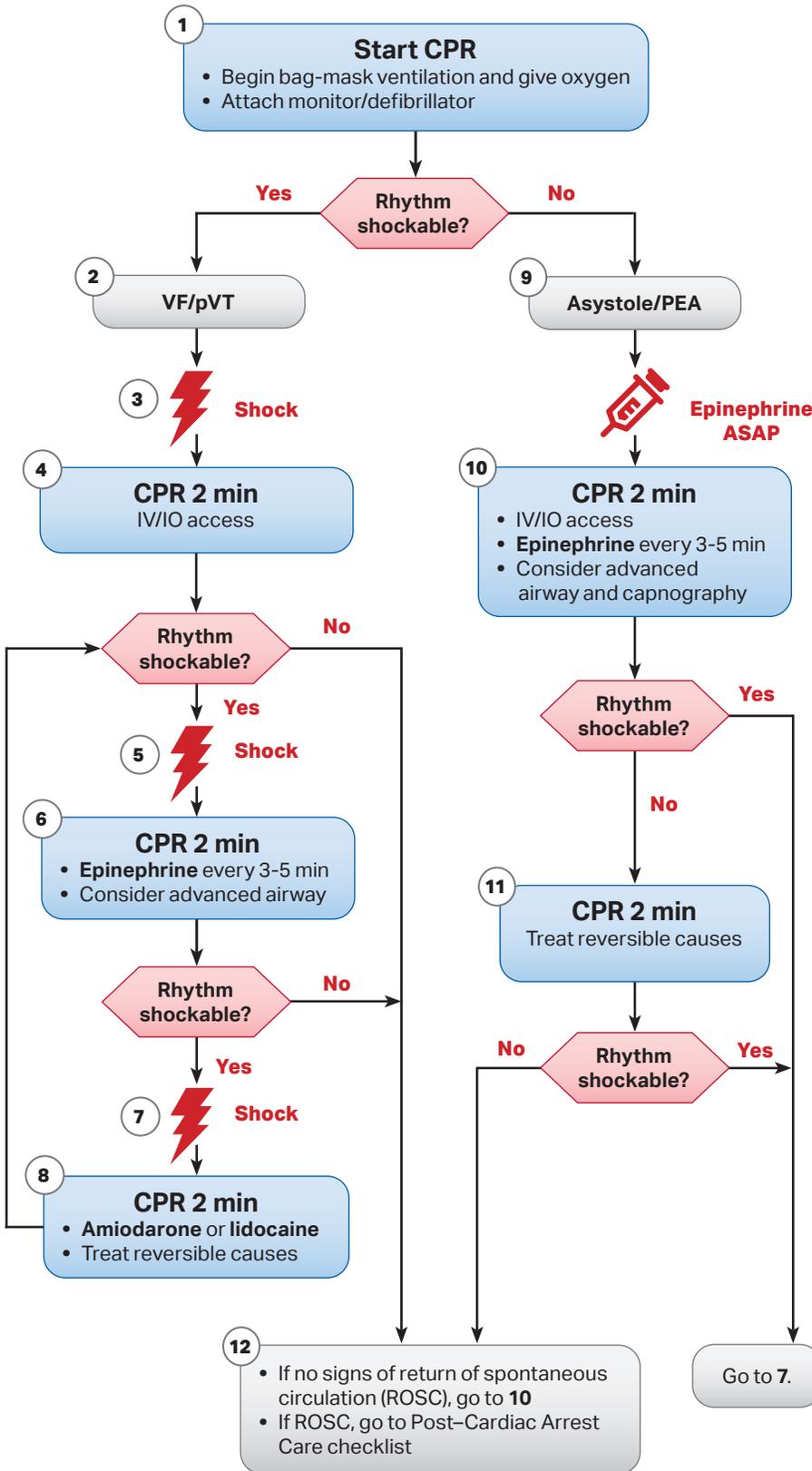


Pediatric Tachycardia With a Pulse Algorithm



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 <ul style="list-style-type: none"> • 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 Cardiac Arrest Algorithm



CPR Quality

- 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

- First shock 2 J/kg
- Second shock 4 J/kg
- Subsequent shocks ≥ 4 J/kg, maximum 10 J/kg or adult dose

Drug Therapy

- **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

- Endotracheal intubation or supraglottic advanced airway
- Waveform capnography or capnometry to confirm and monitor ET tube placement

Reversible Causes

- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypoglycemia
- Hypo-/hyperkalemia
- Hypothermia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary

Components of Post-Cardiac Arrest Care	Check
Oxygenation and ventilation	
Measure oxygenation and target normoxemia 94%-99% (or child's normal/appropriate oxygen saturation).	<input type="checkbox"/>
Measure and target $Paco_2$ appropriate to the patient's underlying condition and limit exposure to severe hypercapnia or hypocapnia.	<input type="checkbox"/>
Hemodynamic monitoring	
Set specific hemodynamic goals during post-cardiac arrest care and review daily.	<input type="checkbox"/>
Monitor with cardiac telemetry.	<input type="checkbox"/>
Monitor arterial blood pressure.	<input type="checkbox"/>
Monitor serum lactate, urine output, and central venous oxygen saturation to help guide therapies.	<input type="checkbox"/>
Use parenteral fluid bolus with or without inotropes or vasopressors to maintain a systolic blood pressure greater than the fifth percentile for age and sex.	<input type="checkbox"/>
Targeted temperature management (TTM)	
Measure and continuously monitor core temperature.	<input type="checkbox"/>
Prevent and treat fever immediately after arrest and during rewarming.	<input type="checkbox"/>
If patient is comatose apply TTM (32°C-34°C) followed by (36°C-37.5°C) or only TTM (36°C-37.5°C).	<input type="checkbox"/>
Prevent shivering.	<input type="checkbox"/>
Monitor blood pressure and treat hypotension during rewarming.	<input type="checkbox"/>
Neuromonitoring	
If patient has encephalopathy and resources are available, monitor with continuous electroencephalogram.	<input type="checkbox"/>
Treat seizures.	<input type="checkbox"/>
Consider early brain imaging to diagnose treatable causes of cardiac arrest.	<input type="checkbox"/>
Electrolytes and glucose	
Measure blood glucose and avoid hypoglycemia.	<input type="checkbox"/>
Maintain electrolytes within normal ranges to avoid possible life-threatening arrhythmias.	<input type="checkbox"/>
Sedation	
Treat with sedatives and anxiolytics.	<input type="checkbox"/>
Prognosis	
Always consider multiple modalities (clinical and other) over any single predictive factor.	<input type="checkbox"/>
Remember that assessments may be modified by TTM or induced hypothermia.	<input type="checkbox"/>
Consider electroencephalogram in conjunction with other factors within the first 7 days after cardiac arrest.	<input type="checkbox"/>
Consider neuroimaging such as magnetic resonance imaging during the first 7 days.	<input type="checkbox"/>

Managing Respiratory Emergencies Flowchart

Managing respiratory emergencies flowchart		
<ul style="list-style-type: none"> • Airway positioning • Suction as needed 	<ul style="list-style-type: none"> • Oxygen • Pulse oximetry 	<ul style="list-style-type: none"> • ECG monitor as indicated • BLS as indicated
Upper airway obstruction		
Specific management for selected conditions		
Croup	Anaphylaxis	Aspiration foreign body
<ul style="list-style-type: none"> • Nebulized epinephrine • Corticosteroids 	<ul style="list-style-type: none"> • IM epinephrine (or autoinjector) • Albuterol • Antihistamines • Corticosteroids 	<ul style="list-style-type: none"> • Allow position of comfort • Specialty consultation
Lower airway obstruction		
Specific management for selected conditions		
Bronchiolitis	Asthma	
<ul style="list-style-type: none"> • Nasal suctioning • Consider bronchodilator trial 	<ul style="list-style-type: none"> • Albuterol ± ipratropium • Corticosteroids • Magnesium sulfate • IM epinephrine (if severe) • Terbutaline 	
Lung tissue disease		
Specific management for selected conditions		
Pneumonia/pneumonitis Infectious, chemical, aspiration	Pulmonary edema Cardiogenic or noncardiogenic (ARDS)	
<ul style="list-style-type: none"> • Albuterol • Antibiotics (as indicated) • Consider noninvasive or invasive ventilatory support with PEEP 	<ul style="list-style-type: none"> • Consider noninvasive or invasive ventilatory support with PEEP • Consider vasoactive support • Consider diuretic 	
Disordered control of breathing		
Specific management for selected conditions		
Increased ICP	Poisoning/overdose	Neuromuscular disease
<ul style="list-style-type: none"> • Avoid hypoxemia • Avoid hypercarbia • Avoid hyperthermia • Avoid hypotension 	<ul style="list-style-type: none"> • Antidote (if available) • Contact poison control 	<ul style="list-style-type: none"> • Consider noninvasive or invasive ventilatory support

Managing Shock Flowchart

Managing shock flowchart			
<ul style="list-style-type: none"> Oxygen Pulse oximetry ECG monitor 		<ul style="list-style-type: none"> IV/IO access BLS as indicated Point-of-care glucose testing 	
<p align="center">Hypovolemic shock: Specific management for selected conditions</p>			
Nonhemorrhagic		Hemorrhagic	
<ul style="list-style-type: none"> 20 mL/kg NS/LR bolus, repeat as needed Consider colloid 		<ul style="list-style-type: none"> Control external bleeding 20 mL/kg NS/LR bolus, repeat 2 or 3x as needed Transfuse PRBCs as indicated 	
<p align="center">Distributive shock: Specific management for selected conditions</p>			
Septic	Anaphylactic	Neurogenic	
Management algorithm: <ul style="list-style-type: none"> Septic Shock 	<ul style="list-style-type: none"> IM epinephrine (or autoinjector) Fluid boluses (10-20 mL/kg NS/LR) Albuterol Antihistamines, corticosteroids Epinephrine infusion 	<ul style="list-style-type: none"> 20 mL/kg NS/LR bolus, repeat PRN Vasopressor 	
<p align="center">Cardiogenic shock: Specific management for selected conditions</p>			
Bradyarrhythmia/tachyarrhythmia		Other (eg, CHD, myocarditis, cardiomyopathy, poisoning)	
Management algorithms: <ul style="list-style-type: none"> Bradycardia Tachycardia 		<ul style="list-style-type: none"> 5 to 10 mL/kg NS/LR bolus, repeat PRN Inotropic and/or vasoactive infusion Consider expert consultation Antidote for poisoning 	
<p align="center">Obstructive shock: Specific management for selected conditions</p>			
Ductal-dependent (LV outflow obstruction)	Tension pneumothorax	Cardiac tamponade	Pulmonary embolism
<ul style="list-style-type: none"> Prostaglandin E1 Expert consultation 	<ul style="list-style-type: none"> Needle decompression Tube thoracostomy 	<ul style="list-style-type: none"> Pericardiocentesis 20 mL/kg NS/LR bolus 	<ul style="list-style-type: none"> 20 mL/kg NS/LR bolus, repeat PRN Consider thrombolytics, anticoagulants Expert consultation