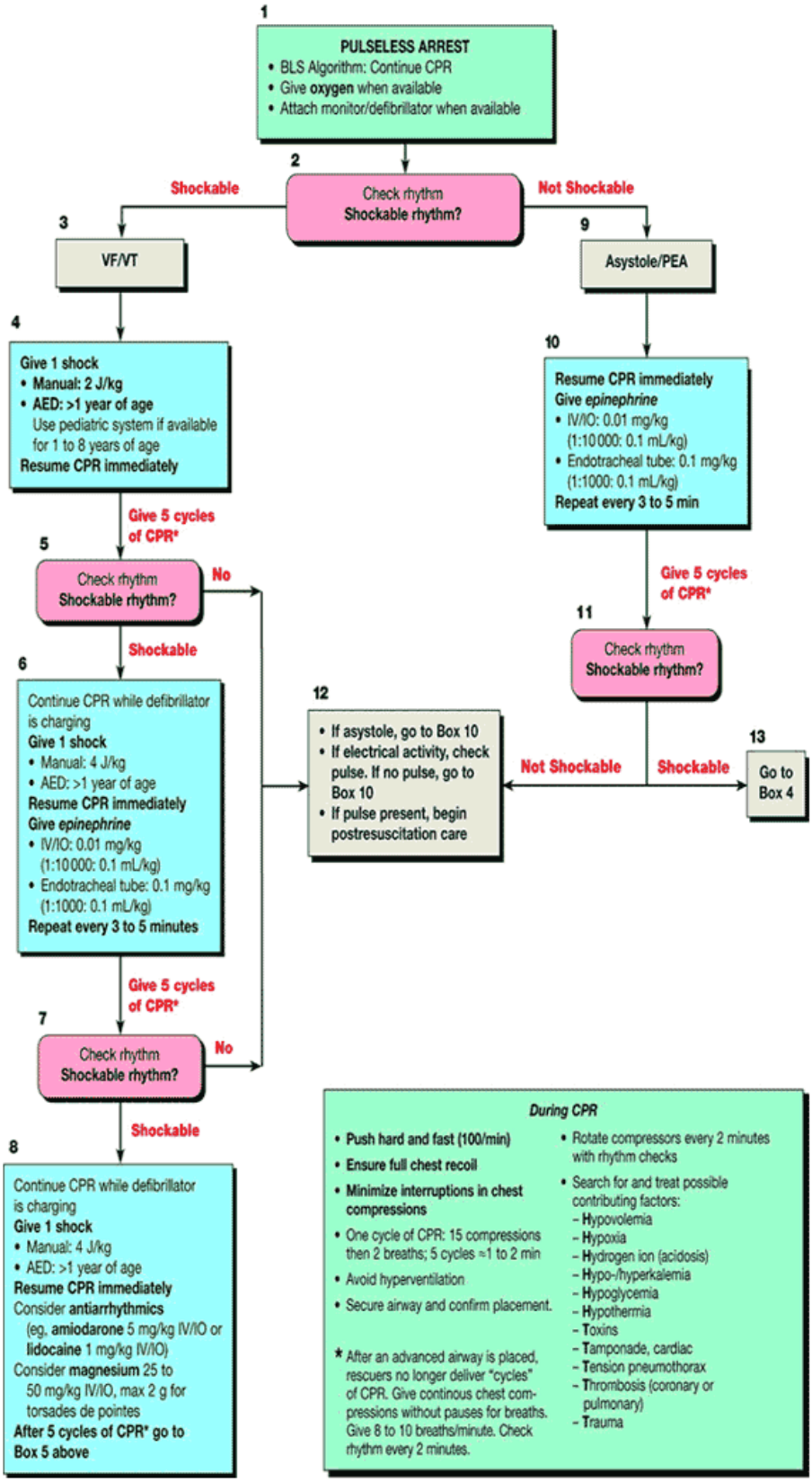
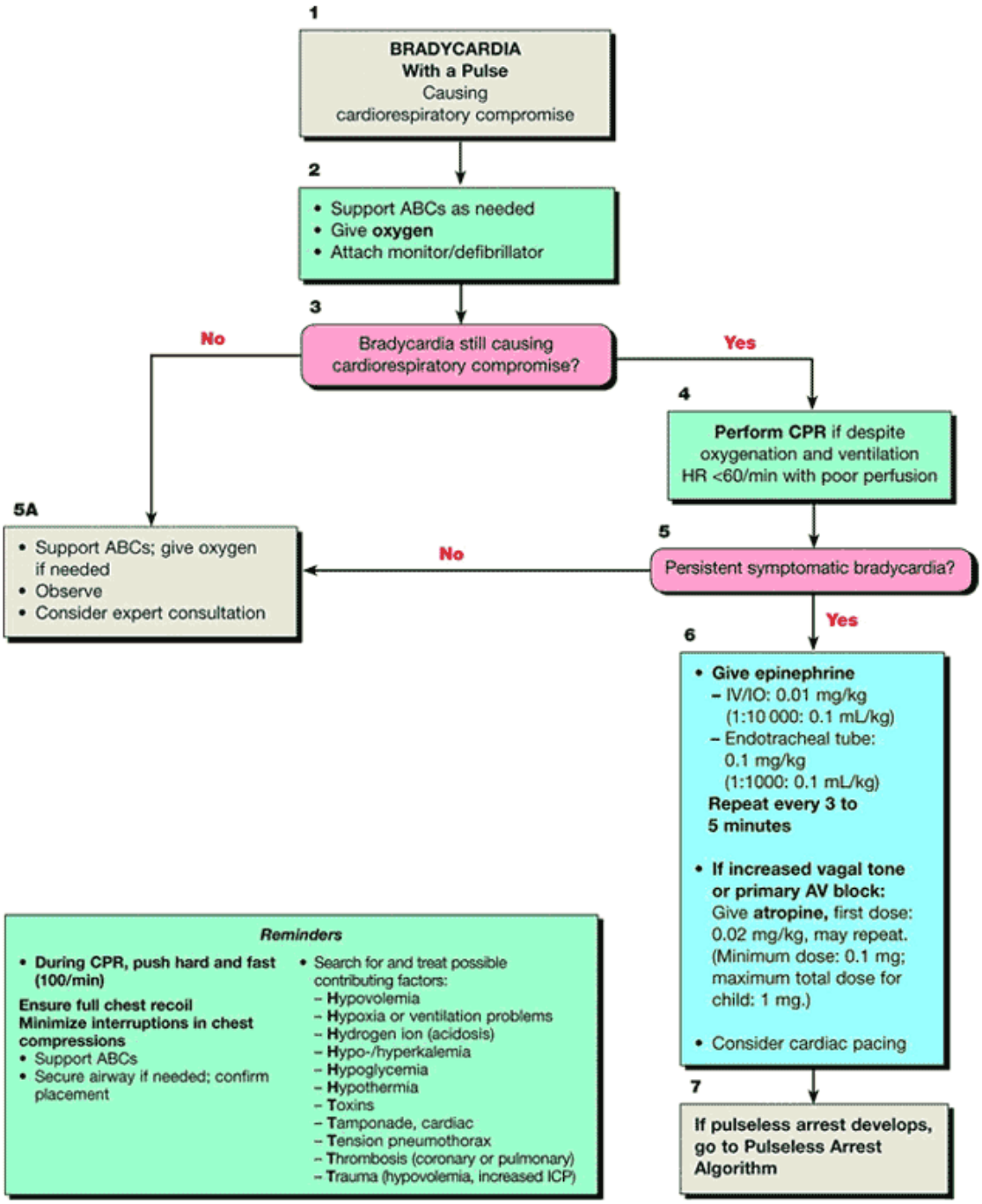
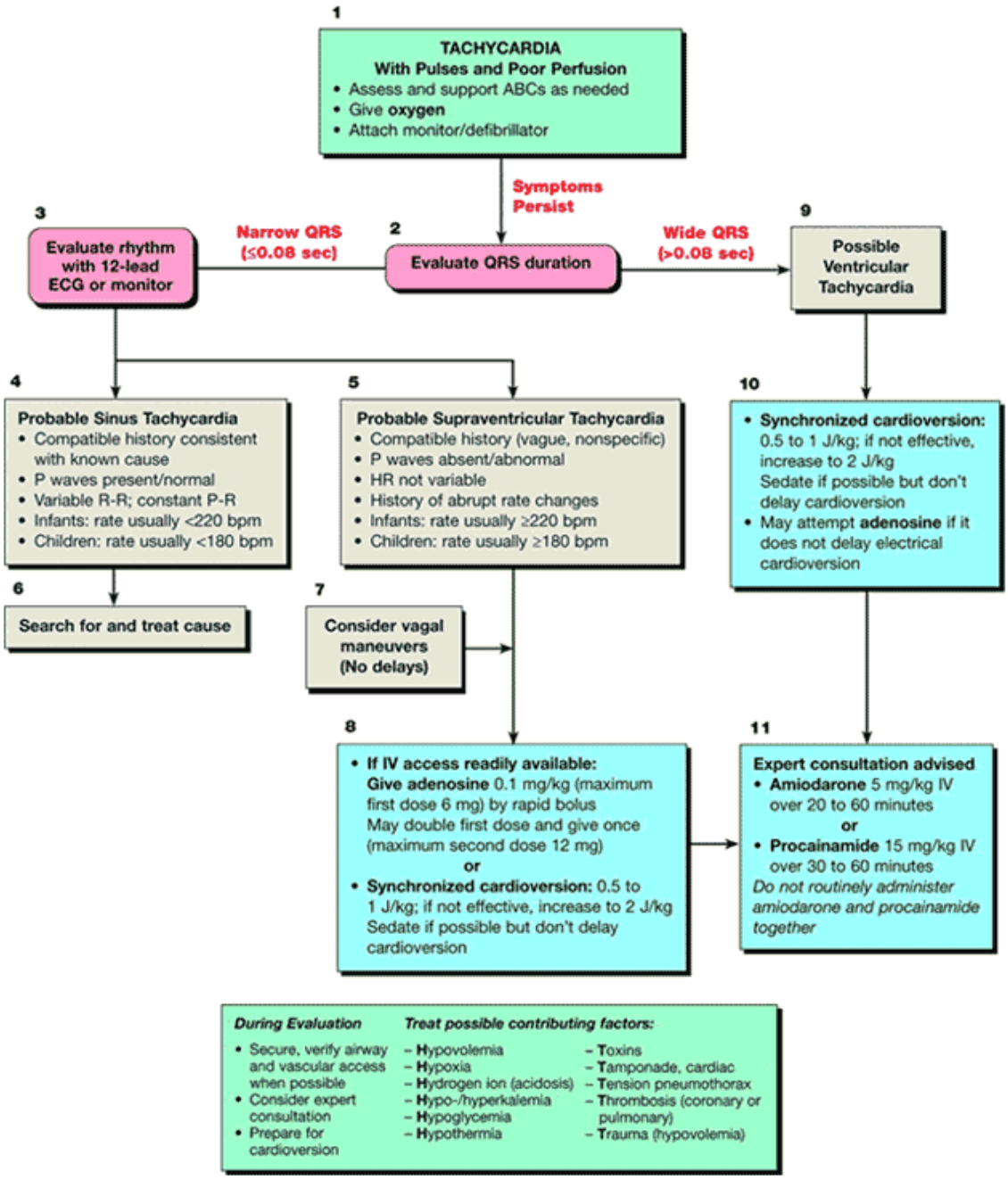

1
PULSELESS ARREST
• BLS Algorithm: Continue CPR
• Give oxygen when available
• Attach monitor/defibrillator when available
2
Check rhythm
Shockable rhythm?
Shockable
Not Shockable
3
VF/VT
9
Asystole/PEA
4
Give 1 shock
• Manual: 2 J/kg
• AED: >1 year of age
Use pediatric system if available for 1 to 8 years of age
Resume CPR immediately
10
Resume CPR immediately
Give epinephrine
• IV/IO: 0.01 mg/kg (1:10 000: 0.1 mL/kg)
• Endotracheal tube: 0.1 mg/kg (1:1000: 0.1 mL/kg)
Repeat every 3 to 5 min
Give 5 cycles of CPR*
5
Check rhythm
Shockable rhythm?
No
Shockable
Give 5 cycles of CPR*
11
Check rhythm
Shockable rhythm?
6
Continue CPR while defibrillator is charging
Give 1 shock
• Manual: 4 J/kg
• AED: >1 year of age
Resume CPR immediately
Give epinephrine
• IV/IO: 0.01 mg/kg (1:10 000: 0.1 mL/kg)
• Endotracheal tube: 0.1 mg/kg (1:1000: 0.1 mL/kg)
Repeat every 3 to 5 minutes
12
• If asystole, go to Box 10
• If electrical activity, check pulse. If no pulse, go to Box 10
• If pulse present, begin postresuscitation care
Not Shockable
Shockable
13
Go to Box 4
Give 5 cycles of CPR*
7
Check rhythm
Shockable rhythm?
No
Shockable
8
Continue CPR while defibrillator is charging
Give 1 shock
• Manual: 4 J/kg
• AED: >1 year of age
Resume CPR immediately
Consider antiarrhythmics (eg, amiodarone 5 mg/kg IV/IO or lidocaine 1 mg/kg IV/IO)
Consider magnesium 25 to 50 mg/kg IV/IO, max 2 g for torsades de pointes
After 5 cycles of CPR* go to Box 5 above
During CPR
• Push hard and fast (100/min)
• Ensure full chest recoil
• Minimize interruptions in chest compressions
• One cycle of CPR: 15 compressions then 2 breaths; 5 cycles ≈1 to 2 min
• Avoid hyperventilation
• Secure airway and confirm placement.
* After an advanced airway is placed, rescuers no longer deliver "cycles" of CPR. Give continous chest compressions without pauses for breaths. Give 8 to 10 breaths/minute. Check rhythm every 2 minutes.
• Rotate compressors every 2 minutes with rhythm checks
• Search for and treat possible contributing factors:
– Hypovolemia
– Hypoxia
– Hydrogen ion (acidosis)
– Hypo-/hyperkalemia
– Hypoglycemia
– Hypothermia
– Toxins
– Tamponade, cardiac
– Tension pneumothorax
– Thrombosis (coronary or pulmonary)
– Trauma


1
BRADYCARDIA
With a Pulse
Causing
cardiorespiratory compromise
2
• Support ABCs as needed
• Give oxygen
• Attach monitor/defibrillator
3
Bradycardia still causing cardiorespiratory compromise?
No
Yes
4
Perform CPR if despite oxygenation and ventilation HR <60/min with poor perfusion
5A
• Support ABCs; give oxygen if needed
• Observe
• Consider expert consultation
5
Persistent symptomatic bradycardia?
No
Yes
6
• Give epinephrine
– IV/IO: 0.01 mg/kg (1:10 000: 0.1 mL/kg)
– Endotracheal tube: 0.1 mg/kg (1:1000: 0.1 mL/kg)
Repeat every 3 to 5 minutes
• If increased vagal tone or primary AV block: Give atropine, first dose: 0.02 mg/kg, may repeat. (Minimum dose: 0.1 mg; maximum total dose for child: 1 mg.)
• Consider cardiac pacing
7
If pulseless arrest develops, go to Pulseless Arrest Algorithm
Reminders
• During CPR, push hard and fast (100/min)
Ensure full chest recoil
Minimize interruptions in chest compressions
• Support ABCs
• Secure airway if needed; confirm placement
• Search for and treat possible contributing factors:
– Hypovolemia
– Hypoxia or ventilation problems
– Hydrogen ion (acidosis)
– Hypo-/hyperkalemia
– Hypoglycemia
– Hypothermia
– Toxins
– Tamponade, cardiac
– Tension pneumothorax
– Thrombosis (coronary or pulmonary)
– Trauma (hypovolemia, increased ICP)


1
TACHYCARDIA
With Pulses and Poor Perfusion
• Assess and support ABCs as needed
• Give oxygen
• Attach monitor/defibrillator
Symptoms Persist
2
Evaluate QRS duration
Narrow QRS (≤0.08 sec)
Wide QRS (>0.08 sec)
3
Evaluate rhythm with 12-lead ECG or monitor
9
Possible Ventricular Tachycardia
4
Probable Sinus Tachycardia
• Compatible history consistent with known cause
• P waves present/normal
• Variable R-R; constant P-R
• Infants: rate usually <220 bpm
• Children: rate usually <180 bpm
5
Probable Supraventricular Tachycardia
• Compatible history (vague, nonspecific)
• P waves absent/abnormal
• HR not variable
• History of abrupt rate changes
• Infants: rate usually ≥220 bpm
• Children: rate usually ≥180 bpm
10
• Synchronized cardioversion: 0.5 to 1 J/kg; if not effective, increase to 2 J/kg
Sedate if possible but don't delay cardioversion
• May attempt adenosine if it does not delay electrical cardioversion
6
Search for and treat cause
7
Consider vagal maneuvers (No delays)
8
• If IV access readily available:
Give adenosine 0.1 mg/kg (maximum first dose 6 mg) by rapid bolus
May double first dose and give once (maximum second dose 12 mg)
or
• Synchronized cardioversion: 0.5 to 1 J/kg; if not effective, increase to 2 J/kg
Sedate if possible but don't delay cardioversion
11
Expert consultation advised
• Amiodarone 5 mg/kg IV over 20 to 60 minutes
or
• Procainamide 15 mg/kg IV over 30 to 60 minutes
Do not routinely administer amiodarone and procainamide together
During Evaluation
• Secure, verify airway and vascular access when possible
• Consider expert consultation
• Prepare for cardioversion
Treat possible contributing factors:
– Hypovolemia
– Hypoxia
– Hydrogen ion (acidosis)
– Hypo-/hyperkalemia
– Hypoglycemia
– Hypothermia
– Toxins
– Tamponade, cardiac
– Tension pneumothorax
– Thrombosis (coronary or pulmonary)
– Trauma (hypovolemia)