Cardiac Arrest Circular Algorithm*

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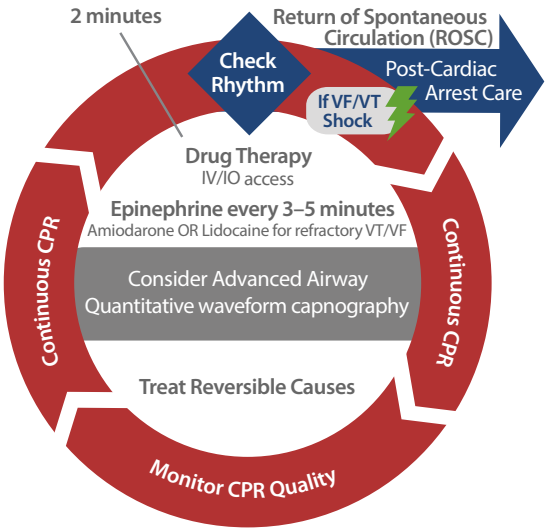
Shout for Help/Activate Emergency Response

Start CPR

- Give Oxygen
- Attach Monitor/Defibrillator



Doses/Details for the Cardiac Arrest Algorithms

CPR Quality

- Push at least 2" (100–120/min) and allow complete chest recoil
- Minimize interruptions in compressions**
- Avoid excessive ventilation
- Rotate compressor every 2 minutes
- If no advanced airway, 30:2 compression-ventilation ratio
- Quantitative waveform capnography
- If $PETCO_2$<10 mm Hg, attempt to improve CPR quality

Drug Therapy

- Epinephrine IV/IO Dose: 1 mg every 3–5 minutes
- Amiodarone IV/IO Dose***: First dose: 300 mg bolus; Second dose: 150 mg
- Lidocaine: First dose: 1–1.5 mg/kg; Second dose: 0.5–0.75 mg/kg

Advanced Airway****

- Supraglottic advanced airway or endotracheal intubation
- 10 breaths per minute with continuous chest compressions

Indication of Spontaneous Circulation (ROSC)

- Pulse and blood pressure
- Abrupt sustained increase of $PETCO_2$ of > 25 mm Hg check perfusion status. An increase to greater than 40 mm Hg is confirmation of ROSC.
- Spontaneous arterial pressure waves with intra-arterial monitoring

Shock Energy

- Biphasic: Manufacturer recommendation (eg. initial dose of 120–200 J): if unknown, use maximum available
- Second and subsequent doses should be equivalent, and higher doses may be considered

Reversible Causes

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

** Link MS, Berkow LC, Kudenchuk PJ, Halperin HR, Hess EP, Moitra VK, Neumar RW, O'Neil BJ, Paxton JH, Silvers SM, White RD, Yannopoulos D, Donnino MW. Part 7: adult advanced cardiac life support. 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation 2015 132 (suppl 2):S444-S464*

*** Bobrow BJ, Clark LL, Ewy GA, Chikani V, Sanders AB, Berg RA, Richman PB Minimally Interrupted cardiac resuscitation by emergency medical services for out of hospital cardiac arrest. JAMA 2008;299:1158-1165*

**** Dorian P, Cass D, Schwartz B, Cooper R. Gelaznikas R, Barr A. Amiodarone as compared with Lidocaine for shock resistant ventricular fibrillation N Engl J Med 2002;346:884-890.*

***** Dorges V, Wenzel V, Knacke P, Gerlach K, Comparison of different airway management strategies to ventilate apneic, nonpreoxygenated patients. Crit Care Med. 2003;31:800-804*

Version control: This document follows 2020 American Heart Association® guidelines for CPR and ECC. American Heart Association® guidelines are updated every five years. If you are reading this page after December 2025, please contact support@acls.net for an update. Version 2021.06.a

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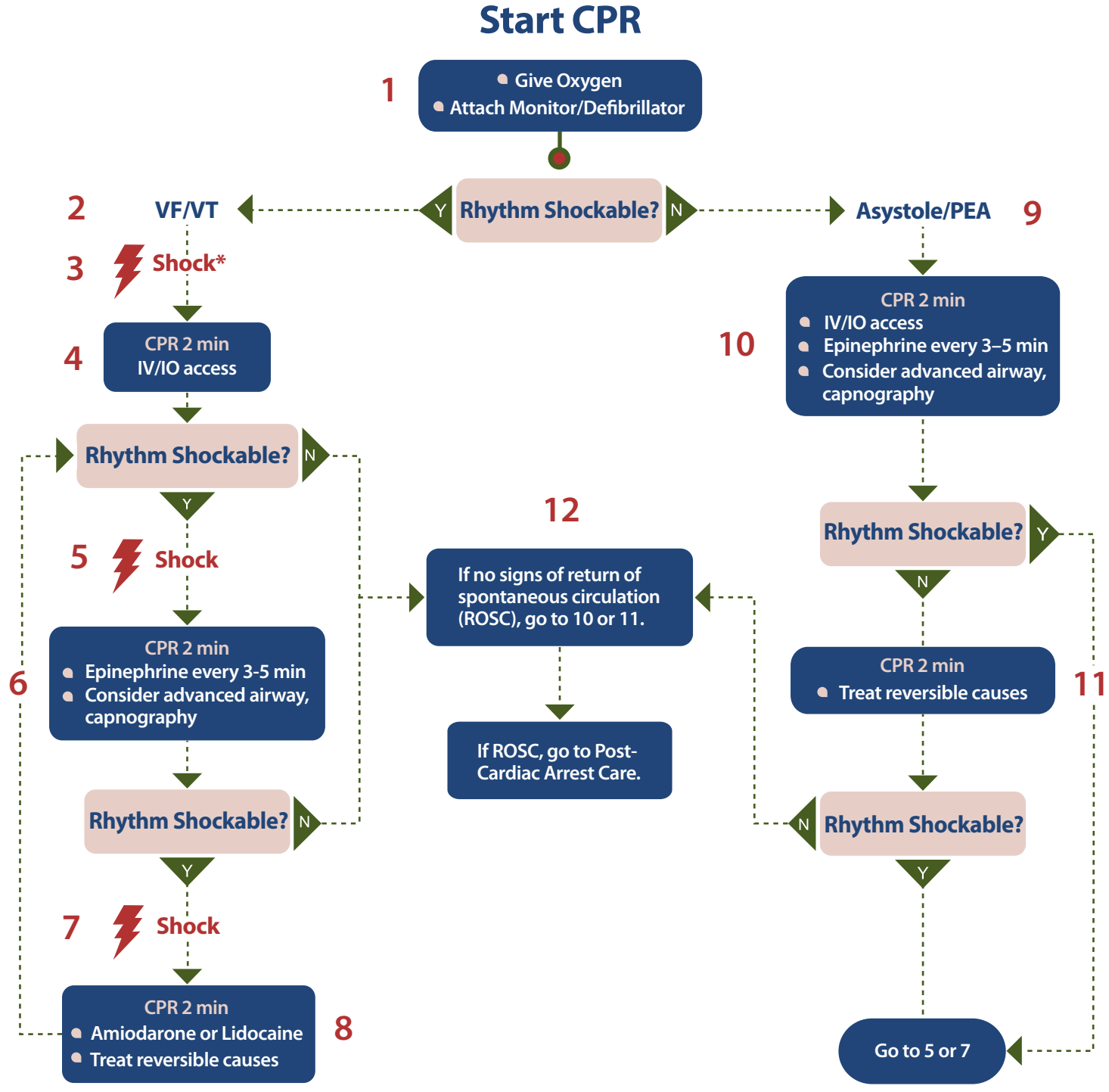

** Link MS, Atkins DL, Plassman RS, Halperin HR, Samson RA, White RD, Cudnik MT, Berg MD, Kudenchuk PJ, Kerber RE. "Part 6: electrical therapies: automated external defibrillators, defibrillation, cardioversion, and pacing: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care". Circulation. 2010;122(suppl 3): S706-S719. http://circ. ahajournals.org/content/122/18_suppl_3/S706*

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