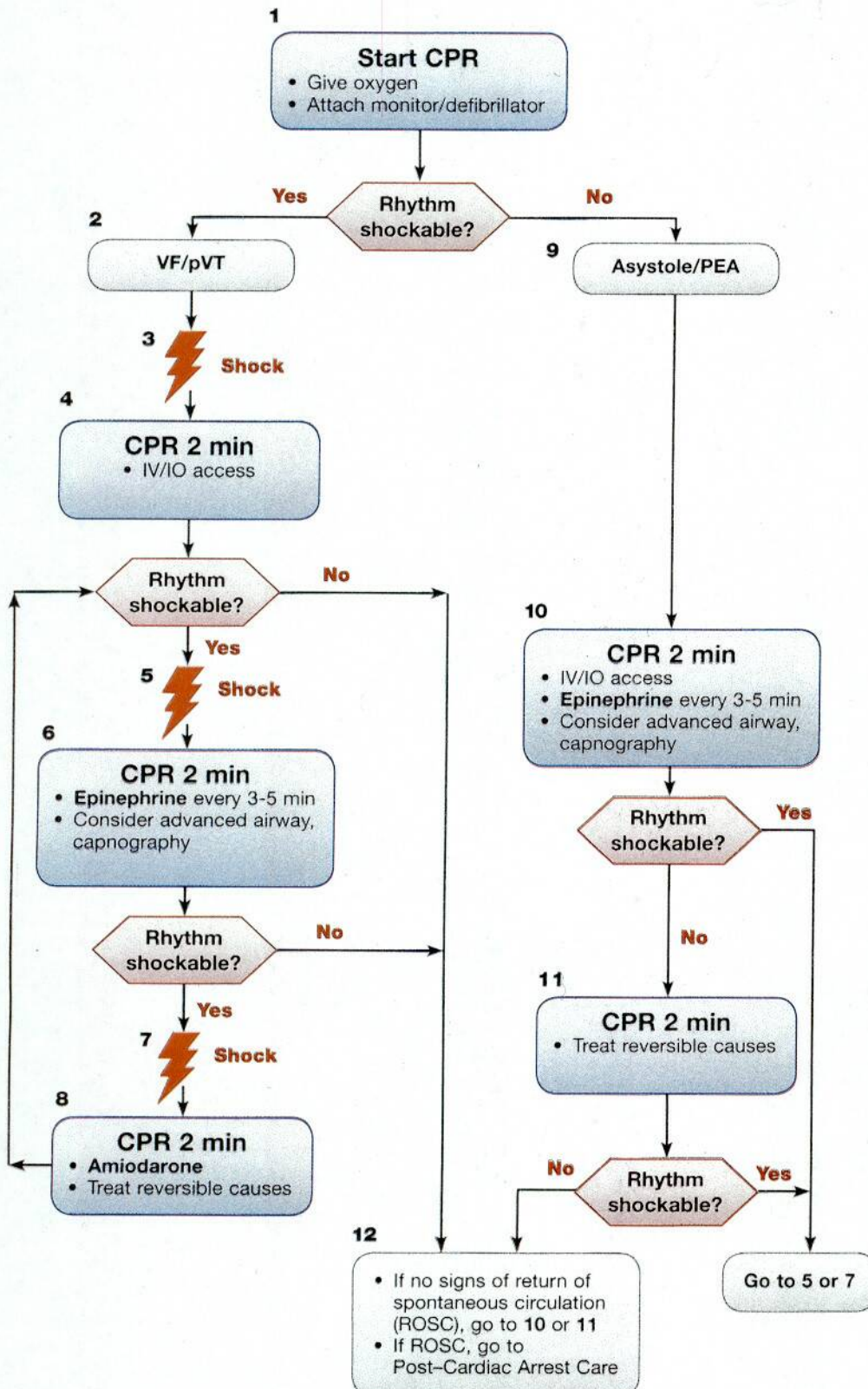


Adult Cardiac Arrest Algorithm – 2015 Update

Advanced Cardiovascular Life Support



CPR Quality

- Push hard (at least 2 inches [5 cm]) and fast (100-120/min) and allow complete chest recoil.
- Minimize interruptions in compressions.
- Avoid excessive ventilation.
- Rotate compressor every 2 minutes, or sooner if fatigued.
- If no advanced airway, 30:2 compression-ventilation ratio.
- Quantitative waveform capnography
 - If PETCO₂ <10 mm Hg, attempt to improve CPR quality.
 - If relaxation phase (diastolic) pressure <20 mm Hg, attempt to improve CPR quality.
- Intra-arterial pressure
- If relaxation phase (diastolic) pressure <20 mm Hg, attempt to improve CPR quality.

Shock Energy for Defibrillation

- **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.
- **Monophasic:** 360 J

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.

Advanced Airway

- Endotracheal intubation or supraglottic advanced airway
- Waveform capnography or capnometry to confirm and monitor ET tube placement
- Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions

Return of Spontaneous Circulation (ROSC)

- Pulse and blood pressure
- Abrupt sustained increase in PETCO₂ (typically ≥40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

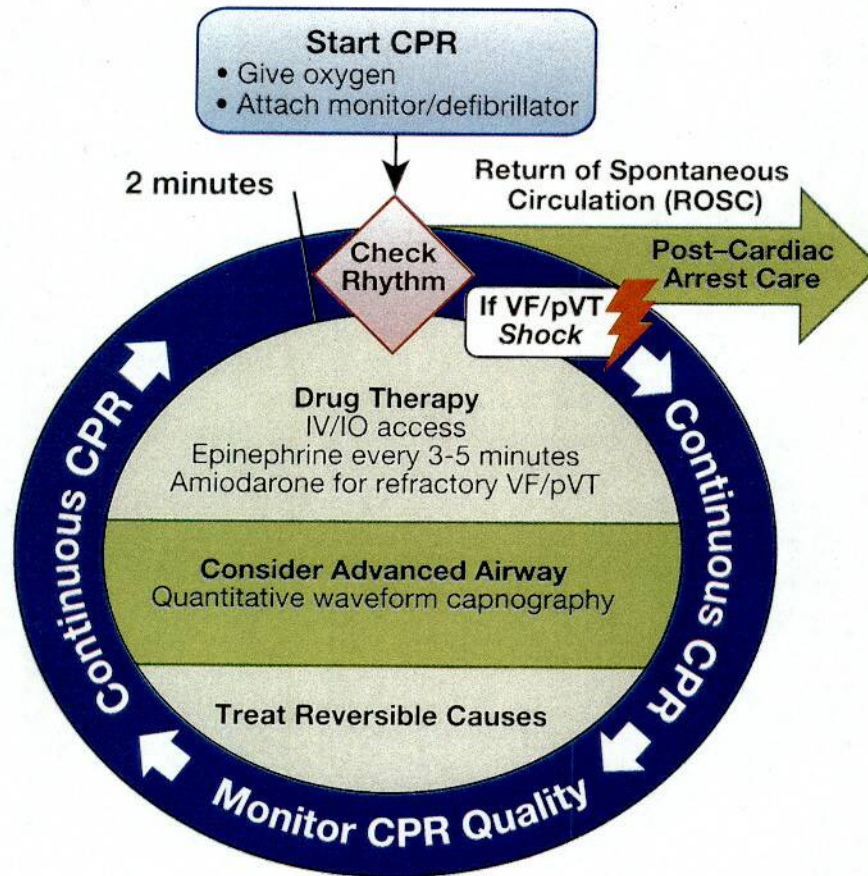
Reversible Causes

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



Adult Cardiac Arrest Circular Algorithm – 2015 Update

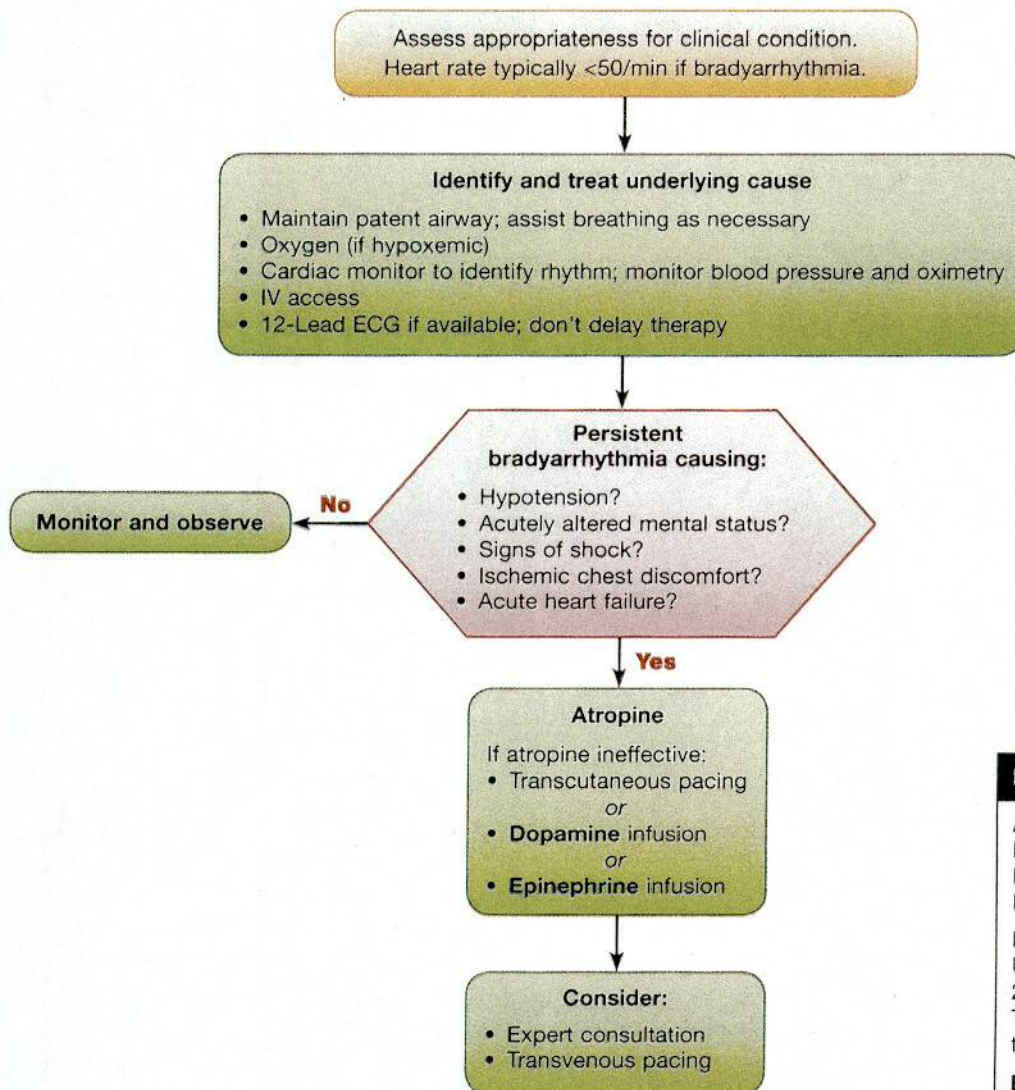
Advanced Cardiovascular Life Support



CPR Quality	Drug Therapy	Return of Spontaneous Circulation (ROSC)
<ul style="list-style-type: none"> • Push hard (at least 2 inches [5 cm]) and fast (100-120/min) and allow complete chest recoil. • Minimize interruptions in compressions. • Avoid excessive ventilation. • Rotate compressor every 2 minutes, or sooner if fatigued. • If no advanced airway, 30:2 compression-ventilation ratio. • Quantitative waveform capnography <ul style="list-style-type: none"> – If PETCO₂ <10 mm Hg, attempt to improve CPR quality. • Intra-arterial pressure <ul style="list-style-type: none"> – If relaxation phase (diastolic) pressure <20 mm Hg, attempt to improve CPR quality. 	<ul style="list-style-type: none"> • Epinephrine IV/IO dose: 1 mg every 3-5 minutes • Amiodarone IV/IO dose: First dose: 300 mg bolus. Second dose: 150 mg. 	<ul style="list-style-type: none"> • Pulse and blood pressure • Abrupt sustained increase in PETCO₂ (typically ≥40 mm Hg) • Spontaneous arterial pressure waves with intra-arterial monitoring
	Advanced Airway	Reversible Causes
	<ul style="list-style-type: none"> • Endotracheal intubation or supraglottic advanced airway • Waveform capnography or capnometry to confirm and monitor ET tube placement • Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions 	<ul style="list-style-type: none"> • Hypovolemia • Hypoxia • Hydrogen ion (acidosis) • Hypo-/hyperkalemia • Hypothermia • Tension pneumothorax • Tamponade, cardiac • Toxins • Thrombosis, pulmonary • Thrombosis, coronary
Shock Energy for Defibrillation		
<ul style="list-style-type: none"> • 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. • Monophasic: 360 J 		

Adult Bradycardia With a Pulse Algorithm

Advanced Cardiovascular Life Support



Doses/Details

Atropine IV dose:
First dose: 0.5 mg bolus.
Repeat every 3-5 minutes.
Maximum: 3 mg.

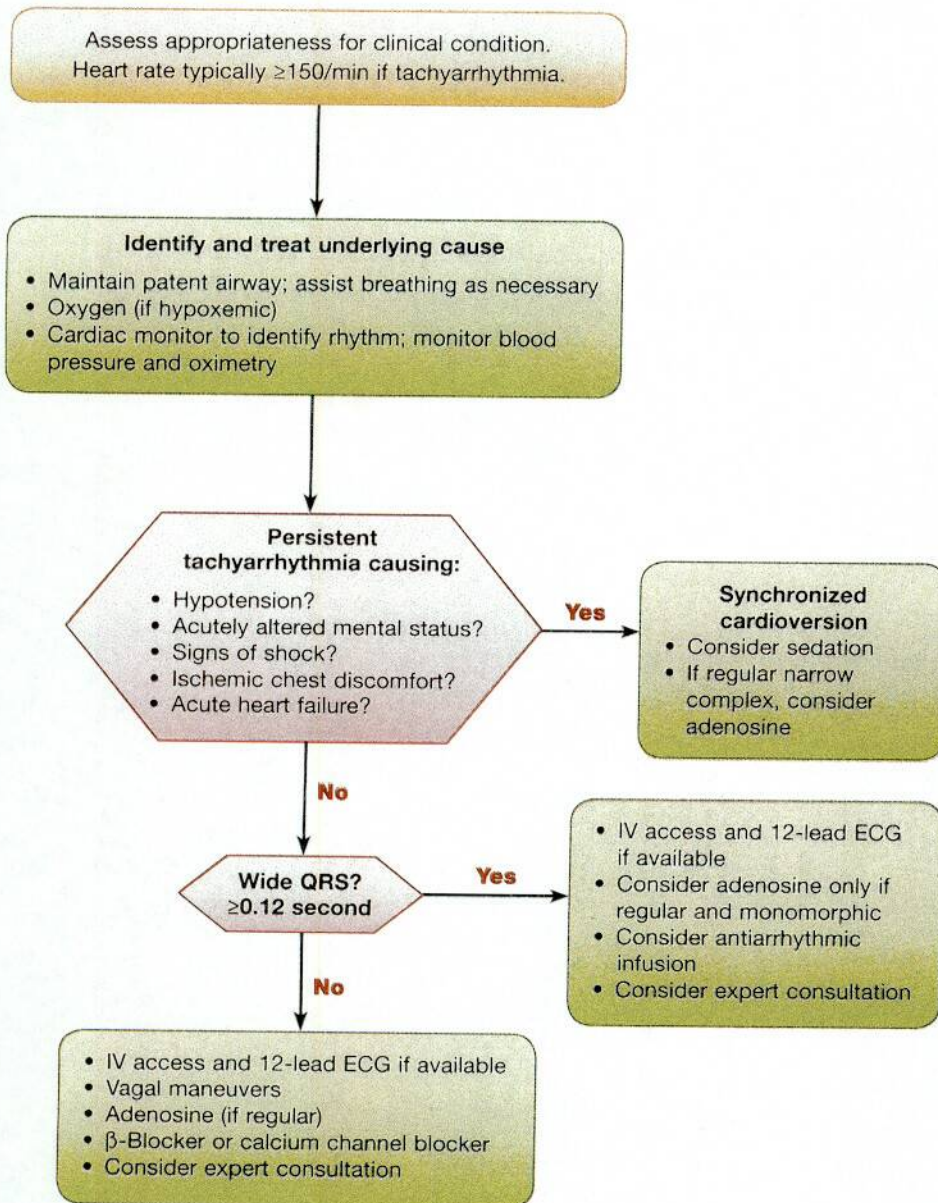
Dopamine IV infusion:
Usual infusion rate is
2-20 mcg/kg per minute.
Titrate to patient response;
taper slowly.

Epinephrine IV infusion:
2-10 mcg per minute
infusion. Titrate to patient
response.



Adult Tachycardia With a Pulse Algorithm

Advanced Cardiovascular Life Support



Doses/Details

Synchronized cardioversion:

Initial recommended doses:

- Narrow regular: 50-100 J
- Narrow irregular: 120-200 J biphasic or 200 J monophasic
- Wide regular: 100 J
- Wide irregular: defibrillation dose (*not* synchronized)

Adenosine IV dose:

First dose: 6 mg rapid IV push; follow with NS flush.
Second dose: 12 mg if required.

Antiarrhythmic Infusions for Stable Wide-QRS Tachycardia

Procainamide IV dose:

20-50 mg/min until arrhythmia suppressed, hypotension ensues, QRS duration increases $>50\%$, or maximum dose 17 mg/kg given. Maintenance infusion: 1-4 mg/min. Avoid if prolonged QT or CHF.

Amiodarone IV dose:

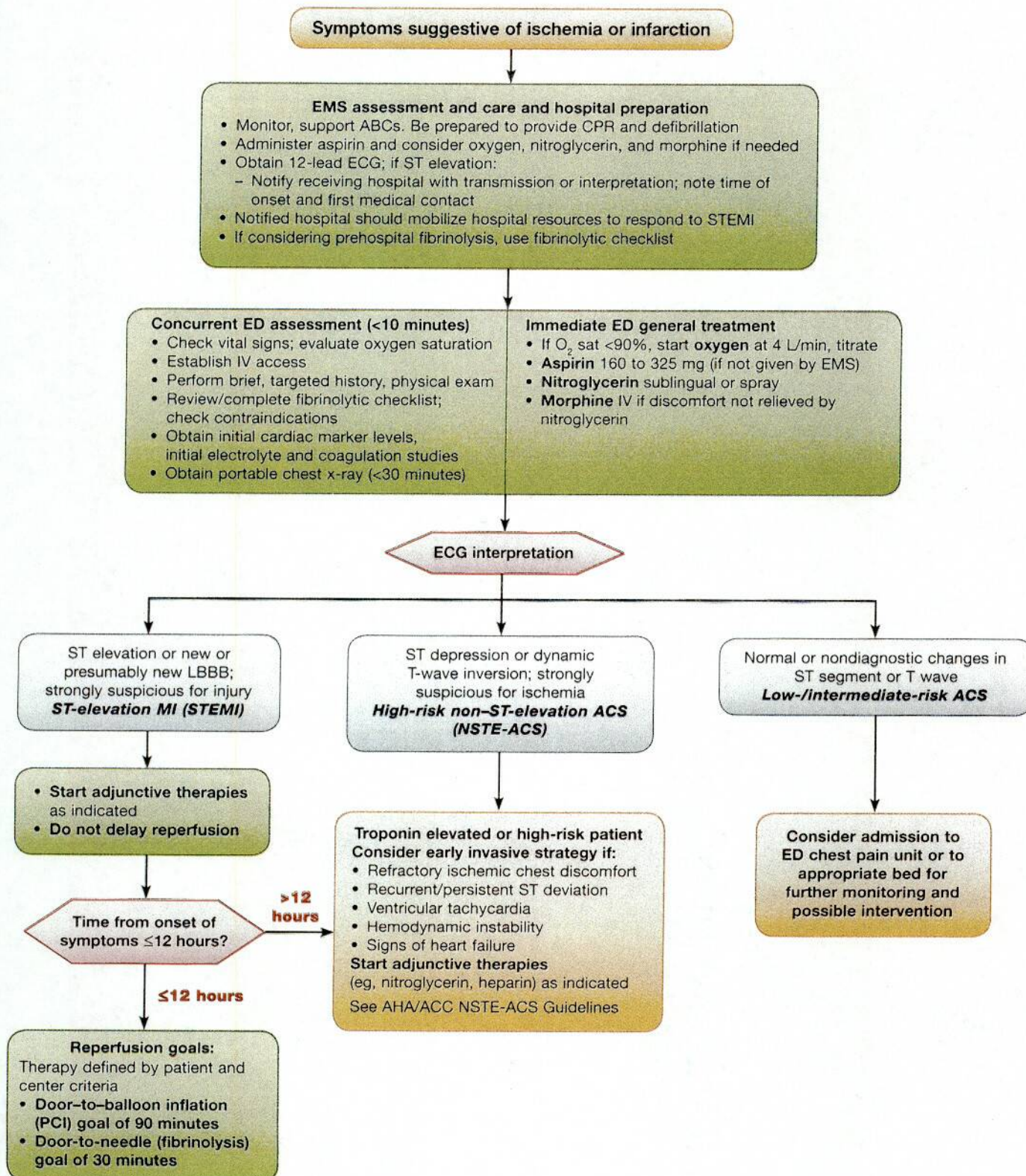
First dose: 150 mg over 10 minutes. Repeat as needed if VT recurs.
Follow by maintenance infusion of 1 mg/min for first 6 hours.

Sotalol IV dose:

100 mg (1.5 mg/kg) over 5 minutes. Avoid if prolonged QT.

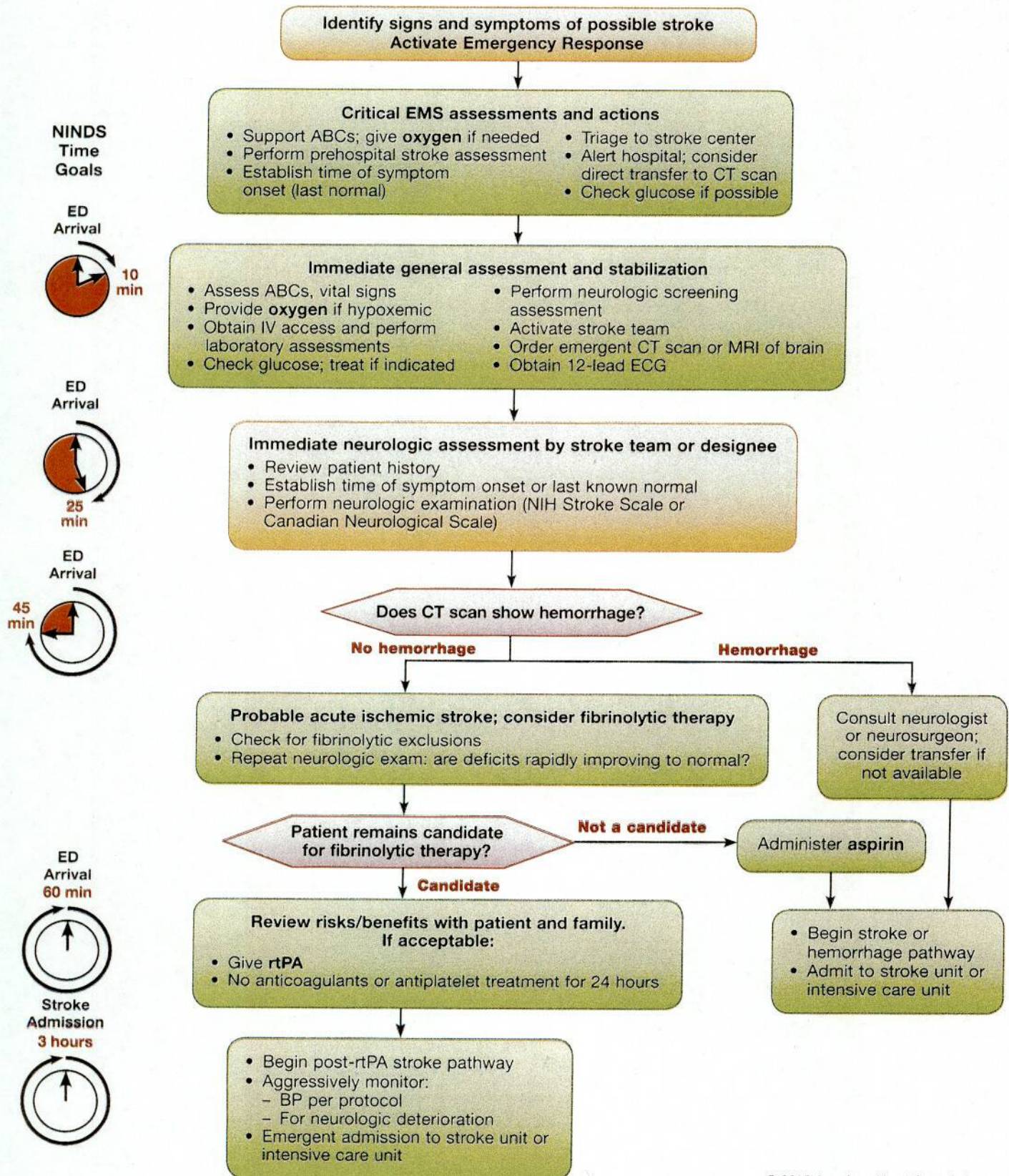
Acute Coronary Syndromes Algorithm – 2015 Update

Advanced Cardiovascular Life Support



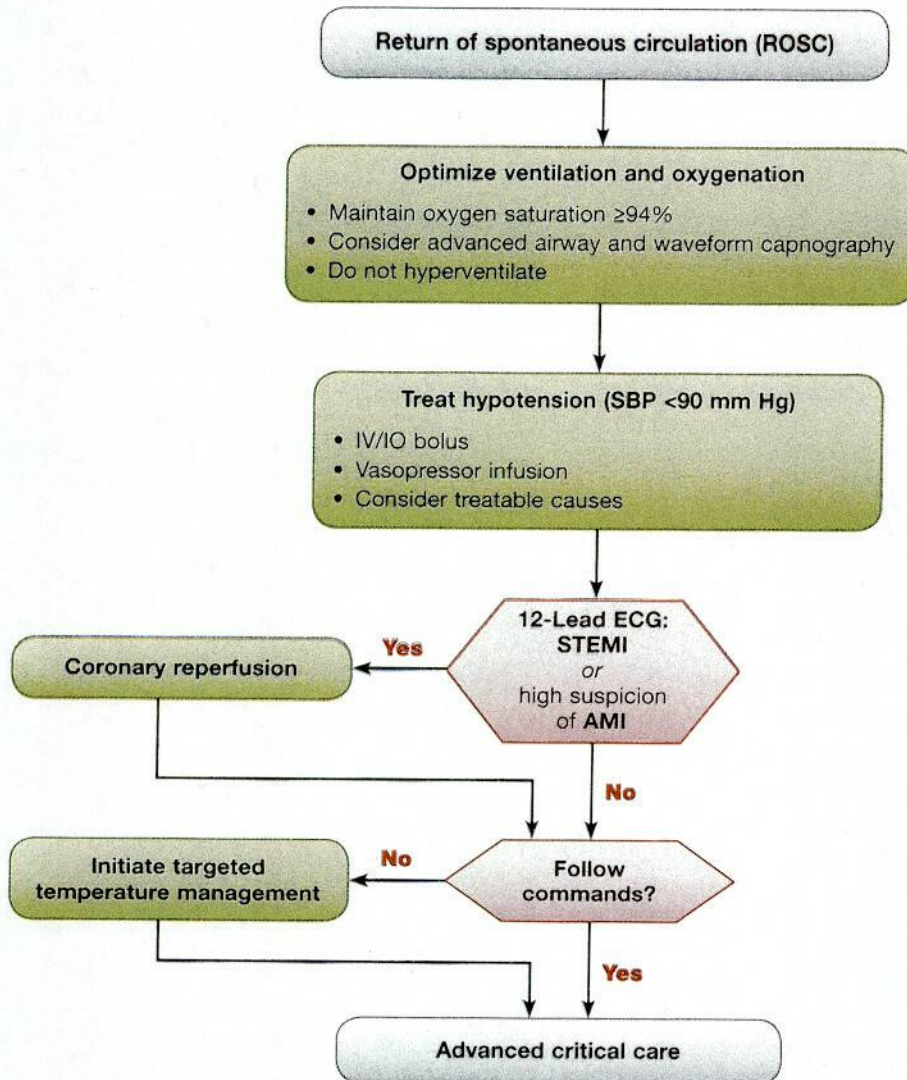
Adult Suspected Stroke Algorithm

Advanced Cardiovascular Life Support



Adult Immediate Post-Cardiac Arrest Care Algorithm – 2015 Update

Advanced Cardiovascular Life Support



Doses/Details

Ventilation/oxygenation:
Avoid excessive ventilation. Start at 10 breaths/min and titrate to target PETCO₂ of 35-40 mm Hg. When feasible, titrate FIO₂ to minimum necessary to achieve SpO₂ ≥94%.

IV bolus:
Approximately 1-2 L normal saline or lactated Ringer's

Epinephrine IV infusion:
0.1-0.5 mcg/kg per minute (in 70-kg adult: 7-35 mcg per minute)

Dopamine IV infusion:
5-10 mcg/kg per minute

Norepinephrine IV infusion:
0.1-0.5 mcg/kg per minute (in 70-kg adult: 7-35 mcg per minute)

Reversible Causes

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



BLS Healthcare Provider Adult Cardiac Arrest Algorithm – 2015 Update



Advanced Cardiovascular Life Support

