



(Stable) Wide Complex Tachycardia

(Unstable) Wide Complex Tachycardia

Irregular Narrow Complex Tachycardia (A-Fib)

Regular Narrow Complex Tachycardia (SVT)

Bradycardia

Asystole- PEA

V-Fib

No Resuscitation Attempt

Termination of Resuscitation

Post-ROSC

Cardiac Arrest Handoff

Shock

LVAD

Chest Pain

General Approach to Cardiac Arrest



Treat wide complex tachycardia (QRS > 120 msec) as ventricular tachycardia

Full ALS Assessment and Treatment including 12 lead EKG

Stable: Normotensive, baseline mental status, no signs of shock

**Do not delay cardioversion to obtain an EKG or obtain vascular access in an unstable patient*

Wide, **Irregular** rhythm (i.e wide complex- A fib)

2g IV/IO Magnesium Sulfate over 2 minutes

If persists, Administer **Lidocaine** 1mg/kg IV/IO

may repeat at 0.5mg/kg IV/IO every 5 -10 minutes with a maximum cumulative dose of 3 mg/kg

Follow with continuous infusion 1 to 4mg/minute

Wide, **regular** rhythm

Administer **Amiodarone** 150mg IV/IO over 10 minutes every 10 minutes as needed (450mg total)

OR

Administer **Lidocaine** 1mg/kg IV/IO

If persists, may repeat at 0.5mg/kg IV/IO every 5-10 minutes with a maximum cumulative dose of 3 mg/kg

Follow with continuous infusion 1 to 4mg/minute

Wide, **Irregular/polymorphic** rhythm (i.e Torsades)

UNsynchronized Cardioversion
(Defibrillation 360J)

If no improvement: 2g IV/IO Magnesium Sulfate over 2 minutes

Administer **Lidocaine** 1mg/kg IV/IO

If persists, may repeat at 0.5mg/kg IV/IO every 5 10 minutes with a maximum cumulative dose of 3 mg/kg

Follow with continuous infusion 1 to 4mg/minute

Transport to PCI Center

PEARLS

- DDx: Arrhythmia, Dehydration, Sepsis, Fluid Overload, Pulmonary Embolism, Thyrotoxicosis, Toxin/Ingestion, Acute Coronary Syndrome, Electrolyte abnormality
- Diltiazem is contraindicated in patients with a wide complex rhythm or history of Wolf Parkinson White (WPW) Syndrome
- Polymorphic Ventricular Tachycardia when associated with prolonged QT may be Torsades de pointes. Magnesium Sulfate is indicated in these cases. If Polymorphic Ventricular Tachycardia is related to ischemia, Magnesium may not be helpful
- If suspicion for hyperkalemia (history of ESRD on dialysis, renal failure) administer:
 - Calcium Chloride 1g IV/IO
 - Sodium Bicarbonate 1 mEq/kg IV/IO (max 50 mEq)
- Amiodarone and Magnesium can cause hypotension and prolong QT
- For patients in Torsades, even when considered "stable", proceed to cardioversion first (per AHA)

(Unstable) Wide Complex Tachycardia >150

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Assume wide complex tachycardia (QRS > 120 msec) is ventricular tachycardia

Unstable: Systolic < 90mmHg, altered mental status, signs of shock, pulmonary edema, ischemic chest pain

Full ALS Assessment and Treatment including 12 lead EKG

**Do not delay cardioversion to obtain an EKG or obtain vascular access in an unstable patient*

Wide, **Regular** rhythm

Synchronized Cardioversion: 100 J > 200 J > 300 J > 360 J

Sedation: Fentanyl 1mcg/kg IV/IO (max 100mcg) may be administered prior to cardioversion if access available if BP > 100 mm Hg

If re-occurs after shocks, administer **Amiodarone** 150mg IV/IO over 10 minutes every 10 minutes as needed (450mg total)
OR
Administer **Lidocaine** 1mg/kg IV/IO

If persists, may repeat at 0.5mg/kg IV/IO every 5-10 minutes with a maximum cumulative dose of 3 mg/kg

Follow with continuous infusion 1 to 4mg/minute

Wide, **Irregular/polymorphic** rhythm (i.e Torsades)

UNsynchronized Cardioversion
(Defibrillation 360J)

If no improvement

2g IV/IO Magnesium Sulfate over 2 minutes

If no improvement

Administer **Lidocaine** 1mg/kg IV/IO

If persists, may repeat at 0.5mg/kg IV/IO every 5-10 minutes with a maximum cumulative dose of 3 mg/kg

Follow with continuous infusion 1 to 4mg/minute

Transport to PCI Capable Hospital

Cardiac Emergencies

PEARLS

- DDx: Arrhythmia, Dehydration, Sepsis, Fluid Overload, Pulmonary Embolism, Thyrotoxicosis, Toxin/Ingestion, Acute Coronary Syndrome, Electrolyte abnormality
- Diltiazem is contraindicated in patients with a wide complex rhythm or history of Wolf Parkinson White (WPW) Syndrome
- Polymorphic Ventricular Tachycardia when associated with prolonged QT may be Torsades de pointes. Magnesium Sulfate is indicated in these cases. If Polymorphic Ventricular Tachycardia is related to ischemia, Magnesium may not be helpful
- If suspicion for hyperkalemia (history of ESRD on dialysis, renal failure) administer:
 - Calcium Chloride 1g IV/IO
 - Sodium Bicarbonate 1 mEq/kg IV/IO (max 50 mEq)
- Amiodarone and Magnesium can cause hypotension and prolong QT



This protocol is specific only to a **narrow** complex tachycardia with an irregular rhythm. Consult Wide Complex Protocol for irregular wide complex tachycardia.

Full ALS Assessment and Treatment including 12 lead EKG

Asymptomatic

Continuous cardiac monitoring

500ml NS Bolus
**reassess lung sounds*
Contraindicated in pulmonary edema

Symptomatic

Stable: Normotensive, baseline mental status, no signs of shock

Diltiazem 20mg IV over 2 minutes or Metoprolol 5mg over 2 minutes

1L NS Bolus
**reassess lung sounds*
**Contraindicated in pulmonary edema*
(may repeat if BP decreases below 90mmHg systolic)

Unstable: Systolic < 90mmHg, altered mental status, signs of shock

Synchronized Cardioversion: 200 J > 300 J > 360 J

**Do not delay cardioversion to obtain an EKG or obtain vascular access in an unstable patient*

Sedation: Fentanyl 1 mcg IV/IO (max 100mcg) may be administered prior to cardioversion if access available & bp > 100 mmHg

PEARLS

- DDX: Arrhythmia, Dehydration, Sepsis, Fluid Overload, Pulmonary Embolism, Thyrotoxicosis, Toxin/Ingestion, Acute Coronary Syndrome, Electrolyte abnormality
- Atrial Fibrillation with Rapid Ventricular Rate can be a compensatory mechanism in a patient with a history of Atrial Fibrillation and an acutely underlying illness. Removing this compensation by treating with medications or cardioversion may cause the patient to acutely decompensate. For this reason, it is important to analyze the rhythm carefully and consider alternative causes of tachycardia such as fever, sepsis, pain, dehydration, fluid overload, Pulmonary Embolism, etc.
- **Diltiazem is contraindicated in patients with a wide complex rhythm or history of Wolf Parkinson White (WPW) Syndrome**



Sinus Tachycardia: Regular rhythm **with** P waves

1L NS Bolus
**reassess lung sounds*
Contraindicated in pulmonary edema

SVT: Regular rhythm **without** P waves

Stable: Normotensive, baseline mental status, no signs of shock

Vagal Maneuvers
(valsalva with passive leg raise)

Adenosine 6mg **rapid** IV over 1-3 seconds (followed by rapid IV push of 10ml NS)

If no improvement

Adenosine 12mg **rapid** IV over 1-3 seconds (followed by rapid IV push of 10ml NS)

Unstable: Systolic < 90mmHg, altered mental status, signs of shock

If IV access, may trial Adenosine 6mg **rapid** IV over 1-3 seconds (followed by rapid IV push of 10ml NS)

Otherwise or if no improvement

Synchronized Cardioversion: 100 J > 200 J > 300 J > 360 J

Sedation: Fentanyl 1 mcg IV/IO (max 100mcg) may be administered prior to cardioversion if access available & bp > 100 mmHg

PEARLS

- DDx: Arrhythmia, Dehydration, Sepsis, Fluid Overload, Pulmonary Embolism, Thyrotoxicosis, Toxin/Ingestion, Acute Coronary Syndrome, Electrolyte abnormality
- Sinus tachycardia can be a compensatory mechanism for an underlying illness. Removing this compensation by treating with medications or cardioversion may cause the patient to acutely decompensate. For this reason, it is important to analyze the rhythm carefully. If the rhythm is regular and there are no P-waves, it is safe to treat as Supraventricular Tachycardia.

Bradycardia <50

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Full ALS Assessment and Treatment including 12 lead EKG

Stable: Normotensive, baseline mental status, no signs of shock

250 ml NS

Unstable: Systolic < 90mmHg, altered mental status, signs of shock

**Do not delay pacing to obtain a 12 lead EKG or to obtain IV access if patient is unstable*

250 ml NS
Repeat as needed, titrate to systolic >90 mmHg
**Reassess lung sounds*

1st or 2nd degree block: Atropine 1mg IV (if IV in place)
Repeat every 3 minutes as needed (max 3mg)

No improvement, delay in IV or 3rd Degree Block

Demand Mode Transcutaneous Pacing

Sedation: Fentanyl 1mcg/kg IV/IO (max 100mcg) or Ketamine 0.5mg/kg IV (50mg max) may be used as needed

No improvement

Push Dose Epinephrine 10mcg (1mL) q1-2 min. max 100mcg (10mL) to increase blood pressure to systolic 90 mmHg and HR>50. Consider initiating Epinephrine Drip as needed

Persistent Hypotension: Norepinephrine infusion at around 8-12 mcg/minute (30-45 gtt/min), titrated to maintain SBP > 90 mm Hg

Cardiac Emergencies

Non-intrinsic cardiac causes:

- **Beta blocker or Calcium Channel blocker overdose:** 50 meq IV/IO Sodium Bicarbonate, Calcium Chloride 1g IV/IO, Glucagon 2mg IV/IO/IV
- **Opiate overdose:** 2mg IV/IO/IM/IN Narcan
- **TCA Antidepressant:** 50 meq IV/IO Sodium Bicarbonate
- **Hyperkalemia:** 50 meq IV/IO Sodium Bicarbonate, Calcium Chloride 1g IV/IO, Albuterol 2.5mg/3ml

Transport to PCI Capable Hospital

**Do not disconnect monitor until the receiving staff is ready to resume pacing on their monitor*

PEARLS

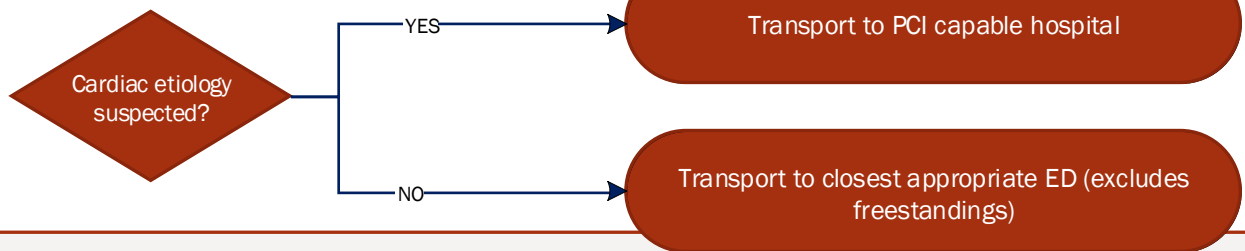
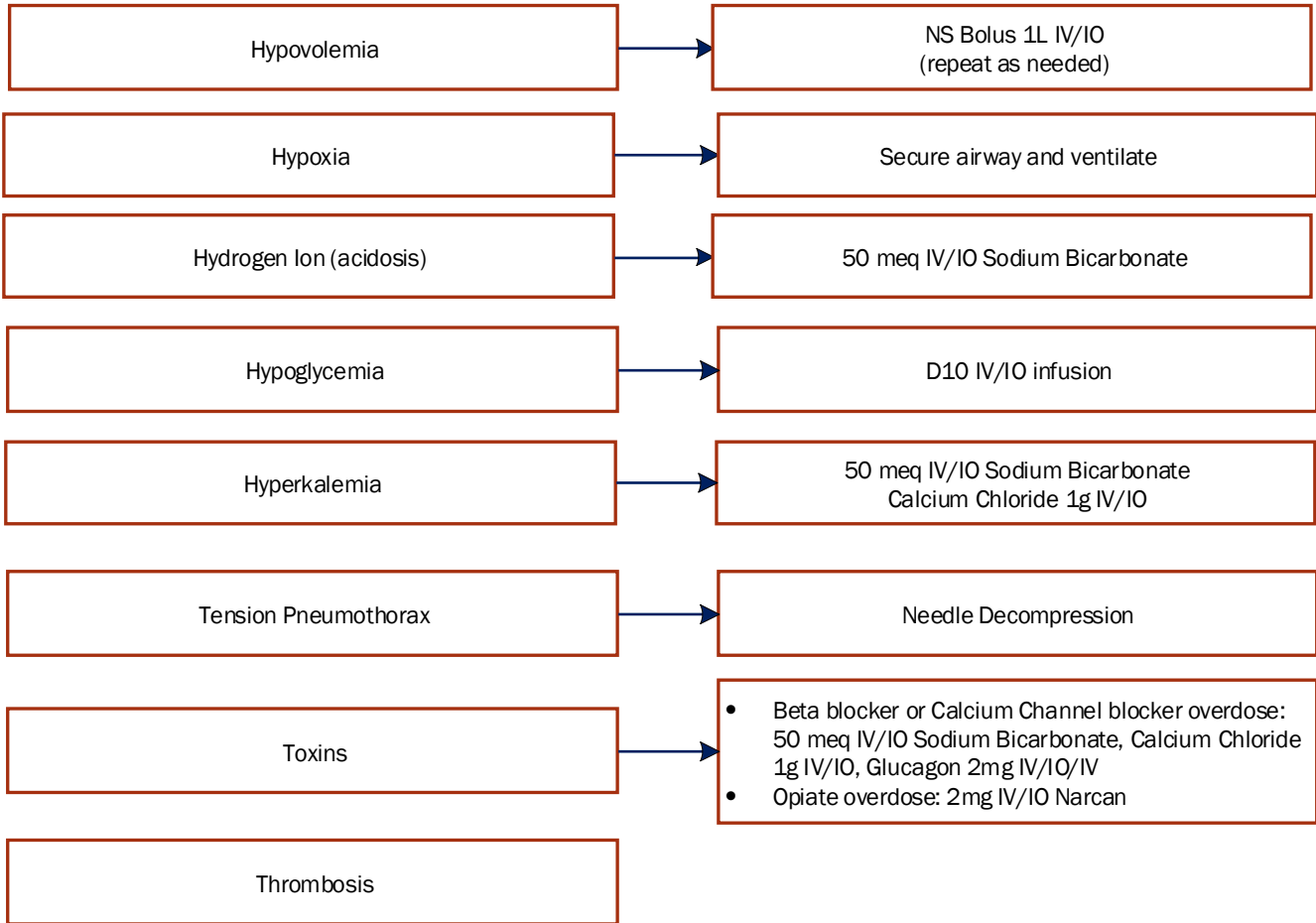
- Ddx: Acute Coronary Syndrome, Hyperkalemia, Renal Failure, Drug Overdose, Head Injury, Stroke, Pacemaker Failure
- Transcutaneous Pacing:
 - Start at the lowest milliamps; increase in 10 mA increments until electrical & mechanical capture achieved. Once achieved, increase by 5-10 mA
 - Start the rate at 70 and increase to achieve a systolic BP>90 mmHg (max 100 bpm)
- In the presence of a Second or Third Degree Block with hypotension, begin Transcutaneous Pacing. Do not wait for IV/IO access. TCP is favored over Atropine.
- Post Cardiac Arrest- It is preferred to start with Epinephrine over TCP as it may be difficult to recognize re-arrest w/ TCP which delays CPR initiation



Follow General Approach to Cardiac Arrest Protocol (Including Epinephrine every 3- 5 minutes)

Asystole/PEA

Treat possible reversible causes early



PEARLS

- When asystole is seen on the cardiac monitor confirmation of the rhythm shall include a printed rhythm strip, as well as interpretation of the rhythm in more than one lead. Low amplitude V-Fib or PEA may be difficult to distinguish from asystole when using only the cardiac monitor display for interpretation.
- Reassess Supraglottic and Endotracheal tube placement via ETCO2 after every move, and at transfer of care.
- When available, US can assist in identifying some of the H-s and T-s (cardiac tamponade, pulmonary embolism, pneumothorax, hypovolemia)
- An example of 'Cardiac etiology suspected' is a witnessed arrest in a patient with an EKG concerning for a STEMI



Follow General Approach to Cardiac Arrest Protocol (including Epinephrine every 3-5 minutes)

Ventricular Fibrillation or Pulseless Ventricular Tachycardia

1 st Shock- 200 J	→	Amiodarone 300 mg IV/IO or Lidocaine 1mg/kg IV/IO
2 nd Shock- 360 J	→	Amiodarone 150 mg IV/IO or Lidocaine 0.5mg/kg IV/IO
3 rd Shock- 360 J	→	Place a 2 nd set of pads Anterior & Posterior
4 th Shock- 360 J	→	Switch to using the 2 nd set of pads for the shock

Initiate transport once determined to be Refractory V-fib

Refractory V-Fib (4 continuous shocks without a conversion of the rhythm at any point)	2g Magnesium Sulfate IV/IO
	50 meq IV/IO Sodium Bicarbonate
	If persistent then Lidocaine IV/IO repeat dose: 0.5-0.75 mg/kg every 5 to 10-minutes, max cumulative dose of 3 mg/kg. Follow with continuous infusion of 1 to 4 mg/minute after return of circulation.

Perform Double Sequential Defibrillation

- Ensure 2nd set of pads are not overlapping. If touching or overlapping, do not attempt procedure. Verify that both monitors are attached and confirm Vfib/Vtach
- Charge both monitors to 360J and ensure all team members are clear of the patient
- Defibrillate by pressing both shock buttons, one after the other (less than 1-2 seconds apart)
- Follow defibrillation with immediate compressions

Transport Recurrent Vfib/Vtach and Refractory V-Fib/V-tach to PCI capable hospital

Cardiac Emergencies

PEARLS

- Continue CPR while defibrillator is charging. Resume compressions immediately after each shock. Do not delay compressions to reassess rhythm.
- Consider and treat reversible causes (H-s and T-s)
- If persistent VF/VT then Lidocaine IV/IO repeat dose 0.5 mg/kg every 5 to 10 minutes with maximum cumulative dose of 3 mg/kg. Follow with continuous infusion of 1 to 4 mg/minute **after return of circulation.**
- **Recurrent** Vfib/Vtach- has converted to another rhythm but subsequently returns to vfib/vtach.
- Refractory Vfib/Vtach- has not converted after 4 shocks in a row during a code and has not responded to antiarrhythmics.
- Reassess Supraglottic and Endotracheal tube placement via ETCO2 after every move, and at transfer of care.



If there is any question about the need for resuscitation, immediately begin resuscitation while contacting medical control.

Resuscitation is not indicated if the patient is unresponsive, pulseless, and apneic and meets the criteria below:

Obvious signs of death

- Decomposition
- Rigor mortis
- Dependent lividity
- Incineration
- Decapitation
- Hemicorporectomy

Valid DNR

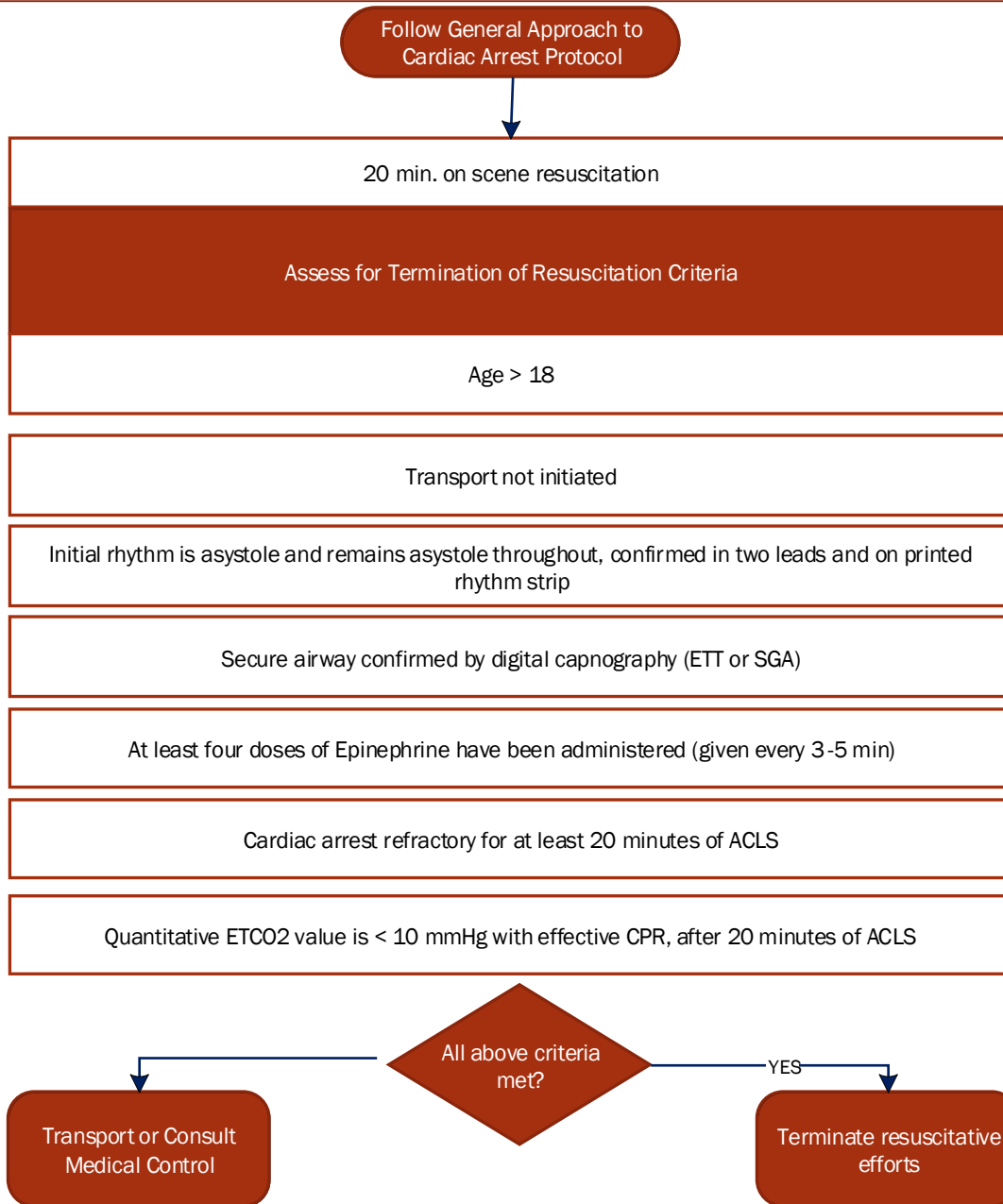
- Must be on yellow paper
- Must be signed by patient and patient-s provider (physician, physician assistant, or advanced practice registered nurse)
- POLST forms are not valid in FL

Blunt or Penetrating Trauma

- None of the below present:
- Spontaneous movement
 - Pupillary reflexes
 - Organized rhythm (narrow complex)
 - *Cardiac activity on US (as available)

PEARLS

- A living will may specify the healthcare surrogate or power of attorney appointed to make healthcare decisions
- A Healthcare proxy is someone who becomes the decision maker when there is no Healthcare surrogate and the patient is incapacitated
- The Healthcare proxy order can be found in FI Statute 765.401. Decision making is deferred first to the spouse, then the majority of the children, then the parents, then the majority of the siblings, then other relatives or friends.
- In Florida, a healthcare surrogate supersedes any Healthcare proxy.
- Death is final. When ethical situations arise, it is best to transport the patient to allow time to work through the ethics. For example, the hospital and the decision maker can complete a DNR form once the patient arrives, if appropriate.

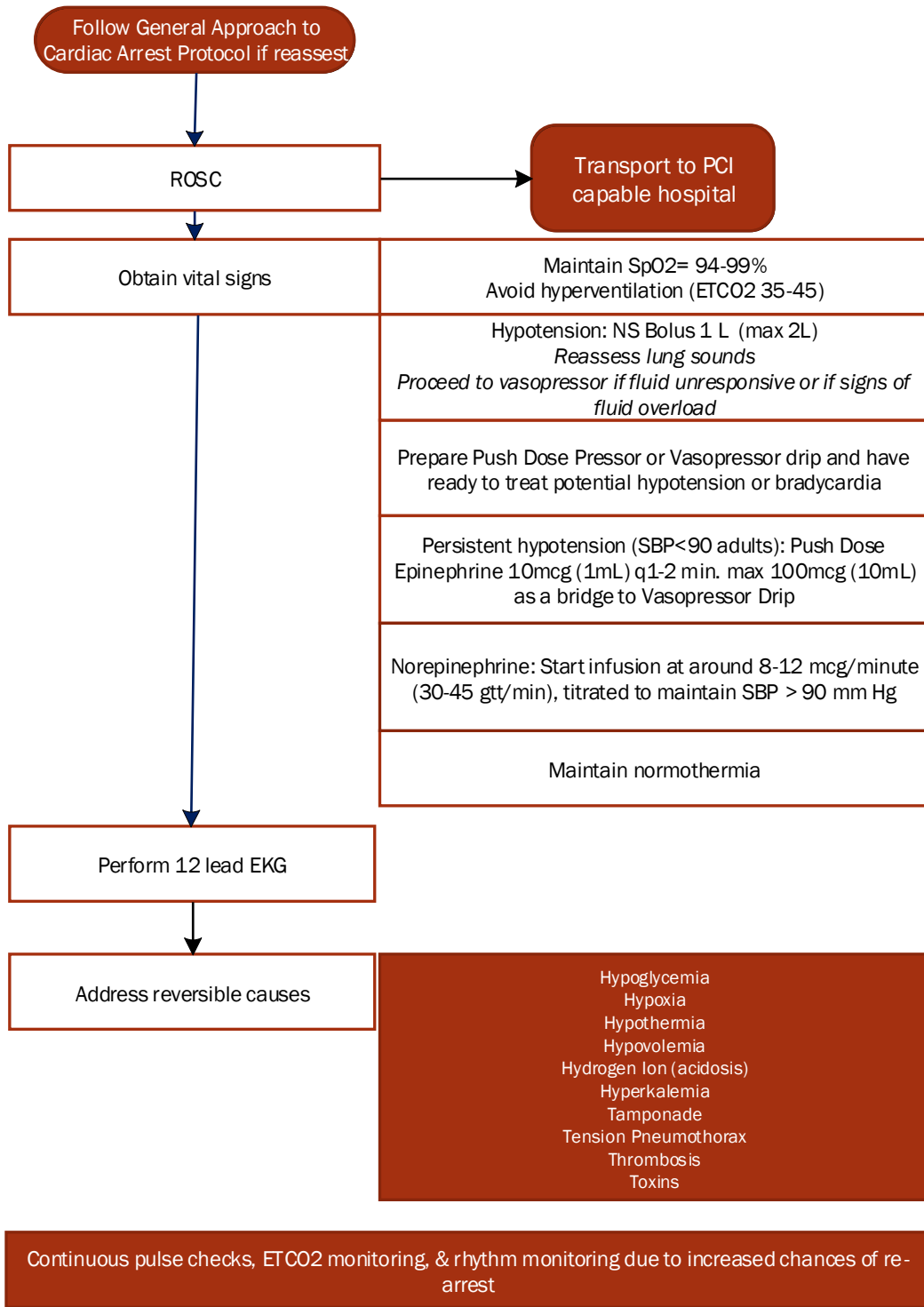


Provide the following information:

- Initial rhythm and any rhythm changes
 - Method of airway management and vascular access
 - Medications given during the arrest
 - ETCO2 value
 - Total Downtime
 - Total amount of time working the arrest
 - Advanced Directives
- ** US interpretation as available (communicate if cardiac standstill)

PEARLS

- The paramedic has the discretion to continue resuscitation efforts in any case despite Termination of Resuscitation criteria being met if scene safety, location, patient's age, time of arrest, or bystander input compels this decision.
- When asystole is seen on the cardiac monitor confirmation of the rhythm shall include a printed rhythm strip, as well as interpretation of the rhythm in more than one lead. Low amplitude V-Fib or PEA may be difficult to distinguish from asystole when using only the cardiac monitor display for interpretation.
- ETCO2 determination is best during periods of rhythm check when the LUCAS is paused.
- Immediately notify the family of the plan: make them aware of how long the crew will remain on scene and put them at ease by informing them your crew is doing everything the hospital would do. You may add that their loved one's heart is not beating so its important that we not interrupt the efforts by transporting too soon.
- Be clear- If the patient is pronounced, use the words 'dead' or 'died' so that they're stressed mind can process appropriately.
- Invite them to say good-bye- if logistically feasible & safe, allow to say good-bye before terminating efforts. Prepare them for the last two minutes of resuscitative efforts.
- Allow grief to happen- it is the beginning of their healing



**dysrhythmias after cardiac arrest are common. If they persist, follow appropriate protocol*

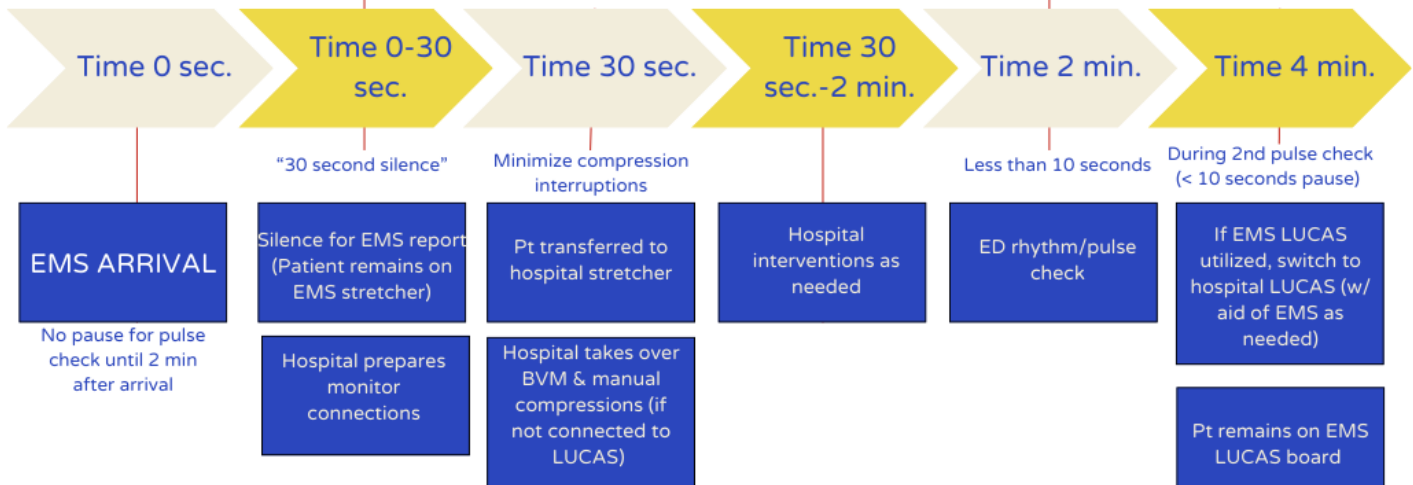
- HCA Florida Osceola
- Orlando Health Dr. P. Phillips
- Advent Health Celebration
- Holmes Regional
- Heart of Florida
- Orlando Health Southlake
- Lawnwood
- Indian River

PEARLS

- Mask available for BVM as back up in case advanced airway fails.
- Keep a finger on the pulse to quickly identify re-arrest. Utilize US for pulse checks as available.
- Titrate fluid resuscitation and vasopressor administration to maintain an adequate MAP.
- Treat Bradycardia, as it may precede re-arrest. Transcutaneous Pacing is not recommended as it prohibits proper monitoring for re-arrest.
- Reassess Supraglottic and Endotracheal tube placement via ETCO2 after every move, and at transfer of care.
- If sedation is needed, use Ketamine with caution in patients who had an arrhythmia (V-fib, V-tach); Etomidate would be preferred



EMS TO ED CARDIAC ARREST HANDOFF



EMS VERBAL REPORT

Demographics <ul style="list-style-type: none"> • Relevant PMH • Witnessed or unwitnessed? • Downtime; CPR time • Location of incident • Signs of trauma? Vitals <ul style="list-style-type: none"> • Initial rhythm and ETCO2 • Rhythm change if any • Change in ETCO2 if any • Vitals if ROSC obtained 	Interventions <ul style="list-style-type: none"> • Airway • IV/IO (location) • How much Epinephrine given? • How many shocks delivered? • Amiodarone or Lidocaine? • Bicarbonate or Calcium? <p>* Please provide family phone number & any advanced directives as available</p>
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**Press suction release button on LUCAS after pausing to allow for removal*

PEARLS

- Maintain High Quality CPR throughout the transition
- Continue resuscitation on the EMS stretcher while giving the verbal report
- Assist with the LUCAS transfer as you may be more familiar with the equipment than hospital personnel



Full ALS Assessment and Treatment

Evaluate for signs and symptoms of Shock

- Systolic BP <90 mm Hg
- HR >100
- Cool extremities
- Mottled skin appearance
- Pallor
- Delayed capillary refill
- Diaphoresis
- Altered mental status
- Shock Index >1 (HR/BP)

Evaluate for signs and symptoms of Shock

Distributive Shock (i.e. sepsis, anaphylaxis)

NS Bolus 1L IV/IO
(repeat as needed)
**Reassess lung sounds*

Push Dose Epinephrine 10mcg (1mL)
q1-2 min. max 100mcg (10mL)

Cardiogenic Shock (i.e. Left Ventricular Failure, Right Ventricular Infarction)

Cautious 250ml NS Bolus IV/IO
**Reassess lung sounds & repeat if improvement*

Push Dose Epinephrine 10mcg (1mL)
q1-2 min. max 100mcg (10mL)

Obstructive Shock (i.e. Tension Pneumothorax, Cardiac Tamponade, Pulmonary Embolism)

NS Bolus 1L IV/IO
(repeat as needed)
**Reassess lung sounds*

Push Dose Epinephrine 10mcg (1mL)
q1-2 min. max 100mcg (10mL)

**Utilize ultrasound as available to confirm diagnosis*

Needle Decompression for Tension Pneumothorax

Hypovolemic Shock (i.e. hemorrhage, dehydration)

NS Bolus 1L IV/IO
(repeat as needed)
**Reassess lung sounds*

Push Dose Epinephrine 10mcg (1mL)
q1-2 min. max 100mcg (10mL)

2g TXA if suspected cause is hemorrhagic (i.e. miscarriage, postpartum, epistaxis)

Epistaxis- (topical only) 500mg soaked gauze

PEARLS

- Hypovolemic Shock- caused by decreased blood or water volume
- Distributive Shock: caused by vasodilation and/or increased permeability, redistributing blood flow
- Cardiogenic Shock: caused by pump failure
- Obstructive Shock: caused by an obstruction that interferes with blood return to the heart
- Norepinephrine may also be used as the vasopressor



***Contact the patient's VAD coordinator immediately

Non-VAD issue

Treat according to standard protocols

Take all equipment associated with the device to the Emergency Department

Be careful not to cause any trauma to the site or driveline (wires)

Transport Destinations:
Trauma Alert → Trauma Center
Stroke Alert → Comprehensive Stroke Center
STEMI Alert → PCI Capable VAD center

Possible VAD issue:

Look at the controller and identify which device is in place.
Locate the colored sticker and match this to the EMS color coded guide.

Intervene appropriately based on the type of alarm and device. Consider: changing device batteries, reconnecting cables

Administer CPR in patients who meet all of the following:

- unresponsive
- apneic
- BGL >60
- no pump sound
- all cables connected & no alarms are sounding

Transport to patient's VAD Center

PEARLS

- Patients with a properly functioning VAD may **not** have a detectable pulse, normal blood pressure, or oxygen saturation. Utilize ETCO2 and cap refill for assessment.
- An automated blood pressure cuff may be used to help obtain a mean arterial pressure (MAP). Goal: 60-90 mmHg
- **LUCAS devices are contraindicated**
- Patients are preload dependent- administer 250ml NS bolus if signs of hypoperfusion
- VAD patients have an increased risk of bleeding due to long term anticoagulant therapy required for VADs
- VAD patients can be cardioverted and defibrillated as needed without any modifications
- CPR contraindicated if the device can be heard (humming sound). May cause internal hemorrhage to the patient



Full ALS Assessment and Treatment

Recognition:

- Evaluate for signs and symptoms of Ischemia including anginal equivalents: dyspnea, nausea, jaw pain, neck pain, dizziness
- 1st EKG: within 3 minutes of contact
- 2nd EKG: once patient is in the rescue
- 3rd EKG: prior to ED arrival

Improve Blood Flow:

- Administer Aspirin 324mg. Do not give if hx of allergy or active GI Bleeding

Pain Control & antiemetic as needed:

- Administer Nitroglycerin 0.4mg sublingual tablet
 - Vascular access should be obtained prior to administration
 - Do not administer in Inferior Wall MI
 - Do not administer if SBP <100 mm Hg
 - Do not administer if Phosphodiesterase-5 (PDE5) inhibitor within last 24 hours (Viagra or Levitra); 48 hours for Cialis
- May repeat Nitroglycerin x 2 q 5 min w/ repeat assessment before & after administration
- 1 mcg/kg Fentanyl max of 100 mcg slow IV/IO push, hold if SBP <100 (may repeat once; cumulative max 200 mcg)
- Zofran 4mg IV/IO

STEMI ALERT

Initiate STEMI Alert if **either** of the 2 are present:
 1. Chest pain or anginal equivalent PLUS ST segment elevation • 1mm in two or more contiguous leads OR
 2. Computer interpretation of 12 Meets ST Elevation MI criteria or similar wording on 12 lead ECG

Transmit EKG to receiving facility

During the radio call to the ED, convey the name of the patient's Cardiologist

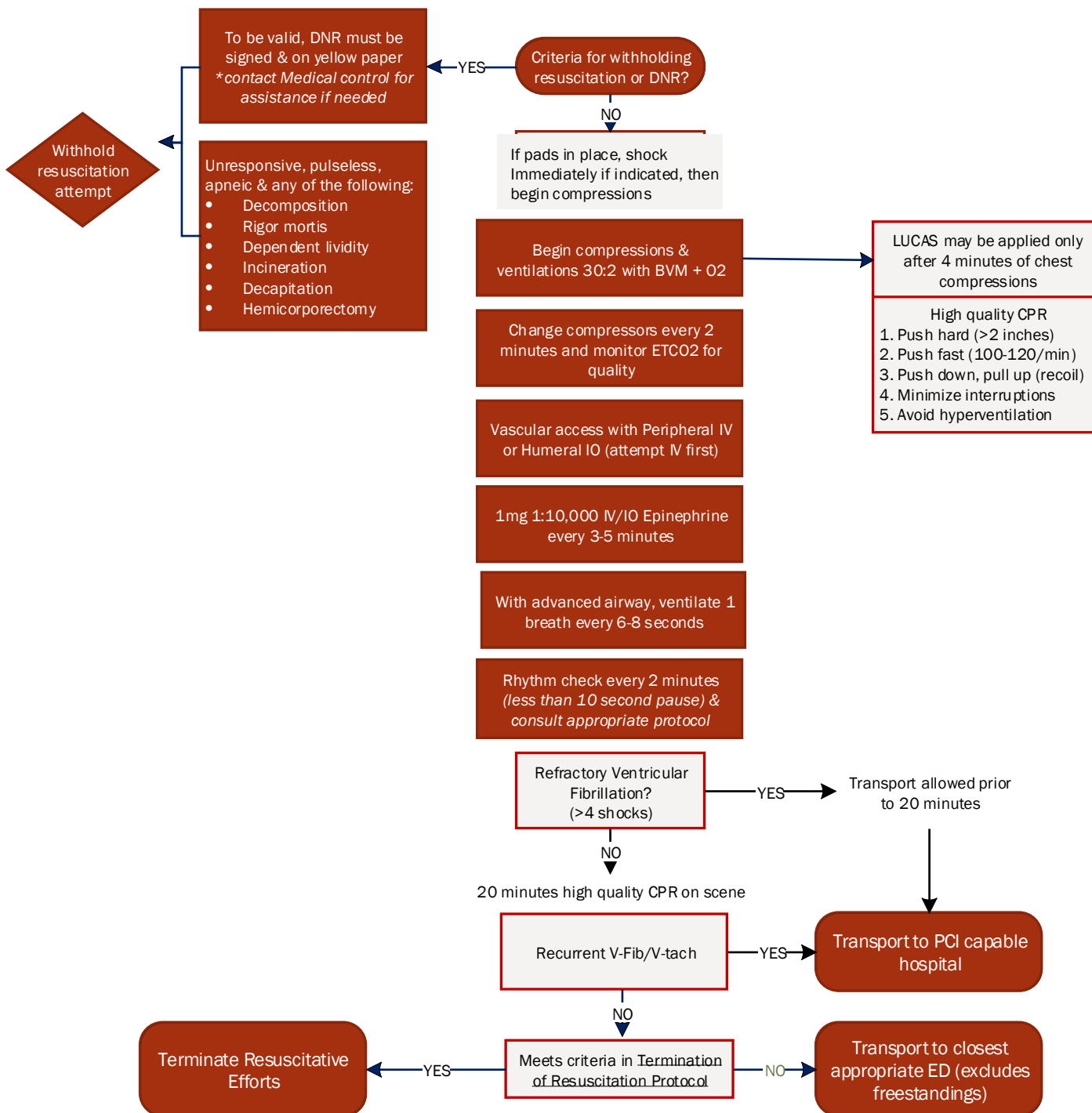
PCI capable facilities:
 HCA Florida Osceola Regional
 Orlando Regional Medical Center
 Advent Health Hospital Orlando
 Advent Health Celebration
 Dr. P. Phillips Hospital
 Holmes Regional Medical Center
 Heart of Florida Regional Medical Center
 Lawnwood Medical Center
 Southlake Hospital
 Indian River Medical Center

Monitor for complications

Cardiogenic Shock (i.e. Left Ventricular Failure, Right Ventricular Infarction)	Cautious 250ml NS Bolus IV/IO	Push Dose Epinephrine 10mcg (1mL) q1-2 min. max 100mcg (10mL)
Unstable Bradycardia < 50	Transcutaneous Pacing (avoid Atropine)	
Sustained Ventricular Tachycardia > 150	Unstable: Synchronized Cardioversion	Stable: Amiodarone 150mg or Lidocaine 1mg/kg

PEARLS

- Aspirin is not contraindicated if Acute Coronary Syndrome suspected and taking Warfarin (Coumadin) or other anticoagulant or antiplatelet, unless active bleeding
- Isolated PVC's do not require treatment. Sustained Ventricular Tachycardia (more than 4 beats) requires treatment
- Refer to appropriate protocol as needed for complications: Shock, Bradycardia, Ventricular Tachycardia



Cardiac Emergencies

PEARLS

- Call 'Working Code' and 'First Shock Delivered' to Dispatch
- Transcutaneous Pacing is not indicated in cardiac arrest.
- When the scene is safe, ALL cardiac arrest resuscitation attempts should be worked **on scene** for 20 minutes prior to transport unless refractory v-fib or v-tach.
- Do not interrupt compressions to place an Endotracheal tube.
- IV/IO access & drug delivery is secondary to high-quality chest compressions and early defibrillation.
- Every minute delay in compressions decreases the chances of survival by ~10%
- Continue compressions while charging for defibrillation
- If ETCO2 <10 improve chest compressions
- Special Considerations
 - Maternal arrest: >20 weeks gestation, manually displace the uterus to the left.
 - Renal Failure/Dialysis patient: consider hyperkalemia
 - Sodium Bicarbonate: no longer recommended as a standard cardiac arrest drug. Consider in dialysis, hyperkalemia, TCA & overdose and when specifically mentioned in protocol.

Updates & Revisions

- 9/6/25 Shock- Topical route specified for TXA administration in nosebleeds with hemorrhagic shock
- 11/30/25 Termination of Resuscitation- communicate to Medical Control when there is cardiac standstill present (if US available)
- 11/30/25 Bradycardia- It is preferred to start with Epinephrine (push dose or drip) rather than TCP in post cardiac arrest as it is difficult to assess for pulses, which may lead to a delay in CPR
- 11/30/25 General Approach- clarification to shock immediately when indicated upon initiation of ACLS. A round of CPR is not required first if shockable rhythm identified.
- 11/30/25 AHA update- Starting cardioversion dose= 200J
- 11/20/25 AHA update- Defibrillation for Torsades rather than Magnesium first
- 2/1/26- Defibrillation in stable Torsades
- 3/19/26 Metoprolol 5mg IV as an alternative to Cardizem in Atrial Fibrillation
- 3/19/26 If sedation is needed, use Ketamine with caution in patients who had an arrhythmia (V-fib, V-tach); Etomidate would be preferred