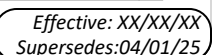


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2.04 MEDICAL CARDIAC ARREST

EMSAC OCTOBER 2025

CPR Quality
<ul style="list-style-type: none">• Push hard (at least 2 inches [5cm] and fast (100-120/min) and allow complete chest recoil.• Minimize interruptions in compression.• Avoid excessive ventilation• Change compressor every 2 minutes or sooner if fatigued• Quantitative waveform capnography – if end tidal CO₂ is low or decreasing reassess CPR quality
Shock Energy for Defibrillation
<ul style="list-style-type: none">• Biphasic: manufacturer recommends (e.g. initial dose of 120-200J): if unknown use maximum available.• Second and subsequent doses should be equivalent, and higher doses may be considered.• Minimize peri-shock pause to <5 seconds. Pre-charge AED/defibrillator at 1:45 to get ready to deliver shock at 2 minutes.• Always resume chest compressions immediately after rhythm analysis or shock.• EXCEPTION: If a patient goes into VF/pulseless VT while monitored or attached to an AED or defibrillator, a shock must be administered immediately.• If there is no shock advised, resume compressions for another 2 minutes before next rhythm analysis/femoral pulse check.• Vector change: If a shockable rhythm continues past the third shock, attach a second set of defibrillator pads in a chest position to provide alternate vector defibrillation and switch vectors.
Drug Therapy
<ul style="list-style-type: none">• Epinephrine IV/IO dose: 1mg every 3-5minutes, up to 4 doses• Amiodarone IV/IO dose:<ul style="list-style-type: none">○ First dose: 300mg bolus○ Second dose: 150mg
Advanced airway
<ul style="list-style-type: none">• BLS airway: 30:2 compression ventilation ratio OR continuous ventilation [1 breath every 6 seconds (10 breaths/min)]• Supraglottic airway (first line) or endotracheal intubation advanced airway. Do NOT stop compressions to place advanced airway.• Waveform capnography to confirm and monitor advanced airway tube placement• Advanced airway: continuous ventilation [1 breath every 6 seconds (10 breaths/min)]
Return of Spontaneous Circulation (ROSC)
<ul style="list-style-type: none">• Check for pulse and blood pressure• Abrupt sustained increase in end tidal (typically >40mmHg)• See Protocol 2.05 Adult Post-Cardiac Arrest or Return of Spontaneous

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2.04 MEDICAL CARDIAC ARREST

EMSAC OCTOBER 2025

Circulation

Reversible Causes

Hypoxia:

- ~~Bag-mask-v~~ Ventilation with O2 (via BVM, supraglottic airway (e.g. iGel) or ET tube)
- Insert airway adjuncts as appropriate
- Target O2 saturation 94 – 95%

Hydrogen Ion (Acidosis):

- Assure adequate ventilation to blow off CO2

Hypovolemia:

- Give Normal Saline bolus
- If secondary to blood loss, early transport

Hypothermia:

- Rewarm if the patient is hypothermic

Hyperkalemia:

- Give Calcium Chloride
- Consider Sodium Bicarbonate only after Calcium Chloride when treating suspected hyperkalemia
- Consider in-line Albuterol via BVM

~~Hypokalemia: Consider early transport~~

~~Hypoglycemia: Check blood glucose and correct hypoglycemia per Protocol 2.03 Altered Mental Status~~

Tension Pneumothorax: Relieve tension pneumothorax per Protocol 7.06 Needle

Thoracostomy

Torsades de Pointes: After defibrillation give Magnesium Sulfate

Toxins: Treat signs and symptoms of drug toxicity:

- If QRS widening from Tricyclic Antidepressant Overdose, give Sodium Bicarbonate. May repeat
- If calcium channel blocker overdose, give Calcium Chloride May repeat in 10 min.
- If opiate overdose is suspected, consider Naloxone

Tamponade (cardiac) or Thrombosis, pulmonary or cardiac: Consider early transport

2.04 MEDICAL CARDIAC ARREST

EMSAC OCTOBER 2025

High Performance CPR Team Set Up

Assign functional positions based on available personnel. One person may do one or more of the recommended functional positions listed below:

Compressor:

- ~~Does~~ Performs chest compressions

Airway:

- Opens airway
- Provides bag-mask ventilation with O2. Inserts airway adjuncts as appropriate.
- Target O2 saturation 94 – 95%.

AED/Monitor/Defibrillator:

- Operates AED/monitor/defibrillator

IV/IO Medications:

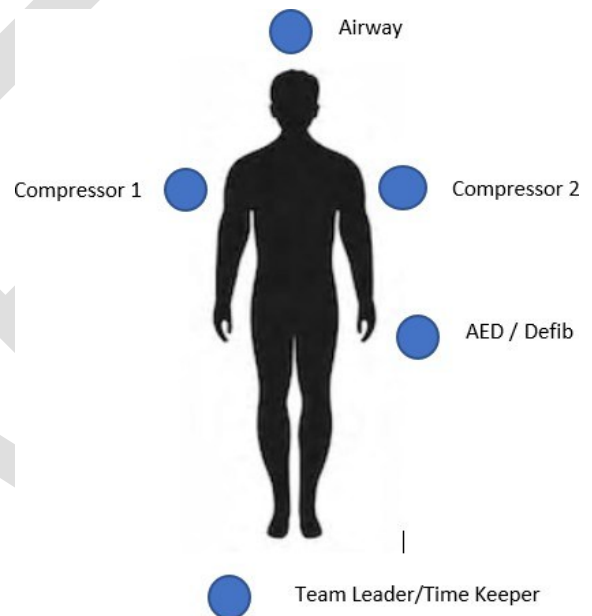
- ALS role – gets IV/IO access and gives medications.

Team Leader/Time Keeper:

- Assigns team roles (or assumes roles if not assigned)
- Provides team feedback.
- Records intervention and medication times. Announces when next interventions and medications due
- Records frequency and duration of CPR interruptions.

Next Compressor:

- Continuously checking ~~femoral~~ pulse. Switch at end of cardiac cycle (2 minutes).



2.04 MEDICAL CARDIAC ARREST

EMSAC OCTOBER 2025

SPECIAL CIRCUMSTANCES

PREGNANCY

- If patient is obviously gravid or known to be > 20weeks gestation, focus on early transport to OB and STAR designated center.
- Most common causes of maternal cardiac arrest are hemorrhage, cardiovascular diseases (including myocardial infarction, aortic dissection, and myocarditis), amniotic fluid embolism, sepsis, aspiration pneumonitis, pulmonary embolism, and eclampsia.
- If patient is receiving IV/IO Magnesium pre-arrest, stop infusion and switch to Normal Saline unless the arrest was due to seizure activity.
- During CPR, have a provider manually displace gravid uterus to patient's left side.
- If ROSC is achieved, displace uterus or place padding under backboard for 30° tilt to patient's left side. ~~in Left Lateral Decubitus Position.~~
- ~~Anticipate difficult airway; experienced provider preferred.~~
- ~~Normal Saline fluid bolus. Reassess and repeat as indicated.~~
- ~~Flush line with Normal Saline prior to giving Calcium Chloride. May repeat in 10 min.~~

VENTRICULAR ASSIST DEVICE (LVAD)

- See Protocol 2.19 Left Ventricular Assist Device (LVAD)

DOCUMENTATION

- Initial "At Patient Side" time
- Intervention and medication times
- Use accelerometer ("puck") to track CPR unless LUCAS is being used
- Patient response to interventions and medications (rhythm changes; pulses with and without CPR, ROSC).
- ROSC or death pronouncement time
- Bystander CPR prior to arrival and duration ~~if not already a required field~~

AFTER CARE

IF ROSC

- See Protocol 2.05 Adult and Pediatric Post-Cardiac Arrest or Return of Spontaneous Circulation

IF NO ROSC after 20 minutes OPTIONS:

~~Asystole/PEA at 20 minutes OR VF/pVT at 30 minutes:~~

2.04 MEDICAL CARDIAC ARREST

EMSAC OCTOBER 2025

<p>If persistent VF/pVT (after 3 defibrillation attempts):</p> <ul style="list-style-type: none">• Transport to a STAR center with ongoing CPROR• Contact Base Hospital Call Base Physician for recommendations	<p>If non-shockable rhythm:</p> <ul style="list-style-type: none">• Review criteria for Discontinuing Resuscitative Efforts (See Policy 4049) OR• Contact Base Hospital Physician for recommendations
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2.04 MEDICAL CARDIAC ARREST

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ALL Cardiac Arrests — High Performance CPR

See **Figure 1** for ~~High Performance Team Organization~~.

~~Current Advanced Cardiac Life Support should be followed in conjunction with this protocol/algorithm~~

~~Start CAB (compressions, airway, breathing) when patient is unconscious/unresponsive, not breathing normally and no pulse is detected within 10 seconds.~~

Compressions

- ~~• Do five (5) cycles of chest compressions at 30:2 compression/ventilation ratio OR continuous ventilation~~
- ~~• Push hard (at least 2 inches) and fast (100-120/min).~~
- ~~• Allow complete chest recoil.~~
- ~~• Minimize compression interruptions.~~
- ~~• Next up team compressor is continuously checking quality of femoral pulse and is ready to rotate to the compressor position at the end of the cardiac cycle (2 minutes).~~
- ~~• Rotate compressors every 2 minutes or sooner if fatigued.~~

AED/Defibrillator

- ~~• While CPR is in progress, turn on AED/defibrillator and apply pads (anterior-posterior if possible) and accelerometer ("puck").~~
- ~~• Shock on a 2-minute cycle. Pre-charge AED/Defibrillator at 1:45 to get ready to deliver shock at 2 minutes.~~
- ~~• Minimize peri-shock pause to less than 5 seconds.~~
- ~~• Change out rescuer on chest compressions during peri-shock pause.~~
- ~~• After first 30 compressions, analyze rhythm. Clear patient and shock if indicated. Resume compressions for another 2 minutes before next rhythm analysis.~~
- ~~• Always resume chest compressions immediately after rhythm analysis or shock.~~
- ~~• **EXCEPTION:** If patient goes into VF/pulseless VT while monitored or attached to an AED or defibrillator, a shock must be administered immediately.~~
- ~~• If no shock advised, resume compressions for another 2 minutes before next rhythm analysis/femoral pulse check.~~
- ~~• If a shockable rhythm continues past the third shock, attach a second set of~~

2.04 MEDICAL CARDIAC ARREST

EMSAC OCTOBER 2025

~~defibrillator pads in a chest position to provide alternate vector defibrillation and switch vectors, or attach a second defibrillator with a second set of defibrillator pads as soon as one is available to provide alternate vector defibrillation.~~

Airway/Ventilation:

- ~~• Open airway. Provide bag-mask ventilation. Pause compressions 2 seconds or less to ventilate during 30:2 or continuous ventilation.~~
- ~~• Ventilate enough to cause chest rise. Avoid excessive ventilation (too fast or too much volume).~~
- ~~• Inserts airway adjuncts as appropriate. Do NOT stop chest compressions during advanced airway insertions.~~
- ~~• Asynchronous ventilations every 6 seconds once advanced airway is in place or every 10th compression~~

IV/IO Medications:

- ~~• ALS provider obtains IV/IO access and gives medications as appropriate.~~