



Cardiac Arrest; Adult



AT ANY TIME

Return of
Spontaneous
Circulation



Go to
Post Resuscitation
Protocol AC 10

Criteria for Death / No Resuscitation
Review DNR / MOST Form

YES

Decomposition
Rigor mortis
Dependent lividity
Blunt force trauma
Injury incompatible with
life
Extended downtime with
asystole

Do not begin
resuscitation

Follow
Deceased Subjects
Policy

NO

Begin Continuous CPR Compressions
Push Hard (≥ 2 inches) Push Fast (100 - 120 / min)
Change Compressors every 200 compressions
(sooner if fatigued)

(Limit compressor changes ≤ 5 seconds)

- Pulse checks ONLY when EtCO₂ not available or at end of cycle with spike in EtCO₂ readings

Ventilate 1 breath every 20th compression
Monitor EtCO₂ when available

AED Procedure
if available

ALS Available

NO

YES

Cardiac Monitor

Shockable Rhythm

NO

YES

AED Procedure

Continue CPR
2 Minutes

Repeat and reassess

Airway
Protocol(s) AR 1, 2, 3

Shockable Rhythm

NO

YES

Asystole / PEA
Protocol AC 1
as indicated

Airway
Protocol(s) AR 1, 2, 3

VF / VT
Protocol AC 9
Tachycardia
Protocol(s) AC 6, 7
as indicated

Airway
Protocol(s) AR 1, 2, 3

Arrest secondary
to Opioid OD?

NO

YES

Naloxone 0.4 – 2 mg IN / IM
Peds: 0.1 mg/kg IN

Maximum 4 mg

A

Naloxone 0.4 – 2 mg
Peds: 0.1 mg/kg
IV / IO / IM / IN / ETT

Maximum 4 mg

Cardiac: Mechanical CPR – LUCAS CSP 8
if available

Termination on Scene Protocol AC 12
as indicated

Notify Destination or
Contact Medical Control



Cardiac Arrest; Adult



PRIMARY FOCUS IS ON HIGH-QUALITY, CONTINUOUS, AND UNINTERRUPTED COMPRESSION:

Follow Cardiac Arrest; Protocol AC3 and Team Focused CPR Protocol AC 11 and Termination of Resuscitation On Scene Protocol AC 12.

Compressor Responsibilities:

- Compress at rate of 120/ minute
- Push ≥ 2 inches depth of compression
- Allow complete recoil of chest on upstroke
- Call out every 20th compression
- Next compressor moves into ready position at compression 180
- Do not interrupt compressions > 5 seconds

ALS Responsibility:

- Ensure adequate compressions and ventilations
- Establish IV or IO access and administer first epinephrine
- Charge defibrillator every sequence at the 180th compression

Ventilator Responsibilities:

- Ventilate ONLY at every 20th compressions
- Same rate with BVM, BIAD, or ETT
- May help compressor count
- DO NOT HYPERVENTILATE

LUCAS Mechanical CPR:

- Ventilate ONLY every 6 seconds (GREEN LIGHT FLASHES)
- Charge defibrillator at the 2-minute mark (3-BEEP)
- When fully charged, pause LUCAS for rhythm check

Airway takes precedence if cardiac event or a primary respiratory event, drug overdose, drowning, hanging, suffocation, or trauma.

Medication Dosing:

- If EtCO₂ falls below 30 mmHg during the first 30 minutes of the resuscitation give the additional 1 mg of Epinephrine.
- Atropine not likely beneficial and no longer indicated with PEA or Asystole (can give at discretion of team leader to max of 3 mg.)

Hyperkalemia: Unknown in field setting. End stage renal dialysis patient is at risk and Sodium bicarbonate and Calcium chloride should be given. ECG findings may not reflect common teaching such as peaked T waves. PEA with a bizarre or widened complex may indeed be hyperkalemia.

CPR-Induced Consciousness:

- Can be seen in high-quality CPR, is poorly understood, may result from many factors, and is characterized by the following:
- Eye opening, movement, purposeful movement, verbal and non-verbal communication, and may interfere with CPR efforts.
- While rare this can be disconcerting to providers and family, as well as bystanders. In the event patient awareness is felt to be problematic to the resuscitation you may administer **Ketamine 2 mg/kg IV / IO.**

Pearls

- **Team Focused Approach / Pit-Crew Approach recommended; assign responders to predetermined tasks. Refer to optional protocol or development of local agency protocol.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated.**
- **DO NOT HYPERVENTILATE, ventilate ONLY at every 20th compression with BVM, BIAD, or ETT.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **Reassess and document BIAD and / or endotracheal tube placement and EtCO₂ frequently, after every move, and at transfer of care.**
- **IV / IO access and drug delivery is secondary to high-quality chest compressions and early defibrillation.**
- **IV access is preferred route. Follow IV or IO Access Protocol UP 6.**
- **Defibrillation:**
Follow manufacture's recommendations concerning defibrillation / cardioversion energy when specified.
Charge defibrillator during chest compressions, near the end of 2-minute cycle, to decrease peri-shock pause.
Following defibrillation, provider should immediately restart chest compressions with no pulse check until end of next cycle.
- **End Tidal CO₂ (EtCO₂)**
If EtCO₂ is < 10 mmHg, improve chest compressions. Goal is ≥ 20 mmHg.
If EtCO₂ spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC)
- **Special Considerations**
Maternal Arrest - Treat mother per appropriate protocol with immediate notification to Medical Control and rapid transport preferably to obstetrical center if available and proximate. Place mother supine and perform Manual Left Uterine Displacement moving uterus to the patient's left side. IV/IO access preferably above diaphragm. Defibrillation is safe at all energy levels.
Renal Dialysis / Renal Failure - Refer to Dialysis / Renal Failure Protocol AM 3 caveats when faced with dialysis / renal failure patient experiencing cardiac arrest.
Opioid Overdose - If suspected, administer Naloxone per Overdose / Toxic Ingestion Protocol TE 7 while ensuring airway, oxygenation, ventilations, and high-quality chest compressions.
Drowning / Suffocation / Asphyxiation / Hanging / Lightning Strike – Hypoxic associated cardiac arrest and prompt attention to airway and ventilation is priority followed by high-quality and continuous chest compressions and early defibrillation.
- **Transcutaneous Pacing:**
Pacing is NOT effective in cardiac arrest and pacing in cardiac arrest does NOT increase chance of survival
Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.
Discussion with Medical Control can be a valuable tool in developing a differential diagnosis and identifying possible treatment options.