From PRIMARY ASSESSMENT

- Known or suspected hypothermia
  - Yes: Algorithm C: Hypothermic CPA
  - No: Shockable rhythm (VT or pVT)

- Shockable rhythm (VT or pVT)
  - Yes: Algorithm A: Shockable Rhythm
  - No: Algorithm B: Non-shockable Rhythm

- Algorithm A: Shockable Rhythm
  - Yes: VF or pVT
  - No: PEA or Asystole

- Algorithm B: Non-shockable Rhythm
  - Yes: PEA or Asystole
### INDICATIONS:
- Cardiopulmonary arrest (CPA) not due to trauma
- EMS personnel with Intermediate Care delegations and above

### CONTRAINDICATIONS:
- Obvious signs of death
- Confirmation of valid health care directive prohibiting resuscitation from CPA

### NOTES:
- In the event of out of hospital CPA with shockable rhythm (VF or pVT) make every effort to resuscitate on scene. At no time should EMS personnel put themselves or the general public at risk from emergent transport that will not benefit the patient.
- At any time, if a ventricular fibrillation (VF) or pulseless ventricular tachycardia (pVT) degenerates into a non-shockable rhythm refer to **algorithm B**. If pulseless electrical activity (PEA) deteriorates to a shockable rhythm refer to **algorithm A**.
- Do not interrupt cardiopulmonary resuscitation (CPR) to perform any procedure(s).
- If the airway cannot be opened and maintained with a basic procedure, providers must attempt to establish a patent airway with a blind insertion airway device (BIAD). If the airway cannot be opened with a BIAD, providers with appropriate delegation must attempt to establish a patent airway with an endotracheal tube (ETT).
- If the airway cannot be opened with a BIAD or ETT, continue CPR and initiate emergent transport. Note that one attempt at defibrillating a shockable rhythm may be undertaken where appropriate before transporting a patient with an obstructed airway.
- After each reassessment or shock delivery immediately resume CPR for two minutes beginning with chest compressions. Do not stop CPR unless the patient shows purposeful movements.
- Dialysis-dependent patients with CPA due to VF, VT or PEA should be treated as hyperkalemic CPA. Administer CALCIUM and SODIUM BICARBONATE as per **M10 Hyperkalemia Therapy**. Consider insulin and glucose upon return of spontaneous circulation (ROSC).
- Consider magnesium sulfate administration as per **M24.1** for polymorphic VT known or suspected to be *torsades des pointes*.
- For pulseless electrical activity providers may consider administering IV solution (0.9% Saline or Ringer’s Lactate) by bolus infusion (20 ml/kg up to 1000 ml per bolus) for non-traumatic cardiopulmonary arrest known or suspected to be due to hypovolemia or toxin/poison.
- For pulseless electrical activity providers with appropriate delegation should initiate needle thoracostomy as soon as tension pneumothorax is suspected.
- If there is no return of spontaneous circulation (ROSC) after maximal on-scene interventions initiate emergent transport regardless of rhythm.
- While en route perform CPR as long as you are able to do so safely and effectively. Do not stop CPR or reassess / reanalyze. Do not interrupt transport or defibrillate regardless of rhythm.
- If the patient shows purposeful movement, perform a brief pulse check (less than ten seconds). If there is no palpable pulse, CPR should be resumed and not interrupted.
- **At any time, EMS personnel may initiate on-line clinical support for assistance with transport decision-making.**
DEFIBRILLATION:
Biphasic – default or maximum
Monophasic – 360 J

EPINEPHRINE
- 0.01 mg/kg (maximum = 1 mg); IV or IO; repeat every 3 to 5 minutes as required

AMIODARONE
- 5 mg/kg (maximum = 300 mg); IV or IO; repeat 5 mg/kg (maximum = 150 mg) up to twice as required

MAGNESIUM SULFATE (for suspected torsades de pointes only)
- 50 mg/kg (maximum = 2 gm); IV or IO; repeat once

CALCIUM CHLORIDE 10% (for suspected hyperkalemia only)
- 0.2 ml/kg or 20 mg/kg; IV or IO; administer once only
- Max dose = 10 ml (1 gm) at 50 kg

CALCIUM GLUCONATE 10% (for suspected hyperkalemia only)
- 0.6 ml/kg or 60 mg/kg; IV or IO; administer once only
- Max dose = 10 ml (1 gm) at 17 kg

SODIUM BICARBONATE 8.4% (for suspected hyperkalemia only)
- 1 ml/kg or 1 mmol/kg; IV or IO; administer once only
- Max dose = 100 ml (100 mmol)
Establish IV or IO access
   Consider hyperkalemia
   Administer EPINEPHRINE

Clear & shock
CPR x 2 min

Reassess after 2 min:
VF or pVT

Yes

Clear & shock
CPR x 2 min

Reassess after 2 min:
VF or pVT

No

Yes

Clear & shock
CPR x 2 min

Reassess after 2 min:
VF or pVT

No

Yes

Clear & shock
CPR x 2 min

Reassess after 2 min:
VF or pVT

No

Yes

Clear & shock
CPR x 2 min

Reassess after 2 min:
VF or pVT

No

Repeat EPINEPHRINE

Clear & shock
CPR x 2 min

Algorithm B: Non-shockable Rhythm

Clear & shock
CPR x 2 min

Repeat AMIODARONE

Clear & shock
CPR x 2 min

Repeat AMIODARONE

Clear & shock
CPR x 2 min

Repeat AMIODARONE

Clear & shock
CPR x 2 min

Repeat EPINEPHRINE

Clear & shock
CPR x 2 min

Clear & shock
CPR x 2 min

Reassess after 2 min:
VF or pVT

No

Yes

PEA or Asystole

Yes

No

Perfom continuous CPR

ROSC

POST ARREST CARE

TRANSPORT

PEA or Asystole

ROSC

POST ARREST CARE

TRANSPORT
ALGORITHM B: NON-SHOCKABLE RHYTHM (PEA or ASYSTOLE)

Exclude tension pneumo

Establish IV or IO access
Consider hyperkalemia
Administer EPINEPHRINE
Consider hypovolemia

CPR x 2 min

Reassess after 2 min: PEA or Asystole

Yes

Perform continuous CPR

No

VF or pVT

ROSC

Post ARREST CARE

Algorithm A: Shockable Rhythm

Yes

No