BRADYCARDIA

EMT:

1) **O2 4 – 6 Liters Nasal Cannula** Maintain pulse ox between 94% and 96% switch to NRB 10-15 Liters if needed.
2) **CPR** if patient is unconscious.
3) Call for ALS
4) Transport ASAP

AEMT:

As above

5) **IV** Isotonic Solution TKO
6) **Consider 200 ml bolus** May repeat up 20ml/kg in 200 ml increments if lungs sounds are clear.
7) Consider second IV line if time permits

PARAMEDIC:

As above

8) Cardiac Monitor
9) Intubate Patient if patient respirations are less than 8 per minute, attach end tidal CO2 monitoring (confirm oxygenation & ventilation)
10) If 2nd degree Mobitz II or 3rd degree block: External Cardiac Pacing
11) If Sinus bradycardia or low-grade AV Block
12) **Atropine 0.5mg** (max of 3 mg) If serious signs or symptoms.
13) Do not delay **Transcutaneous Pacemaker (TCP)** application, if available, while awaiting IV access, or for atropine to take effect if patient is symptomatic.
14) **Activate external pacemaker** if available.
15) **Versed 1 to 5 mg** Slow IV 1 mg/min. procedural sedation.
16) **Repeat atropine 0.5-1.0 mg, q 3-5 min**. up to a total of 0.04 mg/kg. If initial atropine or external pacemaker ineffective,
17) **Dopamine infusion, starting at 5.0-20.0 mcg/kg/min. titrated to BP.** If no response to atropine, or TCP.

(End)

CHEST PAIN / CARDIAC / STEMI

EMT:

1) **O2 4 – 6 Liters Nasal Cannula** Maintain pulse ox between 94% and 96% switch to NRB 10-15 Liters if needed.
2) **Aspirin 324 mg (4- 81mg tablets) p.o.** Document and reduce dose if patient already took Aspirin
3) **Nitro 0.4 mg SL** if physician prescribed to that Patient and **BP > 90**. If patient's own physician prescribed Nitroglycerin not available, provide Nitro from unit.
4) **Nitro 0.4 mg SL** repeat **Q 5 minutes x 2 if BP> 90** & pain not relieved (total of 3 Nitro).
5) Transport in position of comfort.
6) Initiate AMI Thrombolysis Screen ASAP without delaying patient transport. *
7) Call for ALS

AEMT:

As above,

8) Perform 12 lead EKG, **consider** STEMI Activation
9) IV Isotonic Solution TKO
10) **Nitro 0.4 mg SL** repeat **Q 5 minutes x 3 if BP> 90** & pain not relieved. **Max 3 dose** then consult medical control.
11) **Consider 200 ml bolus** May repeat up 20ml/kg in 200 ml increments if lungs sounds are clear.
12) Second IV in route if time.

PARAMEDIC:

As above,

13) Cardiac Monitor
14) **Morphine 2-5 mg IV Q 5 min.** if severe pain persists, as long as BP >100.
15) Consider **Ondansetron 4-8mg IV/IM or Promethazine 6.25mg IV/25mg IM** for nausea
16) Consider **Midazolam or Lorazepam 0.5-2mg IV max 5mg** for anxiety.
17) If systolic BP < 90, assess volume status. If lungs clear and/or 12 lead EKG indicates Inferior wall AMI, consider trial infusion of 200mL. If rales present and/or 12 lead EKG Indicates Anterior wall AMI, consider **Dopamine infusion**.
18) Contact receiving facility as soon as possible if strong clinical suspicion of acute AMI and/or 12 lead EKG indicates AMI.

(End)

PULSELESS ELECTRICAL ACTIVITY (PEA) /ASYSTOLE (Non Shockable)

EMT:

1) Check Respirations and pulse
2) Call for ALS
3) Begin CPR
4) Airway adjunct and supplemental **O2 15 LPM** via BVM
5) Attach AED (after two minutes of CPR)
6) Two no shocks advised
7) Continue CPR Package and transport

AEMT:

As above,

8) See Guideline - G18 for discontinuing CPR in the field.
9) If airway is patent with BVM and adjunct continue, if unable to maintain airway place **King Airway.**
10) **IV** Isotonic Solution **consider 200 ml bolus**
11) Assess Blood Sugar see Medical - M3
12) Assess Pupils see Medical – M1

PARAMEDIC:

As above

13) Confirm Asystole in Two leads
14) Intubate Patient / attach end tidal CO2 monitoring (confirm oxygenation & ventilation)
15) **Epinephrine 1.0 mg IV/IO q 3-5 min**. CONTINUE UNTIL ROSC OR RESUSCITATION TERMINATED. **
16) Consider possible causes and appropriate treatments:

□ Hypovolemia (volume infusion) □ Hypoxia (ventilation)
□ Cardiac tamponade □ Tension pneumothorax (needle decompression)
□ Hypothermia (see hypothermia algorithm)
□ Massive pulmonary embolism (surgery, thrombolytics)
□ Drug overdoses such as tricyclics, digitalis, B-blockers, calcium channel-blockers
□ Hyperkalemia
□ Massive acute myocardial infarction

17) **Sodium Bicarbonate 1.0 mEq/kg IV** (75 mEq for average adult). Consider if patient intubated, repeat q 10 min. @ 1/2 dose.
18) If rhythm improves, or perfusion restored, transport ASAP. If asystole persists, refer to Field Resuscitation Guidelines – G18.

** This drug may be given via the endotracheal tube if IV access cannot be established. ET dose is double the IV dose.

(End)

RETURN OF SPONTANEOUS CIRCULATION (ROSC)

EMT:

1) **O2 4 – 6 Liters Nasal Cannula** Maintain pulse ox between 94% and 96% switch to NRB 10-15 Liters if needed.
2) Transport ASAP
3) Call for ALS

AEMT:

As above

4) IV Isotonic Solution TKO
5) **Consider 200 ml bolus** May repeat up 20ml/kg in 200 ml increments if lungs sounds are clear.
6) Apply **end tidal CO2** and titrate ventilations maintain **35-45mmHg**.

Paramedic:

As above

7) ROSC result of Antidysrhythmic continue their use.
   A) Amiodarone 150 mg over 10 minutes
8) 12 Lead EKG
   A) **STEMI** Activation
9) **Maintain BP** consider
   A) Dopamine 5-20 mcg/kg/min
   B) Epinephrine 2-10 mcg/min IV
   C) Levophed 1-10 mcg/min IV
10) Target temperature of 90-96F

If ventricular ectopy present without chest pain, consult receiving physician.

(End)

SUPRAVENTRICUIAR TACHYCARDIA (SVT, HR > 150)

EMT:

1) **O2 4 – 6 Liters Nasal Cannula** Maintain pulse ox between 94% and 96% switch to NRB 10-15 Liters if needed.
2) Transport ASAP
3) Call for ALS

AEMT:

As above

4) Large bore IV Isotonic Solution TKO
5) **Consider 200 ml bolus** May repeat up 20ml/kg in 200 ml increments if lungs sounds are clear.
6) Consider second IV line if time permits

Paramedic:

As above

7) Cardiac Monitor
8) Consider vagal maneuver
9) **Adenosine 6mg** rapid IVP/IO with fluid bolus
10) **Adenosine 12 mg** rapid IVP/IO
11) **Cardizem** titrated in 5 mg increments, slow IV/IO (max of 0.25 mg/kg)
12) Consider Synchronized Cardioversion

**If wide complex tachycardia is noted begin Ventricular Tachycardia Management

NOTE: If conversion occurs but PSVT reoccurs, repeated electrical cardioversion is NOT indicated unless unstable.

* Use antecubital IV if possible to administer Adenocard

(End)

SYMPTOMATIC HYPOTENSION

EMT:

1) **O2 4 – 6 Liters Nasal Cannula** Maintain pulse ox between 94% and 96% switch to NRB 10-15 Liters if needed.
2) Transport ASAP
3) Call for ALS

AEMT:

As above

4) **IV** Isotonic Solution
5) **Consider 200 ml bolus** May repeat up 20ml/kg in 200 ml increments if lungs sounds are clear.
6) Consider 2nd large bore IV Isotonic Solution

PARAMEDIC:

As above

7) Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitoring).
8) Attach cardiac monitor and pulse oximeter.
9) Treat any cardiac arrhythmias in accordance with protocols.
10) Recognize and treat for underlying cause(s) of shock.
11) Consider starting a **Dopamine infusion IV piggyback at 5-20 mcg/kg/min** titrating until BP> 90 mmHg systolic for non-traumatic hypotension not resolved by fluid challenge.

(End)

VENTRICULAR FIBRILATION/PULSELESS VENTRICULAR TACHYCARDIA (Shockable)

EMT:

1) Check Respirations and pulse
2) Call for ALS
3) Begin CPR
4) Airway adjunct and supplemental **O2 15 LPM** via BVM
5) Attach AED (after two minutes of CPR if un-witnessed) if available
6) Analyze and deliver, immediately continue CPR
7) After 2 minutes of CPR **Repeat Step 6)**
8) Transport ASAP

AEMT:

As above,

9) If airway is patent with BVM and adjunct continue if unable to maintain airway place **King Airway** without interrupting CPR.
10) **IV** Isotonic Solution **TKO**
11) **Consider 200 ml bolus** May repeat up 20ml/kg in 200 ml increments if lungs sounds are clear.
12) Consider second IV line if time permits

PARAMEDIC:

As above

13) Confirmed VF / Pulseless V-Tach
14) 2 minutes of CPR if not already in progress
15) Defibrillate @ 200 Joules (Biphasic) or continue at AED level.
16) 2 minutes of CPR / During CPR administer one of the following:
17) **Epinephrine 1:10,000** (1.0 mg IVP/IO or 2.0 mg ETT (q 3-5 min)
18) Defibrillate @ 300 Joules
19) 2 minutes of CPR / During CPR administer the following antiarrhythmic
20) **Amiodarone 300 mg** IV/IO may be repeated once at 150 mg IV/IO-Max dose of 450 mg
21) Defibrillate @ 360 Joules
22) 2 minutes of CPR / During CPR administer Epinephrine q 3-5 min.
23) If King airway in place / attach end tidal CO2 monitoring (confirm oxygenation & ventilation) if not Intubate Patient without interrupting CPR
24) Defibrillate @ 360 Joules
25) 2 minutes of CPR / During CPR administer antiarrhythmic. If Amiodarone was given a repeat does of 150 mg IV/IO may be given. Do not alternate Lidocaine and Amiodarone.)
26) Defibrillate @ 360 Joules
27) Consider Sodium Bicarbonate (1mq/kg IV/IO) if acute metabolic acidosis is suspected.
28) Administer 25GM of D50W for hypoglycemia

(End)

VENTRICULAR TACHYCARDIA (Pulse)

Pulseless, treat as per V-Fib protocol.

EMT:

1) **O2 4 – 6 Liters Nasal Cannula** Maintain pulse ox between 94% and 96% switch to NRB 10-15 Liters if needed.
2) Transport ASAP
3) Call for ALS

AEMT:

As above

4) IV Isotonic Solution TKO
5) **Consider 200 ml bolus** May repeat up 20ml/kg in 200 ml increments if lungs sounds are clear.
6) Consider second IV line if time permits

Paramedic:

As above

7) Cardiac Monitor
8) **UNSTABLE Patient** with pulse (chest pain, SOB, hypotension, CHF, ischemia or infarction).
9) Consider **Midazolam 1 to 5 mg or Lorazepam 1 to 4 mg Slow IV 1 mg/min** for procedural sedation.
10) **Cardioversion: Set amount of biphasic joules to 50J►75J►100J**
11) **Amiodarone 150 mg over 10min. and cardiovert again**, starting at level previously successful, if V-Tach persists or recurs, repeat **Amiodarone 150 mg over 10min** PRN if tachycardia returns.

12) **STABLE PATIENT**
13) **Amiodarone 150 mg over 10 minutes** May repeat once.
14) Contact receiving physician for possible **cardioversion**, as in unstable patients.

(End)