March 2013 – Cardiac Arrest Team Resuscitation

Name	Employer	Date Submitted

Notes: (1) post-test must also be passed; (2) questions may be submitted until July 1 without penalty; (3) class handout is availlable: http://www.nwcemss.org/assets/1/continuing_education_materials/handout_nwc_emss_ce_13_mar.pdf

1. What three (3) things are "known" to improve outcomes in cardiac arrest (CA) resuscitation?

   A. What one (1) thing "might" improve outcomes in CA resuscitation?

   B. What has NOT been shown to improve outcomes in CA resuscitation?

   C. Should EMS delay doing something "known" to improve outcomes, to do something NOT proven to improve outcomes?

      i) List an example of how that could happen.

2. What are the 4 links in the "chain of survival" from CA?

3. Why does the NWC EMSS use the "pit crew" approach to CA resuscitation?

   A. List the roles of the 5 "pit crew" members.

      i) Why are the 5 roles numbered? What is the significance of that numbering?

March 2013 – Cardiac Arrest Team Resuscitation

Name	Employer	Date Submitted

4. What should be done differently if there are initially only 2 responders on the scene of a CA?

5. Should pts be moved with CPR in progress? Why?

6. What is meant by "release completely"?

   A. Why is it important to release completely?

7. Is the ResQPOD/Impedance Threshold Device (RQP/ITD) a primarily device ventilation to enhance ventilation or circulation?

   A. Does the RQP/ITD "work" during compressions or ventilation?

   B. When using the RQP/ITD, what chest compression rate is associated with the best outcomes?

   C. What happens to outcomes if the RQP/ITD is used with a compression rate that is too fast?

   D. What are you doing, at your agency, to assure correct compression rates?

8. Describe on the chest, where combo defib pads should be placed?

9. What are 2 acceptable reasons to interrupt chest compressions?

   A. How long of an interruption, of chest compressions, is acceptable?

   B. What else should be done during one of those interruptions?

March 2013 – Cardiac Arrest Team Resuscitation

Name	Employer	Date Submitted

10. Should the ECG rhythm check be performed during the same interruption as delivering a defib shock? Why?

11. How often should compressors be rotated?

    A. Should a compressor stop chest compressions if another compressor is NOT in place and ready to take over compressions?

    B. What should be done if that happens?

12. When checking the ECG rhythm, what is the objective - what should be determined?

13. What can be done to minimize the time from the last compression to delivery of the defibrillation shock?

14. When ventilating a pt in cardiac arrest, what are 2 times when the bag should not be squeezed?

15. Should EMS personnel delay BVM to insert an OP/NPA? Why?

16. How often should capnography be checked and documented during CPR?

17. List 4 uses of capnography in CA resuscitation.

18. List 2 ways hyperventilation can occur.

19. Prior to placement of an advanced airway, why should face-mask be sealed w/ 2-hands?

March 2013 – Cardiac Arrest Team Resuscitation

Name	Employer	Date Submitted

20. When treating a pt in CA, how soon should an advanced airway be placed?

21. Which has a higher priority – advanced airway or defibrillation?

    A. Which has a higher priority – advanced airway or medications?

    B. Which has a higher priority – defibrillation or medications?

22. What is the first medication that should be given to a pt in cardiac arrest?

    A. Can it be prepared even before the ECG rhythm is checked/known?

    B. What should be done after the administration of all IV/IO meds in CA?

23. What can be done to decrease the frequency of medication errors?

24. What is “persistent/refractory” VF?

25. How is “persistent/refractory” VF different from “recurrent” VF?

    A. What should be done for the pt in “persistent/refractory” VF?

    B. Why might this be effective?

    C. Describe the alternate positioning for combo defib electrodes.

March 2013 – Cardiac Arrest Team Resuscitation

Name	Employer	Date Submitted

26. What is the difference between true & pseudo PEA? Can the difference be determined in the field?

A. Is PEA an ECG rhythm?

B. What should be documented in the ECG section of the ePCR for a pt in PEA?

C. List 12 causes of PEA.

D. What 5 things should be done/checked for a pt in PEA? (tip: IGLOP)

27. Post-ROSC, what 5 things should be done?

March 2013 – Cardiac Arrest Team Resuscitation

Name	Employer	Date Submitted

28. Post-ROSC, which has a higher priority – begin hypothermia or treat hypotension?

A. Can dopamine be given via an IO line? If so, what should be done with main IVF line?

29. For therapeutic hypothermia, how much cold IVF should be given to pts who weigh >110 lbs?

A. How fast should that IVF be given?

B. How can that amount of IVF be given that fast?

30. Post-ROSC, how common is re-arrest?

A. What is the most common type of re-arrest?

i) Why is this type of re-arrest especially problematic?

B. What can be done to quickly detect this type of re-arrest?

Because much of this CE class was psychomotor, hands-on practice of the pit crew approach to team resuscitation, which can not be made up on paper, corresponding time will be awarded for the following.

30-35. Attach either completed CA worksheet (following pages) or completed image trend ePCR demonstrating documentation (appropriate assessment & all interventions) for pt in persistent VF, treated correctly for 30 minutes, up to and including ROSC.

36-40. Attach either completed CA worksheet (following pages) or completed image trend ePCR demonstrating documentation (appropriate assessment & all interventions) for pt in PEA, treated correctly for 30 minutes, up to and including ROSC.

Note: NWC EMSS supports the IL Heart Rescue Project, which will collect data to submit to the CDC – Cardiac Arrest Registry to Enhance Survival (CARES).

time	EtCO2 # ECG VF, AS, IVR, AIVR	Defib J	Med Vaso, Epi, Amio	Notes (airway, IV/IO, ROSC, BP, P, 12L, TOR)

Resuscitation performed where found; do NOT move w/ CPR in progress, unless scene unsafe or need tx not available

COMPRESS

- ☐ Rate 100/min - when using RQP (avoid rate >120)
- ☐ Depth: 2”
- ☐ Release completely: lift hand slightly off chest
- ☐ Rotate compressor q 2 minutes during ECG ✓
- ☐ Interrupt only for: rhythm ✓ & defib
- ☐ After adv airway: do not pause compressions for ventilation

MONITOR

- ☐ ComboPads - do not interrupt compressions to place
- ☐ Perform compressions while defib charging
- ☐ Minimize time from last compression to shock (<5 secs)
- ☐ After defib immed resume compressions; NO ECG/pulse ✓

AIRWAY

- ☐ OP/NPA inserted w/ BVM ventilation
- ☐ RQP/ITD attached to mask/adv airway
- ☐ Capnography between RQP and bag; ✓# every 2 min
- ☐ BVM 2 hands: tight face-mask seal during compressions
- ☐ Avoid hyperventilation (30:2, after adv airway 8-10 min)
- ☐ O2 attached to bag
- ☐ Adv airway inserted w/o interrupting chest compressions
- ☐ King LTSD w/ 18 fr gastric tube in suction lumen

MEDS

- ☐ Vascular access (IO / IV-AC or EJ)
- ☐ Vasopressor q 3-5 min (vasopressin x 1, epinephrine)
- ☐ If VF: Amiodarone (300 mg, in 5 min repeat w/ 150 mg)
- ☐ Meds followed w/ 20-50 mL IVF bolus
- ☐ Extremity IV meds - follow w/ elevation for 20 seconds

PEA

(H&T’s HypoVOLEMIA, HypoGLYCEMIA, HyperKALEMIA, H ion/ACIDOSIS, HypOXIA, TENSION pneumo, TOXINS, Trauma, Thrombosis, TAMPONADE)

- ☐ IVF rapid NS bolus 20 mL/kg - use pressure infuser
- ☐ ✓ Glucose (hypoglycemia)
- ☐ ✓ Lungs (tension pneumo)
- ☐ ✓ Oxygen supply (✓airway patent & O2 supply)
- ☐ ✓ PMH & meds

- ☐ **FAMILY** receiving information

ROSC

- ☐ ✓ BP – if SBP <90 begin dopamine
- ☐ ✓ P, ECG, BP at least q 5 min – many rearrest first 15 m
- ☐ ✓ O2 sat: goal >94%
- ☐ ✓ 12L ECG
- ☐ Begin therapeutic hypothermia – unless contraindicated

time	EtCO2 # ECG VF, AS, IVR, AIVR	Defib J	Med Vaso, Epi, Amio	Notes (airway, IV/IO, ROSC, BP, P, 12L, TOR)

Resuscitation performed where found; do NOT move w/ CPR in progress, unless scene unsafe or need tx not available

COMPRESS

- ☐ Rate 100/min - when using RQP (avoid rate >120)
- ☐ Depth: 2”
- ☐ Release completely: lift hand slightly off chest
- ☐ Rotate compressor q 2 minutes during ECG ✓
- ☐ Interrupt only for: rhythm ✓ & defib
- ☐ After adv airway: do not pause compressions for ventilation

MONITOR

- ☐ ComboPads - do not interrupt compressions to place
- ☐ Perform compressions while defib charging
- ☐ Minimize time from last compression to shock (<5 secs)
- ☐ After defib immed resume compressions; NO ECG/pulse ✓

AIRWAY

- ☐ OP/NPA inserted w/ BVM ventilation
- ☐ RQP/ITD attached to mask/adv airway
- ☐ Capnography between RQP and bag; ✓# every 2 min
- ☐ BVM 2 hands: tight face-mask seal during compressions
- ☐ Avoid hyperventilation (30:2, after adv airway 8-10 min)
- ☐ O2 attached to bag
- ☐ Adv airway inserted w/o interrupting chest compressions
- ☐ King LTSD w/ 18 fr gastric tube in suction lumen

MEDS

- ☐ Vascular access (IO / IV-AC or EJ)
- ☐ Vasopressor q 3-5 min (vasopressin x 1, epinephrine)
- ☐ If VF: Amiodarone (300 mg, in 5 min repeat w/ 150 mg)
- ☐ Meds followed w/ 20-50 mL IVF bolus
- ☐ Extremity IV meds - follow w/ elevation for 20 seconds

PEA

(H&T’s HypoVOLEMIA, HypoGLYCEMIA, HyperKALEMIA, H ion/ACIDOSIS, HypOXIA, TENSION pneumo, TOXINS, Trauma, Thrombosis, TAMPONADE)

- ☐ IVF rapid NS bolus 20 mL/kg - use pressure infuser
- ☐ ✓ Glucose (hypoglycemia)
- ☐ ✓ Lungs (tension pneumo)
- ☐ ✓ Oxygen supply (✓airway patent & O2 supply)
- ☐ ✓ PMH & meds

- ☐ **FAMILY** receiving information

ROSC

- ☐ ✓ BP – if SBP <90 begin dopamine
- ☐ ✓ P, ECG, BP at least q 5 min – many rearrest first 15 m
- ☐ ✓ O2 sat: goal >94%
- ☐ ✓ 12L ECG
- ☐ Begin therapeutic hypothermia – unless contraindicated