NWC EMSS Skill Performance Record

CARDIAC ARREST MANAGEMENT – Adult & Peds

Name #1: (Leader)	Date:
Name #2: (Compressor)	1st attempt: ☐ Pass ☐ Team repeat
Name #3: (Airway/oxygen)	2nd attempt: #1: ☐ Pass ☐ Repeat
Name #4: (Monitor)	#2: ☐ Pass ☐ Repeat
Name #5 (IO & drugs)	#3: ☐ Pass ☐ Repeat
Name #6 (Rotator)	#4: ☐ Pass ☐ Repeat
	#5: ☐ Pass ☐ Repeat
	#6: ☐ Pass ☐ Repeat

General expectations:

- Use "Team" approach and bundles of care (multiple simultaneous steps) per SOP
- Steps generally organized around 2 min cycles in C-A-B priority order unless hypoxic event, pregnant, or a child - **multiple steps may be done simultaneously** if personnel/resources allow
- **Continue resuscitation at point of contact for at least 30 min**. **Exceptions**: Unsafe environment/adverse climate; pt needs intervention not immediately available on scene (PTCA, REBOA, ECMO); penetrating trauma; pregnant; ROSC

Performance standard 0 Step omitted (or leave blank) 1 Not yet competent: Unsuccessful; required critical or excess prompting; marginal or inconsistent technique 2 Successful; competent with correct timing, sequence & technique , no prompting necessary	**Attempt 1 rating**	**Attempt 2 rating**
Verbalizes **equipment needed** at point of care: ☐ BSI ☐ Airways (BLS/ALS) ☐ O_2 source ☐ Suction ☐ BVM ☐ ResQPod ☐ Cardiac monitor ☐ Real-time CPR feedback ☐ SpO_2 ☐ $ETCO_2$ (NC & inline sensors) ☐ Pace/defib pads ☐ Cloth to prep skin ☐ 12 L electrodes ☐ CPR device (optional) ☐ Vascular access supplies ☐ Drugs: epinephrine; amiodarone; naloxone, sodium bicarb; norepinephrine		
STEP 1: PRIMARY ASSESSMENT ☐ Verify scene safety |; **determine UNRESPONSIVENESS** ☐ **Open airway (head tilt/chin lift if no SCI or jaw thrust)** ☐ Assess **BREATHING**/gasping **| SUCTION** prn | Simultaneously **check PULSE** ☐ If apneic/gasping & no pulse (in 10 sec): Assume cardiac arrest. ☐ Determine if **CPR is indicated or contraindicated** (see below) ☐ Attempt to **determine down time:** Electrical (0–5 min); Circulatory (6–10 min); Metabolic (> 10 min) phases		
Ask, "What are the contraindications to CPR and actions to take?" ☐ Valid DNR order | Triple Zero | Blunt trauma found in asystole ☐ If DNR status unclear: Start CPR; stop if valid order is presented or per OLMC order ☐ If pulseless & **VAD placed**: See VAD SOP | Call VAD Coordinator for instructions ✓ SpO_2 (if registers, perfusion is present), mental status, skin signs | DO NOT disconnect batteries If perfusing: NO CPR and NO DEFIBRILLATION (even if VF) Chest compressions are allowed if pt is unconscious and nonbreathing		
CPR		
Step 2: If CPR indicated: ☐ Start **high quality,** minimally interrupted **MANUAL CPR** w/in 10 seconds of arrest recognition. Use audible prompt for correct rate + **real-time CPR feedback** device until a mechanical CPR device is deployed ☐ **13+ yrs/no contraindications after manual CPR started:** Deploy **MECHANICAL CPR device** ASAP (If available and meets protocol) to maintain uninterrupted chest compressions **Pause compressions < 5 sec to place device.** **State approved CPR pauses and contraindications for mechanical devices below.** ☐ **If no CPR device available** or contraindicated: Continue 2 person CPR (adult, child, infant)		
CPR caveats: ☐ **LifeVest**® on: Disconnect batteries | Remove vest | Resuscitate per SOP ☐ **Pregnant** & fundus at navel or higher: CPR + **manual left lateral uterine displacement**; stop magnesium if running		

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Verbalize CONTRAINDICATIONS to deploying a MECHANICAL CPR Device: ☐ Impossible to position the device safely or correctly on patient's chest ☐ **Adult patient too small | Patient is a child ≤ 12 years** ☐ **Adult too large:** Cannot lock Upper Part to back plate without compressing pt's chest		
Step 3: GIVE OXYGEN: ☐ **BLS airways:** Maintain manual airway positioning + NPA/OPA ☐ **O_2 15 L/ NC $EtCO_2$** sensor | Hold BV mask over $EtCO_2$ NC w/ tight mask seal to reduce O_2 leak ☐ **13+ yrs: Add RQP** above mask to maintain negative intrathoracic pressure unless contraindicated **Contraindications to RQP**: Flail chest, pulse present; children ≤12 years Continue this set up until advanced airway placed. [photo A] ☐ Place SpO_2 central sensor; observe (trend) reading and pleth waveform		
Determine need for immediate vs. delayed BLS Positive Pressure VENTILATIONS (PPV)		
☐ **Ventilate immediately:** Cardiac arrest caused by hypoxic event (asthma, anaphylaxis, submersion, drug OD etc.), unwitnessed arrest; pregnant, peds ≤12 years **Adult** 10 BPM (asthma 6-8 BPM) | **child** (1 breath q. 6 sec) each over 1 second; see visible chest rise (adult: 500-600 mL) + bilateral breath sounds midaxillary lines | Avoid hyperventilation, high airway pressure (≥25 cm H_2O) & gastric distention. ☐ **O_2 w/o ventilations (ApOx):** EMS witnessed arrest and/or found in a shockable rhythm: Manual BLS airways + O_2 as above | **No** ventilations for first 3 minutes.		
Step 4: EARLY DEFIBRILLATION (VF & Pulseless VT)		
APPLY DEFIB PADS/Connect CARDIAC MONITOR without interrupting compressions ☐ Expose chest | Remove NTG paste/patches | Briskly wipe skin with dry towel or gauze ☐ ✓ Defib pads for expiration date | Connect defib cable to pads | Select paddles mode ☐ Carefully peel back electrode liner beginning with cable connection end; ensure gel is moist ☐ **Place defib pads with no gaps or wrinkles:** Anterior-lateral or anterior-posterior placement. Consider need for rapid removal of excessive chest hair before applying pads, but maintain emphasis on minimizing delay in shock delivery. **Adult Ant-lat.**: Anterior electrode on RT upper chest lateral to sternum, above Rt nipple and just below clavicle. Lateral electrode under and lateral to Lt nipple with electrode center in anterior axillary line. If large breasts: place Lt pad lateral to or underneath Lt breast, avoiding breast tissue. **Adult A-P:** Place posterior pad to the Lt of the spine just below scapula at the heart level. Place anterior pad over the cardiac apex between midline chest and nipple on a male or under a larger breast on a female. **Peds:** Use peds pads to defibrillate any child < 8 yrs or weighing < 25 kg (55 lb.) (AHA). Peds pads should be as large as possible while still providing 3 cm (1.18") of space between pad edges. Electrodes must not overlap or make contact during defibrillation. Best pad location may be A-P to avoid overlap. Place one electrode on the anterior chest over the cardiac apex between chest midline and nipple. Place posterior pad on the center of the child's back. ☐ Smooth electrode center and edges onto pt's chest to eliminate folds and air pockets between gel surface and skin. Firmly press all adhesive edges to skin. ☐ **If ICD firing**, wait 30-60 sec. for cycle to complete; place pads at least 1" from implanted device.		
* ✓ **RHYTHM: Know your monitor –** Does it sense native rhythm with CPR in progress? ☐ **CPR DEVICE and monitor senses native ECG w/ compressions:** No pause to ID rhythm ☐ **NO CPR DEVICE / monitor does not sense ECG with compressions:** Palpate femoral pulse for 5 sec (w/ compressions) | Pause ≤ 5 sec to ✓ rhythm. (Pulse will likely disappear during pause) ☐ **Can't ID rhythm during pause**: Print strip; resume compressions | ID ECG from printed strip		
☐ **Not shockable: Continue** compressions | ☐ **Shockable DEFIB immediately**		
JOULES (rapidly measure child with length-based tape) ☐ **Adult & peds > 50 kg**: Zoll: 120-150-200 | LifePak 200-300-360 | Philips: 150-170-200 ☐ **Peds** < 50 kg: 2 J/kg then 4 J/kg | Subsequent shocks ≥ 4 J/kg not to exceed 10 J/kg or adult max		
PERI-SHOCK PAUSE ☐ **WITH CPR DEVICE:** None ☐ **NO CPR DEVICE**: ≤ 5 sec Precharge with compressions continuing Compressor verbally counts down 5-4-3-2-1 prior to shock		

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Defibrillation caveats ☐ Depress current discharge button (after last compression - not a ventilation) ☐ NO CPR DEVICE: ***Change compressors** w/o ECG or pulse ✓, **resume compressions** (≤ 5 sec) ☐ NO rhythm/pulse check until after 2 min of CPR unless evidence of ROSC ☐ Continue to defib shockable rhythms per above in 2 minute cycles ☐ If very **fine VF / $EtCO_2$ low/decreasing:** ✓CPR quality; attempt to improve perfusion/ventilation ☐ Persistent/refractory VF: Change defib pad location if possible		
Step 5: ALS interventions: Priority order – IV/IO access | EPINEPHRINE | Adv. airway		
☐ **1. VASCULAR ACCESS:** Preferred venous access site during CPR: Largest, most accessible vein that does not require interruption of resuscitation. May consider IO (approved site) if attempts at IV access are unsuccessful or not feasible. NS TKO unless IVF indicated per condition When placed, give meds w/o CPR interruption ☐ **2. Early EPINEPHRINE** (Non-shockable rhythm: as soon as feasible | Shockable: after initial defibs) **EPINEPHRINE** (1 mg/10 mL) IVP / IO Repeat every **6 min** as long as CPR cont. ▪ **Adult:** 1 mg (each dose) ▪ **Peds:** 0.01 mg/kg (0.1 mL/kg) (max 1 mg/dose) Use dosing chart in Appendix	☐ **3. Consider ADV Airway 3 min after preox** **ETI** (preferred in adults) limit 2 attempts per DAI SOP / **BIAD** (adults & peds) Place w/o pausing CPR | Cont. O_2 15 L/$EtCO_2$ NC until placed Keep head of bed flat if using CPR device **Confirm placement:** 5 point auscultation & $ETCO_2$; secure tube, stabilize head & neck/**ADV airway SOP** **Tower of Power:** Airway | $EtCO_2$ | HEPA filter (product-dependent) | ITD (RQP) | Zoll Accu-vent | BVM (D/C NC $EtCO_2$) (see photos below) ☐ **VENTILATE:** O_2 15 L/BVM at 10 BPM with continuous chest compressions. Volume only to see visible chest rise and bilateral breath sounds at midaxillary lines. May adjust peds to 20 BPM based on SpO_2 / $EtCO_2$. Don't over ventilate.		
Antidysrhythmic agent given only if patient is in a SHOCKABLE RHYTHM **AMIODARONE IVP/IO** ☐ Adult: 300 mg ☐ Peds**:** 5 mg/kg (Max 300 mg) Rhythm persists after 5 min: ☐ Adult: 150 mg ☐ Peds: 5 mg/kg (May repeat up to 3 doses)		
Step 6: **Consider & Rx Reversible Causes: Hs & Ts** (May use ultrasound to ID reversible causes or ROSC)		
☐ Hypoxia (ventilate/O_2) ☐ Hypothermia (core rewarm ☐ Hypovolemia (IVF boluses) ☐ Hypo/**hyper**kalemia (bicarb-responsive acidosis (DKA/TCA/ASA OD, cocaine, diphenhydramine): **SODIUM BICARB** 1 mEq/kg (max 50 mEq) IVP/IO (routine use of sodium bicarb in an undifferentiated cardiac arrest is not recommended)	☐ Tamponade, cardiac (early transport) ☐ Thrombosis (coronary/pulmonary) ☐ Tension pneumothorax (pleural decompression) ☐ Toxins **Opioid OD**: **NALOXONE** Adult: 1 mg IVP/IO; repeat q. 2 min up to 4 mg from EMS Peds 0.1 mg/kg IVP/IO (max 1 mg); repeat as above Additional orders: OLMC		
Return of spontaneous circulation (ROSC): Rapid, sustained rise in $EtCO_2$ (≥40); pt moves; wakes up **FOCUS:** Oxygenation, circulatory support, lung-protective ventilation, adequate sedation; 12 L ECG		
☐ **Remove RQP |** Assess VS + SpO_2 & $EtCO_2$: Pause compressions & ID ECG rhythm | If organized rhythm, palpate **pulse & watch SpO_2 pleth for 5 min** to detect PEA ☐ **Support ABCs:** Target normal oxygenation (avoid hyper or hypoxia) - **SpO_2 (92-98%) $EtCO_2$ 35-45** | **PPV prn** 10 BPM w/ visible chest rise; do not hyperventilate even if ↑ $EtCO_2$ **Adult** SBP > 90 (MAP > 65) | **Child** SBP >70 + (2 X age) If ETI/BIAD placed and pt remains unconscious: Assess need for pain mgt/sedation (RASS score) per DAI SOP ☐ **Obtain12 L ECG** (as soon as feasible - target within 8 min) after ROSC (call alert if STEMI) **Emergent Rx if hypotensive | Cardiogenic shock | Circulatory support needed** ☐ **If lungs clear:** IV NS 20 mL/kg up to 1 L. The post-arrest pt is not usually hypovolemic and does not need more IVF. Avoid volume overloading pt into pulmonary edema. Stunned heart needs inotropic support and may need assistance with peripheral vasoconstriction.		

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☐ **NOREPINEPHRINE** drip (IV/IO) | 4 mg in 1,000 mL NS (4 mcg/mL) | Use of IV pump preferred **Adult**: Initial dose: 8 mcg/min (2 mL/min) titrated to reach SBP ≥ 90 (MAP ≥ 65) **Peds:** Initial dose: 0.1 mcg/kg/min (max 1 mcg/kg/min up to 8 mcg/min) titrated to SBP >70 + (2 X age in yrs); Do not exceed adult doses listed above. Higher doses (10 mcg/min) RARELY needed – contact OLMC. Assess BP (MAP) q. 2 min until target BP reached (don't overshoot) | Reduce drip rate incrementally to maintain at BP targets. Maintenance: 2 to 4 mcg/min (0.5 mL to 1 mL/min) or less | Continue to reassess BP q. 5 min. ☐ Monitor for **SEIZURES:** Rx per SOP ☐ ✓ **GLUCOSE** level: Rx hypoglycemia per SOP; avoid hyperglycemia		
Determination of Death | TERMINATION OF RESUSCITATION (TOR) | Must be approved by OLMC physician		
BLS TOR Rule: Arrest Unwitnessed by EMS/1st responders | No ROSC before transport | no AED shocks delivered **ALS TOR Rule**: Arrest unwitnessed by anyone | No bystander CPR | No ROSC after full ALS | No defib before transport **Addtl. Considerations:** Normothermic pt. remains in persistent monitored asystole for ≥ 30 min despite resuscitation | $EtCO_2$ remains ≤ 10 mmHg for 20 min in pts with advanced airways & no reversible causes of arrest identified **If TOR denied**: Transport with CPR in progress after 30 min of resuscitation on scene **If TOR granted**: Note time resuscitation was terminated | Follow System policy for patient disposition		
Verbalize acceptable CPR pauses/discontinuation of compressions: ☐ Optional: Lift patient for posterior defib pad placement (<5 sec) (attempt to combine pause with step below) ☐ Lift patient for CPR device back plate placement (< 5 sec) ☐ Activation of CPR device (autosensing piston placement) (<5 sec) ☐ Every 2 min: Rhythm check if cannot ID rhythm with compressions in progress (< 5 sec) ☐ Every 2 min if shockable rhythm: Manual defibrillation (< 5 sec) if no CPR device deployed ☐ Organized rhythm appears w/ spike in $ETCO_2$; pause to check for pulse (ROSC). If present: cease compressions. ☐ TOR: Meeting criteria above		
Critical Error Criteria - Check if occurred ☐ Failure to perform quality, high perfusion, uninterrupted CPR unless justified pause ☐ Failure to appropriately initiate BLS airway/oxygenation; $ETCO_2$ monitoring ☐ Failure to appropriately ventilate; hyperventilation; airway pressure (≥25 cm H_2O) ☐ Failure to appropriately attach ECG monitor, check/ID rhythm, and defib if shockable rhythm ☐ Failure to initiate/sequence ALS care appropriately ☐ Failure to consider Hs & Ts and provide appropriate interventions ☐ Failure to support perfusion after ROSC or detect re-arrest ☐ Performs any improper technique resulting in potential harm ☐ Exhibits unacceptable affect with patient, bystanders, or other healthcare personnel		

Scoring: All steps must be independently performed in correct sequence with appropriate timing and all starred (*) items explained/performed correctly to demonstrate competency. Any errors or omissions of these items will require additional practice and a repeat assessment.

Rating: (Select 1) for team

☐ **Proficient**: Can sequence, perform and complete the performance standards independently, with expertise and to high quality without critical error, assistance or instruction.

☐ **Competent:** Satisfactory performance without critical error; minimal coaching needed.

☐ **Practice evolving/not yet competent:** Did not perform in correct sequence, timing, and/or without prompts, reliance on procedure manual, made critical error(s); recommend additional practice

CJM 10/22

Preceptor (PRINT NAME – signature)