Portage County EMS
Annual Skills Labs

Scope:

Provide skills labs for all Emergency Medical Responders and First Response EMTs to assure proficiency of skills and satisfy the Wisconsin State approved Operational Plan for Portage County Emergency Medical Responders and EMTs. The skills lab sessions will include but may not be limited to insertion of combitube, use of a glucometer, intramuscular and subcutaneous injections, cardiopulmonary resuscitation and defibrillation (based on the individual's scope of practice).

Requirements:

It is the responsibility of all individuals in Portage County who are listed on the Stevens Point Fire Department/Portage County Ambulance roster to participate and successfully complete one skills lab session per year.

Format:

All labs will be hosted at the Stevens Point Fire Department and will take approximately one hour to complete. The session will offer four proficiency stations and they can be completed at random. Stations will be staffed by the county Service Directors, Medical Director, Portage County EMS Coordinator and possibly paramedics from the Stevens Point Fire Department.

Documentation:

Documentation to assist in the successful completion for each skill will be provided prior to attending any one of the scheduled labs. This paperwork will include the requirements needed to be successful at each skills station.

Skills Lab 1 - Injections

Description: Perform a subcutaneous (SQ) and intramuscular (IM) injection or Epi-pen; depending on the participant's scope of practice. Epi-pen or the delivery of epinephrine by manually drawing-up is used in the event of anaphylaxis. Anaphylaxis is a true emergency and if not treated swiftly can result in death. The signs and symptoms of anaphylaxis usually appear rapidly after an exposure to an allergen. Signs of anaphylaxis include difficulty breathing or wheezing, difficulty swallowing, swelling of tongue or throat and/or throat tightness or hoarseness.

Objective: Participant will display competency in the delivery of appropriate injections using the following criteria.

Criteria - Subcutaneous Injections
Check medication expiration, color, clarity, right concentration, etc.
Assess for right patient, right medication, right dose, right time, right route
Receive and confirm medication order or perform according to standing orders.
Using aseptic technique, prepare equipment and medication expelling air from the syringe.
Explain the procedure to the patient and reconfirm patient allergies.
Select injection site. Expose and cleanse with alcohol.
Gently pinch skin between fingers.
Insert the needle into the skin at a 45 degree angle with a smooth, steady motion.
Aspirate for blood, if blood present, start over, if not continue to next step.
Inject the medication.
Withdraw the needle quickly and dispose of properly without recapping.
Apply pressure to the site.
Explain desired therapeutic effect and at least one possible side effect.
List what information you would document on the patient care report after completing this procedure.

Criteria - Intramuscular Injections
Check medication expiration, color, clarity, right concentration, etc.
Assess for right patient, right medication, right dose, right time, right route
Receive and confirm medication order or perform according to standing orders.
Using aseptic technique, prepare equipment and medication including expelling air from the syringe.
Explain the procedure to the patient and reconfirm patient allergies.
Select injection site. Expose and cleanse with alcohol.
Gently flatten skin against muscle.
Insert the needle at a 90 degree angle with a smooth, steady motion.
Aspirate for blood, if blood present, start over, if not continue to next step.
Inject the medication.
Withdraw the needle quickly and dispose of properly without recapping.
Apply pressure to the site.
Explain desired therapeutic effect and at least one possible side effect.
List what information you would document on the patient care report after completing this procedure.

Criteria - EpiPen
Check medication and expiration
Assess for right patient, right medication, right dose, right time, right route.
Receive and confirm medication order or perform according to standing orders.
Indicate correct route (IM) and injection site (lateral thigh)
Explain the procedure to the patient and reconfirm patient allergies.
Expose and cleanse injection site with alcohol.
Hold patient's leg to prevent movement.
Remove gray safety cap. Place black tip on lateral thigh and press forcefully to activate mechanism.
Hold for 10 seconds.
Withdraw EpiPen and place in sharps container.
Massage area (optional).
Explain desired therapeutic effect and at least one possible side effect.
List what information you would document on the patient care report after completing this procedure.

Skills Lab 2: Nonvisualized Airway

Description: Combitube is indicated in patients that are unconscious and unable to protect their own airway due to absent gag reflex. An adult combitube is used for patients at least five feet tall and a small combitube is used for patients between four and five feet tall. Combitubes are contraindicated in patients with the following; responsive, with an intact gag reflex, known esophageal disease, ingested caustic substances, known or suspected foreign body obstruction of larynx or trachea or the presence of a tracheotomy.

Objective: Participant will display adequacy in placement of combitube.

Criteria – Non-visualized Airway (two person skills lab)
Open the airway manually
Inserts simple adjunct (oropharyngeal)
Ventilates patient at a rate of 8 – 10 per minute with visible chest rise and fall
Partner checks/prepares airway device
Lubricates distal tip of device
Positions the head properly (sniffing position)
Performs a tongue-jaw lift
Inserts combitube
Adequately inflates cuffs, removes syringes
Attaches BVM to the combitube and ventilates
Confirms placement and ventilation by observing chest rise, auscultation over epigastrium

Skills Lab 3: Cardiocerebral Resuscitation (CCR)

Description: Cardiocerebral resuscitation (CCR) is a new approach to patients with out-of-hospital cardiac arrest that has been shown to improve rates of neurologically intact survival by 250% - 300%. CCR consists of three major components:

1. Continuous chest compressions (CCC) without ventilation for all bystanders of witnessed cardiac arrests and for first responders.
2. A new advanced cardiac life support algorithm that delays endotracheal intubation, emphasizes minimal interruptions of chest compressions, deemphasizes positive-pressure ventilations, prioritizes defibrillation according to the three-phase time sensitive model of ventricular

fibrillation and encourages early administration of epinephrine[1]. CCR is also for EMTs and Emergency Medical Responders; they too should deliver continuous chest compressions at a rate of 100 per minute. Invasive airway insertion is delayed, and positive pressure ventilations are not utilized during the initial minutes of resuscitation. Epinephrine, when appropriate, is administered via IV or IO ASAP when paramedics arrive.

3. It is the future goal of Portage County EMS to incorporate some of the newest components of CCR which advocates for establishing protocol to prioritize those patients with a ROSC to a cardiac arrest center that can provide optimal care that includes urgent cardiac catheterization and incorporate controlled mild therapeutic hypothermia procedures pre-hospital.

The CCR protocol (Figure 1) is reserved for **adult** cases in which an out-of-hospital arrest is presumed to be cardiac in origin – i.e., individuals with sudden, unexpected collapses with absent or abnormal breathing. In all other situations, AHA guidelines for ACLS should still be used.

EMS should give 200 uninterrupted chest compressions (100 per minute) before each rhythm analysis and single shock, if indicated, followed by another 200 chest compressions and repeat analysis. Moving patients from the scene should not be a consideration until at least three cycles of 200 compressions/rhythm analysis have been completed.

Initial airway management is delayed until a second rescuer is available and is initially **limited** to placement of oral-pharyngeal airway and administration of oxygen by non-rebreather mask. **Insertion of an invasive airway and** assisted ventilations are not performed until either return of spontaneous circulation (ROSC) or after three cycles of chest compressions, analysis and when needed, shock. Assisted ventilations can be detrimental to patient outcome. With normal ventilations (i.e. oral-pharyngeal placement with oxygen), breathing results in a negative pressure inside the chest that not only causes air to enter the lungs but enhances blood return to the heart and thus improves cerebral blood flow. On the other hand, when positive pressure ventilations are performed (i.e. bag-valve mask ventilations), an increase of pressure occurs inside of the chest, decreasing blood return to the chest and decreasing blood flow to the brain. There is also an inherent risk of regurgitation/aspiration with positive pressure ventilation.

[1] One of the major contributions to the field of resuscitation science was the description by Drs. Myron Weisfeldt and Lance Becker of the three-phase time-sensitive model of ventricular fibrillation. The first phase of untreated VF is the electrical phase, the second is the circulatory phase, and the third is the metabolic phase. During the first five minutes, or electrical phase, of untreated VF, the most important therapy is **prompt defibrillation**. That is why implantable defibrillators and AEDs are effective. However, after about five minutes of untreated VF, the heart has depleted its energy stores, and defibrillation most often results in a nonperfusing rhythm – asystole or pulseless electrical activity. Thus, if EMS personnel witness a collapse, the approach is as it has always been: immediate defibrillation. If the arrest is not witnessed by EMS and adequate chest compressions have not been administered by bystanders or other first responders, then 200 chest compressions are performed before defibrillation. However, doing 200 compressions post-defibrillation is still recommended to help re-establish arterial pressures earlier. The third, metabolic phase of untreated VF begins after about 15 minutes. Here, entirely new approaches are needed, as most subjects still untreated cannot be resuscitated.

When positive –pressure ventilations are delivered, it was initially recommended that they be limited to a rate of 8 – 10 per minute. There is good evidence that this should be as few as six ventilations per minute.

Chest compressions should be performed at 100 per minute. Full chest recoil after each compression is essential along with frequent changing of those personnel providing chest compressions. This personnel change should be accomplished with no interruption in the delivery of the compressions. (The AHA recommendation is to change every two minutes but more frequent changes, such as every one minute, have been determined to provide greater proficiency in the delivery of chest compressions.)

If only one responder is on scene, cardiac arrest was unwitnessed, and there is not anticipation of a second responder arriving in the next two minutes, the defibrillator or AED pads should be applied before chest compressions are initiated in effort to minimize the pause between stopping compressions and the defibrillation shock.

Objective: This station is to clarify the expectations of CCR and to assist all responders in becoming more proficient and comfortable in executing the CCR protocol in the event of cardiac arrest.

Figure 1: The Cardiocerebral Resuscitation protocol

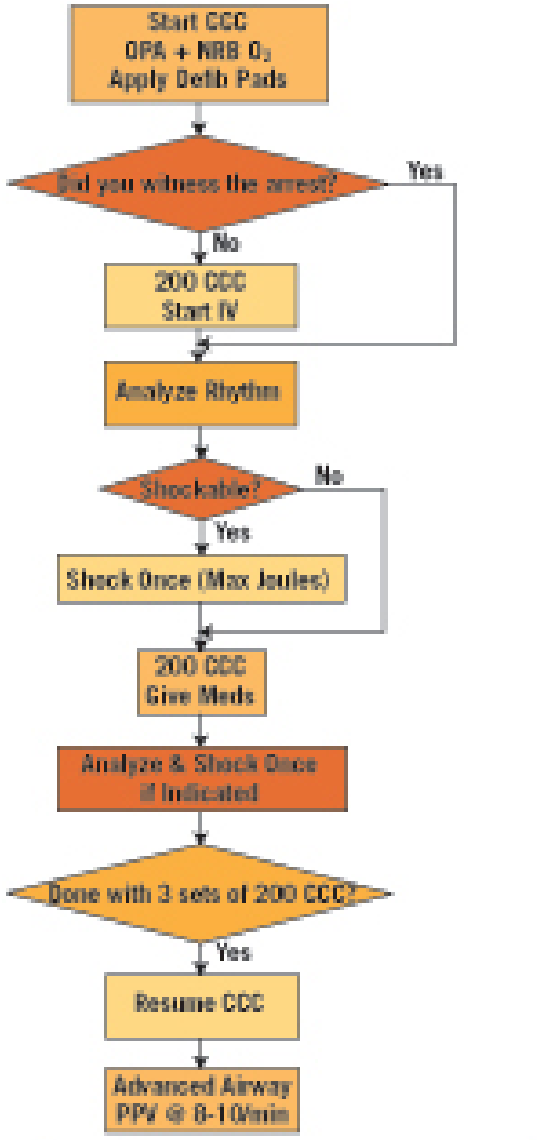

Figure Key
CCC = continuous chest compressions
OPA = oral-pharyngeal airway
NRB = nonrebreather mask
Advanced airway = endotracheal tube or Combitube
PPV = positive-pressure ventilations

Figure 1: The Cardiocerebral Resuscitation protocol

Skills Lab 4: Glucometer

Description: A glucometer is a medical device for determining the approximate concentration of glucose in the blood. This type of blood testing is used to determine whether or not a blood glucose level is within normal ranges.

Objective: To make certain the participant has a fundamental understanding of the One Touch Ultra Blood Glucose Monitoring System, its features and basic principles of operation.

Criteria – Glucometer – One Touch Ultra
Verify meter code and strip code
Assemble lancing device
Select and prepare site for stick
Insert test strip according to directions
Gather blood sample
Run test
Verbalize recording of results
Verbalize normal glucose range and interventions required if out of this range
Clean up and dispose of supplies