12 LEAD TRANSMISSION FOR ALS ZOLL CARDIAC MONITOR
******Note: If data was put in correctly, you will see flashing across the top of the monitor “Preparing Fax”, next “Dialing Fax”, and then “Sending Fax”. When the fax has been successfully transmitted the machine will read “Fax Done”.

IMPORTANT: YOU MUST NOTIFY THE ER/RECEIVING HOSPITAL THAT YOU HAVE TRANSMITTED A 12 LEAD ECG SO THAT THEY CAN RETRIEVE IT FROM THEIR FAX MACHINE FOR VIEWING.
Initiated 8/08

AIRWAY OBSTRUCTION REMOVAL

Purpose:
1. To remove a foreign body from the upper airway of an unconscious patient to improve oxygenation.

Guidelines:
1. Patient with an airway obstruction.
2. Rapid removal of a visible obstruction.
3. Avoids potential trauma with abdominal thrusts.

Complications:
1. Oral or airway trauma.
2. Requires specialized equipment and training.
3. Obstruction must be visible.

Equipment:
1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. Pulse oximetry
5. BVM
6. Laryngoscope/blade
7. Magill forceps
8. Suction equipment
9. Intubation equipment

Procedure:
1. Observe universal precautions.
2. Assemble laryngoscope and blade.
3. Place patient’s head in a slightly extended position (maintain c-spine precautions when indicated).
4. Hold the laryngoscope in the left hand, insert the blade into the right side of the mouth and sweep the tongue to the left.
5. Lift up with blade to expose the pharynx and epiglottis.
6. Suction as necessary.
7. Visualize the foreign body.
8. Holding the Magill forceps in the right hand, insert the tip into the patient’s mouth, grasp and remove the obstruction.
9. Visualize airway for further obstructions before removing laryngoscope blade.

**AIRWAY OBSTRUCTION REMOVAL**

10. Oxygenate patient with 100% oxygen with a device and a rate appropriate for the patient’s condition.
11. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Contraindications:**
1. Foreign body below the level of the vocal cords.

Revised 1/07
ALS SQUAD SUPPLIES & EQUIPMENT

**Purpose**:  
1. To maintain readied ALS squads.

**Guidelines**:  
1. Complete squad checkout.
2. Complete med inventory to check for expired meds every Monday.
3. All extra supplies and equipment will be kept at Station 1.

**Procedure**:  

### DAILY – Beginning of shift  
1. Each morning verify that all medications, supplies and equipment are present in the squad. If something is missing, retrieve from Station 1.
2. Daily the squad is to be inventoried per the “ALS Squad Checklist”.
3. If the med bag is sealed with a tag, you may document that number on your checklist and consider all contents to be present.
4. Should you open a sealed bag and there are missing meds/supplies, replace them and document the missing items on the checklist.
5. Place all expired meds in the ALS room for Bob Bliemeister. Do **not** replace until the end-of-the-month.
6. Ensure that all equipment is intact and operating by performing test checks.
7. Report all missing and damaged equipment to the ALS Coordinator immediately.
8. Report all missing and damaged equipment to dispatch so that information is documented on the dry-erase board/brought to Bob Bliemeister’s attention.

### DAILY – End of shift  
1. Make sure that all used supplies are restocked.
2. Make sure all equipment is intact and charging.
3. Report all missing and damaged equipment to the ALS Coordinator immediately.
4. Report all missing and damaged equipment to dispatch so that information is documented on the dry-erase board/brought to Bob Bliemeister’s attention.
5. Complete end-of-shift ALS Squad Checklist.

**ALS SQUAD SUPPLIES & EQUIPMENT**  

**Squad Switch**:  
1. Make sure the following items are taken from your squad when switching:  
   a. Zoll Biphasic Cardiac Monitor
b. Zoll Biphasic Cardiac Monitor and Accessories (BP Cuffs X 3, EKG Paper, Telemetry Cable, CO2 Monitoring Cable, 4 Lead Cable, 12 Lead Cable, Pulse Oximetry Cable)
c. Spare Zoll Battery
d. Vela Ventilator
e. Vent Circuits & Accessories
f. Vent Test Lung
g. High Pressure Regulator
h. IV Pump (RN Squad X 2)
i. IV Pump Tubing (i.e. Blood, Nitro, ½ Set, and Full Set)
j. ALS Protocol Books (i.e. Milwaukee and Southern Divisions)
k. Drug Handbook
l. Vent Tray
m. CPAP (Whisper Flow) Device
n. CPAP Accessories
o. Pressure Infusion Bag
p. Med Bag
q. Misc. Cabinet Supplies
r. IV Fluid Warmer
s. RN Bag (RN Squad)
t. Sand Bag (RN Squad)

2. It is the responsibility of both crewmembers to make sure all equipment and supplies are switched into the new squad.

Revised 1/07
AMMONIA INHALANT

**Indication:**
1. To aid in the arousal of a patient with an altered level of consciousness (unconscious/semi-conscious state).

**Guidelines:**
1. Patient who presents with an altered level of consciousness after other medical/traumatic causes have been ruled out.

**Precautions:**
1. May further irritate patient.
2. Irritation of patient’s airway.

**Equipment:**
1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. Pulse oximetry
5. Ammonia capsule
6. Suction equipment
7. Intubation equipment

**Procedure:**
1. Observe universal precautions.
2. Determine the patient has an altered level of consciousness (unconscious/semiconscious).
3. Rule out all medical and traumatic causes for the altered LOC before administering ammonia capsule.
4. Break ammonia capsule and gently wave under patient’s nostril.
5. Do not insert ammonia inhalants into any orifice or under oxygen mask.
6. Once aroused, apply supplemental oxygen at a rate and with a device appropriate for patient condition. Assist ventilations with BVM at 100% oxygen if patient condition warrants.
7. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Contraindications:**
1. Patient is alert and oriented.
2. Medical cause for the altered level of consciousness has been established.

Revised 1/07
ARTERIAL LINE MANAGEMENT

**Purpose:**
1. To monitor the hemodynamic status of a critical patient.

**Guidelines:**
1. The arterial line with transducers is usually used to obtain accurate blood pressure readings every few seconds. This is especially important in monitoring the hemodynamic status of a critical patient.
2. With an arterial line, the immediate effects of medication can be seen. Both systolic, diastolic and mean pressures can be monitored immediately. This is especially important when pressors such as **Nipride**, **Dopamine**, **Dobutrex**, **Epinephrine**, **Vasopressin** or **Levophed** are being administered.
3. Another advantage of using an arterial line is that frequent blood samples can be obtained.

**Equipment:**
1. PPE
2. Invasive monitoring cable (Edward Scientific or Abbott).
3. Zoll cardiac monitor
4. High pressure infusion bag
5. 0.9% Normal Saline

**Procedure:**
1. Observe universal precautions.
2. If Abbott or Edward Scientific invasive monitoring cables are not compatible with sending facility, you must exchange patient’s current transducer for an Edward Scientific.
3. Prepare a 1000 cc bag of **0.9% Normal Saline** since heparin is no longer used.
4. Spike the bag with the transducer administration set.
5. Remove all air from the tubing and transducer set. Pay particular attention to the transducer part of the tubing and the flush port. The smallest air bubble must be removed to insure transducer accuracy. The easiest way to do this is to pressurize the bag up to 300 mmHg, then invert the bag, and fast flush it to remove all air from the bag.
6. The purpose of pressurizing the bag to 300 mmHg is to provide backpressure to prevent blood from contaminating the transducer.
7. Connect the transducer to the cable and then connect the cable to the Zoll biphasic cardiac monitor.
8. With the cable connected to the monitor, select arterial monitor, and perform a transducer check by fast flushing the line. As you do this, you should see a change in the waveform. This is called a square wave test.
9. Zero the transducer and monitor by placing the transducer at the phlebostatic axis of the patient. Close the line off to the patient and open to air. Press zero on the monitor. To monitor pressure, close the port off to the patient.
ARTERIAL LINE MANAGEMENT

10. You should now see an arterial waveform on the monitor with arterial blood pressure and mean should be on the monitor screen. Check for good waveform.

11. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Special Considerations:

- To display IBP on Zoll Monitor. Connect the transducer to the IBP interface cable.
- Connect the IBP cable to the IBP connector located on the front of the monitor.
- Press parameter key.
- Press select until IBP highlights, zero key will now display, select to zero out.
- Press enter.
- During transport, if waveform flattens...double check there is at least 300 mmHg in high pressure infusion bag.

Revised 1/07
PARATECH AMBULANCE SERVICE, INC.
Standards of Practical Skills/Procedures

ARTERIAL SHEATH MANAGEMENT

**Purpose:**
1. To assure proper monitoring of arterial sheaths.

**Guidelines:**
1. Arterial sheaths are used for procedures such as cardiac catheterizations and angiograms.
2. Following the procedure the patient normally has the sheath removed. In some cases the physician allows the sheath to remain for additional procedures.
3. We are called to transport these patients to the tertiary care facility where another procedure will most likely be performed (i.e. another cardiac cath, CABG).
4. Always use aseptic technique when dealing all central lines.

**Equipment:**
1. PPE
2. Sand bag

**Procedures:**
1. Observe universal precautions.
2. The arterial sheath should not be used for any reason.
3. Keep the patient’s leg straight at all times. Patient should not be asked to transfer or ambulate...these patients have strict bedrest orders.
4. Examine the area for hematoma, bleeding, intact dressing every 15 minutes. Document findings in your ALS narrative.
5. Should the sheath begin to leak or hemorrhage, direct pressure to the site should be used to control the bleeding. If this does not control the leak or hemorrhage, **contact medical control** for additional orders.
6. Consider diverting to a closer hospital.
7. Document any unusual circumstances and/or difficulties encountered.

Revised 1/07
BLOOD PRESSURE MEASUREMENT

Purpose:
1. To measure and monitor the systolic and diastolic blood pressure.

Guidelines:
1. Establish blood pressure measurement on all patients.
2. Document multiple readings to monitor patient’s hemodynamic status.
3. An improperly sized cuff may give false reading (i.e. cuff too large – false low; cuff too small – false high).

Precautions:
1. Avoid fistula/dialysis catheter sites.
2. Avoid extremities with trauma, severe burns, and increased edema.
3. Avoid extremities with central lines in place.
4. Avoid either right or left upper extremity of patients with a history of mastectomy.

Equipment:
1. Blood pressure cuff – size appropriate
2. Stethoscope

Procedure:
1. Observe universal precautions.
2. Position the patient with the arm at heart level.
3. Select an appropriately size blood pressure cuff (2/3 of the distance between axillae and antecubital fossa of patient) long enough to securely wrap around the arm.
4. Wrap the cuff around the patient’s arm, centering the bladder over the brachial artery.
5. Place stethoscope earpieces in ears with earpieces pointing forward, test diaphragm for sound conduction.
6. Palpate or auscultate brachial artery pulse while inflating cuff 30 mmHg above loss of pulse.
7. Place stethoscope diaphragm over brachial artery.
8. Deflate cuff slowly watching pressure gauge as cuff deflates.
9. If able to hear pulsating sound, record pressure when sound is first heard as systolic pressure.
10. Record pressure when sound disappears as diastolic pressure.
11. If unable to hear pulsating sound, palpate radial or brachial artery while reinflating cuff 30 mmHg above loss of pulse.
12. Deflate cuff slowly, watching pressure gauge.

13. Record pressure when pulse returns as systolic pressure/palpated.
14. Document procedure and results, including any unusual circumstances and/or difficulties encountered.
Special Considerations:

• Blood pressures should be auscultated whenever possible. The palpation method should only be used when environmental noise or conditions make it difficult to hear through the stethoscope.
  o A blood pressure cuff that is too small will give a false high reading.
  o A blood pressure cuff that is too large will give a false low reading.

Revised 1/07
BAG VALVE MASK VENTILATION

**Purpose:**
1. To assist respirations in a patient whose respiratory effort is absent or inadequate.

**Guidelines:**
1. To ventilate a patient in cardiac/respiratory arrest with ongoing chest compressions.
2. To ventilate a conscious patient in respiratory distress/compromised airway.
3. To provide ventilations with supplemental oxygen.

**Complications:**
1. Gastric Distention.
2. Increased risk for emesis.
3. Increased risk for aspiration.
4. Difficult to maintain proper face seal with one rescuer.
5. Does not prevent patient from aspirating.

**Equipment:**
1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. Pulse oximetry
5. BVM
6. Suction equipment
7. Intubation equipment
8. ETCO2 device
9. Medication as per suggested medical protocol

**Procedure:**
1. Observe universal precautions.
2. Refer to AHA guidelines.

**Patient Not Intubated:**
1. Select and insert appropriate airway adjunct.
2. Select appropriate size bag valve mask.
3. Connect the bag valve mask with tubing to oxygen source.
4. Administer 100% oxygen at 15 LPM.

**BAG VALVE MASK VENTILATION**
5. Apply mask to patients face. Place narrow end at bridge of nose and wide end between lower lip and chin (maintain airtight seal).
6. Compress the bag valve mask with enough speed and force to ventilate the patient according to AHA guidelines.
7. With each ventilation observe chest rise and fall. If no chest rise, reassess patient, technique, and equipment. If proper seal, continue to ventilate the patient at an age appropriate rate according to AHA guidelines.
8. Reposition patient’s head if necessary.
9. Suction as needed.

**Patient Intubated:**

1. Attach bag valve to ETT or Combitube.
2. Attach and record ETCO2
3. Oxygenate/ventilate the patient according to AHA guidelines, noting rise and fall of the chest.
4. Reposition patient's head if necessary.
5. Suction as needed.
6. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Contraindications:**

1. Facial trauma that involves disruption of the bone framework of the face and jaw.

Revised 1/07
BLOOD GLUCOSE CHECK

Purpose:
1. Known diabetic with or without altered LOC.
2. Altered LOC of unknown origin.
3. TIA/CVA.
4. Seizure Activity.
5. Abdominal Pain.
6. Weak/Dizzy/Faint.

History:
• History of seizure disorder
• Known diabetic
• History of substance abuse
• TIA/CVA
• History of recent trauma
• Presence of medical alert ID

Signs/Symptoms:
• Unresponsive
• Bizarre behavior
• Cool, diaphoretic skin (hypoglycemia)
• Abdominal pain, Kussmaul respirations, warm & dry
• Kussmaul respirations
• Warm and dry skin
• Fruity breath odor
• Dehydration (diabetic ketoacidosis)

Working Assessment:
• Altered LOC
• Insulin shock
• Hypoglycemia
• Diabetic ketoacidosis
• Overdose

Complications:
1. Infection/pain at the finger stick point.
2. Accidental needle stick.

Equipment:
1. PPE
2. Alcohol prep
3. Lancet
4. Glucometer
5. Glucometer test strip
6. Gauze 2x2
7. Band-Aid
BLOOD GLUCOSE CHECK

Procedure:
1. Observe universal precautions.
2. Perform detailed history and assessment.
3. Obtain patient consent for a blood sugar check.
4. Explain procedure to the patient.
5. Insert glucose strip as directed.
6. Massage the patient's hand in a downward motion to accumulate a pool of blood in the fingertip.
7. Clean patient’s middle or ring finger with alcohol prep and allow to dry.
8. Dry finger with gauze square.
9. Puncture the skin with the blood lancet, preferably puncturing the side of patient’s non-dominant hand.
10. Squeeze a drop of blood from the puncture, wipe it away with the gauze square then squeeze a second drop from the puncture.
11. Place tip of glucose strip near drop of blood to draw in specimen.
12. If a sufficient sample has been obtained, the machine will start to count down.
13. If the glucometer fails to count down, simply squeeze more blood into glucose strip.
14. Glucometer result should automatically display in less than 5 seconds.
15. Remove strip and dispose of in sharps container along with lancet.
17. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

NOTE: Patients with blood sugar less than 60 mg/dl or greater than 400 mg/dl with altered LOC must be monitored and transported by Med Unit.
Revised 1/07
BLOOD PRODUCT ADMINISTRATION

**Purpose:**
1. To assure proper monitoring and administration of blood products.

**Guidelines:**
1. We do not initiate the administration of blood products (i.e. packed red blood cells, fresh frozen plasma, platelets).
2. We will only transport patients that have had blood administering for at least 30 minutes.
3. RN or CCEMTP will be able to hang additional units provided there is a written physician order.
4. Vital signs including temperature and SaO2 must be obtained and recorded every 15 minutes.
5. Blood products need to be infused with blood tubing only.
6. You should have a spiked 1000 cc bag of 0.9% Normal Saline ready to be attached in case of an infusion reaction.

**Procedures:**
1. When picking up a patient on blood products, all crewmembers should receive the patient care report from the attending RN.
2. If additional units are going with the patient for possible infusion, they should be transferred in a cooler (usually supplied by the hospital). The blood should be checked against the patient’s record to assure compatibility. The following will need to be verified prior to transport by all crew members:
   - Verify order
   - Patient’s name
   - Patient's medical number
   - Date of birth
   - Blood group
   - Correct blood component
   - Blood unit number
   - Expiration date
   - Medical history/record
   - Name of ordering physician
   - Lab values (hematocrit, hemoglobin, platelets, INR, PTT)
   - Ask if any other medications should be given after or between blood product infusions (i.e. Lasix IV).
   - Assure catheter size is 20 gauge or larger.
3. Normally an infusion reaction will occur within the first 30 minutes of the infusion. Occasionally it will occur later. Be alert for the following signs and symptoms:
• Fever (increase of 2-3 degrees)
• Chills
• Back Pain
• Dyspnea, including wheezing
• Hypotension
• Hemoglobinuria
• Bleeding
• Itching/Hives (anaphylaxis)

4. Should a reaction occur do the following:

• STOP THE INFUSION.
• Disconnect the infusion set and attach the spiked 0.9% Normal Saline.
• Open 0.9% Normal Saline and infuse at 100 cc/hr.
• Re-check all forms, labels, and patient information to assure the patient has received the correct blood.
• Contact medical control for further instructions.
• Document events of the run report.

5. If the infusion completes without incident, clamp off the blood and start the 0.9% Normal Saline at 100 cc/hr not to exceed 250 cc total.

6. If another unit is to be hung:

• Using aseptic technique disconnect the completed unit. Place the completed unit in a biohazard bag.
• Assure the new blood is correct for the patient.
• Start the infusion slowly for the first 15 minutes of infusion.
• After the first 15 minutes, the infusion may be increased to the previous infusion rate.
• Remember to document the initiation time, completion time, and vitals with temperature every 15 minutes.
• The same blood tubing can be used to transfuse two units (i.e. PRBs, FFP) consecutively.

7. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
BLS/ALS INTERFACING

**Purpose:**
1. To insure expeditious and appropriate patient care when a Paratech BLS crew requires the services of a Paratech ALS squad.

**Guidelines:**
1. Interface between Paratech BLS and Paratech ALS squads can only occur at a facility (i.e. Nursing Home, Independent Living, Assisted Living, Doctor’s Office, or Clinic).
2. An interface should never happen at a residence, on the street, or in the ambulance away from the facility. In those instances 9-1-1 must be activated. *(Milwaukee Only)*.
3. Unless a patient codes during transport a BLS unit is not to intercept with any ALS unit (Paratech or Milwaukee FD).
4. Requests for Paratech ALS should be limited to the following:
   - Cardiac patients in distress
   - Respiratory patients in distress
   - Unconscious/unresponsive patients
   - Hypotension w/altered LOC
   - Hypoglycemia with altered LOC
   - Active seizures

**Procedure:**
1. If the patient condition meets the criteria as above in #4, the crew will explain to the facility that the patient would benefits from ALS intervention.
2. The facility will then have the opportunity to activate 911 or allow Paratech ALS to intervene.
3. If the facility declines both, just transport.

If the facility:

**Requests 911** — have the facility call 911
- Wait for med unit to arrive to evaluate the patient.
- Give the med unit a verbal/written report.
- Offer a recent set of vitals and ensure that the patient has oxygen applied.
- Keep the patient in the facility.

**Requests Paratech ALS** — Contact Paratech dispatch, make request, get ETA
- If the ETA of a Paratech Ambulance Service, Inc. ALS squad is greater than 10 minutes or not available, the crew should load and go.
- While waiting for the arrival of the Paratech ALS crew, the BLS crew should continue assessment and treatment and package/load patient into the ambulance.
• ALS assessment and treatment should occur in the ambulance and NOT in the facility.

BLS/ALS INTERFACING
Declines ALS Intervention – Load and go.
Revised 1/07
BOARD SPLINT

**Purpose:**
1. To provide rigid splinting for an obvious or suspected fracture of an extremity.

**Guidelines:**
1. To immobilize a suspected fracture of an extremity (radius, ulna, midshaft humerus, tibia/fibula).
2. To immobilize and obvious fracture of an extremity (radius, ulna, midshaft humerus, tibia/fibula).
3. Monitor for soft tissue swelling to prevent bandages holding the board in place to become too tight and restrict peripheral circulation.

**Equipment:**
1. Board splint – size appropriate
2. Cravats
3. Ice pack
4. Pillow
5. Medication as per suggested medical protocol

**Procedure:**
1. Observe universal precautions.
2. Cover any open wound with sterile dressing, control bleeding, and support fracture site during process.
3. Check distal pulse, sensation and movement.
4. Straighten any severe angulation with gentle longitudinal traction above and below break and maintain traction while splint is applied and fixed in place by second EMT.
5. If resistance is felt when attempting to straighten, stop attempt and splint in position found.
6. Apply rigid splint to extremity, extending from joint above through joint below fracture site.
7. Secure splint to extremity with bandage.
8. Check distal circulation, sensation, and movement after splinting and frequently thereafter.
9. Loosen bandages on splint if necessary to maintain circulation.
10. A sling and swathe may be used to further support upper extremity injuries.
11. Apply ice pack to injury site to decreased edema or swelling.
12. Elevate injured extremity to decrease edema or swelling.
13. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
PARATECH AMBULANCE SERVICE, INC.
Standards of Practical Skills/Procedures

CARDIO-PULMONARY RESUSCITATION

Purpose:
1. To attempt to establish return of spontaneous circulation and respiration in a patient in cardio respiratory arrest.

Guidelines:
1. Provide patient with circulation and respiration during cardio respiratory arrest.

Complications:
1. Possible chest trauma.

Equipment:
1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. Pulse oximetry
5. BVM
6. Cardiac monitor or AED
7. Multi-function pads – adult
8. Multi-function pads – peds
9. Suction equipment
10. Intubation equipment
11. ETCO2 device
12. Medication as per suggested medical protocol.

Procedure:
1. Observe universal precautions.
2. Confirm cardio respiratory arrest by assessing for absence of spontaneous respirations and absent palpable pulses.
3. Open airway and look/listen/feel for breaths for 10 seconds.
4. If no respirations, give two breaths, ensuring effective rise and fall of the chest (allow for exhalation between each breath).
5. Check for pulse - adult feel carotid for 10 seconds.
6. Check for pulse - peds feel brachial/femoral for 10 seconds.
7. If no pulse, initiate chest compressions and ventilation at age appropriate rate and depth according to the AHA guidelines.
8. Call for help.
9. Defibrillate with an AED.

CARDIO-PULMONARY RESUSCITATION

Infant (0-1 year):
1. Place 2 fingers, just below nipple line on lower ½ of the sternum.
2. Compress the chest at a rate of 100/minute to a depth of ½ to 1 inch.
3. Intubate and ventilate at 30:2 (single rescuer) or 15:2 (2 rescuers) compression/ventilation ratio.
**Child (1-8 years):**
1. Place heel of one hand on ½ of sternum between the nipples.
2. Compress the chest at a rate of 100/minute to a depth of 1 to 1 ½ inches.
3. Intubate and ventilate at 30:2 (single rescuer) or 15:2 (2 rescuers) compression/ventilation ratio.

**Adult (greater than 8 years):**
1. Place heel of both hands on lower ½ of sternum between the nipples.
2. Compress at a rate of 100 beats per minute to a depth of 1 ½ to 2 inches.
3. Intubate and ventilate at 30:2 compression/ventilation ratio.

**Contraindications:**
1. Patient has pulse and respirations.
2. Patient meets any of the following criteria:
   - Valid DNR
   - Decapitation
   - Rigor Mortis
   - Lividity
   - Tissue Decomposition

Revised 1/07
CENTRAL LINE MANAGEMENT

Purpose:
1. To ensure the proper infusion of IV medications in central venous IV lines.

Guidelines:
1. Provides access to the patient's central circulation.
2. May be accessed if patient is unstable or in life threatening situations when peripheral IV access is not obtainable.
3. Personnel are not to insert or remove central lines unless trained and/or under the direct supervision of a physician.
4. Should failure occur, assess for listed complications and then contact medical control for further assistance.
5. Always use aseptic technique when handling IV tubing, claves, port accesses, connections.
6. If you connect or disconnect a line, remember to always use an alcohol prep to clean the access port prior.

Complications:
1. Air embolus.
2. Clot formation at the end of the catheter.
3. Heparin overdose, if not removed prior to flushing.
4. Infection.
5. Infiltration causing extreme extremity edema.

Equipment:
1. PPE
2. 0.9% Normal Saline
3. IVAC IV pump

Procedures:
1. Determine that patient is unstable with no peripheral IV access.
2. Cleanse the cap on the indwelling IV line and distal end of the catheter with alcohol.
3. Withdraw 5-10 cc of blood from catheter to insure removal of heparin solution (typically 2 cc of low dose heparin is used to cap central line
4. After withdrawing 5 -10 cc of blood from line, flush with 0.9% Normal Saline 10 cc IV.
5. Administer medication at appropriate rate per suggested medical guidelines.
6. Flush with 0.9 Normal Saline per medical guidelines.
7. Report to receiving staff that the central line was accessed.
8. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

CENTRAL LINE MANAGEMENT

MONITORING DURING INTERFACILITY TRANSPORTS:
1. Take report from sending facility on the type of catheter and the medication or fluid being infused.
2. Assess the administration port connection for leaks.
3. Assess the insertion site of the catheter and note in your narrative any edema, redness, or leaking at the insertion site.
4. Continue to monitor the catheter and infusion for any complications listed above.
5. **Contact medical control** if any complications develop.

Special Considerations:

**IDENTIFICATION OF CATHETERS:**

**Non-Tunneled Catheter (PICC Line or Groshong)**
- Inserted peripherally or centrally
- Short term use
- Limits patient activity
- Smallest lumen and external diameter
- Single or multiple lumen catheter

**Tunneled Catheter**
- Exits the body between nipple and sternum
- Tunneled four inches to the cannulated vein
- Dacron cuff lies about 2” from exit site
- Versatile use for intermittent therapy
- Large bore, thick walled catheter
- Single, double, or triple lumen catheter

**Hickman Line**
- Placed through the subclavian vein
- Ends at right atrium
- Proximal end is tunneled through the skin and secured to provide easy access
- Long-term use

**Subclavian Catheter (Triple Lumen)**
- Placed and remains in the subclavian vein
- Ends in right atrium
- Short term use

**CENTRAL LINE MANAGEMENT**

**Venous Access Port (Medaport)**
- Attached to plastic or metal port
- Completely under the skin
- Septum lies perpendicular to skin

**Procedures:**

**MANAGEMENT OF COMPLICATIONS:**

**Occlusion Prevention**
- Always flush after each use
- Always use 0.9% Normal Saline for flushing
- Sluggish infusion problems
- Check for kinks in catheter
- Reposition maneuvers
- Remove injection cap and check for clots
- Flush vigorously with 10-20 cc of 0.9% Normal Saline

**Prevent Catheter Damage**
- Do not use scissors near catheter
- Always clamp at the reinforced area
- Always keep catheter looped on chest wall
- Do not force to infuse fluids

**If Damage Occurs**
- Clamp catheter between damaged area and skin
- Cover damaged area with sterile gauze
- Do not attempt to repair catheter
- Contact medical control

**Contraindications:**
1. Available peripheral IV.
2. Inability to withdraw fluid from port of central line.

Revised 1/07
CHEST DECOMPRESSION

Purpose:

1. To provide an open vent into the pleural space to decompress a suspected tension pneumothorax.
2. The following signs are significant. Signs of pneumothorax as well as signs of tension must be present before treatment is undertaken:

Simple Pneumothorax

- Respiratory distress - mild to severe
- Chest pain
- Decreased or absent breath sounds on affected side
- Subcutaneous crepitation

and

Signs of Tension

- **Progressive** respiratory distress (severe)
- Restlessness/agitation
- "Drumlike" percussion note on affected side
- Hyperexpanded chest on affected side
- Tracheal shift away from affected side
- Distended neck veins
- Shock - low BP
- If patient is intubated, increasing difficulty in bagging

Precautions:

1. Accurate diagnosis is imperative.
2. Tension pneumothorax is rare, but when present may rapidly lead to death and must be treated promptly.
3. **Chest decompression is only to be done under direct order by the Medical Control Physician.**

Complications:

1. Creation of a pneumothorax if none existed previously.
2. Laceration of lung.
3. Intercostal artery injury.
4. Severe pain.

Equipment:

- PPE
- Iodine or alcohol wipe or IV start kit
14 gauge or 16 gauge IV catheter or Cook Emergency Pneumothorax Set
- Tape
- Stethoscope

CHEST DECOMPRESSION

**Procedure:**

1. Observe universal precautions.
2. **Contact medical control** to continue protocol.
3. Explain the procedure to the patient.
4. Decide whether you are inserting a #14 or #16 gauge IV catheter or using the Cook Emergency Pneumothorax Set.
5. If inserting an IV catheter, adhere to procedures 6-14.
6. Insert a #14 or #16 gauge IV catheter through the fingertip of a clean glove, which will act as a flutter valve. Maintain an aseptic field at all times.
7. Cleanse the skin with an iodine or alcohol prep. If the patient is allergic to iodine, cleanse the skin with an alcohol prep.
8. Locate the suprasternal notch, move laterally to the midclavicular line and locate the second and third rib on the side of the pneumothorax.
9. Insert the catheter at a 90 degree angle directly over the third rib. When the tip of the needle touches the third rib, alter the angle of the needle and “walk” the needle over the third rib, advancing it into the pleural space.
10. Confirm entry into the pleural space by noting air escaping, under pressure, through the open needle.
11. Remove needle and secure catheter in place, leaving it open to atmospheric air.
12. Dispose of contaminated materials in the appropriate receptacle.
13. Reassess the patient’s condition including vital signs and cardiac rhythm frequently.
14. Document procedure and results, including any unusual circumstances and/or difficulties encountered.
15. If using the Cook Emergency Pneumothorax Set, adhere to procedures 16-25.
16. Cleanse the skin with the chloraprep provided.
17. Locate the suprasternal notch, move laterally to the midclavicular line and locate the second and third rib on the side of the pneumothorax.
18. Insert the catheter at a 90 degree angle directly over the third rib. When the tip of the needle touches the third rib, alter the angle of the needle and “walk” the needle over the third rib, advancing it into the pleural space.
19. Confirm entry into the pleural space by noting air escaping, under pressure, through the open needle.
20. Remove needle and secure catheter in place, leaving it open to atmospheric air.
21. Attach the leuer end of the connecting tubing to the catheter and press the other end on the blue tip of the Heimlich Chest Drain Valve.
22. Tape the Heimlich Chest Drain Valve to the patient’s chest and verify air escaping through the clear end of the drain. A “honking” or fluttering sound may be heard.
23. Dispose of contaminated materials in the appropriate receptacle.
24. Reassess the patient’s condition including vital signs and cardiac rhythm frequently.
25. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07; 1/09
COMBI-TUBE INSERTION

Purpose:
1. To provide a secure airway for patients with an altered level of consciousness without a gag reflex.
2. To facilitate ventilation with a bag valve device for a non-breathing patient.
3. To facilitate suctioning of secretions.

Guidelines:

**Milwaukee County**
1. Patients who are in cardiac arrest (medical/trauma).
2. ALS personnel unable to intubate with an endotracheal tube or when interfacing with a Milwaukee County Paramedic Unit.

**Outside Milwaukee County**
1. Patients who are in cardiac arrest from any cause.
2. Respiratory arrest (unconscious, no gag reflex)
3. Unconscious patient with inadequate ventilation, no gag reflex (BLS should contact medical control).

Complications:
1. Possible trauma to airway or esophagus.
2. Placement must be identified (trachea/esophagus).
3. Patient must be unconscious.
4. Gag reflex must be absent.

Equipment:
1. PPE
2. Oxygen
3. BVM
4. Suction equipment
5. Intubation equipment
6. Pulse oximetry
7. Cardiac monitor

Procedure:
1. Observe universal precautions.
2. Ensure that the patient does not have a gag reflex and is unconscious.
3. Remove dentures if possible.

4. Pre-oxygenate patient with bag valve mask (monitor pulse oximetry if available).
5. Have suction available.
6. Test cuffs.
7. Lubricate tube.
8. Place neck in neutral position.
9. Lift tongue and lower jaw with one hand.
10. With the other hand, hold the Combitube so that it curves in the same direction as the natural curvature of the pharynx.
11. Insert the tip into the mouth and advance gently until the printed ring is aligned with the teeth.
12. Inflate pilot tube #1 (blue) with 100 cc of air using the 100 cc syringe (the tube may fluctuate slightly in the patient’s mouth and is normal. If you feel air leaking around the cuff or it is fluctuating greatly, you may need to add 5-10 cc of additional air).
13. Inflate pilot tube #2 (white) with 15 cc of air using the 15cc syringe.
14. Attach a bag valve device to the #1 port (blue) and begin ventilating. Check breath sounds and if breath sounds are present continue to ventilate (Esophageal Placement).
15. If breath sounds are absent attach a bag valve device to the #2 port (white) if breath sounds are present continue to ventilate (Tracheal Placement).
16. Regardless of tracheal or esophageal placement, both balloons should remain inflated during transport.
17. If you are unable to ventilate, pull the tube back slightly and attempt to re-ventilate. Check breath sounds, if breath sounds are present continue to ventilate (tube may have been inserted too deeply).
18. If you feel an air leak around the hypopharyngeal balloon (mouth) you may add approximately 5-10 cc of air to tube #1.
19. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Contraindications:
1. Patients under 12 years of age or under 5 feet tall.
2. Patient with known esophageal disease.
3. Ingested of caustic substances.
4. Gag reflex present.
5. Unconscious patient that is not PNB (Milwaukee County Only).
6. Patients < 4 feet in height when inserting Short Adult Combi-tube.

Revised 1/07
COMBI-TUBE REMOVAL

Purpose:
1. To safely remove a Combitube from the patient's airway.

Guidelines:
1. Patient has gag reflex.
2. Patient has adequate ventilations.
3. Patient regains consciousness.
4. Alleviates anxiety and discomfort from a patient with an intact gag reflex who is adequately ventilating on his/her own.

Complications:
1. Aspiration.
2. Loss of airway control.

Equipment:
1. PPE
2. Pulse oximetry
3. Oxygen
4. Oxygen device with connecting tubing
5. Cardiac monitor
6. BVM
7. Suction equipment
8. Intubation equipment

Procedure:
1. Observe universal precautions.
2. **Contact medical control** for orders to remove Combitube. Do not delay tube removal, if unable to contact medical control.
3. Position the patient on his/her side. Use spinal precautions if necessary.
4. Explain procedure to the patient.
5. Have suction unit readily available and suction as needed.
6. Instruct the patient to cough as the tube is being removed from his/her mouth.
7. Deflate both cuffs (blue then white) and withdraw tube from the airway as gently as possible.
8. Suction as needed.
9. Continue to monitor the airway and respirations closely (apply pulse oximetry if available).
10. Provide supplemental oxygen at a rate and with a device appropriate for patient condition.
11. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Contraindications:
1. Any patient who is unable to adequately ventilate or protect their own airway.

Revised 1/07
CONSCIOUS SEDATION

Indication:
1. To achieve rapid tracheal intubation of an awake adult patient who needs an immediate airway through the use of pharmacological agents.
2. To achieve a medically controlled state of depressed consciousness that allows protective reflexes to be maintained.

Guidelines:
1. Inability to maintain an adequate airway (trauma, stroke, acute mental status change).
2. Respiratory failure (CHF, pulmonary edema, COPD, asthma, anaphylaxis with respiratory rate <10 or > 40; shallow/labored effort, or SPO2 < 92%).
3. Glasgow Coma Scale 8 or less due to an acute condition.
4. Inability to ventilate/oxygenate adequately after insertion of oral/nasal airway and/or via BVM.
5. Anticipated patient deterioration due to airway at imminent risk of closing secondary to edema.
6. Need to provide therapy which requires sedation (cardioversion, fracture splinting).

Equipment:
1. PPE
2. Oxygen
3. Pulse oximetry
4. Oxygen device with connecting tubing
5. BVM
6. Intubation equipment
7. Suction equipment
8. Medication as suggested in medical guideline
9. IV start kit

Procedure:
1. Observe universal precautions.
2. Perform primary medical assessment and initiate standard medical care.
3. Obtain baseline vital signs including SPO2.
4. Place patient on cardiac monitor and obtain ECG reading.
5. Establish IV of 0.9% Normal Saline.
6. Contact medical control before proceeding with protocol.
7. Position patient in “sniffing” position with towel roll under head if not contraindicated by trauma or suspected C-spine injury.
8. Pre-oxygenate patient with oxygen 12-15 L/NRB or 100% via BVM.

CONSCIOUS SEDATION

9. Prepare intubation equipment.

Premedicate prior to intubation:
- Gag reflex present: use Benzocaine (Hurricaine, Americaine, Cetacaine)
• Spray for 1-2 seconds.
• Spray posterior pharynx twice, waiting 30 seconds between each spray.
• ** For pain administer Morphine 2 mg IVP slowly for a total of 10 mg.
• ** For sedation administer Versed 5 mg IVP. Use cautiously in a hypotensive patient.
• ** If systolic blood pressure less than 100 mmHg administer only Etomidate 20 mg IVP (not to be administered when interfacing with MFD).

10. Monitor vital signs, level of consciousness, skin color, and SPO2 every 5 minutes during procedure.
11. Assist ventilations/BVM if decreased respiratory rate, or decreased blood pressure.
12. Allow at least 30 seconds for response to medication before intubating or cardioverting.

**Intubate:**
• Apply Sellick’s Maneuver
• Confirm tube placement w/auscultation and ETCO2 device
• Ventilate and observe equal chest rise and fall. Auscultate over epigastrium and midaxillary.

**If Successful:**
• Oxygenate patient with 100% via BVM.
• Secure intubation tube and continue to reassess patient.

**If Unsuccessful:**
• Re-attempt intubation once.
• If unable to intubate, attempt Combitube placement.

13. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Contraindications:**
1. Coma or known hypersensitivity/allergy to sedation medications.
2. Use in pregnancy could be potentially harmful to the fetus, consider the risk versus the benefits.

Revised 1/07
CONTINUOUS BLADDER IRRIGATION

Purpose:
1. Maintain bladder and catheter patency by removing or minimizing obstructions such as clots and mucous plugs in the bladder.
2. Prevents or treats local bladder inflammation or infection.
3. Instills medications for local bladder treatments.

Equipment:
1. PPE

Procedure:
1. Observe universal precautions.
2. Complete assessment to include the following:
   - Type of irrigation order
   - Characteristics of urine before irrigation, such as hematuria
   - Amount of urine output
   - Distention, pain, or tenderness of the lower abdomen
   - Signs of inflammation or infection of bladder and perineal structures
   - Status of catheter before irrigations
3. Transfer patient to cot and hang the irrigation fluid from the IV pole on the cot.
4. Make sure tubing is not kinked and running at the prescribed rate.
5. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

Purpose:
1. To rapidly improve vital signs, gas exchange, reduce the work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in patients who suffer from shortness of breath from asthma, COPD, pulmonary edema, CHF, and pneumonia. In patients with CHF, CPAP improves hemodynamics by reducing left ventricular preload and afterload.

Guidelines:
1. Any patient who is in respiratory distress with signs and symptoms consistent with asthma, COPD, pulmonary edema, CHF, or pneumonia.
2. Any patient who is conscious and/or able to follow commands.
3. Any patient who is over 8 years old and is able to fit the CPAP mask.
4. Any patient who is able to maintain an open airway.
5. Any patient who is tachypneic, dyspneic, orthopneic, anxious, or has abnormal lung sounds.
6. Any patient who has a pulse oximetry of less than or equal to 94%.
7. Any patient who is exhibiting accessory muscle use.

Complications:
1. Hypotension
2. Pneumothorax
3. Corneal drying
4. Oral dryness

Equipment:
1. PPE
2. Oxygen
3. Pulse oximetry
4. High pressure regulator
5. Oxygen wall adaptor
6. Oxygen device and connecting tube
7. CPAP generator (whisper flow)
8. CPAP mask with accessories
9. CPAP compatible nebulizer set-up
10. Suction equipment
11. Intubation equipment
12. BVM
13. Medication as suggested by medical protocol

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

Procedure:
1. Observe universal precautions.
2. Place the patient in an upright position.
3. Apply supplemental oxygen at a rate and with a device appropriate for patient condition.
4. Obtain vital signs and pulse oximetry.
5. Apply cardiac monitor and obtain ECG reading.
6. Set up the CPAP equipment, to include the peep valve and CPAP compatible nebulizer if necessary.
7. Treat the patient according to the appropriate suggested medical protocol.
8. Explain the procedure to the patient.
9. Ensure adequate oxygen supply to CPAP device
10. Place mask over mouth and nose.
11. Secure the mask with the provided straps.
12. Instruct patient to breath in through their nose slowly and exhale through their mouth as long as possible.
13. Check for air leaks.
14. Continue to encourage patient to keep mask in place and readjust as needed.
15. Sedation may be needed to ease patient anxiety. **Contact medical control if sedation orders are needed.**
16. If patient’s respiratory status is deteriorating despite CPAP and the need for immediate advanced airway intervention is necessary proceed with endotracheal intubation.
17. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Contraindications:**
1. Age < 8 years
2. Respiratory or cardiac arrest
3. Agonal respirations
4. Severely depressed level of consciousness
5. Systolic blood pressure less than 90mmHg
6. Signs and symptoms of pneumothorax
7. Inability to maintain airway patency
8. Major trauma, especially head injury with increased ICP or significant chest trauma
9. Facial anomalies or trauma (e.g., burns, fractures)
10. Vomiting

**CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)**

**Note:**
1. Bag-valve-mask ventilation or endotracheal intubation should be considered if the patient fails to show improvement based on the above goals.
2. Apply 1” **Nitro Paste** when using CPAP.
3. CPAP should not be used in children under 8 years of age.
4. Monitor patient for gastric distension which may lead to vomiting.
5. **DO NOT PLACE PATIENT ON CPAP WHEN INVOLVED IN A POTENTIAL INTERFACE WITH A MILWAUKEE COUNTY PARAMEDIC UNIT.**

Revised 1/07
CONTROLLED SUBSTANCE ACCOUNTABILITY

Purpose:

1. To ensure accurate accountability for supply levels, usage, and waste of all controlled substances in accordance with federal and state guidelines.

Guidelines:

1. Accountability for the main company stock will be done on a daily basis by two dispatchers (off-going and on-coming).
2. Accountability for the ALS squad med bag/cooler and any waste will be done on a daily basis by the on-duty ALS provider and his or her partner.
3. Accountability for the station stock will be done on a daily basis by two crewmembers - the on-duty ALS provider and his or her partner.
4. Specific forms will be utilized and are labeled as, “Controlled Substance Inventory Log” – ALS squad med bag/med cooler, “Narcotic Inventory Control Record” (Form 3 to be completed for each controlled substance) – Dispatch and station stock, and “Record of Controlled Substance Administration/Dispensed” (Form 2 to be completed for each controlled substance) – Dispatch and station stock.

Procedure:

DISPATCH

1. At AM and PM shift change, two dispatchers (off-going and on-coming) will remove the medication storage box from the shelf and medication cooler, unlock, and inventory the contents. These counts will be documented on the “Narcotic Inventory Control Record” – Form 3 for each medication (Morphine, Ativan, Valium, Fentanyl and Versed) located on the clipboard. Form 3 requires witness signatures from two dispatchers (off-going and on-coming) and or members of Administration.
2. As part of the count, they will make sure differences in the previous inventory amount are properly accounted for on the “Record of Controlled Substance Administration/Dispensed” form – Form 2.
3. If a discrepancy is noted, the dispatcher will notify the Assistant Director of Ambulance Operations, who will investigate the matter immediately. If there isn’t a resolution, the Assistant Director of Ambulance Operations will notify the Director of Ambulance Operations, who take the appropriate actions as required by federal and state statutes.
CONTROLLED SUBSTANCE ACCOUNTABILITY - Continued

ALS PROVIDER AND HIS OR HER PARTNER

INVENTORY - SQUAD

1. The ALS squad med bag/cooler will be inventoried on a daily basis when the squad is checked out.

2. Using the “Controlled Substance Inventory Log” (located in the outside pocket of the med pouch), document the number of Morphine, Ativan, Valium, Fentanyl and Versed present in the med bag. Document the external and internal tag numbers and sign your name verifying the count is current.

3. If the bag has not been inventoried in several days, the tags should be removed and the contents re-inventoried. Make sure to mark “OOS” (Out Of Service) in the signature blocks of the days it was not in use. Document as above.

4. ALS med bags/coolers not in service will be inventoried by the on-duty ALS provider every Monday when all the bags are inventoried for number as well as expiration dates.

5. If a discrepancy is noted, the on-duty ALS provider is to notify his or her immediate Supervisor, who will investigate the matter immediately. If there isn’t a resolution, the Assistant Director of Ambulance Operations will notify the Director of Ambulance Operations, who will take the appropriate actions as required by federal and state statutes.

6. All “Controlled Substance Inventory Logs” will be turned into the Assistant Director of Ambulance Operations at the end of the month.

INVENTORY - STATION

1. The station stock will be inventoried on a daily basis by the on-duty ALS provider and his or her partner.

2. They will remove the medication storage box from its designated area/medication cooler, unlock it, and inventory the contents. These counts will be documented on the “Narcotic Inventory Control Record” - Form 3 for each medication (Morphine, Ativan, Valium, Fentanyl and Versed) located on the clipboard. Form 3 requires witness signatures from two crewmembers - the on-duty ALS provider and his or her partner and or Supervisors.

3. As part of the count, they will make sure differences in the previous inventory amount are properly accounted for on the “Record of Controlled Substance Administration/Dispensed” form – Form 2.

4. If a discrepancy is noted, the on-duty ALS provider will notify his or her immediate Supervisor, who will investigate the matter immediately. If there isn’t a resolution, the Assistant Director of Ambulance Operations will notify the Director of Ambulance Operations, who will take the appropriate actions as required by federal and state statutes.
CONTROLLED SUBSTANCE ACCOUNTABILITY – Continued

INVENTORY – STATION – (Continued)

5. All “Controlled Substance Inventory Logs”, “Narcotic Inventory Control Record” - (Form 3), and “Record of Controlled Substance Administration/Dispensed” – Form 2, forms will be turned into the Assistant Director of Ambulance Operations at the end of the month without discrepancy.

WASTE

1. After completing a transport that required the administration of a controlled substance, the names of both crewmembers (ALS provider and his or her partner) are to be documented along with the signatures of both crewmembers in the ePCR.
2. Document the controlled substance, the amount administered, and the amount to be wasted.
3. When wasting a controlled substance, both the ALS provider and his or her partner must witness the waste in an approved area. The unused medication must be drawn up and wasted, it cannot remain in the vial and disposed of in a sharps container.

RESTOCKING

1. The restocking of controlled substances must be done the same shift as administration.
2. In Milwaukee, restocking will be done from the stock located in Dispatch. In the other divisions (i.e. Sturtevant, Walworth, Janesville and Madison) restocking will be done from the stock located in the station.
3. In Milwaukee, the Dispatcher will retrieve the storage box from the shelf/medication cooler and unlock it.
4. The Dispatcher will document on the appropriate forms the information requested.
5. After documenting the removal, the Dispatcher will remove the appropriate medication and have the Paramedic/RN initial alongside his/her initials in the witness box.
6. A copy of the Controlled Substance page of the ePCR in Field Bridge, documenting usage/waste along with all the appropriate signatures will be placed in the in the storage box.
7. The Dispatcher will relock the storage box and place it back on the shelf/medication cooler in Dispatch.
8. All “Controlled Substance Inventory Logs”, “Narcotic Inventory Control Record” - (Form 3), and “Record of Controlled Substance Administration/Dispensed” – Form 2, forms will be turned into the Assistant Director of Ambulance Operations at the end of the month without discrepancy.

Revised 1/07; 6/09; 3/11
DECONTAMINATION OF NON-DISPOSABLE EQUIPMENT

**Purpose:**
1. To reduce the risk of transmitting potentially communicable diseases to any patient or EMS personnel.

**Equipment:**
1. PPE
2. Biohazard bag – size appropriate
3. Tape

**Procedure:**
1. Observe universal precautions.
2. After use of a disposable item (i.e. laryngoscope blades, Magill forceps, or any other metal object) that comes in contact with a patient’s airway/oral secretions, it should be scrubbed with hot water and soap to remove all secretions.
3. Thoroughly rinse and soak for a minimum of 10 minutes in 1:10 dilution of bleach water or 70% Isopropyl alcohol.
4. A fresh solution should be used for each disinfection and the metal rinsed with water and air-dried before reuse.
5. Cleaning of contaminated equipment should take place in designated area.
6. Item may then be placed back in service for use.

1. If unable to decontaminate promptly after call, contact the ALS Coordinator for a temporary replacement.
2. Item that requires decontamination is full responsibility of the crew who used it.

Revised 1/07
DEFIBRILLATION

Purpose:
1. To simultaneously depolarize the myocardial cells to terminate:
   • Ventricular fibrillation.
   • Ventricular tachycardia or wide complex tachycardia without a pulse.
   • Polymorphic VT

Precautions:
1. Do not treat the monitor alone. Treat the patient.
2. Unsuccessful defibrillation is often due to hypoxia or acidosis. Careful attention to airway management and proper CPR is important.
3. Ensure that all personnel are clear of direct and indirect patient contact.
4. Apply multi-function/combo electrode pads, place them on sternum and apex area.
5. While analyzing, protect the rescuers by clearing the patient and immediate area.

Complications:
1. Skin burns can occur to skin.
2. Accidental defibrillation may occur to others, make sure to clear the area before defibrillation occurs.
3. Defibrillation is not the only step in treating fibrillation due to traumatic hypovolemia. CPR and fluid resuscitation should be started immediately.

Equipment:
1. PPE
2. Zoll cardiac monitor
3. EKG patches
4. Razor
5. Multi-function pads - adult
6. Oxygen
7. BVM
8. Intubation equipment
9. Suction equipment

Procedure:
1. Observe universal precautions.
2. Determine unresponsiveness and pulselessness.
3. Open airway, check for breathing.
4. Initiate “Standard of Care: Respiratory Arrest”.
5. Check for pulse. If defibrillator is not immediately available then initiate CPR according to AHA guidelines.
6. Maintain CPR with 1 or 2 rescuers, switching every two minutes.

DEFIBRILLATION

7. Second or third person should get monitor/defibrillator.
8. Apply cardiac monitor and obtain ECG reading.
10. Obtain 15 second strip printout.
11. Check for organized rhythm.
12. If ventricular fibrillation or pulseless ventricular tachycardia is present continue with protocol.
13. Adhere to appropriate medical protocol for all other arrhythmias.
14. Continue CPR according to AHA guidelines.
15. On Zoll Biphasic Cardiac Monitor, turn the selector switch to defib.
16. Select energy in biphasic joules: (Adults 200 joules/Pediatrics 2 joules/kg, then 4 joules/kg).
17. Press the charge button.
18. Give verbal command to clear area.
19. Press the shock button.
20. Check for organized rhythm.
21. Continue CPR according to AHA guidelines.
22. If ventricular fibrillation/pulseless ventricular tachycardia persists initiate “Medical Standing Order: Ventricular Fibrillation/Pulseless Ventricular Tachycardia”.
23. If organized rhythm appears, continue CPR according to AHA guidelines for another two full minutes.
24. Hang converting antiarrhythmic as maintenance drip.
25. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
DOPPLER

**Purpose:**
1. Determines presence of arterial blood flow when pulse is not palpable.

**Guidelines:**
1. Assessment should focus on the following:
   - Medical diagnosis
   - History of medical problems related to cardiovascular deficits
   - Quality of pulses in extremities
   - Circulatory indicators of extremities (color, temperature, sensation, and capillary refill)
   - Pulse rate and blood pressure

**Equipment:**
1. PPE
2. Ultrasound stethoscope blood flow Doppler
3. Conducting gel

**Procedure:**
1. Observe universal precautions.
2. Provide privacy during assessment.
3. Squirt conducting gel over pulse area.
4. Place ear tips of Doppler scope in ears.
5. Place Doppler transducer over identified pulse area.
6. Turn Doppler on until faint static sound is audible.
7. Adjust volume with control knob.
8. Identify pulse by listening for a hollow, rushing, pulsatile sound (a “swooshing” sound).
9. If pulse is not audible within 4-5 seconds, slowly slide Doppler over a 1-2 inch radius within same pulse area. If pulse still is not audible, continue this step, increasing radius by 1-2 inches until pulse is audible or until convinced that pulse is not present.
10. Wipe gel from skin.
11. If pulse was difficult to obtain, draw a circle around the pulse site.
12. Clean off equipment.
13. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
ELECTROCARDIOGRAM – 12 LEAD

**Purpose:**
1. To obtain and transmit a diagnostic quality 12-Lead Electrocardiogram.

**Guidelines:**
1. Any patient experiencing symptoms of suspected cardiac origin.
2. Provides electrical view of all areas of the myocardium.

**Complications:**
1. Poor tracing due to patient movement.

**Equipment:**
1. PPE
2. EKG patches
3. Zoll cardiac monitor

**Procedure:**
- V1 – 4th intercostal space, right sternal border
- V2 – 4th intercostal space, left sternal border
- V3 – Midway between V2 and V4
- V4 – Mid clavicular line, fifth intercostal space
- V5 – Lateral to V4 at the anterior axillary line
- V6 – Lateral to V5 at the midaxillary line
- RA – Right arm or shoulder
- LA – Left arm or shoulder
- RL – Right leg or right lower abdomen
- LL – Left leg or left lower abdomen

1. Observe universal precautions.
2. Press 12 lead key on monitor.
3. Enter patient age and gender.
4. Press “Acquire” key.
5. Instruct patient to remain quiet and lay still while machine is obtaining reading.

4. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Contraindications:**
1. Cardiac or Respiratory arrest.

Revised 1/07
ELECTROCARDIOGRAM – 4 LEAD

Purpose:
1. To monitor heart for arrhythmias and obtain/transmit an electrocardiogram.

Guidelines:
1. Any patient who requires cardiac monitoring.
2. Displays cardiac electrical activity.

Equipment:
1. PPE
2. EKG patches
3. Zoll cardiac monitor

Procedure:
1. Observe universal precautions.
2. Loosen/remove clothing for electrode placement.
3. Dry chest and clip excessive chest hair if necessary.
4. Snap leads onto each electrode.
5. Peel off protective backing from electrode
6. Apply adhesive side of electrode to patient.
7. Apply limb leads as follows:
   • Right arm (negative)
   • Left arm
   • Right leg
   • Left leg (positive)
8. Turn selector switch to monitor.
9. Press the lead button to select Lead II.
10. Press the size button until the desired waveform (QRS) size is displayed.
11. Press the recorder button to print a copy of the waveform.
12. Print at least two 6 inch strips (one to give to hospital and one to attach to run report).
13. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

ELECTROCARDIOGRAM – 4 LEAD
Special Considerations:
• Lead II is the standard lead used to monitor the patient’s ECG
• Record and print any rhythm changes different from patient’s baseline ECG rhythm.

Revised 1/07
ENDOTRACHEAL MEDICATION ADMINISTRATION

**Indication:**
1. To deliver medication to the alveoli of the lung for rapid absorption by the capillaries.

**Guidelines:**
1. Critically ill patient who is intubated without IV access.
2. Delivers medications rapidly to the circulatory system for distribution throughout the body.
3. Verify placement of ETT by auscultation of bilateral breath sounds and with an ETCO2 device.
4. Medications administered via ETT must be 2-2 ½ times the normal dose.
5. Medications administered via ETT are limited to: Narcan, Atropine, Epinephrine, and Lidocaine, however, administration via ETT is no longer recommended by AHA.
6. CPR and ventilation must be stopped to administer medications.

**Complications:**
1. Potential damage to lung tissue by the medication.

**Equipment:**
1. PPE
2. Syringe – 10 cc
3. 0.9% Normal Saline
4. Medication as per suggested medical protocol.

**Procedure:**
1. Observe universal precautions.
2. Obtain past medical history for known allergies to medications.
3. Intubate patient.
4. Attach bag valve device and ventilate patient.
5. Confirm placement with ETCO2 device and auscultation with a stethoscope.
6. Confirm medication to be administered (right patient, right medication, right dose, right route, and right time).
7. Prepare medication for administration.
8. Stop ventilations and chest compressions if in progress.
9. Disconnect bag valve device.
10. Inject medication into ETT.
11. Administer 10 cc of **0.9% Normal Saline** flush after each medication given down ETT.

**ENDOTRACHEAL MEDICATION ADMINISTRATION**
12. Reconnect bag valve device and slowly compress bag valve device (over a 2 second period) 5 times, then continue to ventilate at age appropriate rate.
13. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Contraindications:**
1. Medications that are not approved for ETT administration.

Revised 1/07
EXTERNAL JUGULAR VEIN CANNULATION

**Purpose:**
1. Inability to secure an extremity peripheral IV.
2. To administer fluids or medications when an extremity IV site is not available.
3. External Jugular Vein Cannulation is only to be done under direct order by Medical control physician.

**Complications:**
1. Infiltration of fluid into the subcutaneous tissue.
2. Extravasations of some medications can cause tissue sloughing.
3. Introduction of bacteria during insertion can cause tissue infection.

**Equipment:**
1. PPE
2. IV administration set appropriate for the volume of fluid to be administered
3. IV extension set attached to IV administration set
4. IV catheter of an appropriate size and length for patient’s condition
5. IV start kit
6. 0.9% Normal Saline

**Procedure:**
1. Observe universal precautions.
2. **Contact medical control** to continue protocol.
3. Explain procedure to patient.
4. Assemble proper equipment using aseptic technique.
5. Position patient supine with head down slightly and turned to the side away from the vessel to be cannulated.
6. Cleanse entire area with alcohol.
7. Position yourself at the patient’s head, facing the patient’s feet.
8. Stabilize the vein by placing an index finger on it just above the clavicle and press down slightly until the vein is distended.
9. Align the IV catheter with the bevel side up in the direction of the blood flow with the tip pointing toward the torso. Point the catheter towards the shoulder in the direction of and parallel to the vein.
10. Make the venipuncture midway between the angle of the jaw and the mid-clavicular line while noting blood return when entry into the vein is achieved.
11. Advance catheter into vessel.
12. Firmly press finger below hub to prevent blood from leaking from catheter while attaching extension set.
13. Attach a prefilled extension set to catheter and secure with tape/tegaderm.
14. Attach administration set and 0.9% Normal Saline.
15. Check flow and adjust according to the ordered rate.
EXTERNAL JUGULAR VEIN CANNULATION

16. All infusions other than 0.9% Normal Saline must be maintained with an IV infusion pump.
17. Inspect neck for hematoma or infiltration.
19. Continue to monitor the flow rate and the site for signs of infiltration.
20. Dispose of contaminated needle in appropriate receptacle.
21. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Contraindications:
1. External jugular vein cannulation is contraindicated in the following
   • Obscured landmarks (trauma, subcutaneous emphysema, etc.)
   • Presence of a cervical collar
   • Infection in the area of insertion point
   • Known or suspected cervical spine injury

Revised 1/07
EXTUBATION

Purpose:
1. Patient with a gag reflex who is able to follow commands.
2. Improper placement.
3. Defective tube, cuff not inflating.

Complications:
1. Aspiration
2. Laryngospasm
3. Vomiting
4. Throat/oral trauma - bleeding

Equipment:
1. PPE
2. Oxygen
3. Oxygen source with connecting tubing
4. Pulse oximetry
5. BVM
6. Suction equipment
7. Intubation equipment
8. Syringe – 10 cc

Procedure:
1. Observe universal precautions.
2. **Contact medical control.**
3. Evaluate and document patient’s level of consciousness and ability to follow commands prior to extubation.
4. Explain procedure to patient.
5. Ventilate patient.
6. Suction out patient’s mouth.
7. Suction out patient’s ETT.
8. Instruct patient to take a deep breath.
9. Attach the syringe, deflate the cuff of the tube, and have the patient cough while the tube is removed from the airway.
10. Instruct patient to take deep breaths and cough.
11. Continue to suction patient’s mouth as needed.
12. Using a non-rebreather, oxygenate patient enroute to facility.
13. Continue to monitor patient’s pulse oximetry.
14. Monitor the patient carefully for respiratory distress, be prepared to reintubate patient.
15. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
FACILITY (SENDING) DISPENSED INTRAVENOUS MEDICATIONS

Indication:

1. To maintain therapeutic blood levels of a medication approved for administration by the Corporate Medical Director, but not carried by Paratech Ambulance Service, Inc. during transport.

Guidelines:

1. To maintain hemodynamic stability or comfort during transport.
2. To administer medications dispensed by the sending facility.
3. To properly account for the administration and waste of medications dispensed by the sending facility.
4. To maintain therapeutic blood levels of a medication during transport.
5. To deliver medications continuously to the circulatory system for distribution throughout the body.

Procedure:

1. Obtain a thorough verbal patient report to include a past medical history or known allergies to medications.
2. For a patient requiring a medication that has been approved for administration by the Corporate Medical Director, but not carried by Paratech Ambulance Service, Inc., collaborate with the sending physician and obtain a verbal order from him or her.
3. Document the verbal order on the ALS form to include physician’s name, entire verbal order, date, time and crewmember’s initials.
4. Obtain the ordered medication from staff at the sending facility and document it (drug, dose, and quantity) on the ALS form.
5. Confirm right patient, right medication, right dose, right route, and right time of medication being administration.
6. On the billing sheet document the medication (drug, dose, and quantity), sign to include date and time and have staff dispensing medication co-sign as well.
7. Infuse the medication as ordered by the physician or Mosby’s Drug Reference.
8. Reference Mosby’s Drug Reference or collaborate with the sending facility staff (i.e. RN or pharmacy) for compatibility questions regarding the medication if infusing with other medications.
9. If IV drip, label IV bag (name of medication, concentration/dose being administered, time of administration, date, initials of person who initiated the drip and document on ALS form.
10. If IV push, document name of medication, dose administered, time of administration, date and initials of person who administered the IV push on the ALS form.
FACILITY (SENDING) DISPENSED INTRAVENOUS MEDICATIONS - Continued

11. Document in the narrative, reason medication was necessary during transport.
12. Waste and dispose of all unused narcotics according to Paratech Ambulance Service, Inc. Policy and Procedure (Controlled Substance Accountability).
13. Following verbal patient report, have receiving RN co-sign narcotic waste if narcotic was dispensed from a sending facility.
14. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Special Notes:

1. Paratech Ambulance Service, Inc. carries Morphine 20 mg and Fentanyl 200 micrograms, therefore, unless the sending physician specifically requests a particular narcotic, crews should not accept them and administer them from a sending facility.
2. Crews can only accept medications for administration if pre-approved by the Medical Director.
FILTERED INTRAVENOUS MEDICATION ADMINISTRATION

Purpose:
1. To maintain therapeutic blood levels of a medication over a period of time.

Guidelines:
1. Patients with IV access who need to maintain therapeutic blood levels of a medication.
2. Delivers medications continuously to the circulatory system for distribution throughout the body.
3. Maintains a relatively constant blood level of medication.

Complications:
1. Vein irritation by medication injected.
2. Extravasation of medication if IV infiltrates.

Equipment:
1. PPE
2. IV tubing – drip appropriate
3. IVAC IV pump
4. Lever lock
5. Alcohol pad

Procedure:
1. Observe universal precautions.
2. Obtain past medical history of known allergies to medications.
3. Confirm right patient, right medication, right dose, right route, and right time of medication being administration.
4. Obtain IV access if not done already.
5. Prepare medication for administration.
6. Prime drip chamber and clear air from tubing to include filter with medication to be infused.
7. Close roller clamp and keep tip of IV tubing sterile until ready to connect to the IV catheter precleaned with an alcohol pad.
8. Place cartridge in IV Pump and infuse according to MD order.
9. Label IV bag (name of medication, concentration/dose being administered, time of administration, date, initials of person who initiated the drip.
10. Maintain careful observation of flow rate of medication line for signs of infiltration.

FILTERED INTRAVENOUS MEDICATION ADMINISTRATION
11. Dispose of contaminated material in appropriate receptacle.
12. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Contraindications:
1. Infiltrated IV line.
2. Injury to the venous system proximal to the injection site.

Special Considerations:
• Medications generally requiring filter tubing include: TPN, others.

Revised 1/07
INDWELLING/CONDOM CATHETER

**Purpose:**
1. Facilitates emptying of bladder.
2. Facilitates determining amount of residual urine in bladder.
3. Allows for continuous, accurate monitoring of urinary output.
4. Provides avenue for bladder irrigations.

**Complications:**
1. Breakage or leakage.
2. Right lower abdomen pain from bladed distention if tubing kinked.

**Equipment:**
1. PPE

**Procedure:**
1. Observe universal precautions.
2. Provide privacy during assessment.
3. Insure that the indwelling/condom catheter is secured properly to the patient.
4. Transfer patient to the cot with foley lower than peri area to prevent urine from traveling back into the patient.
5. Transport patient with emptied foley bag to prevent spillage of contents.
6. Document procedure and results, including any unusual circumstances and/opt difficulties encountered.

Revised 1/07
GLUCAGON ADMINISTRATION - PATIENT ASSIST

**Indication:**
1. To medically treat a hypoglycemic reaction when unable to obtain IV access.
2. A known diabetic who is unconscious, incoherent, combative, or unconscious for any reason and EMS personnel is unable to establish IV access.

**Complications:**
1. Infection at injection site.
2. Prolonged patient response to medication.

**Equipment:**
1. PPE
2. Glucometer
3. Lancet
4. Alcohol pad
5. Gauze 2x2
6. Band-Aid
7. Medication as per suggested medical protocol

**Procedure:**
1. Observe universal precautions.
2. Remove the flip off seal from the bottle of glucagon, wipe rubber stopper on bottle with alcohol prep.
3. Remove the needle protector from the syringe and inject the entire contents of the syringe into the bottle of glucagon. Do not remove the plastic clip from the syringe. Remove syringe from the bottle.
4. Swirl bottle gently until glucagon dissolves completely. Glucagon should not be used unless the solution is clear and of a water-like consistency.
5. Using the same syringe, hold bottle upside down and making sure the needle tip remains in solution, gently withdraw all of the solution from the bottle, 1mg (1 unit).
6. Cleanse injection site on buttock, arm, or thigh with alcohol prep.
7. Administer injection per IM administration procedural guidelines.
8. Recheck blood sugar.
9. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
HEAD IMMOBOLIZER

Purpose:
1. To provide rigid stabilization of the spinal column in a patient with a suspected or potential for spinal cord injury.
2. To decrease potential for further injury.

Guidelines:
1. Patients with a suspected or potential for spinal cord injury.

Complications:
1. Immobilizing a patient supine compromises a patient’s airway if he/she vomits.
2. Straps may restrict respiratory effort.

Equipment:
1. PPE
2. Head immobilizer
3. Long board
4. Long board straps

Procedure:
1. Place patient on long board, make sure to maintain c-spine stability.
2. Place the head immobilizer under the patient’s head with head between rolls.
3. Once head is in position, grasp rolls and roll snuggly against patient’s ears.
4. Pad as necessary behind neck to maintain neutral position (especially in children and patients with severe kyphosis).
5. Apply the head strap across the forehead just above the eyebrows and wrap the tails to secure strap underneath the long board.
6. Apply the chin strap across the chin and wrap tails to secure strap underneath the long board.
7. Continue to reassess patient status.
8. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
HEMMORRHAGE CONTROL/BANDAGING

**Purpose:**
1. To control bleeding from an open wound.
2. To prevent further contamination of an open wound.

**Guidelines:**
1. Patients who present with bleeding or open wounds.
2. To prevent further blood loss.

**Complications:**
1. Injury to surrounding soft tissue.
2. Circumferential bandage may act as a constricting band if soft tissue swelling occurs.
3. Obscures view of wound.
4. Continued hemorrhage into a bulky dressing may go unrecognized.

**Equipment:**
1. PPE
2. Dressing – variety sizes
3. Tape
4. Ice pack
5. Splint – size appropriate
6. Cravats

**Procedure:**
1. Observe universal precautions.
2. Expose wound and assess potential damage.
3. Control hemorrhage with direct pressure and elevate any affected extremity if necessary.
4. Assess distal circulation, sensation and movement if wound is on the extremity or potentially involves the spinal cord.
5. Maintain aseptic technique and apply gauze pad/dressing covering entire wound.
6. Secure the dressing pad with tape or cling bandage while applying gentle pressure to the site.
7. Monitor distal circulation, sensation and movement before and after bandaging wounds on any extremity.
8. Splint area as necessary to prevent movement and aggravation of injury.
9. Continue to reassess patient status.
10. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
HOSPICE TRANSPORT

Purpose:

1. To provide compassionate, palliative care to the terminally ill patient, with great emphasis on caring rather than curing.

Guidelines:

1. Confirm validity and obtain written DNR/Advanced Directive Order.
2. Obtain written order to discontinue any IV drips upon destination.
3. Provide palliative care during transport as needed (i.e. oxygen, pain management).

Complications:

1. None.

Equipment:

1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. IV pump
5. IV tubing
6. Syringe – 3-5 cc
7. 0.9% Normal Saline 10 cc flush
8. Sharps container

Procedure:

1. Observe universal precautions.
2. Upon arrival to patient’s home or desired destination, settle the patient.
3. If a hospice nurse is available, introduce yourself and give a brief report to facilitate continuity of care.
4. Allow all persons who are close to the patient as well as blood relatives to surround the patient.
5. Communicate your intentions of stopping all medications as ordered with the patient.
6. Discontinue the infusion of medication that is infusing via Paratech IV pump/tubing and clamp the line.
7. Allow the hospice nurse to continue cares.
8. If a hospice nurse is not available, discontinue the infusion of medication that is managing the patient’s blood pressure and or pain medication infusing via Paratech IV pump/tubing.
9. Take a 3-5 cc syringe and draw back 3 cc of blood. Flush line with 0.9% Normal Saline with 10 cc.
10. Clamp or capped the line. Do not remove any central lines.
11. Compassionately reassure and or reposition the patient.
12. Quickly remove all medications, IV tubing, supplies and trash from the patient’s home.
13. Dispose of all of the above items appropriately.
14. Document procedure and results, including any unusual circumstances and/or difficulties encountered.
15. Refer to or follow DNR protocol.
HOSPICE TRANSPORT

12 LEAD TRANSMISSION FOR ALS ZOLL CARDIAC MONITOR

Step 1: Properly attach the electrodes to the patient and hook up the 12 Lead cable. Then Hook Up the Modem Cable to the Monitor. On the Telular Device Select A/C Power or Battery Power To Turn On. Make sure the modem is on and one, some or all the green lights are displaying. A first, single red bar light indicates NO service. (Please note some ambulance inverters may cause artifact with telular device, therefore, reposition the modem or make sure the inverter is off prior to obtaining a 12 lead.)

Step 2: Press 12 Lead soft key and press Pt. Info. button
Input patient’s correct Age and Gender

Step 3: Press ID # and input Patient’s First Initial and Last Name
Example: (M. Smith) press Enter, NO ID # required, press Enter again, then press the Return button

Step 4: Press Settings button
Step 5: Scroll down till Dial Type is highlighted, then press Enter
Step 6: Highlight Tone as your dial choice and then press Enter
Step 7: Press Acquire button to obtain hard copy of 12 lead. This must also be done first to store the 12 lead data into the Zoll to be transmitted

Step 8: Press Pt. Info. button
Step 9: Then press Pt. Records
Step 10: Highlight 12 Lead Data (Displays Date and Time of Pt. Record)
Step 11: Press Transmit button
Step 12: Highlight choice of Hospital that will be receiving fax
Step 13: Then press the Dial Phone button

*****Note: If the hospital fax number has yet not been programmed into your Zoll, then you may need to manually input the hospital fax number.

Manual Dial:

Step 1: Complete steps 1 – 12
Step 2: Press Manual Dial button
Step 3: Highlight Fax and then press Enter
Step 4: Enter Phone Number using area code (to move from left to right, press next digit key)
Step 5: Press Dial #
INTRAMUSCULAR MEDICATION ADMINISTRATION

Indications:

1. To deliver medication to the muscle tissue for absorption by blood vessels.
2. For a patient who needs medication that may be administered via intramuscular route.
3. Delivers medication to the circulatory system for distribution throughout the body.
4. Does not require IV access.

Complications:

1. Infection.
2. Accidental injection into a vein.
3. Pain at injection site.
4. Only small volumes can be given (2-5 cc) IM.
5. Can not give tissue irritating medication IM.

Equipment:

1. PPE
2. Syringe
3. Hypodermic needle (21G-23G - 1” to 2”)
4. Alcohol pads
5. Band-Aids
6. Medication per suggested medical guideline
7. Sharps container

Procedure:

1. Obtain past medical history of any known allergies to medications.
2. Confirm right patient, right medication, right dose, right route, right time of medication being administered.

Standard IM Injection:

1. Select appropriate injection site.
2. Anterior lateral area of thigh between the hip and knee.
3. Deltoid muscle if less than 2 cc.
4. Upper outer quadrant of buttock.
5. Cleanse injection site with alcohol.
6. Press muscle between thumb and index finger.
7. Insert needle at 90 degree angle into muscle.
INTRAMUSCULAR MEDICATION ADMINISTRATION

8. Stabilizing the needle and syringe with one hand pull back on plunger to be sure tip of needle is not in blood vessel.
9. If blood appears in syringe, withdraw and discard syringe and needle (repeat above steps).
10. Inject medication slowly.
11. Withdraw needle at same angle it was inserted.
12. Massage injection site.
13. Dispose of contaminated materials in appropriate receptacles.
14. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Contraindications:

1. Infection in area of injection.
INTRANASAL MEDICATION ADMINISTRATION

Indication:

1. For absorption via the rich vascular plexus of the nose directly into circulation.
2. For absorption directly through the olfactory mucosa into the cerebral spinal fluid.
3. For medication administration to patients without IV access.
4. For medication administration to high-risk patients (i.e. HIV, Hepatitis B, C).
5. For medication administration to patients in high-risk environments (i.e. altered patient, combative, scene control issue, and moving ambulance).

Complications:

1. Too large a volume or too weak a concentration may lead to failure because the drug cannot be absorbed in high enough quantity to be effective.
2. Volumes over one ml per nostril are likely too dilute and may result in runoff out of the nostril.
3. Medication may not absorb effectively, secondary to the following: vasoconstriction, cocaine use, bloody nose, nasal congestion, mucous discharge, destruction of nasal mucosa.

Equipment:

1. PPE
2. Syringe – 3 cc
3. Hypodermic needle and/or blunt plastic cannula
4. Alcohol pad
5. Sharps container
6. Mucosa Atomization Device (MAD)
7. Medication as per suggested medical protocol.

Procedure:

1. Observe universal precautions.
2. Obtain past medical history of known allergies to medications.
3. Explain procedure to patient.
4. Obtain verbal consent from the patient.
5. **Contact medical control** per suggested medical guidelines.
6. Confirm right patient, right medication, right dose, right route, right time of medication being administered.
7. Prepare medication for administration.
8. Cleanse top of medication vial with alcohol prep.
INTRANASAL MEDICATION ADMINISTRATION

9. Insert hypodermic needle and/or blunt plastic cannula into vial to withdraw medication.
10. Discard hypodermic needle and/or blunt plastic cannula in sharps container.
11. Expel air from syringe.
12. Attach disposable single use mucosa atomizer device to syringe via luer lock.
13. Ensure patient is in an upright position, place the tip of the atomizer just inside the nostril to ensure mist is delivered into the nostril.
14. Briskly compress the syringe plunger (maximum of one ml per nostril). Note: Brisk brief compression results in controlled atomization. Gently pushing the plunger will not result in atomization.
15. Deliver up to one ml per nostril.
16. Dispose of contaminated supplies in appropriate receptacle.
17. Restock supplies/medications as needed.
18. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Special Considerations:

1. Device is designed to allow emergency personnel to deliver nasal medications as an atomized spray.
2. Broad 30-micron spray ensures excellent mucosal coverage.
3. Nasal drug delivery is convenient and easy, but may not always be effective.
4. Nasal drug delivery cannot completely replace the need for injections.
5. Drugs that can be delivered intranasally include the following: Narcan, Versed, and Glucagon just to mention a few.
6. IN is a true “needleless” system – reducing bloodborne exposures to HIV and Hepatitis B and C.
INTRAOSSEOUS INSERTION – EZIO

Indications:

1. To establish access to the bone marrow canal as an alternative to an intravenous line for administration of fluids and medications.
2. For other medical or traumatic injuries when immediate vascular access is required and standard IV access is unobtainable.
3. Contact Medical Control before initiating an IO on a conscious patient.

Contraindications:

1. Fractures (fluids may extravasate into subcutaneous tissue).
2. Previous orthopedic procedures near insertion site.
3. Infection at the insertion site.
4. Inability to locate landmarks or excessive tissue.

Complications:

1. Infiltration of fluid into the subcutaneous tissue.
2. Extravasation of some medications can cause tissue sloughing.
3. Introduction of bacteria during insertion can cause infection.
4. Fracture of the tibia.

Equipment:

1. (2) 10 ml syringes with appropriate volume of normal saline flush.
2. Appropriate size intraosseous needle set based on patients weight
   - Pediatric needle set for 3-39 kg
   - Adult needle set for all patients > 39 kg
3. Gloves
4. (1) Low profile EZ connect
5. Antiseptic agent
6. Sterile gauze
7. Tape
8. Appropriate IV tubing
9. Appropriate IV solution
10. Pressure infusion bag
11. EZIO Driver
Procedure:

1. Explain procedure to patient/family.
2. Observe universal precautions.
3. Choose appropriate intraosseous needle and assemble equipment.
4. Obtain assistance as needed.
5. Draw up 2 syringes with normal saline flush (10 ml).
6. Inspect needle package to ensure sterility.
7. Connect 10 cc syringe to EZ connect, prime with normal saline.
8. Leave 10 ml syringe attached.
9. Position patient (supine) and palpate site to locate appropriate anatomical landmarks for needle placement.

EZIO – Adult: (40 kg and over)

- **Proximal Tibia** – The insertion point is 2 fingerbreadths below the patella, 1-2 cm medial of the tibial tuberosity.
- **Distal Tibia** – Identify the major structures of the lower leg, the distal tibia (anterior or most forward lower leg bone) and the medial malleolus (medial ankle bone or protrusion). The insertion point is two finger widths proximal to the medial malleolus and midline on the tibia.
- **Proximal Humerus** – The insertion point is most prominent aspect of the greater tubercles outer margins. (Ensure that the insertion site has been identified and that the patient’s forearm, more specifically the hand is on the patient’s abdomen – at or near the umbilicus and the elbow is positioned posteriorly. Only this orientation will provide the safest most prominent insertion site. Failure to properly orient the patient’s arm may lead to serious injury). Deeply palpate the humeral head, two fingerbreadths from the superior portion is the greater tubercle.

EZIO – Pediatric (3-39 kg)

- **Proximal Tibia** – 1 cm distal to tibial tuberosity and then medial along the flat aspect. Gently guide the driver, do not push. Carefully feel for the “give” indicating penetration into the medullary space.
- **Distal Tibia** – identify the major structures of the lower leg, the distal tibia (anterior or most forward lower leg bone) and the medial malleolus (medial ankle bone or protrusion). The insertion point is one finger width proximal to the medial malleolus for patients less than 12 kg. As the patient reaches the 39 kg mark, the insertions point is two finger widths from the medial malleolus.
- **Proximal Humerus** – The insertion point is most prominent aspect of the greater tubercles outer margins. (Ensure that the insertion site has been identified and that the patients forearm, more specifically the hand is on the greater tubercles outer margins. (Ensure that the insertion site has been identified and that the patients forearm, more specifically the hand is on the patient’s abdomen – at or near the umbilicus. Only this orientation will provide the safest most prominent insertion site. Failure to properly orient the patient’s arm may lead to
serious injury). Deeply palpate the humeral head, two fingerbreadths from the superior portion is the greater tubercle.

10. Prep insertion site.
11. Stabilize site by holding joint proximal to the insertion site.
12. Connect weight based needle set to driver
13. Remove needle cap.
14. Insert EZIO needle into the selected site. **DO NOT** touch the needle set with your fingers.
15. Position the driver at the insertion site with the needle set at a 90-degree angle to the bone surface. Gently pierce the skin with the needle set until the needle set tip touches the bone.
16. Check to ensure that at least 5 mm of the catheter is visible as indicated by the proximal depth indicator. If less than 5 mm of the catheter is showing, the patient may have excessive soft tissue over the tibia site and needle set may not reach the medullary space. The site you have selected may not appropriate for the EZIO – consider an alternate location for insertion.
17. Penetrate the bone cortex by squeezing the drivers trigger and applying gentle, steady downward pressure.
18. Release the drivers trigger and stop the insertion process when:

- A sudden “give” or “pop” is felt upon entry into the medullary space
- When desired depth is obtained
- During intraosseous catheter insertion use gentle-steady pressure. **DO NOT** use excessive force on the needle set. Allow the catheter tip rotation and gentle downward pressure to provide the penetrating action. **STOP WHEN YOU FEEL THE “POP”**.
- **Note:** If the driver stalls and will not penetrate the bone you may be applying too much downward pressure.
- **Caution:** If catheter insertion into the site cannot be properly completed, remove and dispose of the needle set in appropriate sharps container. Repeat the procedure in the patient’s opposite extremity or appropriate site with a new needle set.
19. Remove EZIO driver from needle set while stabilizing catheter hub.
20. Remove stylet from needle set, place stylet in temporary shuttle provided and then dispose of into sharps container.
21. Connect EZ Connect or standard IV tubing to Luer-lock hub.
22. **DO NOT** attach a syringe directly to the EZIO adult catheter hub – doing so may cause enlargement of the hole at the insertion site and possible extravasation (exception when initially drawing a blood sample).
23. Syringe bolus flush the EZIO pediatric catheter with 5 ml of normal saline. Flush the EZIO adult with 10 ml of normal saline.
24. Prior to flush aspirate a small amount of blood to confirm placement.
25. Confirm placement.
27. Disconnect 10 cc syringe from EZ Connect extension set.
28. Connect EZ Connect extension set to primed IV tubing.
29. Begin infusion utilizing pressure delivery system. Inflate pressure bag to approximately 300 mmHg of pressure.
30. Secure tubing and catheter.
31. Monitor EZIO site for complications.
32. Place EZIO identification band on patient. Document time, date and person starting infusion.

**Catheter Removal:**

1. Remove the extension set from the needle hub.
2. Attach a 5-10 cc sterile syringe to act as a handle and to cap the open IO port.
3. Grasp catheter at hub and rotate catheter and syringe clockwise a few turns to loosen catheter and then begin to gently pull upwards to a 90-degree angle from the insertion site.
4. Continue rotating clockwise and pull gently outwards at a 90-degree angle until catheter is removed. **DO NOT ROCK OR BEND DURING THIS PORTION OF THE PROCEDURE.**
5. Dispose of catheter into sharps container.
6. Wipe site, apply pressure to site if bleeding, and then cover with adhesive dressing.

**Complications with removal:**

1. Catheter separation from plastic hub
   a. If this occurs, grasp exposed area of catheter with a hemostat or forceps to maintain 90-degree position.
   b. Turn clockwise and counterclockwise while gently pulling upwards to remove catheter.
   c. Place catheter into sharps container.
   d. Wipe site, apply pressure to site if bleeding, and then cover with adhesive dressing.

**Special Considerations:**

- **Flow rate:** To ensure and improve continuous infusion flow rates always use a syringe, pressure bag or infusion pump.
- Inflate pressure bag to 300 mmHg of pressure.
- Ensure the administration of an appropriate rapid syringe bolus (flush) prior to infusion **NO FLUSH = NO FLOW**
- For adults flush with 10 ml of normal saline.
- For pediatrics flush with 5 ml of normal saline.
- Repeat saline flush as needed.
- **Pain:** Insertion of the EZIO in conscious patients may cause mild to moderate to severe discomfort.
- **Prior to IO syringe bolus or continuous infusion in alert patients,** SLOWLY administer Lidocaine 2% through the EZIO catheter into the medullary space. Ensure that the patient has no allergies or sensitivity to Lidocaine. Contact Medical Control for orders to administer 2% Lidocaine.
- Initial push after catheter placement of 20 – 40 mg of 2% Lidocaine in adults effectively blocks the pressure sensors in the intraosseous space.
- Lidocaine dosage for alert pediatric patients is 0.5 mg/kg as a slow initial push.
- Follow Lidocaine flush with a 10 ml saline flush to ensure good flow.

Added 11/08

Approved:
Gregory Richburg, M.D., F.A.C.E.P
Medical Director
Purpose:
1. To confirm that an endotracheal tube has been correctly placed in the patient’s trachea.
2. To confirm that a patient is being ventilated through the correct port of the Combitube.

Guidelines:
1. Critically ill patient who is intubated with an endotracheal tube or Combitube.
2. Confirms that supplemental oxygen is being delivered to the patient’s lungs.

Complications:
1. Inaccurate reading due to misplacement of ETT or ventilation through wrong port of Combitube.

Equipment:
1. PPE
2. Oxygen
3. Pulse oximetry
4. Cardiac monitor
5. BVM
6. Suction equipment
7. Intubation equipment
8. Stethoscope
9. ETCO2 device
10. Medication as per suggested medical protocol.

Procedure:
1. Observe universal precautions.
2. Intubate patient.
3. Attach Easy Cap II CO2 device between ETT and BVM and watch for color change while ventilating patient.
4. Connect Zoll ETCO2 device to patient’s ETT.
5. Check ETCO2 after 2-5 breaths with BVM.
6. If ETCO2 reading within normal range (35-45 mmHg) continue ventilations.
7. If patient is in cardiac arrest and ETCO2 is low or not detected, reconfirm placement by direct visualization of vocal cords and reassess breath sounds.

INTUBATION – CONFIRMATION OF PLACEMENT
8. If patient is not in cardiac arrest and ETCO2 is low, recheck connections, placement of tube and reassess breath sounds.
9. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
INTRAVENTOUS DRIP ADMINISTRATION

Indication:
1. To maintain therapeutic blood levels of a medication over a period of time.

Guidelines:
1. Patients with IV access who need to maintain therapeutic blood levels of a medication.
2. Delivers medications continuously to the circulatory system for distribution throughout the body.
3. Maintains a relatively constant blood level of medication.

Complications:
1. Vein irritation by medication injected.
2. Extravasation of medication if IV infiltrates.

Equipment:
1. PPE
2. IV tubing – drip appropriate
3. IVAC IV pump
4. Alcohol pad
5. Lever lock
6. 0.9% Normal Saline
7. Medication as per suggested medical protocol/MD ordered.

Procedure:
1. Observe universal precautions.
2. Obtain past medical history of known allergies to medications.
3. Confirm right patient, right medication, right dose, right route, and right time of medication being administration.
4. Obtain IV access if not done already.
5. Prepare medication for administration.
6. Cleanse medication port (end of original IV line) with alcohol prep.
7. Turn off IV line, open flow regulator on administration line containing medication, and adjust to appropriate flow rate.
8. Label IV bag (name of medication, concentration/dose being administered, time of administration, date, initials of person who initiated the drip.
9. Maintain careful observation of flow rate of medication line for signs of infiltration.
10. Dispose of contaminated material in appropriate receptacle.

INTRAVENTOUS DRIP ADMINISTRATION
11. Document procedure and results, including any unusual circumstances and/or difficulties Encountered.

Contraindications:
1. Infiltrated IV line.
2. Injury to the venous system proximal to the injection site.

Revised 1/07
INTRAVENTOUS MEDICATION ADMINISTRATION

Indication:
1. To deliver medication directly into the blood stream for rapid distribution to the rest of the body.
2. Patients with IV access who need medication administration.

Complications:
1. Irritation to the vein by medication injected.
2. Extravasation of medication into subcutaneous tissue if IV infiltrates.

Equipment:
1. PPE
2. Syringe – appropriate size
3. Hypodermic needle
4. Alcohol pad
5. Sharps container
6. Medication as per suggested medical protocol.

Procedure:
1. Observe universal precautions.
2. Obtain past medical history of known allergies to medications.
3. Explain procedure to patient.
4. Obtain verbal consent from the patient.
5. **Contact medical control per suggested medical guidelines.**
6. Confirm right patient, right medication, right dose, right route, right time of medication being administered.
7. Prepare medication for administration.
8. Obtain IV access if not done already.
9. Wipe medication administration port off with alcohol prep.
10. Insert needle/or screw on needless syringe containing medication through administration port.
11. Pinch off IV tubing proximal to medication between medication port and IV bag.
12. Inject medication into IV tubing at a rate appropriate for that medication.
13. Open IV tubing and give 10-20 cc of IV fluid, elevating extremity if possible.
14. Dispose of contaminated material in appropriate receptacle.
15. Restock supplies/medications.
16. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

INTRAVENTOUS MEDICATION ADMINISTRATION

Contraindications:
1. Infiltration of IV line that has caused injury to the venous system proximal to the injection site.

Revised 1/07
INTRAVENTOUS MEDICATION PREPARATION

Indication:
1. To prepare medication contained in a unit dose syringe, glass vial, or multi-dose vial for administration.

Guidelines:
1. Any patient who needs medication administered.
2. Medication can assist in pre-hospital treatment and stabilization of life-threatening conditions.

Complications:
1. If administered incorrectly.
2. When given incorrectly or in the wrong dose, patient may be harmed or become hemodynamically unstable.

Equipment:
1. PPE
2. Syringe
3. Filter Needle
4. Hypodermic needle
5. Gauze 2X2
6. Alcohol Pads
7. Medication per suggested medical protocol
8. Sharps container

Procedure:
Ampule:
1. Observe universal precautions.
2. Tap on neck of vial to force all liquid into glass ampule base.
3. Wrap gauze pad around neck of ampule to snap off top.
4. Assemble filter needle and syringe using sterile technique.
5. Remove needle cap, maintaining sterility of needle, insert filter needle into ampule.
6. Withdraw solution from ampule into syringe.
7. Remove needle from vial.
8. Remove filter needle and discard in sharps container.
9. Apply appropriate sized needle to syringe containing medication.

INTRAVENTOUS MEDICATION PREPARATION
10. Point needle upward, expel air and excess medication from syringe, taking care not to splash medication.
11. Use alcohol wipe to clean patient access port/site.
12. Administer medication per appropriate suggested medical guideline.
13. Dispose of contaminated material in appropriate receptacle.

Multi-dose vial:
1. Observe universal precautions.
2. Wipe off top of vial with an alcohol prep.
3. Assemble needle and syringe using aseptic technique.
4. Pull plunger on syringe back to approximate volume of medication to be withdrawn, taking care not to contaminate area of plunger that will go back into barrel of syringe.
5. Insert needle through top of vial and inject air from syringe into vial.
6. Invert vial, keeping needle under fluid level.
7. Withdraw slightly more than desired amount of medication.
8. Remove needle from vial.
9. Point needle upward, expel air and excess medication from syringe, taking care not to splash medication.
10. Use alcohol wipe to clean patient access port/site.
11. Administer medication per appropriate suggested medical guidelines.
12. Dispose of contaminated material in appropriate receptacle.

Pre-loaded syringe (barrel & plunger):
1. Observe universal precautions.
2. Assemble barrel and plunger by twisting plunger into threaded stopper of barrel.
3. Remove cap from needle.
4. Point needle upward, expel air and excess medication from syringe, taking care not to splash medication.
5. Use alcohol wipe to clean patient access port/site.
6. Administer medication per appropriate suggested medical guidelines.
7. Dispose of contaminated material in appropriate receptacle.

Tubex/capujet:
1. Observe universal precautions.
2. Insert tubex/capujet containing medication into tubex/capujet holder.
3. Rotate tubex/capujet clockwise to screw top of barrel into holder.
4. Swing plunger into position and turn plunger clockwise to lock into position.
5. Remove cap from needle.
6. Point needle upward, expel excess air.
7. Use alcohol wipe to clean patient access port/site.
8. Administer medication per appropriate suggested medical guidelines.
9. Dispose of contaminated material in appropriate receptacle.

INTRAVENOUS MEDICATION PREPARATION
Premixed IV drip:
1. Observe universal precautions.
2. Using sterile technique attach appropriate sized IV administration set.
3. Fill drip chamber and IV line.
4. Label IV bag (time drip was initiated, date, initials).
5. Use alcohol wipe to clean patient access port.
6. Attach IV tubing to IV administration port at patient site.
7. Administer medication per appropriate suggested medical guidelines and continue to assess patient condition and IV site.

**Mixing IV drip:**
1. Observe universal precautions.
2. Wipe medication port at bottom of 100 cc bag of D5W with alcohol prep.
3. Using sterile technique, inject medication as ordered by **medical control** into bag of D5W.
4. Withdraw syringe and rotate bag gently to evenly distribute medication.
5. Maintaining sterile technique, attach appropriate IV administration set.
6. Fill drip chamber and IV line.
7. Label IV bag (medication, time drip was initiated, date, initials).
8. Use alcohol wipe to clean patient access port.
9. Administer medication per appropriate suggested medical guidelines and continue to assess patient condition and IV site.

Revised 1/07
IVAC IV PUMP

Purpose:
1. Ensure delivery of correct amount of IV fluids.

Guidelines:
1. Check patient orders for type and rate of fluid.
2. Check viscosity of ordered fluids. Viscous solutions may require rate adjustments throughout infusion process based on actual flow due to accumulation in filter or sides of tubing.
3. Infusions must be regulated and checked frequently to prevent fluid overload and/or reactions to the medication.

Equipment:
1. PPE
2. IVAC IV pump
3. IV tubing – drip appropriate
4. Alcohol pad
5. Lever lock
6. Saline lock

Procedure:
1. Observe universal precautions.
2. Turn on IVAC IV pump.
3. Insert tubing into infusion pump according to pump manual.
4. Open all tubing clamps.
5. Attach tubing to patients IV catheter.
6. Set rate per MD order.
7. Push start.
8. Monitor frequently to insure that medication is not infiltrating.
9. Document procedure and results, including any unusual circumstances and/or difficulties encountered.
KENDRICK EXTRICATION DEVICE

**Purpose:**
1. To provide rigid stabilization of the cervical and thoracic spine during movement of a patient with a suspected spinal injury from a sitting to supine position.

**Complications:**
1. Use of the chin strap prevents patient from opening mouth if vomiting occurs.
2. Obscures visualization of back and sides.
3. Chest and abdominal straps may restrict respirations.

**Equipment:**
1. PPE
2. Cervical collar – size appropriate
3. KED
4. Long board
5. Long board straps

**Procedure:**
1. Observe universal precautions.
2. Maintain stabilization of head, supporting in a neutral position until head is secured in KED (or in position found if resistance is encountered when attempting to return head to neutral position).
3. Assess neurological status with particular emphasis on peripheral sensation and movement.
4. Apply rigid cervical collar of appropriate size.
5. Slide KED behind patient without disturbing patient’s position.
6. Wrap side panels of KED around torso and slide KED up until tops of side panels are firmly engaged in patient’s axillae.
7. Consider using proper order of fastening KED straps for each patient (middle, bottom, head, groin, top).
8. Fasten middle and bottom torso straps just tight enough to hold device in place.
9. Wrap head portion of KED around patient’s head, place padding behind neck as needed to maintain neutral position.
10. Secure head section with straps and then apply chin strap.
11. Slide pelvic straps under the patient’s thighs (right strap under then over right thigh-insert into right side buckle, left strap under then over left thigh-insert into left side buckle).
12. Tighten top straps.

**KENDRICK EXTRICATION DEVICE**
13. Use support loops on KED to lift patient and slide onto a long board.
14. Loosen pelvic straps when patient is supine.
15. Secure patient to long board with straps.
16. Loosen chest strap to make chest movement during respiration easier.
17. Continue to reassess patient’s status.
18. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
KENDRICK TRACTION DEVICE

Purpose:
1. To provide stabilization and correct anatomical position of a femur fracture

Guidelines:
1. Femur fraction.
2. Stabilizes injury to prevent further damage or loss of CMS.
3. Requires two EMTs to apply.

Complications:
1. Straps holding the splint in place may restrict peripheral circulation if soft tissue swelling may occur.

Equipment:
1. PPE
2. Kendrick

Procedure:
1. Observe universal precautions.
2. (EMT #1) takes position at site of injured extremity, out of the way of EMT #2 who will be applying the traction device.
3. EMT #2 assesses circulation distal to the fracture.
4. (EMT #1) grasps and supports the calf distal to the knee with one hand and to the leg just proximal to ankle with other hand to allow for sufficient space for application of the ankle hitch.
5. (EMT #1) maintains manual traction until traction is assumed by traction device.
6. (EMT #2) applies the ankle hitch tightly around the leg and slightly above the ankle bone. (EMT #2) then tightens the stirrup by pulling the green tabbed strap until it is snug under the heel.
7. (EMT #2) applies the upper thigh system by sliding the male buckle under the leg, at the knee, and see-saws it upward until it is positioned in groin area. (EMT #2) attaches the buckles.
8. Position strap until traction pole receptacle is positioned at the belt line or pelvic crest.
9. Snap out traction pole (making sure that each joint of the pole is securely seated in one another).
10. (EMT #2) adjusts the length of the splint to the patient, measuring against the patient’s uninjured leg.

KENDRICK TRACTION DEVICE
11. (EMT #2) places the traction pole alongside the leg so that one section of tubing extends beyond the bottom of the foot.
12. Insert pole end or ends into traction pole receptacle.
14. Apply traction by pulling red tab (approximately 10% of body weight to a maximum of 15 pounds tension) once device has assumed traction, (EMT #1) may then relieve manual traction.
15. Traction may be applied smoothly by grasping straps on each side of buckle and simultaneously feeding and pulling with equal pressure.
16. Secure remaining elastic straps by applying upper (red) and then lower ankle straps (green).
17. Splint as required (long board, securing legs together).
18. Reassess circulation, sensation and movement before and after splinting.
19. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Contraindications:**

1. Ankle, knee, and hip dislocation/fracture.

Revised 1/07
LONG BOARD – SUPINE PATIENT

Purpose:
1. To provide stabilization of the spinal column in a patient with a suspected or potential for spinal cord injury.

Guidelines:
1. Patients with a suspected or potential for spinal cord injury.
2. To prevent further injury.

Complications:
1. Requires three knowledgeable rescuers.
2. Immobilizing patients supine compromises airway if he/she vomits.
3. Straps may restrict respiratory effort.

Equipment:
1. PPE
2. Cervical collar – size appropriate
3. Long board
4. Long board straps

Procedure:
1. Observe universal precautions.
2. Maintain C-spine stabilization.
3. (EMT #1) maintains cervical stabilization and directs the team in patient movement.
4. Position long board along one side of patient, preferably near an affected/injured extremity so as to not log roll patient onto the affected/injured extremity.
5. (EMT #2 and #3 or qualified hospital/nursing home staff) kneel in straight line along patient’s side.
6. (EMT #2) will raise the patient’s arm (nearest to EMT #2) over the patient’s head to prevent arm from obstructing roll (or place arm at patient’s side with hand against thigh).
7. (EMT #2) place one hand on patient’s farthest shoulder, other hand on small of back.
8. (EMT #3 or qualified hospital/nursing home staff) place top hand around patient’s hip, bottom hand at thigh region.
9. On signal from (EMT #1) roll patient back onto long board and lower patient’s arm to side.
10. If centering is necessary, on signal from (EMT #1) slide patient with gentle, even motion while maintaining c-spine precaution.

LONG BOARD – SUPINE PATIENT

11. (EMT #3 or qualified hospital/nursing home staff) will secure patient to long board.
12. (EMT #2) will secure patient’s head to long board.
13. (EMT #1) will then release manual stabilization.
15. Continue to monitor the patient’s airway.
16. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
USE OF MARK I AUTO INJECTOR

PROVIDER NAME: Paratech Ambulance Service

This protocol may be used by properly trained and licensed EMTs exposed to nerve gas (Sarin, Sman, Tabun, Vx) or organophosphates (insecticides). Mark I use is strictly intended for personal protection.

THIS PROTOCOL IS INTENDED FOR SHORT TERM SURVIVAL ONLY!

I. Equipment:
   A. Mark I auto-injector antidote kit containing
      1. 1 - Atropine auto-injector (2 mg in 0.7 ml)
      2. 1 - Pralidoxime chloride auto-injector – 2-PAM CL (600 mg in 2 ml)

II. Criteria For Use:
   A. Mark I auto-injectors may be used:
      1. If signs and/or symptoms* of nerve gas or organophosphate poisoning are present; or
      3. If known exposure to nerve gas or organophosphates has occurred prior to signs or symptoms.

III. In the event that EMS personnel are exposed to nerve gas or organophosphates and they meet the above criteria:
   A. Mark I kits may either be self-administered or administered by another EMT.
   B. The Mark I kit (one Atropine auto-injector and one 2-PAM CL auto-injector) should be rapidly administered.
   C. Immediately evacuate the contaminated area.
   D. If dermal exposure has occurred, decontamination is critical and should be done with standard decontamination procedures.
   E. Request ALS transport or intercept. Intermediate (99) and Paramedic level providers carry Atropine as one of their standard medications. Continued pre-hospital treatment with Atropine is essential to survival.

IV. Signs and Symptoms:
   A. SLUDGEM + RESPIRATION + AGITATION
      S - salivation (excessive drooling)
      L – lacrimation (tearing)
      U – urination
      D – defecation
      G – GI upset (cramps)
      E – emesis (vomiting)
      M – muscle (twitching, spasm, “bag of worms”)
   RESPIRATION – difficulty breathing/distress (SOB, wheezing)
   AGITATION + CNS SIGNS – confusion, agitation, seizures, coma

MARK 1 AUTO INJECTOR

V. Procedure:
   A. Remove Mark I kit from package.
B. Normal injection site is outer thigh muscle. It is important that the injection site is into a large muscle. Injection may go through clothing.
C. With your non-dominant hand, hold the auto-injector by the plastic clip so that the larger auto-injector is on top and both are positioned in front of you at eye level.
D. With your dominant hand grasp the Atropine auto-injector (the smaller of the two) with the thumb and first two fingers. DO NOT cover or hold the needle end with your thumb, hand or fingers – you might accidentally inject yourself. An accidental injection into the thumb, hand or fingers WILL NOT deliver an effective dose of the antidote, especially if the needle passes entirely through the thumb, hand or fingers.
E. Pull the auto-injector out of the clip with a smooth motion. **The auto-injector is now armed.**
F. Hold the auto-injector with your thumb and two fingers (pencil writing position). Be careful not to inject yourself in the thumb, hand or fingers.
G. Position the green (needle) end of the auto-injector against the injection site. DO NOT inject into areas close to the hip or knee.
H. Apply firm pressure (not a jabbing motion) to the auto-injector until it pushes the needle into the thigh. Using a jabbing motion may result in an improper injection or injury.
I. Hold the auto-injector firmly in place for at least 10 seconds. Firm pressure automatically triggers the oiled mechanism. This plunges the needle through the clothing into the muscle and at the same time injects the antidote into the muscle.
J. Carefully remove the auto-injector from the injection site and place into a sharps container.
K. Pull the 2-PAM CL auto-injector (the larger of the two) out of the clip.
L. Inject the thigh in the same manner as in steps D. through J., holding the black (needle) end against the injection site.
M. Massage the injection site if time permits.
N. After administering the antidote:
O. Transport (ALS provider) to the appropriate hospital for further evaluation and treatment.

**MARK I KITS ARE NOT INTENDED FOR TREATMENT OF PATIENTS!**
**MARK I KITS ARE FOR “RESCUE” OF EMS PROVIDERS!**

Revised 1/07
NASAL PHARYNGEAL AIRWAY INSERTION

**Purpose:**
1. To maintain a patent airway by holding the tongue off the posterior pharynx.

**Guidelines:**
1. Patient must have a decreased level of consciousness.
2. Less likely to stimulate a gag reflex as patient regains consciousness.
3. Can be inserted without having to open mouth.

**Complications:**
1. May cause nosebleed.
2. Pharyngeal stimulation may cause gagging or vomiting.
3. Does not prevent aspiration.

**Equipment:**
1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. Pulse oximetry
5. Nasal pharyngeal – size appropriate
6. Lubrication
7. Suction Equipment

**Procedure:**
1. Observe universal precautions.
2. Select appropriate size nasal airway. Consider using diameter similar to patient’s pinky finger.
3. Measure from tip of patient’s earlobe to tip of nose and adjust flange accordingly.
4. Lubricate the exterior of the nasal airway with a water soluble lubricant.
5. Insert the airway into the larger nare with the bevel facing the nasal septum.
6. Direct the airway straight back along the floor of the nasal passage until the flange touches the external nares.
7. Suction as necessary to clear secretions.
8. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**NASAL PHARYNGEAL AIRWAY INSERTION Contraindications:**
1. Should not be inserted in patients with suspected basilar skull fractures or severe facial trauma.

Revised 1/07
NASOGASTRIC/OROGASTRIC TUBE INSERTION

**Purpose:**
1. To decompress the stomach.

**Complications:**
1. Passage of the tube into the trachea.
2. Coiling of the tube in the posterior pharynx.
4. Risk of aspiration if patient vomits.
5. Increased anxiety/agitation.

**Equipment:**
1. Nasogastric tubes (sizes 5 Fr. to 18 Fr.)
2. Orogastric tubes (sizes 24 Fr. to 42 Fr.)
3. Water soluble lubricant
4. Tape
5. Syringe – 30 cc
6. Stethoscope

**Procedure:**
1. If the patient is **unconscious**, place in left lateral recumbent position with slight Trendelenburg. Airway must be protected by endotracheal intubation prior to NG or OG placement.
2. Measure length of NG tube from the nose to the earlobe and then to a point midway between the xyphoid process and umbilicus.
3. Mark the length of tube with a piece of tape.
4. Lubricate tip of tube with water soluble lubricant if inserting nasally.
5. **Nasal insertion:** Direct tube along the floor of nostril to the posterior pharyngeal then direct the tube downward through the nasopharynx.
6. If the patient is **conscious**, have him/her tip his/her head forward until his/her chin touches his/her chest to decrease opportunity for the NG tube to slide into the patient’s trachea.
7. Have the patient swallow as the tube is advancing to facilitate passage of tube into the patient’s esophagus.
8. **Oral insertion:** Direct tube to the back of the tongue and then direct tube downward through the oropharynx.
9. Continue advancing tube until tape mark is at the nostril or the lip.
10. **Confirm placement of tube by:**
   - Aspirate gastric contents with a syringe.
   - Injecting 10 to 20cc of air while auscultating over the stomach for a “swoosh” or a “burp” indicating gastric placement.

**NASOGASTRIC/OROGASTRIC TUBE INSERTION**

11. **If tube is not placed properly:**
   - Remove immediately
   - Reinsert following the same procedure.
   - Do not attempt insertion more than three (3) times.
12. **If tube is properly placed:**
   - Tape in place.
   - For stomach decompression attach tube to continuous low suction.

13. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Contraindications:**
1. Suspected fractures of the basilar skull.
2. Facial trauma with suspected fractures.

**Special Considerations:**
- If a Combi-tube is in place with ventilation through the blue port, the NG tube (or a pediatric tube) may be inserted through the white port.

Revised 1/07
NASOTRACHEAL INTUBATION PROCEDURE

**Purpose:**
1. To provide definitive control of the airway, especially in those patients who have some respiratory effort, who have suspected cervical injury, who have an intact gag reflex or whose mouth cannot be opened.
2. To provide assisted ventilation to a patient with inadequate respirations/oxygenation.
3. Asthma or pulmonary edema with respiratory failure, where intubation may need to be achieved in a sitting position.

**Guidelines:**
1. Head must be exactly midline for successful intubation.
2. Appropriate intubation precautions should be taken in the trauma patient.
3. Use with caution in patients with significant nasal or craniofacial trauma.
4. Often nares are asymmetrical and one side is much easier to intubate. Avoid inducing bilateral nasal hemorrhage by forcing a nasotracheal tube on multiple attempts.
5. The only absolute contraindication is apnea.
6. This procedure should not be attempted in children under 12 years of age.
7. Prepare suction beforehand. Vomiting can occur, as with any stimulation of the airway. *Use Sellick maneuver as described in orotracheal intubation protocol.
8. Intubation should take no more than 15-20 seconds to complete. Do not lose track of time.

**Complications:**
1. Further craniofacial injury particularly in patients presenting with facial trauma.
2. Nasal bleeding caused by tube trauma.
3. Vomiting and aspiration in the patient with intact gag reflex.

**Equipment:**
1. PPE
2. Oxygen
3. BVM
4. Suction equipment
5. Intubation equipment
6. Stethoscope
7. ETCO2 device

**Procedure:**
1. Observe universal precautions.
2. Assemble the equipment while continuing ventilation and oxygenation.

**NASOTRACHEAL INTUBATION PROCEDURE**

- Choose the appropriate tube size. Limitation is nasal canal diameter.
• Attach 10 cc syringe to pilot tube and inflate the ETT cuff with air and check for leaks, deflate the cuff.
• Lubricate the distal end of the ETT.
• Connect and check suction.

3. Position patient with head in midline, neutral position (cervical collar may be in place, or assistant may provide stabilization in trauma patient).
4. Explain the procedure to the patient.
5. Pre-oxygenate before starting intubation procedure.
6. Insert the endotracheal tube into the nostril with the bevel toward the septum.
7. With gentle pressure, advance the tube through the nostril, straight back along the floor of the nasal passage until the tip of the tube reaches the posterior pharynx. Use the right nostril if possible.
8. Abandon the procedure if significant resistance is encountered.
9. Keeping the curve of the tube in midline, continue advancing slowly. Air will be heard moving through the tube.
10. There will be a slight resistance just before entering the trachea. Wait for an inspiratory effort before final advance into the trachea is made.
11. Advance the ETT about 1 inch further to ensure the cuff clears the cords.
12. Attach ETCO2 device on ETT and ventilate with BVM.
13. Continue ventilating with BVM attached to an oxygen source and observe for equal chest rise with ventilation.
14. Auscultate over axillae and bilateral lungs fields to ensure proper placement.
15. Finally, auscultate over the epigastrum to confirm that the tube is not in the esophagus.
16. When tube placement is confirmed, inflate balloon cuff with 6-10 cc of air and re-assess breath sounds bilaterally.
17. If the ETT has been misplaced in the esophagus, immediately remove the tube, ventilate the patient and repeat the sequence above.
18. Note the tube position and secure the ETT with tape or an approved ETT holder.
19. Ventilate with 100% oxygen via BVM.
20. Re-auscultate over epigastrum and both sides of chest whenever the patient is moved.
21. Complete an ALS run report, documenting all pertinent information received, procedures ordered/completed, results of interventions and changes in patient condition.
22. Document any unusual circumstances and/or difficulties encountered.
23. If breath sounds are auscultated over the right lung field and absent on the left, deflate cuff and pull tube back 1-2 cm and reassess breath sounds. Reinflate cuff when proper placement is confirmed.

Revised 1/07
NEBULIZED MEDICATION ADMINISTRATION

Indication:
1. Signs and symptoms of asthma.
2. Patient with a known history of asthma.
3. Lung sounds consisting of wheezing. Note: tight asthmatics may not wheeze because of poor air exchange.

Complications:
1. Tachyarrhythmias
2. Ventricular beats

Equipment:
1. PPE
2. Oxygen
3. Nebulizer with disposable mask/mouthpiece and corrugated tubing
4. Oxygen device with connecting tubing
5. Pulse oximetry
6. Intubation equipment
7. Suction equipment
8. Medication as suggested by medical guideline

Procedure:

ADMINISTRATION VIA NEBULIZER
1. Observe universal precautions.
2. Check patient’s history and recent medication use.
3. Place medication into the reservoir of the nebulizer (i.e. albuterol, atrovent).
4. Assemble nebulizer.
5. Attach oxygen to nebulizer, and adjust oxygen to 8-10 L.
6. Check nebulizer's mouthpiece and tubing for nebulized mist.
7. Instruct patient to inhale mist and hold it in his/her lungs as long as possible.
   Exhale, and repeat procedure.
8. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

ADMINISTRATION OF A NEBULIZED MEDICATION VIA A NON-REBREATHER MASK
1. Observe universal precautions.
2. Check patient’s history and recent medication use.
3. Place medication into the reservoir of the nebulizer (i.e. albuterol, atrovent).
4. Assemble nebulizer.
5. Remove reservoir bag from the non-rebreather mask.
6. Attach the top of the nebulizer (where the mouth piece normally attaches) to the opening in the non-rebreather mask from where the reservoir bag was removed.
7. Attach oxygen to nebulizer and adjust oxygen to 8-10 L.
8. Check mask for nebulized mist.
9. Instruct patient to inhale mist and hold it as long as possible in his/her lungs. Exhale, and then repeat procedure.
10. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**ADMINISTRATION OF A NEBULIZED MEDICATION VIA AN ENDOTRACHEAL TUBE**

1. Observe universal precautions.
2. Check patient’s history and recent medication use.
3. Attach in-line **albuterol, atrovent** set-up.
4. Remove the oxygen source from the BVM and attach it to the nebulizer. Adjust flow rate to 8-10 L.
5. Connect the BVM to the in-line set-up at the opening where the mouthpiece is usually attached.
6. Ventilate the patient using the BVM.
7. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**ADMINISTRATION OF NEBULIZED MEDICATION VIA CPAP**

1. Observe universal precautions.
2. Check patient’s history and recent medication use.
3. Set up CPAP and its accessories appropriately.
4. Attach to oxygen source with a wall adaptor or high pressure regulator.
5. Place medication into the reservoir of the nebulizer (i.e. **albuterol, atrovent**).
6. Assemble nebulizer and attach it between the CPAP mask and peep flow (make sure you do not hang the nebulizer from the exhalation valve on peep flow).
7. Attach oxygen to nebulizer, and adjust oxygen to 8-10 L.
8. Check CPAP mask and tubing for nebulized mist.
9. Reassure patient…consider **Ativan** if necessary.
10. Instruct patient to inhale mist and hold it in his/her lungs as long as possible. Exhale, and repeat procedure.
11. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
NITROGLYCERIN ADMINISTRATION - PATIENT ASSIST

Indication:
1. Patient exhibits signs and symptoms of cardiac chest pain.
2. Patient has available Nitroglycerin (spray or tablet) prescribed for him/her.
3. Systolic blood pressure equal/greater than 100 mm Hg.
4. Evaluate the following:

History:
- Chest pain associated with angina pectoris.
- Chest pain associated with acute myocardial infarction.

Signs/Symptoms:
- Chest pain/discomfort: pain or pressure in center of chest.
- Chest pain/discomfort relieved with rest.
- Chest pain/discomfort: lasting more than a few minutes.
- Pain/discomfort that comes and goes.
- Radiation of pain to one or both arms, neck, jaw, or back.
- Pressure, squeezing or feeling of fullness.
- Shortness of breath, with or without chest pain.
- Cold sweat, nausea, lightheadedness.

Working Assessment:
- Angina Pectoris
- Myocardial Infarction

Precautions:
1. Nitroglycerin can cause headache, dizziness, weakness, hypotension, and orthostasis.
2. Nitroglycerin can cause severe hypotension when administered to patients who have recently ingested alcohol.
3. Headache is a common side effect of Nitroglycerin administration and results from vasodilatation of cerebral vessels.

Equipment:
1. PPE
2. Oxygen
3. Oxygen device and connecting tubing
4. Pulse oximetry
5. Zoll biphasic cardiac monitor

NITROGLYCERIN ADMINISTRATION - PATIENT ASSIST
6. Patient prescribed Nitroglycerin (spray or tablet).

Procedure:
1. Observe universal precautions.
2. Perform initial assessment.
3. Perform focused history and physical exam.
• History of cardiac chest pain?
• Onset of symptoms.
• Interventions (was nitro taken prior to arrival)?

4. Obtain baseline vital signs (is systolic blood pressure equal/greater than 100 mm Hg)?
5. Obtain a sample history.
   • Does the patient take the drug Viagra or was the drug taken within the last 24 hours.
   • Is systolic blood pressure equal/greater than 100 mm Hg?
   • What is the quality of pain (i.e. sharp, dull, pressure)?
   • How does he or she rate the pain on the scale of 1-10?
   • Does the pain radiate?
   • Any precipitating factors?
   • Any associated signs or symptoms?
   • Was pain relieved with rest?
   • Did patient become nauseous, diaphoretic, or lightheaded?
   • Did patient become short of breath?

6. Apply oxygen with a device and at a rate appropriate for patient condition (if not done already).
7. Confirm Paramedic Unit is enroute.
8. **Does patient have prescribed nitroglycerin?**
9. **Contact medical control.**
10. Report assessment findings, signs and symptoms, including any contraindications.
11. Specify to the medical control physician that you are a BLS unit requesting orders to assist the patient with his/her prescribed Nitroglycerin spray or tablet.
12. If medical control authorizes the administration of assisting the patient with his/her prescribed nitro, proceed with the following:
    • Repeat order back to physician.
    • Verify the dose to be administered.
    • Verify the medication is prescribed for the patient and that it is not expired.
    • Describe procedure to the patient and obtain patient’s verbal consent to administer nitro.

**NITROGLYCERIN ADMINISTRATION - PATIENT ASSIST**
13. Assist patient with Nitroglycerin while patient is lying or sitting. Never standing.
14. Dose of Nitroglycerin spray or tablet is 0.4 mg. Administered sublingually (under the tongue).
15. Document time Nitroglycerin was administered and the physician’s name who gave the order.
16. Monitor for side effects:
    • Hypotension
    • Headache
• Heart rate less than 60 bpm.

17. Reassess patient and vitals before and after each Nitroglycerin administration.
18. If authorization for Nitroglycerin administration is declined, continue to monitor the patient and provide standard medical care until an ALS unit arrives on scene.
19. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Contraindications:**

1. Hypotension
2. Head Injury
3. Age less than 18 years old
4. Patient receiving maximum dose of 3 (sprays or tablets) within the last 30 minutes.
5. Use of Viagra (sildenafil citrate) or Viagra type medications in the last 24 hours.

Revised 1/07
NON-INVASIVE TRANSCUTANEOUS PACING

**Purpose:**
1. To provide electrical stimulation to the myocardium for patients in symptomatic bradycardia and symptomatic AV heart blocks.

**Guidelines:**
1. Reversing the cables or misplacing the electrodes can make a significant difference in capture threshold and should be avoided.
2. Apply multi-function/combo pads in appropriate position firmly on patient's torso.
3. Adjust ECG size until sense marker appears on every QRS. If the sense marker fails to appear on every QRS, select another lead and try again.

**Complications:**
1. Electrical capture may occur with the absence of mechanical capture (palpable pulse and blood pressure).
2. Muscle tremors may complicate evaluation of pulses.
3. Pacing may cause diaphragmatic stimulation.
4. CPR is safe during pacing. A mild shock may be felt if direct active electrode contact is made.

**Equipment:**
1. PPE
2. Oxygen
3. Oxygen device and connecting tubing
4. Pulse oximetry
5. Zoll cardiac monitor
6. Multi-function pads - adult
7. EKG patches
8. Intubation equipment
9. Suction equipment
10. Medication per suggested medical protocol

**Procedure:**
1. Observe universal precautions.
2. Apply supplemental oxygen at a rate and with a device appropriate for patient condition. Assist ventilations with BVM at 100 oxygen if patient condition warrants.
3. Apply cardiac monitor and obtain ECG reading.
4. Obtain 15 second strip printout.
5. Attach multi-function/combo pads to patient.
6. Establish IV of 0.9% Normal Saline.
7. **Contact medical control** for order for sedation and to initiate non-invasive transcutaneous pacing protocol.
8. Explain the procedure to the patient.
9. Sedate patient as needed, while providing and maintaining airway management.
10. Turn the selector switch to pacer.
11. Turn pacer rate to desired rate setting, starting at 70 bpm.
12. Turn the pacer output to set mA.
13. Increase mA until you reach capture, then increase by 10.
14. Palpate the patient’s pulse and check blood pressure to confirm mechanical capture.
15. In the event that the patient remains hemodynamically unstable at the current rate and mA, consider increasing the paced rate by 10 bpm and increasing the mA. Re-evaluate the patient’s response.
16. Obtain an updated ECG reading, noting that each pacing stimulus will be marked with a highlighted mark.
19. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

***This procedure should not be initiated when involved in a potential interface with a Milwaukee Count Paramedic Unit.

Revised 1/07
OPTIUM EZ GLUCOMETER

Purpose: To assure proper use and function of the Optium EZ Glucometer.

Equipment:

1. Optium EZ Glucometer
2. Optium EZ Test Strips - ONLY
3. Alcohol Pad
4. 2X2 Gauze
5. Lancet
6. Band-Aid
7. PPE
8. Case
9. High and Low Solutions

Procedure:

Glucose Testing:

1. Prepare your lancing device.
2. Clean your hands and don on gloves.
3. Remove the test strip from its foil packet.
4. Insert the three black lines at the end of the test strip into the strip port.
5. Push the test strip in until it stops.
6. The monitor will turn on automatically and display: time, month, day and apply sample.
7. Prior to obtaining a blood sample: milk area, clean with alcohol, lance, and wipe first drop with 2X2 gauze.
8. Allow very next drop of blood to be drawn into the white area at the end of the test strip immediately.
9. Continue this until the glucometer begins the test (a beeper will sound).
10. There will be a status bar and countdown.
11. At the end of the countdown a blood glucose result will display and store in the glucometer’s memory.
12. Remove the test strip from the strip port - the glucometer automatically turns off.
13. Properly discard PPE and test strip.
OPTIUM EZ GLUCOMETER

Glucose Control Test: To be done every Monday

1. Clean your hands.
2. Remove the test strip from its foil packet.
3. Insert the three black lines at the end of the test strip into the strip port.
4. Push the test strip in until it stops.
5. The monitor will turn on automatically and display: time, month, day and apply sample.
6. To mark the test as control, press and release the middle button (vertical line with circle) once. A picture of the control bottle will appear.
7. Turn the control solution bottle upside down three or four times to mix the solution.
8. Remove the cap.
9. Apply a drop of **HI** control solution and allow it to be drawn into the test strip.
10. Continue this until the glucometer begins the test (a beeper will sound).
11. There will be a status bar and countdown.
12. At the end of the countdown a blood glucose result will display and store in the glucometer’s memory.
13. Remove the test strip from the strip port - the glucometer automatically turns off.
15. Apply a drop of **LO** control solution and allow it to be drawn into the test strip.
16. Continue this until the glucometer begins the test (a beeper will sound).
17. There will be a status bar and countdown.
18. At the end of the countdown a blood glucose result will display and store in the glucometer’s memory.
19. Remove the test strip from the strip port - the glucometer automatically turns off.
20. Properly discard test strip.
21. **Document both HI and LO on the Glucometer Calibration Sheet and sign.**
22. Contact a Supervisor if you have any questions or concerns.
OPTIUM EZ GLUCOMETER

Special Considerations:

1. The glucometer will display **LO if blood glucose is lower than 20 mg/dl**.
2. The glucometer will display **HI if blood glucose is higher than 500 mg/dl**.
3. E-1 = Temperature is too hot or too cold for glucometer to work.
4. E-2 = Glucometer error.
5. E-3 = There may be a problem with the test strip.
6. E-4 = Blood glucose result may be too high or there may be a problem with the test strip.
7. E-5 = Blood was applied to test strip too soon.
8. E-6 = Test strip error.
9. E-7 = Test strip is damaged, used, or unrecognizable.
10. E-8 = Glucometer error.
11. E-9 = Glucometer error.
12. E-0 = Calibration not required.
13. Battery replacement – CR 2032 Lithium – when backlight no longer works or glucometer automatically turns off.
14. Glucometer cleaning - se damp cloth and mild soap, or 10% bleach, or 70% alcohol, or 10% ammonia.
PARATECH AMBULANCE SERVICE, INC.
Standards of Practical Skills/Procedures

ORAL AIRWAY INSERTION

Purpose:
1. To maintain a patent airway by holding the tongue off the posterior pharynx.

Guidelines:
1. For unconscious patients without a gag reflex.
2. Maintains a patent airway.
3. Easy to use with minimal training.
4. Prevents the patient from biting down on his/her endotracheal tube.

Complications:
1. Oral trauma.
2. Vomiting with possible aspiration.
3. May stimulate gag reflex.

Equipment:
1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. BVM
5. Oral airway – size appropriate
6. Lubrication
7. Suction equipment
8. Intubation equipment

Procedure:
1. Observe universal precautions.
2. Select appropriate size airway by measuring from the earlobe to the corner of the patient’s mouth.
3. Open the patient’s mouth using the cross finger technique.
4. Insert the airway with the tip pointing toward the roof of the patient’s mouth.
5. Rotate the airway 180 degrees into position with the flange resting on the patient’s lips or teeth.
6. If patient is less than 8 years of age, use a tongue depressor to move the tongue forward and down.
7. Insert the airway in anatomical position following normal curvature of the oropharynx.
8. Suction as necessary to clear secretions.

9. Document procedure and results, indicating any unusual circumstances and/or difficulties encountered.

Contraindications:
1. Any patient with an intact gag reflex.

Revised 1/07
ORAL MEDICATION ADMINISTRATION

Indication:
1. To administer medication through the digestive tract.

Guidelines:
1. Patient who is alert, cooperative, and is able to protect his/her airway to swallow the medication.
2. Can be administered without IV access.

Complications:
1. Medication may cause stomach upset and/or vomiting.
2. Patient may vomit prior to absorption of the therapeutic dose.

Procedure:
1. Ensure that patient is alert, cooperative, able to follow instructions, and has an intact gag reflex.
2. Obtain past medical history or any known allergies to medications.
3. Confirm right patient, right medication, right dose, right route and right time prior to administering medication.

Chewable tablets:
1. Instruct patient that medication must be chewed then swallow
2. Instruct patient to chew tablet one at a time
3. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Oral glucose (paste/gel):
1. Apply gel/paste to tongue using a tongue depressor, and position between patient’s cheek and gum
2. Instruct the patient to swallow.
3. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

ORAL MEDICATION ADMINISTRATION

Sublingual:

(Tablet)
1. Ask patient to lift tongue and place tablet under tongue or have patient place tablet under tongue.
2. Instruct patient keep his/her mouth closed until the tablet has dissolved under tongue.
3. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

(Spray)
1. Ask patient to lift his/her tongue, spray medication under tongue.
2. Have patient keep his/her mouth closed until medication has absorbed.
3. Continue to monitor patient.
4. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Contraindications:
1. Patient is uncooperative, unable to follow directions, or lack a gag reflex.

Revised 1/07
OORTACRHEAL INTUBATION

Indication:
1. To provide definitive control of the airway.
2. To provide assisted ventilation to a patient with inadequate respirations/oxygenation.
3. To prevent aspiration of gastric contents, secretions or bleeding in a patient with compromised reflexes.
4. To facilitate administration of drugs during resuscitation.

Guidelines:
1. Do not use intubation as the initial method of managing the airway in an arrest. Oxygenation prior to intubation should be accomplished with a BVM as needed.
2. Appropriate intubation precautions should be taken in the trauma patient. Oral intubation with inline cervical stabilization is the best alternative for a trauma patient requiring definitive airway control.
3. Prepare suction beforehand. Vomiting is particularly common when the esophagus is intubated. **Use Sellick maneuver (pressure downward on cricothyroid membrane with thumb and index finger) to reduce risk of aspiration during BVM ventilation and intubation attempts.
4. Intubation should take no more than 15-20 seconds to complete. Do not loose track of time. If visualization is difficult, stop and ventilate before trying again.

Complications:
1. Esophageal intubation: Particularly common when the tube is not visualized as it passes through the vocal cords. The greatest danger is not recognizing the error. Auscultation over the stomach during trial ventilations should reveal air gurgling through gastric contents with esophageal placement. The patient’s color should improve when ventilating.
2. Intubation in the right mainstem bronchus: Be sure to listen to the chest bilaterally.
4. Hypoxia: Due to prolonged intubation attempt.
5. Cervical cord damage: Occurs in trauma patients with unrecognized spinal cord injury.
7. Induction of pneumothorax: Occurs from traumatic insertion, forceful bagging, or aggravation of underlying pneumothorax.

OORTACRHEAL INTUBATION

Equipment:
1. PPE
2. Oxygen
3. BVM
4. Suction equipment
5. Intubation equipment
6. Stethoscope
7. Oropharyngeal airway
8. ETCO2 device
9. Pulse oximetry

Procedure:
1. Observe universal precautions.
2. Assemble the equipment while continuing ventilation.
   Choose the appropriate tube size.
   Position the stylette in the tube just proximal (1/2") to the opening at the end of ETT.
   Assemble laryngoscope and check light source.
   Attach 10 cc syringe to pilot tube and inflate the ETT cuff with air and check for leaks, deflate the cuff.
   Lubricate the distal end of the ETT.
   Connect and check suction.
3. Position patient supine, neck flexed forward, head extended back. The back of the head should be level with or higher than the back of the shoulders.
4. Give at least 6 breaths before starting intubation procedure.
5. Holding laryngoscope in left hand and while opening patient's mouth, introduce the blade into the right side of the mouth.
6. Advance and move the blade to the midline, displacing the tongue to the left side and out of view.
7. Insert the tip of the blade further, following the roof of the mouth until the tip of the curved blade in the vallecula (in front of the epiglottis) and the tip of the straight blade over the epiglottis.
8. Lift upward and anterior with laryngoscope to expose the posterior pharynx and epiglottis without putting any pressure on the patient's teeth, gums, or lips.
9. Expose and visualize the epiglottis and vocal cords. Suction as necessary.
10. Insert the ETT into the right side of the patient's mouth and following the blade, pass the ETT through the vocal cords under direct visualization.
11. Advance the ETT until the tube cuff is 1 cm past the level of the vocal cords.
12. While holding the tube firmly in place, remove the laryngoscope and stylette.
13. Inflate balloon cuff with 6-10 cc of air.
14. Attach ETCO2 device on ETT and begin to ventilate using a BVM.
15. Observe for equal chest rise and fall with each ventilation.
16. Auscultate over axillae and bilateral lungs fields to confirm placement.
17. Auscultate over the epigastrum to confirm that the tube is not in the esophagus.
18. If the ETT has been misplaced in the esophagus, immediately remove the tube, ventilate the patient and repeat the sequence above.
19. Note the tube position and secure the ETT with tape or ties.
20. Select and insert an oral airway to prevent patient from biting ETT.

**OROTRACHEAL INTUBATION**

21. Continue assisting respirations with 100% oxygen via BVM.
22. Re-auscultate over stomach and both sides of chest whenever the patient is moved/transferred.
23. Complete an ALS run report, documenting all pertinent information received, procedures ordered/completed, results of interventions and changes in patient condition.
24. Document any unusual circumstances and/or difficulties encountered.
25. If breath sounds are auscultated over the right lung field and absent on the left, deflate cuff and pull tube back 1-2 cm and reassess breath sounds. Re-inflate cuff when proper placement is confirmed.

<table>
<thead>
<tr>
<th>AGE</th>
<th>ETT (uncuffed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature</td>
<td>2.5 - 3.0</td>
</tr>
<tr>
<td>Newborn</td>
<td>3.0 - 3.5</td>
</tr>
<tr>
<td>6 Months</td>
<td>3.5</td>
</tr>
<tr>
<td>18 Months</td>
<td>4.0</td>
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<tr>
<td>3 Years</td>
<td>4.5</td>
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<tr>
<td>5 Years</td>
<td>5.0</td>
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<tr>
<td>8 Years</td>
<td>6.0 cuffed</td>
</tr>
<tr>
<td>10 – 15 Years</td>
<td>6.5 - 7.0 cuffed</td>
</tr>
<tr>
<td>Adult</td>
<td>7.0 - 9.0 cuffed</td>
</tr>
</tbody>
</table>

Revised 1/07
OXYGEN ADMINISTRATION

Indication:
1. To increase the partial pressure of oxygen in the lungs, providing oxygenation to all tissues of the body.

Guidelines:
1. Patient showing signs of hypoxia.
2. Any patient that presents with difficulty breathing regardless of the cause.

Complications:
1. May suppress respiratory drive of a patient with COPD.
2. Increases risk of fire when in use.
3. Oxygen is stored under pressure.

Equipment:
1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. Pulse oximetry.

Procedure:
1. Observe universal precautions.
2. Assess patient's level of consciousness.
3. Evaluate respiratory rate and quality.
4. Assess skin color, nail beds, and mucous membranes.
5. Administer supplemental oxygen with a device and at a rate appropriate for patient condition:
   - None - mild distress – nasal cannula 2-6 LPM.
   - Moderate - severe distress – non-rebreather mask 10-15 LPM with oropharyngeal or nasopharyngeal airway if necessary.
   - Respiratory rate less than 8 or greater than 32 consider, assisting ventilations with bag-valve-mask and/or intubation.
5. Document procedure and results, including any unusual circumstances and/or difficulties encountered.
OXYGEN ADMINISTRATION
Special Considerations:

- Patients with lung disease require more oxygen than healthy patients. **Do Not** withhold oxygen from anyone. If a patient’s respiratory rate decreases, assist with ventilations.
- Hypoxia can cause restlessness/agitation.
- Respiratory rate less than 8 per minute signifies hypoventilation, consider intubation.
- Respiratory rate greater than 30 per minute may signify acidosis or hypoxia. Administer oxygen.

**Nasal Cannula** is easily tolerated, but delivers relatively lower oxygen concentrations (25-40%).

**Non-rebreather mask** with reservoir will deliver much higher oxygen concentrations (greater than 90%). Bag must be inflated before it is applied.

**Bag valve mask** with reservoir delivers 100% oxygen to apneic or patient in respiratory distress.

Revised 1/07
PCA (Patient Controlled Analgesia) PUMP TRANSPORT

Purpose:
1. Allows patient to control delivery of pain medication in a safe, consistent, effective and reliable manner.

Complications:
1. Uncontrolled pain level.
2. Infiltrated IV.
3. Allergic reaction to the analgesic.
4. Patient becomes over sedated.
5. PCA pump malfunctions

Equipment:
1. PPE
2. Facility or patient’s personal PCA pump with tubing
3. Oxygen
4. Oxygen device with connecting tubing
5. Narcan
6. Alcohol pad
7. IV start kit
8. Medication per MD order

Procedure:
1. Observe universal precautions.
2. Verify medication order with MD order.
3. Check to insure that the PCA pump is operating properly.
4. Assess whether the patient is capable of delivering his/her own pain medication.
5. Monitor patient’s respiratory rate, level of sedation, and level of pain.
6. Monitor patency of IV line. If infiltrating, stop the pump and start a new PIV. Then restart the PCA pump.
7. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Special Consideration:
- Caregiver is not ever to deliver pain medication to patient.
- PCA pump should be lock prior to transport so that the analgesic dose cannot be tampered with.

Revised 1/07
PERCUTANEOUS CRICOTHYROTOMY

**Purpose:**
1. Inability to establish airway by any other means.
2. Acute upper airway obstruction that cannot be relieved by obstructed airway maneuvers.
3. Upper airway trauma with inability to ventilate the patient with severe respiratory insufficiency.
4. **This procedure is only to be performed under the direct order of the Medical Control Physician.**
5. **This procedure is NOT to be performed when a potential interface exists with the Milwaukee County Paramedic System.**

**Precautions:**
1. Cricothyrotomy is contraindicated in children 8 years of age and younger because of the small cricothyroid space.
2. Injury to carotid or jugular vessels may cause major hemorrhage as a result of straying from the midline.
3. Bleeding is common even with correct technique. It should stop once the airway is successfully intubated.
4. Anticipate an expulsion of blood, mucus, saliva or air through the opening of the cricothyroid membrane once it has been incised.

**Complications:**
1. Even after tying and taping, watch the tube carefully. The tube may be impossible to replace if it is coughed or pulled out.
2. The tube could also easily slide deeper into the right mainstem bronchus causing right main stem intubation.
3. Bleeding into the airway or soft tissue after tube insertion.
4. Subcutaneous air due to improper tube or catheter positioning, along with positive ventilation.
5. Perforations of the esophagus from penetration by the scalpel.
6. Respiratory arrest and patient demise due to:
   - Severity of patient’s airway injury.
   - Cricothyrotomy performance that takes too long.

**PERCUTANEOUS CRICOTHYROTOMY**

**Equipment:**
1. PPE
2. Scalpel
3. Large curved hemostat or extra scalpel handle
4. Small endotracheal tubes (up to 6 mm for adults)
5. Syringe – 10 cc
6. BVM
7. Oxygen
8. Suction equipment
9. Pulse oximetry
**Procedure:**

1. Observe universal precautions.
2. Explain procedure to patient, if appropriate.
3. Place the patient supine and expose the patient’s neck.
4. Identify the trachea and palpate the prominent thyroid notch anteriorly.
5. Palpate the cricoid cartilage inferiorly.
6. Identify the cricothyroid space, in which the cricothyroid membrane is located (the space between the cricoid and thyroid cartilages).
7. Make a vertical incision over the tracheal and cricoid cartilages. Continue the incision downward through the subcutaneous fascia until the cricothyroid membrane is identified. The cricothyroid membrane will be spongy and resilient in comparison to the rigid trachea surrounding it.
8. Make a horizontal incision through the cricothyroid membrane.
9. Insert the hemostat with the handle directed towards the patient’s feet.
10. Spread the hemostat to dilate the incision.
11. While stabilizing the trachea with one hand, pass the endotracheal tube caudally, about 1-1.5 inches into the trachea.
12. Removed the hemostat, being careful not to injure the balloon on the tube.
13. Ventilate the patient through the tube using a BVM device and observe chest rise with ventilation.
14. Auscultate over axillae and bilateral lungs fields to confirm placement.
15. Auscultate over the epigastrum to confirm that the tube is not in the esophagus.
16. Note the tube position and secure the ETT with tape or an approved ETT holder.
17. Ventilate with 100% oxygen via BVM.
18. Control bleeding and dress wound.
19. Suction trachea frequently using sterile technique.
20. Re-auscultate over epigastrum and both sides of chest whenever the patient is moved.
21. If breath sounds are auscultated over the right lung field and absent on the left, deflate cuff and pull tube back 1-2 cm and reassess breath sounds. Reinflate cuff when proper placement is confirmed.
22. Complete an ALS run report, documenting all pertinent information received, procedures ordered/completed, results of interventions and changes in patient condition.
23. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
PERICARDIOCENTESIS

Purpose:
1. Patients with pericardial tamponade demonstrating Beck’s triad.

Complications:
1. Laceration of the coronary artery.
2. Laceration of the lung.
3. Laceration of the ventricle.
4. Cardiac dysrhythmias.
5. Increased tamponade.
6. Laceration of the liver.

Equipment:
1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. Pulse oximetry
5. Zoll cardiac monitor
6. **0.9% Normal Saline**
7. Syringe – 50 cc
8. Spinal Needle 3-inch (16 gauge or 18 gauge)

Procedure:
1. Observe universal precautions.
2. Perform primary medical assessment and initiate standard medical care.
3. Apply supplemental oxygen at a rate and with a device appropriate for patient condition. Assist ventilations with BVM at 100% oxygen if patient condition warrants.
4. Obtain vital signs and pulse oximetry.
5. Apply cardiac monitor and obtain EKG reading.
6. Establish IV of **0.9% Normal Saline**.
7. **Contact medical control** for an order for pericardiocentesis.
8. Using aseptic technique, insert a 3-inch, 16 gauge or 18 gauge needle (attached to a 50 cc syringe) at the angle of the xiphoid cartilage and the seventh rib.
9. Advance the needle at a 45 degree angle to the skin toward the right or left midclavicular line while aspirating the syringe with negative pressure. If the needle is advanced too far, a pulsation will be felt through the needle and syringe.

PERICARDIOCENTESIS

10. Aspirate as much fluid as possible. Fluid is usually encountered at a depth of 3 to 4 cm. (Removal of as little as 20-25 ml of blood from a distended pericardium may produce a dramatic blood pressure response.)
11. After withdrawing blood from the pericardial sac, attach a surgical clamp to the needle at the level of the skin to avoid accidental advancement of the needle.
12. If tamponade recurs, aspirate blood again if necessary.
13. Expedite transport to closest most appropriate medical facility.
14. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Special Considerations:

- Needle pericardiocentesis requires special training and authorization from medical control.
- Beck's triad consists of: elevated central venous pressure evidenced by jugular vein distention, muffled heart sounds, and narrowing pulse pressure.
- Elevated venous pressure, has come to be seen as the single best way to distinguish hemorrhagic shock from pericardial tamponade.

Revised 1/07
PERIPHERAL INTRAVENOUS INSERTION

**Purpose:**

1. To administer fluids for volume expansion.
2. To administer drugs.
3. To establish a peripheral intravenous lifeline for patients requiring ALS transport.

**Guidelines:**

1. Do not start IV lines distal to a fracture site or through skin with lesions, inflammation, swelling, infection, burns or trauma.
2. Attempt to avoid the lower extremities of patients with diabetes or peripheral vascular disease or edema or cellulitis.
3. Avoid same-sided extremity of mastectomy or fistula or flaccidity from CVA.
4. The only acceptable peripheral IV sites include: the bilateral upper extremities and the bilateral lower extremities.
5. No internal jugular, subclavian or femoral central lines are to be placed.
6. Due to the uncontrolled environment in which prehospital IV lines are started, take extra care to use aseptic/sterile technique.
7. IV solutions may be set up in advance and kept available as long as the administration line remains sterile. The intermediate technician, enhanced intermediate, paramedic or RN preparing the line will label it with the date and time the administration set was assembled. The IV administration set must then be discarded after 24 hours.
8. The use of chronic indwelling IV catheter lines with external ports (i.e. central lines, etc.) may be accessed if PIV access is not obtainable and with the consent of the Medical Control Physician.
9. Renal dialysis shunts may only be used if the patient is pulseless and non-breathing and no other IV site is available and intraosseous is contraindicated and only with the consent of the Medical Control Physician.
10. The preferred order of route of administration for parental medications in immediate life-threatening situations is (due to effectiveness):

   - Peripheral (with elevation of the site when possible)
   - Chronic indwelling IV catheter line with external ports
   - Intraosseous
   - Renal Dialysis shunt only if patient is PNB
   - Endotracheal (not recommended by AHA)

**Equipment:**

1. PPE
2. **0.9% Normal Saline**
3. Saline extension set
4. IV administration tubing
5. IV start kit (i.e. tourniquet, alcohol wipe, 2x2 gauze, tegaderm, tape, and betadine)
PERIPHERAL INTRAVENOUS INSERTION

Procedure:

1. Observe universal precautions.
2. Normal Saline (0.9% NS) is the solution of choice for all patients, unless otherwise indicated.
3. Patients who have a potential to become hypovolemic will have their IV solutions administered through a 60 drop administration set at a “to keep open” (TKO) rate unless otherwise specified by the Medical Control Physician.
4. Prepare all IV insertion and administration equipment.
5. In the event the external jugular site or intraosseous site is required, refer to specific protocol.
6. Apply tourniquet 4-8 inches above selected site.
7. Identify and palpate suitable vein.
8. Cleanse insertion site with alcohol or betadine prep.
9. Perform venipuncture and observe for presence of flashback.
10. After the catheter is in place, release tourniquet and remove needle or stylette.
11. Attach IV tubing and administer the IV solution briefly to check flow and placement.
12. Titrate IV solution to appropriate rate.
13. Secure catheter with tegaderm and tape.
14. Secure tubing with tape making sure that traction on the tubing is not transmitted to the catheter itself.
15. Dispose of sharps in the appropriate container.
16. Palpate pulse of extremity cannulated to insure pulse is present.
17. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Complications:

1. Local: hematoma formation, infection, thrombosis, phlebitis.
2. Systemic: sepsis, pulmonary embolus, catheter fragment embolus, fiber embolus from solution in IV.
3. Start venipuncture distally, and if successive attempts are necessary, proximal attempts on the same vein may be possible without extravasating IV fluid.
4. Venipuncture itself is seldom morbid, however, the excess fluids inadvertently administered can be fatal.

Revised 1/07; 3/10
PULSE OXIMETRY

Purpose:
1. Noninvasive monitoring of the oxygen saturation of arterial blood.

Guidelines:
1. Assessment should focus on the following:
   • Other signs and symptoms of hypoxemia (restlessness, confusion, dusky skin, nail beds, or mucous membranes).
   • Quality of pulse and capillary refill proximal to potential sensor application site.
   • Respiratory rate and character.
   • Amount and type of oxygen administration, if applicable.

Equipment:
1. PPE
2. Pulse oximetry

Procedure:
1. Observe universal precautions.
2. Explain procedure to the conscious patient.
3. Choose patient appropriate sensor.
4. Prepare site. Use alcohol pad to cleanse site gently. Remove nail polish or acrylic nail, if needed when using finger as monitoring site.
5. Ascertain the alignment of the light-emitting diodes and the photo detector. These sensors should be directly opposite each other.
6. Turn on the pulse oximeter to the ON position.
7. REMEMBER: DISPOSABLE SENSORS NEED TO BE ATTACHED TO THE PATIENT CABLE BEFORE TURNING THE PULSE OXIMETER ON.
8. Listen for the beep and note waveform or bar of light on front of the pulse oximeter.
9. Document procedure and results, including any unusual circumstances and/opt difficulties encountered.

Special Considerations:
• Be sensitive to probe placement. This includes tension on probe site, a well as tape applied to dry, thin skin.
• Choose appropriate sensor. Stabilization of the sensor may be accomplished only by safely immobilizing the monitoring site.
• When choosing the earlobe as a site for pulse oximetry in patients of African descent, be sensitive to the presence of keloids.
• Scars may not allow accurate SaO2 readings.
• Fingernail polish may not allow accurate SaO2 readings.

Revised 1/07
Standards of Practical Skills/Procedures

SALINE LOCK

Purpose:
1. To establish a prophylactic intravenous lifeline for patients requiring ALS transport.
2. To administer fluids for volume expansion.
3. To administer drugs.

Guidelines:
1. Consider whether the patient requires a running IV or a capped IV.
2. If a PIV is inserted in the field, the PIV must be reported to the receiving facility whether it is running or capped.
3. Do not placed saline locks in an external jugular vein.

Complications:
1. Local: hematoma formation, infection, thrombosis, phlebitis.
2. Systemic: sepsis, pulmonary embolus, catheter fragment embolus, fiber embolus from solution in IV.
3. Start venipuncture distally, and if successive attempts are necessary, proximal attempts on the same vein may be possible with extravasating IV fluid.

Equipment:
1. PPE
2. IV start kit
3. **0.9% Normal Saline**
4. Syringe – size appropriate
5. Hypodermic needle
6. Tape
7. Saline lock

Procedure:
1. Observe universal precautions.
2. Obtain consent from the patient.
3. Explain the procedure to the patient.
4. Prepare all IV insertion and IV administration set.
5. Prefill the saline lock with **0.9% Normal Saline**.
6. Apply tourniquet.
7. Identify and palpate suitable vein.
8. Cleanse insertion site with alcohol prep.
9. Perform venipuncture and observe for presence of a flashback.
10. After the catheter is in place, release tourniquet and remove needle or stylette.
11. Attach the saline lock.
12. Flush the saline lock with **0.9% Normal Saline** 3-5 cc to check flow and placement.
13. Secure catheter with tegaderm and tape.
14. Secure tubing with tape. Make sure that the traction on the tubing is not transmitted to the catheter.
15. Place sharps in the sharp’s container.
16. Dispose of trash in proper receptacle.
17. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Medication Administration When a Saline Lock is in Place:**
1. Observe universal precautions.
2. Cleanse the end of the cap with alcohol.
3. Insert the needle of the medication syringe through the cap.
4. Inject the appropriate dose of medication as ordered.
5. Withdraw the needle and dispose of it in the sharps container.
6. Flush the cap with 0.9% Normal Saline 3-5 cc.
7. Record the administration of the medication.
8. Observe the patient for response to the medication.
9. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Intravenous Fluid Administration When a Saline Lock is in Place:**
1. Observe universal precautions.
2. Prepare appropriate IV solution and administration set.
3. Using sterile technique, remove the cap to the IV tubing.
4. Attach the IV line assembly directly to the saline lock or extension set.
5. Open roller clamp and infuse IV solution briefly to check flow and placement.
6. Observe site for signs of infiltration.
7. Adjust the flow rate to deliver the volume ordered.
8. Secure the tubing.
9. Continue to monitor the PIV site and flow rate.
10. Dispose of the trash in the proper receptacle.
11. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Contraindications:**
1. The saline lock is contraindicated in any patient who is hypotensive or in need of IV fluids.
2. The saline lock is contraindicated in a cardiac arrest patient.

Revised 1/07
SCOOP STRETCHER

Purpose:
1. To enable movement of a patient with a potential or suspected spinal cord injury while maintaining rigid stabilization of the spinal column.

Guidelines:
1. Patient with a potential or suspected potential for spinal cord injury.
2. Enable movement of patient to long board with spinal stabilization.
3. Prevents further injury.

Complications:
1. Accidental pinching of skin.
2. Immobilizing patient supine leaving airway easily compromised if patient vomits.

Equipment:
1. PPE
2. Scoop stretcher
3. Head immobilizer
4. Long board
5. Long board straps

Procedure:
1. Observe universal precautions.
2. Maintain c-spine precaution if patient condition warrants.
3. Adjust stretcher length to height of patient, if probable hip fracture, measure length of stretcher on patient’s unaffected side.
4. Release stretcher locks and separate into two sections, one on each side of patient.
5. Slide stretcher halves under patient without distributing spinal alignment.
6. Close and lock head end of the scoop stretcher.
7. Close and lock foot end of scoop stretcher, taking care not to pinch the patient.
8. Maintain head stabilization while patient is lifted onto long board.
10. Remove scoop stretcher without disturbing spinal alignment.
11. Position and secure head bed if warranted.
12. Secure patient onto long board with straps.

SCOOP STRETCHER
14. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
SLING AND SWATHE

Purpose:
1. To immobilize the shoulder girdle and upper extremity (clavicle, scapula, shoulder dislocation, humerus).

Guidelines:
1. Injury to the upper extremity.
2. Used as a support for board splints on the elbow, forearm, or wrist.
3. Easy to apply.
4. Supports the shoulder girdle and upper extremity.

Complications:
1. Patient must be in sitting position.
2. Does not provide rigid protection by itself.

Equipment:
1. PPE
2. Splint – size appropriate
3. Cravat

Procedure:
1. Observe universal precautions.
2. Check distal circulation, sensation, and movement.
3. Fold forearm of injured side across chest, hand slightly elevated toward opposite shoulder.
4. Place triangular bandage under and over spine.
5. Pin or tie pointed end of triangular bandage to form cup to support elbow.
6. Leave fingers exposed to check circulation.
7. Wrap wide bandage/cratav around injured arm and body as swathe to secure injured arm to body.
8. Continue to reassess circulation in extremity.
9. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
SPINAL STABILIZATION

**Purpose:**
1. To provide rigid stabilization of the spinal column in a patient with a suspected or potential for spinal cord injury.

**Guidelines:**
1. Patients with a suspected or potential for spinal cord injury.

**Complications:**
1. Risk for pressure sores due to long transport times.
2. Immobilizes patient supine leaving airway compromised if patient vomits.

**Equipment:**
1. PPE
2. Cervical collar – size appropriate

**Procedure:**
1. Observe universal precautions.
2. Select appropriate size cervical collar for patient.
3. Apply cervical collar while maintaining c-spine stabilization.
4. While maintaining c-spine precaution, place patient onto long board using proper log roll technique.
5. Pad as necessary under the shoulders of geriatric patients with kyphosis or the pediatric patients to keep c-spine in neutral position.
7. Continue to reassess patient status.
8. Document procedure and results, including any unusual circumstances or complications encountered.

Revised 1/07
SUBCUTANEOUS MEDICATION ADMINISTRATION

**Indication:**

1. To deliver medication to the subcutaneous tissue.

**Guidelines:**

1. Medications ordered to be administered via the subcutaneous route.
2. Delivers medication slowly for distribution throughout the body.
3. Does not require IV access.

**Complications:**

1. Infection at injection site.
2. Pain.
3. No tissue irritating medication can be administered subcutaneously.

**Equipment:**

1. PPE
2. Syringe – size appropriate
3. Hypodermic needle (25G - 1”)
4. Alcohol pad
5. Sharps container
6. Medication as per suggested medical protocol.

**Procedure:**

1. Obtain patient history for any known allergies to medications.
2. Confirm right patient, right medications, right dose, right route, and right time for medication to be administered.
3. Prepare medication for administration.
4. Select appropriate injection site.
5. Cleanse injection site with alcohol.
6. Tent skin and subcutaneous tissue between thumb and index finger.
7. Insert a short needle with small gauge at a 45 degree angle into subcutaneous tissue.
8. Stabilize needle and syringe with one hand.
9. Pull back on plunger to make sure needle is not in blood vessel.
10. If blood appears in syringe, withdraw and discard syringe in sharps container, repeat steps 1-9.
11. Inject medication slowly.
12. Withdraw needle at same angle of insertion.
13. Gently massage injection site to distribute medication and speed up absorption of medication.
14. Dispose of contaminated material in appropriate receptacle.
SUBCUTANEOUS MEDICATION ADMINISTRATION

15. Document procedure and results, including any unusual circumstances and/or difficulties Encountered.

Contraindications:

1. Medications that cannot be administered subcutaneously.
SUCTIONING

Purpose:
1. To remove foreign material or secretions from the upper airway.

Guidelines:
1. Patient with foreign material or secretions in upper airway.
2. Clears foreign material and secretions from the airway.

Complications:
1. Hypoxia.
2. Oral trauma.
3. May stimulate gag reflex.
4. May introduce bacteria into the airway.

Equipment:
1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. Pulse oximetry
5. Suction equipment

Procedure:
1. Observe universal precautions.
2. Turn patient onto side (if possible).
3. Select appropriate size/type of suction catheter.
4. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Oral:
1. Measure suction catheter from corner of mouth to earlobe.
2. Open mouth using the cross finger technique.
3. Insert catheter tip into area of mouth/pharynx to be suctioned (no flexible catheters should be inserted orally).
4. Apply suction as catheter is withdrawn from mouth.
5. Repeat as necessary to remove foreign material/secretions from airway.
6. Oxygenate patient at a rate and with a device appropriate for patient condition.

SUCTIONING

ETT/Stoma:
1. Use sterile suction catheter and maintain sterile technique.
2. Cleanse catheter in sterile water with each reinsertion of catheter.
3. Insert suction catheter down ETT or into stoma opening until it reaches area where secretion/foreign material are present (flexible suction catheter to be used).
4. Apply suction as catheter is withdrawn.
5. If thick secretions are present, instill 2.5 – 5 cc of 0.9% Normal Saline (available in “pink” pre-filled saline bullets) into the ETT or stoma to help liquefy secretions. Suction immediately after solution is instilled.
6. Oxygenate patient with a device and at a rate appropriate for patient condition.
**Newborn (bulb syringe):**

1. Squeeze air from bulb before syringe.
2. Gradually release pressure on bulb to provide suction while removing from mouth or nose.
3. Expel suctioned material out of bulb before next suctioning.
4. Oxygenate newborn with a device and at a rate appropriate for patient condition.

**Newborn (meconium aspiration):**

1. Suction mouth, pharynx and nose as soon as head is delivered. Use either a bulb syringe or a sterile suction catheter (8 or 12 French) along with a suction unit turned on to a low setting.
2. Oxygenate newborn with a device and at a rate appropriate for patient condition.

**Special considerations:**

- Oxygenate patient with supplemental oxygen after each procedure.
- Aggressive suctioning of a newborn may cause vagal bradycardia.

Revised 1/07
SYNCHRONIZED CARDIOVERSION

**Purpose:**
1. To deliver an electrical charge to the myocardium, synchronized to the depolarization of the ventricle.

**Guidelines:**
1. Precautions for defibrillation apply.
2. Protect rescuers - "Clear" the area and ensure that all personnel are clear of direct and indirect patient contact.
3. **Synchronized Cardioversion is only to be done under direct order by the Medical control physician.**

**Complications:**
1. If ventricular fibrillation occurs, immediately turn off synchronization button and proceed with immediate defibrillation.

**Equipment:**
1. PPE
2. Zoll cardiac monitor
3. EKG patches
4. Multi-function pads - adult
5. Intubation equipment
6. Suction equipment
7. Pulse oximetry
8. Medication as per suggested medical protocol

**Procedure:**
1. Observe universal precautions.
2. Provide airway management as patient’s condition indicates.
3. Administer oxygen with a device and at a rate appropriate for patient’s condition.
4. Apply Zoll Biphasic Monitor to patient using 4 lead electrode cables.
5. Obtain ECG reading.
6. Obtain 15 second strip printout.
7. Attach multi-function/combo electrode pads.
8. Establish IV of **0.9% Normal Saline.**
9. **Contact medical control** to continue protocol and request sedation order.
10. Explain the procedure to the patient.
11. Sedate patient as necessary, while providing and maintaining airway management.
12. Turn knob on Zoll Biphasic Monitor to defib mode.
13. Press the synchronization button.

**SYNCHRONIZED CARDIOVERSION**

14. Select and adjust an ECG lead and size so that the sync markers occur only on the QRS complex.
15. Select appropriate energy to be delivered as ordered by the medical control physician (50 joules, 75 joules, 120 joules, 150 joules and 200 joules).
16. Charge the defibrillator.
17. Reconfirm rhythm.
18. Give verbal command to clear area.
19. Press and hold the shock button until discharge.
20. Reconfirm rhythm.
22. In the event cardioversion needs to be re-attempted, repeat steps 13-21 above.
23. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Revised 1/07
TEMPORAL ARTERY THERMOMETER

**Purpose:**

1. To clarify the proper use of the temporal artery thermometer.

**Guidelines:**

1. Perform a daily physical inspection of the temporal artery thermometer prior to the start of a shift.
2. Perform a self test to ensure the temporal artery thermometer is functioning appropriately.
3. Replace the 9-volt battery if not providing accurate readings.
4. Cleanse the probe lens and cone with an alcohol pad if not shiny clean.
5. Store in the BLS trauma bag in squad.
6. Contact Dispatch, write a Matter Of, and notify a Supervisor if malfunctioning or damage is seen.

**Equipment:**

1. Temporal artery thermometer
2. 9 volt battery
3. Alcohol pads

**Procedure:**

1. Observe universal precautions.
2. Perform a complete patient assessment and check vitals
3. Remove the protective cap before use. Be sure lens is clean. If not, clean with an alcohol pad and let dry.
4. Gently position the probe flush (flat) on the center of the forehead, midway between the eyebrow and the hairline.
5. Press and hold the SCAN button.
6. Lightly slide the thermometer across the forehead keeping the sensor flat in contact with the skin until you reach the hairline.
7. A beeping sound will be heard and a read light will blink to indicate a measurement is taking place.
8. If perspiration is present, continue to hold button depressed, lift probe from forehead and touch the neck just behind the ear lobe.
9. Release the SCAN button and remove the temporal artery thermometer from the head.
10. Read the temperature on the display. Thermometer will shut off automatically after 30 seconds. To turn thermometer off immediately, press and release the button quickly.
11. Replace the protective cap on thermometer to protect the sensor when not in use.
TEMPORAL ARTERY THERMOMETER

12. To replace the batteries, remove the battery compartment door by pushing down on the ridges with your thumb, and pushing away as indicated. Use both thumbs, if necessary.
13. Insert an alkaline 9-volt battery as illustrated, with the positive (small terminal) always on the right.
14. Replace the battery compartment door as indicated, with a push of your thumb on the ridges.

Complications:

1. Display message reads: HI – the target temperature measured is higher than 107.6 Fahrenheit.
2. Display message reads: LO – the target temperature measured is lower than 60.0 Fahrenheit.
3. Display message reads: HI. A – the temperature of the thermometer is higher than 104.0 Fahrenheit. Let the thermometer acclimatize for about 30 minutes in a cooler area in which it will be used.
4. Display message reads: LO. A – the temperature of the thermometer is lower than 60.0 Fahrenheit. Let the thermometer acclimatize for about 30 minutes in a warmer area in which it will used.
5. Display message reads: Err – EMI/RFI (like static on a radio) protection is preventing a temperature from being taken. Wait a minute and you should be able to proceed. If not, reset by removing and replacing the battery.
6. Temperature readings aren’t consistent – probe lens and cone may require cleaning and or batteries may need replacing.

Special Considerations:

1. For agitated or squirming patients, keep the button depressed and continue measurement when able.
2. The operating environmental temperature range for this product is 60 to 104 degrees Fahrenheit.
3. Do not check temperatures over scar tissue, open sores, or abrasions.
4. To RESTART: depress the button to restart. It is not necessary to wait until the display is clear, the thermometer will immediately begin a new scan each time the button is depressed.
5. Blinking battery icon with temperature displayed: battery is low but will still operate correctly. Replace soon.
6. Blinking battery icon with 2 dashes: not enough energy in the batter to measure correct temperature. Replace the battery.

Originated 4/09
TITRATION OF MEDICATIONS

**Purpose:**
1. To assure quality assurance in titration of medications.

**Guidelines:**
1. This policy refers to interfacility medications.
2. Titration of any infusing IV medication without a physician order is **prohibited** without medical control orders or written/verbal orders from patient’s physician.
3. If transporting a patient with an infusing IV medication that may require titration (i.e. Nitroglycerin, Insulin, and Dopamine etc.) obtain a verbal order from the sending physician. The verbal order should be written on the ALS form and include:
   - Physician’s Name
   - Time of Verbal Order
   - Precise Order (name of medication, dose, rate, route)
   - Parameters for Titration (i.e. keep SBP > 90)
4. During transport, if no order had been received for titration, **contact medical control** for orders.
5. Further documentation including the physician’s name giving the verbal order, time it was received, name of the medication, and patient response should be included in the narrative.

Revised 1/07
TRACHEOSTOMY CARE

**Purpose:**
1. To maintain a patent airway and adequate oxygenation of the patient with a temporary or permanent tracheotomy.

**Guidelines:**
1. Patients with temporary or permanent tracheotomy obstructed by secretions.
2. Clear foreign material or secretions from the tracheotomy.

**Complications:**
1. Hypoxia.
2. Airway trauma.
3. May introduce bacteria into the airway.

**Equipment:**
1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. Pulse oximetry
5. Suction equipment

**Procedure:**
1. Observe universal precautions.
2. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

### Permanent tracheotomy:
1. Suction through opening in neck (upper airway is surgically absent and aspiration is not possible).
2. If secretions are thick, instill 2.5 – 5 cc of 0.9% Normal Saline ("pink" pre-filled saline bullets) to liquefy secretions.
3. Suction immediately after saline has been instilled.
4. Oxygenate patient with a device and at a rate appropriate for patient condition.

### Temporary tracheotomy:
1. Suction through inner cannula.
2. If secretions are thick, instill 2.5 – 5 cc of 0.9% Normal Saline ("pink" pre-filled saline bullets) to liquefy secretions.
3. If outer tube has been displaced or is obstructed, remove and replace it with patients spare tube or an ETT. Procedure done only if patient airway is completed compromised or under direct authorization of medical control.
4. Oxygenate patient with a device and at a rate appropriate for patient condition.
5. If ventilating through stoma with an uncuffed tube, block upper airway.
6. Consider intubation.
7. If able to ventilate through stoma, remove tracheotomy tube.
8. Insert ETT through stoma until cuff is past opening.
9. Inflate cuff with 6-8 cc of air.
10. If uncuffed ETT was inserted, upper airway must be blocked while ventilating.
11. Auscultate bilaterally over the axillae and epigastrium to confirm Placement.
12. Connect ETCO2 and secure ETT.
13. ETT may be shortened to the point where cuff inflation line separates from tube.
14. If unable to intubate through stoma, intubate through upper airway.
15. Pass cuff of tube below neck opening.
16. Inflate cuff with 6-8 cc of air.
17. Ventilate, blocking opening of neck.
18. Auscultate bilaterally over axillae and epigastrium to confirm placement.
19. Connect ETCO2 and secure ETT.

**Special Considerations:**

- Temporary tubes are rarely cuffed and aspiration is possible from above from gastric contents.
- A permanent tracheotomy is created when the upper airway structures are surgically removed and a stoma (opening in the neck) is created in the anterior neck.
- A temporary tracheotomy bypasses the upper airway. A metal or plastic tube is inserted through the soft tissue of the anterior neck into the trachea and held in place with ties, circling the neck.

Revised 1/07
VELA VENTILATOR

Purpose:
1. To ensure proper use of the Vela ventilator.

Procedure:
1. Prior to the start of a shift, the ventilator is to be self-tested. This is done by pressing & holding the “accept” button as the unit is powering up. Follow all the tests as listed. If any fail, notify the ALS Coordinator or the Operations Director.

2. Ensure that you have all the necessary accessories with your vent (i.e. green high pressure oxygen tubing, high pressure regulator for the oxygen bottle, extra HEPA filter, extra wye connector, transducer with diaphragm in protective container, squad oxygen adaptor, test lung, plenty of tubing).

3. Inspect entire ventilator/case to ensure there are no visual damages.

4. When transporting from Kindred you may **NOT** use their vent circuit to transport the patient. This introduces bacteria into a closed system.

5. If transporting from any other facility the circuit and vent must be set-up with a test lung prior to transferring the patient over to Paratech Ambulance Service, Inc.’s ventilator.

6. Prior to switching patient over to vent, ensure that all vent settings are verified with a respiratory therapist. You may not change vent settings at any time. Settings are obtained by a physician order.

7. If you have any questions about the operation of the ventilator refer to the operator’s manual accompanying the ventilator or contact the ALS Coordinator.

Revised 1/07
VAD (VENTRICULAR ASSIST DEVICE)

**Purpose:**
1. To provide appropriate medical care for patient with a VAD.

**Equipment:**
1. PPE
2. Oxygen
3. Oxygen device with connecting tubing
4. Pulse oximetry
5. Zoll cardiac monitor
6. EKG patches

**Procedure:**
1. Observe universal precautions
2. Determine if patient has a VAD (Ventricular Assist Device) and if the battery pack has the physician/engineer contact information.
3. Request MFD paramedic unit immediately for ALS transport.
4. Request operating instructions for VAD in case of failure prior to MFD arrival.
5. Insure backup batteries, backup controller, and hand pump (or crank) is with patient. If possible package the power base unit.
6. If VAD is demonstrating complications, request that the patient or a trained person manually pump the VAD, if able to do so.
7. If VAD is demonstrating complications, manually pump the VAD as instructed by the patient or a trained person.
8. If necessary, transport patient to his/her cardiac facility regardless of diversion status.
10. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

**Special Considerations:**
1. Axial and centrifugal flow VADs do not produce a palpable pulse in the patient. Assess for other signs of adequate perfusion (alert, warm skin, capillary refill).
2. Axial and centrifugal flow VADs produce very narrow pulse pressures (5-15 mmHg). This is normal for the device! Use only manual blood pressure cuffs on these patients and don’t be concerned if you can’t detect a blood pressure.
3. Chest compressions can cause a tear or the aorta in patients with a VAD - DO NOT INITIATE CHEST COMPRESSIONS PRIOR TO

**CONSULTING THE CLINICAL ENGINEER ON CALL.**

VAD (VENTRICULAR ASSIST DEVICE)
4. Patients can tolerate prolonged VTach, VFib, and even Asystole. If administered correctly, electrical shock can cause device malfunction. Do not shock a patient prior to consulting with the Clinical Engineer on call.
5. Unless the patient requires treatment for major trauma or burns, the closest appropriate facility is the patient’s cardiac hospital, regardless of diversion status. If the patient receives cardiac care outside the Milwaukee area, the default receiving hospital is St. Luke’s –main campus. While enroute be sure to inform the receiving hospital that the patient has a VAD.

Revised 1/07
WOUND VAC MANAGEMENT

**Purpose:**
1. Removes accumulated secretions and dead tissue from wound or incision.
2. Decreases microorganism growth on wounds or incision site
3. Promotes wound healing.

**Equipment:**
1. PPE

**Procedure:**
1. Observe universal precautions,
2. Provide privacy during assessment.
3. Assess for the following:
   - Type of drain (i.e. Jackson Prat, Penrose, T-tube, or Hemovac)
   - Type, appearance, and location of wound or incision
   - Time of last pain medication
4. Transfer the patient to the cot. Insure that tubings are not kinked, twisted, or dislodged.
5. Insure that the drain is intact and functioning per MD order.

Revised 1/07
PARATECH AMBULANCE SERVICE, INC.
Standards of Practical Skills/Procedures

ZOLL CARDIAC MONITOR

Purpose:
1. To clarify the proper procedure for checkout and use of the Zoll CCT Monitor.

Guidelines:
1. A physical inspection/inventory of the Zoll cardiac monitor and its accessories should be done daily prior to the start of a shift.
2. Perform a self test to ensure monitor is functioning appropriately.
3. Rotate batteries per policy.

Equipment:
1. PPE
2. EKG patches
3. Zoll cardiac monitor

Procedure:
1. Observe universal precautions.
2. Check to make ensure all accessories are present:
   - 12 Lead Cable
   - 4 Lead Cable
   - CO2 Monitoring Cable
   - Defibrillation Cable
   - EKG Paper
   - Adult Regular/Thigh Cuffs
   - Pediatric Cuff
   - Adult/Pediatric Electrode Patches
   - Adult/Pediatric Multi-function Pads
   - Telephone Cable
   - Pulse Oximetry Cable/Probe
   - Batteries X 2
4. Check EKG paper supply & supply of adult/pediatric electrodes.
5. Perform self check by connecting defibrillation cable to "short plug" located on the on the defibrillation cable.
6. Turn monitor on and switch to defibrillation mode.
7. Set energy to 30 joules, charge and shock. Screen should indicate “test OK”.
8. If you receive an error message or code, contact dispatch and the ALS Coordinator immediately.

ZOLL CARDIAC MONITOR
9. As a precaution, after the self test, consider clearing the memory of the machine by holding the “summary” button for 4 seconds and then following the prompts to erase previous history.

10. If the monitor passes the self test, plug the Zoll monitor in to resume charging on the squad, and rotate the batteries as follows:
   - Remove the battery from the unit and replace with the spare battery on the squad shelf.
   - Place the battery from the unit into the charger and depress the “test” button.
   - Remove a charged battery from the charger and place it as the spare battery on the squad shelf.

11. Document procedure and results, including any unusual circumstances and/or difficulties encountered.

Special Considerations:
   - After the use of the Zoll cardiac monitor, insure that all of it pieces are placed back in the correct pouch and that the cables are gently looped (tight curling or stuffing of the cables leads to internal wire breakage).

Revised 1/07