



**Kootenai County Emergency Medical Services System**

**ALS  
PROTOCOLS**

**Revised  
April, 2004**

## INTRODUCTION

The following Kootenai County Advanced Life Support Protocols strive to delineate a foundation for the pre-hospital care of the ill or injured patient. While it is impractical to attempt to anticipate and cover all possible patient care scenarios, the theme for such protocols is to serve as a guideline or template for the care of our patients. Each patient encounter will demonstrate unique issues or challenges with the expectation that the medic will adapt and apply these protocols to the specific clinical situation.

Notwithstanding the stated goal of these protocols, there exist additional components to pre-hospital care, which serve to augment these guidelines. The role of On-line Medical Control is a perpetual resource that provides additional support and guidance in treatment of our patients. The team which serves as On-line Medical Control has a shared investment in the optimal pre-hospital care of our patients and welcomes an opportunity to provide support where protocols may not sufficiently address or apply to a specific patient encounter.

Additionally, it is incumbent upon paramedics to establish a focus towards the continued acquisition of knowledge and mastery of skills. Medicine is an evolving science, which demands such growth from all clinicians. Continuing medical education, conferences, literature review and even the day-to-day interaction amongst various medical team members are mechanisms for our continued development as clinicians.

By embracing the challenge to master these guidelines, work with a team concept and commit to the lifelong quest for improving our knowledge base there exists a tremendous potential to enjoy daily and lifelong career rewards.

Dr. Eric Chun

Dr. Douglas Stafford

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# VASCULAR ACCESS

Protocol #101P

April 14, 2004

**Intravenous Cannulation/ Fluid Resuscitation:** Intravenous access should be obtained via peripheral or central venous cannulation for existing or impending need for medication administration route or fluid resuscitation. Intravenous lines may be maintained with saline lock, D5W, Normal Saline or Lactated Ringers Solution.

**Indications for other than normal IV access:**

- Peripheral venous access cannot be established in a critical patient.
- Additional fluid routes are needed for volume resuscitation.
- Central venous medication route for cardiac arrest.

**Precaution:**

- cervical spine injury for internal / external jugular

**Complication of central vascular access**

- hematoma formation
- thrombosis
- arterial puncture
- pneumothorax
- hemopneumothorax
- nerve puncture
- peripheal neuropathy

**Equipment:**

- Large bore IV catheter.
- Betadine swabs.
- 12, 6, 3 or 1 cc syringe.
- IV fluid & set up.

**1. Procedure:**

General

- Patient needs to be in supine position, at least 15 degrees head-down to distend the neck veins and prevent an air embolism.
- Cleanse the skin well around the venipuncture site with betadine using aseptic technique.
- Infiltrate site with 1% lidocaine if indicated and time permits.
- Maintain negative pressure on the syringe as the needle is slowly advanced.
- When vein has been entered, blood will appear in the syringe, slowly advance the catheter while withdrawing the plunger of the syringe, advance the catheter over the needle and withdraw the needle.
- Immediately occlude the catheter to prevent air embolism.
- Attach infusion line to catheter and confirm proper placement by observing for free flow of fluids through the line and free return of blood on lowering the IV solution bag below the level of insertion.
- Attach IV line to catheter.
- Securely tape the IV line in place.
- Monitor breath sounds bilaterally.

### **a. Internal Jugular Vein, Posterior Approach**

- Insert needle under the sternomastoid muscle near the junction of the middle and lower thirds of the posterior border (just above the point where the external jugular vein crosses the sternomastoid muscle).
- Aim the needle caudally and anteriorly toward the suprasternal notch at an angle of 45 degrees to the sagittal and horizontal planes and with 15 degrees forward angulation in the frontal plane. The vein should be entered within 5-7 cm.

### **b. Internal Jugular Vein, Central Approach**

- Locate the triangle formed by the two heads (sternal and clavicular) of the sternomastoid muscle and the clavicle.
- If the carotid artery pulse is palpable within the triangle, place two fingers along the artery and retract it medially.
- Insert the needle at the apex of the triangle.
- Direct the needle in inferior and lateral motion so that it's parallel to the medial border of the clavicular head of the sternomastoid muscle.
- If the vein is not entered after the needle has been inserted a few cm, slowly withdraw the needle (maintaining negative pressure on the syringe). If the vein is not entered, withdraw the needle completely and reinsert it directing 5-10 degrees laterally. Do not direct the needle medially since the carotid artery may be punctured.

### **c. Subclavian Vein, Infraclavicular Approach**

- Insert large caliber needle attached to 10 ml syringe with 0.5-1ml saline, 1 cm below the junction of the inner and middle and medial thirds of the clavicle.
- Hold the syringe and needle parallel to the frontal plane.
- Direct the needle medially and slightly cephalad, behind the clavicle toward the posterior, superior aspect to the sternal end of the clavicle. (establish a good point of reference by firmly pressing the fingertip into the suprasternal notch to locate the deep side of the superior aspect of the clavicle, and direct the course of the needle slightly behind the fingertip).

### **d. External Jugular Vein Cannulation**

- Position head to opposite side of vein being accessed.
- Cleanse the site with antibacterial solution
- Apply light pressure over the vein with one finger just above the clavicle to stabilize and help fill the vein.
- Insert the needle midway between the angle of the jaw and the midclavicular line.

## 2. Intraosseous (IO) Puncture (proximal tibial route)

**INTRAOSSIOUS CANNULATION:** May be utilized to provide a medication administration route or fluid resuscitation in the pediatric patient.

### Indications:

- Medication or fluid resuscitation for the pediatric patient when a venipuncture site or IV access is not readily obtainable.

### Contraindications:

- Pelvic fracture.
- Fracture of the ipsilateral tibia or femur.
- Cellulitis or infection over the preferred site.

### Complications

- osteomyelitis
- sepsis
- through and through penetration of bone
- subcutaneous infiltration
- hematoma

### Equipment:

- IO needle.
- Betadine swabs.
- Appropriate IV fluid with set up.
- Tape / sterile dressing

### Procedure:

- Pad under the knee to effect a 30 degree angle.
- Locate flat, anterior surface of the proximal tibia 1-3 cm (one finger width) below the tibial tuberosity.
- Prep site with Betadine using aseptic technique.
- At a 90 degree angle insert the IO needle (with a gentle twisting motion) into the anterior tibia 1-3 cm below the tibial tuberosity. The needle should be perpendicular or angled slightly distal to the epiphyseal plate. Direct bevel of needle towards the foot
- Entrance into the marrow can be noted by a "giving" or a "pop" upon penetrating the cortex. The needle will stand upright without support and marrow can be aspirated if the needle is in the marrow space.
- Remove the stylet, and check placement by aspirating with a syringe (marrow aspirant will be red or pinkish).
- Connect appropriate infusion line and secure catheter with tape.

Eric Chun, MD  
Medical Director

Douglas R. Stafford, MD  
Medical Director

**Date Reviewed**

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**Medical Director Signatures**

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# NEEDLE THORACENTESIS

**Protocol #102P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will manage the patient with a suspected tension pneumothorax in a manner that reduces morbidity and mortality and provides optimum care in the pre-hospital setting.

**Procedure:** The paramedic shall provide a needle thoracentesis for tension pneumothorax consistent with the following guidelines.

**Indications:**

- Suspected tension pneumothorax or associated chest trauma with severe respiratory compromise.

**Equipment:**

- Large bore, over-needle IV catheter.
- Betadine swabs.
- Rubber glove.

**Procedure:**

- Locate second intercostal space, mid-clavicular line.
- Prep site with Betadine using aseptic technique.
- Infiltrate skin and subcutaneous tissues with 1% Lidocaine subcutaneous if indicated and time permits.
- Introduce the (10, 12 or 14 ga) IV catheter into the second or third intercostal space in the mid-clavicular line immediately superior to the third or fourth rib. A "pop" may be felt or a rush of air through the catheter will indicate entry into the pleural space.
- Remove the needle from the catheter.
- If time permits, a flutter valve may be made by utilizing the finger from a rubber glove.

**NOTE:** An alternate approach is mid axillary line at fifth intercostal space (intersection of nipple line and mid axillary line) and palpate nearest intercostal space.

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# PERICARDIOCENTESIS

**Protocol #103P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County shall manage the patient with a suspected pericardial tamponade in a manner that reduces morbidity and mortality and provides optimum care in the pre-hospital setting.

**Procedure:** The paramedic shall provide a pericardiocentesis for a pericardial tamponade consistent with the following guidelines.

**Indications:**

- Suspected Pericardial Tamponade.

**Equipment:**

- 16-18ga spinal needle.
- 20 cc syringe.
- Betadine swabs.
- Cardiac monitor.

**Complications:**

- V-Fib
- puncture of aorta, inferior vena cava, esophagus, peritoneum
- pneumothorax
- aspiration of ventricle blood instead of pericardial fluid

**Procedure:**

- Ensure patient is first placed on monitor
- Attach syringe to spinal needle.
- Place pt supine or upper torso elevated 20-30 degrees.
- Prep site with Betadine using aseptic technique.
- If indicated and time permits, infiltrate skin and subcutaneous tissues with 1% lidocaine to a depth of 1 1/2 to 2 inches.
- Locate the insertion site below the tip of the xiphoid and 1 cm to the patient's left.
- Maintaining continuous aspiration, insert the needle at a 20-30 degree angle with the frontal body plane and advance toward left shoulder.
- A "giving" sensation may be felt as the needle penetrates the pericardium and a "scratching" sensation may be felt as the needle contacts the epicardium.
- Aspirate fluid.

**NOTES:**

- If grossly bloody fluid is aspirated from the pericardial space, it should not clot and if a drop is placed on a gauze dressing, a red central spot should appear with a less bloody halo around it.
- If needle is advanced too far, an injury pattern appears on the ECG monitor (extreme S-T wave changes, widened QRS). This pattern indicates the needle should be withdrawn slightly.

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**Date Reviewed**

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# **AIRWAY MANAGEMENT**

**Protocol #104P**

**April 14, 2004**

**Policy:** Paramedics providing care to patients in Kootenai County shall manage the airway for the patient with respiratory compromise in a manner that reduces morbidity and mortality and provides optimum care in the pre-hospital setting.

**Procedure:** The paramedic shall provide a oxygen therapy consistent with the following guidelines.

**GENERAL AIRWAY/VENTILATORY MANAGEMENT:** Existing or impending airway compromise and/or hypoxia should be treated utilizing the following modalities:

- O<sub>2</sub> therapy via appropriate adjunct (nasal cannula, non-rebreather mask, IPPV, etc) at a flow rate to provide adequate oxygenation.
- Suctioning.
- Manual airway manipulation (jaw thrust, jaw lift, etc).
- Nasopharyngeal, oropharyngeal, esophageal obturator, esophageal/gastric tube airways.

## **Combi Tube**

**Indications:** airway designed for difficult or emergency intubation.

### **Contraindications:**

- Patient has ingested caustic substance
- Patient is under 5 feet in height

### **Procedure:**

- Lift the tongue and jaw upward with one hand
- With the other hand, hold and insert the Combitube so that it curves in the same direction as the natural curve of the pharynx and advance in a downward curved movement until the teeth or alveolar ridges lie between the printed bands.
- Inflate the #1 blue pilot balloon with 100ml of air.
- Inflate the #2 white pilot balloon with 15 ml of air
- Begin ventilation through the longer connecting tube, labeled #1.
- If auscultation of breath sounds is negative, begin ventilations through the connecting tube, labeled #2
- If both auscultation of breath sounds are negative the combitube may be advanced to far into the pharynx. Deflate the #1 balloon and move out 2-3cm, re-inflate and begin ventilations / auscultation again.

## **ENDOTRACHEAL INTUBATION**

### **Indications:**

- Immediate or impending airway or ventilatory compromise when the patient's airway and oxygenation cannot be adequately maintained with a BVM.

### **Cautions:**

- If cervical spine injury is suspected, maintain manual c-spine immobilization.
- If cribriform plate fracture is suspected, oral tracheal intubation is preferred.
- Suspected epiglottitis.

### **Equipment:**

- BVM w/supplemental O2.
- Suction unit.
- Laryngoscope with appropriate size blade.
- Appropriate size endotracheal tube, stylet and 6 or 12 cc syringe. If cuffed ET tube, check integrity of cuff.
- Tape or device for securing ET tube.
- Stethoscope.

### **General:**

- Hyperventilate patient.
- Cricothyroid pressure.
- Place patient's head in neutral or "sniffing" position.
- Following intubation, inflate cuff with 6-12 cc of air, auscultate for thoracic breath sounds, absence of air movement in epigastrium, chest expansion and fogging of ET tube.
- Secure ET tube manually or with adhesive tape or ET tube securing device.
- Reassess breaths sounds following patient transfer, change in patient's status or other situations which may dislodge proper tube placement.
- Attach end tidal CO2 pulse oximetry monitor

### **Orotracheal Intubation:**

- Visualize glottic opening with laryngoscope.
- Introduce ET tube through the glottic opening and pass the cuff just distal to the vocal cords.
- Remove stylet.

### **Nasotracheal Intubation (Blind)**

- Lubricate tip of ET tube and nare with 1% lidocaine jelly or K-Y jelly. **NOTE:** Do not use lubricant on endotracheal tubes < 5.0.
- Introduce ET tube into nare and gently advance.
- Advance tube through the glottic opening during inspiration or coughing.

### **Nasotracheal Intubation (UDV)**

- Lubricate tip of ET tube with 1% lidocaine jelly or K-Y jelly.
- Introduce ET tube into nare and gently advance.
- Visualize glottic opening with laryngoscope.
- If needed guide tip of ET tube through glottic opening with McGill forceps.

## Rapid Sequence Intubation

### Indications:

- Immediate or impending airway or ventilatory compromise in which endotracheal intubation is indicated but rendered difficult by excessive gag reflex, trismus or vocal cord spasm. Paramedic must be skilled in performing cricothyrotomy and have appropriate instruments available.

### Equipment:

- Bag-valve-mask w/supplemental O2.
- Suction unit with rigid suction tip.
- Laryngoscope with appropriate size blade.
- Appropriate size endotracheal tube, stylet and 6 or 12 cc syringe.
- Patent intravenous line.
- EKG monitor.
- Dosage of Succinylcholine and / or Vecuronium or Etomidate drawn up in a syringe.
- Dosage of Midazolam drawn up in a syringe.

### Procedure:

- Hyperventilate pt.
- Observe EKG, treat persistent dysrhythmia as needed.
- If patient is conscious, consider premedication with 2-5 mg Midazolam IVP.
- Pediatric patients (< 10 yrs); Administer 0.02 mg/kg of Atropine IVP (minimum 0.1 mg- maximum 1.0 mg) give 1-2 minutes before intubation.
- Suspected head injury; Administer 1.0 mg/kg 2% Lidocaine IVP.
- Administer Midazolam IVP or Etomidate (0.3 – 0.6 mg/kg IVP). Preference Etomidate over Midazolam if patient is hemodynamically unstable.
- Administer 1.5-2.0 mg/kg Succinylcholine IVP or 0.08-0.1mg/kg of Vecuronium.
- Apply cricoid pressure until intubation is completed.
- Upon cessation of fasciculation, intubate under direct vision.
- Confirm proper ET tube placement, reassess with any patient movement or change in patient status.
- If unable to intubate due to inadequate relaxation, ventilate with BVM for 30-60 seconds then administer 2nd dose of 1.5-2.0 mg/kg Succinylcholine IVP. If subsequent attempts at intubation are unsuccessful, ventilate with BVM until spontaneous ventilations resume (5-10 minutes).
- If unable to ventilate, provide surgical airway.

**Note:** May repeat dosage of Midazolam IVP following intubation for sedation purposes.

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**Date Reviewed**

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# **CRICOTHYROIDOTOMY**

**Protocol #105P**

**April 14, 2004**

## **1. NEEDLE CRICOTHYROIDOTOMY**

### **Indications:**

- Immediate or impending upper airway compromise that cannot be corrected by airway manipulation or endotracheal intubation (cricocentesis is preferred mode of surgical airway in patients under 12 years old).

### **Equipment:**

- 12 or 14 gauge, over-needle IV catheter.
- Y-tubing adapter or 15 mm adapter from a 3.0 ET tube.
- 6 or 12 cc syringe.
- BVD w/supplemental O<sub>2</sub>.
- Betadine swabs.

### **Complications:**

- Asphyxia
- Aspiration
- Esophageal perforation
- Hematoma
- Posterior tracheal wall
- Inadequate ventilations → hypoxia

### **Procedure:**

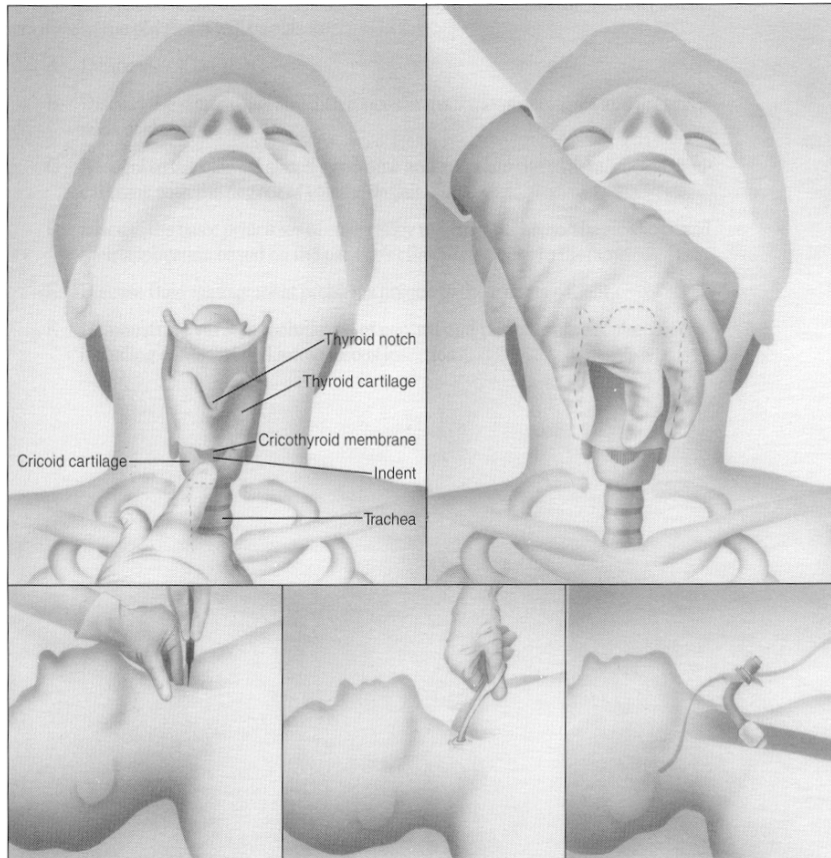
- Assemble the 12 or 14 ga needle to 6-12cc syringe
- Hyperextend pt's neck (if cervical spine injury is not suspected).
- Locate cricothyroid membrane by palpating for the depression below the prominence of the thyroid cartilage. Stabilize the trachea with the thumb and forefinger to prevent lateral movement of the trachea.
- If time permits, prep site with Betadine using aseptic technique.
- Insert catheter through the cricothyroid membrane, midline at a 45 degree, caudal angle. Negative pressure is applied to the syringe during insertion.
- Aspiration of air into the syringe indicates that the trachea has been entered.
- Advance the catheter over the needle and withdraw the needle and syringe.
- Attach ported, Y-tubing adapter to catheter hub and O<sub>2</sub> supply tubing.
- Administer high flow oxygen.
- Intermittent ventilation can be accomplished by occluding the open port with your thumb. Ventilate with a 1 second "on" and 4 seconds "off" rhythm.
- Auscultate lungs and observe for chest rise.

### **OPTION:**

- Following cannulation of the trachea and advancement of the catheter:
- Attach the 15 mm adapter from a 3.0 ET tube to the hub of the catheter and ventilate with BVD w/supplemental O<sub>2</sub>.

**NOTE:** This is a temporizing measure, adequate oxygenation may be maintained for approximately 30 minutes.

## 2. SURGICAL CRICOTHYROTOMY



### Indications:

- Immediate or impending upper airway compromise, which cannot be corrected by airway manipulation or endotracheal intubation. Needle Cricothyrotomy is the preferred surgical airway in patients under 12 years old.

### Equipment:

- Suction unit with rigid suction tip.
- Appropriate size ET tube, 6 or 12 cc syringe.
- Scalpel.
- Betadine swabs.
- 4 x 4 dressings.
- Forceps.

### Complications:

- asphyxia
- aspiration
- creation of false passages into tissues
- subglottic stenosis / edema
- laryngeal stenosis
- hemorrhage / hematoma
- laceration of esophagus or trachea

**Procedure:**

- Hyperextend pt's neck (if cervical spine injury is not suspected).
- Locate cricothyroid membrane by palpating for the depression below the prominence of the thyroid cartilage.
- Prep site with Betadine using aseptic technique.
- Manually stabilize the thyroid cartilage.
- Using a scalpel, make a horizontal incision and carefully dissect the tissues to the cricothyroid membrane. Make a horizontal incision in the membrane.
- Insert the handle of the scalpel into incision, then rotate 90 degrees to widen the opening. (Alternate procedure: insert the tip of forceps into the incision and open).
- Pass 5.0 or 6.0 cuffed ET tube (smaller if necessary due to pt size) into the trachea and inflate cuff.
- Confirm endotracheal placement by auscultation of bilateral lung sounds, fogging of the tube, chest expansion and absence of epigastric ventilation sounds.
- Ventilate or assist ventilations with BVD w/supplemental O2 as needed.

Eric Chun, MD  
Medical Director

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Date Reviewed

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Medical Director Signatures

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**CERTIFICATION & LICENSURE**

**Protocol # 201P**

**April 14, 2004**

**Policy:** All personnel whose classification requires a license or certification as mandated by any regulatory agency are responsible to maintain these credentials.

**Procedure:** Paramedics employed and providing care within Kootenai County are required to be current with the following:

- American Heart Association CPR for Healthcare Providers
- American Heart Association Advanced Cardiac Life Support
- Current and valid drivers license
- State of Idaho Paramedic card
- Pre-Hospital Trauma Life Support / Basic Trauma Life Support
- Pediatric Advanced Life Support
- Minimum Requirement of 15 documented Intubations – Field, OR/ER or Practical Setting

Any change in status needs to be reported to the licensing agency.

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**Date Reviewed**

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# **REVIEW OF PARAMEDIC RUN REPORTS**

**Protocol #202P**

**April 14, 2004**

**Policy:** There will be a systematic process in place that allows for audits of run reports by all paramedics caring for patients within Kootenai County. The audits will be part of a process to identify and correct possible patient care discrepancies.

**Procedure:** The auditing of run reports by paramedics caring for patients in Kootenai County will be consistent with the following guidelines.

## **Peer Audits of Run Reports:**

- All ALS reports will have a retrospective peer review done.
- The run reports will be reviewed for standard of care, “painting a clear picture” for the reviewer of what happened during the run and any identified problems during the call.
- The reviewer may flag the report for presentation if it may be an interesting case or there is something that would benefit the entire paramedic group at the monthly TCR review.

## **EMS review**

A Senior Paramedic from each department will review the following reports as a minimum:

- patient in cardiac arrest
- any intubations
- a TCR was declared or consulted on
- all pediatric cases
- special procedure done (needle thoracotomy, pericardiocentesis, etc.)
- reports in which new medications carried by paramedics were used
- reviews identified as unusual occurrence or questionable standard of care by paramedic peer review.
- random sampling of other ALS run reports

## **Medical Director review**

The Medical Director will review the following reports as a minimum:

- patient in cardiac arrest
- any intubations
- a TCR was declared or consulted
- all pediatric cases
- special procedure done (needle thoracotomy, pericardiocentesis, etc.)
- reports in which new medications carried by paramedics were used.
- reviews identified as unusual occurrence or questionable standard of care by paramedic peer review.
- Random 25% sampling of other ALS run reports
- Random 75 % of all reports from paramedics with less than 1 year experience in the field environment.

The Senior Paramedic / Medical Director will make any comments / observations on the copied patient care report and will then be shared with the original caregiver.

**Run Reports with possible Risk Management Issues:**

Run reports in which possible identified risk management issues are raised may have a formal review process done. Representatives of the review process may consist of the following as a minimum:

- Medical Director
- Other Physician(s)
- KCEMSS legal counsel
- Chief KCEMSS
- One senior paramedic peer

Other personnel who may be contacted during the review process may consist of the EMS crew(s), Firefighters or others associated with the run for information gathering purposes.

The Medical Director will share findings from the review process with the paramedic in question.

**Eric Chun, MD**  
Medical Director

**Douglas R. Stafford, MD**  
Medical Director

**Date Reviewed**

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**Medical Director Signatures**

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**CRITICAL TRAUMA PATIENTS REQUIRING POSSIBLE  
SURGICAL INTERVENTION**

**Protocol # 203P**

**April 14, 2004**

**Policy:** Paramedics providing care within Kootenai County will aggressively attempt to reduce the “Golden Hour” for the trauma patient suspected of requiring critical surgical intervention by consulting or declaring Trauma Code Reds’ (TCRs) to prevent a worsening of the patient’s condition.

**Procedure:** The paramedic will consult for / consider declaring TCRs consistent with the following guidelines.

- A Trauma Code Red should be considered for any patient in which immediate surgical intervention is indicated (i.e. penetrating and/or blunt abdominal or thoracic injuries, intrathoracic or intraabdominal hemorrhage, evisceration, uncorrected traumatic airway compromise, dissecting aortic aneurysm, etc)
- Consideration should be given when a patient is hemodynamically unstable with a high degree of suspicion of injuries such as chest, abdomen, pelvis, open head and bilateral femur fractures.
- If in doubt about declaring TCR consult with on–line medical control.
- Communicate TCR request / consultation as soon as possible (to include while on scene if possible).

**Monthly Case Review**

There are six ways a report can be put up for review at the monthly paramedic meeting:

- A report flagged through the review process by any of the paramedics
  - All TCRs
  - All reports in which a new drug carried as part of the ALS inventory
  - Any report(s) flagged by the original provider on the EMS run reports database
  - Any runs that involved extended extrications, rescue operations or multi-agency interactions.
  - Any report identified by the departments EMS Coordinator, Medical Director or KMC Emergency Department physicians.
- Run reviews will be from the previous month’s run reports. A copy of the requested charts will go to the Medical Director a week prior to the monthly case reviews so that the in hospital information can be pulled.
  - A copy of the reports up for review will be given to each paramedic at the meeting so that they can follow along. All patient information will be blackened out on the reports.
  - The paramedics will gain continuing education hours for the case reviews and will document type of cases reviewed in their individual training records.
  - The paramedics are expected to attend TCRs at the direction of their departments.
  - Paramedics presenting cases will receive a copy of their report one week prior to the case presentation.

**Eric Chun, MD**  
Medical Director

**Douglas R. Stafford, MD**  
Medical Director

**Date Reviewed**

**Medical Director Signatures**

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# PATIENT TRANSPORT & DESTINATION

**Protocol #: 204P**

**April 14, 2004**

**Policy:** Transport / patient destination decisions must be made which in the judgment of the paramedic caring for patients in Kootenai County serves in the best interests of the patient and their family members.

**Procedure:** The paramedic will use the following guidelines in making patient transport and destination decisions.

## **Transport Guidelines:**

Expeditious transport must be considered for any patient in acute status. When "on scene" intervention is likely to decrease mortality or morbidity to a greater extent than immediate transport, then "on scene" interventions should be attempted.

- Once on scene interventions have been done the patient should be transported as soon as possible.
- The decision to use lights and siren and expedite transport rests with the senior medical person on the transport unit.
- Once the paramedic is on scene the decision of what mode to use for transporting the patient (ambulance, boat, helicopter, etc.) rests with the paramedic.
- Once the paramedic is caring for a patient requiring Advanced Life Support (ALS) the paramedic is in charge of the patient until turned over to someone of equal or greater level of certification.
- A paramedic may defer a transport to the Critical Care Transport (CCT) Team in a situation where they are on scene of a physician ordered transport to another facility other than the closest one, if the patient is stable. The paramedic should remain available on scene until the CCT team arrives.

## **PATIENT DESTINATION:**

- Except during multiple casualty incidents, when triage and patient load dictates otherwise, all patients requiring ambulance transport should be transported to the nearest appropriate facility.
- If a patient insists on transport to another facility the paramedic may do so on a case-by-case basis. The decision to honor the patient's request should be based on three considerations:
  - The patient must be stable at the time of the transport decision.
  - Transporting the patient to that destination will not greatly hinder EMS operations within Kootenai County.
  - If the patient becomes unstable the transport will be taken to the nearest facility.
- Consider consulting on-line medical control as necessary.
- Transporting ALS patients to the Veterans Hospital should be done on a case-by-case basis. It is highly advisable that the paramedic contact the Veterans Hospital prior to transport to determine if the hospital will accept the patient (in many cases the Veterans Hospital will accept the patient only when the patient's current condition is directly related to a illness / injury from when they were serving in the military).

Eric Chun, MD  
Medical Director

Douglas R. Stafford, MD  
Medical Director

**Date Reviewed**

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**Medical Director Signatures**

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**WITHHOLDING / DISCONTINUING RESUSCITATION IN THE  
PRE-HOSPITAL SETTING**

**Protocol #: 205P**

**April 14, 2004**

**Policy:** The decision to withhold / discontinue resuscitation in the pre-hospital setting must follow guidelines which in the judgment of the paramedic providing care within Kootenai County serves in the best interests of the patient and their family members.

**Procedure:** The paramedic will use the following as guidelines in making the decision to withhold / discontinue resuscitation in the pre-hospital setting.

- Resuscitation may be withheld in the Pre-Hospital setting (or if initiated by others discontinued) in the following circumstances:**
- Traumatic cardio-pulmonary arrest
  - Triage situations in which survival is unlikely or when death has obviously occurred
  - Signs of rigor mortis, dependent lividity, or body cooling in a warm environment
  - Obvious non-survivable injury.
  - Cases where attempts at resuscitation would put the paramedic and / or EMS, fire fighters at significant risk of personal injury.
  - If there is a signed "Comfort One Do Not" Resuscitate Order present.

- Discontinuation of Resuscitation in the pre-hospital setting Guidelines:**
- Resuscitation may be discontinued when the cardiovascular system remains unresponsive (with a viable cardiac rhythm) to properly applied advanced life support measures including advanced airway techniques, medications, defibrillation and other procedures that may prove to be lifesaving.
  - Consideration should be given to the possible influences of hypothermia and/or drugs.
  - Consideration should be given to consult with the Emergency Room Physician if there is any question about continuing or discontinuing resuscitation efforts.
  - If family members are present they should be consulted prior to discontinuing resuscitation efforts.

- The following applies once resuscitation is discontinued in the pre-hospital setting:**
- Thoroughly document the patient's chart with resuscitation efforts, times, providers on scene, any physicians or family members consulted.
  - All tubes and lines may be removed unless there is suspicion of a crime scene.
  - Law Enforcement should be notified and one EMS provider should remain at the scene until relieved by police or coroner.
  - A copy of the patient report will be forwarded to the coroner.
  - Provide grief support to family members if present.

Eric Chun, MD  
Medical Director

Douglas R. Stafford, MD  
Medical Director

**Date Reviewed**

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**Medical Director Signatures**

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**KOOTENAI COUNTY PARAMEDIC APPROVED  
MEDICATION LIST**

**Protocol# 301**

**April 14, 2004**

**ADENOSINE**

Supplied: 6mg / ml (2ml vial)

Dose: 6 mg rapid bolus (1-3 seconds) followed by 20 ml NaCl flush.

Peds: 0.1 to 0.2 mg/kg rapid bolus (maximum single dose: 12 mg)

Indications: Supraventricular Tachycardia.

Notes: Two additional doses of 12 mg are indicated if conversion does not occur within 1-2 minutes of first dose. Half-life of adenosine is less than 5 seconds.

Xanthines, Tegretol, Persantine may alter effectiveness of adenosine. Side effects may include: transient flushing, dyspnea, chest pain, and transient asystole.

**ALBUTEROL**

Supplied: 3 ml (2.5 mg)

Dose: 2.5 mg (3 ml) in nebulizer @ 6 l/m flow.

Peds: 1.25 mg (1.5 ml) in nebulizer @ 6 l/m flow.

Indications: Bronchospasm.

Notes: Use with caution in hypertension, tachycardia.

**ASPIRIN (baby chewable)**

Supplied: 81mg / tablet

Dose: 4 aspirin

Peds:

Indications: acute MI

Notes: contraindicated in ulcers, GI bleeds, or other bleeding disorders

**ATROPINE SULFATE**

Supplied: 1.0mg / 10ml

Dose:

-Bradycardia /asystole; 1-2 mg IVP or ET q 3-5 minutes (Max 3.0 mg).

-Cholinesterase inhibiting toxins; 1.0-2.0 mg IVP challenge then 1.0 mg IVP q 5-10 minutes, titrated to drying of secretions.

Peds:

-Bradycardia/asystole; 0.01-0.03 mg/kg (minimum dose: 0.2 mg).

-Adjunct with intubation (<10 y/o ) 0.02 mg/kg IVP/IM

-Cholinesterase inhibiting toxins; 0.05 mg/kg q 5-10 minutes titrated to drying of secretions (minimum dose: 0.2 mg).

Indications: Bradycardia, asystole, cholinesterase inhibiting toxins.

Notes: Use with caution in Tricyclic overdose.

**CALCIUM CHLORIDE 10%**

Supplied: 1gm / 10ml

Dose: 2-4mg / kg slow IVP; may be repeated Q10minutes

Peds: 5-7mg / kg slow IVP push

Indications: acute hyperkalemia, hypocalcemia, calcium channel blocker toxicity

Notes: flush IV line well between administration of Sodium Bicarbonate to avoid precepitation...may cause bradycardia, arrhythmias, syncope, and cardiac arrest

**DEXTROSE 50%**

Supplied: 25 grams / 50ml solution

Dose: 1-2 amps slow IVP

Peds: 2.0-4.0ml/kg of D25W (dilute D50W 1:1 with NaCl to yield D25W).

Indications: Hypoglycemia.

Notes: Necrotizing if IV Infiltrated

**DILTIAZEM (Cardizem)**

Supplied: 25mg / 5ml

Dose: titrate in 5mg increments, slow IVP (max of 0.25mg/kg)

Peds:

Indications: A-Fib or flutter, PSVT

Notes: should not be administered if patient has been in A-Fib / flutter for greater than 48 hours or duration is unknown...contraindicated in second or third degree AV block, systolic BP less than 100mm, Ventricular Tachycardia or cardiogenic shock

**DIPHENHYDRAMINE (Benadryl)**

Supplied: 50mg / ml

Dose: 25-100 mg deep IM or slow IV push.

Peds: 1 mg/kg.

Indications: Anaphylaxis, allergic reaction, nausea control, dystonia (an impairment of muscle tone often effecting the head, neck and tongue) secondary to extrapyramidal (associated with uncontrolled movement, changes in muscle tone, and abnormal posturing) reactions.

Notes: Observe for hyperthermia, tachycardia. Relative contraindication with asthma.

**DOPAMINE (premix)**

**Preparation:** 400 mg in 250 ml of NaCl to yield 1600 mg/ml

Dose: Start @ 2-10 mcg/Kg/min titrated to blood pressure.

Peds: Same.

Indications: Hypotension, refractory bradycardia and AV blocks.

Notes: Observe carefully for ectopy and tachycardia. Contraindicated in hypovolemia, pheochromocytoma (a tumor of the adrenal glands that causes too much release of epinephrine & norepinephrine) and pts on MAO inhibitors.

**EPINEPHRINE 1:1000**

Supplied: 1 mg/ml

Dose: - SQ: 0.3-0.5 ml q 10 mins if needed.  
- Infusion: 1-4 mcg/min (mix 1mg in 250ml NaCl to yield 4.0mcg/ml).

Peds: 0.01 ml/kg SQ not to exceed 0.3 mg.

Indications: Bronchospasm, anaphylaxis, allergic reaction.

Notes: Use with caution in hypertension, tachycardia.

**EPINEPHRINE 1:10,000**

Supplied: 0.1 mg/ml (10 ml)

Dose: 1-2 mg IVP or ET.

Peds: 0.1 ml/kg ET or IVP.

Indications: V-fib, asystole, EMD, bronchospasm, anaphylaxis, allergic reaction.

Notes: Use with caution in hypertension, tachycardia.

**ETOMIDATE**

Supplied: 40mg Vial

Dose: 0.2 – 0.6mg/kg IVP (RSI)  
0.1 – 0.15 mg/kg IVP (Procedural effect)

Indications: RSI adjunct, cardioversion, emergent reduction of dislocation

Notes: Causes hypnotic effect within one minute, duration 4-10 minutes

**FUROSEMIDE (Lasix)**

Supplied: 10 mg/ml (4 ml)

Dose: 20-100 mg slow IVP / Peds: 1 mg/kg slow IVP

Indications: Pulmonary edema, hypertensive crisis

**GLUCAGON**

Supplied: 1 mg/ml

Preparation: Mix solution and powder to yield 1 mg.

Dose: - hypoglycemia; 1 mg IM or SQ.

Peds: 0.025 mg/kg IM or IV.

Indications: Hypoglycemia when IV access is unobtainable. Symptomatic beta blocker overdose.

Note: not compatible with NaCl

**IPRATROPIUM (Atrovent)**

Supplied: 0.5mg / 2.5ml

Dose: 0.5 mg (2.5ml) in Nebulizer @ 6LPM flow

Peds:

Indications: used as an adjunct with Albuterol for Bronchospasms, COPD, Asthma

Notes: cough, nervousness & dry mouth

**LIDOCAINE Hcl 2%**

Supplied: 20 mg/ml (5 ml)

Dose: - Initial dose: 1.5 mg/kg slow IVP or ET. (V-Fib pulseless V-Fib); 0.5-1mg/kg ectopic beats, Subsequent doses: 0.5 mg/kg q 10 min up to a maximum of 3 mg/kg.

Peds: Same.

Indications: VF, VT, pathologic ventricular ectopy.

Notes: Decrease loading dose by 50% in patients over 70 Y/O or with impaired hepatic function.

**LIDOCAINE Hcl 1 GM 4%**

Supplied: 1 gram (25 ml)

Preparation: 1 gm in 250 ml NaCl (4 mg/ml).

Dose: 2-4 mg/min (30-60 gtts/min) titrated to control of ventricular ectopy.

Peds: Same.

Indications: VF, VT, pathologic ventricular ectopy.

Notes: Use with caution in patients over 70 Y/O or with impaired hepatic function.

**LIDOCAINE Hcl 1%**

Supplied: 1 ml

Dose: 1-5 ml SQ infiltration.

Peds: Same.

Indications: Local anesthesia for IV cannulation, needle or surgical cricothyrotomy, thoracentesis.

**LORAZEPAM (Ativan)**

Supplied: 2mg / 1 ml

Dose: 2mg, slow IVP (over 1 minute), may repeat 2mg slow IVP in 7-10 minutes, may administer IM (2-4mg)

Peds:

-sedation: 0.05mg/kg slow IVP

- status epilepticus: 0.1mg/kg slow IVP (maximum of 4mg dose), may repeat 0.05mg/kg once in ten minutes...MAY

ALSO BE ADMINISTERED RECTALLY

Indications: seizures & anxiety

Notes: reduce dosage by half for patients over 70y/o...use with depressants may potentiate CNS effects

**MEPERIDINE Hcl (Demerol)**

Supplied: 100 mg/ml (1ml)

Dose: 50-100 mg slow IV push or IM titrated to effect.

Peds: (IVP-.015-0.1mg/kg, oral – 0.25-0.5 mg/kg, Nasal – 0.15mg/kg)

Indications: Analgesia.

Notes: Monitor respirations and BP closely. Contraindicated in hypotension, CNS injury and intraabdominal injury.

**MIDAZOLAM Hcl (Versed)**

Supplied: 5.0 mg/ml (1 ml)

Dose: 1-5 mg slow IV push titrated to effect or deep IM.

Peds: 1.0 mg IV titrate to effect or 2 mg IM (contact medical control if more than 2 mg IM is required).

Indications: Seizures, sedation, facilitation of advanced airway management (i.e. endotracheal intubation, cricothyrotomy, post-intubation sedation, etc).

Notes: Monitor BP and respirations closely. Contraindicated in hypotension.

**MORPHINE SULFATE**

Supplied: 10.0 mg/ml (1 ml)

Dose: 2-20 mgs slow IVP or IM titrated to pain or effect.

Peds: 0.1 mg/kg slow IVP.

Indications: Analgesia, pulmonary edema, hypertensive crisis.

Notes: Monitor respirations and BP closely. Observe for bronchospasm secondary to histamine release. Contraindicated in hypotension or CNS injury.

**NITROGLYCERIN**

Supplied: 0.4 mg/ tab or spray

Dose: 1 tab SQ up to 3 total.

Indications: Angina pectoris, pulmonary edema, hypertensive crisis.

Notes: Potentiates orthostatic hypotension.

**NITROGLYCERIN PASTE**

Supplied: 2% paste

Dose: ½" dermal

Indications: Angina, pulmonary edema, hypertensive crisis

Note: Potentiates orthostatic hypotension

**OXYTOCIN**

Supplied: 10 units/ml (1 ml)

Preparation: 10 units in 1000 ml of Ringers Lactate.

Dose: Start at 0.5-1.0 ml/min (5-10 gtts/min) and titrated to hemorrhage control.

Indications: Post-partum hemorrhage control.

Notes: Do not use prior to delivery of the placenta, R/O multiple pregnancy.

**PHENERGAN**

Supplied: 50mg/ml, 1ml ampuls

Dose: Nausea: 12.5-25mg IVP / deep IM

Sedation / allergic reaction adjunct: 25-50 mg IVP / deep IM

Peds: Not recommended

Indications: nausea / vomiting, adjunct for allergic reaction, sedation

**PROCAINAMIDE Hcl**

Supplied: 500 mg/ml (2 ml)

Preparation: (for infusion) 1 gm in 250 ml NaCl to yield 4 mgs/ml

Dose: Bolus: 20 mg/min IVP to total of 17 mg/kg or one of the following occurs:

1) The arrhythmia is suppressed.

2) Hypotension ensues.

3) QRS complex widens by 50%

Infusion: 1-4 mg/min (15-60 gtts/min).

Peds: 2 mg/kg.

Indications: VT, VF, pathologic ventricular ectopy.

Notes: Monitor BP, QRS interval. Use with caution in CHF.



**SODIUM BICARBONATE**

Supplied: 1 mEq / ml (50ml)

Dose: 1 mEq / kg IVP

Peds: 1 mEq / kg IVP

Indications: Tricyclic overdose, consider in cardiac arrest with suspected metabolic acidosis and crush injuries.

Note: Precipitates calcium

**SUCCINYLCHOLINE CHLORIDE**

Supplied: 20 mg / ml (10ml)

Dose: 1.5-2.0 mg /kg IVP

Peds: (>10yrs) 2.0 mg /kg

Indications: To facilitate endotracheal intubation when excessive gag reflex, trismus or vocal cord spasm render intubation difficult.

Notes: Monitor EKG, provide airway support as needed. May cause histamine release, some patients may experience prolonged paralysis. Contraindicated after 24 hours in burns or extensive crush injuries. In patients under 10 years old premedicate with Atropine 0.02 mg /kg IVP. Administer Lidocaine 1.0 mg/kg in patients with suspected head injuries

**VECURONIUM**

Supplied: 20 mg vial

Dose: 0.08 – 0.1 mg / kg

Peds: 0.1 – 0.15 mg / kg IVP

Indications: Longer acting neuromuscular block lasting 20-40 minutes. Considered when transport time is greater than 15-20 minutes and / or if patient’s condition would benefit from longer acting block.

Note: Reconstituted by mixing 10-20 ml solution (0.9 nacl, D5W or LR) to provide a solution of 1mg/ml. Offers excellent conditions

Eric Chun, MD  
Medical Director

Douglas R. Stafford, MD  
Medical Director

Date Reviewed

Medical Director Signatures

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# PARAMEDIC EQUIPMENT & SUPPLIES

Protocol#: 302

April 14, 2004

## Equipment

### Cardiac Monitor

- (2) monitoring cables
- (1) extra roll of monitoring paper
- (3) sets monitoring leads
- (2) set pediatric monitoring leads
- (1) tube of defibrillation gel
- (2) set of quick combo pads
- (1) set of pediatric quick combo pad
- (1) extra battery
- (1) end tidal CO2 lead/adaptor
- (1) PO2 cable

### Portable Suction Unit

### Miscellaneous

- (1) KTE
- (1) D sized oxygen tank with regulator
- (1) each Adult, child, infant BVM
- (1) OB Kit
- (1) Set Vacuum Splints
- (5) flares
- (1) flashlight
- (1) fire extinguisher
- (1) Haligan tool
- (2) head immobilizer
- (2) burn sheets
- (1) roll duct tape
- (1) each c-collars
  - no neck
  - regular
  - tall
  - peds
  - baby no neck
- (1) back pack frame
- (1) dive kit – mask, fins, snorkel, towels
- (3) blankets

### Supply Bag

- (2) 1000ml bag of NaCl w/admin sets
- (1) 250ml premixed Dopamine
- (1) 500ml premixed Lidocaine
- (2) nebulizers
- (2) D50W
- (2) Sodium Bicarbonate, 50meq

### Narcotics

- (2) Midazolam, 5mg
- (1) Meperidine, 100mg
- (2) Morphine, 10mg

### Intubation Kit

- (1) laryngoscope handles

- (2) Lorazepam, 2mg

### IV Kit

- (2) tourniquits
- (1) 1" tape
- (1) ½" tape
- (1) carpojet injector
- (2) 14ga catheters
- (2) 16ga catheters
- (2) 18ga catheters
- (2) 20ga catheters
- (2) 24ga catheters
- (2) 14ga x 5.5cm catheter
- (1) 18ga spinal needle
- (6) 2ml saline tubex
- (6) tegaderm op site
- (6) alcohol preps
- (6) iodine preps
- (2) 6" IV tubing extension
- (3) saline adapters
- (2) sterile 4 x4's
- (1) sterile gloves
- (2) IO needles
- (2) sterile 2x2's, 4x4's

### Medication kit

- (2) Atrovent
- (3) Albuterol
- (2) Ntg paste
- (1) Ntg - bottle
- (1) Ntg - spray
- (1) 81mg chewable Aspirin - bottle
- (2) Etomidate
- (2) Succinylcholine
- (1) Vecuronium
- (2) cardizem
- (1) oxytocin
- (2) glucagon
- (4) Lasix, 40mg
- (2) Procainamide
- (2) Narcan, 2mg
- (4) Adenosine, 6mg
- (2) Benadryl, 50mg
- (2) 1:1,000 Epinephrine ampules
- assorted sizes needles & 3ml syringes

- (1) #3 macintosh blades
- (1) #2 macintosh blade

- (1) #1 macintosh blade
- (1) #0 miller blade
- (1) #3 miller blade
- (1) #2 miller blade
- (1) #1 miller blade
- (1) each - uncuffed ETT  
2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0mm
- (1) each – cuffed ETT  
5.0, 6.0, 6.5, 7.0, 7.5, 8.0mm
- (1ea) magill forceps – adult, pedi

### **Surgical Airway Kit**

- (1) 12ml syringe
- (1ea) 12, 16 fr stomach tube
- (1ea) 5,8,10,14, 18fr suction catheter
- (3) 6fr stylet
- (1) 10,14fr stylet
- (1) 12ml Syringe
- (1) adult ETT holder
- (1) tube lidocaine gel

### **Outside Pouch**

#### **Rapid Intubation Set up**

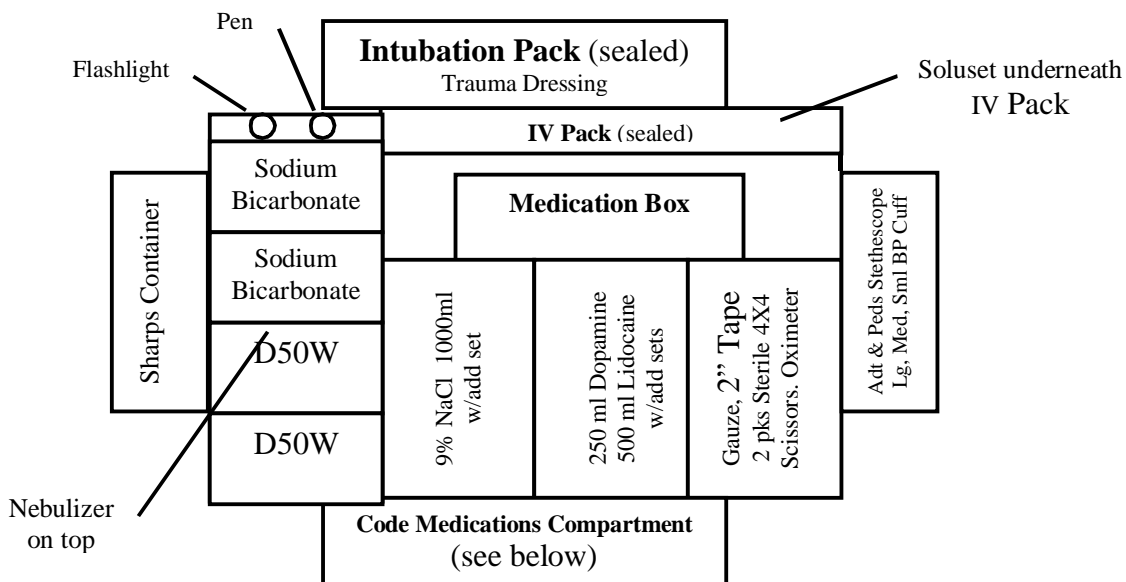
- (1) 8.0 ETT
- (1) 12ml syringe
- (1) ETT holder
- (1) Stylet
- (1) Laryngoscope handle
  - #4 macintosh blade
  - #3 miller blade

#### **Code Medications**

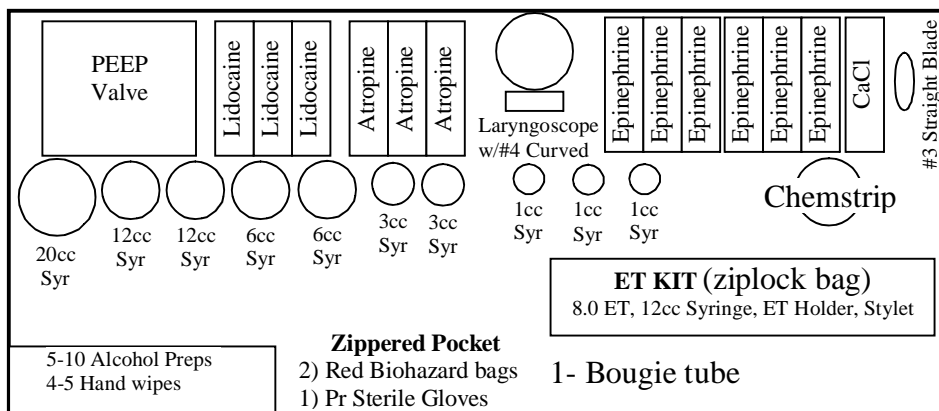
- (3) Lidocaine
- (3) Atropine Sulfate
- (6) 1:10,000 Epinephrine
- (1) Calcium Chloride
- (1) 20ml syringe
- (2) 12ml syringe
- (2) 3ml syringe
- (2) 1ml syringe
- (1) PEEP valve
- (1) bougie tube
- (2) red biohazard bags
- (1pr) sterile gloves
- (5-10) alcohol preps
- (5) hand wipes

- (1) #10 scalpel
- (2) hemostat
- (1) oxygen tubing
- (2) petrolatum gauze
- (1) short 5.0mm cuffed ETT
- (1) 3.0mm ETT adapter
- (1) ET O2 T-Adapter
- (1) sterile gloves
- (1) “Y” tubing
- (1) Nebulizer “T” piece
- (2) 10ga IV catheters

# ALS Pack



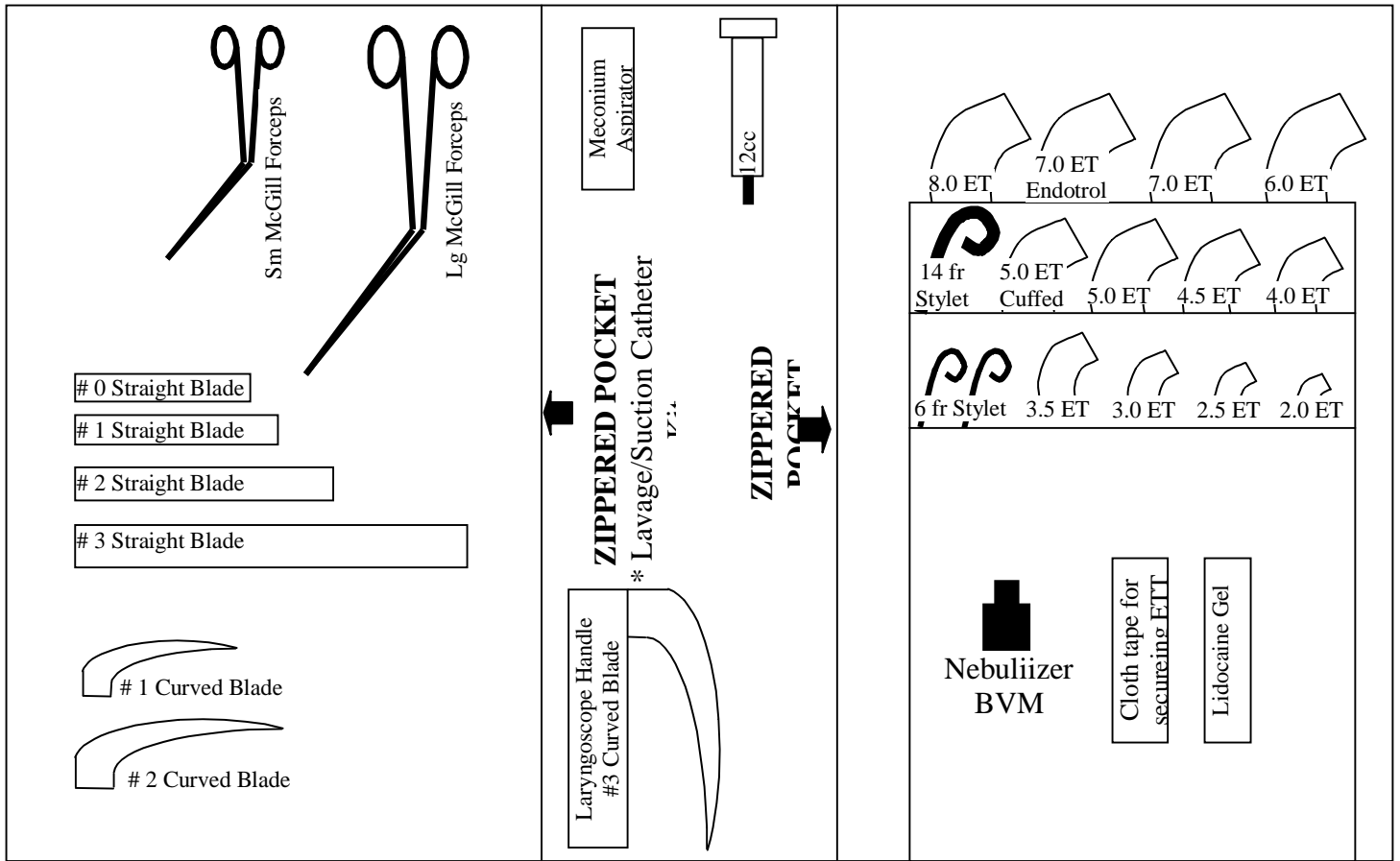
## Code Medications Compartment



## Medication Box

5 Adenocard	4 Furosemide	2 Naloxone	2 Diltiazem	5 Needles 18 ga x 1"	Glucagon
2 Procainamide 2 Diphenhydramine	2 Epinephrine 1:1,000	2 Etomidate		5 Needles 21 ga x 1"	
2 Albuterol Inhalation Solution	1 Oxytocin	1 bottle Aspirin	2 Succinylcholine Chloride	NTG Spray NTG Tablets NTG Paste	Vecuronium Bromide
2 Ipratropium Inhalation Solution	2 Droperidol	3 Albuterol Inhalation Solution			
	2-4 Ammonia Inhalants				

# Intubation Pack



\* Lavage/Suction Catheter Kit

- |  |
|--|
| Rigid Suction Catheter<br>18 fr Suction Catheter<br>14 fr Suction Catheter<br>10 fr Suction Catheter<br>8 fr Suction Catheter<br>5 fr Suction Catheter<br><br>16 fr Gastric Lavage Tube<br>12 fr Gastric Lavage Tube |
|--|

### \*\* Surgical Airway Pack

#### Back Pocket:

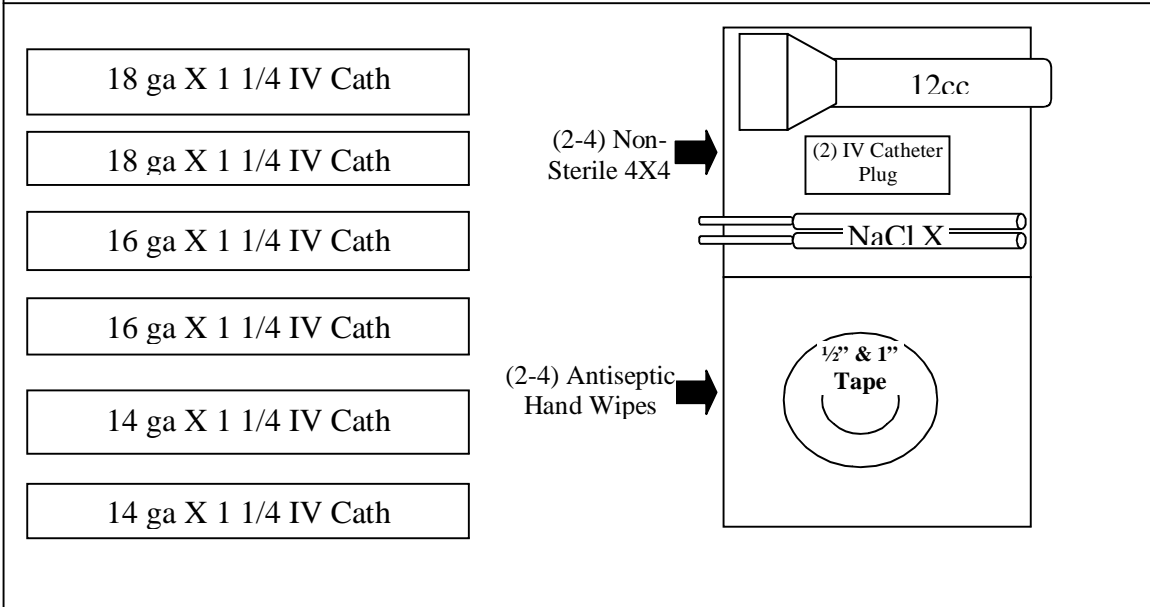
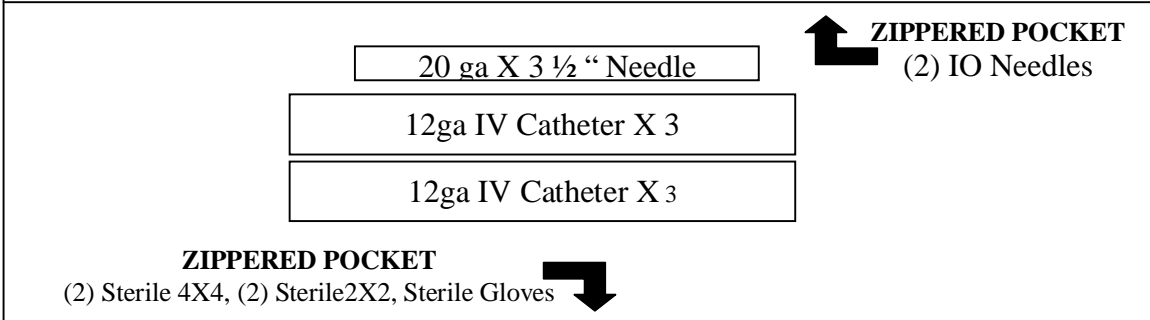
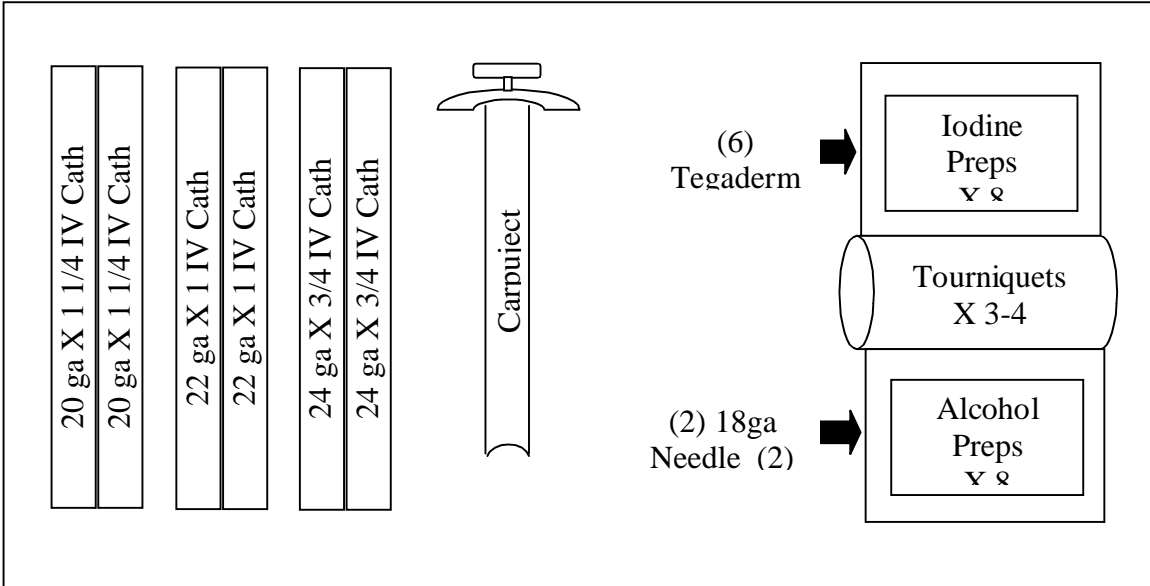
(1) pair Sterile Gloves, (2) Petroleum Dressings

ET O2 T-Adapter	(2) 10ga X 3 IV Catheters	(2) Sterile Forceps (1) #10 Scalpel
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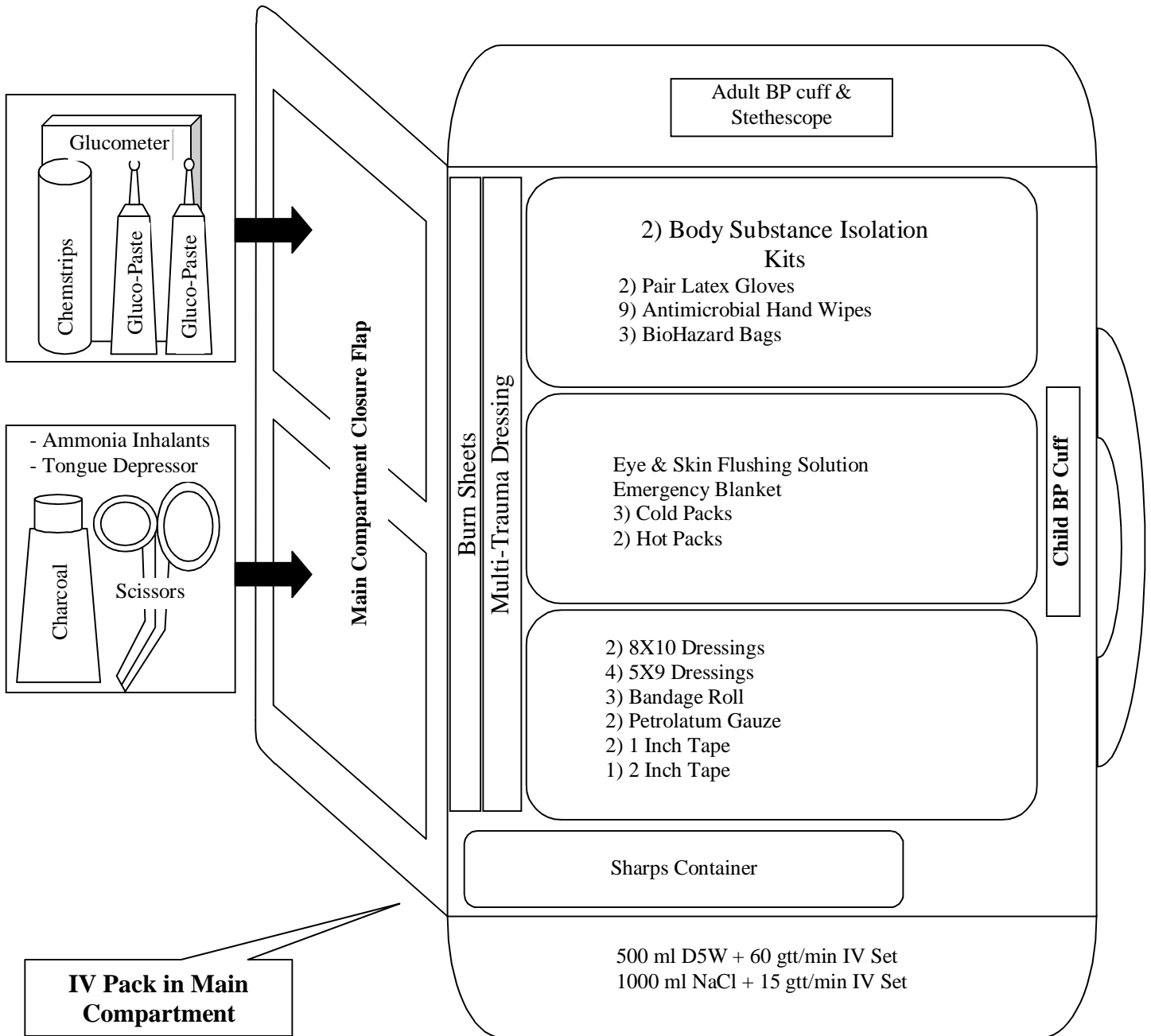
#### Front Pocket: (in baggie)

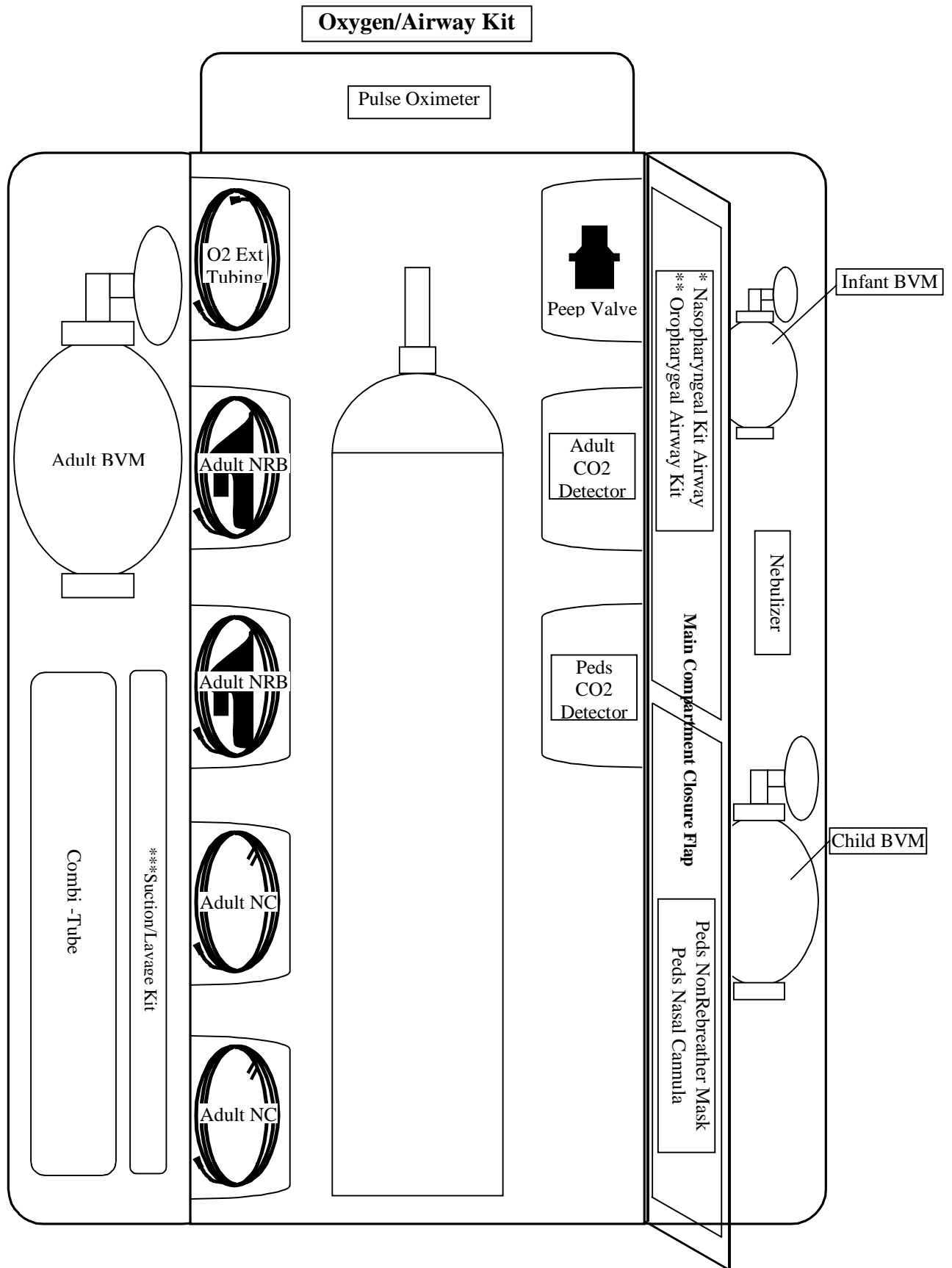
(1) Short 5.0 ET, (1) 3.0 ET Hub, (1) 6cc Syringe  
 (1) Cricocentesis Y-tube Adapter

# IV Kit



# JUMP KIT





\* NPA Kit: 20f, 24f, 28f, 32f

\*\* OPA Kit: 43mm, 60mm, 80mm, 90mm, 100mm, 110mm

\*\*\* Suction Kit:

- Rigid Suction Cath
- 18fr, 14fr, 10fr, 8fr, 5fr Suction Catheters
- 16 fr, 12 fr Gastric Lavage Tube





**CARE OF THE ACUTE PSYCHOTIC, COMBATIVE OR SUICIDAL  
PATIENT**

**Protocol # 401P**

**April 14, 2004**

**Policy:** Kootenai County Paramedics will care for the acute psychotic, combative or suicidal patient in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the acute psychotic, combative or suicidal patient consists of the following guidelines.

- Standing Orders**
- Treat any underlying medical / trauma conditions associated with patient's condition.
  - Consider starting IV of NaCl or saline lock for medication purposes.
  - Consider administration of controlled sedation for potentially or actual violent patient ((Phenergran, 25-50mg), (Midazolam, 1-5mg, IVP or IM),(Lorazepam, 2-4mg IVP or IM)).
  - Restrain patient as necessary for protection of EMS personnel, patient or others. (if patient is restrained ensure open airway at all times).
  - Ensure safety of EMS /fire personnel and others first and foremost!

**Eric Chun, MD**  
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**CARE OF THE PATIENT WITH ANAPHYLAXIS / ALLERGIC REACTIONS**

**Protocol #402P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will manage the patient with anaphylaxis / allergic reaction in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the patient with anaphylaxis / allergic reaction consists of the following guidelines.

**Standing Orders**

- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- Consider attaching cardiac monitor.
- Consider pulse oximeter reading.
- Start IV of NaCl. Consider bolusing for hypotension.
- Consider starting Inhalation treatment (or via ETT, if intubated) for bronchospasms with Albuterol (2.5mg) & Atrovent (0.5mg) at 6LPM; may repeat treatment of Albuterol Q5 minutes up to a maximum of three times and Atrovent (max of 1 additional time).
- Consider administration of Epinephrine, 1:1,000 (0.3-0.5mg, SQ/IM) for more severe forms of bronchospasms / anaphylaxis.
- Consider administration of Epinephrine 1:10,000 (0.3-0.5mg, IVP for severe Anaphylaxis).
- Consider administration of Benadryl (50mg IVP, IM if no IV access).
- Consider administration of Dopamine for persistent hypotension not solved by fluid bolusing (start at 5-20mcg / kg/ minute).
- Contact on-line medical control as necessary for consultation.

**Eric Chun, MD**  
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**CARE OF THE PATIENT WITH ALTERED MENTAL STATUS**

**Protocol #403P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County Paramedics will manage the patient with altered mental status in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the patient with altered mental status consists of the following guidelines.

**Standing Orders**

- Consider possible causes of the altered mental status.
- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- Consider starting an IV of NaCl or saline lock for medication purposes.
- Check glucose level of patient. **Conscious patient:** If glucose below 60mg/dl consider oral glucose or other carbohydrate source provided patient’s level of consciousness is not compromised to the point they cannot maintain their own airway. **Unconscious patient:** administer D50W (12.5-25gm, slow IVP, titrate to patient’s level of consciousness with consideration of hyperglycemic rebound).
- If IV access is unobtainable administer Glucagon (1mg, IM / SQ).
- Consider administration of Naloxone (0.4-2mg IVP, SQ, IM).
- Contact on-line medical control as necessary for consultation.

**Eric Chun, MD**  
Medical Director

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Medical Director

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# CARE OF THE PATIENT IN HYPERETENSIVE CRISIS

**Protocol #404P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County Paramedics will manage the patient with hypertensive crisis in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the hypertensive crisis patient consists of the following guidelines.

**Note:** Generally patients with a diastolic blood pressure greater than 130mmHg are considered to be in hypertensive crisis. However patients who have an elevated diastolic below this level and are symptomatic should be considered for treatment to decrease the systolic blood pressure.

### **Standing Orders**

- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- Attach cardiac monitor
- Start IV of NaCl / saline lock.
- Consider Morphine (slow IVP, titrate to patient's condition to a max of 20mg).
- Contact on-line medical control as necessary for consultation.

**Eric Chun, MD**  
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# CARE OF THE PATIENT WITH METABOLIC DISTURBANCES

Protocol #405P

April 14, 2004

**Policy:** Paramedics caring for patients in Kootenai County will manage the patient with metabolic disturbances in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the patient with metabolic disturbances consists of the following guidelines.

## Standing Orders for hypoglycemia

- Evaluate blood glucose level.
- If glucose below 60mg/dl **Conscious patient:** consider oral glucose or other carbohydrate source provided patient's level of consciousness is not compromised to the point they cannot maintain their own airway. **Unconscious patient:** administer D50W (12.5-25gm, slow IVP, titrate to patient's level of consciousness with consideration of hyperglycemic rebound).
- If IV access is unobtainable administer Glucagon (1mg, IM / SQ).
- Consider administration of oxygen as needed.
- Closely monitor for open airway.
- Encourage serial evaluation glucose levels.

## Standing Orders for Hyperglycemia / DKA

- Evaluate blood glucose level.
- Start parental IV of NaCl at wide open rate to hydrate patient.
- Closely monitor for open airway and level of consciousness.
- Consider underlying causes for hyperglycemia states.

## Standing Orders for Hyperkalemia (known or strongly suspected hyperkalemia with peaked T-waves, widened QRS complexes and arrhythmias, or potassium reported greater than 6.0)

- Attach cardiac monitor
- Start IV NaCl at KVO rate.
- Consider consulting with on line medical control for administering 10% Calcium Chloride (10ml, IVP) and Sodium Bicarbonate (1meq/kg, IVP).
- Consider administering Albuterol (2.5mg, nebulizer treatment) for a temporizing effect in lowering potassium

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# **CARE OF THE PATIENT WITH ENVIRONMENTAL EMERGENCIES**

**Protocol #406P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will manage the patient with environmental emergencies in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the patient with environmental emergencies consists of the following guidelines.

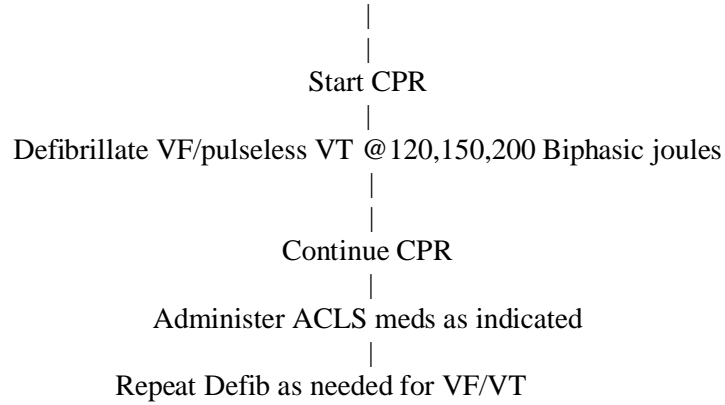
## **Standing Orders for Heat Related Emergencies**

- Remove patient from environment that caused the emergent circumstances and provide rapid cooling of patient.
- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- For severe heat related problems attach cardiac monitor
- Start large bore IV of NaCl at WO rate. Consider second IV for hydration purposes
- Recognize & treat for shock.

## **Standing Orders of the hypothermic patient**

- Remove patient from environment that caused the emergent circumstances.
- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- For more severe forms of hypothermia attach cardiac monitor
- Start large bore IV using warmed NaCl.
- Recognize & treat for shock.
- Start to rewarm the patient → **minor hypothermia**=passive and active rewarming, **moderate hypothermia**= passive rewarming and active rewarming of torso only, **severe hypothermia**= warmed IV fluids only in pre-hospital setting.
- Avoid rough handling of patient.
- Contact on-line medical control as necessary for consultation.

**Absent Pulse / Respirations Hypothermia Algorithm**



**NOTE:**

- 1) **Due to special circumstances of hypothermia, patient should be considered for resuscitation until patient is asytopic AND at room temperature. The exception of not resuscitating a hypothermic patient would be after on-line medical consult is obtained.**
- 2) **Lidocaine & Procainamide may increase the resistance to defibrillation. The paramedic may consider consulting with on-line medical control regarding the use of medications with hypothermic patients in cardiac arrest.**

**Eric Chun, MD**  
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**CARE OF THE PATIENT WITH CHRONIC OBSTRUCTIVE  
PULMONARY DISEASE (COPD)**

**Protocol #407P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will manage the patient with COPD in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the COPD patient consists of the following guidelines.

**Standing Orders**

- **Note room air SPO2 saturation if feasible**
- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- Consider attaching cardiac monitor
- Start IV of NaCl at KVO rate (bolus as needed).
- Consider starting Inhalation treatment (or via ETT, if intubated) for bronchospasms with Albuterol (2.5mg) & Atrovent (0.5mg) at 6LPM; may repeat treatment with Albuterol Q5 minutes up to a max of three times and Atrovent (max of 1 additional time).
- Consider use of positive end expiratory pressure valve. Titrate to patient condition.
- **Note: document if patient on O2 prior to fire/EMS arrival**

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**CARE OF THE PATIENT WITH CERBROVASCULAR ACCIDENT  
(CVA) / TEMPORARY ISCHEMIC ATTACK (TIA)**

**Protocol #408P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County Paramedics will manage the patient with CVA / TIA in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the CVA patient consists of the following guidelines.

- Standing Orders:**
- Minimize on scene time. Expedite delivery of patient to hospital.
  - Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
  - Consider attaching cardiac monitor
  - Consider starting IV of NaCl, (patient's unaffected side) titrate to patient's condition.
  - Check patient's glucose.
  - Consider early notification of medical control to facilitate possible thrombolytic therapy if onset less than 3 hours.

**Eric Chun, MD**  
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**CARE OF THE PATIENT WITH STATUS EPILEPTICUS**

**Protocol #409P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will manage the patient with Status Epilepticus in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the patient with Status Epilepticus consists of the following guidelines.

- Standing Orders**
- Consider possible causes of the seizures.
  - Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
  - Start IV of NaCl or saline lock for medication purposes.
  - Consider administering Lorazepam (2mg slow IVP (If unable to establish IV may administer dose (2-4mg) IM) or Versed (1-5mg IVP (2mg nasal), consider repeating dose in 5-7 minutes (If unable to establish IV may administer dose (2-4mg) IM).
  - Consider checking glucose.
  - Consider attaching cardiac monitor.
  - Contact on-line medical control as necessary for consultation.

**Eric Chun, MD**  
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# CARE OF THE OVERDOSE / POISONING PATIENT

**Protocol #410P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County Paramedics will manage the patient with a overdose or poisoning in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the overdose / poisoning patient consists of the following guidelines.

## **Standing Orders**

- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- Attach to cardiac monitor.
- Consider starting IV of NaCl or saline lock for medication purposes.
- Contact poison center if possible.
- If narcotic is suspected / confirmed administer Naloxone IV, IM, SQ or ET titrated to effect (0.4-2mg).
- If Tricyclic OD is suspected with widening QRS on cardiac monitor or hypotension consider administering Sodium bicarbonate (1 mEq/ kg, IVP).
- If cholinesterase inhibiting toxins, administer Atropine 1-2 mg IV titrated to effect (repeat doses may be necessary (1.0mg IVP Q5-10 minutes).

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## CARE OF THE PATIENT IN SHOCK

**Protocol #411P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County Paramedics will manage the patient in shock in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the patient in shock consists of the following guidelines.

**Standing Orders:**

- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- Attach cardiac monitor.
- Start large bore IV of NaCl, titrate to patient's condition. Consider starting second IV line for hypovolemic shock, major traumas.
- Treat any cardiac arrhythmias in accordance with Kootenai County ALS protocols.
- Recognize and treat for underlying cause(s) of shock.
- Consider starting a dopamine drip (5-20mcg / kg /min) for hypotension not solved by fluid bolusing.

**Eric Chun, MD**  
Medical Director

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## CARE OF THE REACTIVE AIRWAY PATIENT

**Protocol # 412P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will treat the patient with reactive airway disease in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care for the patient.

**Procedure:** Paramedic provider care of the reactive airway patient consists of the following guidelines.

### **Standing Orders:**

- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- Attach cardiac monitor
- Start IV of NaCl at KVO rate.
- Consider starting Inhalation treatment (or via ETT, if intubated) for bronchospasms with Albuterol (2.5mg) & Atrovent (0.5mg) at 6LPM; may repeat treatment of Albuterol Q5 minutes, up to a maximum of three times and Atrovent (max 1 additional time).
- Consider administration of Epinephrine, 1:1,000 (0.3-0.5mg, SQ/IM) for moderate to severe forms of bronchospasms.
- Consider administration of Epinephrine, 1:10,000 (0.3-0.5mg, IVP, ETT) for severe Status Asthmaticus.
- Consider use of positive end expiratory pressure valve. Titrate to patient condition.
- Contact on-line medical control as necessary for consultation.

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## **CARE OF THE ASTOLYIC PATIENT**

**Protocol #501P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the astolyic patient in a manner which combines using established guidelines combined with sound decisions based on the pre-hospital setting and that results in optimum care to the patient.

**Procedure:** Paramedic provider care of the Astolyic patient consists of the following guidelines.

### **Paramedic Standing Orders**

- Confirm asytole in a second lead
- Initiate / continue CPR
- Intubate Patient / attach end tidal CO<sub>2</sub> monitor (confirm oxygenation & ventilation)
- Establish an large bore IV, NaCl solution W/O rate
- Attempt to find reasons for Asytole (hypoxia, hyperkalemia, hypokalemia, pre-existing acidosis, drug overdose, hypothermia)
- Consider Calcium Chloride for possible hyperkalemia (2-4mg / kg, slow IVP).
- Consider use of Albuterol and Sodium Bicarbonate in response to hyperkalemia from Calcium in accordance with protocol on metabolic disturbances.

### **Asytole Algorhythm**

|  
If rhythm is unclear and possibly Ventricular Fibrillation, Defibrillate as for VF.

|  
Epinephrine 1:10,000 @ 1.0 mg IVP or 2.0 mg ET q 3-5 min.

|  
Atropine @ 1.0 mg IVP or 2.0mg ET q 3-5 min. (Max 3.0 mgs)

|  
Consider Sodium Bicarbonate (1mq / kg) IVP

|  
Consider Pacing (if considered perform immediately)

|  
If asytole persists consideration should be given to ceasing resuscitation efforts

**Transcutaneous Cardiac Pacing**

|  
Ensure Quick Combo pads are in place

|  
Set the desired rate on the pacemaker (60-100 BPM)

|  
Ensure milliamps setting to zero

|  
Turn the pacer on

|  
slowly increase the voltage (current) until ventricular capture is noted

|  
Check for carotid pulse

**Eric Chun, MD**  
Medical Director

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Medical Director

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# CARE OF THE PATIENT WITH ANGINA / ACUTE MYOCARDIAL INFARCTION

**Protocol #502P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the patient with angina / acute myocardial infarction in a manner which combines using established guidelines combined with sound decisions based on the pre-hospital setting and that results in optimum care to the patient.

**Procedure:** Paramedic provider care of the patient with angina / acute myocardial infarction consists of the following guidelines.

## **Paramedic Standing Orders:**

- Start oxygen using device appropriate for patient's condition (nasal cannula at 4-6 lpm / non-rebreather mask at high flow rate).
- Start IV of NaCl at TKO rate. Consider Bolusing for dehydration, hypotension.
- Attach cardiac monitor to patient.
- If patient's systolic blood pressure is greater than 90 mmHg, chest pain is persistent and thought to be cardiac in origin, administer Nitroglycerin (0.4mg tabs or spray S/L, max of three doses (by provider) as long as systolic BP remains greater than 90mmHg).
- Administer baby ASA chewable tablets (4 tablets; 324mg, PO). If patient is taking Coumadin administer 81mg of aspirin. Document if patient has taken aspirin at home prior to EMS arrival.
- If chest pain persists after patient's systolic BP remains above 90mmHg consider administration of narcotic analgesic.
- Administer bolus of 200cc for hypotension. Consider a dopamine drip infusion (5-20mcg/kg) for persistent hypotension (less than 90mmHg systolic) associated with cardiogenic shock.
- Observe for and be prepared to treat for cardiogenic shock.

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## PULSELESS ELECTRICAL ACTIVITY (PEA) (ELECTROMECHANICAL DISSOCIATION (EMD))

**Protocol #503P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the patient with PEA / EMD in a manner which combines using established guidelines combined with sound decisions based on the pre-hospital setting and that results in optimum care to the patient.

**Procedure:** Paramedic provider care of the patient with PEA / EMD consists of the following guidelines.

### **Paramedic Standing Orders**

- Initiate / continue CPR
- Intubate Patient / attach end tidal CO<sub>2</sub> monitor (confirm oxygenation & ventilation)
- Establish an large bore IV, NaCl solution W/O rate
- If patient taking beta blockers, consideration should be given to administering Calcium Chloride Consider Calcium (**2-4mg / kg, slow IVP**).
- Attempt to find and correct reasons for PEA / EMD including: (HH PATCH)
  - Hypoxia**
  - Hyperkalemia**
  - Pulmonary Embolism**
  - Acidosis**
  - Tension Pneumothorax**
  - Cardiac Tamponade**
  - Hypothermia**

### **PEA / EMD Algorhythm**

|  
Consider fluid challenge  
|  
Epinephrine 1:10,000 @ 1.0 mg IV or 2.0 ET q 3-5 min.  
|  
If HR < 50 consider Atropine (1mg IVP or 2.0mg ETT) Q3-5 minutes(max 3mg)  
|  
Consider Pacing (if considered perform immediately)  
|  
Consider Sodium Bicarbonate (1mq/kg)  
|

**Transcutaneous Cardiac Pacing**

|  
Ensure Quick Combo pads are in place

|  
Set the desired rate on the pacemaker (60-100 BPM)

|  
Ensure milliamps setting to zero

|  
Turn the pacer on

|  
slowly increase the voltage (current) until ventricular capture is noted

|  
Check for carotid pulse

**Eric Chun, MD**  
Medical Director

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Medical Director

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# TREATMENT OF THE PATIENT IN CONGESTIVE HEART FAILURE (CHF)

**Protocol #504P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the patient with CHF in a manner which combines using established guidelines combined with sound decisions based on the pre-hospital setting and that results in optimum care to the patient.

**Procedure:** Paramedic provider care of the patient with CHF consists of the following guidelines.

### **Paramedic Standing Orders:**

- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor). An alternative to intubating a CHF patient is a trail of Positive End Expiratory Pressure (PEEP) using the PEEP valve. Titrate between 5cm H2O and 10cm H2O to patient's condition. Consider Rapid Sequence Intubation if no improvement is noted through respiratory effort and pulse oximetry
- Attach cardiac monitor
- Start IV of NaCl or D5W at KVO rate. Consider carefully bolusing as necessary for hypotension without signs of shock.
- If systolic BP is greater than 90mmHg consider administration of Nitroglycerin (0.4mg tabs or spray S/L, max of three doses by provider).
- Consider administration of Furosemide (40-120mg slow IVP).
- If systolic BP is greater than 90mmHg consider administration of Morphine (2-10mg slow IVP, may repeat with up to 10mg for a max of 20mg).
- If hypotensive (less than 90mmHg) with signs of shock consider Dopamine Drip Infusion (start @5-20mcg/kg).

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# TREATMENT OF THE PATIENT WITH SYMPTOMATIC BRADYCARDIA

Protocol #505P

April 14, 2004

**Policy:** Paramedics caring for patients in Kootenai County will attend to the patient with symptomatic bradycardia in a manner which combines using established guidelines combined with sound decisions based on the pre-hospital setting and that results in optimum care to the patient.

**Procedure:** Paramedic provider care of the patient with symptomatic bradycardia consists of the following guidelines.

## Paramedic Standing Orders

- Administer high flow oxygen via non-rebreather and / or intubate to assist ventilations as necessary (if intubating patient attach end tidal CO<sub>2</sub> monitor).
- Apply ECG Monitor
- Establish IV Line of NaCl (bolus as necessary for hypotension).
- Consider possible causes of the Bradycardia

## Bradycardia Algorithm

**Patient Profile: altered mental status, dyspnea, chest pain, hypotensive, diaphoretic**

2nd degree Mobitz II or  
3rd degree block

External Cardiac Pacing

Sinus bradycardia or  
low grade AV Block

Atropine 0.5 - 1.0 mg (max of 3 mg)  
or  
External Cardiac Pacing

## NOTES:

\* Consider fluid boluses for hypotensive patient

\*\* If pacer is unavailable or ineffective, consider Dopamine @ 5 ug/min titrate to effect to maximum of 20 ug/min., and/or epinephrine 2-10mcg/min IVP.

**Transcutaneous Cardiac Pacing**

|  
Ensure Quick Combo pads are in place

|  
Set the desired rate on the pacemaker (60-100 BPM)

|  
Ensure milliamps setting to zero

|  
Turn the pacer on

|  
slowly increase the voltage (current) until ventricular capture is noted

|  
Check for carotid pulse

**Eric Chun, MD**  
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## TREATMENT OF THE SYMPTOMATIC TACHYCARDIA PATIENT

**Protocol #506P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the patient with symptomatic tachycardia in a manner which combines using established guidelines combined with sound decisions based on the pre-hospital setting and that results in optimum care to the patient.

**Procedure:** Paramedic provider care of the patient with symptomatic tachycardia consists of the following guidelines.

### **Paramedic Standing Orders**

- Administer high flow oxygen via non-rebreather and / or intubate to assist ventilations as necessary (if intubation is done attached end tidal CO<sub>2</sub> monitor).
- Apply ECG Monitor
- Establish IV Line of NaCl / Saline lock (IV site should be closest to heart as possible)
- Consider possible causes of tachycardia

### (1) Narrow Complex Symptomatic Tachycardia Algorithm

|  
|  
**Patient Profile: hypotensive, chest pain, decreased level of consciousness, SOB, CHF, shock, AMI**  
|  
|

#### **Hemodynamically Stable**

Consider vagal maneuver

Adenosine (6mg rapid IVP with fluid bolus)

Adenosine (12mg rapid IVP)

Adenosine (12mg, rapid IVP)

Cardizem (titrate in 5mg increments, slow IVP (max of 0.25mg/kg))

Consider synchronized Cardioversion (normally contraindicated in patients with CHF)

#### **Hemodynamically Unstable**

May consider brief trial of Adenosine or Cardizem

Synchronized Cardioversion (seldom needed for HR under 150) (administer per protocol)

If patient is unconscious or severely obtunded, consider immediate synchronized cardioversion

### **Narrow Complex Symptomatic Tachycardia Algorithm (cont.)**

||  
||  
\*\*If wide complex tachycardia is noted anywhere  
along algorithm:

||  
Lidocaine (1-1.5mg IVP (max 3mg/kg), if effective start Lidocaine drip)

||  
Procainamide (20mg / min IVP, until 1) conversion, 2) widening QRS, or 3)17mg/kg  
|| (in severe cases may medicate up to 50mg /min)

||  
Consider Synchronized Cardioversion (per protocol)

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

### **(2) Ventricular Tachycardia (with a pulse) Algorithm**

**\*\*if stable consider medications however may go to  
synchronized cardioversion at any time in algorithm**

||  
Lidocaine (1-1.5 mg / kg IVP Q5-10min (max 3.0mg /kg)  
(if conversion start Lidocaine drip at 2-4mg/min)

||  
Procainamide (20mg / min IVP (20mg / min IVP, until 1) conversion,  
2) widening QRS, or 3)17mg/kg  
(in severe cases may medicate up to 50mg /min)

||  
(if conversion start Procainamide drip at 1-4 mg/min)

||  
Synchronized Cardioversion per protocol

### **(3) Uncontrolled Atrial Fibrillation / Flutter Algorithm (Hemodynamically unstable)**

||  
Cardizem titrate in 5mg increments, slow IVP (max 0.25mg/kg)  
(repeat @0.35mg / kg after 15 minutes)

||  
Consider synchronized cardioversion



**NOTE:** If conversion occurs but PSVT recurs, repeated electrical cardioversion is NOT indicated. Sedation should be used as time permits.

<p style="text-align: center;"><b>Synchronized Cardioversion</b></p> <p style="text-align: center;"> </p> <p style="text-align: center;">Appropriate oxygen device on patient, cardiac monitor attached, IV line (if possible without undue delay), suction</p> <p style="text-align: center;"> </p> <p style="text-align: center;">Consider sedation (midazolam 1-5mg slow IVP) narcotic analgesic and/or Etomidate 0.1 – 0.15 mg/kg</p> <p style="text-align: center;"> </p> <p style="text-align: center;">Attach Quick Combo Pads to chest or paddles (if using paddles use gel and apply 25 pounds of pressure to patient's chest)</p> <p style="text-align: center;"> </p> <p style="text-align: center;">Engage "Sync" button on defibrillator, look for markers on R wave indicating sync mode</p> <p style="text-align: center;"> </p> <p style="text-align: center;">Set amount of biphasic joules 50J→75J→100J</p> <p style="text-align: center;"><b>(NOTES: reset sync button after each synchronized cardioversion, check for pulse between each synchronized cardioversion, PSVT &amp; Atrial Flutter may respond to lower energy levels and consider starting at 25J biphasic)</b></p>
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**Eric Chun, MD**  
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**CARE OF THE PATIENT WITH VENTRICULAR ECTOPY  
ACUTE SUPPRESSIVE THERAPY**

**Protocol #507P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the patient with ventricular ectopy in a manner which combines using established guidelines combined with sound decisions based on the pre-hospital setting and that results in optimum care to the patient.

**Procedure:** The paramedic shall provide care to the patient with ventricular ectopy in a manner consistent with the following guidelines.

- Paramedic Standing Orders**
- Administer high flow oxygen via non-rebreather and / or intubate to assist ventilations as necessary (if intubating patient attach end tidal CO2 monitor).
  - Attach cardiac monitor
  - Establish IV Line of NaCl / Saline lock (consider fluid bolus for dehydrated or hypotensive patient)
  - Consider possible causes of Ventricular Ectopy

**Ventricular Ectopy Algorithm**

|

Lidocaine 1.5 mg/kg bolus + Maintenance Drip

|

If not suppressed, Repeat Lidocaine @ 0.5 mg/Kg every 2-5 min. until ectopy resolves or up to 3 mg/Kg given

|

If not suppressed, Procainamide 20 mg /min IVP until 1)no ectopy 2) widening QRS, or 3)17mg/kg (in severe cases may medicate up to 50mg /min)

|

**MAINTENANCE DRIP RATES**

- Lidocaine 2-4 mg/min
- Procainamide 1-4 mg/min

Indications for the above therapy include but are not limited to:

- PVC's in the presence of acute ischemic heart disease
- PVC's occurring frequently (more than 6 / minute)
- Close coupled or R-on-T phenomenon
- Multifocal or multiform PVC's
- Runs of two or more PVC's

**NOTE:** Decrease lidocaine dosage by 50% in patients over 70 Y/O or with impaired hepatic blood flow.

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**NOTES:**

1. If conversion occurs with lidocaine or procainamide start infusion.
2. Alternate Epinephrine with antiarrhythmic medications.
3. If patient has recurrent VF / pulseless V-Tach, defibrillation setting should be set at joules previously used to convert patient.

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# CARE OF THE BURN PATIENT

**Protocol #601P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the burn patient, in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care.

**Procedure:** Paramedic provider care of the burn patient consists of the following guidelines.

### **Standing Orders for Thermal Burns:**

- Ensure patient's burning process has stopped.
- Cool burn area with cool water, for major burns irrigate 15-20% of burned area at a time, up to one minute with cool water, while preventing hypothermia and cover with dry, sterile sheet.
- Using rule of nines determine percentage of burns.
- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor). **INTUBATION OF PATIENT SHOULD BE CONSIDERED EARLY ON FOR PATIENT'S WITH UPPER AIRWAY EXPOSURE TO BURNS.**
- Consider attaching cardiac monitor.
- Start large bore IV of NaCl, titrate to patient's condition (WO for patients with any significant thermal burns). Consider starting second IV for thermal burns.
- Consider and treat patient who was in enclosed spot for Carbon Monoxide poisoning.
- Consider and treat for pain relief (morphine (titrate to patient up to a max of 20mg) and sedation ((Phenergan 25-50mg), (2.5mg, or Versed (1-5mg) IVP).

### **Standing Orders for Electrical Burns:**

- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- Attach cardiac monitor --> closely monitor for arrhythmias and treat in accordance with Kootenai County Paramedic protocols.
- Start large bore IV of NaCl, titrate to patient's condition (WO for patients with any significance of thermal burns). Consider starting second IV.

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# **CARE OF THE PATIENT WITH CHEST TRAUMA**

**Protocol #602P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the patient with chest trauma, in a manner, which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care.

**Procedure:** Paramedic provider care of the patient with chest trauma consists of the following guidelines.

**Standing Orders:**

- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor), (maintain c-spine control with intubation attempt with suspected spinal injury).
- Attach cardiac monitor.
- Start large bore IV of NaCl and titrate to patient's condition (bolus for hypotension). Consider starting second IV for fluids.
- Recognize and treat for hypovolemic and/or cardiogenic shock.
- Consider declaring / consulting for Trauma Code Red with Emergency Department for chest trauma where surgical intervention may be required.
- Treat suspected pneumothorax and pericardial tamponade as outlined in Kootenai County protocols.

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# CARE OF THE PATIENT WITH HEAD TRAUMA

**Protocol #603P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the patient with head trauma, in a manner, which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care.

**Procedure:** Paramedic provider care of the patient with head trauma consists of the following guidelines.

**Standing Orders:**

- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor). **INTUBATION SHOULD BE CONSIDERED EARLY ON IF PATIENT AIRWAY IS COMPROMISED IN ANY WAY OR IF GCS IS  $\leq$  8** (maintain c-spine control during any intubation attempt)
- Administer Lidocaine (1.5mg/kg, IVP) if intubating patient with head injury.
- Consider attaching cardiac monitor.
- Start large bore IV of NaCl and titrate to patient's condition.
- Recognize and treat for neurogenic shock.
- Consider declaring / consulting for Trauma Code Red with Emergency Department for severe closed / open head trauma.

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**CARE OF THE PATIENT WITH  
ABDOMINAL AORTIC ANEURYSM (AAA)**

**Protocol #604P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the patient with the AAA, in a manner, which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care.

**Procedure:** Paramedic provider care of the patient with a possible AAA consists of the following guidelines.

**Standing Orders:**

- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- Attach cardiac monitor.
- Start two large bore IVs of NaCl at a WO rate.
- Consider administering morphine (2-10mg, slow IVP for hypertensive patients or pain control (contraindicated if patient has systolic BP less than 100mmhg).
- Ensure rapid transport.
- Contact on-line medical control as necessary for consultation.

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## **CARE OF THE PATIENT WITH CRUSH INJURIES**

**Protocol #:605P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the patient with crush injuries, in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care.

**Procedure:** Paramedic provider care of the patient with crush injuries consists of the following guidelines.

### **Standing Orders:**

- Start appropriate oxygen therapy for condition of patient (if intubating patient attach end tidal CO2 monitor).
- Consider administration of analgesia for pain control
- Consider attaching cardiac monitor.
- Start two large bore IVs of NaCl at a WO rate (**prior to extrication if possible**).
- Consider consulting with on line medical control for administration of Sodium Bicarbonate (50meq mixed with 1000ml NaCl) for crushing injuries to extremities.
- Recognize and treat for hypovolemic shock.
- Position extremity with crushing injury at level of heart.
- Transport patient rapidly.
- Consider declaring / consulting for Trauma Code Red with the Emergency Department.
- Consult with on line medical control for crush injuries in which patient cannot be extricated.

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# **PROVIDING PAIN CONTROL**

**Protocol #606P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the patient needing pain control, in a manner, which combines using established guidelines with sound decisions based on the pre-hospital setting and that results in optimum care.

**Procedure:** Paramedic providing pain control to patient consists of the following guidelines.

**Standing orders:**

- Ensure underlying problem is properly treated.
- Start IV of NaCl / saline lock.
- Administer analgesic (Demerol – 50-100mg titrate slowly IVP or IM), (Morphine – titrate to patient, 2-20mg).
- Consider administration of sedation as needed (versed -1-5mg, slow IVP) or( Ativan -2-4mg, slow IVP)).
- Consider Phenergan for nausea from analgesic (12.5-25mg, IVP).
- Monitor patient's airway.
- Attach cardiac monitor for any respiratory depression / cardiac irregularity.

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# CARE OF THE PATIENT WITH OB / GYN COMPLICATIONS

**Protocol #701P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the woman with OB / GYN complications in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and results in optimum care for the patient.

**Procedure:** Paramedic provider care of the woman with OB / GYN complications consists of the following guidelines.

**Standing Orders:**

- Consider administering Oxytocin (10 units in 1000 ml LR, titrate to effect (usually 5-10gtts/min)) for control of postpartum hemorrhage.
- Treat for signs of shock
- Consider attaching cardiac monitor for maternal complications
- Administer Ativan (2mg, slow IVP) for seizures secondary to eclampsia
- Start needed oxygen therapy for condition of patient; consider ETT intubation as needed for supporting airway (if intubating patient attach end tidal CO2 monitor).
- Consider administering pain medication (use cautiously if delivery appears to be imminent).

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**CARE OF THE NEONATE REQUIRING RESUSCITATION**

**Protocol #702P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the neonate requiring resuscitation in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and results in optimum care for the patient.

**Procedure:** Paramedic provider care of the neonate consists of the following guidelines.

**Apgar Scoring**

	<b>0 points</b>	<b>1 point</b>	<b>2 points</b>
<b>Color</b>	<b>Body-cyanotic</b>	<b>Body-pink / limbs cyanotic</b>	<b>Pink</b>
<b>Pulse</b>	<b>Absent</b>	<b>Less than 100</b>	<b>Over 100</b>
<b>Grimace</b>	<b>No response</b>	<b>Grimace</b>	<b>Crying</b>
<b>Muscle Tone</b>	<b>Limp</b>	<b>Flexion in extremities</b>	<b>Active</b>
<b>Respirations</b>	<b>Absent</b>	<b>Slow / irregular</b>	<b>Crying</b>

**Standing Orders:**

- Suction, dry and warm, clear airway, stimulate.
- Start needed oxygen therapy for condition of patient; for heart rate less than 100 and not rising= ventilate with BVM device; consider ETT intubation for prolonged BVM ventilation with little to no respiratory effort or heart rate less than 100 (if intubating patient attach end tidal CO2 monitor).
- Apgar score 7-10 =support and monitor infant's needs, Apgar score of 4-6 = administer oxygen and stimulation, Apgar score of less than 4=aggressive ALS interventions.
- Consider attaching cardiac monitor.
- Treat for signs of shock.
- Consider possible cause(s) of condition (to include hypothermia & hypoglycemia).

**Neonatal Resuscitation Algorithm**

- Start CPR if heart rate is less than 60bpm in accordance with AHA standards
- For heart rate less than 100 and not rising= ventilate with BVM device; consider ETT intubation for prolonged BVM ventilation with little to no respiratory effort or heart rate less than 100 (if intubating patient attach end tidal CO2 monitor).
- Defibrillate for V-Fib at 2j/kg → 4j/kg
- Administer epinephrine 1:10,000 (.01-.03mg/kg) Q3-5 minutes until heart rate over 60bpm.
- Consider administration of Sodium Bicarbonate (dilute to 0.5meq/ml (administer 1-2meq/kg)
- Consider starting peripheral IV,IO or umbilical catheterization of NaCl as needed (20ml/kg).
- Consider administering naloxone (0.1mg/kg, IVP, IM) for depressed infant.
- Consider checking glucose level (administer D10W(0.5gm/kg)for hypoglycemia).
- Consider repeating dosage of epinephrine 1:10,000 and providing IV/IO/umbilical catheterization infusion for hypotension.

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# CARE OF THE PEDIATRIC PATIENT WITH CARDIO-RESPIRATORY ARREST

Protocol #703P

April 14, 2004

**Policy:** Paramedics caring for patients in Kootenai County will attend to the pediatric patient with cardio-respiratory arrest in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and results in optimum care for the patient.

**Procedure:** Paramedic provider care of the pediatric patient with cardio-respiratory arrest consists of the following guidelines.

## Standing Orders:

- Start needed oxygen therapy for condition of patient; for heart rate less than 80 and not rising= ventilate with BVM device; consider ETT intubation as needed for supporting airway (if intubating patient attach end tidal CO<sub>2</sub> monitor).
- Attach cardiac monitor.
- Treat for signs of shock.
- Consider possible cause(s) of condition.
- Prevent hypothermia
- Gain vascular access (peripheral or IO of NaCl as needed (10-20 ml/kg)).

## Asystole / Pulseless Electrical Activity (PEA) Algorithm

Consider causes of PEA (HHPATCH) Hypoxia, Hyperkalemia, Pulmonary Embolism, Acidosis, Tension Pneumothorax, Hypothermia

Confirm cardiac rhythm in more than one lead

Continue CPR

Administer epinephrine 1:10,000 (0.01mg/kg, IVP)(ETT-0.1mg/kg, 1:1,000)

Administer epinephrine 1:10,000, second and subsequent doses Q3-5 minutes (0.01-mg/kg)

Consider pacing

## Ventricular Fibrillation (VF) Algorithm

Defibrillate @2J/kg, 4J/kg, 4J/kg

Administer Epinephrine, 1:10,000(0.01mg/kg, IVP, (ET.01mg/kg, 1:1,000))

Defibrillate @4J/kg (within 30-60 seconds)

Administer Epinephrine, 1:10,000 (0.01mg/kg)

Defibrillate @4J/kg (within 30-60 seconds)

Administer Lidocaine (1mg/kg, IVP)

Defibrillate @ 4J/kg (within 30-60 seconds)

NOTE: Alternate Epinephrine – Lidocaine with Defibrillation

## Bradycardia (with severe cardio-respiratory compromise which doesn't respond to ventilatory efforts)

Perform chest compressions if heart rate is less than 80BPM (infant) and 60BPM (child)

Administer Epinephrine 1:10,000 (.01mg/kg, IVP / IO; ETT -0.1mg/kg 1:1,000 Epinephrine); repeat Q3-5 minutes

Administer Atropine (0.02mg/kg (minimum dose 0.1mg), may be repeated once)

Consider pacing

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**CARE OF THE PEDIATRIC PATIENT WITH ALTERED LEVEL OF CONSCIOUSNESS**

**Protocol #704P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the pediatric patient with altered level of consciousness in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and results in optimum care for the patient.

**Procedure:** Paramedic provider care of the pediatric patient with altered level of consciousness consists of the following guidelines.

**Standing Orders:**

- Start needed oxygen therapy for condition of patient; consider ETT intubation as needed for supporting airway (if intubating patient attach end tidal CO2 monitor).
- Attach cardiac monitor.
- Treat for signs of shock.
- Consider possible cause(s) of condition.
- Prevent hypothermia
- Consider gaining vascular access (peripheral or IO of NaCl as needed (10-20ml/kg)).
- Consider checking glucose level, if below 70mg/dl, administer 25% glucose (2-4ml/kg)
- Consider administering Narcan (0.1-2.0mg/kg, titrated to effect, IVP, IM) for possible Narcotic overdose

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**CARE OF THE PEDIATRIC PATIENT WITH RESPIRATORY  
DISTRESS**

**Protocol #705P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the pediatric patient with respiratory distress in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and results in optimum care for the patient.

**Procedure:** Paramedic provider care of the pediatric patient with respiratory distress consists of the following guidelines.

- Standing Orders:**
- Start needed oxygen therapy for condition of patient; consider ETT intubation as needed for supporting airway (if intubating patient attach end tidal CO2 monitor).
  - Attach cardiac monitor.
  - Treat for signs of shock.
  - Consider possible cause(s) of condition.
  - Prevent hypothermia
  - Consider gaining vascular access (peripheral or IO of NaCl as needed (20ml/kg)).
  - Administer 0.5% Albuterol (1.25mg) & Atrovent (25mcg/kg) via nebulized treatment Q20 minutes (max 5mg / dose Albuterol) for reactive airway disease symptoms.
  - Consider SQ epinephrine, 1:1,000 (0.01mg/kg (max 0.4mg dosage)) for severe forms of reactive airway disease; may be repeated every 20-30 minutes.

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**CARE OF THE PEDIATRIC PATIENT WITH SEIZURES**

**Protocol #706P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the pediatric patient with seizures in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and results in optimum care for the patient.

**Procedure:** Paramedic provider care of the pediatric patient with seizures consists of the following guidelines.

- Standing Orders:**
- Start needed oxygen therapy for condition of patient; consider ETT intubation as needed for supporting airway (if intubating patient attach end tidal CO2 monitor).
  - Determine glucose level, if below 70mg/dl administer 25% glucose (2-4ml/kg)
  - If seizure lasts greater than 5 minutes and IV is not established, administer Versed 0.2mg IM then attempt IV.
  - If seizure lasts greater than 5 minutes and IV is in place, administer Versed 0.1mg/kg every 2 minutes (max dosage = 5.0mg) or Lorazepam 0.05 mg/kg every 12 minutes IVP or rectally (max dosage 4mg)
  - Consider attaching cardiac monitor.
  - Treat for signs of shock.
  - Consider possible cause(s) of condition.
  - Prevent hypothermia
  - Consider gaining vascular access (peripheral or IO of NaCl as needed (10ml/kg)).
  - Be prepared to support respirations.

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## CARE OF THE PEDIATRIC PATIENT WITH TACHYCARDIA & POOR PERFUSION

Protocol #707P

April 14, 2004

**Policy:** Paramedics caring for patients in Kootenai County will attend to the pediatric patient with tachycardia & poor perfusion in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and results in optimum care for the patient.

**Procedure:** Paramedic provider care of the pediatric patient with tachycardia & poor perfusion consists of the following guidelines.

### Standing Orders:

- Start needed oxygen therapy for condition of patient; consider ETT intubation as needed for supporting airway (if intubating patient attach end tidal CO<sub>2</sub> monitor).
- Attach cardiac monitor.
- Treat for signs of shock.
- Consider possible cause(s) of condition.
- Prevent hypothermia
- Gain vascular access (peripheral or IO of NaCl as needed (20ml/kg)).

### Supraventricular Tachycardia (SVT) Algorithm

Criteria defined as: QRS complex less than 0.08 seconds  
rate above 220 BPM (infants) /180 BPM (children)  
P waves absent  
abrupt rate changes  
HR not variable with activity

**Unstable SVT-** Cardioversion (0.5-1.0 J/kg – may increase to 2 J/kg (sedate with Versed 0.1mg/kg if possible)

**OR**

**Stable SVT -** Administer rapid bolus of Adenosine (0.1mg/kg IVP or IO, max first dose 6mg) may double and repeat with second dose (max 12mg)

## Wide Complex Tachycardia

Criteria → QRS greater than 0.08 seconds

Cardioversion (0.5-1.0 J/kg – may increase to 2 J/kg (sedate with Versed/Etomidate if possible)  
AND / OR

Administer Lidocaine (1mg/kg IVP)

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# CARE OF THE PEDIATRIC PATIENT WITH TRAUMA

**Protocol #708P**

**April 14, 2004**

**Policy:** Paramedics caring for patients in Kootenai County will attend to the pediatric patient with trauma in a manner which combines using established guidelines with sound decisions based on the pre-hospital setting and results in optimum care for the patient.

**Procedure:** Paramedic provider care of the pediatric patient with trauma consists of the following guidelines.

**Standing Orders:**

- Start needed oxygen therapy for condition of patient; consider ETT intubation as needed for supporting airway (if intubating patient attach end tidal CO2 monitor).
- Hyperventilate patient (40-60 breaths / minute) for signs of increased intracranial pressure
- Consider attaching cardiac monitor.
- Treat for signs of shock.
- Prevent hypothermia
- Consider gaining vascular access with large bore catheter (peripheal or IO of NaCl as needed (20ml/kg)). Establish second line as necessary for shock / hypotension.
- Consider administration of Versed (IVP - 0.1mg/kg; ORAL – 0.25-0.5mg/kg; Rectal, IM – 0.1-0.15mg/kg) for sedation, as needed.
- Consider pain control for musculoskeletal trauma or burns; morphine (0.1mg/kg (max 2.0mg/kg)) or Demerol (1.0mg/kg).

**Eric Chun, MD**  
Medical Director

**Douglas R. Stafford, MD**  
Medical Director

Date Reviewed

Medical Director Signatures

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