MED-CARE AMBULANCE

EMS
STANDARDS OF CARE

EFFECTIVE JULY 1, 2005

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Standards of Care

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Purpose

The primary purpose of these Standards is to serve as guidelines for out-of-hospital (prehospital and interhospital) care. While these Standards may look like protocols they are not and they do not supersed any established MEMS protocol. Some Standards do however have the correlating MEMS protocol included in them. Quality out-of-hospital care is the direct result of comprehensive education, accurate patient assessment, good judgment, and continuous quality improvement. All EMS personnel are expected to know these Standards and understand the reason for their use. EMS personnel should not perform any step or steps in a Standard or MEMS protocol if they have not been trained to perform the procedure or treatment in question.

Communication Problems

There are rare situations where the patient is unstable and delay in treatment threatens the patient’s life or limb. If after good-faith attempts, the advanced EMT cannot contact Medical Control, then the advanced EMT is authorized to use any appropriate treatment protocols as if they were standing orders. An emergency department nurse at the medical control hospital may relay orders from the emergency physician in cases where it is impractical for him or her to come to the radio/phone. It is not necessary to speak with a medical control physician concerning treatment modalities that are considered to be standing orders except if a question arises concerning the planned treatment. In the event medical control cannot be contacted, and treatment protocols were carried out as standing orders, the record shall be pulled for review by the QA Coordinator.

General Guidelines for Standard Usage

1. The patient history should not be obtained at the expense of the patient. Life-threatening problems detected during the primary assessment must be treated first.
2. Cardiac arrest due to trauma is not treated by medical cardiac arrest protocols. Trauma patients should be transported promptly with CPR, control of external hemorrhage, cervical spine immobilization, and other indicated procedures attempted en-route.
3. In patients with non-life-threatening emergencies who require IV’s, try to limit the number of attempts made pre-hospital.
4. Patient transport, or other needed treatments, must not be delayed for multiple attempts at endotracheal intubation.
5. Verbally repeat all orders received prior to initiation.
6. Any patient with a cardiac history, irregular pulse, unstable blood pressure, dyspnea, or chest pain should be placed on a cardiac monitor.
7. Acquisition of a 12-lead EKG should be done on all patients with chest pain or a potential cardiac complaint/diagnosis such as syncope or shortness of breath and have a high index of suspicion in elderly patients.
8. If the patient’s condition does not seem to fit a protocol or protocols, always contact medical control.
Special Considerations

IV Therapy

1. All hemodynamically unstable trauma patients should receive at least one, and preferably two, IV’s of NACL 0.9% via 18 gauge or larger catheters. If shock present, i.e. BP < 90 mmHg in an adult less than 65 years of age, perform fluid challenge according to the following guidelines:
   a. Controlled Bleeding – in situations where the provider has controlled the hemorrhage, give 1-2 liters of NS or LR to restore normal vital signs. (MEMS states normal VS to be BP > 100 systolic and HR <100)
   b. Uncontrolled Bleeding (permissive hypotension) – for suspected internal bleeding or uncontrolled bleeding; fluid resuscitate to maintain BP between 80-90 mmHg.
   c. Suspected TBI/CNS Injury – fluid resuscitate to maintain BP greater than 90 mmHg
   d. Contact OLMC if patient is greater than 65 years of age for a fluid challenge order

2. Warmed IV fluids should be used in all pediatric, elderly trauma, and hypothermia patients. A saline lock may be substituted for an IV line if appropriate. All IV’s listed in the Standard will be lines of NACL 0.9%. Other generally accepted IV solutions are approved for administration at or above the EMT-I level and for monitoring at or above the EMT level.

3. IO may be used in any patient if an IV is not established within two attempts or 90 seconds and that patient has one of the following:
   a. Altered mental status (GCS <= 8)
   b. Respiratory failure (SaO2 <= 80% after appropriate oxygen therapy, respiratory rate <10, >40) with alteration of mental status.
   c. Profound hypovolemia or hemodynamic instability (systolic BP <90) with alteration of mental status
   d. Cardiac arrest (medical or traumatic)

4. With discussion with OLMC, may consider IO placement for the following conditions:
   a. Profound hypovolemia (systolic B/P < 90 mm Hg)
   b. Burn patients with bilateral upper extremity burns

5. IO is contraindicated in the following conditions:
   a. Fracture of the tibia or femur
   b. IO with 24 hours
   c. Knee replacement
   d. Tumor near site
   e. Inability to locate landmarks
   f. Excessive tissue at insertion site
   g. IO is not intended for prophylactic use
6. Approved IO sites (one per bone)
   a. Anterior/medial tibia
   b. Lateral humerous
7. All pediatric peripheral IV’s should be started with a mini-drip administration set.
8. All IV attempts are to be peripheral. The external jugular vein is considered a peripheral vein. Placement of an intraosseous needle is permitted in children <6 years of age who have a life-threatening emergency where immediate fluid or medication administration is necessary.
9. Each IV bag should be labeled with the following data:
   a. Time and date of IV start
   b. IV cannula size
   c. Initials of ALS provider who started the IV

Endotracheal Intubation

1. Proper endotracheal tube placement must be confirmed by use of end-tidal carbon dioxide monitoring and at least two other methods. These include:
   a. Presence of bilateral breath sounds
   b. Absence of breath sounds over the epigastrium
   c. Presence of condensation on the inside of the endotracheal tube
   d. Use of an endotracheal esophageal detector
   e. Visualizing the tube passing through the cords
   f. For pediatrics, continuous waveform capnography is required, without it you are not allowed to intubate the pediatric patient

   All three verification methods must be documented in the medical run report!

2. Following endotracheal intubation, tube placement should be re-verified every 5-10 minutes by noting bilateral breath sounds and continuing end-tidal carbon dioxide readings (if cardiac monitor is equipped).
3. All patients who are intubated will be immobilized with a board and cervical collar and blocks to help ensure the endotracheal tube remains patent. A cervical collar alone is permitted if conditions prohibit full immobilization.
4. If unable to obtain endotracheal intubation by normal insertion methods then the use of airway adjuncts and LMA’s should be attempted per Maine EMS Protocol

Resuscitation Considerations

1. Do Not Resuscitate (DNR) orders should be honored when valid. If a patient’s family presents you with a DNR order written by the patient’s physician, the following procedures should be followed:
   a. Contact medical control
   b. Provide a brief synopsis of the situation. Be sure to include the diagnosis which resulted in the DNR order (i.e. cancer).
c. Provide a brief report of the patients current status (vital signs, ECG tracing).
d. Confirm receipt of written DNR. Be sure to note issuing physician’s name.
e. The medical control physician will determine whether to accept or deny the DNR order.
f. If the patient is in cardiac arrest upon EMS arrival, initiate BLS while contacting medical control.

2. Resuscitation should not be attempted in the field in cases of:
   a. Rigor mortis
   b. Decapitation
   c. Decomposition
   d. Dependent lividity
   e. Obvious massive head or trunk trauma which is incompatible with life (provided the patient does not have vital signs)

3. Consider the potential for organ donation. Patients who have sustained mortal injuries may still warrant emergent care until a determination can be made whether the patient may be a potential organ or tissue donor.

More detailed information regarding DNR orders can be located in the MEMS Protocol book pages Gray 1 thru 5.

Remember a DNR can be revoked by the following people:
   a. The patient
   b. The patients physician who signed the order
   c. The authorized decision maker for the patient who signed the order

Orders from Transferring/Receiving Physicians

During interfacility transport, medical crews will be asked to continue treatment initiated at the transferring hospital. These orders may be written or verbal. Verbal orders must be written by the medical crew and included in the narrative of the patient care chart. Ideally, the transferring physician should put these orders in writing. If, at any time the EMS crew questions orders from a referring or receiving physician, on-line medical control from the sending facility must be contacted. Anytime transferring or receiving staff asks the EMS crew to carry out medical treatment for which they have not been trained, or which appears to be in conflict with established treatment protocols, the EMS crew must respectfully decline to follow the request. If this creates an issue the EMS supervisor must be contacted.

EMS crews will not accept responsibility for a patient until they have received a patient report, necessary paperwork for the transfer, and performed what the attending EMS provider feels is an adequate physical exam.

EMS providers may from time to time be requested to perform a Paramedic Interfacility Transfer (PIFT). As a routine, nursing or other members of medical staff do not accompany these patients. If the attending provider feels that the patient is unstable and a
higher level of care (i.e. physician, nurse, respiratory technician) should accompany the patient during transport the following steps should take place:

1. The provider should respectfully convey their concerns to the sending staff and decline to perform the transfer until a resolution can be met.
2. The provider should immediately notify the Shift Officer of the situation.
3. The provider and Shift Officer will work with the sending staff to ensure the transfer is completed in as timely a fashion as possible.
4. The Shift Officer and attending provider will, as soon as possible, complete an incident report outlining the details of the event.
5. A copy of this incident report shall be forwarded to the Assistant Chief’s Office as soon as appropriate
6. The Assistant Chief will then forward his/hers findings/suggestions along with a copy of the original incident report to the Service Medical Director for further review and comment

Scene Responses/On Scene Physician

EMS personnel functioning under MEMS protocol will accept orders from an on-scene physician under the following conditions:

1. The EMS provider has requested the assistance of the physician.
2. Permission has been obtained from on-line medical control.
3. The physician is capable of assisting, or delivering more extensive emergency medical care at the scene.
4. The physician is licensed in the State of Maine.

If the physician is the patients own, EMS providers will work with that physician within the scope of their practice and protocol.

If controversy arises with an on-scene physician, place the on-scene physician in contact with the on-line medical control physician via cellular telephone or radio.

Any physician providing care on scene, who does not relinquish care to EMS providers, should be presented with page Black 1 from the MEMS Protocol book.

PASG/MAST Trousers

PAST/MAST Trousers are no longer required by MEMS. However, individual departments can elect to carry and utilize the PASG/MAST as directed in the MEMS Protocols.
Maine EMS Approved Medication List

- Activated Charcoal (without Sorbitol)
- Adenosine
- Albuterol
- Amiodarone
- Aspirin
- Atropine
- Fentanyl
- Cyanide Poisoning kit
- Dextrose 10%
- Dextrose 25%
- Duo-Neb
- Heparin Solution (for use in maintaining IV access in heparin lock only, approved also at the EMT-I level)
- Benadryl
- Dopamine
- Epinephrine 1:1000
- Epinephrine 1:10000
- Epinephrine Auto Injector
- Lasix
- Glucagon
- Magnesium Sulfate
- Metaprolol (Lopressor)
- Midazolam (Versed)
- Narcan
- Promethazine (Phenegran)
- Sodium Bicarbonate
- Nitroglycerin
- Nitrous Oxide
- Thiamine
- Tetracaine Ophthalmologic Drops

IV Fluids

- 0.9% sodium chloride

Paramedic Interfacility Drug Classifications:

- Anticoagulants
- Anticonvulsants
- Antidiabetics
- Antidysrhythmics
- Antihypertensives (including ACE inhibitors, Calcium Channel Blockers, Diuretics, Alpha Blockers, and Beta Blockers)
- Anti-infectives
- Antipsychotics
- Cardiac Glycosides
- Corticosteroids
- Gastrointestinal Agents (including H2 Blockers, PPI’s, antiemetics, and Somatostatin or its analogues)
- IV Fluids, Electrolytes (including Dextran, Albumin, and Hetastarch)
- Drotrecogin
- Narcotics (including all routes except epidural)
- Parenteral Nutrition and Vitamins
- OTC Medications
- Platelet Aggregation Inhibitors (including Ib/IIa Inhibitors)
- Respiratory Medications (Beta Agonists, Anticholinergics, Mucolytics, and Steroids)
- Sedatives (Benzodiazepines, Barbituates)
- Vasoactive Agents (Antihypertensives, Pressors/Sympathomimetics)
Routine Care

The following assessment or similar is to be performed and information is to be obtained on all patients:

1. Always assure scene safety for yourself, your fellow rescuers, and your patient.
2. Primary survey:
   a. **A** = Airway with cervical spine control
   b. **B** = Breathing
   c. **C** = Circulation with hemorrhage control

   These are referred to as the ABC’s

d. **D** = Disability Determination
   1) **A** = alert and conscious
   2) **V** = responsive to verbal stimuli
   3) **P** = responsive to painful stimuli
   4) **U** = unresponsive

3. Secondary survey:
   a. Obtain vital signs and perform objective head-to-toe assessment
   b. Obtain history
      - Sex, age, and approximate weight
      - Chief complaint
      - Precipitating factors
      - Significant past medical history
      - Allergies
      - Current medications

4. Place monitoring equipment, if indicated:
   - ECG monitor
   - 12 lead ECG
   - Pulse Oximetry
   - Capnography (when indicated as equipment allows)

5. Apply appropriate protocol and standing order based on assessment.
6. Contact medical control as designed in protocol or for any problems or questions.
7. Position patient comfortably as indicated by condition or situation.
8. Reassure and calm patient. Loosen any restrictive clothing or remove as indicated.
9. **Secure patient to ambulance stretcher using all appropriate safety belts to include shoulder straps**
10. Transport as soon as feasible.
Abdominal Trauma

Guidelines for Care

1. Assure ABC’s.
2. Oxygen via non-rebreather mask. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
3. Perform Spinal Assessment Protocol and immobilize as appropriate.
4. Attach cardiac monitor and pulse oximeter.
5. Establish two large bore IV’s of NACL 0.9%. If bleeding uncontrolled, fluid resuscitate to maintain SBP at 80-90 mmHg. If bleeding controlled, fluid resuscitate to maintain normal vital signs
6. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
7. Contact Medical Control for pain control options (i.e. Fentanyl)
8. Impaled objects should be stabilized in place.
9. Eviscerations should be covered with saline soaked gauze. Do not attempt to push the organs back into the abdomen.
10. Consider transport to closest Trauma Center (as per trauma triage protocol).
11. Consider Lifeflight if available.

Abdominal Pain (Non-Traumatic)

Guidelines for Care

1. Assure ABC’s.
2. Oxygen via appropriate methods. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
3. Attach cardiac monitor and pulse oximeter.
4. Perform 12 lead EKG
5. Establish IV access. If possible internal bleeding, fluid resuscitate to maintain SBP between 80-90 mmHg
6. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
7. Contact Medical Control for pain control options (i.e. Fentanyl)
8. If abdominal trauma see Abdominal Trauma.
9. If pain secondary to labor see Childbirth or Pre-Term Labor.
10. Contact Medical Control for any questions.
11. Transport to appropriate hospital as per MEMS Protocol.
**Alcohol Emergencies**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen as appropriate. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
3. Perform spinal immobilization if indicated.
4. Initiate IV of NACL 0.9% TKO.
5. Attach cardiac monitor and pulse oximeter.
6. Determine serum glucose level with Glucometer.
   a. If glucose <80 mg/dl, administer 25 gms 50% Dextrose IV. Recheck serum glucose level. If above 300 mg/dl administer 500 cc bolus of NACL 0.9%
   b. If glucose >80 mg/dl and <300 mg/dl go to step #7.
   c. If glucose >300 mg/dl, go to Hyperglycemia Protocol.
7. If history suspicious for alcoholism, administer 100 mg Thiamine IV, or IM.
8. If history drug abuse, and patient has constricted pupils or respiratory rate <12 per minute, administer Narcan 0.1-2.0 mg IV. Titrated to increase respiratory drive.
9. Provide supportive measures.
10. Contact Medical Control for any questions or problems.

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**Altered Mental Status/Coma**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen as appropriate. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
3. Initiate IV of NACL 0.9% TKO.
4. If unable to gain IV access, establish IO as per MEMS protocol
5. Attach cardiac monitor, pulse oximeter and capnography.
6. Obtain body temperature by appropriate means i.e. tympanic or rectal
7. Perform 12 lead EKG
8. Determine serum glucose level with Glucometer.
   a. If glucose <80 mg/dl, administer 25 gms 50% Dextrose IV. Recheck serum glucose level. If above 300 mg/dl administer 500 cc bolus of NACL 0.9%
   b. If glucose >80 mg/dl and <300 mg/dl go to step #6.
   c. If glucose >300 mg/dl, go to Hyperglycemia Protocol.
9. If history suspicious for alcoholism, administer 100 mg Thiamine IV, IO or IM.
10. If history of drug abuse, and patient has constricted pupils or respiratory rate <12 per minute, administer Narcan 0.1-2.0 mg IV or IO. Titrated to increase respiratory drive.
11. Provide supportive measures.
12. Contact Medical Control for any questions or problems.

Amputations

Guidelines for Care

1. Assure ABC’s.
2. Control bleeding, by either pressure dressing, tourniquet, and or hemostatic agent
3. Oxygen as appropriate.
4. Perform spinal immobilization as indicated.
5. Large bore IV of NACL 0.9%. If bleeding uncontrolled, fluid resuscitate to maintain SBP at 80-90 mmHg. If bleeding controlled, fluid resuscitate to maintain normal vital signs.
6. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
7. Treat for shock, if indicated.
8. Rinse amputated part with normal saline to remove loose debris. **DO NOT SCRUB.**
9. Wrap amputated part in gauze moistened with saline.
10. Place wrapped part in plastic bag and seal. Label with NAME, DATE, and TIME.
11. Place sealed bag in container filled with water and several ice cubes.
12. Consider Fentanyl 1 mcg/kg IV or IM with an initial maximum dose of 100 mcg then 25-75 mcg IV every 5-10 minutes titrated to effect with maximum dose of 400 mcg.
13. If partial amputation, place in anatomical position to facilitate the best vascular status and wrap in bulky dressings. If the vascularity to the distal part is compromised, wrap the distal part and apply ice. (Consider placing the pulse oximeter probe on a finger or toe of the affected extremity to monitor the vascular status of the injured extremity).
14. Consider transport to Trauma Center (as per trauma triage protocol).
15. Consider Lifeflight if available.
16. Contact Medical Control for any questions or problems.

Anaphylaxis/Allergic Reactions

Guidelines for Care

1. Assure ABC’s.
2. Oxygen as appropriate. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
3. Attach cardiac monitor, capnography and pulse oximeter.
4. IV of NACL 0.9% TKO.
5. Consider IO access if unable to gain IV access and patient exhibits respiratory failure (SaO₂ \( \leq 80\% \) after appropriate oxygen therapy, respiratory rate \(<10, >40\) with alteration of mental status or **hemodynamic instability with altered mental status**

6. If blood pressure normal, consider Benedryl 25-50 mg IM or slow IV, IO push.

7. If hypotensive (systolic \(<100\) mmHg) and patient has moderate-severe respiratory distress:
   - Open IV or IO and infuse fluid bolus (500 ml for adults or 20 ml/kg for children).
   - Administer Epinephrine 1:1,000 IM in anterolateral thigh (adult: 0.3 ml / Pedi: 0.01 ml/kg).
   - Administer Benedryl 25-50 mg.
   - Administer Albuterol, 2.5 mg by nebulization Consider repeat X-1 as needed or nebulizer of 5 ml of 1:1000 Epinephrine.
   - Transport.
   - Contact Medical Control en route.

8. If patient in shock or cardiovascular collapse, contact Medical Control for repeat Epinephrine IM injections or IV Epinephrine 1:10,000, 0.5 to 1 ml, every 10-20 minutes

9. Contact Medical Control for any questions or problems.

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**Aortic Aneurysm / Dissection**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen via non-rebreather mask. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS \(<8\).
3. Attach cardiac monitor, capnography, and pulse oximeter.
4. Establish two large bore IV’s of NACL 0.9%, fluid resuscitate to maintain SBP at 80-90 mmHg.
5. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P \(<90\) mmHg) with an altered mental status.
6. If blood pressure normal, contact Medical Control for consideration of Fentanyl 1 mcg/kg IV or IM with an initial maximum dose of 100 mcg then 25-75 mcg IV every 5-10 minutes titrated to effect with maximum dose of 400 mcg.
7. If hypertensive, go to Hypertensive Crisis Protocol.
8. Notify receiving facility of patient’s condition to expedite admission to surgery for definitive care.
9. If time permits obtain 12 lead EKG
10. Contact Medical Control for any questions or problems.
**Asthma/COPD**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen via non-rebreather mask if no history of COPD.
3. If history of COPD, administer oxygen at 2-6 lpm via nasal cannula. **Do not withhold higher concentrations of oxygen from patients in extreme distress.** Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
4. Initiate IV NACL 0.9% TKO.
5. Consider IO access if unable to gain IV access and patient exhibits respiratory failure (SaO2 <= 80% after appropriate oxygen therapy, respiratory rate <10, >40) with alteration of mental status.
6. Attach cardiac monitor, capnography and pulse oximeter.
7. If signs of hypoventilation:
   a. Assist ventilations with BVM with 100% oxygen
   b. Consider intubation.
   c. Contact Medical Control.
8. If history of asthma, and patient exhibiting wheezing, cough, tachypnea, or retractions:
   a. Administer Albuterol breathing treatment 2.5 mg by nebulization. (Albuterol may be repeated x1. Contact Medical Control for further repeated doses) or
   b. Administer Ipratropium Bromide/Albuterol Sulfate (Duo-Neb) 3 mg nebulizer if greater than 1 year of age and more significant respiratory distress, and may repeat x1.
   c. Consider Epinephrine 1:1,000, 0.3 mg IM. (Pediatric dose = 0.01 ml/kg of a 1:1,000 solution IM to a maximum dose of 0.3mg) with medical control order.
   d. Transport.
9. Contact Medical Control for any question or problems.

**Burns**

**Guidelines for Care**

1. Assure ABC’s.
2. Extinguish any flames on patient, remove smoldering clothing (leather), and any constricting jewelry unless adherent to patient.
3. Remove from harmful environment and limit injury:
   a. CHEMICAL: Flush with water or normal saline. Brush off dry chemicals. (Check for MSDS sheets prior to flushing to make sure that chemical does not react with water)
   b. TAR: Cool with water or normal saline (do not attempt to remove tar).
c. ELECTRICAL: Remove from contact with current source if equipped to do so. (Note any secondary fractures and exit wounds caused by current)

4. If respiratory distress, or airway burns exist, prepare to intubate. Consider intubation early if respiratory burns are present.

5. If pulseless or apneic, go to Cardiac Arrest Protocol.

6. If additional injuries, go to Trauma Management Protocol.

7. If burn area is <10% BSA, cover with dressing soaked in normal saline or other commercially prepared moist burn dressing

8. If significant 2nd degree or 3rd degree burns (>10% BSA):
   a. Oxygen via non-rebreather mask
   b. Establish two large bore IV’s of NACL 0.9%.
      - Administer 4 ml X patients weight (kg) X % BSA burned.
   c. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
   d. Cover with dry dressing, sterile sheet, or commercially prepared dry dressing
   e. Monitor and capnography.
   f. Contact Medical Control.

9. Consider Fentanyl 1 mcg/kg IV or IM with an initial maximum dose of 100 mcg then 25-75 mcg IV every 5-10 minutes titrated to effect with maximum dose of 400 mcg.

10. If altered LOC and/or signs of head injury (consider carbon monoxide poisoning if closed space burn):
    a. Oxygen via non-rebreather mask.
    b. Monitor and capnography.
    c. Immobilize cervical spine.
    d. IV NACL 0.9% to maintain a systolic pressure > 90 mmHg.
    e. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
    f. Contact Medical Control.

11. Transport all significantly burned patients on sterile dry sheets.

12. Consider transport to Trauma Center (per trauma triage protocol).

13. Consider transport by Lifeflight if available.

14. Contact Medical Control for any questions or problems.

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**Cardiogenic Shock**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen via non-rebreather mask if no history of COPD. If history of COPD, titrate oxygen delivery to maintain SPO2 > 90%. Consider intubation and
ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
3. Initiate IV of NACL 0.9% TKO. If hypotensive, perform fluid challenge of 300-500ml of fluid until a BP of greater than 90 mmHg systolic is achieved
4. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
5. Attach cardiac monitor, capnography, and pulse oximeter.
6. Perform 12 lead EKG.
7. Treat dysrhythmias per the appropriate protocol.
8. If signs of severe hypoventilation occur:
   a. Assist ventilations with BVM with 100% oxygen.
   b. Consider intubation.
   c. Contact Medical Control.
9. If systolic BP <100 mmHg, consider Dopamine at 2-20 ug/kg/min to maintain systolic > 100 mmHg.
10. Contact Medical Control if not responsive to therapy.
11. Transport.

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**Chest Pain**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen via non-rebreather mask.
3. Attach cardiac monitor and pulse oximeter.
4. Perform 12 lead EKG.
5. Place in position of comfort.
6. Initiate an IV of NACL 0.9% at a TKO rate. Second large bore IV should be established as time permits.
7. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
8. Administer ASA 324 mg if patient is not allergic to ASA and does not have ulcer disease. (4) 81 mg baby ASA tablets)
9. Administer nitroglycerin, 0.4 mg (1/150) SL or 1 spray, SL if systolic BP > 100 mmHg and patient has not taken an “erectile dysfunction medication” within 24 hours. May be repeated every 5 minutes until:
   a. 3 tablets have been administered
   b. Pain is relieved, or
   c. Systolic blood pressure falls below 100 mmHg
10. Treat dysrhythmias per protocols.
11. Contact Medical Control for options of continued NTG or Fentanyl 1 mcg/kg IV or IM with an initial maximum dose of 100 mcg.
12. Consider Zofran 4 mg IV/IO, may repeat in 15 minutes if needed for nausea/vomiting
13. If no CHF and BP greater than 140 systolic and HR greater than 100 beats/min, then Metoprolol (Lopressor) 5 mg IV over 5 minutes x1 for target HR 70-80 beats/min. Contact OLMC for option of repeating this once or twice more.
15. Consider emergent transport.
16. Contact Medical Control for any questions or problems.

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**Chest Trauma**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen as appropriate. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
3. Attach cardiac monitor, capnography and pulse oximeter.
4. Establish two large bore IV’s of NACL 0.9% fluid resuscitate to maintain SBP at 80-90 mmHg.
5. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
6. If stable contact Medical Control for pain control options.
7. If penetrating or sucking chest wound (look for bubbles, listen for air leaks):
   a. Place occlusive dressing during exhalation (tape on 3 sides).
   b. Once occluded, monitor for tension pneumothorax.
8. If flail chest (unstable segment that does not expand with the remainder of the chest on inspiration):
   a. If conscious, stabilize flail segment with gauze pad, IV bag, etc.
   b. If unconscious, immobilize neck and intubate. Ventilate with 100% oxygen by BVM.
   c. Re-assess, if tension pneumothorax develops, see #8 below.
9. If tension pneumothorax (unilateral absent breath sounds with or without tracheal deviation or bilaterally absent breath sounds:
   a. Perform needle decompression per protocol.
10. Continued inadequate ventilations and decreasing LOC:
    a. Rapid secondary survey for additional injuries.
    b. Immobilize.
    c. Control hemorrhage.
    d. Intubate with cervical stabilization.
    e. Ventilate with 100% oxygen via BVM.
    f. Establish second IV of NACL 0.9% fluid resuscitate to maintain SBP at 80-90 mmHg.
    g. Cardiac compressions if pulseless.
11. Impaled objects should be stabilized in place.
12. Treat any dysrhythmias per protocols.
13. Consider transport to Trauma Center (per Trauma Triage Protocol)
14. Consider activation of Lifeflight
15. Contact Medical Control for any questions or problems.

**Childbirth**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen as appropriate.
4. Obtain pertinent history:
   a. Number of pregnancies/deliveries.
   b. History of problems with pregnancy (vaginal bleeding, prior cesarean sections, high blood pressure, premature labor, premature rupture of membranes).
   c. Last menstrual period and due date (if known).
   d. Current complaints (onset of labor, timing of contractions, rupture of membranes, or urge to push).
   e. Past medical history (including medications).
5. Peritoneal examination (do not perform internal vaginal examination):
   a. Vaginal bleeding or leakage of fluid.
   b. Presence of meconium.
   c. Crowning during a contraction.
   d. Presenting part (head, face, foot, arm, cord).
6. If active labor, and no vaginal bleeding or crowning:
   a. Transport.
   b. Monitor mother and prepare for delivery if extended transport.
7. If vaginal bleeding with no signs of shock (systolic > 90mmHg)
   a. Transport left lateral recumbent position.
   b. IV NACL 0.9% at 125 ml/hr (31gtt/min).
   c. Cardiac monitor.
8. If heavy vaginal bleeding with signs of shock (systolic <90 mmHg):
   a. Transport with patient in left lateral recumbent position.
   b. Cardiac Monitor.
   c. IV NACL 0.9% wide open to maintain normal VS (systolic BP > 100 mmHg and HR < 100)
   d. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
9. If imminent delivery:
   a. Place mother in lithotomy position.
   b. Drape mother.
c. Prepare for neonatal resuscitation.
d. Assist delivery.
e. Suction mouth, then nose with bulb syringe (if meconium stained fluid, suction baby’s airway until clear before stimulating first breath).
f. Warm, dry, and stimulate infant.
g. Wrap infant in sterile drape or dry blanket.
h. Infuse mother with IV of NACL 0.9% at 125 ml/hr (31gtts/min).
i. Transport.
j. If prolapsed cord:
   1) Place mother on back with hips elevated or place her in knee/chest position.
   2) Place sterile gloved index and middle fingers into the vagina and push the infant up to relieve pressure on the cord.
   3) Check cord for pulse.
   4) Transport and notify receiving hospital of impending arrival.
k. If abnormal fetal presentation or decreased fetal heart tones:
   1) Place patient in left lateral recumbent position.
   2) Transport and notify receiving hospital of impending arrival.
   3) Attempt IV NACL 0.9% en route and run at 125 ml/hr (31gtts/min).
l. If delivery completed before arrival, or in the field:
   1) Protect infant from fall and temperature loss.
   2) Check infant’s vital signs (perform CPR or assist ventilations as necessary).
   3) Clamp cord in two places, six inches from infant, and cut cord between clamps.
   4) Suction, warm, dry, and stimulate infant.
   5) Give infant to mother.
   6) Do not pull on cord or attempt to deliver placenta.
   7) Start IV NACL 0.9% and run at 200 ml/hr.
   8) Transport.
   9) Watch for external bleeding. Perform fundal massage if placenta delivers.
m. Contact Medical Control for any questions or problems.

Congestive Heart Failure/Pulmonary Edema

Guidelines for Care

1. Assure ABC’s.
2. Oxygen via non-rebreather mask if no history of COPD. If history of COPD, titrate oxygen delivery to maintain SPO2 >90%. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
3. Initiate IV NACL 0.9% TKO.
4. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovoleemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
5. Attach cardiac monitor, capnography and pulse oximeter.
6. Perform 12 lead EKG.
7. If signs of severe hypoventilation:
   a. Assist ventilations with BVM with 100% oxygen.
   b. Consider endotracheal intubation.
   c. Contact Medical Control.
8. If history of CHF, and patient exhibiting tachypnea, orthopnea, JVD, edema, moist breath sounds (rales):
   a. Place in seated position (semi-fowlers).
   b. Administer nitroglycerin 0.4 mg (1/150) sublingually (if B/P >100 systolic).
   c. After 1st SL Nitroglycerin may place 1 inch of Nitroglycerine ointment 2% if BP greater than 115 mmHg
   d. Administer Lasix 40 mg IV.
   e. Consider use of CPAP if at the EMT-I or EMT-P level
   f. Contact OLMC for options of Fentanyl 1 mcg/kg IV to a maximum dose of 100 mcg.
   g. Transport.

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**CVA/Stroke**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen via non-rebreather mask. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
3. Initiate IV NACL 0.9% TKO.
4. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovoleemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
5. Attach cardiac monitor, capnography and pulse oximeter.
6. Elevate head of bed if possible.
7. Determine serum glucose level with Glucometer.
   a. If glucose < 80 mg/dl, administer 25 gms 50% dextrose IV. Recheck serum glucose level. If above 300 mg/dl administer 500 cc bolus of NACL 0.9%
   b. If glucose > 80 mg/dl and < 300 mg/dl, go to step #8
   c. If glucose > 300 mg/dl, go to Hyperglycemia Protocol.
8. Place in recovery position (unless spinal injury suspected).
9. Prepare to suction and manage airway.
10. Repeat vital signs frequently. If hypertensive, go to Hypertensive Crisis Protocol.
11. Treat active seizures with Midazolam (Versed) 3 mg IV or IO. If unable to establish IV or IO, option of Versed, 3-5 mg IM with Medical Control permission.
12. Consider emergent transport.

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**Dehydration**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen as appropriate.
3. Attach cardiac monitor and pulse oximeter.
4. **Mild** – Establish IV NACL 0.9%. Infuse at a rate if 125 ml/hr (31 gtts/min).
5. **Moderate** – Establish IV NACL 0.9%. Infuse at 250 ml/hr (63 gtts/min).
6. **Severe** – Establish two large bore IV’s of NACL 0.9%. Infuse to maintain a systolic pressure > 90 mmHg (20 ml/kg boluses for children).
7. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
8. Be alert for dysrhythmias.
10. Contact Medical Control for any questions or problems.

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**Diabetic Emergencies/Hypoglycemia**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen via non-rebreather mask.
3. Initiate IV NACL 0.9% TKO and perform blood glucose analysis.
4. If unable to gain IV access perform finger stick for blood glucose analysis.
5. Attach cardiac monitor and pulse oximeter.
6. Determine serum glucose level with Glucometer.
   a. If glucose < 80 mg/dl, administer 25 gms 50% dextrose IV. Recheck serum glucose level. If above 300 mg/dl administer 500 cc bolus of NACL 0.9%
   b. If glucose > 80 mg/dl and < 300 mg/dl, go to step #7.
   c. If glucose > 300 mg/dl, go to Hyperglycemia Protocol.
7. If unable to establish IV, give Glucagon 1 mg IM.
8. Transport.
9. Repeat serum glucose level in 5 minutes:
   a. If glucose remains < 80 mg/dl, and no significant change in mental status, contact Medical Control for repeat administration of Dextrose 50% 25 gms IV.
10. Provide supportive measures.
11. Contact Medical Control for any questions or problems.

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**Diabetic Emergencies/Hyperglycemia (Ketoacidosis)**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen via non-rebreather mask. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
3. Initiate IV NACL 0.9% TKO and perform blood glucose analysis.
4. If unable to gain IV access perform finger stick for blood glucose analysis.
5. Attach cardiac monitor and pulse oximeter.
6. Determine serum glucose level with Glucometer.
   a. If glucose < 80 mg/dl, go to Hypoglycemia Protocol.
   b. If glucose > 80 mg/dl and < 300 mg/dl, go to step #7.
   c. If glucose > 300 mg/dl, go to #7.
7. Transport.
8. If glucose > 300 mg/dl, and patient exhibiting altered mental status, Kussmaul respirations, dry skin with poor turgor, and/or ketotic breath:
   a. Open NACL 0.9% wide open
   b. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
   c. Transport.
9. If time permits obtain 12 lead EKG
10. Contact Medical Control for any questions or problems.

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**Diving Emergencies (Decompression Sickness)**

**Guidelines for Care**

1. Assure ABC’s.
2. Administer oxygen via non-rebreather mask.
3. Place the patient in a supine head-down left lateral decubitis position.
4. Attach monitor, capnography and pulse oximeter.
5. Start an IV of NACL 0.9% TKO.
6. Protect against hypothermia and hyperthermia.
7. Monitor closely for complications (pneumothorax, shock, seizures) and treat per standing orders/protocols.
8. Contact Medical Control if analgesics indicated.
9. Assess vitals signs, including temperature, every 10 minutes.
10. Consider transport to a hyperbaric facility. Provide hyperbaric personnel with a detailed history of the dive (depth and duration, timing and onset of symptoms, complications, and any treatment rendered).
11. Contact Medical Control for any questions or problems.

**Dyspnea**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen via non-rebreather mask if no history of COPD. If history of COPD, titrate oxygen delivery to maintain SPO2 > 90%. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS <8.
3. Initiate IV NACL 0.9% TKO.
4. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
5. Attach cardiac monitor pulse oximeter and capnography.
6. Perform 12 lead EKG.
7. If signs of severe hypoventilation:
   a. Assist ventilations with BVM with 100% oxygen.
   b. Capnography
   c. Consider endotracheal intubation.
   d. Contact Medical Control.
8. If history of COPD (emphysema/chronic bronchitis):
   a. Administer Albuterol 2.5 mg by nebulization. Discontinue therapy if patient develops marked tachycardia of chest pain.
   b. Consider DuoNeb 3 mg nebulizer if greater than 1 year of age and more significant respiratory distress
   c. Consider Epinephrine 0.3 mg 1:1000 IM with Medical Control permission.
   d. Contact Medical Control for any questions or problems.
   e. Transport.
9. If history of fever and/or productive cough:
   a. Place in position of comfort.
   b. Transport.
10. If allergen exposure, edema, rash, and wheezing:
    a. Go to Anaphylaxis/Allergic Reaction Protocol.
    b. Contact Medical Control.
    c. Transport.
11. If history of pulmonary embolism:
    a. Place in position of comfort (preferably with extremities lower than level of heart).
b. Contact Medical Control for consideration of Fentanyl 1 mcg/kg IV or IM to a maximum dose of 100 mcg and or Midazolam (Versed) 3 mg IV.

c. Transport.

12. If history of CHF, and patient exhibiting tachypnea, orthopnea, JVD, edema, moist breath sounds (rales):
   a. Place in seated position (semi-Fowlers).
   b. Administer Nitroglycerin 0.4 mg (1/150) SL (if BP >100 mmHg systolic).
   c. After 1st SL Nitroglycerin may place 1 inch of Nitroglycerine ointment 2% if BP greater than 115 mmHg
   d. Administer Lasix 40 mg IV.
   e. Consider use of CPAP
   f. Contact OLMC for option of Fentanyl 1 mcg/kg IV to a maximum dose of 100 mcg.
   g. If systolic BP < 100 mmHg, contact OLMC for consideration of Dopamine at 2-20 ug/kg/min to maintain systolic > 100 mmHg.
   h. Contact Medical Control if not responsive to therapy.
   i. Transport.

13. If history of asthma, and the patient is exhibiting wheezing, cough, tachypnea, or retractions:
   a. Administer Albuterol 2.5 mg by nebulization. Discontinue therapy if patient develops marked tachypnea or chest pain.
   b. Consider DuoNeb 3 mg nebulizer if greater than 1 year of age and more significant respiratory distress
   c. Consider Epinephrine 1:1,000, 0.3 mg IM. (Pediatric dose = 0.01 ml/kg) if ordered by Medical Control.
   d. Contact Medical Control for any questions or problems.
   e. Transport.

14. Contact Medical Control for any questions or problems.

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**Dysrhythmias**

**Guidelines for Care**

Care of cardiac dysrhythmias is based on standards established by the American Heart Association committee on Emergency Cardiac Care. Please look to the specific protocol which follows for:

- Asystole
- Bradycardia (symptomatic)
- Narrow Complex Tachycardia (symptomatic)
- PEA (Pulseless Electrical Activity)
- Ventricular Fibrillation
- Ventricular Tachycardia (with pulse)
- Ventricular Tachycardia (without pulse)
- Premature Ventricular Contractions
Other points to include:

- Always treat the patient, not the monitor.
- Cardiac arrest due to trauma is not treated by medical protocols.
- Protocols for cardiac arrest situations assumes that the condition under discussion continually persists, that the patient remains in cardiac arrest, and that CPR is always performed.
- Adequate airway, ventilation, oxygenation, chest compressions, and defibrillation are more important than administration of medications and take precedence over initiating an IV or injecting medications.
- After each IV medication, give a 20-30ml bolus of IV fluid and immediately elevate the extremity. This will enhance delivery of the drug to the central circulation.

**Dysrhythmias (asystole)**

**Guidelines for Care**

1. Assure ABC’s.
2. Initiate and continue CPR.
3. Rhythm check – consider external pacing for witnessed onset of asystole
4. Manage airway as appropriate per MEMS protocol
5. Initiate IV NACL 0.9% TKO. Establish second line as time permits.
6. If unable to gain IV access, establish IO as per MEMS protocol.
7. Confirm asystole in more than one lead.
8. Consider possible causes:
   a. Hypoxia
   b. Hyperkalemia (increased potassium)
   c. Hypokalemia (decreased potassium)
   d. Pre-existing Acidosis
   e. Drug Overdose
   f. Hypothermia
9. Administer 1 mg of Epinephrine 1:1,000 every 3-5 minutes IV/IO. Follow each IV/IO drug bolus with 20 ml of IV fluid and elevate extremity.
10. Administer Atropine 1 mg IV/IO repeat every 3-5 minutes up to maximum dose 0.04 mg/kg
    i. 2 mg for patients weighing < 110 lbs. (< 50kg).
    ii. 3 mg for patients weighing 110-165 lbs. (50-75 kg)
    iii. 4 mg for patients weighing 165-220 lbs. (75-100 kg).
11. Contact Medical Control for option of Sodium Bicarbonate and orders on continuing ACLS or termination of resuscitation
12. Consider termination of efforts for unknown down time, irreversible signs of death, no response after 10 minutes of effort, or witnessed arrest event
Dysrhythmias (Symptomatic Bradycardia)

Guidelines for Care

1. Assure ABC’s.
2. Administer oxygen.
3. Attach monitor.
4. Perform 12 lead EKG.
5. Start IV of NACL 0.9% TKO. Establish second IV line as time permits.
6. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
7. Assess vital signs.
8. If heart rate < 60 per minute and patient exhibits any of the following signs of symptoms:
   b. Dyspnea.
   c. Cyanosis or pallor
   d. Altered mental status.
   e. Hypotension (BP < 100 mmHg).
   f. Shock.
   g. Pulmonary edema.
   h. Congestive heart failure (CHF).
9. Consider 0.5-1.0 mg Atropine IV
   a. May repeat IV Atropine every 3-5 minutes up to maximum dose of 0.04 mg/kg:
      i. 2 mg for patients weighing < 110 lbs. (< 50kg).
      ii. 3 mg for patients weighing 110-165 lbs. (50-75 kg)
      iii. 4 mg for patients weighing 165-220 lbs. (75-100 kg).
10. Initiate transcutaneous pacing (TCP) for patients who do not respond to Atropine; if serious signs and symptoms, do not delay TCP while awaiting IV/IO access or for Atropine to take effect. Consider premedicating with Midazolam (Versed) 3 mg IV/IO; or Fentanyl 1 mcg/kg IV/IO to a maximum first dose of 100 mcg.
11. If continued signs and symptoms contact OLMC for:
   a. Repeat Atropine
   b. Dopamine (800 mg in 500 ml, or premix). Titrate to maintain BP greater than 100 mmHg (5 to 20 mcg/kg/min)
12. Transport.
13. Contact Medical Control for any questions or problems.
**Dysrhythmias (Narrow complex tachycardia – Symptomatic)**

**Guidelines for Care**

1. Assure ABC’s.
2. Administer oxygen.
4. Perform 12 lead EKG.
5. Assess vital signs.
6. Start IV of NACL 0.9% TKO.
7. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
8. If patient exhibits any of the following signs or symptoms, Consider the patient to be unstable:
   b. Dyspnea.
   c. Altered mental status.
   d. Hypotension/shock.
   e. Pulmonary edema/congestive heart failure.
   f. Acute MI
9. Contact Medical Control for the following options:
   a. Pre-medication with Midazolam (Versed) 3 mg IV/IO or Fentanyl 1 mcg/kg IV/IO push to a maximum initial dose of 100 mcg and synchronized cardioversion.
   b. Cardioversion should initially be 50 joules then 100, 200, 300, then 360 for adults.
   c. Have a running IV in place with NS or LR
10. If patient is stable contact OLMC for the following options for SVT unknown type or PSVT:
    a. Valsalva maneuver
    b. Adenosine 6 mg IV rapid bolus at centrally located peripheral IV with rapid saline bolus
    c. If persistent PSVT
    d. Adenosine 12 mg IV rapid bolus at centrally located peripheral IV with rapid saline
    e. May repeat #1 after consult with OLMC
11. For rate control in A-fib or A-flutter contact OLMC for options:
    a. Metoprolol (Lopressor) 5 mg IV over 5 minutes
    b. Contact OLMC for repeat of therapy options
12. Transport.
Dysrhythmias (Premature ventricular contractions)

Guidelines for Care

1. Assure ABC’s.
2. Administer oxygen.
3. Start IV NACL 0.9% TKO.
5. Assess vitals signs.
6. If patient is asymptomatic, transport with continued monitoring en route.
7. If patient exhibits any of the following signs and symptoms:
   b. Dizziness.
   c. Symptoms of acute MI
And premature ventricular contractions are malignant:
   a. 6 per minute.
   b. Multi-focal.
   c. Occurring in couplets.
   d. Exhibiting “r on t phenomenon”.
   e. 3 or more PVC’s in a row (i.e. non-sustained VT).
8. If patient without Bradycardia (pulse rate less than 60 bpm), nor hypotension (BP less than 90 mmHg), with OLMC may consider Metoprolol 5 mg IV over 5 minutes. (Do not use Metoprolol if evidence of shock)
9. If patient is hypotensive (BP less than 90 mmHg), with OLMC may consider Amiodarone 150 mg IV over 10 minutes along with 500 ml NS IV fluid challenge
10. If pulse rate is less than 60 bpm, these may be escape PVC’s from an irritable focus and with OLMC may want to consider the option of Atropine 0.5 mg IV
11. If patient at any time becomes pulseless, switch to Pulseless Ventricular Tachycardia Protocol (or other appropriate protocol).
12. Transport.
13. Contact Medical Control for any questions or problems.

Dysrhythmias (Pulseless electrical activity) (PEA)

PEA Includes:
- Electromechanical Dissociation (EMD)
- Pseudo – EMD
- Idioventricular Rhythms
- Brady Asystolic Rhythms
- Post Defibrillation Idioventricular Rhythms

Guidelines for Care

1. Assure ABC’s.
2. Initiate and continue CPR.
3. Intubate at once (confirm tube placement with appropriate measures).
4. Initiate IV of NACL 0.9% wide open. Establish second line when time permits.
5. If unable to gain IV access, establish IO as per MEMS protocol.
6. Consider possible causes:
   a. Hypovolemia.
   b. Hypoxia.
   c. Hyperkalemia.
   d. Cardiac tamponade.
   e. Pre-existing acidosis.
   f. Drug overdose.
   g. Hypothermia.
   h. Tension pneumothorax.
   i. Massive pulmonary embolism
   j. Massive acute myocardial infarction.
7. Administer 1 mg of Epinephrine 1:10,000 every 3-5 minutes IV/IO. Follow each IV/IO drug bolus with 20 ml of IV fluid and elevate extremity.
8. If heart rate < 60 per minute, or relative bradycardia, administer Atropine 1 mg IV/IO. May repeat IV/IO Atropine every 3-5 minutes up to maximum dose 0.04 mg/kg
9. Contact OLMC for consideration of Sodium Bicarbonate.
10. Consider transcutaneous cardiac pacing.
11. Contact OLMC for option of termination of resuscitation for
   a. Unknown down time
   b. Irreversible signs of death
   c. No response after 10 minutes of efforts
   d. Or unwitnessed arrest event
12. Transport.
13. Contact Medical Control for any questions or problems.

Dysrhythmias (Ventricular Fibrillation or Ventricular Tachycardia Without a Pulse)

Guidelines for Care

1. Assure ABC’s.
2. Precordial thump (if cardiac arrest witnessed)
3. Initiate and continue CPR until defibrillator attached (confirm tube placement with appropriate measures).
4. Confirm ventricular fibrillation (VF) or non-perfusing ventricular tachycardia (VT) on monitor.
5. Defibrillate x 1 (360 J or equivalent biphasic)
6. If VF or VT persists, continue CPR. If patient develops PEA or asystole, go to appropriate protocol.
7. Perform 5 cycles of CPR between every defibrillation attempt
8. Intubate.
9. Start IV of NACL 0.9% TKO. Establish second line as time permits.
Dysrhythmias (Ventricular tachycardia with pulse)

Guidelines for Care

1. Assure ABC’s.
2. Administer oxygen.
3. Start IV of NACL 0.9% TKO.
4. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
5. Attach monitor and Perform 12 lead EKG.
6. Assess vital signs.
7. If patient exhibits any of the following signs or symptoms, consider patient to be unstable:
   b. Dyspnea
   c. Altered mental status.
   d. Hypotension.
   e. Shock.
   f. Pulmonary edema.
   g. Congestive heart failure.
   h. Acute MI.
8. Administer Amiodarone 150 mg with 50 ml D5W IV/IO infused over 10 minutes
9. Repeat Amiodarone 150 mg with 50 ml D5W IV/IO over 10 minutes if needed
10. Consider synchronized cardioversion at 100, 200, 300, 360 J.
11. Contact OLMC for pre-medication with Midazolam (Versed) 3 mg IV/IO or Fentanyl 1 mcg/kg to a maximum of 100 mcg initial dose IV/IO.
12. If this fails, consider defibrillation x 1 at 360 J or equivalent biphasic
13. If patient unconscious and BP <100 or unconscious with pulmonary edema go straight to unsynchronized cardioversion (defibrillation 360 J or equivalent biphasic).
14. If patient at any time becomes pulseless, switch to Pulseless Ventricular Tachycardia Protocol (or other appropriate protocol).
15. Transport.
16. Contact Medical Control for any questions or problems.

**Eclampsia**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen via non-rebreather mask. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS < 8.
4. Establish IV of NACL 0.9% at 125 ml/hr.
5. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
6. Midazolam (Versed) 3 mg IV/IO for active seizures.
7. Monitor EKG, vital signs, fetal heart tones, level of consciousness, patellar reflexes, respiratory rate, and oxygenation status every 5 minutes. If patellar reflexes are absent, shut off infusion and contact Medical Control immediately.
8. Keep the patient in left lateral recumbent position.
9. Contact Medical Control for other hypertensive agent orders.
10. Monitor urinary output if possible.
11. Evaluate for pulmonary edema. If present, contact Medical Control for consideration of Fentanyl 1 mcg/kg IV and/or Furosemide (Lasix) 40 mg IV over 2-3 minutes.
12. Contact Medical Control for any questions or problems.

**Environmental Emergencies (Frostbite)**

**Guidelines for Care**

1. Assure ABC’s.
2. Administer oxygen as appropriate.
3. Cardiac monitor and pulse oximeter.
4. Check core temperature. If core temperature < 34 degrees C (93.2 degrees F), go to Hypothermia Protocol.
5. Attend to injured areas:
   a. Protect injured areas from pressure, trauma, and friction. *Do not rub or break blisters.*
   b. Do not allow limb to thaw if there is a chance it will re-freeze.
   c. Do not allow patient to ambulate once the limb has started to thaw.
   d. Maintain core temperature by keeping victim warm with blankets.
   e. Warm fluids may be administered orally to conscious patients.

6. Consider using the pulse oximeter probe to detect peripheral perfusion in affected tissues.

7. Consider Fentanyl 1 mcg/kg to a maximum of 100 mcg initial dose IV/IO for pain control.

8. Transport.

9. Contact Medical Control for any questions or problems.

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**Environmental Emergencies (Hyperthermia)**

**Guidelines for Care**

1. Assure ABC’s.
2. Administer oxygen via non-rebreather mask.
3. Start two large bore IV’s of NACL 0.9% at TKO. Bolus as required to maintain systolic BP > 90 mmHg.
4. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
5. Attach monitor, pulse oximeter, and capnography.
6. Assess vital signs, including temperature, every 10 minutes.
7. If history suggestive of heat exhaustion or heat stroke:
   a. Remove to cooler environment.
   b. Cool with ice packs or moist sheets (must have good ambient air flow).
   c. Stop cooling measures when core body temperature is < 39 degrees C (102 F), shivering begins, or CNS/level of consciousness returns to normal.
8. If seizures are present, and suspected to be heat-related:
   a. Protect airway with appropriate airway adjuncts.
   b. Midazolam (Versed) 3 mg IV/IO. Call Medical Control of unable to establish IV or if repeat dose is necessary.
   c. Transport.
   d. Contact Medical Control for any questions or problems.
Environmental Emergencies (Hypothermia)

Guidelines for Care

1. Actions for all patients:
   a. Remove wet garments.
   b. Protect against heat-loss and wind chill.
   c. Maintain horizontal position.
   d. Avoid rough movement and excess activity.
   e. Monitor core temperature.
   f. Monitor cardiac rhythm.
   g. Treat major trauma as the first priority and hypothermia as the second.

2. Treatment for mild hypothermia. Reduced core temperature greater than 93.2 degrees F (34 degrees C) with a shell to core shunt
   a. Reduce the cold challenge by protecting the patient from the cold environment.
   b. Reverse the cold challenge by adding external heat and moving the patient to a warm environment.
   c. Administer oxygen (heated and humidified) if available.
   d. Increase heat retention by adding insulation.
   e. Increase intrinsic heat production by light exercise if the patient is dry.
   f. If the patient can safely swallow and protect his airway, increase calorie stores by giving liquid laced with sugar.
   g. Warmed IV fluids may be necessary, and give as bolus therapy (250-500 ml in normal adult; 20 ml/kg in pediatrics.), with repeating once if necessary. Use normal saline heated to 104-108 degrees F (40-42 degrees C) if available.
   h. Contact Medical Control if a 3rd bolus is necessary.
   i. Treat associated conditions
   j. Treat cardiac problems and cardiac arrest as per normothermic protocols

3. Treatment For Moderate to Severe Hypothermia With Signs of Life
   a. Reduced core temperature between 86 – 93.2 degrees F (30 – 34 C)
   b. Treat patients very gently – do not rub or manipulate extremities, or attempt to remove wet clothing without cutting them off.
   c. Treat as per “Mild Hypothermia”, but with the following changes
      i. Do not allow patient to sit or stand until rewarmed
      ii. Do not give the patient oral fluids or food
      iii. Do not attempt to increase heat production with light or any exercise

4. Treatment For Severe Hypothermia With No Signs of Life
   a. Reduced core temperature below 82 degrees F (28 C)
   b. Use extreme caution with handling these patients
   c. Check for pulse and respirations for 30 to 45 seconds
d. Give 3 minutes of rescue breathing after initial 30 to 45 second pulse/respiration check (give breaths at the rate of 6 min)
e. Chest compressions only if transportation is not available within 3 hours
f. If AED available, proceed with 1 shock if the machine deems that this is indicated. If core temperature above 86 degrees F then treat as normothermic patient. (This is the same procedure if defibrillating the patient manually)
g. Warmed IV fluids (same as mild hypothermic patient)
h. Withhold antiarrhythmic medications or cardiac medications until the patient is warm (> 86 degrees F)
i. Contact Medical Control for any questions or concerns

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**Eye Injuries (General)**

**Guidelines for Care**

1. Assure ABC’s.
2. Secondary survey.
3. If necessary to bandage one eye ensure both are covered.
4. If chemical injury, provide continuous irrigation with sterile normal saline.
5. For pain: Proparacaine ophthalmic drops, 2 drops PRN to affected eye, with continuous irrigation with sterile NS if chemical exposure and not allergic to local anesthetics.
6. Bring chemical container (as long as not considered Haz-Mat) or name of chemical with patient to the emergency department.
7. Contact Medical Control for any questions or problems.

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**Fractures (General)**

**Guidelines for Care**

1. Assure ABC’s.
2. Secondary survey.
4. Establish IV access of NACL 0.9% KVO or Saline lock
5. For isolated extremity trauma consider Fentanyl 1 mcg/kg IV or IM initially with an initial maximum dose of 100 mcg then 25-75 mcg IV every 5-10 minutes titrated to effect with maximum dose of 400 mcg. Contact Medical Control if further dosing needed or vital signs are not stable.
6. Consider self administration of Nitrous Oxide.
7. Immobilize fracture.
8. Consider Zofran 4 mg IV for nausea or vomiting and may repeat 1 time after 15 minutes.
9. For multiple trauma or isolated involving head, spine, or torso then contact Online Medical Control before use of any narcotics, antiemetics, or anxiolytic.
10. Transport.
11. Contact Medical Control for any questions or problems.

**Fractures (femur)**

**Guidelines for Care**

1. Assure ABC’s.
2. Administer oxygen via non-rebreather mask.
3. Start large bore IV of NACL 0.9% at TKO. Bolus as required to maintain systolic BP > 90 mmHg.
4. If evidence of shock (tachycardia, diaphoresis, hypotension, etc.), start second IV of NACL 0.9% and infuse wide-open.
5. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
6. Attach monitor.
7. Assess vital signs.
8. Consider Fentanyl 1 mcg/kg IV or IM initially with an initial maximum dose of 100 mcg then 25-75 mcg IV every 5-10 minutes titrated to effect with maximum dose of 400 mcg. If nausea and vomiting with medication administration consider the use of Zofran 4 mg IV/IO.
9. Consider the use of self administered Nitrous Oxide
10. If available place PASG. Inflate if needed for immobilization.
11. Transport.
12. Contact Medical Control for any questions or problems.

**Fractures (Pelvis/Hip)**

**Guidelines for Care**

1. Assure ABC’s.
2. Administer oxygen via non-rebreather mask.
3. Start large bore IV of NACL 0.9% at TKO. Bolus as required to maintain systolic BP > 90 mmHg.
4. If evidence of shock (tachycardia, diaphoresis, hypotension, etc.), start second IV of NACL 0.9% and infuse wide-open.
5. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
6. Attach monitor.
7. Assess vital signs.
8. Contact OLMC for consideration of Fentanyl 1 mcg/kg IV or IM initially with an initial maximum dose of 100 mcg then 25-75 mcg IV every 5-10 minutes titrated to effect with maximum dose of 400 mcg. If nausea and vomiting with medication administration consider the use of Zofran 4 mg IV/IO. Contact OLMC if further dosing needed, vital signs are not stable, or for the use of Nitrous Oxide before moving the patient if no evidence of head or abdominal injury.

9. If available place PASG. Inflate if needed for immobilization.

10. Transport.

11. Contact Medical Control for any questions or problems.

Gastrointestinal Bleeding (Upper and Lower)

Guidelines for Care

1. Assure ABC’s
2. Administer oxygen via non-rebreather
3. IV Access of NACL 0.9% to maintain systolic pressure > 90 mmHg
4. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
5. Attach cardiac monitor and pulse oximeter
6. Perform 12 lead if time permits
7. Treat for shock by assuring patient is covered and remains warm
8. Transport
9. Contact Medical Control for any questions or problems

Head Injury/Spinal Trauma

Guidelines for Care

1. Assure ABC’s.
3. Determine level of consciousness (AVPU).
4. Complete motor examination (paralysis, weakness, posturing), if possible.
5. Pupillary examination (size, equality).
6. Complete sensory examination, if possible.
7. If appropriate the Maine EMS Spinal Protocol may be used to clear the patient’s spine.
8. Patients who are not candidates for spinal clearance should be immobilized as follows:
   a. Commercial or improvised cervical collar must be placed.
   b. Patient must be secured to a long spine board or equivalent device.
   c. Three straps may be used to secure the patient to the board however the four straps, cross strapping technique is preferred.
9. Open wounds which expose the brain tissue should be covered with saline-soaked gauze.

10. Oxygen as appropriate with capnography. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS < 8.

11. Personnel must be careful not to over ventilate head injured patients. If the head injured patient is not showing signs and symptoms of herniation, provide PPV at 10 to 12 bpm (one every 5-6 secs.). If they are showing signs and symptoms of herniation and you have the ability to measure end-tidal CO2, provide PPV to maintain a CO2 level of 34-38. If you don’t have CO2 measurement capabilities, provide PPV at a rate not to exceed 20 bpm (one breath every 3 secs).

12. If pulseless, apneic: (it may be appropriate to withhold resuscitative measures).
   a. Intubate with neck in neutral position (stabilized with traction by second EMT).
   b. Ventilate with 100% oxygen.
   c. Capnography
   d. CPR.
   e. Transport.
   f. Attempt IV NACL 0.9% en route. Establish second IV line if time permits.
   g. If unable to gain IV access, establish IO as per MEMS protocol
   h. Contact Medical Control en route.

13. If patient unresponsive:
   a. Ventilate with 100% oxygen. See above # 11 for ventilatory rate
   b. Capnography.
   c. If necessary intubate with neck in neutral position (stabilized with traction by second EMT).
   d. Transport.
   e. Attempt IV of NACL 0.9% en route. Establish second IV if time permits.
   f. If unable to gain IV access, establish IO as per MEMS protocol

14. If BP < 90 mmHg systolic, or signs of shock:
   a. Administer oxygen via non-rebreather mask.
   b. Capnography.
   c. Immobilize neck.
   d. Transport.
   e. Attempt IV NACL 0.9% en route. Establish second IV line if time permits.
   f. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
   g. Contact Medical Control en route.
   h. If combative, check airway, ensure oxygen delivery, and restrain as needed.
15. Anticipate seizures and possible combativeness. Contact OLMC for options of Versed 3 mg IV or IO. If IV or IO cannot be established, option of Versed 3-5 mg IM
16. Contact Medical Control for any questions or problems.

Hypertensive Crisis

Guidelines for Care

1. Assure ABC’s.
2. Administer oxygen via non-rebreather mask.
3. Cardiac monitor.
4. 12 lead if time permits
5. IV NACL 0.9% TKO.
6. Monitor vital signs every 3-5 minutes.
7. Consider emergent transport.
8. Contact Medical Control for any questions or problems.

Motion Sickness, Nausea, and Vomiting

Guidelines for Care

1. Assure ABC’s.
2. Oxygen as appropriate.
3. Attach cardiac monitor and pulse oximeter.
4. Initiate IV of NACL 0.9%. Give bolus if systolic pressure < 90 mmHg (20ml/kg for children).
5. Be alert for dysrhythmias.
6. Provide appropriate comfort measures (i.e. cool cloth to forehead).
7. If patient nauseated or has recently vomited, contact Medical Control for possible administration of Phenergan 12.5 IV or IM.
8. Monitor ECG, vital signs, pulse oximetry, and level of consciousness.
9. Contact Medical Control for any problems.

Multiple Trauma

****Please Refer to Med-Care’s MCI Plan****
Near-Drowning

Guidelines for Care

1. Assure ABC’s.
2. Immobilize cervical spine.
3. Oxygen via non-rebreather mask.
5. Attach cardiac monitor and pulse oximeter.
6. Perform 12 lead EKG
7. IV of NACL 0.9% TKO.
8. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
9. If apneic:
   a. Initiate and maintain mechanical ventilation with 100% oxygen.
   b. Endotracheal intubation (with in-line cervical immobilization).
   c. Treat any dysrhythmias per appropriate protocol.
   d. Transport and contact Medical Control en route.
10. If apneic and pulseless:
    a. Initiate and maintain mechanical ventilation with 100% oxygen.
    b. CPR.
    c. Endotracheal intubation (with in-line cervical immobilization).
    d. Treat any dysrhythmias per appropriate protocol.
    e. Transport and contact Medical Control en route.
11. If hypotensive:
    a. Elevate legs.
    b. Administer 250 ml fluid bolus (20 ml/kg for children). Repeat to maintain systolic BP > 90 mmHg. Consider starting a second IV of NACL 0.9% if multiple boluses required.
    c. Transport and contact Medical Control en route.
    d. Initiate Dopamine drip if patient unresponsive to fluid challenge. Begin infusion at 2.0 ug/kg/min. and titrate to maintain systolic BP > 90 mmHg.
12. Treat dysrhythmias per the appropriate protocol.
13. Start passive re-warming if patient hypothermic.
14. Obtain glucose level and administer 25 gms D-50 if glucose < 80 mg/dl.
15. Contact Medical Control for any questions or problems.

Pediatric Emergencies

Guideline for Care

1. Remember that children are not small adults. Treatments vary as do drug dosages and fluid administration rates.
2. Cardiac arrest in children is not a sudden event. It is almost always due to a respiratory problem which leads to hypoxia, bradycardia, and eventually asystole. Ventricular fibrillation is a rare event in children. Initial treatment should be directed at establishment of an airway, administration of supplemental oxygen, and mechanical ventilation.

3. Esophageal combitubes should not be used in children. The preferred method of airway management is endotracheal intubation. If unable to intubate attempt LMA insertion.

4. The intraosseous route of fluid and medication administration is available for children of all ages.

5. Blood pressure is a late sign of shock in children. Instead, you should evaluate end-organ perfusion.

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**Anticipating Cardiopulmonary Arrest**

All sick children should undergo a rapid cardiopulmonary assessment. The goal is to answer the question, "Does this child have pulmonary or circulatory failure that may lead to cardiopulmonary arrest?" Recognition of the physiologically unstable infant is made by physical examination alone. Children who should receive the rapid cardiopulmonary assessment include those with the following conditions:

1. Respiratory rate > 60.
2. Heart rate > 180 or < 80 (under 5 years).
3. Heart rate > 180 or < 60 (over 5 years).
4. Respiratory distress.
5. Trauma.
7. Cyanosis.
8. Altered level of consciousness.
10. Fever with petechiae (small skin hemorrhages).

**Rapid Cardiopulmonary Assessment**

The Rapid Cardiopulmonary Assessment is designed to assist you in recognizing respiratory failure and shock, thus anticipating cardiopulmonary arrest. The Rapid Cardiopulmonary Assessment follows the basic ABC’s of CPR.

**Airway Patency**

Inspect the airway and ask yourself the following questions:

1. Is the airway patent?
2. Is it maintainable with head positioning, suction, or airway adjuncts?
3. Is the airway unmaintainable? If so, what action is required? (endotracheal intubation, removal of foreign body, and so on).
Breathing

Evaluation of breathing includes assessment of the following conditions:

1. **Respiratory rate.** Tachypnea is often the first manifestation of respiratory distress in infants. An infant breathing at a rapid rate will eventually tire. Thus, a decreasing respiratory rate is not necessarily a sign of improvement. A slow respiratory rate in an acutely ill infant or child is an ominous sign.

2. **Air entry.** The quality of air entry can be assessed by observing for chest rise, breath sounds, stridor, or wheezing.

3. **Respiratory mechanics.** Increased work of breathing in the infant and child is evidenced by nasal flaring and use of the accessory respiratory muscles.

4. **Color.** Cyanosis is a fairly late sign of respiratory failure and is most frequently seen in the mucous membranes of the mouth and the nail beds. Cyanosis of the extremities alone is more likely due to circulatory failure (shock) than respiratory failure.

Circulation

The cardiovascular assessment consists of the following procedures:

- **Heart Rate.** Infants develop sinus tachycardia in response to stress. Thus, any tachycardia in an infant or child requires further evaluation to determine the cause. Bradycardia in a distressed infant or child may indicate hypoxia and is an ominous sign of impending cardiac arrest.

- **Blood pressure.** Hypotension is a late and often sudden sign of cardiovascular decompensation. Even mild hypotension should be taken seriously and treated quickly and vigorously, since cardiopulmonary arrest is imminent.

- **Peripheral circulation.** The presence of pulses is a good indicator of the adequacy of end-organ perfusion. The pulse pressure (the difference between the systolic and diastolic blood pressure) narrows as shock develops. Loss of central pulses is an ominous sign.

- **End organ perfusion.** The end organ perfusion is most evident in the skin, kidneys, and brain. Decreased perfusion of the skin is an early sign of shock. A capillary refill time of > 2 seconds is indicative of low cardiac output. Impairment of brain perfusion is usually evidenced by a change in mental status. The child may become confused, lethargic, or seizures may occur. Failure of the child to recognize the parents’ faces are often and ominous sign. Urine output is directly related to kidney perfusion. Normal urine output is 1-2 ml/kg/hr. Urine flow of < 1 ml/kg/hr is an indicator of poor renal perfusion.

The Rapid Cardiopulmonary Assessment should be repeated throughout initial assessment and patient transport. This will help you determine whether the patient’s condition is deteriorating or improving. Any decompensation or change in the patient’s status should be immediately treated.
Pediatric Emergencies (Cardiac Arrest, Medical)

Guidelines for Care

1. Determine pulselessness and begin CPR.
2. Confirm cardiac rhythm in more than 1 lead.
3. If asystole:
   a. Continue CPR.
   b. Secure airway. Only perform endotracheal intubation if able to provide continuous waveform capnography. If unable to do so than insert oropharyngeal airway and ventilate patient with BVM device.
   c. Hyperventilate with 100% oxygen and monitor EtCO2.
   d. Obtain IV or IO access.
   e. Epinephrine (first dose):
      - IV or IO: 0.01 mg/kg of 1:10,000 solutions.
   f. Epinephrine (second and subsequent doses):
      - IV, IO, or ET: 0.1 mg/kg of 1:1,000 solution, repeat every 3-5 minutes.
      - IV, IO doses as high as 0.2 mg/kg of 1:1,000 may be effective.
   g. Transport as soon as possible continuing resuscitation en route.
4. If pulseless electrical activity:
   a. Identify and treat causes including hypoxemia, acidosis, Hypovolemia, tension pneumothorax, cardiac tamponade, or profound hypothermia.
   b. Continue CPR.
   c. Secure airway.
   d. Hyperventilate with 100% oxygen.
   e. Obtain IV or IO access.
   f. Epinephrine (first dose):
      - IV or IO: 0.01 mg/kg of 1:10,000 solutions.
   g. Epinephrine (second and subsequent doses): 
      - IV, IO, or ET: 0.1 mg/kg of 1:1,000 solution, repeat every 3-5 minutes.
      - IV, IO doses as high as 0.2 mg/kg of 1:1,000 may be effective.
   h. Transport as soon as possible continuing resuscitation en route.
5. If ventricular fibrillation/pulseless ventricular tachycardia:
   a. Continue CPR.
   b. Attach AED if no ALS provider available.
   c. Secure airway.
   d. Hyperventilate with 100% oxygen.
   e. Obtain IV or IO access.
   f. Defibrillate X 1 at 2 J/kg initially, (4 J/kg subsequent defibrillations)
   g. Resume CPR immediately
   h. Epinephrine; Repeat every 3-5 minutes
      - IV or IO: 0.01 mg/kg of 1:10,000 solutions.
      - IV, IO, or ET: 0.1 mg/kg of 1:1,000 solution, repeat every 3-5 minutes.
- IV, IO doses as high as 0.2 mg/kg of 1:1,000 may be effective.
  i. Consider antiarrhythmics;
  - Amiodarone 5 mg/kg IV/IO or,
  j. Consider magnesium 1-2 grams IV/IO push, max 2 g for torsades de pointes

6. Transport as soon as possible and continue resuscitation efforts
7. Contact Medical Control for any questions or problems.

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**Pediatric Emergencies (Cardiac Arrest, Trauma)**

**Guidelines for Care**

1. If patient is severely injured, and in cardiac arrest:
   a. Airway with cervical spine control.
   b. Breathing.
   c. Circulation/perfusion with hemorrhage control.
   d. Disability determination (AVPU, motor, posturing).
   e. Exposure.
2. If extrication required, perform quickly with spinal immobilization.
4. Transport immediately and attempt IV or IO en route. Give 20 ml/kg fluid boluses of NACL 0.9%.
5. Contact Medical Control en route.
6. Consider correctable causes:
   a. Severe hypoxemia.
   b. Cardiac tamponade.
   c. Tension pneumothorax.
   d. Severe acidosis.
7. Contact Medical Control for any questions or problems.

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**Pediatric Emergencies: (Bradycardia)**

1. Assure ABC’s
2. Oxygen as appropriate. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway.
3. Attach monitor, pulse oximeter
4. Start IV/IO NACL 0.9% TKO
5. Administer 20 ml/kg fluid boluses if hemodynamic instability
6. Perform CPR if despite oxygenation and ventilation HR < 60/min with poor perfusion
7. Give epinephrine;
   a. IV/IO: 0.01 mg/kg (1:10,000: 0.1 ml/kg)
   b. Repeat every 3 to 5 minutes
8. If increased vagal tone or primary AV block ;
a. Give atropine, first dose: 0.02 mg/kg, may repeat. (minimum dose: 0.1 mg; maximum total dose for child: 1 mg)

9. Consider cardiac pacing
10. If pulseless arrest develops, go to pediatric medical/traumatic arrest procedure
11. Transport as soon as possible to hospital
12. Contact Medical Control

**Pediatric Emergencies: (Tachycardia)**

1. Assure ABC’s
2. Oxygen as appropriate. Consider intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway.
3. Attach monitor, pulse oximeter
4. Start IV/IO NACL 0.9% TKO
5. **Probable sinus tachycardia**; compatible history consistent with known cause, P-waves present/normal, variable R-R; constant P-R, Infants; rate usually <220 bpm, Children; rate usually <180 bpm
   a. Search and treat cause
   b. Consider vagal maneuvers (no delays)
   c. If IV access readily available: give adenosine 0.1 mg/kg (maximum 1st dose 6 mg) by rapid bolus. May double first dose and give once (maximum second dose 12 mg) **or**,
   d. Synchronized cardioversion: 0.5 to 1 J/kg; if not effective, increase to 2 J/kg. Sedate if possible but don’t delay cardioversion
6. **Possible Ventricular Tachycardia**
   a. Synchronized cardioversion: 0.5 to 1 J/kg; if not effective, increase to 2 J/kg. Sedate if possible but don’t delay cardioversion
   b. May attempt adenosine if it does not delay electrical cardioversion

**Pediatric Emergencies (Croup, laryngotracheobronchitis)**

**Guidelines for Care**

1. Assure ABC’s.
3. Administer humidified oxygen via non-rebreather mask.
4. Have equipment ready for endotracheal intubation.
5. Place in position of comfort.
6. Pulse oximetry, capnography and cardiac monitor.
7. Defer starting an IV if possible.
8. Contact Medical Control.
9. Consider Albuterol nebulizer or racemic Epinephrine treatment (1 ml of 1:1000 diluted with 2 ml of normal saline) as ordered by Medical Control.
10. Transport. If child to be transported without intubation, have BVM and airway equipment at the head of the bed. Endotracheal intubation equipment should be open and prepared for immediate use if required.

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11. Contact Medical Control for any questions or problems.
12. Severe respiratory distress despite the above measures requires intubation.
   Consider intubating with a tube one full size smaller than would normally be used. Use any uncuffed tube.
13. If necessary, restrain the child to protect the ET tube.

Do not examine pharynx as this may cause laryngospasms in cases of epiglottitis.

Pediatric Emergencies (Epiglottitis)

Guidelines for Care

1. Assure ABC’s.
2. Administer humidified oxygen via non-rebreather mask.
3. Have equipment ready for endotracheal intubation.
4. Place in position of comfort.
5. Pulse oximetry, capnography and cardiac monitor.
6. Defer starting IV if possible.
7. Contact Medical Control.
8. Consider Albuterol nebulizer or racemic Epinephrine treatment (1 ml of 1:1000 diluted with 2 ml of normal saline) as ordered by Medical Control.
9. Transport. If child to be transported without intubation, have BVM and airway equipment at the head of the bed. Intubation equipment should be open and prepared for immediate use if required.
10. Contact Medical Control for any questions or problems.
11. Severe respiratory distress despite the above measures requires intubation. Consider intubating with a tube one full size smaller than would normally be used. Use an uncuffed tube.
12. If necessary, restrain the child to protect the ET tube.

Do not examine pharynx as this may cause laryngospasms in cases of epiglottitis.

Poisoning/Overdose

Guidelines for Care

1. Assure ABC’s.
2. Oxygen via non-rebreather mask.
3. Obtain history:
   a. Type and amount of poison.
   b. How poisoned (ingested, inhaled, injected, surface contamination).
   c. Time poisoned.
   d. Has patient vomited? If so, when?
   e. History of drug or ETOH usage.
   f. Pre-existing medical problems.
4. Initiate IV NACL 0.9% TKO.
5. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.

6. Attach cardiac monitor and pulse oximeter.

7. Determine serum glucose level with Glucometer.
   a. If glucose < 80 mg/dl, administer 25 gms 50% dextrose IV.
   b. If glucose > 80 mg/dl and < 250 mg/dl, go to step #8.

8. If inadequate air exchange:
   a. Initiate and maintain mechanical ventilation with 100% oxygen.
   b. Consider endotracheal intubation.
   c. Treat any dysrhythmias per appropriate protocol.
   d. Transport and contact Medical Control en route.

9. If apneic:
   a. Initiate and maintain mechanical ventilation with 100% oxygen.
   b. Endotracheal intubation.
   c. Treat any dysrhythmias per appropriate protocol.
   d. Transport and contact Medical Control en route.

10. If apneic and pulseless:
    a. Initiate and maintain mechanical ventilation with 100% oxygen.
    b. CPR.
    c. Endotracheal intubation (with in-line cervical immobilization).
    d. Treat any dysrhythmias per appropriate protocol.
    e. Transport and contact Medical Control en route.

11. If seizing:
    a. Go to Seizure Protocol.

12. If inhaled poison:
    a. Assure personal safety.
    b. Remove patient to fresh air.
    c. Administer 100% oxygen via non-rebreather mask.

13. If skin or eye contamination:
    a. Assure personal safety.
    b. Remove contaminated clothes.
    c. Irrigate with water or normal saline.
    d. Consider Tetracaine ophthalmologic drops (2 drops) to affected eye PRN.

14. If blood pressure < 90 mmHg, and/or if respirations < 12 per minute, and/or possible narcotic overdose:
    a. Administer 100% oxygen via non-rebreather mask.
    b. Assist ventilations as needed.
    c. Administer 0.1-2.0 mg Narcan IV push. May give IM or endotracheally if unable to start IV.
    d. Transport and contact Medical Control en route.

15. If antidepressant OD (tricyclics):
    a. Contact Medical Control.
    b. Transport.
    c. Consider Sodium Bicarbonate.

16. If Benzodiazepine OD:
a. Transport.
b. Prepare to support ABC’s.

17. Transport.
18. Contact Medical Control for any questions or problems.
19. EMS units with cellular telephones may contact poison control directly for any questions.
20. Consider administration of activated charcoal.
21. Do not induce emesis in any patient without express orders from Medical Control.

Preeclampsia – Pregnancy Induced Hypertension

Guidelines for Care

1. Assure ABC’s.
2. Oxygen via non-rebreather mask.
4. Establish IV of NACL 0.9% at 125 ml/hr.
5. Monitor ECG, vital signs, level of consciousness, patellar reflexes, respiratory rate, and oxygenation status every 5 minutes. If patellar reflexes are absent, shut off the infusion and contact Medical Control immediately.
6. Keep the patient in left lateral recumbent position.
7. Evaluate for pulmonary edema. If present, consider CPAP and contact Medical Control for consideration of Fentanyl 1 mcg/kg to a maximum dose of 100 micrograms IV and or Furosemide 40 mg IVP.
8. Contact Medical Control for any questions or problems.

Pre-Term Labor

Guidelines for Care

1. Assure ABC’s.
2. Oxygenation as appropriate.
4. Establish IV of NACL 0.9% at 125 ml/hr.
5. Consider fluid bolus as initial tocolytic therapy.
6. Position the patient in the left lateral recumbent position.
7. Record frequency, character and duration of contractions, blood pressure, and pulse every 15 minutes.
8. Transport.
**Psychiatric Emergencies**

**Guidelines for Care**

1. Assure personal safety. Call police.
2. Approach patient only when safe to do so.
3. Talk in an even, reassuring tone.
4. Restrain if suicidal or homicidal or if patient has a life-threatening emergency (with police assistance only).
5. If needed for restraining patient, contact OLMC for option of Versed 4 mg IM for patient safety and comfort.
6. Perform primary assessment.
7. Perform secondary assessment:
   a. Look for medical or traumatic causes for the patient’s behavior.
   b. Note behavior.
   c. Note mental status.
   d. Obtain drug/alcohol/medical history/psychiatric history.
8. Administer oxygen as appropriate.
9. IV NACL 0.9%. (as appropriate)
10. Determine serum glucose level with Glucometer.
    a. If glucose < 80 mg/dl, administer 25 gms 50% dextrose IV.
    b. If glucose > 80 and < 250 mg/dl, go to step #11.
11. If history of alcoholism, or alcoholism suspected:
    a. Consider Thiamine 100 mg IV or IM. (as appropriate)
12. Transport (if restrained, have police accompany patient).
13. Contact Medical Control for any problems or questions.

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**Pulmonary Embolism**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen via non-rebreather mask if no history of COPD. If history of COPD, titrate oxygen delivery to maintain SPO2 > 90%. Consider intubation and hyperventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patent airway, or for GCS < 8.
3. Initiate IV NACL 0.9%.
4. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
5. Attach cardiac monitor, capnography and pulse oximeter.
6. If signs of severe hypoventilation:
   a. Assist ventilations with BVM with 100% oxygen.
   b. Consider endotracheal intubation.
7. If history suspicious for pulmonary embolism:
a. Place in position of comfort (preferably with extremities lower than level of heart).
b. Contact Medical Control for consideration of Fentanyl 1 mcg/kg to a maximum dose of 100 micrograms IV and Midazolam (Versed) 3-5 mg IV.
c. Transport.
8. Contact Medical Control for any questions or problems.

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**Seizures**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen via non-rebreather mask.
3. Attach cardiac monitor, capnography and pulse oximeter.
4. Initiate IV NACL 0.9%.
5. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
6. If actively seizing, go to #9 below.
7. If not actively seizing:
   a. Open airway and suction PRN.
   b. Proceed with secondary survey.
   c. Obtain history.
   d. Apply cardiac monitor and pulse oximeter.
8. Determine serum glucose level with Glucometer.
   a. If glucose < 80 mg/dl, administer 25 gms 50% dextrose IV.
   b. If glucose > 80 mg/dl and < 250 mg/dl, go to #9
9. If actively seizing:
   a. Protect patient from injury.
   b. Do not attempt to insert tongue blade or oral airway.
   c. Suction PRN.
   d. Insert appropriate size nasopharyngeal airway.
   e. Administer Midazolam (Versed) 3 mg IV. Call Medical Control if unable to establish IV for option of Versed 3-5 mg IM or if repeat dose necessary.
   f. Determine serum glucose level. If glucose < 80 mg/dl, administer 25 gms 50% dextrose IV.
   g. Transport.
10. If patient is a child, and actively seizing:
    a. Protect patient from injury.
    b. Administer Midazolam (Versed) 0.02 mg/kg IV maximum 3 mg. Call Medical Control for repeat dose necessary.
    c. Buccal administration: Versed 10 mg per buccal/mucosa. Rectal administration: Versed 0.3 mg/kg to maximum dose of 10 mg
d. If unable to gain IV access, Versed 0.2 mg/kg IM to maximum dose of 5 mg.

e. Follow Maine EMS Protocol for alternate routes of dosing.

f. Transport.

g. Contact Medical Control for option of
   - Narcan
   - Dextrose
   - Glucagon

11. Contact Medical Control for any questions or problems.

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**Sepsis**

**Guidelines for Care**

1. Assure ABC’s.
2. Administer oxygen via appropriate methods.
3. Cardiac monitor and pulse oximeter.
4. Obtain 12 lead
5. Obtain patient temperature.
6. Establish IV access. Administer NACL 0.9% as appropriate.
7. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
8. Contact Medical Control for any questions or concerns.
9. Transport to appropriate hospital as per MEMS Protocol.

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**Sexual Assault**

**Guidelines for Care**

1. Assure ABC’s.
2. Reassure patient and provide emotional support.
4. Treat all injuries appropriately, preferably with a relative present.
5. Protect the scene and preserve evidence. Do not allow the patient to bathe, change clothes, go to the bathroom, or douche.
6. Notify police if not already informed.
7. Contact Medical Control for any questions or problems.
Snakebite

Guidelines for Care

1. Kill the snake, if practical and safe, and bring the dead snake to the emergency department (or identify). Do not mutilate the snake’s head.
2. Assure ABC’s.
3. Administer oxygen as appropriate.
4. If bite on extremity, immobilize affected extremity in dependent position. Patient should remain still. Place elastic bandage or similar wrap proximal to bite to limit lymphatic flow. Check for pulses before and after application. If no pulse, loosen band until pulse returns.
5. Remove watches, rings, and jewelry from affected extremity.
6. Cleanse site with normal saline.
7. If signs of toxicity (local edema and hypotension):
   a. Increase oxygen delivery to 100% via non-rebreather mask.
   b. Start IV NACL 0.9% at 150 ml/hr (wide open if signs of shock).
8. Contact Medical Control.
9. Reassure and transport.
10. Contact Medical Control for any questions or problems.

General Information:

**Pit Vipers:** Rattlesnake, Water Moccasin, and Copperhead typically cause puncture wounds. There may be ecchymosis at site, localized pain, swelling, weakness, tachycardia, nausea, dyspnea, dim vision, vomiting, or shock.

**Coral Snakes:** Usually chewed wound. There may be slight burning pain, mild swelling, blurred vision, drooping eyelids, slurred speech, drowsiness, salivation and sweating, nausea and vomiting, shock, dyspnea, paralysis, convulsions, and coma.

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Syncope

Guidelines for Care

1. Assure ABC’s.
2. Oxygen as appropriate.
3. Initiate IV of NACL 0.9%.
4. If unable to gain IV access, an IO may be used if the patient exhibits profound hypovolemia or hemodynamic instability (systolic B/P < 90 mmHg) with an altered mental status.
5. Cardiac monitor. If dysrhythmia, go to appropriate protocol.
6. Perform 12 lead
7. Obtain vital signs. If BP < 90 mmHg systolic:
   a. Recheck blood pressure.
b. If still hypotensive, give 250 ml fluid bolus (20 ml/kg for children).
8. Pulse oximetry.
9. Obtain pertinent history:
   a. Time of syncopal episode and length of unconsciousness.
   b. Patient’s position at time of syncope.
   c. Symptoms preceding event (dizziness, nausea, chest pain, headache, seizures, etc.).
   d. Medications/ETOH/drug usage.
   e. Relevant past medical history.
10. Determine serum glucose level with Glucometer.
   a. If glucose < 80 mg/dl, administer 25 gms 50% dextrose IV.
   b. If glucose > 80 mg/dl and < 250 mg/dl, go to step #10.
11. Place in recovery position.
12. Spinal immobilization if syncopal episode resulted in a fall with suspected spinal injury.
13. Prepare to suction and manage airway.
14. Repeat vital signs frequently. Watch for hypertension.
15. Transport to designated hospital.
16. Contact Medical Control for any questions or problems.

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**Weak and Dizzy**

**Guidelines for Care**

1. Assure ABC’s.
2. Oxygen as appropriate.
3. Attach cardiac monitor and pulse oximeter. Perform 12 lead ECG as time permits.
4. Initiate IV of NACL 0.9% at 125 ml/hr. Give 250 ml fluid bolus if systolic pressure < 90 mmHg (20 ml/kg for children).
5. Be alert for dysrhythmias.
6. Provide appropriate comfort measures (i.e. cool cloth to forehead).
7. If patient nauseated or has recently vomited, contact OLMC for consideration of Zofran 4 mg IV/IO
8. Monitor ECG, vital signs, pulse oximetry, and level of consciousness.
9. Contact Medical Control for any problems.

*Many thanks go out for all those employees who helped in the process of making this manual. We would especially like to thank Geoff Low for all his hard work in laying the ground work which has made these standards possible.*