Seaside Fire & Rescue Medical Protocols

General Considerations

Introduction & General Information

These protocols are intended as the offline medical control treatment guidelines for all pre-hospital medical providers working under the Medical Director for Seaside Fire & Rescue. All providers must have a thorough knowledge of the applicable State of Oregon scope of practice. Under no circumstances will patient care exceed the scope of practice, training, or competency of an individual.

Situations will arise which are not covered within these guidelines or mitigate their usefulness so use them in conjunction with your training, experience, and expertise. In such instances, you should function within your scope of practice and consider when time and circumstances permit, the use of other available resources, including on-line medical control.

EMS is a stressful, dynamic, and constantly changing environment. These guidelines cannot cover every type of injury, illness, and complicating circumstance which may be encountered. These Protocols are not absolute treatment doctrines.

THESE PROTOCOLS ARE INTENDED TO

- Standardize and provide a framework for pre-hospital care for all providers.
- Provide hospital physicians and nurses with an understanding of what aspects of patient care have been stressed to the Pre-hospital Care Providers and what their treatment capabilities may be.
- Provide the basic framework on which the Medical Director can audit the performance of pre-hospital providers.

ONLINE MEDICAL CONTROL

- Providers are encouraged to consult online medical control (OLMC) in all situations that fall outside the normal protocols, in instances of extended scene times or when the provider feels it necessary to contact the Emergency Department. Coordination with the transporting ambulance paramedic is recommended.
- When consulting Online medical control have the following information ready:
    - Unit identification
    - Age gender of patient
    - Chief complaint and reason for medical response
    - Brief pertinent medical history
    - Vital signs and treatments rendered
    - Reason why you have contacted Online Medical Control

Introduction & General Information

RESPONSIBILITIES, RECEIPT, AND ADDENDUMS

- The Medical Director will review and update a signed list of all personnel with their current standing orders at least once per year or as necessary.
- All EMS licensed personnel shall complete a medical protocol review and a written assessment for their level before performing care at that level.
- All providers will sign a receipt acknowledging they have received a copy of the protocols.
- Addendums to the current protocols will be signed by the medical director and be effective immediately.

INFECTION CONTROL

- All members of the department working in the pre-hospital care environment shall abide by the department's current policies and procedures regarding infection control and prevention.

HAZARDOUS MATERIALS

- All members of the department working in the pre-hospital care environment shall abide by the department's current policies and procedures regarding a response to hazardous materials. Patients may need to be triaged and care deferred until DECON can be initiated. Should EMS providers find themselves contaminated they are to wait for DECON and cleared by the Incident Commander (or their designee) before leaving the hot zone.

RELEVANT CONTACT PHONE NUMBERS

503-717-7000	Providence Seaside Hospital:
503-338-7508	Columbia Memorial Hospital
800-232-0911	Life Flight Dispatch
503-861-1990	Medix Ambulance Dispatch
800-222-1222	Poison Control
503-861-6211	USCG Astoria
503-738-6311	Seaside Dispatch
503-325-2061	Clatsop County Dispatch
1-877-367-7657	Oregon POLST Registry
503-4947333	Medical Resource Hospital
971-678-4042	St. Vincent's LVAD Center

Scope of Practice -EMR

The following information is from Oregon Administrative Rules (OAR) 847-035-0030

An Emergency Medical Responder may:

A. Conduct primary and secondary patient examinations;
B. Take and record vital signs;
C. Utilize noninvasive diagnostic devices in accordance with manufacturer's recommendation;
D. Open and maintain an airway by positioning the patient's head;
E. Provide external cardiopulmonary resuscitation and obstructed airway care for infants, children, and adults;
F. Provide care for musculoskeletal injuries;
G. Provide hemorrhage control;
H. Provide emergency moves for endangered patients;
I. Assist with prehospital childbirth;
J. Complete a clear and accurate prehospital emergency care report form on all patient contacts and provide a copy of that report to the senior emergency medical services provider with the transporting ambulance;
K. Administer medical oxygen;
L. Maintain an open airway through the use of:
    1. A nasopharyngeal airway device;
    2. An oropharyngeal airway device;
    3. A pharyngeal suctioning device;
M. Operate a bag mask ventilation device with reservoir;
N. Provide care for suspected medical emergencies, including administering liquid oral glucose for hypoglycemia;
O. Prepare and administer aspirin by mouth for suspected myocardial infarction (MI) in patients with no known history of allergy to aspirin or recent gastrointestinal bleed;
P. Prepare and administer epinephrine by automatic injection device for anaphylaxis;
Q. Prepare and administer naloxone via intranasal device or auto-injector for suspected opioid overdose;
R. Perform cardiac defibrillation with an automated external defibrillator; and
S. Perform other emergency tasks as requested if under the direct visual supervision of a physician and then only under the order of that physician.

Scope of Practice -EMT

The following information is from Oregon Administrative Rules (OAR) 847-035-0030

An EMT may:

A. Perform all procedures that an Emergency Medical Responder may perform;
B. Ventilate with a non-invasive manual or continuous positive pressure delivery device;
C. Insert a supraglottic airway device to facilitate ventilation through the glottic opening by displacing tissue and sealing of the laryngeal area;
D. Perform tracheobronchial tube suctioning;
E. Provide care for suspected shock;
F. Provide care for suspected medical emergencies, including:
    1. Obtain a capillary blood specimen for blood glucose monitoring;
    2. Prepare and administer epinephrine for anaphylaxis;
    3. Administer activated charcoal for poisonings; and
    4. Prepare and administer nebulized and metered dose albuterol with or without ipratropium for known asthmatic and chronic obstructive pulmonary disease (COPD) patients suffering from suspected bronchospasm.
G. Transport stable patients with saline locks, heparin locks, foley catheters, or indwelling vascular devices;
H. Assist the on-scene Advanced EMT, EMT-Intermediate, or Paramedic by:
    1. Assembling and priming IV fluid administration sets; and
    2. Opening, assembling and uncapping preloaded medication syringes and vials;
I. Complete a clear and accurate prehospital emergency care report form on all patient contacts;
J. Assist a patient with administration of sublingual nitroglycerine tablets or spray and with metered dose inhalers that have been previously prescribed by that patient's personal physician and that are in the possession of the patient at the time the EMT is summoned to assist that patient;
K. In the event of a release of organophosphate agents, the EMT who has completed Authority-approved training may prepare and administer atropine sulfate and pralidoxime chloride by autoinjector, using protocols approved by the Authority and adopted by the supervising physician; and
L. In the event of a declared Mass Casualty Incident (MCI) as defined in the local Mass Casualty Incident plan, monitor patients who have isotonic intravenous fluids flowing
M. Administer over-the-counter medications in unit dose packaging for immediate use under specific written protocols authorized by the supervising physician or direct orders from a licensed physician.
N. Acquire and transmit cardiac monitoring and electrocardiogram (ECG).
O. Prepare and administer Immunizations:
    1. According to the CDC Advisory Committee on Immunization Practices (ACIP) and/or the Oregon State Public Health Officer's recommended immunization guidelines;
    2. As directed by the agency's supervising physician's standing order;
    3. Under the direction of their supervising physician; and
    4. Prior to vaccine administration, the EMT must be trained by the supervising physician or their designee. The EMT and the EMS agency or employer must maintain records of training.

Scope of Practice - Advanced EMT

The following information is from Oregon Administrative Rules (OAR) 847-035-0030

Advanced Emergency Medical Technician (AEMT) may:

A. Perform all procedures that an EMT may perform;
B. Initiate and maintain peripheral intravenous (I.V.) lines;
C. Initiate saline or similar locks;
D. Obtain peripheral venous blood specimens;
E. Initiate and maintain an intraosseous infusion; and
F. Prepare and administer the following medications under specific written protocols authorized by the supervising physician or direct orders from a licensed physician:
    1. Analgesics for acute pain: nitrous oxide.
    2. Anaphylaxis: epinephrine;
    3. Hypoglycemia reversal agents:
        a) Hypertonic dextrose;
        b) Glucagon;
    4. Intraosseous infusion anesthetic: Lidocaine;
    5. Bronchodilators:
        a) Albuterol or levalbuterol;
        b) Ipratropium bromide;
    6. Vasodilators: nitroglycerine;
    7. Isotonic Crystalloid solutions
G. Distribute medications at the direction of the Oregon State Public Health Officer as a component of a mass distribution effort. The AEMT must be trained by the supervising physician or their designee. The AEMT and EMS agency or employer must maintain records of the training; and
H. Prepare and administer routine or emergency immunization and tuberculosis skin testing, as part of an EMS Agency's occupational health program, to the AEMT's EMS agency personnel, under the supervising physician's standing order. Prior to administration, the AEMT must be trained by the supervising physician or their designee. The AEMT and the EMS agency or employer must maintain records of training.

Scope of Practice – EMT Intermediate

The following information is from Oregon Administrative Rules (OAR) 847-035-0030

An EMT-Intermediate may:

A. Perform all procedures that an Advanced EMT may perform;
B. Prepare and administer the following medications under specific written protocols authorized by the supervising physician, or direct orders from a licensed physician:
    1. Vasoactive medications:
        a) Epinephrine;
        b) Vasopressin;
    2. Antiarrhythmics:
        a) Atropine sulfate;
        b) Lidocaine;
        c) Amiodarone;
    3. Analgesics for acute pain:
        a) Morphine;
        b) Fentanyl;
    4. Antihistamine: Diphenhydramine;
    5. Diuretic: Furosemide;
    6. Anti-Emetic: Ondansetron;
C. Prepare and administer immunizations in the event of an outbreak or epidemic as declared by the Governor of the state of Oregon, the State Public Health Officer or a county health officer, as part of an emergency immunization program, under the agency's supervising physician's standing order;
D. Insert an orogastric tube;
E. Maintain during transport any intravenous medication infusions or other procedures which were initiated in a medical facility, if clear and understandable written and verbal instructions for such maintenance have been provided by the physician, nurse practitioner or physician assistant at the sending medical facility;
F. Perform electrocardiographic rhythm interpretation; and
G. Perform cardiac defibrillation with a manual defibrillator
H. Administer benzodiazepines for seizures or agitation. Prior to administration of benzodiazepines, the EMT-I must be trained by the supervising physician or their designee. The EMT-I and the EMS agency or employer must maintain records of training.

Scope of Practice – Paramedic

The following information is from Oregon Administrative Rules (OAR) 847-035-0030

A Paramedic may:

A. Perform all procedures that an EMT-Intermediate may perform;
B. Initiate and maintain mechanical ventilation during transport if formally trained on the particular equipment and if acting under written protocols specific to the particular equipment;
C. Initiate the following airway management techniques:
    1. Endotracheal intubation;
    2. Cricothyrotomy; and
    3. Transtracheal jet insufflation which may be used when no other mechanism is available for establishing an airway;
D. Initiate a nasogastric tube;
E. Provide advanced life support in the resuscitation of patients in cardiac arrest;
F. Perform emergency cardioversion in the compromised patient;
G. Transcutaneous pacing of bradycardia that is causing hemodynamic compromise;
H. Initiate needle thoracostomy for tension pneumothorax;
I. Obtain peripheral arterial blood specimens under specific written protocols authorized by the supervising physician;
J. Access indwelling catheters and implanted central IV ports for fluid and medication administration;
K. Initiate and maintain urinary catheters under specific written protocols authorized by the supervising physician or under direct orders from a licensed physician; and
L. Prepare and initiate or administer any medications or blood products under specific written protocols authorized by the supervising physician or under direct orders from a licensed physician
M. Interpret electrocardiogram (ECG).

Documentation

The State of Oregon requires a "complete, clear and accurate pre-hospital emergency care report form on all patient contacts"; therefore, on all patient contacts a report shall be completed by a qualified Emergency Medical Responder (or higher) with current signed Standing Orders.

DOCUMENTATION OF INCIDENTS REGARDING MEDICAL PATIENTS

- Documentation shall be competed for all medical related responses with one of the following options:
    - If an incident has persons who are not deemed to be medical patients a narrative shall be written in the Incident Record to reflect why (i.e., cancelled before or on arrival, no patient, no medical need (and why), lift assist back-to-bed calls, etc.)
    - Patent Care Report
    - *Refusal of treatment against medical advice* form
    - *No patient, No need for Service* form

PATIENT CARE REPORT

- A Patient Care Reports (PCR) shall be written on an approved State EMS patient care form for each identified patient who receives care, treatments or inventions by Seaside Fire & Rescue Personnel.
- Documentation shall include a narrative written in the SOAP or Narrative format, and shall include all pertinent medical information regarding the patient's condition and care.
- The PCR shall be written by a Seaside Fire & Rescue EMS provider who was on scene.

NO PATIENT, NO NEED FOR SERVICE FORM

- Seaside Fire & Rescue responds to many *Good Intent* incidents or motor vehicle collisions that often may have a number of persons who are not patients or absolutely refuse any type of care, treatment or intervention.
- The *No patient, No need for Service* form is to be used to collect information related to an incident where NO care of any kind (treatments, interventions, vitals, etc.) was provided.
- The *No patient, No need for Service* form shall be attached to the incident record.
- The Incident Record will note the disposition of the incident and the reason for the No Patient Form.

Documentation (cont.)

REFUSAL OF TREATMENT

- Any identified patient with decision making capacity who refuses care or transport to a hospital (whether initially or at any time throughout the contact) needs to sign a *REFUSAL OF TREATMENT AGAINST MEDICAL ADVICE* form (AKA Refusal Form) by at least one responding EMS agencies.
- A competent person must be oriented and understand the potential consequences of refusing treatments and transport. If a patient is not competent (i.e., confused, or obviously drug/substance altered) then OLMC and/or law enforcement should be involved in patient disposition.
- Persons refusing EMS care or transport represent a significant medical-legal risk for EMS agencies and their personnel. Adherence to medical release principles will minimize liability and maximize patient care. To refuse care the person:
    1. The person has been fully informed of their condition **AND**
    2. The person has the perceived ability to understand the information provided on their condition and the potential consequences of refusing treatment or care. **AND**
    3. The form has been read to, and signed by the patient.
- Refusals should be witnessed (and signed) by a competent third party (not a member of Seaside Fire & Rescue) witness if available on scene.
- Refusals are not required for persons under arrest or in the custody of a police officer, although the circumstances shall be noted in the PCR, including the officer's name and law enforcement agency.
- A PCR is required for any Refusal form, written by an EMS provider.

IMPAIRED DECISION-MAKING ABILITY REFUSING CARE

- Any person/patient with impaired decision-making capacity should not sign a refusal form
- Any person who is incapacitated and has a medical need
- Make all reasonable efforts to assure the patient is provided for, if able contact family, friend, law enforcement, etc. to help
- If deemed necessary contact OLMC, law enforcement or refer to the appropriate protocol(s) for physical and/or pharmacological restraint of the patient

MINORS

- A child under 10years of age cannot be left alone regardless of patient status (ORS 163.545)
- Minors 15 years and older can consent to treatment
- For minors 15 to 17 years of age refusing care and/or transport EMS providers should attempt to contact the minor's guardian, Consider OLMC or Law enforcement. In some circumstances the minor may be released to a law enforcement officer.
- Implied consent. EMS providers may treat and/or transport under the doctrine of implied consent for a person who requires immediate care to save a life or prevent further injury. Minors may be treated and transported without parental consent if a good faith effort has been made to contact their guardians regarding care and the EMS provider has the opinion the patient needs additional care and /or transport.

Mandatory Reporting

For additional information on Mandatory Reporting see the current Oregon Revised Statute 419B

WHAT IS A MANDATORY REPORTER

- Mandatory reporters are public and private professionals required by law to report suspected child abuse. Some examples of mandatory reporters include: medical practitioners, law enforcement personnel, any Firefighter or emergency services provider, employees of a public or private organization providing child-related services or activities, public and private school employees, and members of the clergy

REPORTING ABUSE

A person making a report of child abuse, whether the report is made voluntarily or is required by ORS 419B.010, shall make an oral report by telephone or otherwise to the local office of the Department of Human Services, to the designee of the department or to a law enforcement agency within the county where the person making the report is located at the time of the contact. The report shall contain, if known, the names and addresses of the child and the parents of the child or other persons responsible for care of the child, the child's age, the nature and extent of the abuse, including any evidence of previous abuse, the explanation given for the abuse and any other information that the person making the report believes might be helpful in establishing the cause of the abuse and the identity of the perpetrator.

DEFINITION OF CHILD ABUSE PER ORS 419B.005

- Any assault, as defined in ORS chapter 163, of a child and any physical injury to a child which has been caused by other than accidental means, including any injury which appears to be at variance with the explanation given of the injury.
- Any mental injury to a child, which shall include only observable and substantial impairment of the child's mental or psychological ability to function caused by cruelty to the child, with due regard to the culture of the child.
- Rape of a child, which includes but is not limited to rape, sodomy, unlawful sexual penetration and incest, as those acts are described in ORS chapter 163.
- Sexual abuse, as described in ORS chapter 163.
- Sexual exploitation, including but not limited to:
- Buying or selling a person under 18 years of age as described in ORS 163.537.
- Permitting a person under 18 years of age to enter or remain in or upon premises where methamphetamines are being manufactured.
- Unlawful exposure to a controlled substance, as defined in ORS 475.005, or to the unlawful manufacturing of a cannabinoid extract, as defined in ORS 475B.015, that subjects a child to a substantial risk of harm to the child's health or safety.
- Abuse" does not include reasonable discipline unless the discipline results in one of the conditions described
- "Child" means an unmarried person who is under 18 years of age; or is under 21 years of age and residing in or receiving care or services at a child-caring agency as that term is defined in ORS 418.205.
- Phone number to report abuse: 1-855-503-SAFE (7233)

Crime Scene Response

CONSIDERATIONS

- Law enforcement agencies stress that their first priority on any crime scene is the preservation of life with reconstruction of the crime scene second. EMS personnel can be of assistance by adhering to the following guidelines regarding crime scene response.
- Any location can be, or become, a crime scene. When responding, and upon arrival, if something does not appear to be right, notify police. If you suspect crime scene and police are not present, secure area and document what you see.

RESPONSE AND ARRIVAL

A. Be conscious of physical and weather conditions around the site. Tire tracks of suspect vehicles are often located in or adjacent to a driveway.
B. Limit the number of personnel allowed onto the scene. Consult with police on the scene to direct placement of vehicles and route of personnel onto the scene.

ACCESS AND TREATMENT

A. Select a single route to the victim. Maintaining a single route decreases the chance of altering or destroying evidence or tracking blood over a suspect's footprints.
B. Note the location of furniture, weapons, and other articles, and avoid disturbing them. If they need to be moved, someone should note the location the article was moved from, by whom it was moved, and where it was placed.
C. Remove from the scene all EMS generated debris that is contaminated with blood or body fluid and dispose of through established channels.
D. Be conscious of any statements made by the victim or other persons at the crime scene. Write down what these statements were and report to the investigating officers.
E. Note the specific garments worn by the patient at the time of treatment. It is also important not to tear the clothing off or cut through any holes, whether made by a knife, bullet, or other object.
F. The victim should be placed on a clean sheet when ready for transport. At the hospital, please try to obtain the sheet once the victim is moved off it. Fold it carefully in on itself and give it to the investigating officers. This is especially important in close contact crimes such as rape, serious assault, and death cases.

DOCUMENTATION

A. A detailed report is important in case you are later called to testify in court. An incident report should be completed and should cover your observations, conversations with family or witnesses, location of response vehicles and equipment, furniture, weapons, clothing that has been moved, items that were handled, and your route to the victim.
B. An Unusual/Supplemental Event Report may be helpful for you to complete. This is a protected document and if you are called to court may be used by you to refresh your memory of aspects of the call that are not included in the Patient Care Report.
C. Do not offer your opinions or evaluations about the crime scene.

Patient Treatment & Rights

TREATMENT

- Assess every scene considering the safety of yourself, your EMS partners, the public and the patient.
    - Always ensure you are wearing the appropriate PPE for the situation and the environment
    - Investigate the mechanism of injury (MOI) or the Nature of Illness (NOI), the chief complaint, treating the patient following the appropriate protocols based on your investigation and your assessment.

PATIENT TREATMENT RIGHTS

- These protocols are intended for use with conscious and consenting patients, or unconscious patients (by means of implied consent). Every patient is entitled to the following rights:
    - Every patient has the right to be treated equally and with courtesy, regardless of race, gender, social, or economic status.
    - Every patient (if conscious and of reasonable judgment) has the right to refuse care.
    - Every patient shall be treated in accordance with established Medical Protocols and shall receive the benefit of being treated to the maximum ability of the medical providers on scene.
    - Every patient has the right to be treated and transported to the hospital via ambulance if they desire; as such their decision regarding their treatment or transport (or their refusal of said treatment or transport) shall be respected.
    - Every patient shall expect a reasonable amount of privacy regarding the care they have received and the medical information they provide to us, in accordance with these Protocols and established HIPPA laws.

MEDICATIONS AND ALLERGIES

- All medications are to be administered only after ascertaining that the patient is NOT allergic to them, that the patient is receiving the correct medication and dosage, the medications is not expired, and the right route is being used for administration.
- In situations when the patient is unable to speak responders should question family/ people on scene and attempt to find information regarding their medications and allergies

Helicopter Transport

CONSIDERATIONS

- All helicopter requests will initially be made through Dispatch.
- Consider US Coast Guard for rescue in terrain or areas with limited access.
- Life Flight may be placed on standby by dispatch or responding personnel prior to reaching the scene. The first EMS person(s) on scene will perform a rapid triage of the patient to ascertain the need to either activate Life Flight or stand them down.

Indications for Air transport for trauma patient:

- Consider air transport from scene when extrication time combined with total ground transport time to the nearest appropriate hospital will be > 60 minutes **AND** the patient meets one or more of the following criteria:

Vital Signs / Level of Consciousness	1. Shock: Systolic Blood Pressure < 90; or 2. Respiratory Distress: Respiratory Rate <10 or >20 3. Altered Mentation: Glasgow Coma Score <13
Anatomy of Injury	1. Penetrating injury of head, neck, torso, or groin; or 2. Combination of burns >20% of total body surface or involving face, airway, hands, feet, and genitalia; or 3. Amputation above wrist or ankle; or 4. Spinal cord injury; or 5. Flail chest; or 6. Two or more obvious proximal long bone fractures
Multiple Risk Factors Apply. Consider the Following Conditions	1. Death of same car occupant; or 2. Ejection of patient from enclosed vehicle; or 3. Falls > 20 feet; or 4. Pedestrian hit at > 20 mph 5. Rollover; or 6. Motorcycle, ATV, or bicycle accident; or 7. Extrication time > 20 minutes; or 8. Significant intrusion
Co-morbid Factors:	1. Extremes of age (< 12 years or > 60 years). 2. Hostile environment (extremes of heat or cold). 3. Medical (such as COPD, CHF, renal failure, etc.) 4. Presence of intoxicants. 5. Second/third trimester pregnancy.

Pain Management

CONSIDERATIONS

- Benzodiazepines do not have an analgesic effect. Their anxiolytic effects may potentiate the analgesic effect of opioids but also increase the likelihood of respiratory depression.

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs, pain scale. Reassess Vitals as Needed
5. Treat *per* Shock protocol as needed
6. Obtain SAMPLE History
7. Use non-pharmacological pain management (i.e., position of comfort, hot/cold pack, elevation, splinting, padding, wound care, therapeutic calming and communication).

Advanced EMT — *Follow above protocols and in addition:*

8. Established IV.

Intermediate Paramedic — *Follow above protocols and in addition:*

9. If able, apply cardiac monitor.
10. Administer Pain Medication:
    A. **Fentanyl**- 50–100 mcg IV/IN. May repeat with 25–50 mcg every 5 minutes as needed to a maximum of 500 mcg. If IV/IN not available, give 50-100 mcg IM. May repeat IM every 15 minutes as needed to a maximum 500 mcg.
    If BP is less than 100 mmHg and/or patient has minor altered mental status or respiratory depression, the first dose fentanyl by any route is 25 mcg, may repeat 25-50 mcg every 5 minutes to a maximum of 500 mcg. Monitor patient closely.

    B. **Morphine**:2-8 mg IV every 5 minutes to a maximum of 20 mg. If IV not available give morphine 5-10 mg IM. May repeat IM with 5 mg every 15 minutes to a maximum of 20 mg. **Do not administer morphine if systolic BP is less than 100 mmHg.**
11. Monitor Vital signs, and response to treatment.

Controlled Medications

Seaside Fire & Rescue will cooperate fully with any type of State or Federal audit or investigation

POLICY

- This policy defines the rules for administering, storage, "waste", and inventory of all controlled medications and narcotics carried by Seaside Fire & Rescue.
- All controlled medications will be authorized by the Medical Director and conform to this policy.
- Two-person authentication is required anytime a controlled medication is handled (a Handler and a witness)
- The Medical Director will approve in writing:
    - All personnel authorized to administer narcotics and controlled medications
    - All personnel allowed to handle narcotics or controlled medications.
    - The "Controlled Substance Manager". Responsible for overseeing the controlled medications program, involving ordering, inventory, audits, and access.

CONTROLLED MEDICATION STORAGE

- Shall be stored in a DEA approved security safe (Narcbox™) to limit access.
- Shall be stored in one of the following locations:
    - Narcbox™ 1 Main Security safe located at Seaside Fire Station
    - Narcbox™ 2 Security Safe mounted in a fire apparatus
    - Narcbox™ 3 Security Safe mounted in a fire apparatus
- Only authorized handlers will have access to security safes (via Narcbox™ issued PINs, RFID badges and biometrics).
- Controlled medications shall be removed and placed in the main security safe from any apparatus taken out of service (such as maintenance) or when they are unable to be secured.

WASTING OF MEDICATIONS

- Anytime a controlled medication is administered to a patient the remnants of the container must be expelled or "wasted" in such a manner the medication is irretrievable
- A witness shall visually watch an authorized handler and verify:
    - The wasting occurs in a manner that makes the medication is irretrievable.
    - The documentation matches: Product label, the container and drug, and the volume or amount being wasted
- Both the handler and the witness shall print (legible) and sign the controlled substance log to verify the use and waste of the medication.

Controlled Medications (Cont.)

RECORD-KEEPING

In addition to the Narcbox™ electronic logging/tracking software:

- **Administration Log**
  - The Department Incident Record (EMS Report) shall include the name of the drug, dosage, and the name of the provider who administered the drug
- **Controlled Substances Log**
  - Completed any time a controlled medication is handled
  - Completed as each dose of controlled medication is dispensed
  - A perpetual inventory will be maintained and archived.
- **Inventories and Audits**
  - Completed and documented on the Controlled Substance Log
  - A physical inventory is required at least weekly
  - As needed based on call volume, usage and shift schedules

Broken Or Damaged Containers

- If any controlled medication is found broken or damaged the drug will be immediately placed in a plastic bag, sealed, and labeled with date, time, and signatures, placed in the main security safe and the Controlled Substance Manager notified.

ADMINISTRATION OF A CONTROLLED MEDICATION

- Authorized providers shall only administer a controlled medication to an EMS patient who needs the medication and meets the criteria outlined in the offline orders (standing orders) or as directed by online medical control (OLMC).

MISUSE OF A CONTROLLED MEDICATION

- All EMS providers shall be familiar with this policy.
- Any provider who witnesses, or hears about misuse of a controlled medication that does not conform to this policy shall immediately report it to their chain of command, preferably a Chief Officer or the Controlled Substance Manager
- The Medical Director will be made aware of the allegations and the investigation as soon as practical.

Procedure: Patient Restraint

All Providers

INDICATIONS

- To prevent further harm to a patient and others when all other means have been exhausted.
- Physical and/or pharmacological sedation is used on a patient exhibiting behaviors that present a danger to themselves and others though violence considering the following:
- Confusion; Irritability; Boisterousness; Verbal threats; Physical threats; Attacks on objects

CONSIDERATIONS

- A restrained patient will still receive a medical treatment and all appropriate care.
- Always use the minimum level of physical restraint required to accomplish safe patient care.
- If handcuffed: *Consider* having them cuffed in front (with separate cuffs) for patient access.
- Haloperidol is preferred for patient experiencing psychiatric episodes
- Midazolam is preferred for patients suspected to be under the influence of stimulants, other intoxicants, to be in withdrawal, or postictal.
- A pharmacologically sedated patient will be put on a cardiac monitor if available

PHYSICAL RESTRAINT OF A PATIENT:

1. Place patient face up on long backboard or gurney, NEVER PRONE. Monitor Patient's respiratory status
2. Secure all extremities, start with lower extremities at the ankles, followed by arms at the sides,
    a. If needed and C-spine precautions are not warranted: One arm secured above the patient's head and the other at his side. Use padding/ tape if necessary to control violent head movement
3. If on Backboard, secure it to the gurney, do not tighten any straps to the point of restricting breathing

PHARMACOLOGICAL SEDATION OF A PATIENT:

ADULT DOSING:

- **Patient who is Very Agitated to Combative** (Aggressive, verbally and physically uncooperative; too overly combative and violent posing an immediate danger
  Administer Midazolam 2.5 mg IV/IO, or 5-10 mg IM or Haloperidol 5-10 mg IV/IM
- **Patient who is very agitated** (Frequent non-purposeful movement, agitated when touched or moved:
- **If agitation is likely due to substance abuse (especially stimulants), alcohol withdrawal, or patient is postictal:**
  Administer Midazolam 2.5 mg IV or 5 mg IM
  Repeat Dose: 2.5mg IV or 5 mg IM. Max dose: 5mg IV or 10 mg IM
- **If agitation is likely due to psychiatric disorder, or reason is unknown:**
  Administer Haloperidol 5-10 mg IV/IO/IM
  Repeat dose 5-10mg IV/IO/IM Max does: 20 mg IV/IO/IM

PEDIATRIC DOSING:

Midazolam: 0.1 mg/kg IV/IO to a max single does 5mg

~or~ 0.2 mg/kg IM/IN to max single dose of 10mg

*Contact OLMC for additional midazolam or other medications

Sports Injuries

All Providers

CONSIDERATIONS

- Athletic Trainers and Coaching Staff are subject matter experts when it comes to the gear regardless of the sport. The athletic staff are responsible for having and using all equipment needed to remove the athlete's protective gear. Fire personnel will assist as needed.
- If removing equipment, always remove the helmet and the shoulder pads, never just one or the other. Leaving the helmet on or just the shoulder pads on by itself creates head, neck, or spinal cord flexion.

Initial Considerations

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
   - IF patient has no pulse, no breathing. Remove Helmet and Shoulder pads immediately and Treat *per* Cardiac Arrest protocol
   - IF patient has a pulse, but is NOT breathing, remove facemask immediately and Treat *per* Respiratory Arrest protocol.
     - Maintain helmet and shoulder pads on the patient
     - Immobilize patient to a long board
     - Transport and manage other illnesses and injuries *per* appropriate protocol(s)
   - If patient is breathing and a neck injury is suspected, a quick sensory and motor nerve exam should be initiated, flowed by removal of the facemask
4. Assess motor functions
   - If the athlete has neck pain, numbness or tingling, extremity weakness, or is unconscious, the helmet and shoulder pads should not be removed on the field of play.
5. Removal of helmet and shoulder pads as appropriate (See Procedures)
6. Protect C-spine and immobilize patient on a longboard *per* General Trauma Guidelines
7. Transfer patient off of the playing field to the ambulance
8. Obtain baseline vital signs: Reassess Vitals as Needed

Mass Casualty Incidents (MCI)

- A mass casualty incident often overwhelms initial and available on-scene resources.
- All personnel must understand and stay with their assignments until relieved.

Trauma System.
Entry of patients into the trauma system is suspended during an MCI.

Triage:
All patients shall be triaged and tagged using the START triage system.
Triage teams perform no treatment except: Repositioning airways & controlling external bleeding.

Walking Wounded
Inform: "Those who can walk, please do so and move to "this" location." These patients are categorized GREEN. These patients need to be evaluated after all Yellows and Reds have adequate resources for patient care.

Respiratory Effort
No breathing: Reposition the airway and check:
Patient doesn't start breathing: Categorize: DEAD (BLACK)
Breathing and the respiratory rate is above 30: Categorize IMMEDIATE (RED)
Respiratory rate is less than 30: Go to next assessment:

Pulse/Capillary Refill
Capillary refill greater than two (2) seconds OR the patient does not have a radial pulse:
Categorize: IMMEDIATE (RED)
Capillary refill less than two (2) seconds or the patient has a radial pulse: Next assessment

Neurological Status
Patient is unconscious ~or~ altered level of consciousness Categorize IMMEDIATE (RED)
If patient can respond to commands appropriately, Categorize: DELAYED (YELLOW)

Simple **T**riage **A**nd **R**apid **T**reatment (**S.T.A.R.T.**)

A. Able to Walk? If yes, GREEN or YELLOW tag
B. If not able to walk, assess Respirations, if Respirations Absent, Open Airway
   If still absent, Tag BLACK
   If breathing begins or >30, Tag RED. Keep airway open
C. Assess Circulation, Control Bleeding
   If Capillary Refill > 2 sec., Tag RED
D. Assess Mental Status
   Does not obey simple commands, Tag RED
   Obeys simple commands, Tag YELLOW

Procedure: NIO/EZ-IO Procedure

EMT-Advanced EMT-Intermediate Paramedic

CONTRAINDICATIONS

In ALL below cases, consider/look for alternate site

- Fracture of the bone selected for IO infusion
- Excessive tissue at insertion site with the absence of anatomical landmarks
- Previous significant orthopedic procedures (10 within 24 hours, prosthesis)
- Infection at the site selected for insertion

INDICATIONS

- Immediate vascular access in emergencies
- Intravenous fluids or medications are urgently needed and a peripheral IV cannot be established in two (2) attempts or 90 seconds, **AND** the patient exhibits one or more of the following:
  - An altered mental status (GCS of 8 or less)
  - Respiratory compromise (Sa02 90% after oxygen therapy, respiratory rate < 10 or > 40 min)
  - Hemodynamic instability (Systolic BP of < 90)
- NIO IO Device or EZ-IO should be considered PRIOR to peripheral IV attempts in the following situations:
  - Cardiac arrest (medical or traumatic)
  - Profound hypovolemia with altered mental status
  - Patient in grave condition with immediate need for delivery of medication/ fluids

CONSIDERATIONS

- NIO Device Sizes: Adult- Blue, Ped-Yellow, Infant-Pink
- EZ-IO Needle Sizes: Large(bariatric) – **yellow**, Adult (over40 kg) –**blue,** & PED (3-39 kg or 6.5-85lbs)-**red** Certain patients may require a needle set outside of their ideal weight range "One size needle set does not fit all."
- Flow rates may appear to be slower than those achieved with an IV catheter
- **"NO FLUSH = NO FLOW":** Administer rapid **SYRINGE BOLUS (flush)** prior to infusion
  - Rapid syringe bolus (flush) the NIO/ EZ-IO® Large or Adult with 10 ml of normal saline
  - Rapid syringe bolus (flush) the NIO /EZ-IO® Ped with 5 ml of normal saline
    - ➢ Repeat syringe bolus (flush) as needed

Procedure: NIO IO Device Procedure

EMT-Advanced EMT-Intermediate Paramedic

SIZING

- NIO Device Sizes: Adult- Blue, Ped-Yellow, Infant-Pink

If the patient is conscious: Advise them of the Emergent Need for procedure and obtain consent

PROCEDURE

1. Locate the appropriate insertion site.
2. Locate the correct NIO device and GO-IO kit.
3. Prepare insertion site using aseptic technique.
4. Remove the Device from Package
5. Stabilize the NIO using two fingers at base of device on the textured dots. Make sure finger are clear of locking tabs.
6. Rotate the safety cap 90 degrees and using the palm of your hand push down on the safety cap,
7. Using to fingers, pull up on the safety wings. This will deploy the needle.
8. Once the needle is deployed, remove the device with one hand while maintaining the base of the device on the skin
9. Apply the NIO fixation device to secure the base to the skin.
10. The trocar can now be removed either using your finger or the trocar notch on the side of the NIO device. Place the Needle in an approved sharps container immediately.
11. Confirm placement by aspiration of bone marrow.
12. Attach the flushed lock set with 3-way stopcock.
    a. Conscious patients: **Lidocaine 2% 0.5 mg/kg slow push. max 40mg**
13. Attach IV lines and begin infusion via pressure infuser

Procedure: EZ-IO Device Procedure

EMT-Advanced EMT-Intermediate Paramedic

SIZING

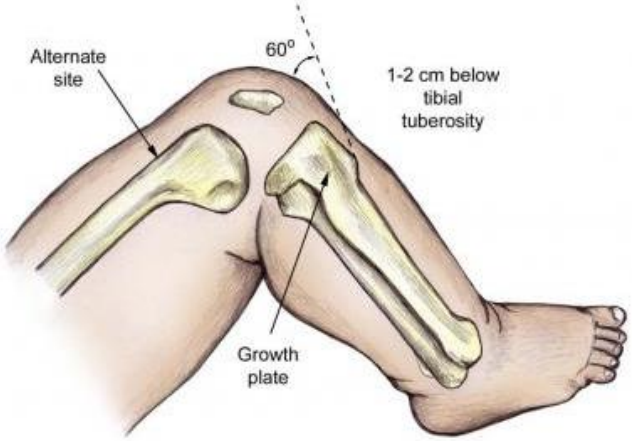
- EZ-IO Needle Sizes: Large(bariatric) – **yellow**, Adult (over40 kg) –**blue,** & PED (3-39 kg or 6.5-85lbs)-**red** Certain patients may require a needle set outside of their ideal weight range "One size needle set does not fit all."

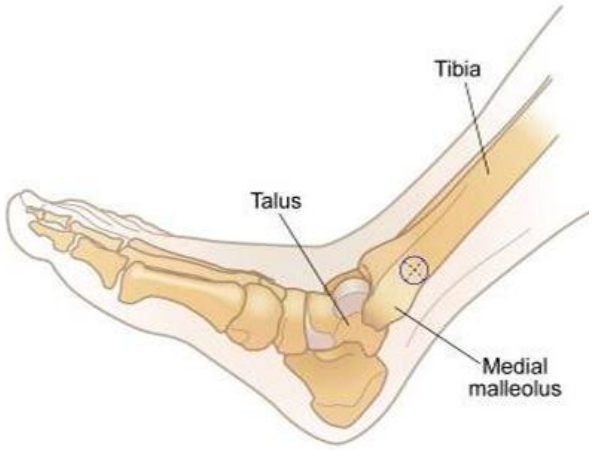
If the patient is conscious: Advise them of the Emergent Need for procedure and obtain consent

PROCEDURE

1. Locate appropriate insertion site
2. Prepare the EZ-IO driver and appropriate needle set
3. Prepare insertion site using aseptic technique. At least one of the 5mm black line indicators must be visible above the skin, after the needle has entered the skin and contacted the bone; but prior to engaging the driver.
4. Stabilize site and insert appropriate needle set perpendicular to insertion site. Avoid rocking the needle, advance until a "pop" or loss of resistance is felt
5. Remove EZ-IO driver from needle set while stabilizing catheter hub
6. Remove stylet from catheter, place stylet in shuttle and approved sharps container
7. Confirm placement by aspiration of marrow or air
    a. Conscious patients: **Lidocaine 2% 0.5 mg/kg slow push. max 40mg**
8. Syringe bolus (flush) the EZ-IO catheter with the appropriate amount of normal saline
9. Attach IV lines and begin infusion via pressure infuser
10. Dress site, secure tubing, and monitor site.

Procedure: Intraosseous Device Sites

Proximal Tibia – Adult Extend the leg, insertion site is approximately 2cm MEDIAL to the Tibial tuberosity, or approximately 3cm (2 finger widths) below the patella and approximately 2cm medial, along the flat aspect of the tibia	
Proximal Tibia – Infant/ Child Extend the leg, insertion site is approximately 1cm MEDIAL to the Tibial tuberosity, or just below the patella (approximately 1cm or 1 finger width) and slightly medial (approximately 1cm or 1 finger width) along the flat aspect of the tibia. Pinch the tibia between your fingers to identify the center of the medial and lateral borders	

Distal Tibia – Adult Insertion site is located approximately 3cm (2 finger widths) proximal to the most prominent aspect of the medial malleolus. Palpate the anterior and posterior borders of the tibia to assure that your insertion site is the flat center aspect of the bone **Distal Tibia – Infant/ Child** Insertion site is located approximately 1-2cm (1 finger width) proximal to the most prominent aspect of the medial malleolus. Palpate the anterior and posterior borders of the tibia to assure that your insertion site is the flat center aspect of the bone	

Procedure: Intraosseous Device Sites (Cont.)

Proximal Humerus – Adult & Pediatric

(**Fig 1**) Place patient's hand over their abdomen (elbow adducted and humerus internally rotated)
Place your palm on the patient's should anteriorly

The area that feels like a "ball" under your palm is the general target area

You should be able to feel this ball even on obese patients by pushing firmly

(**Fig 2**) Place the ulnar aspect of one hand vertically over the axilla

(**Fig 2**) Place the ulnar aspect of your opposite hand along the midline of the upper arm laterally

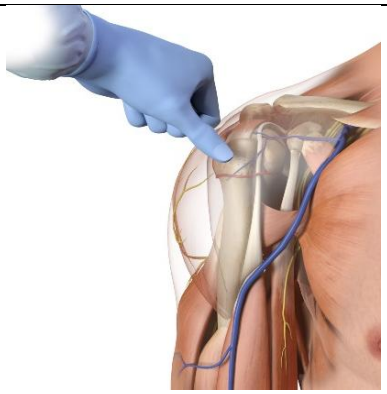
(**Fig 3**) Place thumbs together over the arm, palpate deeply as you climb up the humerus to the surgical neck. – It will feel like a golf ball on a tee where the ball meets the tee is the surgical neck

Insertion site is 1 to 2cm above the surgical neck, the most prominent aspect of the greater tubercle

Figure 1

Figure 2

Figure 3



Insertion Site

Figure 4

Procedure: Intravenous Lines & Solutions

EMT-Advanced EMT-Intermediate Paramedic

PRECAUTIONS

- Fluid overload in the CHF &/or Pulmonary edema patient
- Fluid overload in the Pediatric Patient
- Necrosis as a result of extravasation from medication(s)
- Allergic reaction to fluids, medication, and/or equipment
- Air Embolism
- Catheter Shear
- Accidental arterial puncture
- Clot formation

EXTERNAL JUGULAR (EJ) & FOOT ACCESS

Should only be attempted if no other IV site is possible for life saving treatments
No more than 1 attempt per patient for External Jugular (EJ) IVs
Consider IO access before use of an EJ or foot.

INDICATIONS

- Fluid replacement for the volume depleted patient (Medical and/ or Trauma)
- Medication Administration

CONSIDERATIONS

- EZ-IO IV Fluid
  - Always check expiration date, fluid clarity, and packaging is intact
- IV Lock
  - Can be used on any patient instead or before a fluid bag is administered
  - Useful for medication or planned medication administration

PROCEDURE

1. Prepare all needed IV equipment first
2. Select appropriate venipuncture site
3. Apply constricting band proximal to site
4. Clean site with alcohol swab, working in an outward circle from the center of the site
5. Apply traction to patient's skin distal to venipuncture site to stabilize the vein
6. Insert IV cannula at a 10^0- 30^0 angle into the vein until flashback occurs in the chamber
7. Advance the cannula another 0.5cm past this point, then slide catheter into the vein

8. Apply pressure at the tip of the catheter to occlude blood flow while removing the needle
9. Dispose of the used needle in an approved site
10. Attach administration set (IV bag or/ Lock), secure, assure flow
11. Apply bioclusive to IV site, secure tubing as necessary to prevent dislodgement
12. Monitor site for swelling, redness, or other complications. Monitor patient for fluid overload

Procedure: Sports Injuries PPE Removal

All Providers

This procedure uses football gear as the example; these guidelines can be applied to other sports equipment.

FACE MASK REMOVAL

1. Stabilize patient's head

Remove side and top attachments at the loop to remove the facemask.

a. Some helmets may need a cutting tool to release the facemask from the helmet
b. Some helmets have may screws to release the facemask from the helmet
c. Some helmets may have a device that looks like a "rivet" that is activated by pushing it down with a pen or tip of a screwdriver

REMOVAL OF HELMET AND SHOULDER PADS AS A UNIT

1. Gear removal starts from the head and proceeds down the body.
2. Remove the helmet first and then remove the shoulder pads, and leg gear. **Do not start with the shoulder pads.**
3. Release / Cut chin straps, then cheek pad snaps.
4. Use a **two-person technique** to remove the helmet.
    a) Responder #1 at the top firmly holds manual c-spine at the top using two hands to stabilize the patient's helmet.
    b) Responder #2 starting at the chin, slides their hands inside the patient's helmet "firmly" gripping the head and sliding their hands inside the helmet.
    c) Responders transition manual c-spine responsibility from the person at the top of the head/ helmet (#1) to the person supporting the patients head (#2).
    d) Firm control of the head and neck is the goal. Responder #1 proceeds to remove the helmet off the patient's head in a coordinated and smooth manner. **DO NOT SPREAD APART SIDES OF HELMET.**
    e) Once helmet is removed, Responder #1 resumes manual c-spine
6. Cut/remove shoulder pad straps.
7. Cut/remove both the jersey and shirt up sleeves towards midline of body.
8. Responder #1 stabilizes the head and gives command
9. Position three people on each side, one additional person removes the equipment as a unit

CHEST ACCESS

1. Cut jersey and front laces of shoulder pads.
2. Flip out shoulder pads. Some newer systems allow the shoulder pads to come apart prior to removal.
3. Place hands on shoulders with thumbs grasping the clavicle and fingers surrounding the upper trapezius muscles.
4. Secure the athlete's head between the responder's forearms.

Pediatric General Considerations

AGE DEFINITIONS

Premature: < 36 weeks gestation or < 5 lbs birth weight
Newborn: Birth to 28 days old
Pediatric: Considered 14 years and younger

American Heart Association (AHA)ages for CPR / Defibrillation:
Infant: Birth to 1 year old
Child: 1 year to 8 years old
Adult: 8 years or showing signs of puberty (breast development / underarm hair)

A Broselow Tape® is to be used if available for verification purposes any time a child requires medications or procedures

AVERAGE VITAL SIGNS FOR PEDEATRICS BY AGE

	Pulse	Systolic BP	Respirations	Weight (Kg)
Premature	140	50 – 60	Less than 60	1 – 2
Newborn	110 - 150	60 – 90	30 – 60	3 – 4
1 year	100 - 140	75 – 100	25 – 40	10
2 years	90 - 100	75 – 100	25 – 40	16
6 years	80 – 100	85 – 100	20 – 30	20
10 years	70 – 110	90 – 110	14 – 22	40
Adolescent	60 - 100	100 - 120	12 - 20	50 - 70

ET TUBE AVERAGES

Age:	Premature	Newborn	6 Month	18 Month	3 Years	5 Year	6 Year	12 ye
Size	2.5	3	3.5	4	4.5	5	5.5	6.5
Length	6 + wt (kg)	6 + wt (kg)	11	11	13	14	15	19

IGEL SUPRAGLOTIC AIRWAY SIZING for pediatrics

Age	Neonate	Infant	Small Pediatric	Large Pediatric
Size:	1	1.5	2	2.5
Weight in kg:	2 -5 kg	5 – 12 kg	10 – 25kg	25 – 35 kg

Calculations

Pounds & Kilograms: 1kilogram is 2.2 pounds	
Formula #1	Divide the patient's weight in pounds by 2.2 (1kg= 2.2lb)
Formula #2	Divide the patient's weight in pounds by 2 and then subtract 10%

Drip rate Calculation: Number of Drops in a minute
(Volume in mL) x (drip set) = _gtt (time in minutes) min

Drug concentration
Total weight of drug / total volume in milliliters = weight per millimeter

Volume to be Administered
Desired Dose (mg) / Dose on Hand (mg/ml) = Volume to be administered (ml)

Weight Based Drug Dosage
Step 1: Convert patients' weight from pounds to kilograms Step 2: Determine the desired dose -.-mg/kg x weight in kg = mg (desired dose) Step 3: Determine concentration mg/ ml = mg/ml (dose on hand) Step 4: Determine how much volume to administer: mg (desired dose) / mg/ml (dose on hand) = ml to administer

Seaside Fire & Rescue Medical Protocols

Respiratory

Airway Management

INDICATIONS

- Almost all medical and trauma patients benefit from the administration of oxygen. The flow rate and method of delivery is dependent upon the patient's condition.

METHODS OF ASSESSMENT

Patient's use of accessory muscles, changes in pulse rate, ECG & respiratory rate can all be used as assessment tools.

- Pulse oximeter should be used to evaluate all patients but never delay Oxygen administration.
- End-tidal CO2 detection evaluates the perfusion of patients with an advanced airway.
- Mentation changes and agitation are early signs of hypoxia.
- Assess lung sounds using a stethoscope when assessing the breathing status of your patient.

DELIVERY SYSTEMS

Nasal Cannula

- Used when small amounts of oxygen are desired. Flow rates should not exceed 6 LPM.

Non-Rebreather (NRB) Mask

- Used when high concentrations of oxygen are needed and in patients. Flow rates 12-15 LPM

Nebulizer

- For patients in bronchospasm. Flow rates are 4 to 6 LPM Handheld, 6-10 LPM mask

CPR Pocket Mask

- For patients in respiratory arrest until BVM can be administered.

Bag/Valve/Mask (BVM) Device

- Used when respiratory drive is compromised and needs ventilatory assistance.
- Must be equipped with an oxygen reservoir and capable of delivering at 15 LPM.
- Proper facial seal and head positioning is required.
- Auscultate lungs and observe chest rise and fall to ensure proper ventilation.

MAINTENANCE DEVICES

Nasopharyngeal Airway (NPA)

- Used on unconscious or have an altered LOC patient unable to maintain their airway
- NPA must be lubricated with water-soluble lubricant prior to insertion.
- May be used with NRB mask or with BVM.
- Assess respiratory status.

Oropharyngeal Airway (OPA)

- Used on patients unable to maintain their airway and **Do Not** have a gag reflex.
- Can also be used as a block to keep patients from biting down.
- OPAs must be used with high-flow oxygen delivery devices such as a BVM.

Asthma

- Indications: Shortness of Breath with wheezing (not cardiac related) or poor air movement upon auscultation

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Allow patient to assume a position of comfort
3. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Obtain baseline vital signs: Reassess Vitals as Needed
6. Obtain SAMPLE history
7. Assist the patient with self-administration of Metered Dose Inhaler only if medication is prescribed for the patient and is not expired

EMT — *Follow above protocols and in addition:*

8. Administer nebulizer treatment: **Albuterol** 2.5mg/3cc ~or~ **Levalbuterol** 1.25mg/3cc

Advanced EMT Intermediate — *Follow above protocols and in addition:*

9. If EMT has not administered nebulizer, or patient's condition has not improved after first dose: Administer: Nebulizer **DuoNeb** (albuterol 3 mg / ipratropium 0.5 mg), Do not exceed three DuoNeb treatments.
10. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
11. No change in condition: Administer additional DuoNeb
12. ECG monitor

Paramedic — *Follow* above protocols and in addition:

13. Dysrhythmias: *Treat* per appropriate protocol
14. If SPO2 is <92% CPAP at 5cm H20 (*Per* CPAP Procedures)
15. Administer **Solu-Medrol 125mg** Slow IVP (1-2 minutes) if no response to Levalbuterol
16. If patient cannot protect their own airway or respirations are <8 BPM: Consider Intubation
17. If unable to ventilate, **dilute Albuterol/ Levalbuterol** mixed in **5-10 ml NS via ET Tube**
18. *Consider* **Epinephrine 0.3 mg 1:1,000 IM** if Patient is not responding to albuterol, and:
    Patient: has severe symptoms; is <40 years old; is not hypertensive; has no cardiac history

Chronic Obstructive Pulmonary Disease (COPD)

- COPD: May be result of Chronic bronchitis (excess mucus) or Emphysema (Alveoli destruction)
- Major causes of COPD is long term smoking or inhalation of industrial pollutants
- Signs of a priority COPD patient:
  - Altered LOC • Silent chest • Cyanosis • Diaphoresis • Cyanosis
- In addition you should assess for signs of congestive heart failure (CHF):
  - Crackles • JVD • Chest Pain

EMR *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Have patient sit down or assume positon of comfort
3. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Obtain baseline vital signs: Reassess Vitals as Needed
6. Obtain SAMPLE History
7. Assist the patient with self-administration of Metered Dose Inhaler only if medication is prescribed for the patient and is not expired

EMT *Follow above protocols and in addition:*

8. Administer nebulizer treatment: **Albuterol** 2.5mg/3cc ~or~ **Levalbuterol** 1.25mg/3cc

Advanced EMT Intermediate *Follow above protocols and in addition:*

9. If EMT has not administered nebulizer, or patient's condition has not improved after first dose: Administer: Nebulizer **DuoNeb** (albuterol 3 mg / ipratropium 0.5 mg), Do not exceed three DuoNeb treatments.
10. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
11. No change in condition: Administer additional DuoNeb
12. ECG monitor

Paramedic *Follow* above protocols and in addition:

13. Dysrhythmias: *Treat* per appropriate protocol
14. If SPO2 is <92% CPAP at 5cm H20 (Per CPAP Procedures)
15. **Solu-Medrol 125mg** Slow IVP (1-2 minutes) if no response to albuterol/Levalbuterol
16. If patient cannot protect their airway or respirations are <8 BPM: Consider Intubation

Obstructed Airway (Adult and Child Choking)

EMR **EMT** **Advanced EMT** **Intermediate**	***Initial Considerations***

- **If Patient is Conscious**

1. Ask "Are you Choking?"
2. If patient can answer or is moving air, reassure them, have them cough
3. If patient is unable to speak or take in air: Initiate abdominal thrusts (chest thrusts for pregnant or obese) Continue thrusts until patient becomes unresponsive or obstruction is cleared

Each thrust is an individual attempt with force to dislodge the object

- **If Patient becomes unconscious ~or~ is found unconscious**

1. Position patient flat on back
2. Determine breathlessness
3. Start CPR in accordance with AHA guidelines and *per* Cardiac Arrest Protocol
4. Each time you open the airway for ventilation look for the object in the back of the throat
   If you see the object and think you can remove it, remove it.

➢ **If patient becomes responsive**:

1. Assess responsiveness and ABCs
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs: Reassess Vitals as Needed
5. Obtain SAMPLE history
6. Assess lung sounds
7. Treat per Respiratory Distress Protocol
8. Investigate and treat other illness or injuries *per* appropriate protocol(s)

Paramedic	***Follow above protocols and in addition:***

1. If unsuccessful, visualize larynx with laryngoscope and remove with forceps
2. If unable to remove obstruction with direct laryngoscopy, perform cricothyrotomy if necessary

Obstructed Airway (INFANT CHOKING)

EMR
EMT
Advanced EMT
Intermediate

Initial Considerations

- **Choking relief for a responsive Infant**

1. Kneel or sit with the infant in your lap, remove their clothing if easy to do
2. Hold infant facedown with the head slightly lower than the chest, resting on your forearms
3. Support the head and jaw with one hand -Avoid compressing the soft tissues of the throat.
4. Rest your forearm on your lap to support the infant
5. Deliver 5 back slaps forcefully between the infant's shoulder blades using the heel of your hand
6. Place your top hand along the baby's back and cradle the head, sandwich the infant between both arms and roll Infant as one unit onto its back keeping the head lower than the trunk.
7. Provide 5 quick downward thrusts in the middle of the chest with two fingers
8. Repeat sequence as needed until the object is dislodged or the patient becomes unresponsive

- **If Patient becomes unconscious ~or~ is found unconscious**

1. Begin CPR in accordance with current AHA guidelines (starting with compressions)
2. Each time you open the airway for ventilation look for the object in the back of the throat, if you see the object and think you can remove it, remove it.

➢ **If object is removed / patient becomes responsive (due to your efforts or prior to arrival):**

1. Assess responsiveness and ABCs
2. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
3. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
4. Obtain baseline vital signs: Reassess Vitals as Needed
5. Obtain SAMPLE history
6. Assess lung sounds
7. Treat per PEDIATIC Respiratory Distress Protocol
8. Investigate and treat other illness or injuries *per* appropriate protocol(s)

Paramedic ***Follow above protocols and in addition:***

1. If unsuccessful and necessary, visualize larynx with laryngoscope and remove with forceps
2. If unable to remove obstruction with direct laryngoscopy, consider Needle Cricothyrotomy

Respiratory Distress

EMR — *Initial Considerations*

1. Assess responsiveness and ABCs
2. Have patient sit down or assume position of comfort
3. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Obtain baseline vital signs; Reassess Vitals as Needed
6. Obtain SAMPLE history
7. Assist the patient with self-administration of Metered Dose Inhaler only if medication is prescribed for the patient and is not expired

EMT — *Follow above protocols and in addition:*

8. Known Asthmatic patient with Bronchospasm:
   a.) Administer nebulizer treatment: **Albuterol** 2.5mg/3cc ~or~ **Levalbuterol** 1.25mg/3cc

Advanced EMT Intermediate — *Follow above protocols and in addition:*

9. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
10. If EMT has not administered nebulizer, or patient's condition has not improved after first dose:
    a. Administer: Nebulizer **DuoNeb** (albuterol 3 mg / ipratropium 0.5 mg), Do not exceed three DuoNeb treatments.
    b. If additional bronchodilator needed, administer albuterol only 2.5 mg by nebulizer as needed.
    Pediatric patients under 1 year old: DO NOT add Atrovent
12. ECG monitor

Paramedic — *Follow* above protocols and in addition:

13. Dysrhythmias: *Treat* per appropriate protocol
14. May repeat additional nebulizer doses *without* Atrovent until improved:
15. If patient cannot protect their airway or respirations are <8 BPM: Consider Intubation

Pediatric: Respiratory Distress with Stridor

- Stridor is a high-pitched wheezing sound resulting from a narrowed or constricted Airway.
- Stridor is often associated with Croup, Respiratory Infections, and Airway Obstructions
- It is a **sign of a life-threatening** respiratory emergency

EMR EMT — *Initial Considerations*

DO NOT AGITATE PATIENT OR ATTEMPT TO VISUALIZE THE PHARYNX

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Have patient sit down or assume position of comfort, may be best left with parents
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
   Consider blow-by oxygen administration at 10LPM via tubing
5. Obtain baseline vital signs: Reassess Vitals as Needed
6. Obtain SAMPLE history
7. Assess rate and quality of respirations, note retractions
   a.) For respiratory arrest or cyanosis with loss of consciousness
      I.) Place patient in a sniffing position
      II.) Attempt positive pressure ventilation with Bag Valve Mask

Advanced EMT Intermediate — Follow above protocols and in addition:

IV ACCESS IS NOT INDICATED IN THESE PATIENTS

8. ECG monitor
9. Assess rate and quality of respirations, note retractions
   a.) For mild Stridor: **Normal Saline by nebulizer**
   b.) For respiratory arrest: Treat *per* Respiratory Arrest protocol

Paramedic — *Follow* above protocols and in addition:

10. Assess rate and quality of respirations, note retractions
    a.) For cyanosis or severe stridor:
       I.) Racemic Epinephrine 2.25% via nebulizer
          Patient >2 years old 0.5ml in 3ml Normal Saline
          Patient <2 years old 0.25ml in 3ml Normal Saline
    b.) For respiratory arrest: Treat *per* Respiratory arrest protocol

Respiratory Arrest

EMR & EMT — *Initial Considerations*

1. Open Airway and check for spontaneous ventilations
2. If **NO spontaneous ventilations**:
   IF no BVM: Ventilate with Pocket mask until BVM is available
   Ventilate with Bag Valve Mask 15 LPM: 1 Breath every 5 to 6 seconds
   Children/Infants: 1 Breath every 3 to 5 seconds
3. **EMR:** Place OPA (if no gag reflex) or NPA as soon as available
4. **EMT:** Place King Airway (if no gag reflex) or NPA as soon as available
4. Assess lung sounds and chest rise and fall for adequate ventilations.
5. Every 2 minutes reassess for Pulse and Breathing**. IF no pulse** treat *per* Cardiac Arrest protocol
6. Pulse oximeter *if* available
7. Suction Airway as needed
8. Obtain vital signs (BP & Pulse)
9. Obtain SAMPLE History

Advanced EMT & Intermediate — *Follow above protocols and in addition:*

10. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
11. Establish IO Access if unable to obtain IV site
11. *Consider* **Naloxone 0.5 – 2.0mg** IVP/ IO/ IM (**0.1mg /kg** Pediatric)
12. ECG monitor

Paramedic — *Follow* above protocols and in addition:

13. Dysrhythmias: Treat per appropriate protocol
14. *Consider* Intubation

Toxic Inhalation with Respiratory Compromise

EMR & EMT — *Initial Considerations*

1. Assess responsiveness and ABCs
2. Have patient sit down or assume position of comfort, avoid further strenuous activity on the heart
3. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Obtain baseline vital signs: Reassess Vitals as Needed
6. Obtain SAMPLE history
7. Assess lung sounds (posterior if able), if crackles heard sit patient and dangle legs (if able)
8. Obtain SAMPLE History

Advanced EMT & Intermediate — *Follow above protocols and in addition:*

9. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
10. Patient with wheezing: **Administer** nebulizer:
    Albuterol 2.5mg/3cc ~or~ **DuoNeb** (albuterol 3 mg / ipratropium 0.5 mg), Do not exceed three DuoNeb treatments.
11. ECG monitor
12. If SPO2 is <92% Administer **CPAP** at 5cm H20 *per* CPAP Procedures

Paramedic — *Follow* above protocols and in addition:

13. Dysrhythmias: *Treat* per appropriate protocol
14. If pulmonary edema is evident treat *per* CHF Protocol
15. If patient cannot protect their airway or respirations are <8 BPM: Consider Intubation

Procedure: Capnography Easy Cap CO_2 ™ detector

SPECIAL NOTES

- Approximately 5% of the exhaled air of a healthy patient is carbon dioxide.
- Waveform capnography is preferred over use of color metric devices.
- The Easy Cap CO_2 Detector is an easy to use, visual indicator of CO_2 production and therefore, is a good indicator of tube placement.
- The patient must be circulating blood for the CO_2 detector to work. Effective CPR will produce a sufficient pulse for Easy Cap to gain a reading.
- In low perfusion states, production of CO_2 is diminished and color change may not be profound.
- Capnography should always be used in conjunction with other assessments of proper airway placement such as: 5-point check, tube fogging, pulse oximetry, and direct visualization of intubation.
- Never entirely rely on $ETCO_2$ detection as the sole method of assessment for tube placement.
- The device must be changed if it becomes contaminated with bodily fluids.

INDICATIONS

To assist in determining correct ET tube or King Airway placement.

Capnography with the Easy Cap CO_2™ Detector

The Easy Cap CO_2 ™ detector is a disposable chemical indicator that can be used for up to three hours. It works by detecting $ETCO_2$ on the following color scale:

- Range A (purple): < 0.5% $ETCO_2$
- Range B (tan): 0.5-2.0% $ETCO_2$
- Range C (yellow): >2.0% $ETCO_2$

Easy Cap CO_2 ™ PROCEDURE

1. Place the advanced airway device (ET Tube, Igel, King Airway)
2. Assess tube placement by using visualization, 5-point check, and looking for chest rise.
3. Ventilate 4-5 times then place Easy Cap™ device on the ET tube or the ventilation port of the Igel or King Airway.
4. Continue ventilating the patient.
5. If placement is correct: Color will change from purple to yellow or gold with each ventilation.
   Color change may not be apparent for 6 to 8 breaths
   Color change is positive indication of correct tube placement
6. If the color does not change, **immediately determine tube position**.
7. Remove any tube whose position cannot be confirmed.
8. Document results (color change) of $ETCO_2$ detection on run report form.

Capnography $EtCO_2$ Monitor

$EtCO_2$ MONITOR PROCEDURE

1. Place the advanced airway device (ET Tube, Igel, King Airway)
2. Apply EtCO2 monitor if available, maintain EtCO2 output between 35-40 mmHg

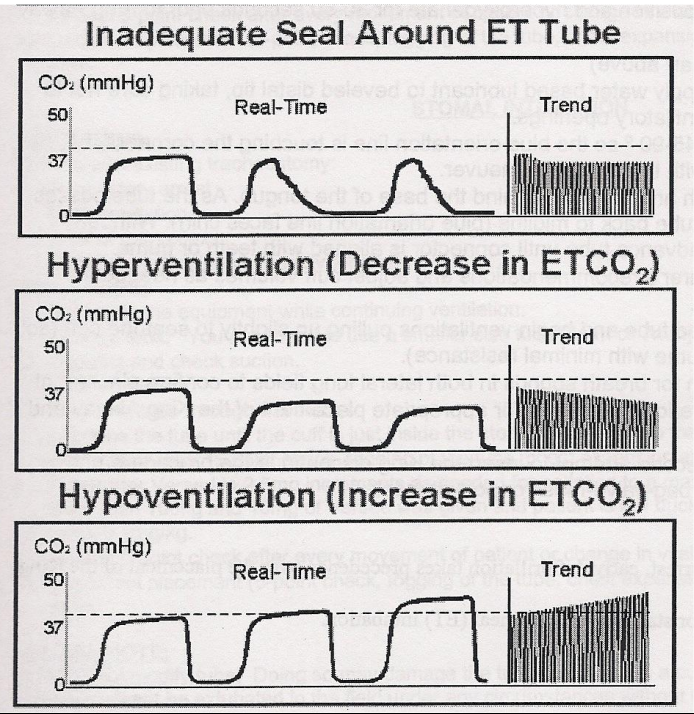
$EtCO_2$ Readings

> 40 mmHg	Hypoventilation
35 – 40 mmHg	Normal ventilation
30 – 35 mmHg	Hyperventilation
< 30 mmHG	Dangerous

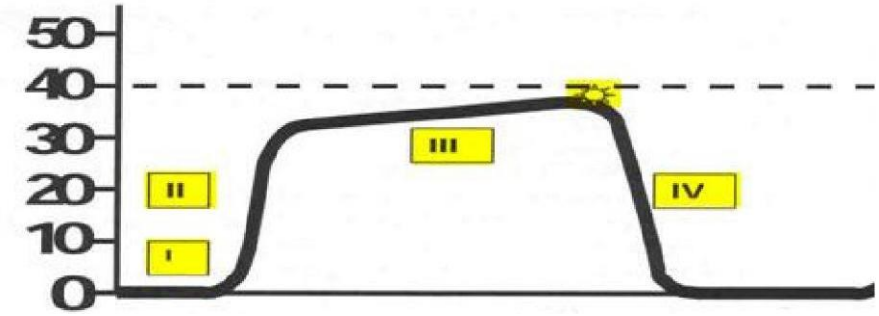
*If there are signs of traumatic brain injury (TBI) and herniation, then mild hyperventilation to an EtCO2 of 35 mmHg may be performed

*A sudden drop in CO2 output from normal to 15-20 mmHg and an obvious change in waveform is indicative of tube displacement, most likely in the hypopharynx

$EtCO_2$ Seal Troubleshooting Guide



$EtCO_2$ Waveform Diagram



PHASE I:	Respiratory baseline, CO2 free dead space air, normally 0.
PHASE II:	Expiratory upstroke, rapid rise due to mixing of dead space air and alveolar air, should be steep.
PHASE III:	Expiratory plateau, exhalation of mostly alveolar air
☼:	Peak EtCO2 Level, end of exhaled air, peak end tidal CO2 level, normally 35-45mmHg.
PHASE IV:	Inspiratory downstroke, inhalation of CO2 free gas, quickly returns to the baseline.

Procedure: Pulse Oximeter

EMR EMT Advanced EMT EMT-Intermediate Paramedic

PRECAUTIONS

- Never delay administration of Oxygen to a patient in need to attach a pulse oximeter.
- Carbon monoxide poisoning may alter the ability of the SpO_2 to accurately reflect SpO_2 and may indicate a false high SpO_2 in a patient who actually needs oxygen.
- Regardless of what pulse oximetry indicates always treat the patient and not the machine.

- Continuous noninvasive monitoring of peripheral arterial hemoglobin oxygen saturation (SpO_2).
- As a standard of care, a pulse oximeter shall be applied to all patients as soon as basic stabilization (ABCs) has been concluded.
- Pulse oximetry has both physiologic and technical limitations. Because the technique uses light absorbency, pulsation changes in a vascular bed, any event that decreases those pulsation (hypotension, hypothermia, and vasoconstriction), will decrease the ability of the pulse oximeter to obtain and process a signal and calculate the SpO_2
- It may be necessary to change sensor sites (finger, ear) to obtain an optimal signal. Motion artifact (as evidenced by a heart rate discrepancy between the ECG and pulse oximeter) may interfere with accurate calculation of SpO_2 in awake, agitated, or shivering patients. Ambient light as well as other light sources (radiant warmers, fluorescent bulbs) contaminates light-emitting diode signals. Nail polish can alter the spectra of emitted light.
- Neonates: SaO2 must be monitored on the right (preductal) hand.

Pulse oximetry (SpO2) Readings		
SpO_2 Reading	*Status*	*Treatment Indicated*
95-100%	Normal SpO_2	None
91-94%	Mild Hypoxia	Low-flow oxygen therapy
86-91%	Moderate Hypoxia	High-flow oxygen therapy
< 85%	Severe hypoxia	Aggressive oxygen therapy. Intubation indicated.

Targeted SpO2 Readings after birth for Neonates					
1 minute:	**2 minutes:**	**3 minutes:**	**4 minutes:**	**5 minutes:**	**10 minutes:**
60-65%	**65-70%**	**70-75%**	**75-80%**	**80-85%**	**85-85%**

Procedure: Nebulizers

EMT **Advanced EMT** **EMT-Intermediate** **Paramedic**

INDICATIONS

- Used to treat bronchospasm and patients in respiratory distress
- May be administered through a mask or handheld (T-piece)

Aerosol Medications

Albuterol
Action: Relaxes bronchial smooth muscle
Dose: Solution of 2.5mg of medication mixed with 3 cc of normal saline

Xopenex (levalbuterol)
Action: Relaxes bronchial smooth muscle, induces bronchial dilatation.
Dose: Solution of 1.25mg of medication mixed with 3cc of normal saline

Atrovent (Ipratropium Bromide)
Action: Inhibits interactions of cholinergic receptors in bronchial smooth muscle
Contraindicated: Allergy to Soy beans or peanuts
Dose: Solution of (500mcg)0.5mg of medication mixed with 2.5ml Normal Saline
Notes: Only one nebulizer treatment in a patient treatment series is to be mixed with Atrovent
EMTs are not authorized to use Atrovent in a breathing treatment they are administering

PROCEDURE

1. Select the correct medication(s) ensuring they are not expired
2. Select the most appropriate delivery device (either handheld pipe of mask)
3. Pour the medication(s) into the nebulizer.
4. Assemble the nebulizer and components
5. Connect the unit to oxygen.
6. Place unit to patient
   a.) Place mouthpiece in the patient's mouth with the lips sealed around the mouthpiece.
   b.) Place the mask over the patient's mouth and nose and secure drawstring
7. Adjust Oxygen flow until you produce a visible steady mist
   a.) 4-6LPM mouthpiece
   b.) 6-10 LPM mask
8. Instruct the patient to inhale slowly and deeply through the mouth and hold breaths 3 to 5 seconds before exhaling. Mist should disappear with each breath.

Procedure: In-Line Nebulizer

EMT **Advanced EMT** **EMT-Intermediate** **Paramedic**

PRECAUTIONS

- Do not interrupt ventilation of the patient while assembling in-line nebulizer

INDICATIONS

- Administration of Albuterol/ Levalbuterol (Xopenex) and Atrovent while providing ventilatory support to a patient utilizing a Bag Valve Mask (BVM)

PROCEDURE

1. Assure that adequate ventilations are being performed while nebulizer is assembled
2. Remove Nebulizer "acorn" and attach setup between the BVM and Mask (or tube end)
    a. Use the 15/22mm adapter to attach to the Mask/ tube end
3. Place selected airway medication in the "acorn" and attach secondary O2 (= or > 6 LPM)
4. Insert Nebulizer 'acorn" securely into the Tee
5. Continue ventilations of the patient, ensuring nebulizer is working

Procedure: Intranasal (IN) Administration

EMT **Advanced EMT** **EMT-Intermediate Paramedic**

CONTRAINDICATIONS

- Epistaxis
- Nasal Trauma
- Nasal septal abnormalities
- Nasal congestion or discharge

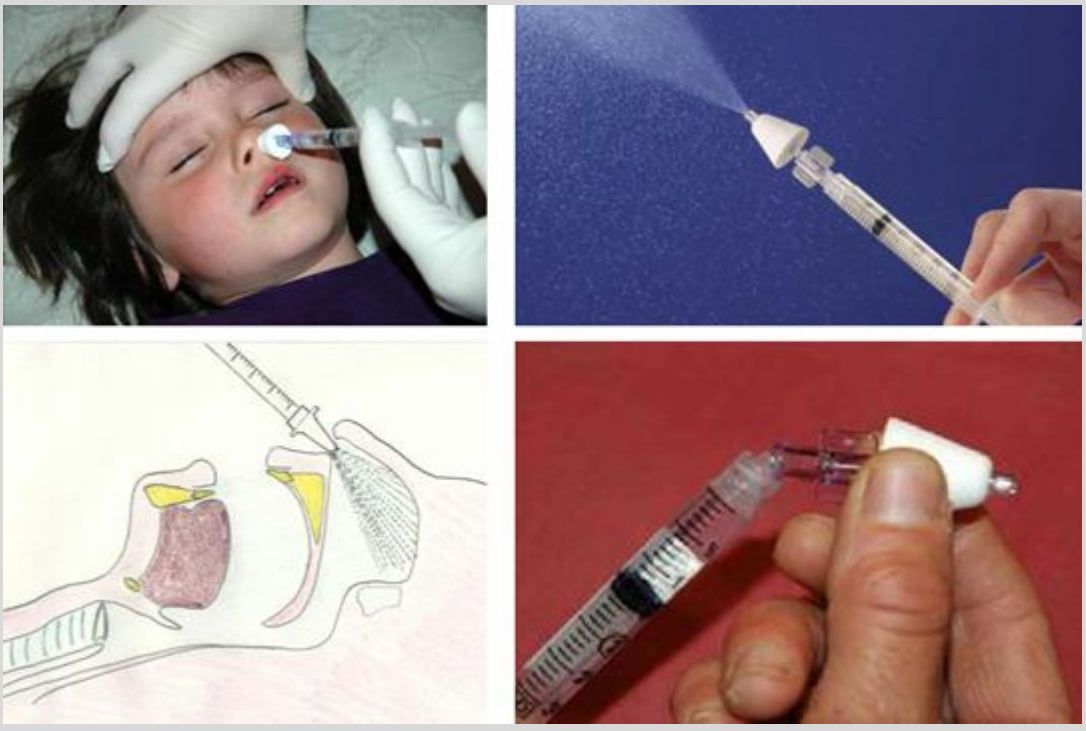
INDICATIONS

- Patient without IV access requiring urgent medication administration
- Alternate administration route for fentanyl administration for pain management

PROCEDURE

1. Patient should be in the supine or recumbent position
    a. If patient is sitting then compress the nares after administration
2. Draw up medication into a syringe (Using appropriate transfer device)
3. Remove air from syringe
4. Remove transfer device and place atomizer onto syringe and secure it
5. Administer medication briskly compressing the plunger to expel and atomize the medication administering 1ml(cc) of solution per nare
6. Evaluate medication effectiveness and continue with treatment protocol

Intra Nasal Administration



Procedure: Continuous Positive Airway Pressure & Bi- Level Continuous Positive Airway Pressure (Bi-Level CPAP)

EMT Advanced EMT EMT-Intermediate Paramedic

INDICATIONS	CONTRAINDICATIONS
1. Moderate to severe respiratory distress secondary: A. Congestive heart failure (CHF) with pulmonary edema B. Acute respiratory failure C. Acute exacerbation of COPD D. Asthma E. Toxic inhalation F. Near drowning 2. Patient is able to fit the CPAP mask appropriately 3. Any two of the following: A. SpO2 is <93% B. Respiratory rate >25 bpm C. Accessory muscles are being used D. Responsive and able to follow directions	1. Inability to understand and follow directions or tolerate mask 2. Respiratory or cardiac arrest 3. Pneumothorax 4. Tracheostomy 5. Inability to maintain patent airway 6. Head, facial, or chest trauma 7. Systolic blood pressure <90 8. Vomiting or excess oral secretions 9. Moderate to severe epistaxis 10. Inability to obtain mask seal

SPECIAL NOTES

- Within 5 minutes patient should improve: Decreased BP, Heart rate, and respirations Increased SPO2
- Paramedic: Consider mild sedation with Ativan or Versed if needed

PROCEDURES for CPAP

- Place patient in the seated position
- Set-up system in CPAP mode, assuring switch is turned to CPAP
- Verify O2 cylinder level is adequate
- Explain procedure to patient- Instruct them to inhale through nose, out through mouth
- Allow oxygen to flow through mask for approximately 2 seconds before placing on patient
- Place mask on patient – Continue to offer assurance as they may not at first tolerate mask
  - For CHF with pulmonary edema: Start at 10cmH2O
  - For Asthma, acute exacerbation of COPD, toxic inhalation, and/or respiratory Failure: Start with 5cmH2O Increase 2-3cm H2O increments to a max of 10 (based on tolerance and vital signs (Decrease if necessary
- Recheck vital signs as close to every 5 minutes as possible, recheck seal often

If using Bi-level CPAP

- IPAP needs to be above 8 cm H20 for this function to work
- Turn switch on mask to Bi-level and use the EPAP dial on the side of the assembly to adjust to the desired EPAP level.
- Use the manometer to verify both IPAP and EPAP pressures.

Procedure: Continuous Positive Airway Pressure & Bi- Level Continuous Positive Airway Pressure (Bi-Level CPAP)

- Obtain Vital signs every 5 minutes
- Ensure mask seal is intact each time patient is moved or device is adjusted.

Special Notes:

- 1. In-line nebulizer and sublingual nitroglycerin may be given.
- 2. In-line nebulizers must only be given while in CPAP mode.
- 3. You can monitor capnography by placing a Co2 sampling nasal cannula on the patient prior to applying the mask.
- 4. Keep the patient on Bi-level CPAP during transport; if patient is not tolerating then try intermittent use provided it does not cause negative changes in patients' condition.
- 5. The patient should show improvement within 5 min of using Bi-level CPAP; decreased BP, heart rate and respiratory rate with and increased SPO2.
- 6. For severe anxiety Midazolam 1-2 mg slow IV/IO/IM or Lorazepam 0.5 IV/IO/IM may repeat q 3-5 min (not to exceed 5 mg Midazolam or 2 mg Lorazepam). Caution this could further depress respiratory function.
- 7. If patients condition worsens on Bi-level CPAP discontinue, assist ventilations and consider RSI

CPAP Flow Rate Chart

Liter Flow +cmH2O

Flow	CPAP
10 LPM	2.5 - 3.0 cmH2O
15 LPM	4.5 – 5.0 cmH2O
20 LPM	7.0 – 8.0 cmH2O
25 LPM	08/05/10 cmH2O

Minutes of O2 based on "D" cylinder
Based on full 2200 PSI cylinder

FLow	"D" Cylinder
6 LPM	58 min
8 LPM	44 min
12 LPM	29 min
15 LPM	23 min

Bi-PAP Flow Rate Chart

Liter Flow +cmH2O

Flow	Bi-CPAP
6 LPM	2.0 - 3.0 cmH2O
10 LPM	6.0 – 7.0 cmH2O
12 LPM	8.0 – 9.0 cmH2O
15 LPM	11.0-12.0 cmH2O

Minutes of O2 based on "D" cylinder
Based on full 2200 PSI cylinder

FLow	"D" Cylinder
6 LPM	58 min
8 LPM	44 min
12 LPM	29 min
15 LPM	23 min

Procedure: Advanced Airway Sizing Charts

EMT **Advanced EMT** **EMT-Intermediate Paramedic**

King Airway Sizing

Type	LTD	LTD	LTS-D	LTS-D	LTS-D
Size	2	2.5	3	4	5
Tube Color	Green	Orange	Yellow	Red	Purple
Patient Height	3-3.5 feet	3.5 feet	4-5 feet	5-6 feet	Greater than 6 feet
Inflation Volume	25-35 mL	30-40 mL	40-55 mL	50-70 mL	60-80 mL
Age	4-8 years	5-10 years	Adult →		

i-gel® Airway Sizing

	I-gel size	Patient Size	Patient Weight (kgs)	Patient Weight (lbs)
	1	Neonate	2-5	4-11
	1.5	Infant	5-12	11-26
	2	Small Pediatric	10-25	26-55
	2.5	Large Pediatric	25-35	55-77
	3	Small Adult	30-60	66-132
	4	Medium Adult	50-90	110-198
	5	Large Adult	90+	198+

Orogastric Tube Sizing

Age	Size	Max Size of tube for an i-gel®
Less than 1 year old	Refer to Pediatric Guide (Broslow® Tape)	i-gel® Size 1 N/a i-gel® Size 1.5-4 12 French i-gel® Size 5 12/14 French
1 year – 16 years	10-14 French	
Older than 16 years	Up to 18 french	

Procedure: KING Airway

EMT **Advanced EMT** **EMT-Intermediate** **Paramedic**

PRECAUTIONS

- The KING LTS-D does not protect the airway from the effects of regurgitation and aspiration.
- High airway pressures may divert gas either to the stomach or to the atmosphere.
- Placement into the trachea cannot be ruled out as a potential complication of the insertion of the King Airway.
- For Patients in Cardiac Arrest quality compressions and defibrillation take precedent over the placement of an advanced airway.

INDICATIONS

- Management of the airway in the respiratory and/or cardiac arrest for patients without spontaneous respirations.
- Second line airway (after failed ET attempt) for Paramedics.

CONTRAINDICATIONS

- Patients who are conscious or who have an intact gag reflex
- Patients under four (4) feet in height
- Known esophageal disease or esophageal trauma
- Obstructed Airway
- Known or suspected ingestion of caustic substances

PROCEDURE

2. Position head in a neutral position and hyper-oxygenate for 30-60 seconds prior to insertion.
3. Select correct size based on the patient's height, and using the package insert
4. Prepare the King Airway: apply water-based lubricant to beveled distal tip, taking care not to get lubricant on or near ventilatory openings.
5. Hold the King Airway at a 45-90 degree angle so the blue orientation line is touching the corner of the mouth; hold mouth open with the chin lift maneuver.
6. Introduce tip into the mouth and advance behind the base of the tongue. As the tube passes behind the tongue, rotate tube back to midline (blue orientation line faces chin). Without exerting excessive force, advance tube until connector is aligned with teeth or gums.
7. Inflate cuff (s) per manufacturer's recommendations and adjust cuff volumes as needed to achieve and maintain seal.
8. Attach a BVM and Co2 detector to the tube and begin ventilations pulling up slightly to seat the cuff (so that there is large tidal volume with minimal resistance).
9. Confirm correct placement. Listen for breath sounds in both lateral lung fields and lack of sounds in epigastrium. Ease of bagging is not a reliable indicator of correct placement.
10. Secure Airway in place. Perform placement checks anytime patient is moved
11. If unsuccessful after the second attempt to insert the King discontinue the procedure and continue ventilations via a bag-valve-mask or pocket mask.

Procedure: i-gel® Supraglottic Airway

EMT **Advanced EMT** **EMT-Intermediate** **Paramedic**

INDICATIONS

- Although indicated for all patients Seaside Fire & Rescue carries i-gel for pediatric patients too small (<12kg / 26lbs) to accept a king airway as an airway device.
- The i-gel is an acceptable alternative primary airway device over the endotracheal tube in cardiac arrest.

CONTRAINDICATIONS

- Awake or responsive patient
- Intact gag reflex
- Severe maxillofacial trauma
- Trismus or limited mouth opening
- Non-fasting of full stomach (relative contraindication)

PREPPING THE DEVICE PROCEDURE

1. Choose the correct i-gel Supraglottic Airway

2. Prep the Airway: Wearing gloves, open the cage pack and transfer the device into the lid. Place a small bolus of water-based lubricant onto the smooth inner surface of the cage (hard plastic cover)

3. Grasp the i-gel along the integral bite block and lubricate the back, sides, and front of the cuff with a thin layer of lubricant
    a. Ensure NO lubricant remains in the bowl of the cuff or elsewhere on the device, avoid touching the cuff of the device with your hands

4. Place the i-gel back into the cage if insertion is not immediate

Procedure: i-Gel Supraglottic Airway

PRECAUTIONS

- Sometimes a feel of give-way is felt before the end point resistance is met. This is due to the passage of the bowl of the i-gel through the pharyngo-epiglottic folds.
- Once resistance is met and teeth are on the bite block, do not repeatedly push i-gel down or apply excessive force
- A small air leak through the gastric channel may happen, an excessive leak indicates incorrect insertion, remove and reinsert with gentle jaw thrust and deep rotation

If an excessive air leak during intermittent PPV is notice use 1 or all of the following:

Hand ventilate with slow gentle squeezing
Limit tidal volume to 5ml/kg
Limit peak airway pressure to 15-20 cm o H2O

- When using the i-gel, the risk of regurgitation and aspiration must be weighed again the benefit of establishing an airway

INSERTION PROCEDURE

1. Grasp the lubricated i-gel firmly along the integral bite block. Position the device so the i-gel cuff outlet is facing towards the chin of the patient
2. The patient should be in the sniffing position with head extended and the neck flexed. The chin should be gently pressed down before insertion

Do not apply excessive force on the device during insertion. It is not necessary to insert your fingers into the patient's mouth during insertion

3. If there is early reistance duringinsertion, perform a jaw thrust and insert the igel with a deep rotation

4. If ventialtion is inadaquete, remove the i-gel and re-insert. Re-oxygenate via BVM between insertion attempts as necessary

5. At this point the tip for the airway should be located in the upper esophageal opening, the cuff should be located against the laryngeal framework, and the incisors should be resting on the integral bite-block

6.Secure the device with commerical securing device (i-gel® specific)

Procedure: Intubation

Paramedic

SPECIAL NOTES

- A patient should never be extubated in the field without approval form Online Medical Control
- Prior to Intubation ensure Patient: Is on the Cardiac Monitor and Pulse oximeter

INDICATIONS

- Respiratory insufficiency (less than 8 BPM) or arrest.
- Airway obstruction.
- Brain injury (GCS $\leq$ 8).
- Unconsciousness or altered mental status with airway compromise.
- Situations that require positive pressure ventilation.

PROCEDURES

- Prepare the ET tube by checking the cuff
  - STOMAL INTUBATION: A smaller size tube (6mm or 7mm) may be needed
- Apply a water-soluble lubrication jelly to the distal tip and cuff
- Have suction ready
- Preoxygenate the patient
- Position the patient
- ORAL INTUBATION:
  - Open airway and apply cricoid pressure
  - Intubate in a controlled, but timely manner

.

- STOMAL INTUBATION
  - Insert the tube through the stoma
  - Advance the tube until the cuff is just inside the stoma. Inflate the cuff to prevent an air leak
- Verify placement (5-point check, fogging of the tube, chest expansion & CO_2 detector.)
- Secure Tube
- Consider a C-collar to maintain tube position
- Monitor vital signs including O_2 saturation and end-tidal CO_2 detector
- Administer Versed in 2.5 mg increments as needed for agitation to a maximum of 10 mg.
- Repeat 5-point check after every movement of patient or change in vital signs

Procedure: Flex-Guide ET Tube Introducer

Paramedic

INDICATIONS

To be used during all adult intubation attempts.

CONTRAINDICATIONS

- Nasal Intubation
- ET Tube smaller than 6mm

PROCEDURE

- Begin intubation as normal with insertion of the laryngoscope blade
- Insert the Flex-Guide with the angled end facing up
- Pass the Flex-Guide Introducer through the cords (visually or by feeling the end of the Introducer) vibrate over the tracheal rings as it passes through the trachea) until resistance is felt or the thick black line reaches the corner of the patients' lips.
- While holding the Introducer in place slide the ET tube backwards (Murphy eye facing left and the beveled end facing right) down the introducer (may be done by EMT as paramedic holds in place and maintains visualization)
- Pass ET tube to the cords and while advancing through rotate the ET tube 90° COUNTERCLOCKWISE (if resistance is felt pull tube back and re-advance while continuing to turn counterclockwise to spread the arytenoid cartilage)
- Hold ET tube firmly in place and remove the Flex-Guide Introducer (the curved end will produce resistance as it passes through the tube, failure to hold tube will result in tube being dislodged)
- Continue as normal with intubation protocol

Procedure: Rapid Sequence Induction (RSI)

Paramedic

INDICATIONS

If necessary to gain immediate control of the airway in the critically ill patient who may be hypoxic, hemodynamically unstable, agitated, or uncooperative and at risk of further deterioration.

PROCEDURE

1. Pre-oxygenate for at least 5 minutes with NRB at 15LPM or at least 8 vital capacity breaths. This helps facilitate nitrogen washout and maximizes the oxygen reserve
2. Assemble required equipment: BVM; Suction with Yankauer tip; ETT securing device; Laryngoscope and blades; Endotracheal tube with intact cuff, stylet, syringe; Cricothyrotomy kit
3. Ensure a functioning, secure IV /IO is in place
4. Continuously monitor the cardiac rhythm and oxygen saturation
5. Pre-medicate as appropriate
   - **Etomidate 0.3 mg/kg** no > 20mg for adults and children > 10 years old
   - **Pediatric: Midazolam 0.1- 0.2 mg/kg** for children ≤ 10 years old. ~or~ **Lorazepam 0.1 mg/kg** no > 4.0 mg single dose. **May repeat 2nd dose of Lorazepam 0.05 mg/kg** after 10-15 minutes prn. Dilute Lorazepam with an equal volume of Normal Saline when administered IV or IO.
6. **Succinylcholine 1.5 mg/kg** IVP/IO
   - Apnea, jaw relaxation, and decreased resistance to BVM indicates the patient is sufficiently relaxed to proceed with intubation
7. During intubation attempt place patient on 15Lpm nasal cannula to facilitate oxygenation
8. Intubate. If unable to intubate during the first attempt, stop and ventilate the patient with BVM for 30 – 60 seconds
9. Treat bradycardia occurring during intubation with oxygenation and hyperventilation first. If no improvement, **Atropine 0.5 mg**
10. Complete intubation, inflate the cuff and continue as normal with intubation protocol
    - Etomidate duration is only 3-5 minutes. After intubation patient should be sedated with: **Midazolam 2.0-5.0 mg** IVP/IO/IM ~or~ **Lorazepam – 4.0-8.0 mg** IV/IM/IO. Dilute Lorazepam with equal volume Normal Saline when administered IV/IO
11. **Rocuronium 0.6 mg/kg or Vecuronium 0.1mg/kg** to maintain intubation. Note: CHF, ARDS, or pneumonia patients: Consider disposable PEEP valve on BVM exhaust port. Begin at 5cm H2O and titrate in 2cm increments
12. If unable to intubate, bag the patient until spontaneous respiration returns or proceed with Eschmann catheter, consider or surgical cricothyrotomy

Procedure: Orogastric Tube Insertion and Maintenance

EMT-Intermediate Paramedic

CONTRAINDICATIONS

- Known alkali or acid ingestion
- Esophageal obstruction
- Known esophageal varices
- Suspected epiglottitis or croup

INDICATIONS

- To alleviate gastric distention, reduce aspiration, and facilitate ventilation in intubated patients

PRECAUTIONS

- Do Not delay transport for this procedure
- OG tube placement can cause bradycardia
- Monitor SpO2 and EtCO2 continuously

PROCEDURE

7. Assemble equipment
    a. Proper size tube, lubricant, 30 or 60cc Syringe
    b. Suction unit
8. Place patient's head in a neutral position and measure tube length form the xiphoid process to the angle of jaw corned to the mouth. Place a mare on the tube to indicate how far to advance the tube
9. Lubricate end of tube (3-4 inches)
10. Gently insert tube and advance toward posterior oropharynx
11. For non-traumatic patients, repositioning the head into a slightly flexed forward position may facilitate OG tube passage past the hypopharynx and into stomach.
12. Continue to insert tube to the measured mark). Secure tube with tape.
13. Attach syringe to the distal end of the OG tube
14. Confirm tube placement by placing stethoscope over epigastrium and auscultate while inserting 30 - 60 ml of air in tube. You should hear gastric gurgling.
15. Secure tube in place with tape
16. Place the tube to low continuous suction as needed, gastric contents should be visible in tubing.
17. Document tube size and depth, color, consistency, and amount of gastric contents.

Procedure: Cricothyrotomy

Paramedic

INDICATIONS

- **This technique is used ONLY when other attempts to establish an airway have been unsuccessful and respiratory obstruction exists.**
- Such conditions are most likely to be found with:
  - Foreign-body obstruction
  - Inhalation of thermal gases
  - Angioneurotic edema
  - Epiglottitis
  - Facial and laryngeal trauma
  - Caustic injury to the upper airway
  - Upper airway bleeding
  - Severe croup

NOTES & PRECAUTIONS

- Hazards in performing this procedure are primarily those of damage to nearby structures; major vessels to either side of the midline, to the vocal cords if the puncture is made too high, or a through and through injury of the trachea if the puncture is made too deeply. The latter is more commonly seen in infants and children whose tracheas may be deceptively narrow.
- Palpation of the cricothyroid membrane is very difficult in the infant and young child. The key to success is immobilization of the trachea throughout the procedure.
- Needle cricothyrotomy is only a temporizing measure providing oxygenation not adequate ventilation.

- **SURGICAL CRICOTHYROTOMY IN PATIENT >40KG**

PROCEDURE

1. Cleanse and prep the site with antiseptic
2. Using your non-dominant hand (thumb and middle finger), stabilize the trachea. Your index finger is available to maintain location of the cricothyroid membrane throughout the procedure
3. Locate the cricothyroid membrane
4. Make a vertical incision through the skin. **NOTE**: There may be significant bleeding; consider use of combat gauze to control bleeding
5. Make a horizontal incision through the cricothyroid membrane large enough to pass the tube
6. Insert the tracheal hook or dilator through the cricoid membrane. If using the hook secure the superior edge of the cricothyroid cartilage and apply caudal displacement
7. Insert a 6.5 or smaller tube (rotate at 90° if necessary)
8. Remove tracheal hook
9. Inflate the cuff
10. Secure device
11. Attach end-tidal CO2 adapter and BVM
12. Consider sedation

Procedure: PEDIATRIC Cricothyrotomy

Paramedic

INDICATIONS
- Same as adult

NOTES & PRECAUTIONS
- Same as Adult

- **NEEDLE CRICOTHYROTOMY IN PEDIATRIC PATIENT 12 YEARS & YOUNGER**

PROCEDURE

1. Assemble equipment
    a. 14g or 16g angiocath, 3cc syringe, 3.0 ETT adapter, oxygen, BVM
2. Place patient in a supine position with support under the shoulders and mild hyperextension of the neck (Unless C-Spine precautions are in place)
3. Palpate the neck in the midline and locate the slight depression just below the notch of the thyroid cartilage. This is the position of the cricothyroid membrane.
4. Cleanse the site with antiseptic
5. Stabilize the airway between the thumb and forefingers
6. Insert the needle with catheter into the cricothyroid membrane at a 30-degree angle caudally (toward the patient's feet).
7. When the needle is through the membrane. Stop and aspirate for air to ensure tracheal entry.
8. Advance the catheter over the needle and then remove the needle.
9. Attach the 3.0 ETT adapter to the hub of the catheter and begin ventilations with the BVM.
10. Secure the cannula with tape after confirming correct placement by auscultation for breath sounds (5-point check). Observe for kinking of cannula.
11. Consider Sedation

Tension Pneumothorax Decompression

Paramedic

SPECIAL NOTES

- Auscultate often for return of tension or other complications
- Tension pneumothorax is a rare condition but can occur with trauma, spontaneously, or as a complication of intubation. Tension takes time to develop, but forceful positive ventilation may increase the rate of development.
- Tension pneumothorax can be precipitated by the occlusion of an open chest wound. If the patient deteriorates after dressing an open chest wound, remove the dressing.

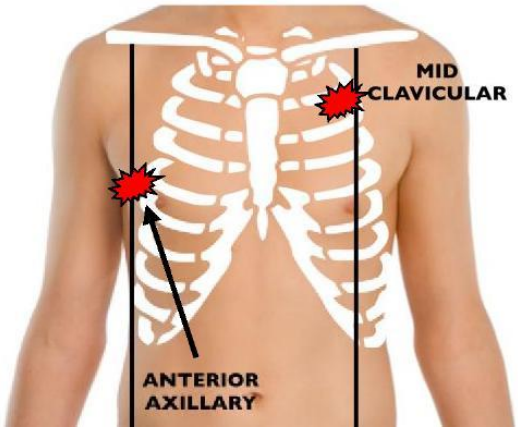
INDICATIONS

- The For a patient who is significantly symptomatic or in extremis (at risk of death)

With the Following:	**And at least one of the following:**
• High clinical suspicion and; • Progressive respiratory distress and; • Shock symptom with low or rapidly decreasing blood pressure	• Decreased or absent breath sounds • Consistent history (chest trauma, COPD, asthma) • Tracheal shift away from affected side • Asymmetrical movement on inspiration • Affected side: Hyper-expanded chest • Affected side: Drum like percussion • Increased resistance to PPV

PROCEDURE

1. Expose the chest and establish landmarks
   a. Anterior-2nd intercostal mid clavicular
   b. If unavailable: Lateral – 4th intercostal space anterior axillary (above nipple)
2. Cleanse the site with antiseptic
3. Locate the landmark on the affected side and insert a large gauge over-the-needle catheter with syringe attached along the superior margin of the rib below (e.g.. top of the third rib to the enter intercostal space)
4. If air is under tension the barrel will pull easily and "pop" out of the syringe
5. Remove syringe, advance the catheter, and remove needle
6. Secure catheter from movement



AIRWAY Procedure: Positive End-Expiratory Pressure (PEEP)

All Responders

CONTRAINDICATIONS

- Cardiac Arrest. Peep may increase intrathoracic pressure, which may reduce blood flow in a cardiac arrest.
- Patient with Hypotension or shock. May be utilized when preparing to RSI a hypoxic/hypotensive patient

INDICATIONS

- Hypoxia, when patient is being ventilated via Bag valve Mask

DEFINITION

- PEEP is a method of ventilation in which airway pressure is maintained above atmospheric pressure a the end of exhalation by means of mechanical impedance (the PEEP Valve).
- At the end of exhalation PEEP prevents alveolar collapse and improves oxygen exchange across the alveolar membrane, this is done to improve oxygenation

SPECIAL NOTES

- Increasing bagging rate will not necessarily improve oxygen but can cause hyperventilation which can be detrimental to patients
- PEEP valve may come out of the package set to 5 or 0

PROCEDURES

- Apply PEEP valve to bag device.
- Dial PEEP valve to 5cm H2O and bag per usual
- Increase PEEP by 5cm H2O every 3-5 minutes until hypoxia resolves (SpO2 >95%) Maximum PEEP is 15cm H20

PEDIATRIC:
Max PEEP in Pediatric is 5cm H20

AIRWAY Procedure: Mechanical Suctioning

All Responders

INDICATIONS

- Patient is exhibiting respiratory difficulty secondary to secretions in airway
- Potential for aspiration exists

SPECIAL NOTES

- Oral and tracheal suctioning can cause trauma to the oropharynx and airway, bradycardia, or hypoxia.
- Suction pressure should be set as low as possible while still effectively clearing secretions
- Recommended Pressures: Neonates: Less than 80-100 mmHg Adults: less than 150 mmHg
- Intubated patients: the diameter of the suction catheter should not exceed ½ the internal diameter of the ET Tube

ORAL SUCTIONING

1. Pre-oxygenate patient with 100% oxygen.
2. Assemble Suction unit and tip and turn suction unit on to confirm mechanical suction is present
3. Insert tip without applying suction
4. Cover thumbhole to begin suction if using a tip other than dental tip.
5. Apply suction for no more than 15 seconds
6. Monitor patient's oxygen saturation.
7. Re-oxygenate patient for at least 2 – 3 minutes between suctioning attempts

TRACHEAL SUCTIONING

1. Pre-oxygenate patient with 100% oxygen.
2. Assemble Suction unit and tip and turn suction unit on to confirm mechanical suction is present
3. If patient is being ventilated via BVM through ET tube have someone else remove BVM
4. Insert catheter into ET tube without applying suction
    a. Advance catheter as far as possible
8. Withdraw slowly using intermittent suction while rotating catheter
9. Apply suction for no more than 15 seconds
10. Monitor patient's oxygen saturation.
11. Rinse catheter in sterile saline
12. Re-oxygenate patient for at least 2 – 3 minutes between suctioning attempts

Seaside Fire & Rescue Medical Protocols

Cardiac

Field Resuscitation Guidelines

- All field resuscitation incidents shall have documentation on the incident events, if CPR was withheld or discontinued and the name of OLMC if contacted.
- Law enforcement shall be notified anytime CPR is withheld and/or discontinued.
- In any event related to cardiac arrest (whether or not the patient is transported) consider the emotional support of the family and find out if you can contact assistance for them.

WITHHOLDING OF CPR

- CPR may be withheld on **Adult** and **Pediatric** patients presenting with any of the following:
  a. Decapitation
  b. Incineration
  c. Decomposition
  d. Dependent lividity
  e. Rigor mortis without vital signs
  f. Apnea in conjunction with separation from the body of either the brain, liver or heart
  g. Mass casualty incidents where triage precludes CPR from being initiated on every victim
  h. Documentation of valid Do Not Resuscitate Orders (DNR) or POLST form is presented

- CPR may be withheld on **ADULT** victims of **unwitnessed medical arrest** presenting with **ALL** of the following:
  a. No CPR in progress **and**
  b. No vital signs **and**
  c. Asystole on the cardiac monitor
  d. No evidence of hypothermia, drug Ingestion, or poisoning

- CPR may be withheld on victims of a **traumatic** cardiac arrest if they meet the above criteria for withholding CPR or the patient presents with **ALL** of the following:
  a. Patient never had any sign of life (pulseless, apneic, fixed pupils, no movement) upon initial assessment **and**
  b. If opening the airway does not restore vital signs **and**
  c. They continue to have no signs of life and asystole on the cardiac monitor.

DISCONTINUING CPR / RESUSCITATION

- Seaside Fire & Rescue will generally not terminate resuscitation efforts once started unless:
  a. CPR is initiated and follow-up assessments note criteria for withholding CPR.
- For other circumstances that suggest a need for termination of resuscitative efforts OLMC shall be contacted for direction. Resuscitative efforts will continue until the order to stop is received.
- If CPR is discontinued an ECG strip documenting asystole will be obtained *if* possible.

Do Not Resuscitate Orders

Contact patient's physician or on-line Medical Control any time if questions or problems arise related to Do Not Resuscitate orders

DEFINITION of DNR

- A DNR (Do Not Resuscitate) Order is an order issued by a physician directing that CPR and resuscitation efforts WILL NOT be administrated in the event of cardiac arrest.
- A Living Will is a legally executed document expressing the patient's wish to not undergo ALS resuscitation.
- Resuscitation includes attempts to restore failed cardiac and/or ventilator function by procedures such as CPR, endotracheal intubation, mechanical ventilation, defibrillation, and use of cardiac medications.
- The Oregon State Department of Health POLST (**P**hysician **O**rders for **L**ife-**S**ustaining Treatment) form has been developed for all medical technicians and practitioners. **POLST** outlines the specific care a patient wishes to receive. The form must include: patients name, date of birth, physician's name, signature and phone number and the signature of the patient or patient's surrogate. Follow all instructions on the form carefully. Any section of the form not completed implies full treatment for that section.
- Responders may encounter DNR orders from a healthcare system other than Department of Health POLST Directive. Should this happen personnel should do the following:
    - Verify that the order has a physician signature requesting "Do Not Resuscitate"
    - Ensure the patient's name on the order
    - Contact on-line Medical Control for further consultation

CONFIRMING DNR ORDERS

- If valid DNR/POLST directives are presented prior to starting interventions on the patient:
    a. Open the airway and assess for spontaneous breathing
        i. Clear the airway (including stoma) of secretions with suction if needed
        ii. If patient is spontaneously breathing and has a pulse after repositioning of airway, refer to the Comfort Measures section of the DNR/POLST form
    b. Check for a carotid pulse
    c. If no pulse/no breathing, do not start interventions
- If valid DNR/POLST directives are presented during resuscitation efforts:
    a. Stop CPR, Intubation / Positive pressure ventilation, medication administration, cardiac monitoring and defibrillation
    b. All invasive and attached supplies / equipment shall be left in place on the patient (tubes, IVs, IOs, Pads, Electrodes, etc.)
    c. Leave scene and patient as is and await law enforcement or a representative of the Medical Examiner to take over control of the scene.

Do Not Resuscitate Orders (cont.)

REVOKING THE DNR/POLST DIRECTIVE

- The following people can inform the EMS system that the Directive has been revoked:
  a. The patient (by destroying the directive or verbally revoking the directive)
  b. The physician expressing the patient's revocation of the directive
  c. The legal surrogate for the patient expressing the patient's revocation of the directive

COMFORT CARE MEASURES

- The DNR/POLST directive DOES NOT mean Do Not Treat. Providing comfort care measures is an important responsibility and service you provide to patients
- Comfort measures may include:
  a. Suctioning the airway
  b. Administering oxygen
  c. Positioning for comfort Splinting
  d. Controlling bleeding
  e. Providing emotional support
  f. Contacting patient's physician or OLMC if questions or problems arise

SPECIAL SITUATIONS

- The patient's wishes in regard to resuscitation should always be respected. Sometimes, however, the family may vigorously and persistently insist on CPR even if a valid DNR/POLST Directive is located. These verbal requests are not consistent with the patient's directive. However, in such circumstances:
  a. Attempt to convince family to honor the patient's decision, if they persist, then;
    i. Consider resuscitation efforts
    ii. Consult Online Medical Control
  b. Remember: Once death has occurred, the family and relatives are your patient(s)

DOCUMENTATION

- The Patient Care Report (PCR) on all incidents involving DNRs should contain:
  a. The name of the patient's physician and if you contacted the physician
  b. Record the reason why the EMS system was activated
  c. Record law enforcement agency notified
  d. If efforts were started, what equipment was left on the patient
  e. Any other pertinent information relating to the patient and/or call

CONTACTING OREGON POLST REGISTRY

- The POLST Registry can do nothing more than verify that the patient has a POLST order and relate the information from the form. If you contact them for verification provide:
  Full Name, DOB, Address, Gender, last 4 of SSN, Registry ID number
  Oregon POLST Registry: 1-877-367-7657

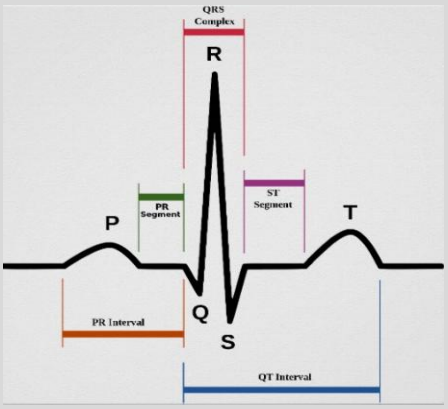
ECG Reading & Samples

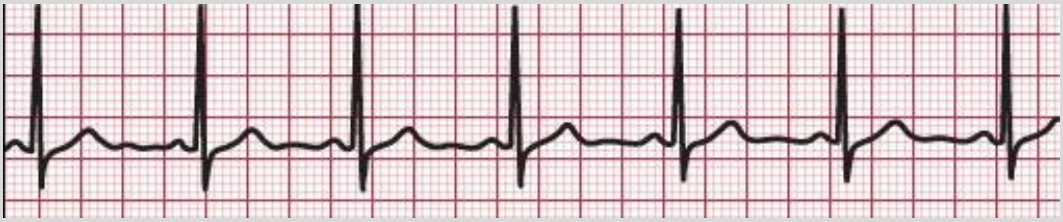
- Always remember to treat the patient not the ECG machine
- Common 9 step method for evaluating 3 and 4 lead ECG printouts

1. **Calculate heart rate**. ECG large boxes (.2 seconds), inside are the smaller boxes (0.04 seconds) One method for heart rate evaluation: Identify 6 second interval, count the number of QRS complexes and/or P waves. Multiply x 10. The sum is your estimated heart rate
2. **Evaluate rhythm**. Measure the R-R intervals and P-P intervals to determine if rhythm is regular or irregular. It is regular when both intervals match; Irregular if R-R and P-P intervals differ
3. **Evaluate P waves**. Is there one P wave before every QRS complex, are they upright? Do they all look the same? A normal rounded P wave indicates the impulse has originated in the SA node.
4. **Evaluate QRS complex**. Do all complexes look alike? Measure the width of the QRS complex. Normal width is 0.12 seconds or less in duration consistently.
5. **Evaluate PR interval**. Measure the PR interval; is it within range of 0.12 and 0.20 seconds? Is the interval constant? Prolonged PR intervals is abnormal.
6. **Evaluate ST segment**. Normal ST segments should be isoelectric (same baseline level) with the PR segment. Higher or lower may indicate cardiac ischemia or AMI.
7. **Evaluate QT interval**. As a rough field guide the normal QT interval is usually less than one half of the R-R interval.
8. **Evaluate T waves**. T waves should be upright and asymmetrical. T waves that are unusually tall or inverted are abnormal.
9. **Look for U waves**. U waves may be normal variants.

ECG Reading & Samples

Normal Sinus Rythm





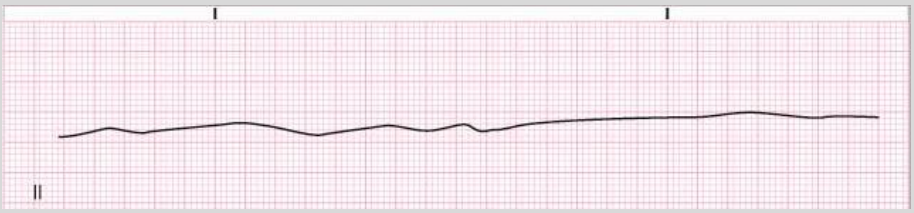
Sample: Sinus Bradycardia — 100 BPM or more

Sample: Sinus Tachycardia — 100 BPM or more

Sample: Ventricular Fibrillation (VF) — Disoriented & quivering

Sample: Ventricular Tachycardia — Very Rapid, usually 150 -200 BPM

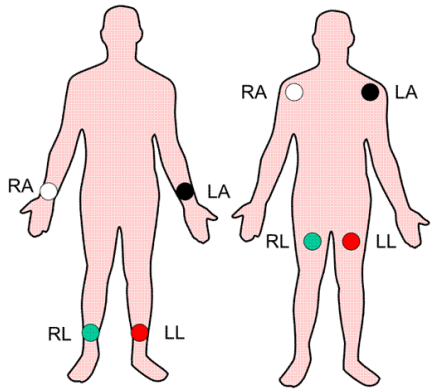
Sample: Asystole — Absence of Electrical Activity



4 Lead and 12 Lead Placement

4 Lead Monitor

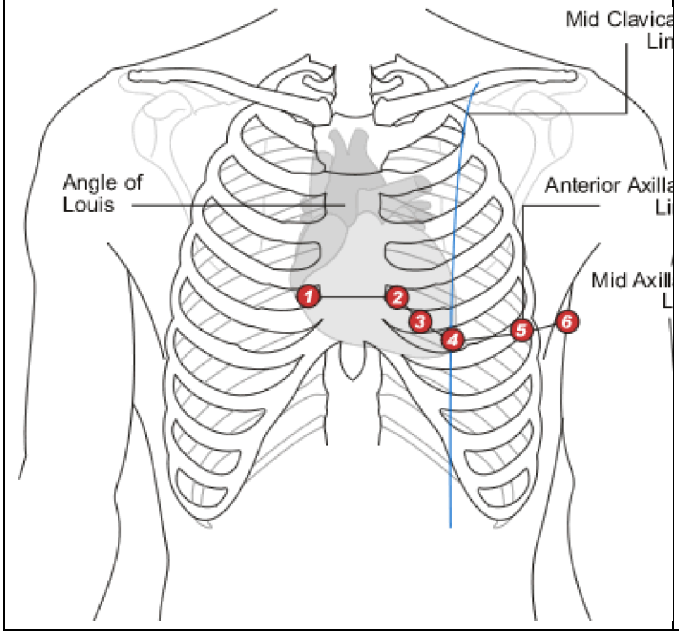
RA	On Right arm, avoid thick muscle
LA	On Left Arm, avoid thick muscle
RL	Right leg, Lateral calf muscle
LL	Left Leg, Lateral Calf muscle

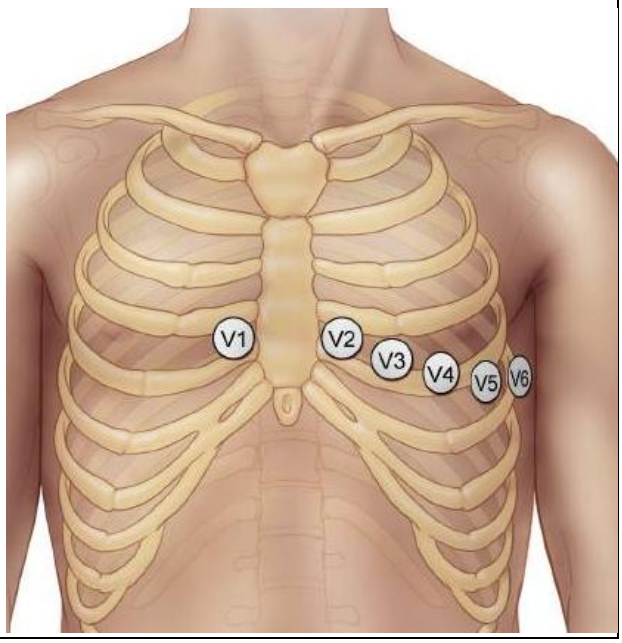


12 Lead

In addition to the 4 leads, attach the following:

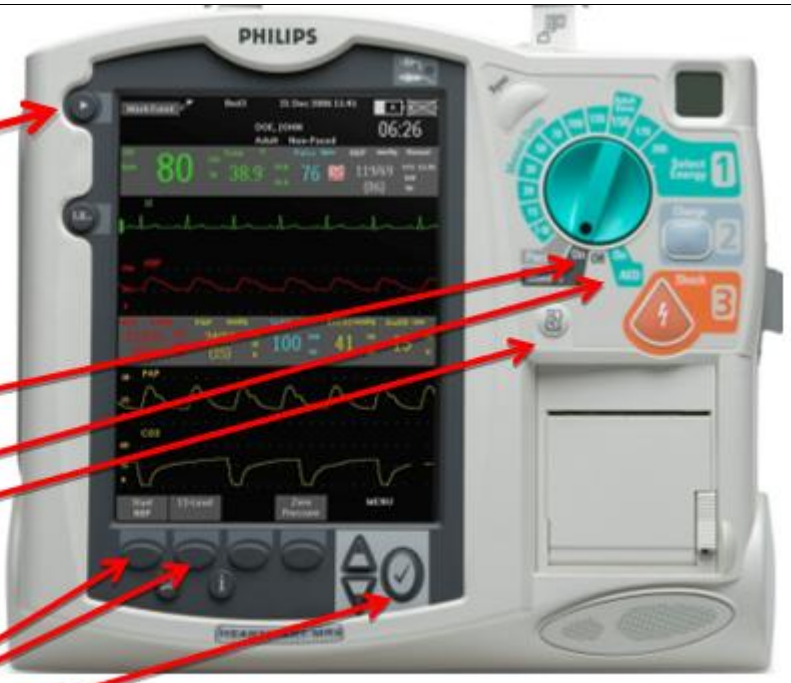
V1	Between the 4th and 5th ribs, right of sternum
V2	Between the 4th and 5th ribs, left of sternum
V3	Between leads V2 and V4
V4	Between 5th and 6th ribs, mid-clavicular line
V5	Horizontally even with V4, in left axillary line
V6	Horizontally even with V4, in midaxillary line





Cardiac Monitor Information

Philips Heartstart MRx



- Mark Event

Touch once for time mark
Or select procedure using arrows

- ON
- AED Mode
- Print ECG

- Start Blood Pressure
- Start 12 lead
- √ Menu

Lifepak 15

- ON

- AED Mode
- 12 Lead

- Print ECG
- Blood Pressure
- Navigation Dial

Chest Pain

INDICATIONS

- Signs and symptoms may include nausea, shortness of breath, weakness, dizziness, and /or sweating

MEDICATION PRECAUTIONS

- Aspirin: Do not administer if patient has an aspirin allergy or has active ulcer
- Nitroglycerin administration
  - Prior to nitro confirm patient has not taken Viagra or a like medication within the last 24 hours, if patient has taken medication withhold unless directed to by OLMC
  - Systolic BP must be greater than 90 prior to administration of nitroglycerin
- Morphine: If suspected right sided AMI Use caution if administering for pain relief

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Have patient sit down or assume position of comfort, avoid further strenuous activity on the heart
3. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Obtain baseline vital signs: Reassess Vitals as Needed
6. Administer (4 chewable baby) **Aspirin** 324mg
7. Obtain SAMPLE history
8. Be Prepared for Patient's condition to deteriorate and Cardiac Arrest occur

EMT — *Follow above protocols and in addition:*

9. *Confirm* medication precaution and if able **Assist** patient with their prescribed nitroglycerin 0.4mg (if systolic BP greater than 90)

Advanced EMT — *Follow above protocols and in addition:*

10. Administer **Nitroglycerin** 0.4 mg; *Confirm* medication precaution
11. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
12. ECG monitor

Chest Pain (Con't.)

Intermediate — *Follow above protocols and in addition:*

16. If pain is severe or unrelieved with Nitroglycerin and BP remains above 90 systolic:
    Morphine sulfate 2-5 mg Repeat PRN every 3-5 minutes Max: 10mg per 30 minutes
~or~ **Fentanyl** 50mcg , Repeat PRN every 3-5 minutes Max: 150mcg per 30 minutes
17. **Repeat nitroglycerin** administration every 3-5 minutes (no more than 3 doses total)
18. If systolic Blood pressure is less than 90 and lungs are clear:
    Administer a 250-500ml Normal Saline Bolus

Paramedic — *Follow above protocols and in addition:*

19. Dysrhythmias: Treat per appropriate protocol
20. If 12 lead indicates ST elevation in lead II, III, or AVF obtain V4R.
    ST elevation in V4R may indicate Right-sided AMI – DO NOT ADMINSTER NITRATES
21. Consider if necessary for anxiety:
    Lorazepam (Ativan) 1-2mg. May repeat every 30 minutes PRN
~or~ **Midazolam** (Versed) 2-5mg IV or IM. Repeat PRN every 15-20 minutes
    Caution using Versed in a hypotensive patient
22. If patient is unresponsive to fluid bolus or shows signs of CHF consider Dopamine
    Administer Dopamine 5-20 mcg/kg/min IV to maintain Systolic BP above 90

Cardiac Arrest

This protocol is a guide for Cardiac arrest management, follow current AHA standards

EMR — *Initial Considerations*

1. Assess pulse/ breathing: Limit check for no more than 10 seconds
2. Initiate CPR per current AHA Guidelines
3. Insert appropriate airway device as available: (OPA / NPA / Pocket Mask / BVM)
4. Ventilate patient with BVM on **O2** @ 15 LPM as soon as available
5. **Attach AED** as soon as it is available, ensure patient is clear and "analyze":
   SHOCK advised: *a.)* Clear Patient, *b.)* Press Shock, *c.)* Continue CPR for 2 minutes unless patient becomes responsive
   NO SHOCK advised: *a.)* Continue CPR, *b.)* Reanalyze patient at 2 minutes
6. Continue CPR /AED use until vital signs are restored (ROSC) or resuscitation is terminated
7. Obtain SAMPLE history from bystander/witnesses/ family
8. Package patient, prepare for transport, Consider: Mega-mover/ Scoop/ Backboard/etc.

EMT — *Follow above protocols and in addition:*

9. Establish King Airway; *a.)* Secure device, *b.)* Auscultate lungs & epigastric sounds
10. Establish ETCO2 Monitoring immediately. *Note:* A sudden rise in ETCO2 can indicate ROSC

Advanced EMT — *Follow above protocols and in addition:*

11. Establish IV access *with* Balanced Salt Solution. Bolus 500-1000ml. Repeat as needed
12. Consider second access when available

Intermediate — *Follow above protocols and in addition:*

13. Secure IO access immediately if unable to establish IV; Consider as secondary access to IV
14. **Administer Epinephrine** 1.0mg 1:10,000 every 3 to 5 minutes
    Continue until vital signs are restored (ROSC) or resuscitation is terminated
15. **If pulseless V-tac or V-fib is identified**: Administer **Amiodarone** 300mg
    Second Amiodarone dose 150mg 3 - 5 minutes after first dose
    If Amiodarone contraindicated: Administer **Lidocaine** 1.5mg/kg
    Repeat at .75 mg/kg (half 1st dose) 3-5 minutes after first dose
16. Search and treat for additional causes

Paramedic — *Follow above protocols and in addition:*

17. Intubation *if indicated*
18. Continue to treat patient per current AHA / ACLS / PALS guidelines

PEDIATRIC Cardiac Arrest

This protocol is a guide for Cardiac arrest management, follow current AHA standards

EMR *Initial Considerations*

1. Assess pulse/ breathing: Limit Check for no more than 10 seconds
2. Initiate CPR per current AHA Guidelines
3. Insert appropriate airway device as available: (OPA / NPA / Pocket Mask / BVM)
4. Ventilate patient with BVM on **O2** @ 15 LPM as soon as available
5. **Attach AED** as soon as it is available, ensure patient is clear and "analyze":
   SHOCK advised: *a.)* Clear Patient, *b.)* Press Shock, *c.)* Continue CPR for 2 minutes unless patient becomes responsive
   NO SHOCK advised: *a.)* Continue CPR, *b.)* Reanalyze patient at 2 minutes
6. Continue CPR /AED use until vital signs are restored (ROSC) or resuscitation is terminated
7. Obtain SAMPLE history from bystander/witnesses/ family
8. Package patient, prepare for transport, Consider: Mega-mover/ Scoop/ Backboard/etc.

EMT *Follow above protocols and in addition:*

9. Establish iGel or King Airway; *a.)* Secure device, *b.)* Auscultate lungs & epigastric sounds
10. Establish ETCO2 Monitoring immediately. *Note:* A sudden rise in ETCO2 can indicate ROSC

Advanced EMT *Follow above protocols and in addition:*

11. Establish IV access *with* Balanced Salt Solution. Bolus 500-1000ml. Repeat PRN
12. Consider second IV access when available
13. Secure IO access immediately if unable to readily establish IV ~or~ as secondary access

Intermediate *Follow above protocols and in addition:*

14. Administer **Epinephrine** 0.01mg/kg (max 1.0mg) 1:10,000 every 3 to 5 minutes.
    Continue until vital signs are restored or resuscitation is terminated
15. **If pulseless V-tac or V-fib is identified:** Administer **Amiodarone** 5 mg/kg.
    Repeat second dose after 3 to 5 minutes to a maximum of 300 mg
    If Amiodarone Contraindicated: **Lidocaine** 1.0mg/kg. Repeat as needed, Max total: 3.0mg/kg
16. Search and treat for additional causes

Paramedic *Follow above protocols and in addition:*

17. Intubation *if indicated*
18. Continue to treat patient per current AHA / ACLS / PALS guidelines.

Cardiac Arrest with Pregnancy (>22 weeks)

NOTES & PRECAUTIONS

- Consider early transport prior to achieving ROSC, especially if a mechanical CPR device is available.
- Alert the receiving facility early in order to have an OB team present upon arrival in the emergency department. If you have not achieved ROSC, go to the closest facility regardless of OB capabilities.
- If ROSC has been achieved and maintained prior to, or during transport, continue to the nearest hospital.
- Lidocaine is preferable (Class B in Pregnancy) to amiodarone (Class C in Pregnancy) in the setting of ventricular fibrillation or pulseless ventricular tachycardia.
- In the setting of ventricular fibrillation or pulseless ventricular tachycardia, no adjustments need to be made to defibrillation energy settings. Immediately following defibrillation, resume the left lateral uterine displacement.
- If mechanical CPR is in place, continue the left lateral uterine displacement by tilting the backboard 30° to the left or by continuing manual displacement.
- If ROSC is achieved continue left lateral uterine displacement by placing the patient in the left lateral decubitus position or by manually displacing the gravid uterus.
- High flow oxygen needs to be maintained in all peri-arrest patients
- Consider OG placement when possible.

1. Manage rhythm per appropriate cardiac algorithm (V-Fib/Pulseless VT, PEA, Asystole)
2. CPR with continuous Manual left lateral uterine displacement using the two-hands method shown below.

3. Ensure BVM ventilations are with high flow oxygen utilizing a two-handed technique to prevent gastric inflation. Suction should be readily available.
4. Early transport is preferable regardless of ROSC status. The gravid uterus must remain displaced during transport. Continue the two-handed technique for uterine displacement (except in the presence of mechanical CPR when the patient can be attached to a board and the board lifted 30 degrees in a left lateral decubitus position). Transport to the closest facility.
5. IV/IO access should be above the diaphragm (Humeral IO or external jugular access is preferred).
6. Intubation should be managed with an endotracheal tube if possible and be performed by the most experience provider using VL if possible. Consider using an endotracheal tube 1-2 sizes smaller than you would normally use.

Cardiac Arrest- Post Resuscitation

NOTES & PRECAUTIONS

- Hyperventilation reduces venous return and may cause hypotension. Additional causes of post-resuscitation hypotension include hypovolemia and pneumothorax, especially in the presence of positive pressure ventilation.
- The condition of post-resuscitation patients fluctuates rapidly, and they require close monitoring.
- Do not use amiodarone or lidocaine in perfusing patients without OLMC approval in the following situations:
    1. Systolic BP is less than 90 mmHg.
    2. Heart rate is less than 50 beats per minute.
    3. Periods of sinus arrest are present.
    4. Second or third-degree heart block are present.
- For transgender and non-binary patients, use sex assigned at birth for 12-lead ECG

Once you have obtained ROSC (return of spontaneous circulation) follow these guidelines:

EMT *Initial Considerations*

1. Consider a supraglottic airway.
2. Titrate oxygen to the lowest level required to achieve an Sp02 >94%.
3. Monitor EtCO2(Normal range is 35-40 mmHg). Do not hyperventilate (ideal rate is 10-12 breaths/min).

AEMT &Intermediate *Initial Considerations*

4.Establish IV or IO if one has not been established yet.
5. If Patient is hypotensive (systolic BP <90 mmHg or MAP <65 mmhg) follow Shock protocol. Goal is to maintain a mean arterial pressure (MAP) >65 mmHg.

Paramedic *Initial Considerations*

6. Intubate PT if indicated.
**If an anti-dysthymic was used AND it was the last anti-dysrhythmic given prior to obtaining ROSC, redose 30 minutes after ROSC with amiodarone, 150 mg over 10 minutes
** If no anti-dysrhythmic given prior to ROSC– Give **either** lidocaine bolus 1.5 mg/kg and re-bolus with lidocaine 0.75 mg/kg every 10 minutes **or** give amiodarone 150 mg over 10 minutes.
** If lidocaine was the last anti- dysrhythmic given – Give lidocaine0.75 mg/kg every 10 minutes.
7.Perform 12 lead ECG (Ideally no more than 8 minutes after ROSC).
8. Transport all patients with ROSC to a hospital with emergent interventional capability.
9. If arrest re-occurs, treat *per* Cardiac Arrest Protocols.

Bradycardia

This protocol is a guide for Cardiac arrest management, follow current AHA standards

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. If pulse less than 50bpm and unconscious and/or BP less than 40 systolic: *Initiate* CPR Protocol
3. Protect airway as needed, *Consider:* BVM, Suction, OPA, or NPA
4. **Oxygen** as needed to maintain O2 sats between 94% & 99% (2-6 LPM NC / 12-15 LPM NRB)
5. Let patient rest in position of comfort
6. Obtain baseline vital signs; Reassess Vitals as Needed
7. Obtain SAMPLE history

Advanced EMT — *Follow above protocols and in addition:*

8. Establish IV access *with* Balanced Salt Solution @ TKO
9. ECG monitor

Intermediate — *Follow above protocols and in addition:*

10. Consider IO access if unable to secure IV *if necessary*
11. If patient has heart rate less than 60 bpm AND any of the following: Cardiac chest pain, difficulty breathing, decreased LOC, hypotension, shock, pulmonary edema, CHF
    a.) Administer **Atropine** 1.0 mg every 3-5 minutes; Max total of 3 mg.

4 Lead ECG monitor must be available prior to medication administration

Paramedic — *Follow above protocols and in addition:*

12a. **Unstable patient**:

DO NOT delay transcutaneous pacing while awaiting IV access or for atropine to take effect
Consider sedation with Versed 2.5-5mg before pacing (Time permitting)

12b. **Stable Patient**:

Patient with HR <60bpm without serious signs or symptoms
Asymptomatic bradycardia with type II 2nd or 3rd degree AV heart block

a) Prepare for transcutaneous Pacing incase patient becomes unstable / symptomatic
b) If patient is asymptomatic with bradycardia, not type II 2nd or 3rd degree AV heart block:
   I. Observe and re-assess
   II. If patient becomes symptomatic, treat as: Unstable patient

PEDIATRIC Bradycardia

- This protocol is a guide for Cardiac arrest management, follow current AHA standards
- Consider blow-by Oxygen administration (10 LPM) for a pediatric patient that may not tolerate a mask

EMR & EMT *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, *Consider:* BVM, Suction, OPA, or NPA
3. **Oxygen** as needed to maintain O2 sats between 94% & 99% (2-6 LPM NC / 12-15 LPM NRB)
4. Consider Ventilation with BVM and O2 @15LPM if spontaneous ventilations are not adequate
5. If poor perfusion and/or hypotension still exists despite oxygenation and ventilations:
   Perform Chest compressions & *Initiate CPR Protocol*
   Infant with heart rate less than 80 per minute
   Child with heart rate less than 60 per minute
6. Obtain baseline vital signs: Reassess Vitals as Needed
7. Obtain SAMPLE history

Advanced EMT *Follow above protocols and in addition:*

8. Establish IV access: *with* Balanced Salt Solution @TKO
9. Consider IO access if unable to readily secure IV or patient is in severe symptoms:
   (Shock, changes in mentation, hypotension)

Intermediate *Follow above protocols and in addition:*

10. ECG monitor **4 lead heart monitor must be available prior to medication administration*
11. Bradycardic: Administer **Atropine** 0.02mg/kg. May repeat once. Maximum dose: 0.5mg

Paramedic *Follow above protocols and in addition:*

12. Dysrhythmias: Treat *per* protocol
13. Consider Intubation to control airway and respiratory rate
14. Administer **Epinephrine** 0.01mg/kg 1:10,000 ~or~ Epi 0.1mg/kg 1:10,000 ET tube
    Repeat Epinephrine dose every 3-5 minutes as needed
15. Consider Transcutaneous Pacing

Transcutaneous Pacing

INDICATIONS

- Transcutaneous pacing should be considered in bradycardia with evidence of inadequate perfusion, (e.g., altered mental status, chest pain, hypotension, other signs of shock.)

NOTES AND PRECAUTIONS

- Transcutaneous pacing should not be used in the following settings:
  - Asystole
  - Patients meeting Death in the Field criteria.
  - Patients in traumatic cardiac arrest.

Paramedic *Initial Considerations*

1. Ensure ECG pads are attached, and monitor displays a rhythm.
2. Attach pacing electrodes to anterior and posterior chest just to the left of the sternum and spinal column, respectively. Alternatively, pads may be placed in the standard anterior and lateral position as with defibrillation. If there is difficulty in obtaining capture, try alternative position.
3. Begin pacing at a heart rate of 80 beats per minute and 30mA current output.
4. Increase current by increments of 10mAs while observing monitor for evidence of electrical capture. Confirm mechanical capture by checking pulses and BP.
5. If patient is comfortable at this point, continue pacing. If patient is *un*comfortable, administer midazolam 2.5 - 5 mg slow IV/IO push or if no IV, 5 mg IM/IN.
6. If patient still complains of pain, repeat dose of midazolam once and contact OLMC.
7. If the patient remains unconscious during pacing, assess capture by observing the monitor and evaluating pulse and blood pressure changes. In the event of electrical capture and no pulses, follow PEA protocol.

If there is no response to pacing and drugs, consult with OLMC. If a change in pacing rate is desired, contact OLMC

PEDIATRIC Transcutaneous Pacing

INDICATIONS

- Transcutaneous pacing should be considered in bradycardia with evidence of inadequate perfusion, (e.g., altered mental status, chest pain, hypotension, other signs of shock.)

NOTES AND PRECAUTIONS

- Transcutaneous pacing should not be used in the following settings:
  - Asystole
  - Patients meeting Death in the Field criteria.
  - Patients in traumatic cardiac arrest.

Paramedic *Initial Considerations*

1. Ensure ECG pads are attached, and monitor displays a rhythm.
2. Attach pacing electrodes to upper Right Chest and lower Left Chest.
   ** Use anterior/posterior pad placement first for patients less than 1 year old.
3. Begin pacing at smallest mA output.
4. Increase current by increments of 10mAs while observing monitor for evidence of electrical capture. Confirm mechanical capture by checking pulses and BP.
5. Contact OLMC for adjustments to rate based on age and response to pacing.

Congestive Heart Failure with Pulmonary Edema

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, *Consider:* BVM, Suction, OPA, or NPA
3. **Oxygen** as needed to maintain O2 sats between 94% & 99% (2-6 LPM NC / 12-15 LPM NRB)
4. Obtain baseline vital signs; Reassess Vitals as Needed
5. Assess lung sounds, if crackles are heard & able: Have patient sit upright and dangle legs
6. Obtain SAMPLE history

EMT — *Follow above protocols and in addition:*

7. If patient is in respiratory distress: Consider **CPAP** starting at 10cm H20

Advanced EMT/ Intermediate — *Follow above protocols and in addition:*

8. Establish IV access *with* Balanced Salt Solution @ TKO ~*or*~ Saline Lock
9. ECG monitor

Paramedic — *Follow above protocols and in addition:*

11. Confirm patient has not taken Viagra® or Cialis®
    Administer **Nitroglycerin** 0.4mg spray if systolic BP remains ≥100
12. If BP remains >100 and pulmonary edema persists, Continue Nitroglycerin 0.4mg
    every 5 = minutes
13. If patient cannot protect their airway or respirations are <8 BPM: Consider Intubation

Adult Tachycardia

MEDICATION PRECAUTIONS

- Diltiazem contraindicated in patients with WPW
- Use caution if administering Diltiazem on patients taking beta blockers
- Any patient with wide complex tachycardia who converted (either chemically or by electricity needs an antiarrhythmic bolus and a drip

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, *Consider:* BVM, Suction, OPA, or NPA
3. **Oxygen** as needed to maintain O2 sats between 94% & 99% (2-6 LPM NC / 12-15 LPM NRB)
4. Obtain baseline vital signs; Reassess Vitals as Needed
5. Obtain SAMPLE history

Advanced EMT Intermediate — *Follow above protocols and in addition:*

6. Establish IV (*Consider* large bore) access *with* Balanced Salt Solution @TKO
   Consider: fluid bolus of 500ml
7. Direct patient to perform **Vagal** (Valsalva) Maneuvers
8. ECG monitor

Paramedic — *Follow above protocols and in addition:*

10a. **UNSTABLE PATIENT**

Patient with Ventricular rate >150: Patients with any of all of the following:
Chest pain, SOB, Decreased LOC, SBP<90, shock, pulmonary edema, CHF, ischemia, AMI

a.) *Consider* sedation **Administer Versed 2.5-5mg** ~or~ **Etomidate 0.15mg/kg** no >10mg
DO NOT delay cardioversion for sedation

	QRS Complex	Rhythm	Cardioversion	Joules
→	Regular, Narrow	SVT, Atrial Flutter	Synchronized (biphasic)	50 -100 J
→	Irregular, Narrow	Atrial Fibrillation	Synchronized (biphasic)	120 - 200J
→	Regular, Wide	Monomorphic VT	Synchronized (biphasic)	100J
→	Irregular, Wide	Polymorphic VT	Unsynchronized (biphasic)	120 - 200J

b.) If Tachycardia persists/recurs, continue to stable treatments

Adult Tachycardia (cont.)

10b. **STABLE PATIENT**

a.) **Wide Complex Tachycardia, Ventricular rate >150, QRS>0.12 seconds**

I) Wide Complex: Administer Amiodarone 150mg over 10 minutes

If Wide Complex tachycardia persists after 10 minutes: Repeat dose once

If amiodarone contradicted: Lidocaine 1.0-1.5mg/kg

If Wide Complex tachycardia persists after 10 minutes: Repeat dose once

If patient converts after bolus start Lidocaine infusion 2-4mg per min

II) Monitor patient. If tachycardia persists/recurs: Magnesium Sulfate 2.0 grams slow push

b.) **Narrow Complex Tachycardia, Ventricular rate >150, QRS<0.12 seconds**

I) Direct patient to perform Valsalva maneuver

a) If VT persists: Adenosine 6.0mg rapid Push over 1-3 seconds
Follow immediately with NS 20ml rapid Push, using the 2 syringe method

b) If VT persists after 2 minutes: Adenosine 12mg rapid Push over 1-3 seconds
Follow immediately with NS 20ml rapid push using 2 syringe method, may repeat once

c) If SVT persists: Synchronized Cardioversion as for unstable patients

d) Wait 15 – 30 minutes and if atrial fibrillation/flutter persists: Contact OLMC

PEDIATRIC Tachycardia

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, *Consider:* BVM, Suction, OPA, or NPA
3. **Oxygen** as needed to maintain O2 sats between 94% & 99% (2-6 LPM NC / 12-15 LPM NRB)
4. Obtain baseline vital signs: Reassess Vitals as Needed
5. Obtain SAMPLE history

Advanced EMT — *Follow above protocols and in addition:*

6. Establish IV (*Consider* large bore) access *with* Balanced Salt Solution @TKO
   Consider fluid bolus of 20 ml/kg

Intermediate — *Follow above protocols and in addition:*

7. ECG monitor
8. Direct patient to perform **Vagal** (Valsalva) Maneuvers If able to do so

Paramedic — *Follow above protocols and in addition:*

9. **Treatments:**

Unstable Child with Ventricular Rate >180 / /Infant >220

Wide complex:

a) Synchronized cardioversion 0.5 -1J/kg (biphasic or monophasic)
b) Repeat 2J/kg as needed. Consider Amiodarone 5mg/kg over 20-60 minutes
c) Contact OLMC for advice (If time permits)

Narrow complex and probably SVT:

a) Synchronized Cardioversion 0.5 -1J/kg
b) Biphasic or monophasic) repeat 2J/kg as needed
c) Otherwise, search and treat for causes
d) Contact OLMC for advice (If time permits)

Stable Child:

a) Monitor and search for causes
b) Contact OLMC (If time permits)

Procedure LUCAS® – Chest Compression System

INDICATIONS

For use on adult sized patients in cardiac arrest when 2 handed CPR would normally be performed

CONTRAINDICATIONS

Patients with excessive torso size that won't allow the Lucas Device to "click" into the backplate
Patients with too small of a torso that places the piston at its max lowered setting

SPECIAL NOTES

- Never connect the device to power without a battery installed
- The device is capable of running from shore power, but the battery will not charge
- Battery indicator lights are at 15-minute increments, a full battery has a 45-minute run time
- A Seaside Fire & Rescue EMS provider will accompany any patient in transport and at the ER who has the Lucas device compressing to assist in any questions or operation of the device
- Ensure PCR documentation includes correct placement of the suction cup and operation of the device. Statements may include "position verified with suction cup over patient's midline at the anatomical nipple line
- Case studies have described patients regaining consciousness while compressions are being performed via the Lucas device. EMS providers must monitor the patient and use their best judgment to discontinue or restart compressions / CPR in accordance with current AHA guidelines
- Sedation may be appropriate for these patients: Paramedics, Versed 2.5mg to 5mg IV

PROCEDURE

1. Provide care and interventions for the patient
2. Grab Lucas Device and follow the initial steps of: ***ABC, 123***

[A] **Activate** the device. Open the backpack and turn on the power button

[B] **Backplate** .Coordinate with Compressor to place the backplate behind (under) the patient below the sternum while limiting pause time between compressions.

[C] **Click-it**. Attach the Lucas to the backplate, your side first (preferably with buttons toward you), then click to the opposite of the patient. Attempt to do this through the arms of the compressor.

[1] Press the **"1" button** and adjust the suction cup to the patient's chest. Optimal placement is on the sternum, midline on the body directly between the anatomical nipple line.

[2] Press the **"2" button** (pause) to lock in the start position.

[3] Press the **"30:2"** button to start compressions.

3. Assess placement of the suction cup, if necessary, pause the device, adjust placement and resume compressions. Continue to reassess and readjust as often as needed.
4. Secure the neck strap to minimize device movement.
5. Secure PT's hands *when able* to the device to minimize movement.
6. After successful placement of an advanced airway the **"3"** or **"Play"** button can be used for continuous compressions.

Left Ventricular Assist Device LVAD

Considerations for All Providers

Call LVAD Center:

- St. Vincent Medical Center: 971-678-4042

SPECIAL NOTES

- If Patient is in cardiac arrest, **DO NOT USE MECHANICAL CPR**
- Do NOT place defibrillation pads directly over the pump or AICD/Pacemaker (consider anterior/posterior placement).

PROCEDURE

- Consult the person with the Patient. They should have received training on the device
- If a patient with an LVAD is having a medical emergency, it does not necessarily mean that it is a device issue. Consider the whole clinical picture and perform a thorough patient assessment, including device function. Infection, volume depletion, stroke, bleeding, and dysrhythmias may be the cause of patient's symptoms. Most LVAD patients are anticoagulated and are at risk for bleeding complications.
- Standard blood pressure devices may not work. If unable to obtain a blood pressure, consider using the following, if available, to estimate perfusion pressure:
  - End-Tidal CO_2 - Expected values should be between 35 – 45 mmHg.
  - Doppler cuff pressure - Estimates the mean arterial pressure. The goal range for Doppler MAP is > 60 and less than 90.
  - Other clinical signs – Capillary refill, mental status
- Auscultate heart sounds to determine if the device is functioning. Both the HeartWare HVAD® and HeartMate II®, are continuous flow devices and you should hear a "whirring" sound". Because these devices diminish pulsatile flow in the circulation, peripheral pulses may not be palpable. The HeartMate III®, although continuous flow, may provide artificial pulsatility (as well as a pulsatile hum) due to the addition of intermittent speed reduction which was designed into the device. Since this artificial pulse is not synchronized with the patient's heart rate, it may augment or diminish the native pulse. If a pulse is palpable, a BP can be attempted.
- When using a Cardiac monitor, a reliable ECG may be obtained. Because the LVAD creates continuous flow independent of left heart function, not all arrhythmias will be symptomatic, including ventricular arrhythmias. If a patient requires defibrillation, leave the pump running and all components in place. The LVAD does not interfere with electrical conduction. In general, LVAD patients also have an AICD/Pacemaker.

Seaside Fire & Rescue Medical Protocols

Medical Emergencies

Acute Abdomen

CONSIDERATIONS

- Acute Abdomen refers to pain not caused by injury/ trauma
- Anticipate vomiting in these patients
- Common causes may include:
  - Bacterial Contamination
  - Peritonea inflammation
  - Obstruction
  - Bleeding
- Common diseases than may be life threatening
  - Acute Myocardial Infarction (AMI)
  - Ruptured organ
  - Ruptured ectopic pregnancy
  - Ruptured Abdominal aortic aneurysm
- Common causes that are not typically life threatening
  - Peptic ulcer disease
  - Gastritis
  - Pneumonia
  - Pancreatitis
  - Diverticulitis
  - Kidney Stones or infection
  - Pelvic inflammatory disease
  - Appendicitis
  - Cholecystitis
  - Abdominal wall hernia

EMR and EMT — *Initial Considerations*

Caution: DO not allow the patient to eat or drink (NPO)

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs: Reassess Vitals as Needed
5. Treat *per* Shock protocol as needed
6. Obtain SAMPLE History
7. Carefully evaluate the abdomen (focused physical exam)
8. Investigate and treat other illness or injuries *per* appropriate protocol(s)

Advanced EMT Intermediate — *Follow above protocols and in addition:*

9. Establish IV access *with* Balanced Salt Solution. Titrate to systolic BP of 90 mmHg
10. Administer a blood draw *if able* and send samples with transporting ambulance
11. Consider 2nd IV
12. ECG monitor

Paramedic — *Follow* above protocols and in addition:

13. Consider Pain management

Epistaxis

CONSIDERATIONS

- Anticipate Vomiting
- Use Eye Protection as patient may inadvertently spit blood when speaking

EMR & EMT *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Have patient sit up and lean forward slightly. DO NOT allow blood to drain into stomach
3. Protect airway. **Suction mouth and oropharynx as needed**
4. Have Patient pinch anterior cartilaginous portion of the nose firmly, and
   a.) DO NOT RELEASE PRESSURE FOR AT LEAST 10 MINUTES
   b.) DO NOT ALLOW PATIENT TO BLOW THEIR NOSE
5. Obtain baseline vital signs: Reassess Vitals as Needed
6. **Oxygen** if needed. *Consider* blow-by oxygen 10 LPM directed into patient's mouth
7. Treat *per* Shock protocol as needed
8. Obtain SAMPLE History
9. Investigate and treat for any other injuries or illnesses *per* appropriate protocol(s)

Advanced EMT / Intermediate / Paramedic *in addition:*

10. Prolonged bleeding or hypotensive: Establish IV access *with* Balanced Salt Solution @TKO

PEDIATRIC Fever

EMR *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Anticipate Vomiting
3. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Obtain baseline vital signs: Reassess Vitals as Needed
6. Obtain SAMPLE history. Investigate recent illnesses, doctor visits, vaccinations
7. If Rectal temperature is >100ºF, or sings of febrile seizure:
    a. Remove clothing / blankets and bring to room temperature
    b. Do not allow child to become cold. Protect from chills /shivering
8. Investigate and treat for any other injuries or illnesses *per* appropriate protocol(s)

EMT *Follow above protocols and in addition:*

9. **Determine Blood Glucose** ASAP. If indicated treat *per* Hypoglycemia protocol

Advanced EMT *Follow above protocols and in addition:*

10. Establish IV access *with* Balanced Salt Solution @TKO

Warning: Do not attempt IV if it raises patient's anxiety and is counterproductive to patient care

11. Establish IO *if* necessary and unable to secure IV access
12. ECG Monitor

Paramedic *Follow above protocols and in addition:*

13. If patient is or has seizure: **Midazolam** 0.1-0.2 mg/kg IVP/ IM/IO. Repeat as needed

Hyperglycemia

- Common Symptoms: Frequent urination coupled with intense thirst and drinking.
- Blurred vision may be symptom due to osmotic changes in the fluid of the eye.
- Hyperglycemia tends to progress rapidly (from minutes to hours).

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
3. Obtain baseline vital signs: Reassess Vitals as Needed
4. Obtain SAMPLE history:
    a.) Inquire History of: Diabetes, last meal, last intake of medication
    b.) Known diabetics: consider DKA should associated signs and symptoms be presented
5. Other signs and symptoms: *Treat* per appropriate protocol

EMT — *Follow above protocols and in addition:*

6. **Determine Blood Glucose** ASAP. Readings of "high" typically equate to BGL >500 mg/dL

Advanced EMT Intermediate — *Follow above protocols and in addition:*

7. Establish IV access *with* Balanced Salt Solution @TKO
8. If Blood Glucose >300 mg/dL: Administer 250ml – 500ml saline bolus. May repeat Bolus x2
9. Recheck Blood glucose levels after 5 minutes.
10. If no response to treatments: *Consider* Altered Mental Status protocol
11. ECG Monitor

Paramedic — *Follow above protocols and in addition:*

12. Dysrhythmias; *Treat* per appropriate protocol

Diabetic Ketoacidosis (DKA)

CONSIDERATIONS

- DKA is a metabolic condition consisting of: hyperglycemia, dehydration, and the accumulation of ketones and ketoacids in the body.
- Usually a relatively slow onset, symptoms may become worse over a matter of hours to days.
- DKA has been mistaken for Alcohol intoxication
- Distinguishing DKA in the field is difficult

SIGNS AND SYMPTOMS OF DKA

- Weakness
- Abdominal Pain
- Thirst
- Rapid, weak pulse
- Nausea and Vomiting
- Frequent Urination
- Rapid, deep, sighing respirations (Kussmaul)
- Alterations in the level of consciousness
- Fruity, acetone like odor to the breath
- Normal or mildly decreased blood pressure

EMR & EMT — *Initial Considerations*

1. Treat patient *per* Hyperglycemia protocol and in addition:
2. Treat *per* Shock protocol as needed, expect patient to be altered from normal mentation
3. Investigate and treat for any other injuries or illnesses *per* appropriate protocol(s)

Advanced EMT Intermediate Paramedic — *Follow above protocols and in addition:*

8. Established IV; Administer 500ml saline bolus
9. Consider second (large bore) IV access *with* Balanced Salt Solution
10. Administer a blood draw *if able* and send samples with transporting ambulance

Hypoglycemia

- Patients who refuse transport to the hospital should be encouraged to ingest "long term" carbohydrates, as the interventions provided by EMS are usually short acting and hypoglycemia may recur rapidly.
- DO NOT rely on patient's continuous Blood Glucose Monitoring (CGM) system for an accurate blood glucose reading, inaccurate readings are possible do to calibration errors and/or delays since they monitor glucose in the fluid of the cells instead of testing blood.

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs: Reassess Vitals as Needed
5. Obtain SAMPLE history: Inquire History of: Diabetes, last meal, last intake of medication
6. If patient has altered mental status and is able to swallow and can protect their own airway; and if Hypoglycemia is suspected: **Administer Oral Glucose 30 gm by mouth**.
   It is recommended to first obtain a Blood Glucose reading

EMT — *Follow above protocols and in addition:*

7. Determine Blood Glucose ASAP
8. If Blood Glucose < 60 mg/d: If patient is able to swallow and can protect their own airway:
   Administer Oral Glucose 30gm by mouth.
9. Recheck Blood Glucose every 5 minutes after treatment.

Advanced EMT — *Follow above protocols and in addition:*

10. Establish IV access *with* Balanced Salt Solution @TKO
11. If Blood Glucose < 60 mg/dL: **Administer D50W 25 gm** slow IV
12. If IV cannot be established: **Administer Glucagon 1.0 mg** IM or SQ *If available*. Continue to attempt IV after glucagon and if able: **Administer D50W 25 gm**
13. ECG Monitor
14. No response to treatments; *Consider* Altered Mental Status protocol

Intermediate — *Follow above protocols and in addition:*

15. If unable to obtain IV *and if needed* establish IO Access: **Administer D50W 25 gm**

Paramedic — *Follow above protocols and in addition:*

16. Suspected chronic alcohol abuse: **Administer Thiamine 100mg** IVP directly after D50W

PEDIATRIC Hypoglycemia

EMR *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs: Reassess Vitals as Needed
5. Obtain SAMPLE history: Inquire History of: Diabetes, last meal, last intake of medication
6. If patient has altered mental status and is able to swallow and can protect their own airway; and if Hypoglycemia is suspected: Administer **Oral Glucose** 30 gm by mouth
   It is recommended to first obtain a Blood Glucose

EMT *Follow above protocols and in addition:*

7. Determine Blood Glucose ASAP
8. If patient has altered mental status and is able to swallow and can protect their own airway:
   If Blood Glucose < 60 mg/dL Administer **Oral Glucose** 30gm by mouth
9. Recheck Blood Glucose every 5 minutes after treatment

Advanced EMT Intermediate Paramedic *Follow above protocols and in addition:*

10. Establish IV access *with* Balanced Salt Solution @TKO
    *If patient >20kg (44 lbs.) & IV cannot be established: **Glucagon** 0.5-1.0mg IM or SQ
11. If unable to obtain IV *and if needed* establish IO Access. Continue to try for IV Access
12. Dextrose administration, slow push IV/IO
    a. Infant: BGL less than 60: **D25** (Mix D50 1:1 with NS) 2 ml/kg
    a. Neonate: BGL less than 40: **D10** (Mix D50 1:4 with NS) 2ml/kg
13. Recheck Blood Glucose every 5 minutes after treatment.
14. No response to treatments; *Consider* Altered Mental Status protocol

Sepsis (Septic Shock)

- **Sepsis** is an infection coupled with System Inflammatory Response Syndrome (SIRS), a highly dangerous condition with a mortality rate of over 30%.
- Suspect sepsis if:
  1. Suspected infection
  2. Two or more of the following:
     a. Temperature greater than 100.4 or less than 96.8ºF
     b. Respiratory rate greater than 20
     c. Heart rate greater than 90
  3. ETCO2 equal or less than 25mmHg

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs; Reassess Vitals as Needed
5. Take Oral or Tympanic Temperature (if able)
6. Obtain SAMPLE History, including recent illness/infection, recent trauma, surgeries, etc.
7. Treat *per* Shock protocol as needed
8. Other signs and symptoms, *Treat* per appropriate protocol(s)

EMT — *Follow above protocols and in addition:*

9. **Determine Blood Glucose**; *Treat* per Hypoglycemia protocol if indicated

Advanced EMT & Intermediate — *Follow above protocols and in addition:*

10. Establish IV *with* Balanced Salt Solution 500-100ml bolus to maintain systolic BP of 90
    Give boluses in rapid succession if needed. Caution when exceeding 2000ml total.
11. Consider second IV *with* Balanced Salt Solution
12. Administer a blood draw *if able* and send samples with transporting ambulance
13. If signs of shock (hypotension, poor perfusion, changes in mentation), or clinical indicators of sepsis, **administer 500-1000 ml of Sodium Chloride 0.9% rapidly**
14. ECG Monitor

Paramedic — *Follow above protocols and in addition:*

15. If BP remains <90 despite adequate fluid resuscitation:
    Administer dopamine 5- 20mcg/kg/min if available. Target SBP >90

Sexual Assault

CONSIDERATIONS

- **Warning:** Patient may be very apprehensive about treatments / procedures. Do not press them for answers or treatments if they are unwilling.
- Partners/ chaperone/ police shall be in the same room during all patient contacts
- If able a provider of the same sex should take primary patient care

All Providers

1. Ensure Law Enforcement is contacted and arriving on scene
2. Assess: Airway, Breathing, Circulation & Neurologic status
3. Obtain baseline vital signs: Reassess Vitals as Needed
4. Treat *per* Shock protocol as needed
5. Other injuries, signs and symptoms: *Treat* per appropriate protocol(s)
6. Obtain SAMPLE history
   - ❖ If Patient is embarrassed or unwilling to answer questions regarding assault
     Restrict questioning to past medical history, medications, etc.
   - ❖ Patient may be unwilling to answer any questions – Do Not press for Answers
7. Provide emotional support for patient. Consider asking patient if they would like someone contacted: chaplain, family, religious contacts patient may have, etc.
8. Maintain chain of evidence
   a.) Advise patient to not bathe, clean, change clothing, etc.
   b.) Work with Law Enforcement to ensure any clothing involved in the incident already removed is collected in a paper bag

Shock / Hypotension

CONSIDERATIONS

- Shock is the body's response to inadequate delivery of oxygen (poor perfusion) to body tissue.
- **5 major types of shock**
  - Hypovolemic shock: Loss of blood or fluid volume from the body
  - Cardiogenic Shock: failure of the heart
  - Neurogenic shock: Nervous system is no longer able to control blood vessel diameter
  - Anaphylactic Shock: Interaction of an allergen, called an antigen with one kind of antibody.
  - Septic Shock: An infection that results in massive vasodilation of the circulatory system

Considerations for All Providers

- **Shock is usually is usually caused by one or more of the 3 primary mechanisms:**
  a.) Fluid loss b.) Significant vasodilation c.) Pump failure

- **Shock is defined in the field by a combination of:**
  - Altered Level of Consciousness
  - Capillary refill greater than 2 seconds
  - Weak or absent distal pulses
  - Rapid Pulse
  - Cool Extremities
  - Hypotension

1. Shock can result from any illness or injury. Investigate and treat per the appropriate protocol(s)
2. After initial assessment treat early; Monitor mental status, respiratory effort and skin color
3. Secure and maintain a patient airway ad provide adequate oxygenation and ventilation
   Administer **Oxygen** to maintain O2 saturations between 94% & 99%
4. Control external bleeding
5. Obtain vitals frequently (attempt every 5 minutes); pulse, respirations, BP, and capillary refill
6. Provide warming for the patient
7. Place patient supine. If BP less than 90mm Hg systolic and no trauma mechanism:
   Position patient supine with legs elevated 8-12 inches (not Trendelenburg)
8. IV or IO fluids maintain blood pressure. Titrate 90mmHg Systolic
   Adult: Fluid bolus 250-500 ml NaCl 0.9%. Repeat If no change
   Pediatrics: Fluid bolus 20ml/kg (10mL/KG for neonates). Repeat as needed
9. Monitor Lung sounds frequently for developing pulmonary edema

Vomiting

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. Consider and Treat *per* Shock protocol as needed
- **Non traumatic patient**: Position patient to protect from aspiration (lateral recumbent or sitting position and able to lean forward)
- **Trauma Patient/ suspected spinal injury**: Log roll patient while maintaining manual, in-line c-spine immobilization or if patient is secured to a backboard tilt the board to protect airway.
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Obtain baseline vital signs: Reassess Vitals as Needed
6. Obtain a SAMPLE History
7. Other signs and symptoms; *Treat* per appropriate protocol

EMT — *Follow above protocols and in addition:*

8. Determine Blood Glucose; *Treat* per Hypoglycemia protocol if indicated

Advanced EMT — *Follow above protocols and in addition:*

9. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
10. ECG monitor

Intermediate — *Follow above protocols and in addition:*

11. Active or anticipated vomiting / dizziness: **Ondansetron** 4mg Slow IVP, IM, or PO
    May Repeat every 5 minutes to a maximum 16mg

Paramedic — *Follow above protocols and in addition:*

12. If nausea is persistent: **Phenergan** 12.5 – 25mg diluted with 20 cc saline slow IV/ IO
    Frail & elderly patients: **Reduce dosage** to 6.25mg
    - Monitor patient and record vital signs every 5 minutes after administration
    - If dystonic reaction occurs: Administer **diphenhydramine** 25 – 50mg IV or IM
    - If patient becomes hypotensive: Administer **fluid challenge** 200 – 500ml Saline

Eye Emergencies

CONSIDERATIONS

- Unless contraindicated, patients should be transported in a seated position of at least 30 degrees in order to decrease intraocular pressure.

NOTES

- Document any new onset of blurring, double vision, perceived flashes of light, or any other visual changes.
- Contact lenses should be removed if possible.

Considerations for All Providers

1. Treat *per* Universal Patient Care.
2. Treat specific injuries as follows:

Chemical Burns

a. Avoid contaminating unaffected eye
b. Consult Poison Control if able for specific treatment
c. If you are unable to contact Poison control, consider the general rules:
    i. Dry chemical: Brush off as much chemical as able, then flush
    ii. Liquid chemical: Flush with copious amounts of water / saline
d. If appropriate, irrigate from the center of the eye towards the eyelid with lactated ringers(preferred), isotonic saline, or tap water for at least 30 minutes.
e. Do not attempt to neutralize acids or bases.

Direct Trauma to Eye (Suspected Rupture/Penetration of Globe)

a. Protect the affected eye and its contents with a hard shield or similar device and cover the other eye.
b. Follow Pain management protocol and consider ondansetron, if indicated.

Eye: Blunt Force /Eye damage without penetrating object

a. Perform examination and note injury, reactivity, and damage
b. Cover injured eye – Do not allow gauze to touch exposed vitreous humor (Jellylike substance inside an eye). Use eye shield or cup to keep gauze off eye.
c. Cover both eyes to reduce sympathetic eye movement
d. Avoid causing additional pressure on eye or head

Foreign body to outer eye

a. Do NOT wipe eye.
b. Consider irrigation.

Procedure: Intramuscular Injection

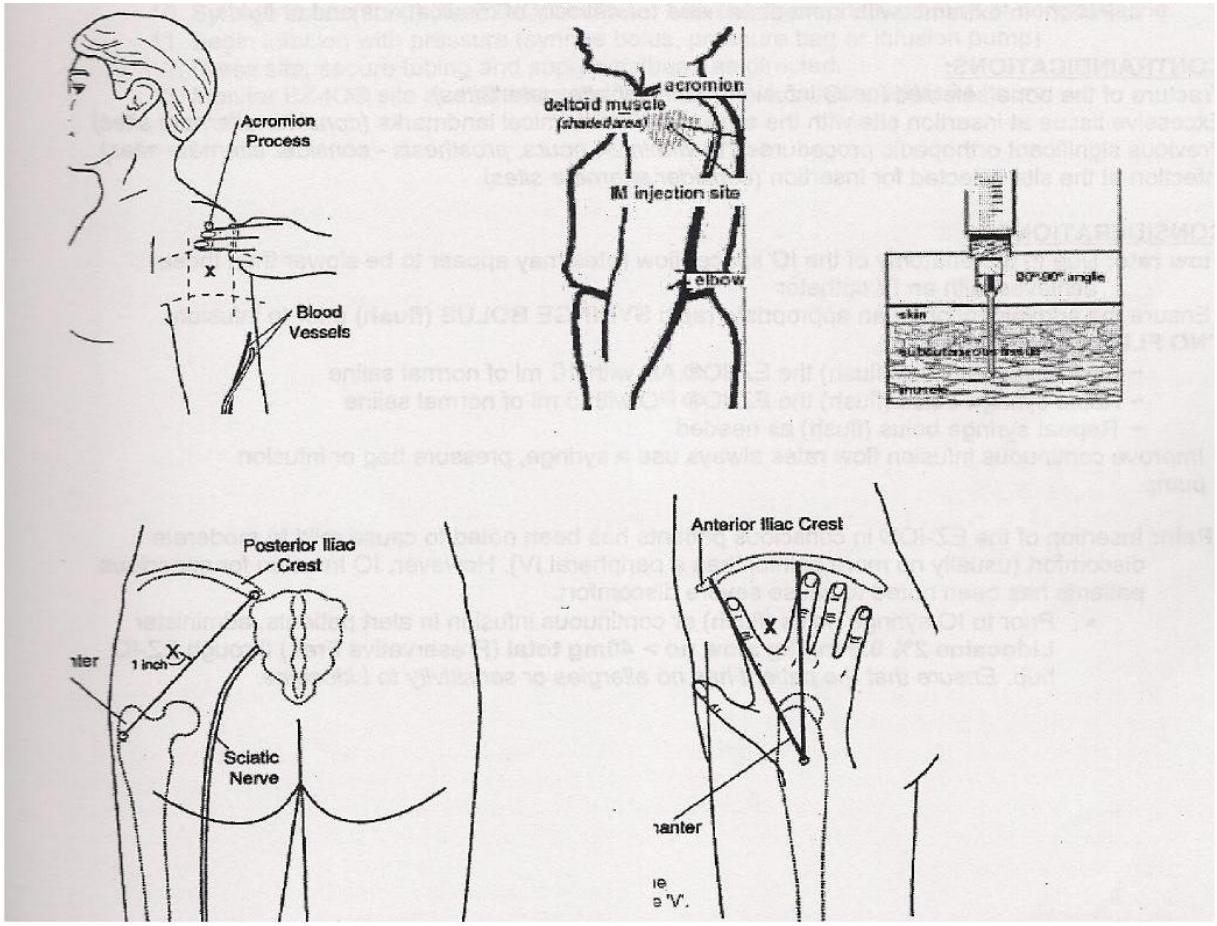
EMT **Advanced EMT** **EMT-Intermediate** **Paramedic**

CONSIDERATIONS

- Medications administered IM must be rotated among the major muscles.
- There is no need to change the needle between injections (on the same person) as long as the skin is adequately swabbed with alcohol.

PROCEDURE

1. Use a needle long enough to reach deep into the muscle.
2. Pinch the skin with your thumb and index finger (see illustrations for puncture sites)
3. Insert needle at an 80º - 90º angle to the skin with a quick thrust.
4. Retain pressure on skin around injection site and slowly administer medication.
   - If blood enters the syringe, remove the needle and choose a new injection site.
   - Multiple injections can be administered in the same extremity however they should be spaced as far apart as possible (minimum of 1 inch)


Acromion Process
Blood Vessels
acromion
deltoid muscle (shaded area)
IM injection site
elbow
skin
Posterior Iliac Crest
1 inch
Sciatic Nerve
Anterior Iliac Crest

Seaside Fire & Rescue Medical Protocols

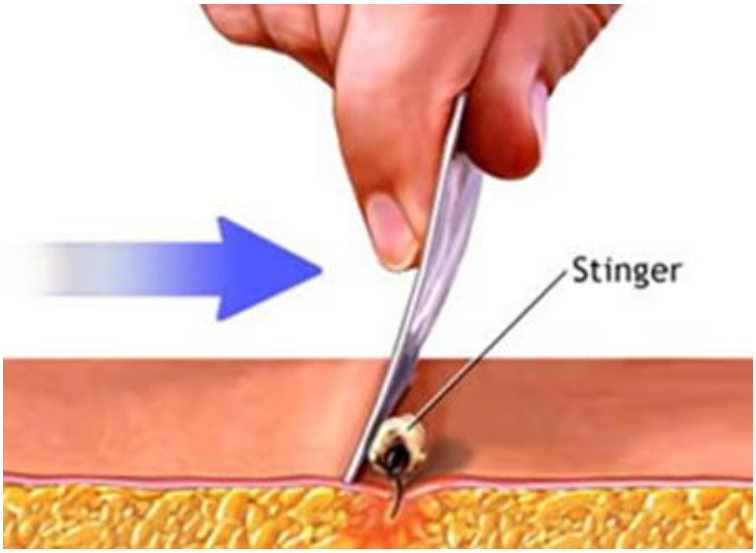
Environmental Emergencies

Allergic Reaction

- **Mild Reaction**: Red itchy skin, hives; and if insect sting present, localized swelling around sting site, with stable vital signs
- Monitor Patient condition for developing anaphylaxis

EMR & EMT — *Initial Considerations*

1. Assess responsiveness and ABCs. Ensure patient is removed from environment causing allergy
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Scrape stinger off stinger if present



5. Obtain baseline vital signs: Reassess Vitals as Needed
6. Treat *per* Shock protocol as needed
7. Obtain SAMPLE history
8. Monitor Patient for anaphylaxis and treat *per* protocol *if* necessary

Advanced EMT — *Follow above protocols and in addition:*

9. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock

Intermediate — *Follow above protocols and in addition:*

10. **Benadryl 25-50 mg** IVP/IO/IM *if* urticaria (hives) or edema is present
    PEDIATRIC: **Benadryl 1 mg/kg.** No more than 50 mg total IVP/IO/IM

Paramedic — *Follow above protocols and in addition:*

12. Dysrhythmias: *Treat* per appropriate protocol

Anaphylaxis

- **Severe Reaction (Anaphylaxis):** Increasing respiratory distress, swelling or constriction of the airway, decreasing blood pressure, profound hives over a large portion of body

EMR — *Initial Considerations*

1. Treat Patient *per* Allergic Reaction protocol and in addition:
2. Patient in respiratory distress or BP <90 Systolic Administer **Auto Epinephrine** pen *if available*

EMT — *Follow above protocols and in addition:*

3. Patient in respiratory distress or BP <90 Systolic: **Epinephrine** 1:1,000 0.3mg-0.5mg IM Repeat as needed every 3-5 mins
4. Monitor lung sounds for pulmonary edema

Advanced EMT — *Follow above protocols and in addition:*

5. Titrate established IV to a systolic BP of 90 mmHg.
6. Consider 2nd (Large bore) IV access *with* Balanced Salt Solution
7. Administer: Nebulizer (**Albuterol** ~or~ **Levalbuterol)** mixed w/ **Atrovent** 500mcg /2.5ml
8. No change in condition: Administer **additional nebulizer** dose *without* Atrovent
9. ECG Monitor

Intermediate — *Follow above protocols and in addition:*

10. If unable to obtain IV establish IO Access

Paramedic — *Follow above protocols and in addition:*

11. If patient cannot protect their airway or respirations are <8 BPM: Consider Intubation
12. Administer:

    Epinephrine 1:10,000, 0.1mg (1ml) slow IVP/IO. Repeat as needed every 3-5 mins
    No >0.5mg. Monitor Heart Rate and for Ventricular ectopy

~or~ **Epinephrine** 1:1,000 0.3mg SQ / IM. Repeat as needed every 3-5 mins

13. If no response to levalbuterol: **Solu-medrol** 125mg IV over 1-2 minutes *If available*
14. If hypotension persists: **Dopamine** 5-20 mcg /kg /min IVP / IO by micro drip or IV pump

PEDIATRIC Anaphylaxis

- **Severe Reaction (Anaphylaxis):** Increasing respiratory distress, swelling or constriction of the airway, decreasing blood pressure, profound hives over a large portion of body

EMR *Initial Considerations*

1. Treat Patient *per* Allergic Reaction protocol and addition:
2. Patient in respiratory distress or BP <90 Systolic Administer **Auto Epinephrine** pen *if available*

EMT *Follow above protocols and in addition:*

3. Patient in respiratory distress or BP <90 Systolic: **Epinephrine** 1:1,000 0.1mg/kg IM
   No more than 0.3mg total SQ or IM injection.
4. Monitor lung sounds for pulmonary edema

Advanced EMT *Follow above protocols and in addition:*

5. Titrate established IV to a systolic BP of 90 mmHg.
6. Consider 2nd (Large bore) IV access *with* Balanced Salt Solution
7. Administer: Nebulizer (**Albuterol** ~or~ **Levalbuterol)** mixed w/ **Atrovent** 500mcg /2.5ml
   Pediatric patients under 1 year old: DO NOT add Atrovent
8. No change in condition: Administer additional nebulizer dose *without* Atrovent
9. If unable to obtain IV establish IO Access
10. ECG Monitor

Paramedic *Follow above protocols and in addition:*

11. If patient cannot protect their airway or respirations are <8 BPM: Consider Intubation
12. Administer:
    Epinephrine 1:1,000, 1.0 mg/250ml D5W (4.0 µgm/ml), 0.1 µgm/kg/min. IV/IO drip**,** titrate to effect, and increase every 1 minute, prn. (Titrate to HR, BP, Ventricular Ectopy)

~or~ **Epi, 1:1,000,** 0.01 mg/kg no > 0.3 mg total, SQ or IM. Repeat q 5 min prn.

~or~ **Epi, 1:10,000,** 0.01 mg/kg no > 0.3 mg total IVP/IO. Repeat q 5 min prn.

~or~ **Epi, 1:1,000,** 0.01 mg/kg no > 0.03 mg total diluted in 2 ml NS. ETT if intubated.

13. If hypertension persists **Dopamine** 5-20mcg/kg/min IV/IO drip *If available*
14. Additional for Insect Stings: **Epi, 1:1,000** 0.2 mg injected at sting site
    Contraindicated for fingers, toes, penis, nose, ears

Frostbite

Superficial Frostbite	Deep Frostbite
• Burning, numbness, tingling, itching or cold sensation. The skin may appear white and frozen, but on palpation it has some resistance. • There is significant pain as the areas are rewarmed and blood flow reestablished. • Tissue may initially appear deceptively healthy. Significant pain and final tissue damage evolve over time	• Sensation is initially decreased then completely lost. Tissue may have swelling and blood-filled blisters over white or yellowish skin that looks waxy and turns a purplish blue as it rewarms. The area has no resistance when pressed on, and may appear blackened or dead • Final amount of tissue damage is proportional to the time it remains frozen, not to the absolute temperature to which it was exposed

- Do not de-thaw / rewarm frostbitten areas if there is a chance for refreezing.
- Typically rewarming frostbitten areas **will not be** done by Pre-hospital providers.
- The most effective method is to rewarm the area quickly in a tub of 104°F water.
- Avoid gradual thaw, keep frostbitten tissue away from heat sources.

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs: Reassess Vitals as Needed
5. Obtain SAMPLE history
5. Treat *per* Shock & Hypothermia protocols as needed
6. Cover involved areas with dry sterile dressings; place gauze between involved fingers or toes
7. Do not attempt rewarming if there is a possibility of refreezing
8. Do not rub the frozen tissue. Friction causes further damage to tissue
9. Leave blisters intact

EMT Advanced — *Follow above protocols and in addition:*

10. Establish IV access *with* Balanced Salt Solution

Intermediate & Paramedic — *Follow above protocols and in addition:*

11. ECG Monitor
12. Consider Pain management

Heat Cramps / Heat Exhaustion

INDICATIONS

Heavy sweating, paleness, muscle cramps, tiredness, weakness, dizziness, headache, nausea or vomiting, fainting, rapid breathing, tachycardia

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Move patient** to cooler environment and remove excess clothing
4. *Consider* applying lukewarm compresses or rags to forehead, neck and extremities
5. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
6. Obtain baseline vital signs: Reassess Vitals as Needed
7. Take Oral or Tympanic Temperature. Repeat every 15 minutes
8. If patient is conscious and able to control their airway:
   Administer Oral Fluids (water) 12oz. for first dose. *If sports drink*: mix 1:1 ratio
9. Obtain SAMPLE History

EMT — *Follow above protocols and in addition:*

10. Obtain Blood Glucose; *Treat* per Hypoglycemia protocol if indicated

EMT Advanced Intermediate Paramedic — *Follow above protocols and in addition:*

11. If symptomatic: Establish IV access *with* Balanced Salt Solution 250-500ml bolus. PRN
12. ECG monitor
13. If patient unable to take oral fluids, is hypotensive; Fluid Bolus 250-500 ml

Heat Stroke

CONSIDERATIONS

- These Patients may have signs and symptoms of: Altered level of consciousness, increased body temperature, no sweating, hot red or flushed dry skin, may collapse or fade in and out of consciousness, show signs of shock, have SOB, and be nauseated or vomiting
- Heat Stroke is an extreme medical emergency. The body is failing to regulate temperature and without rapid cooling the threat brain damage is high

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Move patient** to cooler environment and remove excess clothing
4. High flow **Oxygen** at 12-15 LPM *via* NRB
5. Obtain baseline vital signs, DO NOT delaying cooling patient; Reassess Vitals as Needed
6. Rapid cooling is vital for the patient
   a.) Remove Clothing an place in a cool environment (consider a place with air conditioning)
   b.) Cool patient to at least 102°F by misting and fanning with lukewarm(tepid) water.
   Consider covering patient with sheet soaked in tepid water.
   c. Consider coldpacks in armpits and groin; *but* do not allow for rebound hypothermia
7. Take Oral or Tympanic Temperature. Repeat every 15 minutes
8. Obtain SAMPLE History
9. Investigate and treat other illness or injuries *per* appropriate protocol(s)

EMT — *Follow above protocols and in addition:*

10. Obtain Blood Glucose; *Treat* per Hypoglycemia protocol if indicated

Advanced EMT Intermediate — *Follow above protocols and in addition:*

11. Establish IV access *with* Balanced Salt Solution. Administer 500 -1000ml. Repeat as needed
12. ECG monitor

Paramedic — *Follow above protocols and in addition:*

13. Administer **Midazolam** 2.5mg slow IVP/IM/IO to control shivering while cooling
14. If patient cannot protect their own airway or respirations are <8 BPM; Consider Intubation

Hypothermia

- Handle hypothermic patients gently at all times to minimize tissue damage and cardiac arrhythmias.
- Cut clothing instead of pulling it off
- Causes include environmental exposure, sepsis, and intracranial hemorrhage.
- Consider placing heat pack in groin and axilla, place in heated vehicle.
- Use Warm, Humidified O2 if Available

- **Mild Hypothermia (93°F-97°F)** Usually awake, shivering, altered judgment, apathy, dysarthria, ataxia
- **Moderate Hypothermia (86°F-93°F),**
- **Severe Hypothermia (< 86°F)** Unresponsive, no shivering, significant respiratory depression/apnea, extreme bradycardia, rigidity, dilated/unresponsive pupils

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status Consider 30 second pulse check
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. Remove patient from cold and wet clothing and rewarm patient (Blankets, hotpacks, etc.)
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Obtain baseline vital signs; Reassess Vitals as Needed
6. Check Temperature if able
7. Obtain SAMPLE history; Check and treat **frostbite** *per* protocol if found
8. **IF PATIENT IS IN CARDIAC ARREST:**
   Begin CPR per current AHA guidelines and treat *per* cardiac arrest protocols.
   Defibrillate only once when indicated. If no response, hold further defibrillation attempts until core body temperature is greater than 86^0F

EMT — *Follow above protocols and in addition:*

9. Obtain Blood Glucose; *Treat* per Hypoglycemia protocol if indicated

Advanced EMT — *Follow above protocols and in addition:*

10. Establish IV access *with* (Warmed if able) Balanced Salt Solution
    Adult: Bolus 250 -500 ml normal saline, then TKO, monitor for fluid overload
11. ECG Monitor

Intermediate Paramedic — *Follow above protocols and in addition:*

12. **If in cardiac arrest**: Delay medications to longer than normal intervals if temperature < 86°F

Poisonings and Overdoses

EMR — *Initial Considerations*

- **Scene Safety is the number 1 priority.**
- Protect rescue personnel and bystanders
- Anticipate vomiting!
- Narcotic OD: Consider IM first if IV access is dangerous or unable

Utilize Poison Control: 1-800-222-1222 **OHSU: 1(800) 222-1222**

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs; Reassess Vitals as Needed
5. Treat *per* Shock protocol as needed
6. Determine: A) **Product and route**, B) **Time of incident**, C) **Amount taken**
7. Suspected opioid overdose: **Narcan** 0.5-2.0 mg Intranasal ½ dose per nare
8. Obtain SAMPLE history
9. Transport any and all medication bottles and/or the original containers of poisonous substance(s) that the patient may have taken with them to hospital

EMT — *Follow above protocols and in addition:*

10. Determine Blood Glucose; *Treat* per Hypoglycemia protocol if required

Advanced EMT — *Follow above protocols and in addition:*

11. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
12. Administer a blood draw *if able* and send samples with transporting ambulance
13. If ingestion is unknown: *Treat* as Altered Mental status protocol
14. ECG Monitor

Intermediate — *Follow above protocols and in addition:*

15. If unable to obtain IV *and if needed* establish IO Access
16. Treat *per* specific poison therapies

Paramedic — *Follow above protocols and in addition:*

17. Dysrhythmias: *Treat* per appropriate protocol
18. If patient cannot protect their own airway or respirations are <8 BPM: Consider Intubation

Poisonings and Overdoses (Cont.)

Specific Poison Therapies

EMR and Above **Narcotic/Opioid** Morphine, Demerol, Fentanyl, Heroin, etc.
S/S: Decreased LOC, decreased respirations, constricted/pinpoint pupils

1. **Administer Narcan 0.5-2 mg** IV/IO/IM/IN

AEMT / EMT-I / Medic **Alcohol/ETOH**

1. If no signs of CHF, administer fluid challenge 500-1000ml Sodium Chloride 0.9%

EMT-I / Paramedic **Organophosphates**

1. **Administer Atropine 2 mg** IV/IO/ETT every 5 minutes as needed until "SLUDGE" symptoms diminish
2. Suction as needed
3. Treat seizures per protocol

Paramedic **Beta Blockers OD with bradycardia**

1. **Administer Atropine 0.5-1.0 mg** IV/IO/ETT. Repeat as needed up to 3 mg
2. Fluid Bolus 500 ml Sodium Chloride 0.9% to maintain systolic BP of 90
3. Transcutaneous pacing as needed
4. Consider: Glucagon 5mg IV bolus if Atropine and Fluids are not effective
5. Administer Zofran 4mg IV to prevent vomiting

Paramedic **Calcium Channel Blockers with bradycardia**

1. Administer Atropine 0.5-1.0 mg IV/IO/ETT
2. Fluid Bolus 500 ml Sodium Chloride 0.9% to maintain systolic BP of 90
3. Consider: Glucagon 5mg IVP up to 15mg.
4. Administer Zofran 4mg IV to prevent vomiting
5. Transcutaneous Pacing as needed

Paramedic **CNS Stimulants -** Cocaine, Methamphetamine, MDMA (Ecstasy)

1. Administer Midazolam 2.5-10 mg IV/IO up to 10mg
2. Treat stable V-Tach with Amiodarone 150 mg IV/IO
3. Treat V-Fib per protocol, but limit Epinephrine to 1.0 mg of 1:10,000 q 5 mins

"Sludge" **Symptoms associated with organophosphate poisoning**					
Salivation	Lacrimation	Urination	Defecation	GI Cramping	Emesis

TOXIDROME TABLE		
***Muscarinic**	****Nicotinic**	*****Central**
Diarrhea, Urination, Miosis, Bradycardia, Bronchospasm, Bronchorrhea, Emesis, Lacrimation, Salivation, Sweating	Mydriasis, Tachycardia, Weakness, Hypertension, Hyperglycemia, Fasciculations	Confusion, Convulsions, Coma

Poisonings and Overdoses (Cont.)

Specific Poison Therapies

Paramedic **Dystonic (Phenothiazine) Reaction**

Reaction to certain antipsychotics and antiemetics, such as:

Toxidrome	Examples	Clinical Features	Antidotes
Sympathomimetic	Cocaine Methamphetamine	Agitation Hyperthermia Diaphoresis Dilated Pupils Hypertension Tachycardia	Midazolam
Opioid	Heroin/Fentanyl Hydromorphone Methadone Oxycodone	Depressed mental status Hypoventilation Constricted pupils	Naloxone
Cholinergic (Anti-cholinesterase)	Pesticides • Carbamates • Organophosphates Nerve agents	Muscarinic* Nicotinic** Central***	Atropine Pralidoxime (2-Pam) (Hazmat, OLMC)
Sedative-Hypnotic	Barbiturates Benzodiazepines GHB	Depressed mental status Hypotension Hypothermia	Supportive treatment
Cardiotoxic Drugs	Beta-blockers Calcium channel blockers	Bradycardia Conduction issues Hypotension	Epinephrine Calcium (OLMC)
Anticholinergic	Atropine Jimson Weed Scopolamine Diphenhydramine	Delirium Hyperthermia Tachycardia Warm, dry skin	Supportive treatment Physostigmine (ED)
Sodium channel blockade	Tricyclic antidepressants Antiarrhythmics • Type 1A – quinidine, procainamide • Type 1C – flecainide, propafenone	Altered mental status Hypotension Seizures Wide complex tachycardia	Sodium Bicarbonate (OLMC)
Methemoglobinemia (nitrate/nitrite poisoning)	Contaminated well water (nitrates) Inhalation injuries Topical anesthetics (Benzocaine, lidocaine)	Cyanosis SpO2 75-85% despite supp. O2 Headache Weakness Seizures/Coma Dysrhythmias Chocolate brown blood	Supportive Care O2 administration Methylene blue (ED)

PEDIATRIC Poisoning and Overdoses

EMR *Initial Considerations*

Anticipate vomiting!	
Utilize Poison Control: 1-800-222-1222	**OHSU: 1(800) 222-1222**

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs: Reassess Vitals as Needed
5. Treat *per* Shock protocol as needed
6. **Determine**: a.) **Product and route** b.) **Time of incident** c.) **Amount taken**
7. Suspected opioid overdose: **Narcan** 0.5-2.0 mg Intranasal ½ dose per nare
8. Obtain SAMPLE history
9. Transport any and all medication bottles and/or the original containers of poisonous substance(s) that the patient may have taken with them to hospital

EMT *Follow above protocols and in addition:*

10. Determine Blood Glucose; *Treat* per Hypoglycemia protocol if required

Advanced EMT Intermediate *Follow above protocols and in addition:*

11. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
12. Administer a blood draw *if able* and send samples with transporting ambulance
13. Consider IO if unable to secure IV access and needed
14. If ingestion is unknown treat as Altered Mental status protocol
15. ECG Monitor
16. Treat *per* specific poison therapies

Paramedic *Follow above protocols and in addition:*

17. Dysrhythmias: *Treat* per appropriate protocol
18. If patient cannot protect their own airway or respirations are <8 BPM: Consider Intubation

PEDIATRIC Specific Poisoning Therapies

EMT-I & Paramedic **Narcotic/Opioid** Morphine, Demerol, Fentanyl, Heroin, etc.
S/S: Decreased LOC, decreased respirations, constricted/pinpoint pupils

1. **Administer Narcan 0.1 mg/kg** IV/IO.

EMT-I / Paramedic **Organophosphates**

1. **Atropine 0.02 mg/kg** IV/IO/ETT every 5 minutes as needed until "SLUDGE" symptoms diminish.
2. Suction as needed.
3. Treat seizures per protocol.

Paramedic **Beta Blockers OD with bradycardia**

1. **Atropine 0.02 mg/kg** no>3mg IVP/ IO/ ETT. May repeat to total of 3mg
2. **Glucagon 0.1 mg/kg** (units) IVP/ IO
3. Fluid Bolus 20 ml/kg balanced Salt Solution
4. Transcutaneous pacing as needed
5. **Dopamine 5.0-20 µgm/kg / min** to systolic BP 100mmHg

~or~

Epinephrine Infusion. Start 0.1 µgm/kg / min and increase as needed

Paramedic **CNS Stimulants** Cocaine, Methamphetamine, MDMA (Ecstasy)

1. **Oxygen 12-15 LPM** via NRB
2. **Midazolam 0.1-0.2 mg/kg** IVP/IO/IM Not to exceed 10mg
3. Treat V-Fib per protocol, but limit Epinephrine to 0.1mg/kg of 1:10,000 q 5 mins

Paramedic **Calcium Channel Blockers with bradycardia**

1. **Atropine 0.02 mg/kg** no>3mg IVP/ IO/ ETT
2. Calcium Chloride 20mg/kg no >500mg total. Slow IVP /IO
2. **Glucagon 0.1 mg/kg** (units) no > 5mg (units) total IVP/ IO
3. Fluid Bolus 20 ml/kg balanced Salt Solution
4. Transcutaneous pacing as needed
5. **Dopamine 5.0-20 µgm/kg / min** to systolic BP 100mmHg

~or~

Epinephrine Infusion. Start 0.1 µgm/kg / min and increase as needed

Paramedic **Tricyclic Anti-Depressants**
(With Tachycardia >110/mi Widening QRS or Seizures

1. **Sodium Bicarbonate 1.0mEq/kg** IVP/ IO followed by
Sodium Bicarbonate 50mEq in 250ml NS and run at 250 ml/hr.

Magnesium Sulfate 25-50mg/kg max 2gm Slow IVP/ IO (5-10 minutes) for wide QRS

"Sludge" Symptoms associated with organophosphate poisoning					
Salivation	**Lacrimation**	**Urination**	**Defecation**	**GI Cramping**	**Emesis**

Seaside Fire & Rescue Medical Protocols

Neurological

Altered Mental Status

Indications

- Any patient with an alteration in their level of consciousness
- There are many causes of an altered mental status
- AMS patients may become combative

- **Common causes of AMS:**

○ Alcohol, Acidosis	○ Trauma
○ Epilepsy	○ Insulin
○ Infection	○ Psychosis
○ Uremia	○ Stroke
○ Overdose/ Poisoning	

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. *If* indicated *treat per* trauma protocols: General Guidelines and Spinal and in addition:
3. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Obtain baseline vital signs; Reassess Vitals as Needed
6. Obtain SAMPLE history; *Consider* Common AMS Causes
7. Treat *per* Shock protocol as needed
8. Investigate and treat other illness or injuries *per* appropriate protocol(s)
9. If suspected opioid overdose; **Narcan** 0.5-2.0 mg Intranasal ½ dose per nare

EMT — *Follow above protocols and in addition:*

10. Determine Blood Glucose; *Treat* per Hypoglycemia protocol if required

Advanced EMT — *Follow above protocols and in addition:*

11. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
12. **Naloxone** 0.5 – 2.0mg IVP / IM / Intranasal.
    Narcan max dose: 10mg. Repeat as needed titrated to patient's respiratory status
13. ECG Monitor

Intermediate — *Follow above protocols and in addition:*

14. If unable to obtain IV *and if needed* establish IO Access

Paramedic — *Follow above protocols and in addition:*

15. If patient cannot protect their own airway or respirations are <8 BPM; Consider Intubation

PEDIATRIC Altered Mental Status

Indications	• **Common causes of AMS:**
• Any patient with an alteration in their level of consciousness • There are many causes of an altered mental status • AMS patients may become combative	○ Alcohol, Acidosis ○ Trauma ○ Epilepsy ○ Insulin ○ Infection ○ Psychosis ○ Uremia ○ Stroke ○ Overdose/ Poisoning

EMR *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. *If* indicated *treat per* trauma protocols: General Guidelines and Spinal and in addition:
3. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Obtain baseline vital signs; Reassess Vitals as Needed
6. Obtain SAMPLE history; *Consider* Common AMS Causes
7. Treat *per* Shock protocol as needed
8. Investigate and treat other illness or injuries *per* appropriate protocol(s)
   In the Pediatric Patient with AMS consider poisoning/overdose

EMT *Follow above protocols and in addition:*

7. Determine Blood Glucose; *Treat* per Hypoglycemia protocol if required

Advanced EMT Intermediate *Follow above protocols and in addition:*

8. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
9. If Hypoglycemic patient and unable to get IV *Treat* per PEDIATRIC Hypoglycemia Protocol
10. If unable to obtain IV *and if needed* establish IO Access
11. **Naloxone** 0.1mg/kg IVP / IO / IM/ Slow Push Child 5yrs or 20kg (44 lbs.)
12. ECG Monitor

Paramedic *Follow above protocols and in addition:*

13. Dysrhythmias; *Treat* per appropriate protocol
14. If patient cannot protect their own airway or respirations are <8 BPM; Consider Intubation

Anxiety / Stress

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Reassure patient and speak calmly
5. Obtain baseline vital signs; Reassess Vitals as Needed
6. *Treat* for Shock as needed
7. Obtain SAMPLE History
8. Investigate and treat other illness or injuries and treat *per* appropriate protocol(s)

EMT — *Follow above protocols and in addition:*

9. Obtain Blood Glucose; *Treat* per Hypoglycemia protocol if required

Advanced EMT Intermediate — *Follow above protocols and in addition:*

10. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
11. ECG monitor

Paramedic — *Follow above protocols and in addition:*

12. Dysrhythmias; *Treat* per appropriate protocol
13. Consider: Administer **Midazolam** 2.5mg IV or 5mg IM

Behavioral Health Emergencies

SPECIAL NOTES FOR SAFETY

- Always assess for and assure Scene safety for and your EMS partners
- Request Law Enforcement early if you think they are needed.
- Limit the number of providers asking the patient questions.
- Never be alone with a patient having a mental health emergency.
- Always maintain an "escape route". DO NOT let the patient come between you and your exit
- If no threat or immediate danger from patient:
    - Approach in a calm manner. Do not display an aggressive stance/ posture.
    - Show self-confidence and concern for the patient.
    - Reassure the patient. Explain that you are there to take care of them and they should be transported to the hospital where there are people interested in helping them.
    - Always maintain an "escape route". DO NOT let the patient come between you and your exit.

SPECIFIC PRECAUTIONS

- Behavioral health encompasses a wide variety of issues including: Chronic illness, physical symptoms associated with stress, health behavior, and mental and substance abuse

- Indications this may not be psychiatric patient
    - Waxing and waning level of consciousness
    - Abnormal vital signs
    - Dilated or pinpoint pupils
    - First psychotic episode over the age of 30
    - Acute onset over hours/days (consider substance abuse)
- Psychiatric signs/symptoms
    - Mood disorder (Depression, mania, suicide ideation, anxiety)
    - Thought disorder.)Hallucinations, pressured speech, racing thoughts, grandiose or paranoid ideas, delusions)
- Illness / injury
    - Hypoglycemia, hypoxia, stroke, head injury, poisoning, head injuries
    - CNS infection may mimic psychiatric illness

Mental Health Emergencies (cont.)

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Oxygen if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
3. Obtain baseline vital signs; Reassess Vitals as Needed
4. Obtain SAMPLE history
5. perform a physical and mental status examination
6. Investigate and treat other illness or injuries and treat *per* appropriate protocol(s)

EMT — *Follow above protocols and in addition:*

6. Determine Blood Glucose; *Treat* per Hypoglycemia protocol if indicated

Advanced EMT Intermediate — *Follow above protocols and in addition:*

7. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
8. ECG Monitor

Paramedic — *Follow above protocols and in addition:*

9. Chemical restraint of the violent patient is indicated only after a medical or traumatic cause has been ruled out.

    Administer medication per patient restraint protocol

Seizure

EMR — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Active seizure: Protect them from further injury: pad under head, remove surrounding objects and loosen restrictive clothing. Place NOTHING in mouth, DO NOT hold down patient
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Protect airway. Suction as needed after tonic - clonic activity. Consider: BVM, OPA, or NPA
5. Obtain baseline vital signs; Reassess Vitals as Needed
6. Obtain SAMPLE history
7. Investigate and treat other illness or injuries (including trauma) *per* appropriate protocol(s)

EMT — *Follow above protocols and in addition:*

8. Determine Blood Glucose; *Treat* per Hypoglycemia protocol if indicated

Advanced EMT — *Follow above protocols and in addition:*

9. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
10. If BP< 90 systolic, **Fluid Bolus** to systolic BP of 100
11. ECG Monitor

Intermediate — *Follow above protocols and in addition:*

12. If unable to obtain IV *and if needed* establish IO Access

Paramedic — *Follow above protocols and in addition:*

13. If seizure is greater than 5 minutes in duration or recurrent:
    Administer **Midazolam** 2.5-5mg IVP/IO/IM Repeat as every 5 minutes. Max 10mg total.
14. If patient is pregnant with no history of seizures; treat *per* toxemia of pregnancy protocol
15. Alcohol withdrawal seizure: Administer **Magnesium Sulfate** 2.0gm over 5 to 10 minutes
16. If patient cannot protect their own airway or respirations are <8 BPM: Consider Intubation
17. If hypotension persists after fluid challenge, or pulmonary edema develops:
    Administer **Dopamine** 5.0 -20mcg /kg / min by infusion. Titrate to BP > 90mmHg Systolic

PEDIATRIC Seizure

EMR *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Active seizure: Protect them from further injury: pad under head, remove surrounding objects and loosen restrictive clothing. Place NOTHING in mouth, DO NOT hold down patient
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Protect airway. Suction as needed after tonic/clonic activity. Consider: BVM, OPA, or NPA
5. Obtain baseline vital signs; Reassess Vitals as Needed
6. Obtain SAMPLE history
7. Investigate and treat other illness or injuries (including trauma) *per* appropriate protocol(s)

EMT *Follow above protocols and in addition:*

8. Determine Blood Glucose; *Treat* per Hypoglycemia protocol if indicated

Advanced EMT Intermediate *Follow above protocols and in addition:*

9. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
10. Consider IO if unable to obtain IV access and necessary
11. ECG Monitor

Paramedic *Follow above protocols and in addition:*

12. Dysrhythmias; *Treat* per appropriate protocol
13. If BP< 90 systolic, **Fluid Bolus** 20ml/kg to BP of 100 systolic
14. If seizures are >5 min duration or recurrent:
    a.) Administer **Ativan** 0.1 mg/kg IV/ IO/ IM ~or~ **Midazolam** 0.1 – 0.2mg/kg IVP/IO/IM
    b.) May repeat x 2 q 5 min prn
15. If patient cannot protect their own airway or respirations are <10 BPM: Consider Intubation
16. If hypotension persists after fluid challenges, or pulmonary edema has developed:
    Administer **Dopamine** 5.0 – 20.0 mcg/KG/ Min by infusion. Titrate to BP >90 mmHg Systolic

Stroke

Cincinnati Stroke Scale

a. **Facial Droop**: Have the patient show their teeth and/or smile
Normal: Both sides of the face move equally well
Abnormal: One side of the face does not move as well as the other

b. **Arm Drift**: Patient closes eyes, holds both arms out straight out
Normal: Both arms move the same direction or no movement at all
Abnormal: One arm does not move or one arm drifts down compared to the other

c. **Speech**: Have patient say "You can't teach an old dog new tricks"
Normal: Patient comprehends and repeats statement with no slurring
Abnormal: patient unable to speak, slurs or uses inappropriate words

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect paralyzed extremities.
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs; Reassess as Needed; Reassure patient, explain what you are doing
5. Obtain SAMPLE history, including:
   a. Onset time of stroke symptoms. If unknown: When last seen without current symptoms
   b. History of previous strokes, Including: Dates, type, and residual symptoms
6. Administer **Cincinnati Stroke Test**
   If symptom onset time is less than 4.5 hours; *and* the stroke test is positive; contact the Emergency Department to alert them of a possible stoke patient.
   Provide: DOB, symptoms, vital signs, and last time scene normal
7. Investigate and treat other illness or injuries *per* appropriate protocol(s)

Advanced EMT Intermediate — *Follow above protocols and in addition:*

8. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
9. ECG monitor

Paramedic — *Follow above protocols and in addition:*

10. Dysrhythmias; *Treat* per appropriate protocol
11. If patient cannot protect their own airway or respirations are <8 BPM: Consider Intubation

Seaside Fire & Rescue Medical Protocols

Obstetrics

General Considerations

- Most deliveries proceed without complication
- Allow pregnant patients to rest in best position of comfort
- Hypotensive pregnant patients should be placed in the Left lateral Recumbent Position
- Following a delivery the baby is the primary consideration for care

- If imminent delivery is suspected immediately prepare for it and anticipate completion for delivery - - This may delay the transporting unit from departing
- Imminent Deliver Signs and symptoms:
  - Contractions occurring typically less than 2 minutes apart and lasting up to 60 seconds
  - Sensation of impending defecation
  - Urge to push
  - Crowning

Intermediate & Paramdic

In all obstetric emergencies consider IV access for mother (if time permits) for fluid replacement and medication administration

Normal Range Neonate Vital signs:

Pulse 100-180 Respirations: 30-60 BP: 50-70mm Hg Temp: 98-100°F

APGAR Score

- An objective method of quantifying the newborn's condition and assessing a response
- The APGAR is performed at 1 and 5 minutes following birth
- If needed, resuscitation must be before assigning the first score
- Each sign is given a value of 2, 1, or 0. The five values are added up and the sum is the score
- Most newborns will have a score of 7 or8 at 1 minute. 8 to 10 at 5 minutes
- Additional scores may be given at 5 minute intervals if stimulation/ resuscitation is needed

	2	1	0
Appearance	Entire newborn is pink	Body pink, hands/feet blue	Entire baby is blue/pale
Pulse	Greater than 100 BPM	Less than 100 BPM	Absent Pulse
Grimace / Irritability	Newborn cries / tries to move away from finger flick on the sole	Gives weak cry in response to stimulus	No crying / No reaction to stimulus
Activity / Muscle Tone	Newborn resists attempts to straighten out hips and knees	Newborn makes weak attempts to resist straightening	Newborn is completely limp with no muscle tone
Respiration	Rapid	Slow	Absent

Emergency Delivery

All Providers ***Initial Considerations***

1. Assess: Airway, Breathing, Circulation & Neurologic status of mother
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs: Reassess Vitals as Needed
6. Obtain SAMPLE history; establish last Menstrual period
7. Assess and treat for hypertension *as* needed
8. Determine number of pregnancies (Gravida), number of deliveries (Para) & due date
9. Time the contractions and how far apart they are; when and if bag of waters has ruptured
10. Place mother in supine position with knees elevated
11. Ensure your PPE is on, blankets ready, sanitary pads under mother
12. **Delivery**:
    a.) When baby crowns apply gentle counter pressure to baby's head
    *If delivery is rapid: Coach mother to pant during contraction and not push to slow delivery
    b.) Manually rupture amniotic sac if it is still intact
    c.) When head is delivered, gently wipe clean. If suction is needed:
        I.) Mouth first, then Nose with bulb syringe
    d.) Assist delivery of shoulders (anterior (upper) shoulder first) and rest of body
    e.) Keep both hands on the baby at all times – The baby will be slippery.
    f.) Keep baby below maternal vaginal opening before clamping cord.
        I.) Use two clamps first clamp 6 to 8 inches from baby, second clamp 4 inches further
        II.) Cut between clamps
        III.) NOTE the time of delivery
13. Give **newborn attention**:
    a) Clear airway and suction mouth and nose with bulb syringe only *if necessary*
    b) If baby is not breathing:
        I.) Stimulate by rubbing gently with a towel, or lightly flicking sole of feet
        II.) **If no response within 30 seconds: Treat *per* Neonatal Resuscitation protocol**
    c) Dry baby. Continue to wipe baby and replace with clean towels
        I.) Keep baby warm, wrap in blankets, do not let baby become hypothermic
    d) Assess **APGAR** scores at intervals of: 1 and 5 minutes after delivery
        I.) If 5 minute APGAR score is < 7 continue scores every 5 minutes up to 3 more
14. Place infant in mother's arms if possible
    If needed: Place infant in sniffing position and provide blow-by oxygen until baby is pink
15. Allow placenta to delivery normally; DO NOT pull cord, transport placenta with patient(s)
16. Apply gauze/ pads for any bleeding/tears. DO NOT pack vagina
17. If bleeding is significant treat *per* Postpartum Hemorrhage protocol

Complications of Delivery

All Providers — *Initial Considerations*

1. Treat per Emergency Delivery protocols and in addition:

- **BREECH / LIMB PRESENTATION**

  If single foot or hand presentation, DO NOT attempt delivery, transport ASAP

  1. If Breech /Limb presentation is obvious and transport is available; Transport ASAP
  2. Place mother in supine or Trendelenburg position
  3. Monitor vital signs every (5) five minutes
  4. Allow mother to push
  5. Gently extract baby (Do not pull on baby)
  6. Support delivered body and extremities
  7. If head does not deliver:
     a.) Place gloved hand in vagina and form a "V" with index and middle finger around baby's mouth and nose to allow breathing

- **PROLAPSED CORD**

  1. Place mother in knee-to-chest or Extreme Trendelenburg position
     DO NOT place the mother in the knee-to-chest position during transport
  2. Insert gloved hand into vagina and gently lift head /body off of cord
     Maintain that position until relieved at hospital
  3. Observe cord for pulsations, wrap cord in sterile dressings, and keep warm

- **CORD WRAPPED AROUND NECK**

  1. Gently attempt to loosen cord
  2. With 2 fingers behind baby's neck:
     a.) Try to slip forward over baby's upper(anterior) shoulder and head.
     b.) If unsuccessful attempt to slip lower shoulder an over head
     c.) If unsuccessful: Clamp the cord and cut between clamps
     d.) Unwrap cord from baby's neck
  3. Continue care for baby and mother *per* Emergency Delivery protocols

- **PLACENTA PREVIA / ABRUPTIO (Pre-birth hemorrhage)**

  Previa: Usually painless with rapid blood loss to the point of exsanguinations

  Abruptio: Usually extremely painful/ crampy and visible blood loss does not match the degree of shock, signs, and symptoms observed

1. Transport immediately and provide care for mother

Paramedic — *Follow above protocols and in addition:*

For any mother with complications: Treat dysrhythmias per appropriate protocol

Postpartum Hemorrhage

CONSIDERATIONS

- The average blood loss during the third stage of labor is about 150 mL
- Exceeding 500 mL in the first 24 hours is considered postpartum hemorrhage

- **Massaging the uterine fundus**
  - The abdominal skin will be wrinkled and very soft.
  - You should be able to feel a firm grape-fruit sized mass in the lower abdomen- this is the fundus.
  - As you massage it the uterus will contract and become firmer.

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
3. Obtain baseline vital signs: Reassess Vitals as Needed
4. Obtain SAMPLE history; Treat for mother Shock
5. Place dressings externally over vagina. DO NOT pack vaginal opening
6. Perform firm external uterine massage to control bleeding
   ~This may be uncomfortable for mother. Reassure mother and explain that it is necessary
7. Breast feeding should help to stimulate contraction of the uterus if this is an option

EMT Advanced Intermediate — *Follow above protocols and in addition:*

8. Establish IV access *with* Balanced Salt Solution. Maintain a systolic BP of at least 90mm Hg
9. Consider second (large bore) IV access *with* Balanced Salt Solution
10. ECG Monitor

Paramedic — *Follow above protocols and in addition:*

11. Treat dysrhythmias or other signs and symptoms *per* appropriate protocol

Spontaneous Abortion

SIGNS & SYMPTOMS

- **First half of pregnancy:** Generally characterized by vaginal bleeding and abdominal cramping. Severe pain is rarely a presenting symptom.
- **Second half of pregnancy:** Patient may present with severe abdominal pain, significant vaginal bleeding, and cervical dilation.

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
3. Obtain baseline vital signs: Reassess Vitals as Needed
4. Obtain SAMPLE history; Including last menstrual period
5. Treat *per* Shock protocol
6. Place absorbent dressing externally over perineum. Do Not pack vaginal opening
7. Collect any tissue passed and transport it with patient *If* able
8. Provide emotional support for patient;
    a.) Consider contacting: chaplain, family, religious contacts patient may have, etc.

EMT Advanced Intermediate — *Follow above protocols and in addition:*

9. Establish IV access *with* Balanced Salt Solution. Titrate to a systolic BP of 90mm Hg
10. ECG Monitor

Paramedic — *Follow above protocols and in addition:*

13. Treat dysrhythmias or other signs and symptoms *per* appropriate protocol

Toxemia of Pregnancy (Pre-Eclampsia / Eclampsia)

Signs and Symptoms. May be any or all of the following:

Mild Pre-Eclampsia:	Moderate to Severe Pre-Eclampsia:	Eclampsia:
1. Moderate Hypertension; 2. Edema; 3. Excessive Prenatal Weight Gain;	1. Hypertension > 160 mmHg systolic and > 110 mmHg diastolic; 2. Headache; 3. Cerebral Disturbances (changes in behavior); 4. Visual Disturbances (flashes of light or black spots); 5. Epigastric Pain; 6. Dyspnea / Cyanosis	1. Seizure 2. Postictal

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Obtain baseline vital signs: Reassess Vitals as Needed
5. Obtain SAMPLE history; including last menstrual period
6. Calm and Reassure Patient
7. Other injuries, signs and symptoms: treat *per* appropriate protocol(s)
8. Anticipate possibility of seizures- treat *per* seizure protocol
9. Prepare patient for transporting unit ASAP

EMT Advanced Intermediate — *Follow above protocols and in addition:*

10. Establish IV access *with* Balanced Salt Solution @TKO ~*or*~ Saline Lock
11. ECG Monitor

Paramedic — *Follow above protocols and in addition:*

12. Treat dysrhythmias per protocol
13. Patient in Seizure: Administer **Midazolam** 2.5-5 mg IV/IO or 10 mg IM/IN
    May repeat every 5 -15 minutes no more than 10mg total
14. Patient in Seizure, Consider:
    Pre-Eclampsia: Contact OLMC. **Magnesium Sulfate** 4grams slow IVP over 15 -20 minutes
    Eclampsia**: Magnesium Sulfate** 4grams slow IVP over 15 -20 minutes

Neonatal Resuscitation

CONSIDERATIONS

- In newborns bradycardia (<100beats/min) is usually the result of hypoxia
- Neonates in distress commonly respond to O2 and PPV when necessary. Titrate to expected SaO2 reading after birth. Too much O2 in harmful to neonates
- SaO2 must be monitored on the right (preductal) hand.

Targeted SpO2 Readings after birth

1 min: 60-65% 2 min: 65-70% 3 min: 70-75% 4 min: 75-80% 5 min: 80-85% 10 min: 85-85%

EMR & EMT — *Initial Considerations*

BIRTH 1. Treat mother and baby *per* Emergency Delivery protocols and in addition:
---- 2. **Ask**: Is the baby full term (36 weeks & heavier than 5 lbs.)
---- Is the baby crying and breathing? Is there good muscle tone?

30 SEC 3. Evaluate neonate's **Heart Rate**, **Respirations** & **Color**:
---- → HR >100, Spontaneous Breathing: Keep warm, clear airway as needed, monitor
---- → HR <100, Gasping or agonal: PPV with BVM **40 to 60 breaths/min**, SaO2

60 SEC → HR >100, Gradually decrease PPV until baby adequately breathing on its own
---- → HR < 60, Continue PPV; Initiate chest compressions (compression to ventilation 3:1)

---- Continue cycle of 30 second evaluations with the appropriate treatments until HR is
---- above 100 and baby is breathing on its own

EMT Advanced — *Follow above protocols and in addition:*

4. HR <60 after initial 60seconds of treatment: Establish IV access
5. Consider IO if unable to secure IV access

EMT Intermediate — *Follow above protocols and in addition:*

6. HR <60 after 60 seconds of effective ventilation and compressions:
Administer 0.1 to 0.3ml/kg Epinephrine 1:10,000

Paramedic — *Follow above protocols and in addition:*

7. Continue neonatal resuscitation per current NRP / PALS standards

Seaside Fire & Rescue Medical Protocols

Trauma

Field Triage Trauma System Criteria

Red Criteria

Patients meeting any of the RED criteria should be transported to the highest-level trauma center available in the regional trauma system

Injury Patterns

- Penetrating injuries to head, neck, torso, and proximal extremities
- Skull deformity, suspected skull fracture
- Suspected spinal injury with new motor or sensory loss
- Chest wall instability, deformity, or suspected flail chest
- Suspected pelvic fracture
- Suspected fracture of 2 or more long bones (Humerus or femur)
- Crushed, degloved, mangled, or pulses extremity
- Amputation above a wrist or ankle
- Active bleeding requiring a tourniquets or wound packing with continuous pressure

Mental Status & Vital Signs

All Patients

- Unable to follow commands (GCS motor less than 6)
- Respirations less than 10 or greater that 29 BPM
- Respiratory distress of need for respiratory support
- Pulse oximetry on room air is less than 90%

Patient age: 0-9 Years

- Systolic BP less than 70mmHg + (2 x age)

Patient age: 10-64 Years

- Systolic BP less than 90mmHg ~OR~ Heart Rate is greater than the Systolic Blood Pressure

Patient age: 65 year or older

- Systolic BP less than 110mmHg ~OR~ Heart Rate is greater than the Systolic Blood Pressure

Yellow Criteria

Patients meeting any of the YELLOW criteria should be transported to a trauma center, not necessarily the highest-level trauma center.

Mechanism of Injury

- High-Risk Auto Crash
  - Partial or complete ejection
  - Significant intrusion (including Roof)
    - Greater that 12 inches occupant site ~OR~
    - Greater than 18 inches any site ~OR~
    - Need for extrication for entrapped patient
  - Death in passenger compartment
  - Child (0-9) unrestrained or in unsecured child safety seat
  - Vehicle telemetry data consistent with severe injury
- Rider separated from vehicle with significant impact (Motorcycle, ATV, Horse, etc.)
- Pedestrian/ bicycle rider thrown, run over, or with significant impact
- Fall from a height greater than 10 feet (any age)

EMS Judgement

Consider risk factors, including:

- Low-level falls in younger children (5 or younger) or older adults (65 or older) with significant head impact
- Anticoagulant use
- Suspicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy greater than 20 weeks
- Burns in conjunction with trauma
- Children should be triaged preferentially to pediatric capable centers

If concerned, take patient to a trauma center

General Trauma Guidelines

Initiate this protocol during the evaluation and management of ALL TRAUMA patients

- Safety of rescuers, the patient and bystanders shall be the priority at trauma incidents
- Use the START Triage system for incidents involving 4 or more patients as appropriate
- Treat life threatening injuries first or as you find them
- Protect C-Spine as appropriate
- All Trauma Patients shall be continually evaluated and managed for the following:
  - Airway (include cervical spine control)
    - Evaluate patency; remove blood/ objects from mouth, position for clear airway
    - Assess for potential airway problems and manage as needed
    - Most trauma patients will benefit to receive oxygen via a NRB mask
  - Breathing:
    - Expose neck/chest if possible
    - Rate/depth of respirations
    - Assess for signs of tension pneumothorax
    - Auscultate lung fields
    - Seal open pneumothorax with 3 sided dressing
  - Circulation
    - Assess for pulses
    - Evaluate perfusion / capillary refill
    - Apply direct pressure to control active bleeding
    - If unable to control bleeding with direct pressure: Apply a tourniquet (appendages)
  - Neurological exam with GCS, pupils.
    - Assess Pulse, Motor Response and Sensory Functions
    - Any time before and after splinting and after splinting/ moving
- Conduct a primary survey (Rapid Trauma Assessment) on suspected trauma patients
  - Throughout the head to toe examination provider should consider the following:

D- Deformities	C- Contusions	A- Abrasions	P- Punctures/Penetrations
B- Burns	T- Tenderness	L- Lacerations	S- Swelling

- In addition to DCAP-BTLS your Trauma assessment should also consider:
  - Head
    - Assess for signs of trauma/ lacerations/ bleeding / skull deformities
    - Assess pupillary size and reactivity
    - Assess for instability of facial bones
    - Assess for nasal, eye, and oral injuries

General Trauma Guidelines (cont.)

- Neck
  - Assess for wounds, swelling, deformity, subcutaneous emphysema tracheal deviation, and JVD, if accessible
  - Assess quality of carotid pulses, if applicable.
  - Apply cervical collar and maintain cervical immobilization
- Chest
  - Assess/palpate chest wall for wounds and deformities
  - Auscultate breath sounds
- Abdomen
  - Assess for contusions, wounds or eviscerated tissues
  - Gently palpate to assess tenderness, rigidity, guarding
- Pelvis/GU
  - Assess for instability (unless previous instability reported), DCAPBTLS
  - Apply pelvic wrap or Sam Sling if indicated
- Extremities
  - Assess for bleeding, contusions, deformities, and swelling
  - Assess neurovascular status of all extremities by noting presence of pulses, skin color and gross motor and sensory
- Neurologic
  - Assess mental status and note GCS.

- Conduct a follow-up secondary survey if time permits and treat secondary injuries
- For a patient with minor injuries where there is no significant mechanism of injury
  Consider limiting your exam to the injury site

Glasgow Coma Scale	Eye Opening		Verbal Response		Motor Response	
Evaluate each section based on the patient's best response and add up the 3 sections for a total score	**Spontaneous**	**4**	**Oriented**	**5**	**Obeys Commands**	**6**
	To Voice	**3**	**Confused**	**4**	**Localizes Pain**	**5**
	To Pain	**2**	**To Voice**	**3**	**Withdraws Pain**	**4**
	None	**1**	**Incomprehensible**	**2**	**Flexion (Pain)**	**3**
			None	**1**	**Extension (Pain)**	**2**
					None	**1**

Required Criteria for entering a patient into the trauma system:
1. Gender 2. Age 3. Reason for entering patient into the trauma system

PEDIATRIC Trauma Considerations

EMR & EMT *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Provide manual cervical spine stabilization *per* trauma protocols: General Guidelines
    a.) Head is not in the neutral in-line position but patient's airway is patent
        I.) C*onsider* stabilizing in position found
    b.) Head is not in the neutral in-line position but patient's airway is inadequate
        II.) Straighten using inline axial support just enough to establish a patent airway
3. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
    a) If appropriate, a Supraglottic airway way be placed. Maintain a ETCo2 level between 35-45 mmhg.
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Perform Rapid Trauma Assessment of Patient
6. Place appropriately sized Cervical Collar on patient
7. Assess Pulse, Motor Response and Sensory functions before moving /splinting/ immobilization
8. Immobilize patient:
    a.) Consider backboard, KED, scoop stretcher, Car Seat or another immobilization device
    b.) Assess posterior of patient during transfer
9. Assess Pulse, Motor Response and Sensory functions after moving /splinting/ immobilization
10. Obtain baseline vital signs: Reassess Vitals as Needed
11. Treat *per* Shock protocol
12. Obtain SAMPLE history
13. Perform secondary assessment / detailed physical exam
14. Manage other illnesses and injuries *per* appropriate protocols

Advanced EMT Intermediate *Follow above protocols and in addition:*

15. Establish IV access *with* Balanced Salt Solution. Bolus 20ml/ kg (10cc/ kg for Neonate)
    a.) Give fluids to maintain a systolic BP of 70 + (2x age in years)
    b.) Administer fluid challenge if signs of shock. Repeat if needed
16. Consider second (large bore) IV access *with* Balanced Salt Solution ~or~ Saline Lock
17. If unable to obtain IV *and if needed* establish IO Access
18. ECG Monitor

Paramedic *Follow above protocols and in addition:*

20. Dysrhythmias; *Treat* per appropriate protocol
21. If patient cannot protect their own airway or respirations are <8 BPM; Consider Intubation

Bleeding

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
3. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
4. Specific treatments:
   - **Controlled Bleeding**:
     a.) Apply band aid, dressings, bandages etc. as needed
   - **Uncontrolled Bleeding**:
     a.) Apply direct pressure with dressings
     b.) If bleeding continues /soaks through dressings:
     I.) Apply more dressings, DO NOT REMOVE original dressings
     II.) Apply bulking dressings with bandages after bleeding has been controlled
   - **Extremity Bleeding remains uncontrolled by any other means**:
     a.) Apply a tourniquet approximately 2 inches proximal to the injury
     I.) Only tighten tourniquet until bright red bleeding stops
     II.) Secure rod in place to avoid tourniquet loosening.
     b.) Minimize extremity movement
     c.) Note time tourniquet was placed, mark patient or tourniquet with time/date
     d) If bleeding not controlled with single tourniquet: Apply additional tourniquet
5. If Mechanism of Injury indicates: *treat per* Trauma Protocols: General Guidelines & Spinal
6. Obtain baseline vital signs: Reassess Vitals as Needed
7. Treat *per* Shock protocol as needed
8. Manage other illnesses and injuries *per* appropriate protocols
9. Obtain SAMPLE history

Advanced EMT Intermediate — *Follow above protocols and in addition:*

10. Establish IV access *with* Balanced Salt Solution. Titrate to systolic BP of 90 mmHg
11. Consider second IV in cases of uncontrolled bleeding or when a tourniquet is applied
12. ECG Monitor
13. Pain Control as indicated

Paramedic — *Follow above protocols and in addition:*

14. Dysrhythmias; Treat per appropriate protocol

Burns

INDICATIONS OF SMOKE INHALATION

- Facial burn or signed hose hairs
- Carbon deposits in oropharynx
- Known thermal, chemical, or inhalation exposure
- Altered mental status
- Shortness of breath
- Burns to the rest of the body

EMR & EMT — *Initial Considerations*

1. Scene safety and PPE. Only trained and equipped personnel enter an IDLH environment
2. Ensure patient has been removed from burning source
   Extinguish smoldering or burning clothing and remove
   For semi-solid substances (grease, tar, wax, etc.) cool with water, do not remove substance
3. Obtain pertinent history *including:* Mechanism injury (MOI) & Time of incident
4. Assess: Airway, Breathing, Circulation & Neurologic status
   *If respiratory system has been compromised be prepared for rapid deterioration of patient
5. Protect, auscultate, and monitor airway, consider: EtCO2, BVM, Suction, OPA, or NPA
6. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
7. Remove rings, bracelets, watches and other constricting items ASAP
8. Specific treatments:

- **Thermal Burn**: a.) Cover burned area with dry, sterile dressing or dry sheet
- **Chemical Burn:** a.) Brush chemicals off skin, avoid contaminating eyes or airway
  b.) Irrigate with large quantities of water
  c.) Chemical Identification if able, contact poison Control/ Hazmat 11
- **Electrical Burn**: a.) Often may be worse than initially appears
  b.) Check for exit wound where the current grounded from patient
  c.) Cover burned area with dry sterile dressings

9. If Mechanism of Injury indicates: *treat per* Trauma Protocols: General Guidelines and Spinal
10. Obtain baseline vital signs: Reassess Vitals as Needed (Severe burns: Every 5 minutes)
11. Treat *per* Shock protocol as needed
12. Manage other illnesses and injuries *per* appropriate protocols
13. Obtain SAMPLE history

Advanced EMT — *Follow above protocols and in addition:*

14. Establish (consider large bore) IV access *with* Balanced Salt Solution
    Thermal Burn: Flow 500ml, up to 1000ml of fluid, Lactated Ringers *if* available
    - For the patient where an extended scene and/or transport time exists contact the Emergency Department for fluid administration, considering current ATLS recommendations or the Parkland Burn Formula
15. Consider 2nd (large bore) IV access *with* ~ Saline Lock

Burns (Cont.)

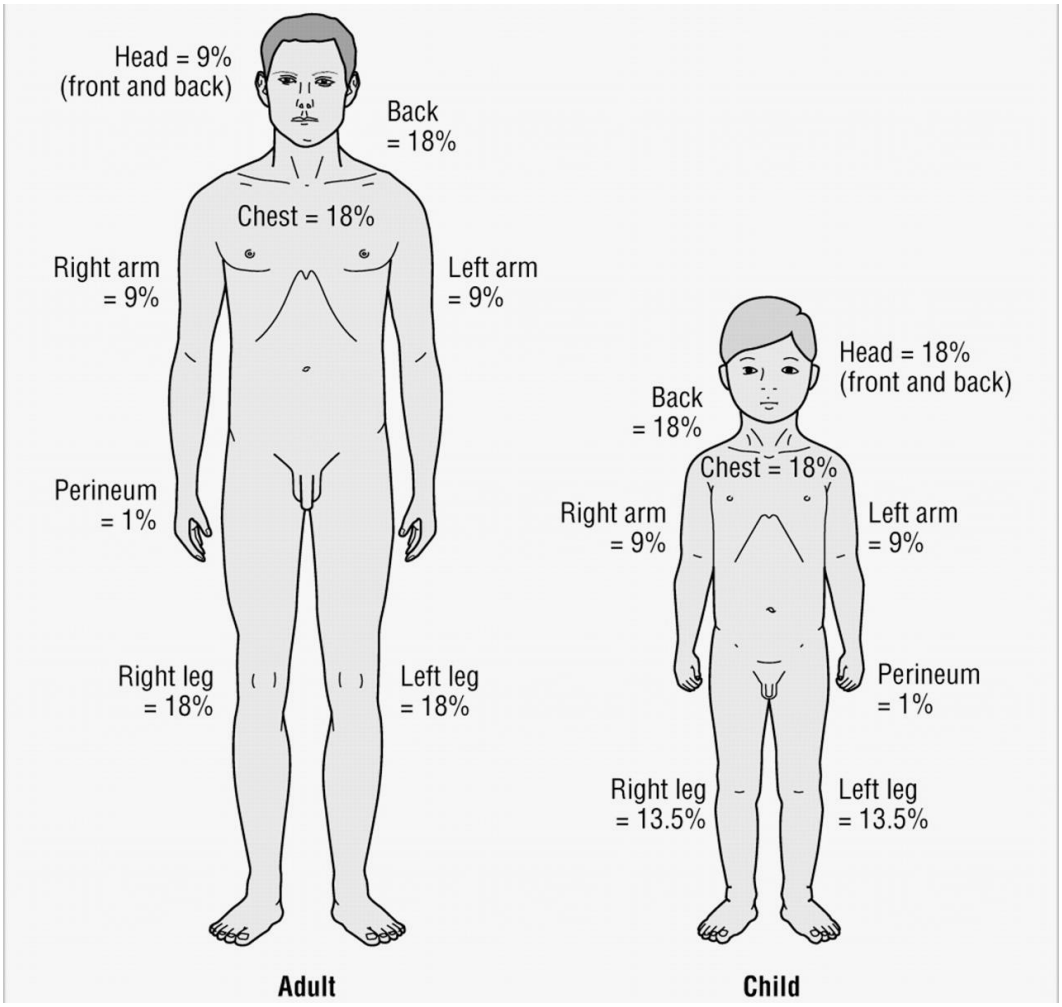
Intermediate ***Follow above protocols and in addition:***

16. ECG Monitor; Monitor for Dysrhythmias or other changes in cardiac system
17. *Consider* **Nebulizer treatment** for assistance in maintaining Airway until RSI is available
18. If unable to obtain IV *and if needed* establish IO Access
19. Severe Pain. *Consider* using narcotics *if* available *per* Pain Control protocol

Paramedic ***Follow above protocols and in addition:***

20. **Intubation** if airway is compromised
21. **Cricothyrotomy** if intubation is inhibited by trauma or oropharyngeal edema
22. **Pain Control** as patients with large burns often require narcotics. Consider starting with **10mg Morphine** ~or~ **2mg hydromorphone**

Rule of Nines Chart for Body Surface Area (BSA) for burns



Drowning

CONSIDERATIONS

- Use C-spine precautions (do not delay resuscitation) on all unconscious drowning patients.
- Any patient resuscitated after submersion or presenting with respiratory distress after submersion/ immersion should not be allowed to walk unassisted and should be transported to the ED. There is a potential for delayed respiratory distress / arrest of ensuing hours to days.

PATIENT REFUSALS for the submersion / immersion event patient

- Time management: Many candidates for the ED may refuse care/transport. Allow time for the patient to calm down from their adrenaline rush; attempt to obtain information and vital signs and a reassessment, do not cancel an ambulance until after Patient signs the refusal.
- All persons declining medical care / transport after submission or immersion shall meet the criteria for refusing care and in addition the following should be read to the patient as well as any family of friends who are with the patient:

"There is not always a definitive answer if too much water has been ingested into the lungs or stomach, complications to aspiration may not present themselves for several hours, one critical complication is pulmonary edema (too much water in the lungs), this can lead to difficulty breathing, respiratory arrest and even death. The patient should not be left alone and should be monitored for at least the next 5 hours for abnormal coughing, anxiety, difficulty breathing or speaking, sudden fatigue, change in behavior, forgetfulness, and throwing up – with or without blood. Do not delay in calling 911 if these signs and symptoms develop"

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. **Treat for Shock and hypothermia** in all drowning and submersion patients
3. Protect airway and anticipate vomiting, consider: Suction, Pocket Mask, BVM, OPA, or NPA
4. If pulseless, start CPR- treat *per* Cardiac Arrest protocols
5. If Mechanism of Injury indicates: *treat per* Trauma Protocols: General Guidelines and Spinal
6. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
7. Obtain baseline vital signs *including* respirations and lung sounds; Reassess Vitals as Needed.
8. Obtain SAMPLE/ MOI history; investigate for other illnesses, injuries & causes for submersion
9. *Consider* transferring patient to a suitable environment for treatment as soon as possible

Advanced EMT Intermediate — *Follow above protocols and in addition:*

10. Establish IV access *with* Balanced Salt Solution @TKO
11. ECG Monitor

Paramedic — *Follow above protocols and in addition:*

12. Treat dysrhythmias *per* appropriate protocol
13. Intubation as necessary to control airway

Electrical Injuries

CONSIDERATIONS

- Electrical injuries: 3 mechanisms of injury
  - Direct Tissue damage, altering cell membrane resting potential
  - Conversion of energy into thermal energy causing tissue destruction
  - Mechanical injury with direct trauma from falls or violent muscle contractions
- Mortality is related to the path of electricity through the body and the type of current:
  - AC current is usually more likely to:
    - Cause cardiac dysrhythmias
    - Repeated muscle contractions
    - Cause V-fib
  - DC current is usually more likely to:
    - Cause deep tissue injuries
    - One muscle contraction
    - Cause Asystole
- Both types of current can cause involuntary muscle spasms that do not allow the patient to let go of the electrical source

CRITICAL THINKING

- Have a high index of suspicion for compartment syndrome from significant tissue damage.
- The degree of internal tissue damage is often masked by the external appearance.

All Providers — Initial Considerations

1. Verify the scene is safe. ENSURE POWER SOURCE IS SECURED prior to any responder entering the hot zone for patient treatment.
2. Obtain pertinent history including: type of current, volts, amperage, duration of exposure, and any mechanism of injury associated with the incident.
3. Investigate and at a minimum: *treat* this patient as a trauma and burn patient:
4. Oxygen with appropriate device as needed to maintain 02 sats between 94% and 99%.
5. Remove rings, bracelets, watches and other constricting items ASAP
6. Cover any entry / exit wounds with clean, dry dressings

Advanced EMT Intermediate — *Follow above protocols and in addition:*

7. Maintain systolic blood pressure of 90 mmHg
8. ECG monitor

Paramedic — *Follow above protocols and in addition:*

9. Dysrhythmias; Treat per appropriate protocol
10. Severe Pain. *Consider* using narcotics *if* available *per* Pain Control protocol
11. Intubation as necessary to control airway

Fractures / Dislocations

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
3. Specific treatments:

Perform Rapid Trauma Assessment and/or focused physical exam of injury site as required

- **Joint dislocations and bone fractures**
  - a.) Check distal motor/sensory/vascular function before and after splinting
  - b.) Should be splinted in position found, except in the event of vascular compromise
    - I.) For vascular compromise one attempt at realignment may be made
    - II.) If realignment procedure is met with resistance STOP and splint in place
    - III.) Realignment is best attempted with ALS available for pain control
- **Long bone Fractures**
  - a.) Check distal motor/sensory/vascular function before and after splinting
  - b.) Splint in anatomical position at the joints above and below injury
  - c.) If resistance is met or bone looks like it may pierce skin: Stop and splint in place
- **Closed Femur Fracture.**
  - a.) Apply traction splint for suspected mid shaft or proximal femur fracture

4. If Mechanism of Injury indicates: *treat per* Trauma Protocols: General Guidelines and Spinal
5. Obtain baseline vital signs: Reassess Vitals as Needed
6. Treat *per* Shock protocol as needed
7. Manage other illnesses and injuries *per* appropriate protocols
8. Obtain SAMPLE history

Advanced EMT — *Follow above protocols and in addition:*

9. Establish large bore IV access, Balanced Salt Solution; titrate to a systolic BP of 90 mmHG
10. ECG Monitor

Intermediate Paramedic — *Follow above protocols and in addition:*

11. Severe Pain. *Consider* using narcotics *if* available *per* Pain Control protocol

Amputation / Soft Tissue Avulsion

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
3. Treat all bleeding per protocol considering: direct pressure, dressings, bandages, tourniquets
4. Specific treatments:

   Perform Rapid Trauma Assessment and/or focused physical exam of injury site as required

   - **Partial amputation / Residual limb**
     a.) Splint in anatomical position
     b.) Cover with sterile dressing
     c.) Moisten with sterile Saline
     d.) Cover with Dry dressing
   - **Severed part / Tissue**
     a.) Collect all tissue that can be found and transport to hospital
     b.) If part is grossly covered in debris gently rinse with sterile saline
     c.) Wrap severed part in moistened dressings, placed in a plastic bag
     - ❖ Never allowed severed parts to be immersed in water or in direct contact with ice

5. If Mechanism of Injury indicates: *treat per* Trauma Protocols: General Guidelines and Spinal
6. Obtain baseline vital signs: Reassess Vitals as Needed (Severe burns: Every 5 minutes)
7. Treat *per* Shock protocol as needed
8. Manage other illnesses and injuries *per* appropriate protocols
9. Obtain SAMPLE history

Advanced EMT Intermediate — *Follow above protocols and in addition:*

10. Establish large bore IV access, Balanced Salt Solution; titrate to a systolic BP of 90 mmHG
11. ECG Monitor

Intermediate Paramedic — *Follow above protocols and in addition:*

12. Severe Pain. *Consider* using narcotics *if* available *per* Pain Control protocol

Spinal Trauma

EMR & EMT — *Initial Considerations*

1. Assess: Airway, Breathing, Circulation & Neurologic status
2. Provide manual cervical spine stabilization *per* trauma protocols: General Guidelines
    a.) Head is not in the neutral in-line position but patient's airway is patent
        I.) C*onsider* stabilizing in position found
    b.) Head is not in the neutral in-line position but patient's airway is inadequate
        II.) Straighten using inline axial support just enough to establish a patent airway
3. Protect airway as needed, consider: BVM, Suction, OPA, or NPA
4. **Oxygen** if needed to maintain O2 sats between 94% & 99% (2-6 LPM NC) / (12-15 LPM NRB)
5. Perform Rapid Trauma Assessment of Patient
6. Place appropriately sized Cervical Collar on patient
7. Assess Pulse, Motor Response and Sensory functions before moving /splinting/ immobilization
8. Immobilize patient:
    a.) Consider long board, KED, scoop stretcher, or another immobilization device
        I.) Provide back-raft if indicated and available
    c.) Assess posterior of patient during transfer
9. Assess Pulse, Motor Response and Sensory functions after moving /splinting/ immobilization
10. Obtain baseline vital signs: Reassess Vitals as Needed
11. Treat *per* Shock protocol
12. Obtain SAMPLE history
13. Perform secondary assessment / detailed physical exam
14. Manage other illnesses and injuries *per* appropriate protocol(s)

EMT Advanced/ Intermediate — *Follow above protocols and in addition:*

15. Establish IV access *with* Balanced Salt Solution. Titrate to a systolic BP of 90mmHG
16. Consider second (large bore) IV access *with* Balanced Salt Solution ~or~ Saline Lock
17. ECG Monitor

Paramedic — *Follow above protocols and in addition:*

19. May elect to forgo full spinal precautions
20. Dysrhythmias; *Treat* per appropriate protocol
21. If patient cannot protect their own airway or respirations are <8 BPM; Consider Intubation

Head Trauma

EMR & EMT — *Initial Considerations*

1. Head Trauma has an associated cervical spine injury until proven otherwise
   Treat per trauma protocols: General Guidelines and Spinal and in addition:
2. Obtain baseline level of consciousness (LOC) and monitor/reevaluate often for changes
3. Use direct pressure for open head wounds if no underlying fractures or depressions are found
4. Stabilize but DO NOT remove impaled objects unless they are compromising airway /breathing
5. Specific injuries and treatments:
   - **Ear Injuries**
     a) Use direct pressure to control bleeding, do not pack ear canal
   - **Nose Injuries**
     a) Suction only, if necessary, maintain airway and apply direct pressure
     b) Treat *per* Epistaxis protocol
   - **Traumatic Brain Injuries (TBI)**

   a) Avoid hypoxia at all times. Place a non-rebreather mask on ALL Patients with potential TBI.
   b) If Patient is unable to maintain airway, an oral may be used. NPA are contraindicated on this type of injury. Consider Supraglottic airway along with ETCo2. Maintain ETCo2 level of 40 mmHg.
   c) Consider and treat reversible causes of altered mental status including hypoxia, hypoglycemia, and overdose.

EMT Advanced Intermediate — *Follow above protocols and in addition:*

6. For unconscious patients with respirations <12 BPM, Administer **Narcan** 0.4 -2 mg
7. If patient is hypotensive Fluid Challenge to maintain systolic BP 100mm Hg

Paramedic — *Follow above protocols and in addition:*

8. Intubate (RSI) if indicated
9. Consider Cricothyrotomy if intubation is indicated but inhibited by mandibular trauma

Chest Trauma

EMR, EMT, AEMT, Intermediate — Initial Considerations

1. *Treat per* Trauma Protocols: General Guidelines and Spinal and in addition:
2. Specific injuries:
   - **Flail Chest**
     a.) Stabilize section; consider pillow, IV bag, hand, etc.
   - **Open or Penetrating chest wounds**
     a.) Stabilize, DO NOT remove penetrating objects unless compromising airway
     b.) Place 3-sided occlusive dressing over wound(s)
     c.) Relieve pressure as needed
     d.) Monitor closely and remove if Tension pneumothorax develops

INDICATIONS OF TENSION PNEUMOTHORAX

Signs of a tension pneumothorax
- Hypertension
- Unilateral or bilateral decreased breath sounds
- Tracheal deviation
- JVD
- Respiratory distress

Consider in:
- Blunt or penetrating trauma patients
- Intubated patients who become suddenly unstable or difficult to bag despite suction
- Patients with known rib fractures and SQ emphysema
- Other chest injuries including open chest wound(s), simple pneumothorax, pulmonary contusion, & flail chest

Paramedic — *Follow above protocols and in addition:*

3. Respirations <8 or >30 or unable to protect airway: Consider Intubation
4. If indicated, Treat *per* Tension Pneumothorax Decompression protocol

Abdominal Trauma

All Providers — Initial Considerations

1. Until proven otherwise (Consider C-Spine) in addition to treating Abdominal Trauma:
   Treat per trauma protocols: General Guidelines and Spinal.
2. Assess: Airway, Breathing, Circulation & Neurologic status
3. Assess Pulse, Motor Response and Sensory functions
4. Specific injuries / treatments:

- **Impaled objects:**
  a.) Stabilize carefully, DO NOT remove object

Package patient in a "Knees Up" position if possible

- **Evisceration**
  a.) DO NOT try to replace eviscerated organs
  b.) Cover with saline (warmed if able) moistened dressings
  c.) Place large occlusive dressing over saline dressing
  d.) Prevent heat loss at wound site
  e.) Package patient in a "knees up" position if indicated

PELVIC FRACTURE

ALL PROVIDERS Initial Considerations

INDICATIONS

- Consider the risk of pelvic instability in all blunt trauma patients with appropriate mechanism of injury, or patients with pelvic pain
- Sling or Sheet is used in the initial reduction of an unstable pelvic fracture to lessen ongoing internal bleeding and ease pain by splinting.
- Pelvic wraps is not indicated for suspected isolated hip fractures

1. *Treat per* trauma protocols: General Guidelines and Spinal and in addition:
   If patient has pelvic pain, or pelvic instability during exam:
2. If pelvis is unstable on the initial exam, DO NOT repeat exam
3. Initiate splinting the Pelvic are, remove all items from patient's pockets and pelvic area:

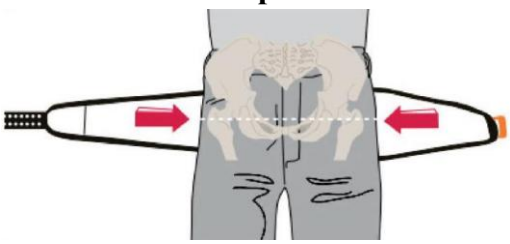
SAM SLING PELVIC WRAP

1. Unfold sling with white surface facing up, place beneath patient at buttocks level
2. Close sling by placing black Velcro side of flap down on the blue side.
3. Fold back material as needed. Place buckle close to midline
4. Grab orange handle on outer surface or flap and releases from flap by pulling upward
5. Pull both handles in opposite directions to tighten sling until you hear or feel buckle lock
6. As soon as it locks, maintain tension and firmly press orange handle against blue side

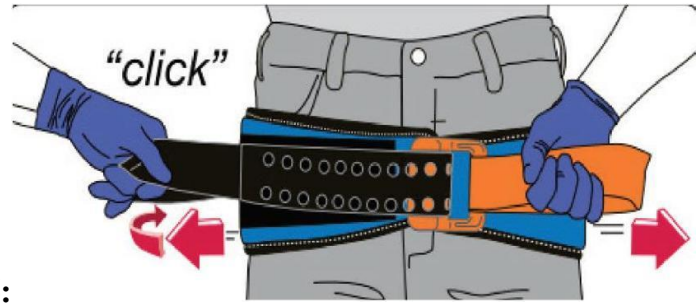
REMOVAL –ONLY with OLMC approval

1. Lift orange handle and release Velcro by pulling upward
2. Maintain tension and slowly allow sling to loosen

Step 1



Step 2 and Step 3



Steps 4 – 6:

PELVIC FRACTURE (Cont.)

BED SHEET (WHEN PELVIC WRAP IS ABSOLUTELY UNAVAILABLE ON SCENE)

1. Consider placement of the sheet on a backboard in advance of patient
2. Fold (Do Not Roll) sheet several times lengthwise until it is about nine 9 inches wide
3. Place underneath the pelvis, centered on the upper part of the thigh even with the level of the patient's wrists, when in supine position with arms down at the side.
4. Tighten the sheet and adjust the tension to try to return the pelvis to the normal anatomic position based on the initial assessment of instability.
5. Cross the sheet around the pelvis and adjust the tension to keep pelvis position
6. Secure it laterally with a knot or clamp.
7. The sheet should feel tightly wrapped around the pelvis allowing for 2 fingers to be inserted between the sheet and pelvis.
8. Always recheck position of sling/ sheet to ensure it hasn't rode up higher on the patient

Step 3 and 4:

Step 5:

Step 6:

Crush Injuries

INDICATIONS

- Compression in excess of 60 minutes
- Involvement of a large muscle mass
- Arrhythmias including peaked T waves and widening QRS complexes
- Rapid deterioration of patient after entrapment release

EMR & EMT — Initial Considerations

1. *Treat per* Trauma Protocols: General Guidelines and Spinal *if* indicated and in addition
2. Perform Rapid Trauma Assessment and/or focused physical exam of injury site as required
3. Provide wound care *per* appropriate protocol
4. Remove all restrictive dressings
5. Continually monitor distal pulse, motor, and sensation in involved extremity
6. Treat *per* Shock protocol

Advanced EMT — *Follow above protocols and in addition:*

7. Administer Balanced Salt Solution:
   ADULTS: 1000-2000 ml bolus, maintain at 500 ml per hour
   PEDIATRIC: 20 -40 ml/kg bolus, maintain at 20 ml/kg per hour
8. ECG Monitor

EMT Intermediate — *Follow above protocols and in addition:*

9. Severe Pain. *Consider* using narcotics *if* available *per* Pain Control protocol

Paramedic — *Follow above protocols and in addition:*

10. Administer Sodium Bicarbonate
    ADULTS: 25meq (1/2 amp) over 10 minutes. Repeat every 30 minutes x3
    PEDIATRIC: 0.5mEq/kg over 10 minutes. Repeat every 30 minutes x3

Suspension Trauma

INDICATIONS

- Trauma sustained during or after a fall while utilizing a fall arrest system resulting in prolonged suspension
- Except these incidents to be long in during and manpower intensive for stabilization and rescue operations
- Consider usage of air transport early

Pathophysiology:

a. Pooling of blood in lower extremities causes a decrease in the amount of blood circulating to vital organs

b. Factors worsening the suspension trauma: inability to move legs, fatigue, other injuries, dehydration, hypothermia, and cardiac disease

c. Suspension trauma just by itself or subsequent reperfusion of the lower extremities may lead to loss of consciousness, renal failure, pulmonary embolus, or cardiac arrest.

Theories of death:

a. Blood pooled in legs is lacking oxygen causing heart failure upon returning.

b. Large volume of blood returns and overloads he right ventricle

c. Reperfusion injury of the vital organs that became hypoxic during vertical immobility

d. Injury caused by toxins that accumulated in the blood pooled in the legs similar to crush injury

Critical Thinking

- Some authorities suggest positioning patient in a sitting position for at least 30 minutes before repositioning patient horizontally for treatment, others recommend immediate supine positioning
- Treat patient based on MOI and condition, if other injuries required immediate supine positioning do not delay.

All Providers — Initial Considerations

1. Immediately after Patient contact and throughout rescue:
    a.) Advise the patient (suspended worker) to pump legs if possible
2. *Treat per* Trauma Protocols: General Guidelines and Spinal *if* indicated and in addition:
3. Consider elevation of the head of the backboard to keep patient's head higher than the feet.
4. Consider management per Crush injuries protocol for prolonged suspension
5. Investigate and treat other illness or injuries *per* appropriate protocol(s)

Taser Patient

CONSIDERATIONS

- The Taser is a less than lethal law enforcement device designed to temporarily subdue and incapacitate a combative subject. Two darts deliver 19 short pulses per second to a typical peak voltage of 1300V.
- The pulse is designed to cause neuromuscular incapacitation with minimal cardiac effects
- Special consideration should be given to patients with cardiac history, respiratory history, and those under the influence of drugs or alcohol.
- Every patient shall receive thorough (as possible) medical exam without prejudice.
- Patients who have been tasered may be combative and uncooperative. If a provider deviates from protocols it is critical to document why.

Documentation

- In addition to patient's Name, Date of birth, address:
- Attempt: Pain level, Chief Complaint, Medications, Allergies.
- Record all vital signs taken, location of probes, any treatments/ procedures you performed.
- The arresting officer's name shall be recorded in the PCR.
- Signed Refusals of care or transport are not indicated in these patients. They are either transported to a hospital or remain in police custody

Physiologic and Metabolic Effects. CEW (Conducted Electrical Weapons) use causes physiologic and/or metabolic effects that may increase the risk of death or serious injury. These effects include changes in blood chemistry, blood pressure, respiration, heart rate and rhythm, and adrenaline and stress hormones, among others. Some individuals may be particularly susceptible to the effects of CEW use. These susceptible individuals include the elderly, those with heart conditions, asthma or other pulmonary conditions, and people suffering from excited delirium, profound agitation, severe exhaustion, drug intoxication or chronic drug abuse, and/or over-exertion from physical struggle. In a physiologically or metabolically compromised person, any physiologic or metabolic change may cause or contribute to sudden death.

Stress and Pain. CEW use, anticipation of use, or response to use can cause startle, panic, fear, anger, rage, temporary discomfort, pain, or stress which may be injurious or fatal to some people.

Loss of control associated with CEW use can have several causes:

Seizure. Repetitive stimuli (e.g., flashing light or electrical stimuli) can induce seizure in some people, which may result in death or serious injury. This risk may be increased in a person with epilepsy, a seizure history, or if electrical stimuli pass through the head. Emotional stress and physical exertion, both likely in incidents involving CEW and other uses of force, are reported as seizure-precipitating factors.

Fainting. A person may experience an exaggerated response to a CEW exposure, or threatened exposure, which may result in fainting or falling.

Muscle contraction, incapacitation, or startle response. CEW use may cause loss of control from muscle contraction, incapacitation, or startle response.

Taser Patient (Barb Removal)

CONTRAINDICATIONS

Taser barbs are not to be removed if:

- Barbs have penetrated:
  - Face/Eye
  - Neck
  - Groin
  - Spinal Column
- Patient's GCS <15
- Patient has abnormal vital signs:
  - Heart rate ,< 60 or >120
  - Systolic BP <90 or >180 mmHg
  - Respirations <12 or >30
  - Patient is less than 16years old

EMR — Initial Considerations

1. Ensure Body Substance Isolation precautions are taken, and that Police have secured the scene
   a.) *Consider* discussing with police about moving the patient if crowd control is an issue
2. Interview Police officer regarding patient's condition and any changes in behavior or responsiveness since the Taser incident
3. Identify locations, ensure barbs are disconnected from gun, and account for all Taser barbs
4. Obtain baseline vital signs; Blood pressure pulse, respirations, SpO2
5. Assess and treat patient for other illnesses and injuries *per* appropriate protocols

EMT — *Follow above protocols and in addition:*

6. Cut wires at the base of the barb
7. Remove barb:
   a.) With one hand: Apply counter pressure on the skin near the impact site
   b.) With your other hand and a pair of pliers; In a single, quick motion perpendicular (90°) to the skin surface pull the barb straight out
   c.) Place barb in supplied Taser Cartridge or SHARPS
8. Swab each impact sight with an alcohol swab and apply a Band-Aid (or necessary dressings)
9. Repeat for all impaled barbs

If Patient Is Not Being Transported By Ambulance To Hospital:

10. Obtain second set of vitals 15 minutes after baseline set *if* able
11. Remind Police Officer the patient needs monitoring for possible physiologic changes that may occur in the following hours after the incident.

Advanced EMT — EMT Intermediate — Paramedic — *In addition:*

12. Obtain ECG strip *if* able

Technical Rescue Patient Considerations

GENERAL

- For the purpose of this treatment protocol the Technical Rescue environment encompasses but may not be limited to: Water Rescue, Rope Rescue, Trench, Confined Space, Structural Collapse, Wilderness Search and Rescue (SAR), Machinery, complex vehicle extractions with a technical rescue component, natural disaster, or any other rescue the Incident Commander (IC) deems that this protocol may apply.
- These Considerations are to be assessed and instituted concurrently with any or all other protocols that patient is being treated for.
- Always remember: Airway, Breathing, & Circulation are the 3 highest patient priorities.

CRITICAL THINKING

- In addition to treating the Patients Presenting Medical Complaint or traumatic injury the following must be considered for patients in the technical rescue environment:
  - Patient Personal Protective Equipment
  - Patient Temperature regulation and environmental protection
  - Long term or extended scene time considerations
  - Responder rehab

All Providers — Initial Considerations

1. Manage immediate life threats (Airway and uncontrolled bleeding)
2. Protect patient with appropriate PPE (If and when the incident allows)
   a.) Patient helmet with chin strap and eye protection
   b.) Patient Hearing protection
   c.) Patient harness/ secured in any environment where a rope system may be used
   d.) Patient Personal Flotation Device if the situation allows
3. Environmental factors:
   a.) Protect Patient from cold, wind, rain, and other environmental factors
   b.) Cold environments: Insulate and cover patient with blankets/ hot packs, etc.
   c.) Hot environments: Keep patient shaded and cool, remove bulky clothing
   d.) Monitor Patient Temperature every 30 minutes
4. Investigate and treat other illness or injuries *per* appropriate protocol(s)
   Basic interventions over Advanced interventions
5. Consider contacting OLMC as appropriate for consultation
6. Patient fluid intake must be monitored and documented
   Example: Patient consumed 1500ml of water over 2 hour contact time
   Maximum sports drink in 6 hour period: 1500 ml.
   If administered sports drinks and water is a 1:1 ratio

Procedure: Tourniquet Placement

EMT **Advanced EMT** **EMT-Intermediate** **Paramedic**

INDICATIONS

- Extremity hemorrhage that is uncontrollable by such means as direct pressure, bandaging, or pressure dressings.

SPECIAL NOTES

- Extremity

PROCEDURE

1. Fully expose and evaluate the wound
2. Apply tourniquet directly to the skin, 2 to 3 inches above (proximal)
    a. Do not place a tourniquet over a joint
3. Tighten the windlass until all bleeding stops and no distal pulse is palpable
4. Secure the windlass
5. If one properly placed tourniquet does not control bleeding, a second should be placed above the first (proximal).
6. Keep all tourniquets exposed
7. Mark the time of application and communicate this to other providers during patient hand-offs
8. Reevaluate tourniquet(s) frequently to ensure they are still effective

Seaside Fire & Rescue Medical Protocols

Medications

Medications

All providers are authorized to administer the following medications for their intended treatments and routes, without deviating from their scope of practice.

- It is the intent of these protocols to allow each level of provider to use the full scope of their practice set forth by the state. Not all medications or procedures listed in these protocols may be stocked in department inventories but may be available on incidents
- Providers are responsible for staying current on their knowledge of medications.

Emergency Medical Responder

Aspirin	Via mouth for suspected myocardial infarctions
Epinephrine	Via Automation Injection device for Anaphylaxis
Oral Glucose	For suspected hypoglycemia
Oxygen	
Naloxone	Via intranasal devise for suspected opioid overdose

Emergency Medical Technician *Same medications as above and in addition*:

Activated Charcoal	For poisoning
Albuterol	For suspected bronchospasm
Epinephrine	For anaphylaxis
Nebulized dose inhalers	Metered dose inhalers
Sublingual nitroglycerine	Assist ONLY with medication prescribed to patient by their physician

Advanced Emergency Medical Technician *Same medications as above and in addition*:

Albuterol	Dextrose	Nitroglycerine
Glucagon	Ipratropium bromide	
Lidocaine for intraosseous infusion anesthetic	Physiologic isotonic crystalloid solutions	

Emergency Medical Technician Intermediate *Same medications as above and in addition*:

Amiodarone	Diphenhydramine	Lidocaine	Ondansetron
Ammonia Inhalant	Epinephrine	Morphine	Vasopressin
Atropine Sulfate	Fentanyl		

Paramedic *Same medications as above and in addition*:

Adenosine	Magnesium sulfate	Rocuronium	Solu-Medrol
Ativan	Midazolam	Sodium bicarbonate	Succinylcholine
Dilaudid	Racemic Epinephrine	Solu-Cortef	Vecuronium
Etomidate			

Activated Charcoal

EMT and Above

CONTRAINDICATIONS

- Patients with altered mental status or the inability to maintain their own airway
- Patients who have aspirated or with a potential for aspiration

INDICATIONS

- Management of poisoning or overdose of many substances

SUPPLIED: 25 grams in a 120 ml bottle.

ADULT DOSING:
1 gram / kg PO of OG tube, max dose 50 grams

PEDIATRIC DOSING:
Same as Adult

PHARMACOLOGY AND ACTIONS:
Activated charcoal adsorbs toxic substances ingested and inhibits GI adsorption by forming an effective barrier between the particulate material and the gastrointestinal mucosa. The effect is greatest if used within one hour of ingestion.

PRECAUTIONS:
A. Activated charcoal may be ineffective in some ingestions.
B. Milk, ice cream and other dairy products will decrease the adsorption capacity substantially.

SIDE EFFECTS AND NOTES: May cause nausea, vomiting, and constipation.

Adenosine (Adenocard)

Paramedic

CONTRAINDICATIONS	
• Second- or third- degree heart block • Sick Sinus Syndrome	• Known hypersensitivity • Atrial fibrillation

INDICATIONS

- To convert PSVT to a normal sinus rhythm, including PSVT that is associated with accessory bypass tracts (e.g. Wolff-Parkinson-White Syndrome)

OLMC Required: NO

SUPPLIED: 6 mg / 2 ml
~or~ 12 mg / 4 ml pre-filled syringes

ADULT DOSING:
6 mg rapid IV. May repeat with 12 mg IV x 2 if patient fails to convert after 6 mg dose.
Use a large proximal IV site with fluid bolus flush

PEDIATRIC DOSING:
0.1mg/kg rapid IV push. May repeat with 0.2 mg/kg once if patient fails to convert covert after first Dose.
Use a large proximal IV site with fluid bolus flush

PHARMACOLOGY AND ACTIONS:
Adenosine is a naturally occurring nucleoside that has the ability to slow conduction through the AV node. Since most cases of PSVT involve AV nodal re-entry, adenosine is capable of interrupting the AV nodal circuit and stopping the tachycardia, restoring normal sinus rhythm. It is eliminated from the circulation rapidly and has a half-life in the blood of less than ten seconds.

PRECAUTIONS:

A. When doses larger than 12 mg are given by injection, there may be a decrease in blood pressure secondary to a decrease in vascular resistance.
B. The effects of adenosine are antagonized by methylxanthines such as theophylline and caffeine. Larger doses of adenosine may be required.
C. Adenosine effects are potentiated by dipyridamole (Persantine) resulting in prolonged asystole.
D. In the presence of carbamazepine (Tegretol), high degree heart block may occur.
E. Adenosine is not effective in converting atrial fibrillation, atrial flutter or ventricular tachycardia.
F. All doses of adenosine should be reduced to one-half (50%) in the following clinical settings:
    a. History of cardiac transplantation.
    b. Patients who are on carbamazepine (Tegretol) and dipyridamole (Persantine).
    c. Administration through any central line.
G. Use caution in patients with asthma as it may cause a reactive airway response in some cases.

SIDE EFFECTS AND NOTES:
May cause facial flushing, shortness of breath, chest pressure, nausea, headache, and lightheadedness.

Albuterol

EMT and Above

CONTRAINDICATIONS

- None in the prehospital setting.

INDICATIONS

- To treat bronchial asthma and reversible bronchial spasm that occurs with chronic obstructive pulmonary disease.
- To treat hyperkalemia.
- Chlorine Inhalation.

OLMC Required: None

SUPPLIED: 2.5 mg / 3 ml vial individually

~or~ 3 mg packaged with 0.5 mg ipratropium (Duo-Neb)

ADULT DOSING:	
Respiratory distress 3.0 ml DuoNeb (2.5 mg albuterol/0.5 mg ipratropium) via nebulizer. Repeat DuoNeb as needed X 2. Do not administer more than three total treatments. If no response to DuoNeb, continue with Albuterol only at 2.5 mg via nebulizer. May repeat as needed	**Hyperkalemia (including secondary to crush injury) -** 10 mg via nebulizer. **Chlorine Inhalation-** 2.5 mg via nebulizer

PEDIATRIC DOSING:

Same as adult except in hyperkalemia.

Hyperkalemia-

< 25 kg, 2.5 mg via nebulizer. 25 - 50 kg, 5.0 mg via nebulizer. > 50 kg, 10 mg via nebulizer

PHARMACOLOGY AND ACTIONS: Albuterol is a potent, relatively selective beta-2 adrenergic bronchodilator and is associated with relaxation of bronchial smooth muscle and inhibition of release of mediators of immediate sensitivity from cells, especially MAST cells. The onset of improvement in pulmonary function is within 2 – 15 minutes after the initiation of treatment and the duration of action is from 4 – 6 hours. Albuterol has occasional beta-1 overlap with clinically significant cardiac effects.

PRECAUTIONS: The patient's rhythm should be observed for arrhythmias. Stop treatment if frequent PVC's develop or any tachyarrhythmias other than sinus tachycardia appears or if heart rate increases by more than 20 beats/minute.
Paradoxical bronchospasm may occur with excessive administration.

SIDE EFFECTS AND NOTES: Clinically significant arrhythmias may occur, especially in patients with underlying cardiovascular disorders such as coronary insufficiency and hypertension.

Amiodarone

EMT Intermediate and Paramedic

CONTRAINDICATIONS • None in cardiac arrest	• Do not use in perfusing patients in the following situations without OLMC approval: ➢ Systolic BP is less than 90 mmHg ➢ Periods of sinus arrest present ➢ Heart Rate less than 50 BPM ➢ 2nd or 3rd degree heart blocks are present
INDICATIONS	• Ventricular fibrillation • Ventricular tachycardia with pulses. • Post resuscitation anti-dysrhythmic

OLMC Required: See contraindications.

SUPPLIED: 150 mg in a 3 ml pre-filled syringe ~or~ vial

ADULT DOSING: **V Fib, pulseless V Tach** 300 mg IV/IO. May repeat once with 150 mg **Post resuscitation** 150 mg IV/IO. Mix with 100 ml of NS (in Buretrol or 100 ml bag) and infuse over 10 minutes via drip or pump.(If Amiodarone was last anti-dysrhythmic given prior to ROSC wait 30 minutes after ROSC to re-dose	**Unstable V Tach with a pulse (after unsuccessful cardioversion X2** 150 mg IV/IO slow push over 3 minutes **Stable V Tach with a pulse** 150 mg IV/IO. Mix with 100 ml of NS (in Buretrol or 100 ml bag) and infuse over 10 minutes via drip or pump. May repeat once if no conversion
PEDIATRIC DOSING: **V Fib, pulseless V Tach** 5 mg/kg IV/IO. May repeat once with 2.5mg/kg **Unstable V Tach with a pulse (after unsuccessful cardioversion X2** 2.5mg/kg IV/IO slow push over 3 minutes	**Stable V Tach with a pulse** 2.5 mg/kg IV/IO. Mix with 2 ml/kg of NS in Buretrol) or 100 ml bag if using IV pump) and infuse over 10 minutes. May repeat once if no conversion

PHARMACOLOGY AND ACTIONS: Amiodarone depresses automaticity of the SA node. It slows conduction and increases refractoriness of the AV node. Amiodarone increases atrial and ventricular refractory period and prolongs the QT interval. When given IV it is rapidly distributed. No dosage adjustments needed for patients with renal, liver, heart failure, or advanced age.

PRECAUTIONS: In high concentrations (> 3 mg/ml), amiodarone can cause phlebitis. Infusion concentrations should not exceed 2 mg/ml.
Amiodarone will precipitate if administered in the same IV line as sodium bicarbonate or heparin.

SIDE EFFECTS AND NOTES: In perfusing patients, amiodarone may cause hypotension, prolonged QT interval, pro-arrhythmic effects, severe bradycardia, and atrioventricular block.
Non-cardiac toxicities are usually related to chronic administration and include pulmonary infiltrates, hepatic and/or thyroid dysfunction, and peripheral neuropathy.

Aspirin

All Providers

CONTRAINDICATIONS

- Allergy to aspirin or aspirin induced asthma
- History of bleeding disorder (i.e., hemophilia)
- Current ulcer of GI bleeding
- Suspected aortic dissection

INDICATIONS

In unstable angina and acute myocardial infarction, aspirin has been shown to lower mortality and is indicated in patients with suspected ischemic chest pain.

OLMC Required: NO

SUPPLIED: 81 mg chewable tablets (Baby aspirin)

ADULT DOSING:

Chest pain (acute myocardial infarction): 324 mg orally

PEDIATRIC DOSING:

Not Indicated in Pediatric Patients

PHARMACOLOGY AND ACTIONS: Aspirin inhibits prostaglandins and disrupts platelet function for the life of the platelet. It is also a mild analgesic and anti-inflammatory agent.

PRECAUTIONS: In high concentrations (> 3 mg/ml), amiodarone can cause phlebitis. Infusion concentrations should not exceed 2 mg/ml.
Amiodarone will precipitate if administered in the same IV line as sodium bicarbonate or heparin.

SIDE EFFECTS AND NOTES:
High doses of aspirin can cause ringing in the ears.
May cause heartburn, nausea, and vomiting.

Atropine Sulfate

EMT Intermediate and Paramedic

CONTRAINDICATIONS

- Atrial fibrillation and atrial flutter because increased conduction may speed ventricular rate excessively
- Not used in neonatal resuscitation

INDICATIONS

- To increase the heart rate in bradycardia or pacemaker failure.
- To improve conduction in second- and third-degree heart block.
- As an antidote for some insecticide exposures (e.g., anti-cholinesterase, organophosphates) and nerve gases.
- To counteract excessive vagal influences causing some brady-systolic and asystole arrests.
- For bradycardia not due to hypoxia when using succinylcholine.

OLMC Required: No

SUPPLIED: 1 mg in a 10 ml pre-filled syringe ~or~ 2 mg / 0.7 ml autoinjector, 8 mg / 20 ml vial

ADULT DOSING:

Bradycardia (Cardiac)
1.0 mg IV/IO. May repeat every 3-5 minutes to max of 3 mg.

Bradycardia secondary to RSI/DSI -
0.5 mg IV/IO.

Organophosphate Poisoning
For mild to moderate poisoning (Headache, mild bronchorrhea, nausea, vomiting, diarrhea but normal mentation): 1-2 mg IV/IO/IM every 3-5 minutes until symptoms improve (e.g., decreased secretions).
For severe poisoning with unconsciousness (Altered mental status, unconsciousness, seizures): 3 - 5 mg IV/IO/IM every 3-5 minutes until symptoms improve (e.g., decreased secretions, ease of ventilation).

PEDIATRIC DOSING:

Bradycardia secondary to RSI/DSI
0.02 mg/kg IV/IO. Minimum dose 0.1mg. Do not exceed adult dose
Organophosphate poisoning
0.05 mg/kg IV/IO/IM. Contact OLMC for frequency of dosing

PHARMACOLOGY AND ACTIONS:
Atropine is a muscarinic-cholinergic blocking agent. As such, it has the following effects:

A. Increases heart rate (by blocking vagal influences).
B. Increases conduction through the AV node.
C. Reduces motility and tone of the GI tract.
D. Reduces action and tone of the urinary bladder (may cause urinary retention).
E. Dilates pupils

PRECAUTIONS:

A. Activated charcoal may be ineffective in some ingestions.
B. Milk, ice cream and other dairy products decreases adsorption capacity substantially.

SIDE EFFECTS AND NOTES: May cause nausea, vomiting, and constipation

Dextrose

EMT Advanced and Above

CONTRAINDICATIONS

- None

INDICATIONS

- Hypoglycemia
- Unconscious patient when history is unobtainable

OLMC Required: No

SUPPLIED: 25 grams in a 50 ml pre-filled syringe 50%.

~or~ 25 grams/250 ml bag 10%

ADULT DOSING:
Hypoglycemia / Altered Mental Status
10 – 25 grams slow IV/IO

PEDIATRIC DOSING:
For infants <10kg (Birth to 1 year) with CBG < 40mg%:
Children 10kg to 35 kg with CBG <60 mg%:
Dextrose 10% ml/kg IV by infusion to a maximum does of 250 ml
If diluting D50: Dextrose 12.5% 4 ml/kg by infusion to a maximum dose of 200 ml

PHARMACOLOGY AND ACTIONS:
Glucose is the body's basic fuel. It produces most of the body's quick energy. Its use is regulated by insulin which stimulates storage of excess glucose outside the bloodstream, and glucagon, which mobilizes stored glucose into the bloodstream.

PRECAUTIONS:
A. Extravasation of dextrose may cause necrosis of tissue and the patency of the IV should be secured during administration. If extravasation does occur, immediately stop administration.
B. Report any extravasation to receiving hospital personnel and document on the Prehospital Care Report.

SIDE EFFECTS AND NOTES:
Hyperglycemia may complicate or worsen a number of medical conditions (e.g. myocardial infarction and stroke). Dextrose should be given whenever hypoglycemia is documented by blood glucose meters. If these findings are not available, the EMT should use judgement based on signs and history.

Dilaudid (Hydromorphone)

Paramedic

CONTRAINDICATIONS

- Known hypersensitivity
- Moderate to severe respiratory depression
- Patient in labor

INDICATIONS

- Moderate to severe pain

OLMC Required: No

SUPPLIED: 2mg/ml

ADULT DOSING:

- **Pain Management: 0.5- 1.0 mg IV; 1-2 mg IM q 20 minutes, PRN for pain**

PEDIATRIC DOSING: Never exceed adult dose

- **Pain Management: (0-6 months): 0.005 mg/kg IV/IM (5mcg/kg)**
  (6 months +): 0.015 mg/kg IV/IM (15 mcg/kg)

PHARMACOLOGY AND ACTIONS: Dilaudid is a potent opioid analgesic that produces analgesia and sedation. Action onset is 3-5 minutes. Duration of Medication is 2-4 hours.

PRECAUTIONS:

A) Have naloxone and respiratory support available when administering Dilaudid. **C**an cause respiratory depression that is reversible with naloxone. Respiratory depression can also be exacerbated by lung disease and the use of other respiratory depressant drugs (benzodiazepines, alcohol, cyclic antidepressants).

B) Elderly Patients generally require a lower dose.

C) Significantly smaller doses are required for Dilaudid than with Morphine.

SIDE EFFECTS AND NOTES:

If hypotension develops, it is usually responsive to naloxone and Trendelenburg position. If hypotension continues, follow Shock protocol.

After each dose document vital signs. The goal of Dilaudid is patient comfort with reduction in the perception of pain, not the total elimination of pain.

Diphenhydramine (Benadryl®)

EMT Intermediate and Above

CONTRAINDICATIONS

- None

INDICATIONS

- The second-line drug in anaphylaxis and severe allergic reactions (after Epinephrine)
- To counteract acute dystonic (involuntary muscle contractions) and dysphoric (unhappiness and dissatisfaction) reaction to anti-psychotic drugs

OLMC Required: No

SUPPLIED: 50 mg/ml vial

ADULT DOSING:
1 mg/kg IV/IM to a max of 50mg

PEDIATRIC DOSING:
1 mg/kg IV/IM to a max of 50mg

PHARMACOLOGY AND ACTIONS:
Diphenhydramine is an antihistamine which blocks the action of histamines released from cells during an allergic reaction. It has direct CNS effects, which may be a stimulant, or more commonly a depressant, depending on individual variation. Diphenhydramine also has an anticholinergic and antiparkinsonian effect which is used to treat acute dystonic reactions to antipsychotic drugs (e.g. Haldol®, Thorazine®, Compazine®, Inapsine®). These reactions include oculogyric crisis, acute torticollis, and facial grimacing.

PRECAUTIONS:
A. May have an additive effect with alcohol or other CNS depressants.
B. Although useful in acute dystonic reactions, it is not an antidote for anti-psychotic toxicity or overdose.
C. May cause hypotension when given IV.

Epinephrine

EMT and above (for anaphylaxis)
EMT Intermediate and Above (cardiac arrest)

CONTRAINDICATIONS

- None

INDICATIONS

- Anaphylaxis and severe asthma
- Ventricular fibrillation, asystole, pulseless electrical activity, symptomatic bradycardia

OLMC Required: No

SUPPLIED: 1:1,000 30mg in 30 ml vial ~or~ 1 mg/ml vials

1:10,000 1mg in a 10 ml pre-filled syringe

ADULT DOSING:

V-Fib, Pulseless V-Tach, Asystole, PEA 1.0 mg 1:10,000 IV/IO every 3 to 5 minutes
Asthma 0.3mg – 0.5mg 1:1,000 IM. May repeat once
Anaphylaxis 1:1,000 0.3mg – 0.5mg IM. May repeat once in 5-15 minutes
~or~ 1:10,000 0.1 mg boluses IV/IO every 5 minutes titrated to effect.
Max does 0.5mg

PEDIATRIC DOSING:

V-Fib, Pulseless V-Tach, Asystole, PEA 0.01 mg/kg 1:10,000 IV/IO
Asthma 0.01 mg/kg 1:1,000 IM (Max does 0.5mg). Contact OLMC for additional doses
Anaphylaxis 1:1,000 0.01 mg/kg IM to a max of 0.5 mg. May repeat once in 5-15 minutes
~or~ 1:10,000 0.01 mg/kg (max 0.1 mg) IV/IO bolus every 3-5 min titrated to effect.
Max dose 0.5mg

PHARMACOLOGY AND ACTIONS:

Epinephrine is a catecholamine with both alpha and beta effects. In general, the following cardiovascular responses can be expected: increased heart rate, increased myocardial contractile force, increased systemic vascular resistance, increased arterial blood pressure, increased myocardial oxygen consumption, and increased automaticity. Epinephrine is also a potent bronchodilator.

PRECAUTIONS:

A. Epinephrine increases cardiac workload and can precipitate angina, MI, or major dysrhythmias in individuals with ischemic heart disease.
B. Wheezing in an elderly person is pulmonary edema or pulmonary embolus until proved otherwise.

SIDE EFFECTS AND NOTES:

May cause anxiety, tremor, or headache.
Cardiac side effects include tachycardia, PVC's, angina and hypertension.

Racepinephrine (Racemic Epinephrine)

Paramedic

CONTRAINDICATIONS

- Life-threatening cardiac arrhythmias (i.e., ventricular tachycardia, unstable SVT)

INDICATIONS

- Nebulized in suspected croup (audible stridor at rest in children 6 months to 6 years)

OLMC Required: No

SUPPLIED: 11.25 mg / 0.5 ml

PEDIATRIC USE ONLY IN SUSPECTED CROUP:
Respiratory distress with audible stridor at rest (pts 6 months to 6 years old) - 0.5 ml (11.25 mg) of racepinephrine diluted with 2.5 ml of normal saline via nebulizer. May repeat once in 10 minutes if necessary. Contact OLMC for additional doses. In the absence of Racepinephrine, you may substitute 5 ml (5mg) of EPI 1:1000 via nebulizer

PHARMACOLOGY AND ACTIONS:
Racemic epinephrine is a mixture consisting of d-Epinephrine and l-Epinephrine enantiomers. Epinephrine causes smooth muscle relaxation on various tissues, including bronchial smooth muscles. It also results in vasoconstriction of airway soft tissues when nebulized.

PRECAUTIONS:

A. Monitor efficacy to nebulization by clinical status, oxygen saturation and respiratory rate and work of breathing.
B. Monitor response to heart rate and blood pressure.
C. Administer via nebulization ONLY.
D. DO NOT administer IV/ IO/ IM/ IN

Etomidate (Amidate®)

Paramedic

CONTRAINDICATIONS

- Patients with known hypersensitivity to the drug

INDICATIONS

- As an induction agent for use in rapid sequence intubation
- As a sedation agent prior to synchronized cardioversion of unstable tachycardia

OLMC Required: No

SUPPLIED: 40 mg in a 20 ml pre-filled syringe ~or~ 2 mg/ml in 40 mg vial

ADULT DOSING:

Induction agent for Rapid Sequence Intubation
0.3 mg/kg IV/IO slow push

Synchronized cardioversion for unstable tachycardia
0.15 mg/kg IV/IO push to a max of 10mg. Wait 45-60 seconds for signs of sedation such as patient becoming verbally unresponsive or no longer following commands

PEDIATRIC DOSING:
Same as adult

PHARMACOLOGY AND ACTIONS:
Etomidate is a hypnotic drug without any analgesic activity. Intravenous injection of etomidate produces hypnosis characterized by rapid onset of action; usually within one minute. Duration of hypnosis is dose dependent but relatively brief, usually 3-5 minutes.

Fentanyl (Sublimaze®)

EMT Intermediate and Paramedic

CONTRAINDICATIONS

- Known allergy to fentanyl
- Moderate to severe respiratory depression

INDICATIONS

- Pain due to musculoskeletal injury or burns
- Suspected ischemic chest pain
- Post-intubation analgesia
- CPR induced consciousness

OLMC Required: No

SUPPLIED: 100 micrograms (mcg) in a 2ml vial

ADULT DOSING:

- **Pain Management** 50-100 mcg IV/IN. May repeat 25-50 mcg every 5 minutes as needed. Max 500 mcg
  50-100 mcg IM May repeat 25-50 mcg every 15 minutes as needed. Max 500 mcg

*IF BP is <100mmHg and/or patient has minor ALOC or respiratory depression first dose of 25 mcg, may repeat 25-50 mcg every 5 minutes to a max of 500 mcg. Monitor

- **Post Intubation analgesia** After successful airway placement: 50 – 100 mcg IV/IO if Systolic BP ≥ 100 mmHg (MAP >65 mmHg). Repeat every 15 minutes as necessary
- **CPR Induced Consciousness** 50 mcg IV/IO used in conjunction with midazolam.
  May repeat every 5-10 minutes as needed

PEDIATRIC DOSING: **Never exceed adult dose**

- **Pain Management** 1 mcg/kg IV. May repeat 0.5-1 mcg/kg every 5 minutes as needed to a max of 4mcg/kg OR 2mcg/kg IN repeated with 1mcg/kg every 5 minutes as needed to a maximum of 4 mcg/kg
  If no IV/IN may give fentanyl 1-2 mcg/kg IM.
  May repeat every 15 minutes to a max of 4mcg/kg.
- **Post Intubation analgesia** After successful airway placement: 1 mcg/kg IV/IO, repeat doses at 0.5 – 1mcg/kg every 15 minutes

PHARMACOLOGY AND ACTIONS: Fentanyl is a potent synthetic opioid analgesic that produces analgesia and sedation. It is about 50-100 times more potent than morphine on a weight basis. Action onset is 2-3 minutes. Peak effect occurs at 3-5 minutes and lasts 15-45 minutes.

PRECAUTIONS: Have naloxone and respiratory support available when administering fentanyl. **C**an cause respiratory depression that is reversible with naloxone. Respiratory depression can also be exacerbated by lung disease and the use of other respiratory depressant drugs (benzodiazepines, alcohol, cyclic antidepressants).
If administered rapidly and in very large doses, fentanyl can cause muscle spasm and chest wall rigidity. The only reliable treatment for this is neuromuscular blockade.
The action of fentanyl is prolonged, and its elimination is slower in the elderly. Smaller maintenance doses are advisable.
Fentanyl must be used cautiously in patients who have already received morphine for prehospital analgesia.

SIDE EFFECTS AND NOTES: If hypotension develops, it is usually responsive to naloxone and Trendelenburg position. If hypotension continues, follow Shock protocol.
After each dose document vital signs. The goal of fentanyl is patient comfort with reduction in the perception of pain, not the total elimination of pain.

Glucagon

Advanced EMT and Above

CONTRAINDICATIONS

- None

INDICATIONS

- Known hypoglycemia (preferably demonstrated by CBG) when patient is confused or comatose and dextrose is not available or an IV cannot be started

OLMC Required: No

SUPPLIED: 1 mg vial of powder with a 1 ml vial of diluent

ADULT DOSING:

Hypoglycemia
1 mg IM

PEDIATRIC DOSING:

Hypoglycemia
0.02 mg/kg IM to a maximum of 1mg

PHARMACOLOGY AND ACTIONS:

Glucagon is a hormone that causes glucose mobilization in the body. It works opposite to insulin, which causes glucose storage. It is released at times of insult or injury when glucose is needed and mobilizes glucose from body glycogen stores. Return to consciousness should be within 20 minutes of an IM dose if patient is hypoglycemic

PRECAUTIONS:

IV Dextrose is the treatment of choice for hypoglycemia in the patient who cannot tolerate oral glucose. The use of glucagon is restricted to patients who are seizing, comatose, combative, or with collapsed veins and in whom an IV cannot be started.

SIDE EFFECTS AND NOTES:

A. Nausea and vomiting may occur with administration.
B. Persons with no liver glycogen stores (malnutrition, alcoholism) may not be able to mobilize any glucose in response to glucagon.

(Oral) Glucose

All Providers

CONTRAINDICATIONS

- Do not give to a patient that cannot protect their own airway

INDICATIONS

- In the conscious patient where suspicion of hypoglycemia exists, or a CBG indicates a low blood glucose level

OLMC Required: No

SUPPLIED: 15 - 24 grams glucose in gel tubes

ADULT DOSING:
1 Tube. Repeat as needed

PEDIATRIC DOSING:
Same as Adult

PHARMACOLOGY AND ACTIONS:
Glucose is the body's basic fuel and it produces most of the body's quick energy. Its use is regulated by insulin that stimulates storage of excess glucose from the bloodstream and glucagon that mobilizes stored glucose into the bloodstream.

PRECAUTIONS:
To give solutions orally, a patient must be continually assessed for the ability to protect their own airway

SIDE EFFECTS AND NOTES:

A. Research suggests that hyperglycemia may complicate, or worsen, a number of medical conditions (e.g., myocardial infarction, stroke). Oral glucose should be given to a conscious patient whenever hypoglycemia is documented by blood glucose meter. If these objective findings are not available, the EMT should use judgment based on signs and history
B. Effects will be delayed in the elderly and people with poor circulation
C. May be more tolerable if administered with liquid between dosages
D. Patient's condition may require more than one dose of oral glucose

Haloperidol (Haldol®)

Paramedic

CONTRAINDICATIONS

- None

INDICATIONS

- Sedation of combative patients to facilitate restraint
- Nausea and vomiting

OLMC Required: No

SUPPLIED: 5 mg in a 1 ml Vial

ADULT DOSING:
Patient Restraint
5-10 mg IV/IO/IM May repeat to a maximum of 20 mg
Nausea and Vomiting
1.25 mg IV/IM

PEDIATRIC DOSING:
Contact OLMC

PHARMACOLOGY AND ACTIONS
Haloperidol is an antipsychotic that may be used as a chemical restraint by producing marked sedation and allaying apprehension. It also provides a state of mental detachment and indifference while maintaining a state of reflex alertness. Haloperidol may potentiate the effects of other CNS depressants. It also causes mild alpha-adrenergic blockade which can lead to peripheral vasodilatation and hypotension, as well as a reduction of the pressor effect of catecholamines. It is also a very effective anti-emetic. The onset of action of a single IV dose is from 5-15 minutes following administration, and the peak effect may not be apparent for up to 30 minutes. Duration is generally from 2-6 hours

PRECAUTIONS:
A. Hypertension may occur; IV fluids and other measures to manage hypotension should be readily available.
B. Use caution when administering haloperidol to patients who have taken other CNS depressant drugs (barbiturates, benzodiazepines, alcohol).
C. Haloperidol may induce Torsade de Pointes.

SIDE EFFECTS AND NOTES:
A. The most common side effects are hypotension and tachycardia, which usually responds to a fluid bolus.
B. Dysphoric (restlessness) and dystonic reactions have been reported following administration. These symptoms can be treated with the administration of diphenhydramine.
C. Haloperidol should be used with caution in patients with a seizure disorder or condition that causes seizures; other similar neuroleptics are known to lower the seizure threshold.

Ipratropium Bromide (Atrovent)

Advanced EMT and Above

CONTRAINDICATIONS

- Do not use with patients with severe glaucoma

INDICATIONS

- Supplement to albuterol in patients with asthma and COPD

OLMC Required: No

SUPPLIED: 0.5 mg in a 2.5 ml vial individually

~or~ 0.5 mg packaged with 3 mg albuterol (Duo-Neb)

ADULT DOSING:
3.0 ml DuoNeb (3.0 mg albuterol/0.5 mg ipratropium) via nebulizer
Repeat as needed x2. Do not administer more than three total treatments.

PEDIATRIC DOSING:
Same as Adult

PHARMACOLOGY AND ACTIONS:
Ipratropium is an atropine derivative used for inhalation therapy. For severe asthma, ipratropium taken in addition to a short acting beta agonist (such as albuterol) can provide greater bronchodilation and clinical benefit than the beta agonist alone. It has no anti-inflammatory effects and does not decrease bronchial hyper-responsiveness.

PRECAUTIONS:
Ipratropium in the meter dose inhaler and auto-inhaler formulations should not be administered to individuals allergic to soy lecithin or related food products (e.g. soybeans, peanuts). The nebulized formulation may be administered to these patients.

SIDE EFFECTS AND NOTES:

A. Dry mouth
B. Pharyngeal irritation
C. Increased intra-ocular pressure in glaucoma patients

Lidocaine

Advanced EMT and Above

CONTRAINDICATIONS

- Do not use in perfusing patients for the following without OLMC approval:
  A. Systolic BP less than 90 mmHg
  B. Heart rate is less 50 beats per minute
  C. Periods of sinus arrest
  D. 2nd or 3rd degree heart block present

INDICATIONS

- Recurrent ventricular fibrillation or pulses ventricular tachycardia
- Following successful defibrillation from ventricular fibrillation or pulselessness
- PVCs in a suspected ischemic event
- Pain management following IO placement

OLMC Required: See Contraindications.

SUPPLIED: 100 mg / 5 ml of 2% solution in a pre-filled syringe

ADULT DOSING:

V Fib / Pulseless VT: Bolus dose 1.5 mg/kg IV/IO. Repeat to a max of 3mg/kg if needed

ROSC (from V-Fib/ Pulseless VT Arrest): If no anti-dysthymic given prior to ROSC 1.5 mg/kg repeated with 0.75 mg/kg every 10 minutes If Lidocaine was the last anti-dysthymic given: 0.75 mg/kg every 10 minutes

PVCs (in the setting of an acute ischemic event only): Bolus dose 1.5 mg/kg IV/IO over 1-2 minutes. If no change, give 0.75 mg/kg every 5minutes up to 3mg/kg. When PVCs are suppressed, give 0.75 mg/kg every 10 minutes

Pain management after IO: 40 mg (2 ml of 2% lidocaine slowly over 2 minutes)

PEDIATRIC DOSING:

For: V-Fib, VT, ROSC, and PVCs: Same as Adult

Pain management after IO: 0.5 mg/kg slowly, not to exceed 40 mg

PHARMACOLOGY AND ACTIONS:

Lidocaine depresses the automaticity of Purkinje fibers, raising stimulation threshold in the ventricular muscle fibers which makes the ventricles less likely to fibrillate. It has little antiarrhythmic effect on the atrial muscle in normal doses. The effect of a single bolus on the heart disappears in 10-20 minutes due to redistribution in the body. The metabolic half-life of lidocaine is about 2 hours.

PRECAUTIONS:

A. Lidocaine is not recommended in the treatment of supra-ventricular arrhythmias.
B. If administering maintenance dosing and the patient begins seizing, stop the lidocaine dosing and treat per Seizure protocol.

SIDE EFFECTS AND NOTES:

Side effects include drowsiness, dizziness, disorientation, confusion, seizures and hypotension. Lidocaine is metabolized in the liver and, therefore, patients with hepatic disease, shock or congestive heart failure will have decreased metabolism. All doses after the initial dose must be decreased to one-quarter of the initial dose. Toxicity is more likely in elderly patients.

Magnesium Sulfate

Paramedic

CONTRAINDICATIONS

- None in the emergency setting

INDICATIONS

- Polymorphic Ventricular Tachycardia (stable wide complex, irregular tachycardia associated with an underlying prolonged QT [Torsade de Pointes])
- For the treatment of seizures in women with pre-eclampsia with OLMC approval
- In severe asthma as a smooth muscle relaxant and inhibitor of histamine

OLMC Required: Seizures in eclampsia/pre-eclampsia and Asthma in patients.

SUPPLIED: 1 gram (50%) in a 2 ml vial

~or~ 5 grams (50%) in a 10 ml vial

ADULT DOSING:

Wide complex, irregular tachycardia:
2 grams IV/IO over 1-2 minutes

Eclampsia:
Normal dose is 4 grams IV over 15-20 minutes

Pre-eclampsia:
Contact OLMC for Dosing. Normal dose is 4 grams IV over 15-20 minutes

Asthma:
Contact OLMC for Dosing. 2 grams IV over 15-20 minutes

PEDIATRIC DOSING:

Asthma: Contact OLMC for dosing

PHARMACOLOGY AND ACTIONS:

Magnesium is a cation that is present in human cells and intercellular fluids. It acts as an antiarrhythmic agent and is useful in the treatment of polymorphic ventricular tachycardia due to an underlying prolonged QT interval, ventricular fibrillation and ventricular tachycardia

PRECAUTIONS:

In the non-arrest patient, magnesium sulfate may cause hypotension, bradycardia, decreased reflexes, and respiratory depression.

DILUTING FOR IV ADMINISTRATION:

A. Dilute each gram of magnesium sulfate in 8 ml of normal saline. (Example: Mix 1 gram in 8 ml of NS; mix 2 grams in 16 ml of NS)
B. For use with IV pump, dilute either 2 grams or 4 grams of magnesium sulfate in 100 ml of normal saline or lactated ringers (in Buretrol or 100 ml bag).

Midazolam (Versed®)

Paramedic

CONTRAINDICATIONS

- Do not administer to seizure patient unless they are in an active seizure

INDICATIONS

- Status seizure (any seizure that has lasted longer than 2 minutes or 2 consecutive seizures without regaining consciousness
- To relieve anxiety and produce amnesia during cardioversion, pacing, or paralytic intubation
- To facilitate restraint in patients whose cause of agitation is likely drug ingestion (especially stimulants), withdrawal, or from a postictal state
- CPR induced consciousness

OLMC Required: No

SUPPLIED: 10 mg in a 2 ml vial

ADULT DOSING:

Seizures; Chemical Restraint: 2.5-5 mg IV/IO or 10 mg IM/IN Repeat every 5 minutes until seizure stops
Pre-medication prior to RSI: BP >100 mmHg: 10 mg IV/IO BP <100 mmHg 5 mg IV/IO
Sedation After Intubation; Induced Hypothermia Shivering: BP >100 mmHg: 2.5 – 5 mg
Repeat every 15 minutes as necessary to maintain sedation
Sedation Before Cardioversion with NO IV: 5 mg IM/IN
Sedation for Pacing: 2.5-5 mg IV/IO or 5mg IM/IN, may repeat once. Contact OLMC for additional orders
CPR Induced Consciousness: Up to 2.5 mg IV/IO used in conjunction with fentanyl.
May repeat every 5-10 minutes as needed

PEDIATRIC DOSING:

Seizures: 0.1 mg/kg IV/IO to a max of 5mg. ~or~ 0.3mg/kg IM/IN to a max of 10 mg
Repeat every 5 minutes until seizure stops
Chemical Restraint: 0.1 mg/kg IV/IO to a max of 5mg. ~or~ 0.2mg/kg IM/IN to a max of 10 mg
Contact OLMC for additional orders
Pre-medication prior to RSI: 0.2mg/kg IV/IO. Not to exceed adult dose
Sedation After Intubation with or without paralytics: 0.1 mg/kg IV/IO, max dose 2.5 mg
Repeat every 15 minutes as necessary to maintain sedation
Sedation Before Cardioversion: 0.2 mg/kg IM/IN to a max of 5 mg.
Sedation for Pacing: 0.1 mg/kg IV/IO, Max dose of 5 mg, may repeat once after 5 minutes.
Contact OLMC for additional orders

PHARMACOLOGY AND ACTIONS: Midazolam is a benzodiazepine with potent sedative, anti-anxiety, and anticonvulsant properties. It also causes significant antegrade amnesia when administered IV.

PRECAUTIONS: Midazolam causes respiratory depression and/or hypotension especially if administered rapidly. Monitor patient closely.

SIDE EFFECTS AND NOTES: Common side effects: drowsiness, hypotension, respiratory depression, and apnea; more likely to occur in the very young and the elderly. Patients rarely experience paradoxical agitation. Respiratory depression is more likely in patients who have taken other CNS depressant drugs such as opioids alcohol and barbiturates, or when given rapidly. Doses should be adjusted accordingly in patients with underlying hepatic or renal diseases and low flow states such as congestive heart failure.

Morphine Sulfate

EMT Intermediate and Paramedic

CONTRAINDICATIONS

- Known allergy to morphine or sulfates (sulfa drugs are not sulfates)
- Systolic blood pressure less than 100 mmHg
- Trauma or pain of the head or abdomen
- Respiratory rate less than 14 BPM or O2 sats less than 90%

INDICATIONS

- Suspected ischemic chest pain unresponsive to nitroglycerin
- Pain due to burns or musculoskeletal injury

OLMC Required: No

SUPPLIED: Varies

ADULT DOSING:

Pain from Musculoskeletal injuries, burn, chest pain:
2-8 mg IV/IO. Repeat every 5 minutes to a max of 20 mg.
If no IV/IO give 5-10 mg IM. May repeat IM with 5 mg every 15 minutes to a max of 20 mg

PEDIATRIC DOSING:

Vital Signs should be maintained within the normal age-appropriate range

Pain from Musculoskeletal injuries, burn, chest pain:
0.1 mg/kg IV/IM. May repeat IM after 15 minutes. Do not exceed adult dosing

PHARMACOLOGY AND ACTIONS:

Morphine is a narcotic analgesic that induces drowsiness, mental clouding, and mood changes. It also increases venous capacitance, decreases venous blood return (preload), and reduces systemic vascular resistance at the arteriolar level (afterload). This may lead to decreases in myocardial oxygen demand. Onset of action when given IV is 2-3 minutes and peak effect occurs at 7-10 minutes. Duration is 3-5 hours.

PRECAUTIONS:

A. Morphine causes respiratory depression that is reversible with naloxone. This respiratory depression is exacerbated by underlying lung disease (COPD, etc.) and other depressant drugs (Valium, alcohol, cyclic anti-depressants). Naloxone and respiratory support must be available when using morphine.
B. If hypotension develops, it is usually responsive to naloxone administration and Trendelenburg position. If hypotension persists, follow Shock protocol.

SIDE EFFECTS AND NOTES:

A. The goal of morphine administration is patient comfort (not the total elimination of pain but reduction in perception of pain by the patient).
B. Morphine is a Schedule II controlled substance.

Naloxone (Narcan®)

EMR and Above (Intra-nasal)
Advanced EMT and Above

CONTRAINDICATIONS

- Do not use in Neonates

INDICATIONS

- Reversal of opioid effect, particularly respiratory depression, due to opioid drugs either ingested or injected or administered during treatment. Opioid drugs include fentanyl, morphine, meperidine, hydromorphone, oxycodone, hydrocodone, and codeine
- Coma of unknown to rule out or reverse opioid depression

OLMC Required: No

SUPPLIED: 2mg in a 2ml pre-filled syringe

ADULT DOSING:

Reversal of opioid effect; unknown coma:

0.5 mg/kg IV. Repeat every 2 minutes up to 2 mg titrating to respiratory rate.
If no IV, give 2 mg IM/IN. If no response to initial dose and opiate intoxication is still suspected, repeat 2 mg IV/IM/IN every 3-5 minutes up to a maximum of 8 mg total

PEDIATRIC DOSING:

Reversal of opioid effect; unknown coma:

0.1 mg/kg IV/IM/IN up to 2 mg. May repeat as needed every 3 -5 minutes up to 2mg /dose.
Max total do is 8mg.

PHARMACOLOGY AND ACTIONS

Naloxone is an opioid antagonist that competitively binds to opioid receptor sites, but which exhibits almost no pharmacologic activity of its own. Duration of effect is 1-4 hours.

PRECAUTIONS:

In patients physically dependent on opioids, violent withdrawal symptoms may occur. Be prepared to restrain the patient.
Some opioid intoxications may require up to 8 mg of naloxone to reverse symptoms (e.g. methadone, carfentanil).

SIDE EFFECTS AND NOTES:

The duration of some opioids is longer than naloxone, repeat doses may be necessary. Monitor the patient closely. Patients who have received naloxone must be transported to the hospital because coma may reoccur when naloxone wears off
Side effects are rare. Do not hesitate to use if indicated.
If no effect is seen from naloxone administration, consider other causes of coma.

Nitroglycerin

EMT and Above

CONTRAINDICATIONS

- Blood pressure less than 100 mmHg systolic
- Acute inferior myocardial infarction (ST elevation in II, III, AVF
- Contact OLMC for Patients who have taken:
  - Erectile dysfunction (ED) medication within the last 24 hours (Viagra® Levitra, or similar drugs
  - Patients who have taken Cilais® (tadalafil) within the last 48 hours

INDICATIONS

- Presumed ischemic (reduced or restricted blood flow) chest pain
- Decompensated heart failure

OLMC Required: See Contraindications

SUPPLIED: 0.4 mg metered dose spray

~or~ 0.4 mg tablets

~or~ 50 mg/10 ml vial

ADULT DOSING:
Chest Pain:
0.4 mg Sublingual every 5 minutes until pain is relieved as long as systolic BP is greater than 100 mmhg
Decompensated Heart Failure:
0.4 mg Sublingual every 3-5 minutes

PEDIATRIC DOSING:
Contact OLMC for Dosing

PHARMACOLOGY AND ACTIONS
Nitroglycerin is a vasodilator. It is a smooth muscle relaxant that reduces venous tone causing pooling of blood in the peripheral veins, decreasing peripheral resistance and thereby decreasing cardiac preload. It also causes mild dilation of the coronary arteries

PRECAUTIONS:
Generalized vasodilatation can cause profound hypotension and reflex tachycardia.
IV should be established prior to administration in patients who have not taken nitroglycerin previously, or who have a potential for hemodynamic instability.

SIDE EFFECTS AND NOTES:
Common side effects are headache, flushing, or dizziness.
Because nitroglycerin causes generalized smooth muscle relaxation, may relieve chest pain caused by esophageal spasm.

Ondansetron (Zofran®)

EMT Intermediate and Paramedic

CONTRAINDICATIONS
- Known hypersensitivity to Zofran or similar medications

INDICATIONS
- Nausea
- Vomiting

OLMC Required: Patients under 6 months except if they are spinal immobilized or receiving chemotherapy

SUPPLIED: 4 mg oral tablet

~or~ 4 mg/ 2 ml vial

ADULT DOSING:
Nausea & Vomiting:
8 mg oral dissolving tablet or 4mg IV/IM
If nausea and/or vomiting are not control after 10 minutes may repeat dose once

PEDIATRIC DOSING:
Contact OLMC for Dosing

PHARMACOLOGY AND ACTIONS

Ondansetron is a potent, highly selective serotonin (5-HT3) receptor agonist. Its precise mode of action in the control of nausea is not known. Pharmacologic agents and other triggers may cause release of 5-HT3 receptors. Ondansetron blocks the initiation of this reflex. Ondansetron is commonly used in the treatment of nausea in patients who are receiving chemotherapy or as a postoperative nausea treatment. Peak plasma concentrations of the drug occur 10 minutes after IV administration, and 40 minutes after IM injection. Both routes have the same elimination half-life of 4 hours.

PRECAUTIONS:

A. Hypersensitivity reactions have been reported in patients who have exhibited hypersensitivity to other 5-HT3 medications (Anzemet®, Kytril®).
B. Patients with bowel obstruction should be monitored closely following administration.
C. Ondansetron may precipitate if mixed with alkaline solutions.
D. ECG changes including QT interval prolongation and Torsade de Pointes have been observed in patients receiving ondansetron. Monitor patient's ECG closely.

SIDE EFFECTS AND NOTES:

A. The most common side effects include headache, dizziness, drowsiness, and shivers.
B. Body aches, agitation, dysuria, hypotension, and rash have also been reported in a very small number of patients.

Oxygen

EMR and Above

CONTRAINDICATIONS

- None

INDICATIONS

- Respiratory distress or suspected hypoxemia (from any cause)
- Acute chest pain (in which cardiac ischemia or myocardial infarction is suspected)
- Shock from any cause
- Major trauma
- Carbon monoxide poisoning

OLMC Required: No

SUPPLIED: Various based on size of cylinder. Standard "D" cylinders contain 415 liters at 2,000PSI

ADULT DOSING:

Utilize appropriate delivery device and oxygen flow rate to maintain oxygen saturation rate (SpO2) between 94% & 99%

PEDIATRIC DOSING:

Same as Adult

PHARMACOLOGY AND ACTIONS

Oxygen added to the inspired air raises the amount of oxygen in the blood and the amount delivered to the tissues. Breathing in most persons is regulated by small changes in acid/base balance and CO_2 levels and it takes a large drop in oxygen concentration to stimulate respiration.

PRECAUTIONS:

A. If the patient is not breathing adequately on their own, the treatment of choice is ventilation with oxygen, not just supplemental oxygen.
B. In a small percentage of patients with chronic lung disease, administration of oxygen will decrease respiratory drive. Do not withhold oxygen because of this possibility. Be prepared to assist ventilations if needed.
C. Titrate oxygen to the lowest level required to achieve an $SpO_2 \geq 94\%$.

SIDE EFFECTS AND NOTES:

A. Non-humidified oxygen is drying and irritating to mucous membranes.
B. Restless may be an important sign of hypoxia.
C. Oxygen toxicity is not a risk in acute administration.
D. Nasal cannula prongs work equally well on nose and mouth breathers.

Sodium Bicarbonate

Paramedic

CONTRAINDICATIONS

- None

INDICATIONS

- To control arrhythmias or asystole in cyclic antidepressant overdose or hyperkalemia
- Acidosis caused by prolonged cardiac arrest
- Chlorine inhalation injury

OLMC Required: Pediatrics: Hyperkalemia and crush injuries

SUPPLIED: 50 mEq in a 50 ml prefilled syringe

ADULT DOSING:

Sodium Channel Blockage Overdose:
Tricyclic Antidepressants, Diphenhydramine, Type 1a or 1c anti-dysrhythmics) 1mEq/kg IV/IO.
V-Fib, Pulseless V-Tach, PEA, Asystole: 1 mEq/kg IV/IO. May repeat q 10 minutes at 0.5 mEq/Kg
Hyperkalemia ~or~ Crush Injury: 50 mEq IV/IO
Chlorine Inhalation: 2.5 ml of 8.4% Sodium Bicarbonate via nebulizer

PEDIATRIC DOSING:

Same as Adult with the exception of hyperkalemia and crush injuries
For children less than 10 kg (1 year), dilute by one-half with normal saline prior to administration

PHARMACOLOGY AND ACTIONS

Sodium bicarbonate is an alkalotic solution which neutralizes acids found in the blood. Acids are increased in the blood when body tissues become hypoxic due to cardiac or respiratory arrest. Acidosis depresses cardiac contractility and cardiac response to catecholamines and makes the heart more likely to fibrillate and less likely to defibrillate. In the non-perfusing patient sodium bicarbonate has been shown to increase the intracellular acidosis and worsen acid/base balance, thus it is not recommended in the routine cardiac arrest sequence.

PRECAUTIONS:

A. Addition of too much bicarbonate may result in alkalosis that is difficult to reverse and may cause as many problems in resuscitation as acidosis.
B. May increase cerebral acidosis, especially in diabetics who are ketotic.
C. Do not mix sodium bicarbonate with calcium preparations. Slowly flush one drug from the catheter before administering the other.

SIDE EFFECTS AND NOTES:

Each amp of sodium bicarbonate contains 50 mEq of sodium. This may increase intravascular volume and hyperosmolarity resulting in cerebral impairment.

Succinylcholine

Paramedic

CONTRAINDICATIONS

- Hypersensitivity to the drug
- Major burns and crush injuries between 48 hours and last 6 months
- Stroke or spinal cord injuries with profound residual deficits between 48 hours and last 6 months
- Neuromuscular disease (e.g., muscular dystrophy, multiple sclerosis)
- Suspected hyperkalemia (e.g., end-stage renal disease patients who have missed dialysis)

INDICATIONS

- To achieve temporary paralysis where endotracheal intubation is indicated

OLMC Required: No

SUPPLIED: 200 mg in a10 ml vial

ADULT DOSING:
Rapid or Delayed Sequence Intubation:
1.5mg/kg IV/IO

PEDIATRIC DOSING:
1.5 mg/kg IV/IO for patient >6 years old
2 mg/kg IV/IO for patient <6 years old

PHARMACOLOGY AND ACTIONS

Succinylcholine is a short acting motor nerve depolarizing skeletal muscle relaxant. It competes with acetylcholine to combine with cholinergic receptors in the motor end plate causing depolarization inhibiting neuromuscular transmission. After intravenous injection, paralysis is obtained within 1-2 minutes and persists for approximately 4-6 minutes. Effects then start to fade and return to normal. It has no effect on consciousness. Muscle relaxation begins in the eyelids and jaw, then progresses to the limbs, abdomen, diaphragm and finally intercostal muscles. Succinylcholine is hydrolyzed by plasma pseudocholinesterase and is excreted by the kidneys.

PRECAUTIONS:

A. Succinylcholine shall not be administered unless personnel trained and authorized in this procedure are present and ready to perform the procedure.
B. Oxygen, ventilation equipment, and resuscitation drugs should be readily available.
C. Succinylcholine produces paralysis but does not alter a person's level of consciousness. Paralysis in the conscious patient is very frightening, therefore, sedation should be provided to the patient during the procedure. Verbal explanations should be provided to the patient during the procedure, even if you do not think they can hear you.

SIDE EFFECTS AND NOTES:

In rare individuals, because of pseudocholinesterase deficiency, paralysis may persist for a prolonged period. Be prepared to continue to assist ventilations as needed.

Seaside Fire & Rescue Medical Protocols

Ambulance Operations

AMBULANCE ORENTATION & OPERATION

CONSIDERATIONS

- Prior to responding on a Seaside Fire & Rescue ambulance all operators and providers must complete a Training and Orientation program, as well as complete all documentation required by The State of Oregon

Training for Ambulance Operators

- 3-year driving record and Oregon Driver license on file
- Immunizations on File (or declination forms signed)
- Signed Confidentiality statement on file
- Signed substance abuse statement on file
- Current Bloodborne pathogens training
- Current CPR certification
- Current HazMat Awareness (or higher)
- Training on witnessing for controlled substances use and waste
- Successful completion of an NFPA Driver Course
- 1 hour of drive time
- Ambulance Operations training
  - Emergency lights and siren
  - Paperwork and forms
- Ambulance Operator test complete
- Trained on ambulance equipment (locations and use)
  - Power loader and Gurney
  - Cardiac Monitor
  - Suction Units

Training for Ambulance Providers

- Meet all the requirements for ambulance operator
- Current Oregon EMS license or certified Oregon Ambulance clinician
- Current signed standing orders from the Medical Director
- Training completed on all equipment for the provider's scope of practice
- EMT-Intermediate, Paramedics, and Ambulance Clinicians trained on controlled substance inventory, use, waste, and disposal

AMBULANCE DRIVING

CONSIDERATIONS

- The protocol is an addendum and supplement to the 2020 Fire Operations Protocol *Apparatus Driving and Operation* (B-3).
- It is the responsibility of all ambulance operators to drive and park in regard to their ambulance, the crew, any patients, and the public's safety as the primary concern.

Ambulance Requirements

- Department ambulances shall conform to all State of Oregon requirements in regards to their construction, maintenance, licensing, record keeping, DOT and emergency markings and lights, sirens, and required equipment stock.

Operation

- Apparatus and equipment inspections shall be completed and document as outlined in the daily assignments in "FirstDue".
  - Any inspection discrepancies both apparatus or equipment shall be written up and all attempts made to resolve the issue.
  - If the discrepancy is egregious enough that the ambulance in out-of-service, then the appropriate notifications should happen ASAP as per *Ambulance Out-of-Service* protocol.
- Department ambulances shall not be used for pushing, towing, or "jumpstarting" any other vehicle.
- Only members trained and certified per current department standards and have taken the ambulance operations protocols test shall operate department ambulances.
  - Except during training (with an operator, non-emergent, without a patient).
  - All operators shall have and maintain the required certifications and licenses as required by the State of Oregon and department policy.
- All applicable state and local laws shall be followed by every ambulance operator when operating their vehicle in a non-emergent mode.
- During emergencies (actual or suspected) operators may exercise exemptions from traffic laws in accordance to ORS 820.300 while providing for safety first.
  - Emergency lights shall be used continuously during emergent driving.
  - The request for right of way by siren activation to warn pedestrians and other drivers shall be used as needed in addition to the requirements of state law.
  - Speeds shall be reasonable and should match the conditions (roadway, weather, vehicle, type of call, etc.), the greater the speed – the greater the chance of an accident.

Accident Involving an Ambulance

CONSIDERATIONS

- If involved in an accident/collision do not admit fault, provide pertinent facts.
- Minor accident/collision. No patients involved, vehicles involved are not blocking or obstructing a road, are still drivable.
- Other-than-Minor accident. May have a patient(s) from the accident/collision, vehicles involved are blocking or obstructing a road, vehicles are not drivable, etc.

Minor Accident /Collision Involving ambulance

- Immediately notify Seaside Dispatch of the incident
  - Provide the location, type of incident, and resources needed
- Provide for Scene Safety, Verify no medical need from any involved party
  - If transporting a patient ensure patient care continues
  - Exchange insurance information
- Request law enforcement for an accident investigation
- If a code 3 incident is pending: Continue as soon as practical
- Follow-up; back-to-the scene or law enforcement ASAP

Accident /Collision Involving ambulance

- Immediately notify Seaside Dispatch of the incident
  - Provide the location, type of incident, and resources needed
- Provide for Scene Safety, *If* needed and personnel on the ambulance are able: Provide emergency care for patients, prioritize lifesaving treatments first
  - If transporting a patient ensure patient care continues
- Request law enforcement for an accident investigation
- Provide incoming units with a size-up and additional pertinent information

After an Accident / Collision

- Following an accident / collision involving an ambulance:
  - Provide insurance information
  - Notify Supervisor (if not already done so)
    - Follow the *Ambulance Out-of-Service* protocol if required
  - Complete State of Oregon DMV accident report
    - Submit a copy of the DMV accident report to the Oregon Health Authority within 10 business days (OAR 333-250-0265(o))
  - Complete all documentation required by City of Seaside policies involving, but not limited to: Employee Accident/ Incident, Exposure, Automobile Accident

QUALITY ASSURANCE AND IMPROVEMENT

CONSIDERATIONS

- OAR 333-250-0320 requires a licensed ambulance service shall establish and maintain an effective quality assessment and performance improvement program that is approved by the EMS medical director and the ambulance service administrator.
- Feedback provided to personnel will be positive constructive criticism.
- QA/QI will safeguard/redact any protected personal information from being released.

Quality Assurance /Quality Improvement (QA/QI) Committee

The Seaside Fire & Rescue QA/QI committee (AKA EMS Committee) will report to the Medical Director. The committee's primary mission is to monitor, evaluate, and improve organizational efficiency and care delivery in relation to emergency medical care

  - The committee consists of three to five members: Training Officer, Ambulance Service Administrator (The EMS Coordinator), and up to three additional members (one of them shall be a volunteer of any EMS level)

- The committee will be responsible for:
  - Reviewing and providing the newest revision of the EMS protocols in entirety
  - Providing updates and addenda to the EMS Protocols as needed
  - Coordinate EMS training for the department, including hands-on skill stations
  - Investigate, address, and document concerns raised by staff or the public in regards to patient care and treatments, safety, and adherence to standards and protocols
  - Review charts and incidents on a quarterly basis; investigate and document findings related to: Patient assessment, medical interventions, success of skills, quality of documentation, and clinical outcome (if known)
  - Provide input for additional training based on types of incidents and charting
  - Provide clinical outcome feedback to the department if follow-up information from other transporting agencies or receiving hospitals is provided
    - Per ORS 682.056 the medical director may file an official request from a receiving hospital regarding a patient's care and ultimate outcome
- The Ambulance Service Administrator will review all EMS patient care reports
  - Feedback may be provided to individual providers without committee input
  - Select at least 5 charts on a quarterly bases for review by the committee
  - Work directly with the Medical Director in regards to the review of charts (case reviews), EMS licensure and standing orders status of personnel; complete all required state and federal paperwork
  - Collect information on types of EMS incidents and provide feedback to the department
  - Maintain documentation of committee meetings, reviews, and findings

SEASIDE AMBULANCE TRANSPORT CRITERIA

CONSIDERATIONS

- Medix ambulance has the franchise agreement for pre-hospital transport in Clatsop County.
- Seaside Fire & Rescue (SF&R) has a mutual aid agreement with Medix to transport when requested and available.

Staffing

- A BLS ambulance crew is: 1 EMT provider and 1 ambulance operator
  - BLS ambulances will only transport in rare circumstances (such as an MCI)
- An ALS ambulance crew is: 1 AEMT (or above) provider and 1 ambulance operator
- A Seaside Fire & Rescue ambulance may be unavailable for a transport request when:
  - Structure or Wildland fires when SF&R has crews committed to the fire or district coverage for mutual aid
  - Technical rescue incidents when SF&R is already providing crews for the rescue
  - When SF&R does not have an ALS crew on duty or responding to the station

Seaside Ambulance Transport

- Requests or permission for SF&R pre-hospital transport will come ONLY from Medix
  - The on-duty Medix supervisor via Medix dispatch to Seaside dispatch
  - Any agency requesting a SF&R ALS pre-hospital transport must coordinate with Medix first

Pre-hospital Transport within Seaside Fire's Response area

- A SF&R ALS ambulance may transport within Seaside's response area when:
  - Medix is delayed more than 10 minutes for a pre-hospital transport
  - Pre-arranged special events
  - In the initial tone-out Medix requests SF&R to respond and transport
- In rare incidents when a Medix ambulance is delayed an ALS provider may exercise judgment and transport a critical patient
  - Attempt first to get transport permission, an ETA for their ambulance, and *if* needed coordinate a rendezvous/intercept

Pre-hospital Transport outside of Seaside Fire's Response area

- A SF&R ALS ambulance may be requested to transport in all south county fire districts (Gearhart, Hamlet, and Cannon Beach) for triaged Code 3 patients when Medix is delayed more than 15 minutes
- A SF&R ambulance may be requested to transport during MCI's in all of Clatsop County and in the Nehalem Bay Fire Protection's District (NBFPD), that overwhelm available ground and air ambulances

PATIENT RIGHTS
FOR EMERGENCY MEDICAL CARE AND TRANSPORTATION

This statement of patient rights shall be available to each employee or volunteer and made available in the fire station office.

Seaside Fire & Rescue shall provide access to appropriate emergency medical care and transportation without regard to race, ethnicity, religion, age, gender, sexual orientation, or disability.

EMS providers will be considerate and respectful to all patients regardless of status.

Patients shall have the opportunity to refuse any medical care or transportation to a medical facility when informed about the care to be provided and the risks associated with refusing medical care or transportation.

Patients shall receive transportation to a clinically appropriate medical facility of the patient's choice without questioning their ability to pay. Seaside Fire & Rescue may elect to transport to a closer, appropriate medical facility if a patient's facility of choice is unreasonable due to unsafe conditions; or requires an ambulance to be taken out of service for an unreasonable amount of time.

When appropriate, a patient will have the opportunity to arrange private transport, for example from a friend, family member, or other means.

Patient's health information will be protected in accordance with state and federal privacy laws. Patients are able to receive upon request their medical information relating to the care or transport provided including: the explanation of any charges for emergency medical care provided.

Notwithstanding of this rule, Seaside Fire & Rescue may transport a patient without consent if the patient is incapacitated or cannot make sound decisions based upon illness, injury, or age.

Transport Decision Making

CONSIDERATIONS

- The provider-in-charge (PIC) will need to make the determination when to transport based on the patient and which has the better benefit for the patient: Spending more time on scene to treat and stabilize or expedite to an immediate transport.
- On scene patient care time should be 20 minutes or less prior to transport; always be moving a patient towards definitive care in an efficient way following the appropriate EMS protocols for patient treatment.

CASES FOR IMMEDIATE TRANSPORT

- STEMI, Stroke, Airway compromise, Sepsis, Uncontrolled Hemorrhage

CASES FOR DELAYED TRANSPORT

- Cardiac Arrest stabilization, Imminent childbirth
- Trauma patient: Stabilize patient's primary concerns prior to transport

WHICH HOSPITAL TO TRANSPORT

- Trauma system entry patients will be transported to CMH or a rendezvous with Life Flight**.**
- Unless the provider-in-charge has a specific reason to transport to CMH all other patients will be transported to PSH
    - Permission to transport to CMH instead of PSH must be obtained from the On-Duty Fire Officer
    - If a patient requests to be transported to a different hospital than the closest one that offers the same level of care than the provider will inform the patient there may be an additional cost out of pocket from their insurance
- In the event of a MCI, Seaside Fire & Rescue will work under a unified command with other local EMS, Law enforcement agencies, and cooperators to determine hospital destination

LIFE FLIGHT

- Consider utilizing Life Flight for patients that may need immediate specialized care from a Portland area hospital a local Critical Access Hospital cannot provide
    - Should be considered for patients with: STEMI, Stroke, and Trauma System

CONSENT TO TRANSPORT

- Informed consent is needed prior to transporting to a hospital
- Implied consent may be utilized for unconscious patients, minors and persons with an altered mentation (cannot care for themselves)
- Patients during transport (and pre-hospital care) may refuse certain procedures. Respect their request and ensure it is both documented and noted during the patient hand-off to the hospital

DURING TRANSPORT

CONSIDERATIONS

- Providers must ensure there is a clear benefit to your patient that outweighs the dangers and risks of driving code 3.
- Safe arrival of the ambulance, the crew, and the patient is the number one priority.
- Always keep your patient informed of what is going on and answer questions honestly. Many patients may have anxiety from the incident itself notwithstanding the ambulance trip and the hospital. Provide the patient with information on what is currently happening as well as what will happen once you arrive at the hospital.

SEAT BELTS

- All patients shall be seat-belted in accordance with the manufacture guidelines during transport Only during an extremely rare exceptions where a belt immediately interferes with the patient care/ or the patient must be positioned where a belt may not be effective
- Any pediatric patient (10 to 100 lbs.) must be secured in a pedimate®, the airway seat child restraint system or in their car seat belted to the gurney or seat
- All providers in the patient compartment of the ambulance shall remain seat belted at all times
    - Unbuckling should only be done when necessary for interventions for short durations

TRANSPORT SPEED

- Generally, all patients will be transported code 1 to a destination hospital, in any event for an upgrade the provider-in-charge will make the decision
- In any event when transporting a patient code 2/3 the lights and siren are to assist with moving expediting the drive time based on current traffic conditions, speed and turning must be a slower with concerns for everyone in the patient compartment
    - Upgrade response criteria: Expedited patient turnover for a pending second critical incident
    - Critical patient (examples to consider: Burn patient, Trauma, Cardiac arrest, airway compromise)

TRANSPORT PROCEDURES

- Setup the patient compartment for the patient's comfort (heating/ cooling)
- Secure loose equipment prior to transporting to prevent a projectile hazard
- Monitor patient and in addition to providing additional interventions evaluate previous procedures completely prior to transferring the patient to the gurney
- If an intervention needs to be completed and the transport is inhibiting the successful outcome consider having the ambulance operator find a safe place to stop and park
    - Consider calling for additional help
- When transporting, Notify Dispatch and give last 4 of the odometer
- Upon arrival at the destination inform Dispatch and give the last 4 of the odometer. These are necessary for charting and billing

OUTSIDE AGENCY PROVIDER RENDEZVOUS

CONSIDERATIONS

- If you are requesting a paramedic intercept with MEDIX, call early and remember they have activated our ambulance due to being delayed or unavailable because of an increase strain on the 911 system. They may not be available.

CONSIDER

- If you are needing a paramedic, before contacting MEDIX try to ascertain if a Seaside Fire paramedic is responding or already at the station.
- Remember BLS before ALS. BLS saves lives.
- Ask yourself this: Have you done everything within your scope to make sure the patient is taken care of prior to the intercept.

Ground Ambulance / Medix Paramedic Rendezvous

1. Notify Seaside Dispatch via Radio (on Green Repeat) that you are requesting a Paramedic intercept with Medix
    a. -Coordination with the exact location to meet the ambulance may be via phone, or by radio (Green/RPT, Medix Tillhead Rpt, or PURPLE) talking to Seaside Dispatch, Medix Dispatch, or the responding Medix crew
2. If the on-duty officer is not on scene with you, notify them as soon as possible
3. When asking for the intercept, be ready with the following information:
    a. Age
    b. Sex
    c. Chief Complaint
    d. Why you are requesting the intercept
4. Rendezvous: Generally, the Medix paramedic will board the Seaside Fire ambulance for the remainder of the transport. In rare circumstances the patient may be transferred over to the Medix ambulance. Regardless of ambulance the Medix paramedic will assume primary patient care after a handoff report and the Seaside Fire & Rescue provider will continue to provide care, assist the paramedic as needed, and chart all interventions and actions.

Life Flight / Critical Care Provider Rendezvous

In some incidents a Seaside Fire & Rescue provider may find themselves transporting with a specialty crew (such as Life flight or another type of critical care unit)

1. The provider(s) will assume primary patient care after a handoff report
2. The Seaside Fire & Rescue provider will continue to provide care, assist the providers as needed, and chart all interventions and actions

CONTACTING A RECEIVING HOSPITAL

CONSIDERATIONS

- The HEAR (Hospital Emergency Ambulance Report) is a nationwide system for field units to contact a hospital via radio for both Online Medical Control (OLMC) and a brief status report of a patient prior to arrival at the receiving facility.
- Names and other sensitive information that can be used to identify a patient are not to be transmitted over the HEAR Frequency.

HEAR REPORT TEMPLATE

1. Unit ID and Transport priority
2. Patent age and gender
3. Chief complaint and associated pertinent symptoms
4. Level of consciousness (GCS if a trauma) and current vital signs
5. Interventions and changes
6. ETA to ED

HEAR Report Via Radio

1. Pertinent information only, less than 60 seconds and preferably at the beginning of transport or 10 minutes prior to arrival at the facility
2. Always identify the hospital first, followed by your unit (Example: Providence Seaside from Seaside Fire 3151)

SPECIAL CIRCUMSTANCES

A) **Multiple patients:** Ensure you announce how many patients you are transporting and provide information for each patient and identify each one (Patient #1, Patient #2, etc.)
B) **Busy ambulance provider:** Ambulance operator provides an abbreviated report to the hospital with an ETA
C) **Busy hospital:** Attempt three times to contact them, after the third attempt with no answer from the facility, broadcast an abbreviated report with an ETA to the hospital

Direct Phone Contact to the ED

Recommended option when needing OLMC, or the provider needs to give specific information or receive specific instructions from the ED physician. Examples may be for incidents for a trauma system, stoke patient, or unusual circumstances

1. Contact the Emergency department
2. Identify who you are and why you are calling
3. Ensure you are speaking to the correct provider for the reason you are calling
4. Provide patient information and specifics
    a. If obtaining OLMC ensure you obtain the physician's name for your PCR

Hand-off Report

Handoff Reports

1. Make sure all pertinent providers are present prior to giving handoff report.
    a. Hospital: MD or RN
    b. Life flight: Flight Medic, Flight RN
    c. Ground ambulance Intercept: Paramedic
2. Introduce your patient by name to receiving team
3. Inform receiving team of the following:
    a. Age, Chief Complaint and history as to why EMS was activated
    b. What you found on scene and investigated (MOI/NOI)
    c. Vital signs- Note if there were drastic difference from first set to last set
    d. Treatments and interventions for the patient and patient status afterwards
        i. Improved, worsened, or unchanged
    e. Pertinent medical issues/medications/allergies
    f. Pertinent negatives
4. Lastly, Ask the team if they have any questions prior to you transferring Patient care

DOCUMENTATION

CONSIDERATIONS

- This protocol is an addendum and supplement to the *Protocol Documentation* (A-9).

If transporting a patient for medical care, regardless of the destination (hospital, ground ambulance, air ambulance, care facility, etc.) the following information must be obtained

Required Information:

- Patient demographic information
    - Name, DOB, Address, Gender, phone number
- Insurance information (obtained from Hospital face sheet)
- Consent form
- Start and ending transport times
- Mileage
- Trauma band identification number (if applicable)
- Narcotic tracking number (if applicable)
- All Vitals obtained
    - Minimum of a HR, BP, RR, Sp02, and GCS
- All interventions performed
- Pertinent information and findings
- And pertinent negatives

RESPONDER IDENTIFICATION

CONSIDERATIONS

- Oregon Administrate Rule (OAR) 333-265-0170 requires any licensed EMS provider providing patient care to display their level of licensure on the outermost garment of their usual work uniform.

1. Providers responding on, or detailed to working on an ambulance shall display their level of licensure.

2. All EMS providers working for Seaside Fire & Rescue shall attempt to comply with the Oregon Administrative Rule requiring EMS licensure identification whenever possible while performing patient care.

    a. Exceptions to the identification requirement may be, but not limited to:
        i. Wildland PPE
        ii. Structural PPE
        iii. Water Rescue PPE

3. Appropriate identification may be, but not limited to:
    a. Class “B” Uniform with correct licensure Oregon EMS patch
    b. Correct licensure Oregon EMS patch displayed on the outmost garment, this may include work shirt, sweatshirt, or jacket
    c. T-shirt with correct level of EMS licensure
    d. Sweatshirt with correct level of EMS licensure
    e. Safety vest with correct level of EMS licensure
    f. Seaside Fire & Rescue Identification Card with correct level of EMS licensure

ADDITIONAL RIDERS

CONSIDERATIONS

- Providers are NOT obligated to take a guardian, parent, immediate family member, or rider (associated with the patient) in the ambulance during transport.
- If it is inappropriate for a rider (examples may include: alcohol, belligerent, mental state, patient asks to not have them, etc.) then the crew shall notify them they will not be taking a rider.

GUARDIAN/ FAMILY RIDER:

- All riders will ride seat belted in the passenger seat
    - Exception: Pediatric or developmentally disabled patients where having a family member in the patient compartment helps more than hinders during patient care.
    - Riders permitted in the patient compartment during transport will be seat-belted in the airway seat

- At no time will a pediatric ride in the arms of a guardian during transport
    - Rare exception: Newborn delivery with skin-to-skin contact
    - Extreme more-than-normal caution during driving must be observed

RESTRAINED TRANSPORT

CONSIDERATIONS
- This protocol is in addition to the *Protocol: Patient Restraint (A-17).*
- Notify the receiving hospital during your HEAR report that the patient is under police custody.

SECURE TRANSPORT
Seaside Fire & Rescue does not offer "Secure Transport"

REQUIREMENTS
- Patients shall never be transported face down (prone) *and* restrained
- If hand-cuffed: a key **shall** physically be in the ambulance (provided by law enforcement) and the provider-in-charge has training on how to operate it.
- Patients shall not to be cuffed with their hands behind their backs during transport
    - Exception: A patient in "The Wrap"
- When charting this intervention, include level of consciousness, position of restraints and CMS before and after intervention.

CONSIDERATIONS
- Consider switching from hand-cuffs or hard restraints (like zip-cuffs) to soft restraints if able
- If any type of physical restraint (cuffs, zip-cuffs, soft restraints, etc.) is used then the patient will be restrained with two separate sets so that the hands are in two different locations; the preferable position is one down/one up (one hand down on the gurney, and one hand up above their head)

LAW ENFORCEMENT RIDER
- If a patient is in police custody (restrained or not), then a police officer should ride in the ambulance for the transport, preferably seat-belted in the airway seat
- Restrained patients require a law enforcement rider
    - In the rare circumstance that a restrained patient is transported and a law enforcement member is unable to ride in the ambulance then:
        - A second provider shall ride in the patient compartment and the provider-in-charge must have a way to unsecure the patient

SERVICE (ASSISTANCE) ANIMALS

CONSIDERATIONS

- The Federal Americans with Disabilities Act (ADA) currently only recognize dogs as service animals
- Oregon Law (ORS 659A.143) defines an "assistance animal" as a dog or other animal designated by administrative rule that has been individually trained to do work or perform tasks for the benefit of an individual.
- Emotional support, therapy, comfort, or companion animals are not considered service animals in the ADA or in Oregon law.
- A service animal is trained to provide a specific aid to a person with a disability.
- A service animal should be transported with a patient as long as: A) They can be controlled by their handler by leash or voice, B) Does not pose a risk to the provider, and C) is house broken.
- Service animal are not required to wear identification.
- In accordance with OAR 682.410 any Police K-9 working dog will be transported for treatment that is injured in the line of duty, providing it does not delay or otherwise interfere with the emergency transportation of any human.

AMPLIFYING INFORMATION

- Under federal law a provider cannot ask a patient about their disability in regards to the service animal (unrelated to patient care).
- A provider may not ask for documentation about the service animal.
- Only two questions may be asked about a service animal:
  (a) Is the dog a service animal required because of a disability?
  (b) What work or task has the dog been trained to perform?

1. All personnel will get consent from the service animal's owner prior to touching the animal
2. If the animal is handled by the EMS provider, he/she will use extreme gentleness
3. Care and the appropriate transport of the dog will be requested of family, friends, or other civil services

CLEANLINESS & LINENS

CONSIDERATIONS

- Transporting ambulance must be kept clean and presentable at all times.
- Any linens that have been in contact with a patient either directly or indirectly, they will be considered contaminated and shall be properly disposed of and replaced.

READINESS INSPECTION

At the beginning of each day the ambulance shall be inspected for its equipment status and cleanliness. Any missing equipment shall be restocked and any dirty surfaces cleaned appropriately.

EXTERIOR CLEANING

Ambulance units shall be washed at a minimum once per shift, preferably in the morning. Additional washing or "rinse offs" should be performed after transports when dirt, mud, dust, etc. is visually noticeable. The exception to this will be during inclement weather when the outside temperature is below 35 degrees Fahrenheit.

INTERIOR CLEANING / DECON

Ambulance units shall be cleaned as needed; removing all dust, dirt, debris, garbage, mud, etc. to keep the unit clean and presentable. Transporting ambulances shall be appropriately decontaminated after each transport to ensure all surfaces in direct and indirect contact with a patient are clean and sanitary. All equipment used in the course of treating patients during an emergency call or transport shall be deconned to the manufacturer's specifications prior to that equipment being utilized on another patient. Any disposable equipment shall be disposed of in the proper trash receptacle, anything contaminated with blood or bodily fluid shall be disposed of in a bio-hazard bin.

FOOD / DRINK

Food and drinks shall not be allowed in the patient compartment at any time for cleanliness and safety.

PERSONAL PROTECTIVE EQUIPMENT

All personnel conducting cleaning in the ambulance shall wear the appropriate PPE for the task, this may include, but not limited too gloves, glasses, and an isolation gown.

DISPOSABLE LINENS

Disposable linens shall be disposed of in the proper trash receptacle, any linens with blood or bodily fluid shall be disposed of in a bio-hazard bin.

REUSABLE LINENS

Reusable linens shall be disposed of / replaced in a dirty linens bin at the hospital. Reusable soiled linens shall not be returned to the fire station.

EXPIRED / UNFIT MEDICATIONS & SUPPLIES

CONSIDERATIONS

- If a Medication only has a month and year expiration date, it expires on the last day of that month.
- Discard any medication or medical supply that is discolored.

Expired Medication (Non-controlled)

Any non-controlled medication found to be expired shall be removed from inventory immediately.
Expired medication shall be placed in the expired medication bin located in the EMS office.
The expired medication must be restocked immediately.
If no restock is available, notify the on-duty officer and send an email to the EMS Coordinator.

Expired Medication (Controlled & Monitored)

Any controlled or monitored medication found to be expired shall be removed from service immediately. The provider finding the expired Medication, will shall waste the medication in the RX destroyer located in the EMS Office. The expired medication will be logged using Narc Box system. This process will need to be witnessed by a second Provider/Witness. If someone other than the EMS Coordinator finds the expired medication, an email needs to be sent to the EMS coordinator.

Controlled Medications:
Hydromorphone- Dilaudid
Morphine
Fentanyl
Midazolam -Versed

Monitored Medications:
Adenosine
Etomidate
Succinylcholine

Expired / Unfit Supplies

Any EMS supplies found to be expired, damaged, or unfit for use shall be removed from inventory immediately.
Expired EMS supplies shall be placed in expired supplies bin located in the EMS office.
The EMS supply must be restocked immediately.
If no restock is available, notify the on-duty officer and send an email to the EMS Coordinator.

EXPIRED/UNFIT EQUIPMENT

Equipment out of Service / Unable to Respond

If a piece of EMS equipment is out of service and would prevent an ambulance from remaining in service, the duty officer shall notify the EMS coordinator and the Division Chief of Operations at their earliest convenience. Following the notifications, a work order in First Due must be submitted as to the item or items that caused the out-service state. If replacement equipment is readily available it shall be placed back on the unit, and the unit placed back in service. The out of service equipment shall be tagged with an out of service tag.

Out-of-Service Tags

EMS equipment that is found to be non-operational by the manufacturer's specifications shall be tagged with an Out of Service Tag and notification shall be sent by Email (FirstDue) to the EMS coordinator and Division Chief of Operations.
The Out of Service tag needs to have the following information:

- Item that is out of service
- Date item was placed out of service
- Who placed it out of service

Out-of-Service Storage

Any piece of medical equipment taken out of service shall be placed in the EMS Coordinators office. The shelf is labeled "Out of Service EMS Equipment."

AMBULANCE OUT-OF-SERVICE

Unable to Respond due to Equipment/Mechanical Issues

1. Provide for the safety of the crew and the ambulance including providing advanced emergency warning if oncoming traffic may be a concern
    a. Request additional help from fire or police responders if needed
2. Coordinate if a different crew needs to respond to the incident of your crew can respond in a different apparatus
3. Contact immediately if the ambulance is unable to respond to a pending incident:
    a. Seaside Dispatch
    b. Medix Dispatch (on duty supervisor)
4. Follow-up contact as soon as practical:
    a. EMS Coordinator
    b. Division Chief of Operations
    c. Fire Chief

Major Mechanical Issue

1. Attempt to get the ambulance back to the station
2. If unable arrange for a tow by contacting:
    a. On Duty Fire Officer
    b. EMS Coordinator
    c. Operations Chief
    d. Fire Chief

Ambulance Back-in-Service

1. Once a Seaside Fire ambulance is back in service Medix dispatch shall be notified to inform the on-duty supervisor

LIFE FLIGHT GROUND TRANSPORT

BACKGROUND & CONSIDERATIONS

- The current signed contract between Life Flight Network and the City of Seaside is the final authority for this protocol. Transports will only be from a local hospital to either the Seaside or Astoria Regional Airport
- In any circumstance that a Seaside Ambulance is asked to transport out of Clatsop County, one of the following is applicable: A) Deny the request, B) Return the patient and crew to the hospital, or C) See about a rendezvous with another ambulance provider.
- No patient (or insurance) information will be collected by Seaside Fire.
- No patient treatments, care, interventions, or EMS charting will be done by Seaside Fire.

CAUTION AROUND AIRCRAFT

- Do not park or drive closer than 100 feet of a Life Flight helicopter
- Do not park or driver closer than 50 feet of the fuselage of a Fixed wing aircraft
- Always be on the look-out for wings and/or rotor blades. Whenever possible, coordinate with a Life flight Crewmember for parking

Dispatch Responsibilities

1. Answer the call for a transport and verify
    a. Local transport only
    b. Hospital location and time to have the ambulance meet the crew
    c. Verify Life Flight crew is providing their own transportation to the hospital
2. Contact the Duty Officer (after hours) or the fire station during working hours
3. Create and incident number (No Tone out for this type of incident)
    a. Type of Incident: Assist Other agency Scratchpad: Life Flight Transport

Operator Protocols

1. Arrive at the station and verify:
    a. Ambulance In Service check
    b. All Oxygen bottles are full
2. Respond to the hospital (Go in route with dispatch on the Radio: 3151 responding for transfer).
3. Arrive at the hospital and check in with life flight Crew
    a. Provide a briefing on usage of equipment and patient compartment equipment with one of the crew members prior to loading the patient.
    b. Verify a code 1 or 3 transport, and any additional needs they may have
4. Assist crew with loading the patient and securing for transport
5. Transport the crew and patient to the airport
    a. Utilize the gate next to the Life Flight hanger to access the airport CODE:1228
6. Coordinate with the crew on parking location next to aircraft
7. Complete paperwork (Life Flight Ground Transport Form) with crew prior to leaving the airport
8. Return to station 3100, complete decon / linen / and any other necessary items after a patient
9. Utilize the radio to go “in-service” with Dispatch
10. Complete run sheet and file the Life flight Ground Transport Form in the gray paperwork box