Coos County
EMS Protocols

COOS COUNTY EMERGENCY MEDICAL SERVICES STANDING ORDERS

Mission Statement

The mission of Coos County Emergency Medical Services is to provide compassionate, quality and state-of-the-art pre-hospital care to the residents and visitors of Coos County.

Acknowledgments

We would like to thank the following individuals for their assistance in reviewing these protocols and for providing comments and suggestions for their improvement.

John Aldrich, Paramedic	Myrtle Point Fire & Ambulance
Willy Burris, Paramedic	Myrtle Point Fire & Ambulance
Brian Conley, Paramedic	Coquille Valley Ambulance
Jerry Huff, EMT-Intermediate	Charleston Rural Fire Protection District
Ron Klisch, Paramedic	Bay Cities Ambulance
Dean Martin, Paramedic	Coos Bay Fire and Rescue
Brandon Moore, Paramedic	Bay Cities Ambulance
Randy Noggle, Paramedic	Bay Cities Ambulance
Tim Novotny, Paramedic	Bay Cities Ambulance
Ben Rolicheck, Paramedic	Coos Bay Fire and Rescue
Steve Takis, Paramedic	Coos Bay Fire and Rescue
Lucas Taylor, Paramedic	Bay Cities Ambulance
Eston White, Paramedic	Coquille Valley Ambulance
James Wilcott, Paramedic	Bay Cities Ambulance

In addition, thanks to all the EMT Reviewers from various agencies that provided valuable feedback.

MEMO REGARDING STANDING ORDERS AND PROTOCOLS

This memorandum provides the authority for the Emergency Medical Responders (EMRs), Emergency Medical Technicians (EMTs), Advanced Emergency Medical Technicians (AEMTs), Oregon Emergency Medical Technician Intermediates (EMT-Is), Paramedics and Registered Nurses (RNs) employed by or providing volunteer services for the following organizations to function under their appropriate scope of practice and the written protocols contained herein.

These written protocols operate on the principle that the Emergency Medical Responders, EMTs, AEMTs, EMT-Is, Paramedics and RNs assume considerable latitude in the decisions regarding assessment and treatment of patients at the scene and during transport. The procedures and protocols as set forth in the following pages are intended for use as the patient evaluation and exam indicates. Protocols and/or procedures may be implemented in part or in their entirety based on the results of this exam and the provider's judgment**.** The success of these protocols depends on the training, continuing education, clinical judgment, and personal integrity of all who provide medical services under this agreement.

These standing orders contain agency specific orders. The agencies listed below and their respective Supervising Physicians can act independently of each other. However, as a group we have coordinated our medical equipment and practices, as we recognize the obvious benefit to the community.

These protocols shall be in effect **January 1, 2014** until **January 1, 2015** unless revised or amended. These new protocols supersede and make void all protocols written and approved prior to this date.

James Woods, MD
EMS Supervising Physician

Joseph Amavisca, MD
EMS Supervising Physician

Bandon Fire Department
Bay Cities Ambulance
Charleston Rural Fire Protection District
Coos Bay Fire Department
Green Acres Rural Fire Protection District
Hauser Rural Fire Protection District
Mill Casino First Responders
Millington Rural Fire Protection District
North Bay Rural Fire Protection District
North Bend Fire Department
Southwest Oregon Regional Airport First Responders
Sumner Rural Fire Protection District
Bridge Rural Fire Protection District
Coquille Valley Ambulance
Dora-Sitkum Rural Fire Protection District
Fairview Rural Fire Protection District
Myrtle Point Fire and Ambulance
Powers Ambulance

TABLE OF CONTENTS

NOTES:

(a) – HazMat trained personnel only

(b) – Medication or Procedure only for use by responders working under Dr. Amavisca

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 1

Administrative Rules & Operational Protocols

A. ROLE AND RESPONSIBILITY OF SUPERVISING PHYSICIAN

The Supervising Physician will fulfill his/her responsibilities as described in current Oregon Administrative Rules (OAR 847-35).
http://arcweb.sos.state.or.us/pages/rules/oars_800/oar_847/847_035.html
These responsibilities shall include Registered Nurses (RNs) operating under these protocols for fixed wing transports must comply with OAR 333-255-080 (2)(3). RNs operating under these protocols for rotary wing aircraft (OAR 333-255-080[4]) or functioning as a Paramedic on a ground ambulance (333-255-070[6][d]) shall have (1) current AHA level C or ARC BLS for the Professional, (2) current ACLS, (3) PALS or equivalent course completion, (4) PHTLS, BTLS TEAM or TNCC course completion (TEAM and TNCC must include training in pre-hospital rapid extrication). RNs must also attend the same yearly-required case reviews and skills performance reviews as Paramedics.

B. STANDARD OF CARE FOR COOS COUNTY EMS PERSONNEL

1. A patient is a person who presents with:
    a. An injury or illness, with or without a chief complaint; or
    b. A chief complaint of or have an altered level of consciousness, with or without apparent injury or illness; or
    c. A mechanism of injury, which raises the index of suspicion for injury.
2. All Coos County EMS providers will be expected to conduct themselves in a professional manner.
3. EMS providers will treat all patients with dignity and respect. Patient's medical information will be treated in a confidential manner.
4. EMS providers first priority in the field will be scene safety for themselves, their patients and the public. This may include staging a safe distance away until the scene is safe. This will include the use of appropriate personal protective equipment.
5. Patients with the most severe or life threatening injuries or illnesses will be treated first, except in the event of a multiple patient scene/mass casualty incident where the field resources are overwhelmed. Patient management will begin with the ABCs and CPR if appropriate. Once adequate life support is established; EMS providers will perform the primary and secondary survey to determine and then treat the patients illness or injury. Treatment and drug standing orders will be followed based on the patient's condition and the EMS providers level of training and certification. Patient's condition will be monitored frequently including vital signs (pulse, blood pressure, temperature, respirations), pulse oximetry, mental status, etc. EMS providers are expected to use their knowledge, training, judgment and expertise in pre-hospital care when caring for patients under these standing orders. EMS providers will not exceed their respective scopes of practice as established by Oregon law. When possible and appropriate, pre-hospital personnel will follow the desires and wishes of the patient and their families.
6. Patient care will include documentation in a professional and timely manner to facilitate further evaluation and treatment.
7. Differences of opinion and criticism of agencies or personnel will not interfere with patient care. If not quickly, quietly and easily resolvable in the field such matters should be referred to the agencies involved or the Supervising Physician for investigation, discussion and resolution.

C. SCOPE OF PRACTICE

Emergency Medical Responders, EMTs, AEMTs, EMT-Is and Paramedics shall always function within their scope of practice even if requested to do otherwise. Emergency Medical Responders, EMTs, AEMTs, EMT-Is and Paramedics operating under these standing orders have the scope of practice as described in current Oregon Administrative Rules (OAR 847-035-0030) http://arcweb.sos.state.or.us/pages/rules/oars_800/oar_847/847_035.htmland are expected to provide this level of care.

D. SCENE AUTHORITY

MEDICAL DECISIONS

EMS providers on scene shall cooperate in providing the optimum care for the patient. It is important to recognize and utilize the training and expertise of all available personnel. The highest-level EMS provider on the scene shall be responsible for patient care until the transporting EMS providers arrive. Upon arrival of the transporting EMS provider, the highest-ranking EMS provider on the transporting ambulance shall direct all patient care. Upon arrival, the EMS provider with the transporting agency shall be responsible for patient care and transport decisions. First responders may assist with the patient care during transport. Information regarding the injury or illness, as appropriate for continued medical care, shall be communicated to the transporting EMS provider.

MEDICAL PROFESSIONAL ON THE SCENE

Medical professionals at the scene of an emergency may provide assistance to Paramedics, and shall be treated with professional courtesy. Medical professionals who offer their assistance at the scene should be asked to identify themselves and their level of training. The EMS provider should request that the medical professional provide proof of his/her identity if he/she wishes to assist with care given to the patient after the arrival of the Paramedic unit. Physicians are the only medical professionals who may assume control of the care of the patient. The EMS provider should recognize the knowledge and expertise of other medical professionals and utilize them for the best outcome of the patient. The authority for medical control of Paramedic procedures rest with ORS statutes, these written treatment protocols approved by the Supervising Physician and the receiving hospital's emergency Physician when contacted. A Physician on the scene who is caring for a patient prior to the arrival of a Paramedic unit may retain medical responsibility for the patient if he/she so desires. The EMS provider should advise the Physician who wishes to supervise or direct patient care, that the Physician must accompany the patient to the hospital to maintain continuity of patient care. The Physician on the scene shall have made available to him/her the services and equipment of the Paramedic unit, if requested. There should be full documentation of these events, including the Physician's name and address. If a conflict arises about patient care or treatment protocols, the EMS provider should call the receiving hospital for assistance.

DISPUTES ON THE SCENE

1. Disagreements about care should be handled in a professional manner, so as not to detract from patient care.
2. Standing orders should be followed whenever possible and should be the basis for resolving disputes.
3. If there is an unresolved dispute between EMS providers and medical professionals concerning the care of a patient, contact on-line medical control (OLMC).
4. A written incident report should be prepared concerning any dispute arising at the scene and given to the Supervising Physician for review.

FIRST RESPONDER TRANSPORT POLICY

First responder rescue agencies, with licensed ambulance capability, may transport patients to local medical facilities under the following conditions:

1. Any critical or unstable patient who is packaged and ready for transport and whose **clinical condition would likely deteriorate** in the judgment of the senior transporting EMS provider on scene and if there is a significant delay in the arrival of the transporting ambulance. The transporting ambulance service should be notified and ETA requested prior to considering transport by the first responding agency.
2. If the patient requires immediate intervention beyond the capabilities of on-scene personnel, the first responder, whether ALS or BLS may transport immediately.
3. First responders units may transport if requested to by the ASA provider or if no provider is responding or are under contractual agreement with the ASA provider.
4. In the event of a multiple patient scene or mass casualty incident, any first responder unit may transport, if directed to do so by on-scene Medical Branch Director or Incident Commander.
5. Any BLS responder who transports a patient that might benefit from ALS treatment must request an ALS intercept.

E. MEDICAL CONTROL

OFF-LINE MEDICAL CONTROL

Includes the following:

1. Standing orders approved by the Supervising Physicians.
2. Patient orders and protocols pertaining to a specific transport written by a Physician.

ON-LINE MEDICAL CONTROL

Refers to direct radio and/or phone communication between pre-hospital care personnel and hospital emergency department Physician or the patient's personal Physician. Emergency Physicians should be familiar with ACLS and PHTLS recommendations and be familiar with the pre-hospital care protocols and the capabilities of local EMS providers. OLMC may override written protocols when appropriate such as:

1. Directing medical care for patients within pre-hospital care provider's scope of practice.
2. Routing patients to appropriate hospital destination considering the number of patients, patients needs (pediatric, psychiatric, obstetric, trauma, etc.) or hospital availability of specialty beds, operating rooms or imaging procedures.

PROCEDURE FOR OBTAINING ON-LINE MEDICAL CONTROL

1. Emergency Medical Responders, EMTs, AEMTs and Paramedics will follow the appropriate standing orders for pre-hospital care. If uncertain of protocol or treatment, contact the emergency Physician at the receiving hospital for OLMC.
2. During inter-facility transfers, the sending Physician is the preferred contact for OLMC. In situations where the patient's condition is judged critical or serious, and especially when there are multiple critically ill or injured patients, early notification to the receiving hospital is mandatory. This will allow proper allocation of medical resources and timely preparation for definitive care.
3. All requests by EMS providers for medical guidance will be accommodated promptly and reflect an attitude of joint responsibility and cooperation. The on-line emergency Physician shall issue treatment and transport instructions based on an objective analysis of the patient's needs and the hospital's capability and proximity. NO effort shall be made to obtain institutional or commercial advantage with such transport instructions and hospital assignments. When an emergency department at one hospital is acting as agent for another hospital, information regarding the patients shall be communicated to the receiving hospital in an accurate and timely manner. The transmission of information, regarding patient's identity, condition, and treatment shall otherwise remain strictly confidential.
4. All emergency departments and EMS providers operating under the protocols of these standing orders shall maintain radio communication equipment, which meets the standards of the Oregon State Health Division. All first response units will have MED NET 1 (155.340) frequency and all transport capable vehicles will have both MED Net 1 and MED NET 2 (155.400) frequencies.
5. Any difficulties or problems that arise within the medical control system shall be communicated to the Supervising Physician for clarification or resolution. Medical control should not delay medical or surgical treatment. For patients who fulfill the trauma system criteria, medical control shall rest with Bay Area Hospital's emergency room Physician or receiving surgeon.

TRIAGE AND TRANSPORT

The decision concerning which hospital will be receiving the patient will be determined by a consideration of the following factors

1. **Trauma System Entry patients**
   a. Patients with an unstable or compromised airway will be taken to the nearest hospital for initial airway management.
   b. Patients with a stable airway will be taken to BAH who:
      - Have a penetrating injury of the head, neck, torso or extremities proximal to elbow or knee
      - Open or depressed skull fracture
      - GCS<13
      - Systolic BP <90
      - Respiratory rate <10 or >29 or need for ventilatory support
      - Amputation proximal to wrist or ankle
      - Crushed, degloved, mangled or pulseless extremity
      - Two or more long-bone fractures
      - Suspected pelvis fracture
      - Spinal cord injury with motor sensory deficit
      - Patients who are pregnant

c. All other patients with a stable airway will be taken to the nearest hospital with a trauma designation.
   - Bay Area Hospital is designated Trauma Level 3
   - Coquille Valley Hospital is designated Trauma Level 4
   - Mercy Medical Center is designated Trauma Level 3
   - **Southern Coos Hospital does NOT have a trauma designation**

d. Trauma System Entry patients will have an Oregon State (green) trauma band applied.

2. STEMI patients

a. Patient is stable and Bay Area Hospital is NOT the nearest facility.
   - OLMC to Bay Area Hospital, determine availability of cardiac catheter lab and proceed as directed

b. Patients who are unstable will be taken to nearest facility.

3. Obstetrical patients

a. Patients who are considered stable and delivery is not imminent will be taken to Bay Area Hospital.
b. Patients who are unstable and/or delivery is imminent will be taken to the nearest facility.

4. Psychiatric patients

a. Patients who are considered stable and safety of providers and patient can be managed will be taken to Bay Area Hospital.
b. Patients who are unstable and/or safety of providers and patient cannot be assured will be taken to the nearest facility. Request law enforcement for assistance as needed.

5. Orthopedic patients

a. Patients who are stable with pulseless extremity will be taken to Bay Area Hospital.
b. Patients who are unstable will be taken to nearest facility.
c. It is recommended to contact receiving OLMC at Coquille Valley Hospital to determine if orthopedic services are available.
d. Stable orthopedic patients will NOT be taken to Southern Coos Hospital.

6. Neurological patients

a. Patients with suspected Cerebral Vascular Accident (CVA) will only be taken to Southern Coos Hospital when:
   - Patient has unstable or compromised airway
   - Onset of signs and symptoms is greater than 2 hours

b. Stable and Conscious patient: patient preference
c. Stable and Unconscious: family or caregiver preference

7. Do Not Resuscitate (DNR) patients

a. A hospitals available services will not be a factor in determining the receiving hospital for a patient with a valid POLST form checked “Comfort Measures Only”.

F. PATIENT NON-TRANSPORT PROTOCOLS

REFUSAL OF TREATMENT

A patient may choose to refuse pre-hospital medical care or ambulance transport under the following conditions:

1. The patient is conscious, alert, appropriate and capable of making competent decisions.
2. The patient is of age 15 years or older. (ORS 109.640)
3. The patient's medical condition is stable.
4. The patient has been informed and understands the nature of the medical condition or injury and the risks and benefits of ambulance transport.
5. The patient's refusal has been documented and witnessed in the Pre-hospital care report (PHCR).
6. If the patient is not capable of making competent decisions and refuses care or transport, then it is appropriate to contact the patient's personal Physician, OLMC, concerned family members, friends or law enforcement to assist in arranging for proper medical care. The PHCR should include documentation of all actions taken by the EMS provider/s in attempting to arrange for medical treatment, as well as the means used for determining the patients competence.

PATIENT REFUSAL

These protocols are intended for use with a conscious, consenting patient or an altered mental status, implied consent patient.

1. If a conscious patient who is rational refuses treatment, you should comply with the patient's request and document the refusal.
2. If a conscious patient who is rational refuses treatment against medical advice, efforts should be made to contact the patient's private Physician or on-call Physician. OLMC may be helpful and can be consulted if the private Physician is unavailable.
3. If a conscious patient who is rational refuses transportation post ALS intervention or treatment, consultation with the patient's private Physician, on call Physician, and/or OLMC should strongly be considered.
4. If a conscious patient who is irrational or may harm him/herself refuses treatment, you should contact the OLMC (and police if necessary).
5. A patient has the right to select which hospital to be transported to if he/she is rational and if in your judgment such transport will not cause loss of life.
6. When in doubt, contact OLMC and fully document all of your actions.

PATIENT TREATMENT RIGHTS

IMPLIED CONSENT

1. All patients with altered mental status including: postictal states, diabetic emergencies, head injuries, Alzheimer's, etc. shall be treated under the principle of implied consent. Patients with bizarre or irrational behavior secondary to chemical intoxication shall likewise be treated, but attachment by law enforcement is preferred before treatment.
2. Impaired or incompetent patients should be accompanied to the hospital by a guardian or care provider whenever possible. This will provide someone authorized to sign consent forms and to provide history and other pertinent medical information. The preceding also applies to non-emancipated minors, particularly if the patient is uncooperative.

3. In the event that someone thoroughly familiar with the patient's present and past history, meds, allergies, etc. is not available to accompany the patient, obtain this information and a phone number to call for additional information that may be requested by an Emergency Room Physician.

TREATMENT OF MINORS

Mentally competent patients who are greater than 15 years of age and are not emancipated may refuse non-urgent treatment, but only in the absence of their parent or legal guardian. However, the EMS provider in charge should make every effort to contact that minor's parent or legal guardian, within reason, prior to accepting a refusal. The minor may not override parental or guardian decisions. Once a refusal is obtained on a minor, custody of the minor shall be transferred to a responsible adult either on scene or to law enforcement personnel. Consent for treatment and transport should be obtained by a parent or legal guardian before transport whenever feasible. Verbal consent will facilitate the transfer of patient care when a guardian does not accompany an incompetent or minor patient in the ambulance. The guardian should be advised to contact the receiving facility and give a verbal consent for treatment until such time that they are able to provide written consent.
In the event that a parent, legal guardian, or person who has authorization to act on behalf of the patient is not available and cannot be contacted in a reasonable amount of time, treatment of a minor may be rendered under the "emergency doctrine". This doctrine requires a reasonable and prudent determination that immediate treatment must be rendered to preserve life and prevent serious or permanent impairment of health. Both immediacy and severity must be established; that the patient may benefit or be comforted is not a sufficient reason to act. Nevertheless, it is preferred to render treatment when in doubt. Emancipated minors have the same consent/refusal rights as adults.

***** In the event of any minor refusing treatment in the absence of a parent or guardian, OLMC must be contacted *****

G. EVALUATE, TREAT, AND REFER

If the patient has a minor or stable medical condition, and transport to the hospital by ambulance is not indicated, then the following protocol may be used to determine the appropriateness of non-transport.

1. The patient must be of legal age and mentally competent.
2. The EMT attending the patient has conducted a thorough medical examination and documented all pertinent findings and treatment rendered in a PHCR.
3. The patient's condition is medically stable.
4. The patient agrees with non-transport.
5. An alternative method of transport to a medical care facility is available to the patient.

The following medical and injury conditions mandate consultation with OLMC or the patient's personal Physician; otherwise, EMS transport to a medical facility is indicated.

1. Unstable vital signs, which may include orthostatic hypotension.
2. Altered consciousness or a history of loss of consciousness, or any acute onset neurological deficit. **EXCEPT** in the following instances
   - **Hypoglycemia in patients with Diabetes Mellitus:** A patient with diabetes mellitus who is taking insulin has a documented episode of hypoglycemia with an altered level of consciousness that improves significantly with the administration of Oral Glucose or intravenous Dextrose.
   - **Seizure in a patient with a Seizure Disorder:** If a patient with a known seizure disorder experiences a seizure that is consistent with his or her normal frequency of seizures,

compliance with medications AND the seizure is typical for the patient. In such a case, the patient does not necessarily require transport or OLMC providing that the patient is left in the care of a competent adult, self or other. The PHCR should contain clear documentation of the event.

3. Respiratory distress or pulse oximetry less than 90% (room air).
4. Patients over 40 years old with a complaint of chest pain consistent with heart or lung disease or abdominal pain.
5. Severe headaches or a high fever (>40 C/104 F) in any age group.
6. High risk of traumatic injury including such co-morbid factors as vehicular intrusion, injuries to others on scene, distance of fall or other concerns registered by the responding EMTs.
7. No appropriate, timely, alternative means of transport to a medical facility is available.

H. DETERMINING DEATH IN FIELD

WITHHOLDING RESCUSITATION EFFORTS

1. Determining death in the field without initiating CPR should be considered in the following conditions:
   - Patient qualifies as a DNR
   - A pulseless/apneic patient in a MCI where the resources of the system are required for the stabilization of living patients
   - Decapitation
   - Rigor Mortis
   - Decomposition
   - Dependent Lividity
   - Penetrating head wounds with no vital signs

DETERMING DEATH IN CARDIAC ARREST

EMT- I, Paramedic

1. The victim of a non-traumatic cardiac arrest should not be determined to be dead on the scene unless the patient has been unresponsive to appropriate ACLS resuscitative measures.
   a. All patients in Ventricular Fibrillation (VF) should always be transported except for the conditions listed above and those included in the DNR protocol
   b. Patients found in Asystole (after checking leads), who have not responded to the initial cycle of ACLS for Asystole may be determined dead at the scene after consult with the patient's Primary Care Physician or OLMC.
   c. Patients found in a Pulseless Electrical Activity (PEA) who have not responded to the initial cycle of ACLS for Asystole may be determined dead at the scene after consult with the patient's Primary Care Physician or OLMC.
2. The EMS Providers should begin BLS protocols and contact the patient's Primary Care Physican or OLMC with a request to discontinue resuscitation.
   a. Traumatic Arrest
   b. In addition to the conditions listed under "Withholding Resuscitative Efforts," a victim of trauma should not be determined dead at the scene unless: The patient is a victim of blunt trauma and/or other injuries incompatable with life, has no vitals signs in the field

Documentation

1. All patient care provided should be documented with procedures and time.
2. In non-traumatic deaths, all stopped resuscitation cases should have an EKG strip, which shows asystole in three consecutive leads.
3. All conversations with Physicians, OLMC, or the patient's Primary Care Physician should be fully documented with their names, time, and instructions.

Precautions

***** All hypothermic patients, victims of electrocution, lightning, and drowning should have resuscitative efforts begun and transported to the hospital *****

I. MEDICAL EXAMINER NOTIFICATION

PURPOSE

Oregon law specifies that when a death occurs under certain circumstances, the Medical Examiner (ME) must be notified so that an investigation can be performed into the circumstances surrounding the death.

1. **Definition of Medical Examiner/Deputy Medical Examiners**
   - Coos County Sheriff's Office (CCSO)
   - Any local police agency

2. **The appropriate medical examiner must be notified under the following circumstances**
   - Unattended deaths
   - SIDS
   - Suicide
   - Accidental death
   - Homicide
   - Drug involvement
   - Any death involving a police investigation
   - Any death during transport that is not turned over for further medical care

NOTIFICATION

1. If a police agency is on scene, medical personnel will turn responsibility of the scene over to that agency and provide any requested assistance.
2. If a police agency is not on scene and is needed, medical personnel will notify dispatch.
3. Dispatch will then call for law enforcement to respond.
4. If a patient dies while being transported, dispatch will be notified at the earliest convenient time. Dispatch will be instructed to notify CCSO, or the proper agency, and inform them of the incident and the patient's destination (morgue, funeral home, etc.).

J. DOCUMENTATION AND MEDICAL RECORD REQUIREMENTS

All contacts with patients who are ill or injured must be documented on a PHCR, whether hand-written or computer generated. All PHCR entries are to be dated and timed appropriately. Times are to be recorded as accurately as possible; however, the EMS providers primary concern is patient care, which will take precedence over timekeeping. Times should represent the course and duration of events. Times may vary from those of other clocks, which are not regularly and continuously time-synchronized. The PHCR provides written documentation of patient condition and treatment for medical and legal purposes. It also adds to the continuity of patient care after arrival to the hospital.

PHCR's are to be filled out completely with all pertinent information. The report is a record that reflects on you and our profession as a whole. Reports should be concise, written legibly, use correct spelling, and only accepted terminology and abbreviations.

1. A copy of any 12 lead EKG obtained pre-hospital will be left at the receiving hospital.
2. Any OLMC communication will be documented on the PHCR, regardless of whether or not the patient was transported, and will include instructions, receiving hospital, and Physician name.
3. A patient's refusal of care or transport, transfer to another agency or person, OLMC communications, deviations from these standing orders or determination of death in the field will be documented on the PHCR.
4. In compliance with state regulations, a complete PHCR must be done at the receiving hospital unless the patient's emergency department's Nurse or Physician receives an appropriate verbal report and gives verbal release, in which case a completed PHCR must be provided to the receiving hospital within 12 hours or the end of your shift, whichever is sooner.
5. A list of all current medications and the dosage should be brought to the emergency department with the patient (try not to bring the actual medications if possible).
6. If a non-treating EMS provider does not agree with the care given, it is that EMS providers responsibility to discuss his/her reservations with his or her partner and resolve the problem. If the problem cannot be resolved, the non-treating EMS provider shall write out a report documenting his/her reservations about the call. If there were any problems on the call with personnel or equipment that affected the patient outcome, fill out an incident report and forward to the Supervisor.
7. Non-transporting agencies PHCR must meet state standards and be approved by the Supervising Physician.

PRE-HOSPITAL CARE REPORT

The following is an outline of a common SOAP format

SUBJECTIVE

1. Chief Complaint (why 911 was activated)
2. History of event or mechanism of injury (what happened prior to the call)
3. Report of treatment prior to arrival of the transporting ambulance and by whom
4. Relevant past medical history
    - Meds
    - Allergies
    - Patient's Physician
    - Significant and pertinent negatives

OBJECTIVE

General Appearance, including scene description

- Vital Signs
- Head to toe exam
- Skin
- Head, eyes, ears, nose, throat
- Heart
- Neurological including level of consciousness or Glasgow Coma Score
- Chest
- Abdomen
- Extremities
- Spine

ASSESSMENT

What you think the patient's problem is based on your subjective and objective findings

PLAN

Actions taken and protocols followed; OLMC communications or deviations from these standing orders; time of interventions and changes in a patient's condition; patient refusals and statement of possible consequences; conditions on arrival at the hospital; to whom report was given and to whom the patient was transferred; disposition of patient's personal items.

K. EQUIPMENT AND SUPPLIES

The minimum equipment and supplies are those required by the Oregon State Health Division, Emergency Medical Services Section for all Basic and Advanced Life Support Ambulances. In addition, the Supervising Physician may require additional equipment and supplies in accordance with treatment protocols included in the standing orders. It will be the responsibility of the Supervising Physician to provide a rationale for requiring equipment that exceeds the minimum standards of the State of Oregon. All transporting vehicles covered by these standing orders shall carry a copy of these standing orders.

L. TIME ON SCENE

The purpose of this section is to delineate scene time limitations.

1. If at any time an EMS provider cannot provide or protect a patent airway to a patient, they are required to transport the patient immediately.
2. If at any time an EMS provider has been on the scene for more than thirty (30) minutes after patient encounter, and initiating emergency medical care, he/she is required to document the reason why on the PHCR.
3. For trauma cases, time spent on the scene should be ten (10) minutes or less after extrication has been accomplished and the patient can be moved away from the site.
4. When more than 3 patients are involved, the 10-minute scene rule begins when late arriving units receive their patient.
5. Establishing an IV line in the field should not delay transport unless there is an immediate need for parenteral therapy; e.g., hypoglycemia, seizures, narcotic overdose, cardiac arrest or unstable dysrhythmias.

M. AMBULANCE RESPONSE

Ambulances will be driven in a manner consistent with public safety and the patient's condition as judged by the attending EMS provider. Lights and siren responses or transports may be appropriate if the transport time is significantly reduced and must be carefully balanced by the increased risk to the patient. All responders and the public are at an increased risk of motor vehicle crashes associated with such responses.

N. CONTINUOUS QUALITY IMPROVEMENT PLAN

With the goal of providing a high level of patient care, it is important that all areas of pre-hospital care be monitored and improved upon where possible. With this in mind, all agencies shall participate in the EMS System Continuous Quality Improvement Plan. This plan provides a mechanism for review of selected pre-hospital care cases, with emphasis on critical care cases with high-risk issues and procedures on a continuous basis. Conducting reviews of focused topics allow for intensive scrutiny of select topics. When a potential issue is identified, it will be brought to the attention of the QI Administrator who will submit this to the Supervising Physician and appropriate corrective action implemented. Hospital data may also be obtained to provide additional information. Each agency's QI plan will be reviewed at least annually.

1. **Quality Assurance (retrospective) reviews**
    - Field delivery
    - Needle decompression
    - Intraosseous infusion
    - Cricothyrotomy (needle, percutaneous or surgical)
    - EMT, AEMT or EMT-I dual lumen or supraglottic airway placement
    - Morphine administration by EMT-I
    - Rapid Sequence Intubation (RSI)
    - Major MCI – involving more than 2 agencies
    - Pre-hospital death determined in the field
    - Random review
    - Any cases as designated by the Supervising Physician

2. **Quality Improvement (prospective) reviews**
   (As designated by the Supervising Physician)
   - IV Starts
   - Endotracheal intubations and other artificial airways
   - RSI
   - Spinal Immobilization
   - Seizure
   - Poisoning/Overdose
   - Non-transports/patient refusals
   - Code 3 transport
   - Issues regarding quality of care that are not resolvable by the Supervising Physician and the respective EMS agencies may be referred to the Coos County ASA QA Committee for discussion, investigation and resolution

3. **Additional methods for the Supervising Physician to monitor for Quality Assurance**
   - Direct observation of EMS provider field performance
   - Monitoring and or review radio communications
   - Conduct post-run interviews
   - Conduct periodic case conferences
   - Investigation of all complaints

4. **Case Review Conferences**
   - Supervising Physician, QI Administrator, EMS providers can suggest cases or topics
   - May be invited/hosted at various departments
   - Will be held regularly
   - Consist of case presentations
   - Consist of discussion/lecture

*****Respective QI Administrator contacts are: Tami McVey, Willy Burris or Brian Conley*****

O. CONTINUING EDUCATION AND CONFERENCE STANDARDS

Continuing educational activities for EMS providers shall meet or exceed the minimum requirements of the State of Oregon. Local programs for EMS providers shall include:

1. Case Review Conferences
2. Multi-Disciplinary Trauma Conferences
3. Special EMS Conferences organized by the Emergency and/or Education Departments of local hospitals, or by local EMS/First Response agencies

P. STANDING ORDER REVIEW AND REVISION

There shall be at least an annual review of these standing orders by the Supervising Physician with input from any concerned parties. A committee composed of the Supervising Physicians and other interested parties may be formed periodically for recommending revisions to the Standing Orders. The Supervising Physician shall organize education programs to update EMS Providers as to pertinent changes in and additions to the standing orders within a reasonable period after release of any revisions to the standing orders.

Q. INTER-HOSPITAL TRANSFER PROTOCOL

POLICY

A patient is identified for inter-hospital transfer when an attending Physician determines that more appropriate facilities or services are available, and consent for the transfer has been obtained from the patient or the family.

PROCEDURE

1. The patient's attending Physician must contact the Physician accepting the patient and the receiving hospital.
2. The patient must be stabilized prior to transfer.
   a. Patient is assured of an adequate airway and ventilation.
   b. Control of hemorrhage has been initiated.
   c. Patient's spine and fractures have been appropriately stabilized.
   d. An adequate access route for fluid administration is established and appropriate fluid therapy has been initiated.
3. Responsibility for arrangements and details of the transfer, including transportation, are those of the Physician at the transferring hospital. The receiving Physician will be involved with the details of such a transfer to insure optimum care of the patient.
4. Proper equipment and trained personnel will be utilized to handle the problems specific to the patient's condition.
5. Instructions will be given to the personnel transferring the patient by the transferring Physician or nursing staff.
6. It is essential that a written record of the problems, treatment given and status at the time of transfer accompany the patient. Such a record will include:
   a. Patient information.
   b. History of present injury or illness.
   c. Patient condition: vital signs, pertinent physical findings and neurological status.
   d. Treatment rendered, including medications and fluids.
   e. Diagnostic findings: including laboratory, ECG, CT scan and x-ray films.
7. Medical control during an inter-hospital transfer shall rest with the transporting unit's medical control or the sending Physician. In the event of a serious deterioration in the patient's condition the nearest appropriate medical facility will be utilized.

R. USE OF HELICOPTER FOR PATIENT TRANSPORTS

POLICY

These are guidelines to assist the senior on-scene EMS provider, or Incident Commander in determining the appropriateness of requesting a helicopter response. The helicopter can be put on standby or activated by request through your primary dispatch facility.
Helicopter transport is likely to be beneficial in the care of a trauma or medical patient when the total pre-hospital time for the patient would be reduced by 10 minutes or more.

Additional helicopter use factors include extended extrication, MCI, difficult patient access and remote areas.

- Logging accidents
- Dunes accidents
- Cliff or beach rescue when a rappelling team is not available.
- Mass Casualty Incidents

TRAUMA

- GCS <8
- Need for advance airway management
- Severe uncontrolled bleeding or hypovolemic shock
- Penetrating injuries of the head, neck, chest, abdomen or pelvis
- Amputation proximal to the wrist or ankle
- Spinal cord injury with paralysis
- Flail chest
- Two or more obvious long bone fractures
- Pediatric trauma
- Pelvic fractures
- Significant burns >10% BSE and/or potential for airway compromise
- Any other serious trauma with unstable vital signs requiring rapid transport or immediate surgery

MEDICAL

- Cardiac chest pain, STEMI or CVA
- Post cardiac arrest with ROSC
- Significant hypothermia requiring active re-warming
- Near drowning with hypoxia
- Complicated poisoning or overdose
- Any other serious medical with unstable vital signs requiring rapid transport or immediate surgery

POTENTIAL RESTRICTIONS OF HELICOPTER TRANSPORT

- Patients contaminated with hazardous materials until/unless they are properly decontaminated
- Patients in cardiac arrest without ROSC
- Patients who are combative or in custody, unless they can be physically or chemically restrained, the flight team on their arrival can accomplish restraint

PROCEDURE

1. **Deciding to use a helicopter**
   a. Communication between the lead EMS provider and the Incident Commander is highly encouraged regarding the decision to request air transport. In the normal urban environment the need for helicopter transportation is rare.

2. **Requesting a helicopter for patient transport**
   a. The lead EMS provider or Incident Commander can request a helicopter for patient transport.
   b. The request should be made through dispatch that will advise availability and an ETA.
   c. If a helicopter has been requested prior to arrival of the medic unit, the medic unit shall remain en route to the call until the helicopter is on the scene, and confirms that they will be transporting and do not need further assistance.

3. **Communication with the pilot**
   a. Most helicopter services that work in this area have access to the State Fire Radio Net, Med Net, State Air to Ground.
   b. The preferred landing zone should be given to the incoming helicopter. Cross streets and physical location are preferred. GPS coordinates are useful if in a rural or hard to locate area (Degrees, Minutes, Seconds). Crews should advise the incoming helicopter of the following about the landing zone.
      H Hazards
      O Obstructions
      T Terrain Features
      S Surface Conditions
      A Animals and Livestock (notify if present)
      W Wind and weather

4. **Helicopter**
   a. The ambulance crew may transport a patient from the emergency scene to a designated landing zone.
   b. The ambulance crew may transfer the care of the patient to the helicopter if personnel on the helicopter are equal to or greater than the skill level of the ambulance crew.
   c. It is understood that we will not have PHCR's completed in time to send with most air transport patients; pass on as much information as you can to the flight crews verbally with transfer of patient care.

5. **Documentation**
   a. Medic crews should do a PHCR any time they have contact with a patient and the patient is transported by helicopter.

6. **Exceptions where EMS personnel may accompany the helicopter:**
   a. The helicopter does not have Paramedic level or higher care provider and the patient has received or needs Paramedic level care.
   b. Helicopter transport is best for the patient.
   c. If additional assistance is required by the flight crew, and permission is granted by the pilot.

*****These exceptions apply to helicopters equipped and trained to provide patient transport such as the National Guard and Coast Guard *****

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 2

Patient Care Protocols

ABDOMINAL PAIN

SUBJECTIVE

Pain can be gradual or rapid in onset, sharp, dull, colicky or constant, with or without radiation, it may change with time or position, guarding may be present, nausea, vomiting, diarrhea, constipation, bloody emesis, bloody stools, urinary problems, abnormal menstrual cycle, fever, and dyspnea can occur, past medical history, trauma, abnormal ingestions, medications, past surgeries

OBJECTIVE

Diaphoresis, dyspnea, pallor, jaundice, hypotension, orthostatic BP changes, tachycardia, normal, hypoactive, hyperactive or absent bowel sounds, abdominal inspection can show distention, rigidness, bruising or a pulsating mass, emesis: type and amount, if visualized

ASSESSMENT

Causes of pain may include peptic ulcers, appendicitis, diverticulitis, kidney stones, pelvic inflammatory disease, ectopic pregnancy, pancreatitis, cholecystitis, pyelonephritis, ovarian cyst, hepatitis, cancer, abdominal aortic aneurysm, and peritonitis or bowel obstruction, abdominal pain may be of cardiac origin

SPECIFIC PRECAUTIONS

A. Abdominal pain may be the first warning of catastrophic internal bleeding (dissecting aneurysm, ectopic pregnancy, perforated viscus, liver, spleen, etc.), since the blood loss is not visualized, you must think about volume depletion and monitor your patient closely to recognize shock
B. Use caution during fluid administration for patients with suspected dissecting abdominal aneurysm, avoid exceeding systolic BP of 90, history of dissection of aortic abdominal aneurysm is that of terrible “ripping or tearing” pain radiating through to the back
C. Acute Myocardial Infarction sometimes may present with abdominal pain as the only symptom. It is very important to obtain a complete patient history and physical

TREATMENT

Emergency Medical Responder, EMT

- Oxygen
- Position of comfort
- Nothing to eat or drink

AEMT

- One or two large bore IVs with crystalloid
- In suspected Abdominal Aortic Aneurysm, do not increase systolic BP above 90

EMT- I, Paramedic

- Cardiac monitor

ABDOMINAL TRAUMA

SUBJECTIVE
History of mechanism of injury: blunt or penetrating; onset of symptoms from time of event; abdominal pain; difficulty breathing; vomiting up blood; history of abdominal surgery

Blunt: speed of motor vehicle crash; steering wheel damage; passenger restraints; type of weapon if used; type of fall or blast

Penetrating: mechanism; type of weapon; distance from firing; caliber used

OBJECTIVE
Examination may be normal, patient may appear with pale and diaphoretic skin, conscious or unconscious, may have guarding and rigidity, note injuries associated with traumatic event, visualize bruising, distention, entrance and exit wounds to the abdomen, evaluate vital signs frequently

ASSESSMENT
Diagnosis of abdominal trauma is made based on the traumatic event history, palpation and visual examination

TREATMENT

Emergency Medical Responder, EMT

- Oxygen
- Keep patient warm
- Cover any open wound with dressing and moisten with crystalloid solution

AEMT

- One or two large bore IVs with crystalloid

EMT- I

- Cardiac monitor

Paramedic

- Advanced airway management if required
- Fentanyl
- Morphine

*****Remember cyanosis and hypotension are late signs of shock*****

ACUTE DYSTONIC REACTION

SUBJECTIVE

Involuntary, unpleasant motor movements of the trunk, limbs or face following the administration of antipsychotic medications

Medications commonly included, but not limited to

- Perphenazine (Trilafon), Trifluoperazine (Stelazine), Fluphenazine (Prolixin), Thiothixenxe (Navane), Haloperidol (Haldol)

Common anti-nausea medications

- Promethazine (Phenergan), Droperidol (Inapsine), Prochlorperazine (Compazine) or Metaclopramide, (Reglan)

OBJECTIVE

Patient is awake and conscious, with extrapyramidal symptoms, usually distraught or anxious, extrapyramidal symptoms often consist of small spasmodic movements or tics of the arms, legs, face or neck muscles with lip smacking, grimacing, tongue protrusion, eye movements or neck twisting

ASSESSMENT

Acute Dystonic Reactions are distressing to the patient, but rarely life threatening, patients may have had similar symptoms previously, Acute Dystonic Reactions may be mistaken for Anaphylaxis or Seizures, patients with Seizures, which may look somewhat similar, usually have a loss or alteration of consciousness, Acute Dystonic Reactions may last for hours to days, whereas Seizures usually last minutes

TREATMENT

Emergency Medical Responder, EMT

- Oxygen
- Patient comfort

AEMT

- IV with crystalloid

EMT- I, Paramedic

- Diphenhydramine

ALTERED MENTAL STATUS AND PSYCHIATRIC DISORDERS

SUBJECTIVE
History of recent crisis, emotional trauma, bizarre or abrupt changes in behavior, suicidal ideas, alcohol or drug intoxication, toxic exposure, recent head trauma, past history of psychiatric disorders, medical problems, medications and medication compliance, inquire specifically regarding depression and thoughts of suicide

OBJECTIVE
Level of consciousness and orientation, signs of trauma, injury, ingestion or injection, monitor vital signs, note odor on breath, pill bottles or syringes at scene, look for medical alert tags

ASSESSMENT
Diagnosis may be difficult and should be determined by history, patient assessment and observations noted at the scene of the event

SPECIFIC PRECAUTIONS
A. Psychiatric disorders almost never cause Organic Brain Syndrome, if the patient is disoriented, consider possible medical causes (e.g. hypoxia, hypoglycemia, hypothermia, postictal state, sepsis, CVA, etc.)
B. If drug overdose or other toxic exposure is suspected, proceed to “Poison and Over Dose Protocol”
C. If able to confirm that patient has no history of diabetes and CVA or head trauma is strongly suspected, do not give dextrose unless Chem. BG indicates hypoglycemia (<70 mg/dl)
D. Patients with altered mental status due to Alzheimer’s, senile dementia or degenerative diseases may require only emotional support as pre-hospital treatment and do not warrant invasive procedures
E. Psychiatric patients may exhibit a wide range of altered mental status behaviors (e.g. bipolar, hyperactivity/anxiety, paranoia, schizophrenia, irrational or bizarre ideation, major depression, etc.), usually these conditions are not accompanied by signs of decreased level of consciousness and therefore do not warrant invasive procedures, care should be patient and self-protection oriented
F. If condition is the result of a suicide gesture or illicit substance abuse, scene should be secured by law enforcement before you enter
G. Due to the wide range of patient presentation, sometimes it may not be feasible or safe to administer pre-hospital care to the emotionally deranged patient and supportive measures may be all that is or can be provided
H. Remember that some serious medical conditions may present with aggressive behavior and these conditions **MUST** be recognized and treated appropriately, make sure to solicit the required assistance so that you can treat these patients

TREATMENT

PROTECT YOURSELF AND OTHERS FIRST

Emergency Medical Responder

- Attempt to establish rapport
- Do not leave patient alone
- Remove dangerous objects
- Oxygen
- Restrain, as necessary
- Oral Glucose if no airway risk

EMT

- Check blood sugar

AEMT, EMT- I

- IV with crystalloid or saline lock
- Dextrose
- Narcan
- Transport in calm and quiet manner
- Monitor vitals

Paramedic
If Chemical Restraints required

- Diphenhydramine
- Lorazepam
- Droperidol

AMPUTATION

SUBJECTIVE
Location and mechanism of injury, medications, past medical history, other injuries, and time injury occurred, bleeding disorders

OBJECTIVE
Type of amputation; partial or complete, circulatory function with partial amputations

ASSESSMENT
Quantity of blood loss, active bleeding, presence of shock, evaluate for other injuries, amputation may not be life threatening but may be psychologically traumatic for patient or family

TREATMENT

Emergency Medical Responder, EMT

- Control bleeding
- Oxygen
- Cover wound with sterile dressing soaked with crystalloid
- Splint partial amputations in position of function
- Wrap severed portion in crystalloid soaked sterile dressing, place in sealed plastic bag, and place bag in ice water

AEMT

- One or two large bore IVs with crystalloid

EMT- I, Paramedic

- Morphine
- Fentanyl

***** If prolonged extrication time is expected, you should consider transporting the severed body part ahead of the patient to the receiving facility so that preparations can be made for reattachment. *****

ANAPHYLAXIS

SUBJECTIVE
Past history of allergic reactions, itching, throat tightening, shortness of breath, nausea, diarrhea, abdominal cramps, and syncope

Method of exposure: oral, inhaled, dermal and/or percutaneous

OBJECTIVE
Level of consciousness, wheezing, respiratory distress, stridor, hypotension, flushing, hives, edema, vomiting, diarrhea

ASSESSMENT
Anaphylaxis or systemic allergic reactions range from mild skin rash to shock, Anaphylactic reactions involve symptoms and at least one sign: diffuse skin reaction (flushing, itching or hives), shock, bronchospasm or angioedema (swelling) about the face, mouth and eyes, mild systemic reaction may be managed with Diphenhydramine alone, local reactions confined to one extremity are not systemic or Anaphylaxis

TREATMENT

Emergency Medical Responder
- Oxygen
- Remove allergen if possible

EMT
- Epinephrine 1:1000 SC
- Dual lumen or supraglottic airway device - **if agency approved**

AEMT
- IV with crystalloid
- Albuterol
- Epinephrine 1:1000 IM

EMT- I
- Cardiac monitor
- Epinephrine 1:10,000 IV or IO
- Diphenhydramine

Paramedic
- Advanced airway management
- Epinephrine ET if no other route available
- Racemic Epinephrine
- Dopamine infusion for unresolved hypotension
- Epinephrine infusion **OLMC required**

BAROTRAUMA

SUBJECTIVE
Scuba diving accidents are not common, remember to ask whether patient may have taken any type of breath from a scuba device while under water, patients will complain of chest pain, dyspnea, dizziness, limb paresthesia or paralysis, weakness, itching, blotching rash, visual disturbance or loss, fatigue, joint soreness, abdominal pain or coughing spasms

OBJECTIVE
Patient may present with Hypothermia, pulmonary edema, rash, crepitus, altered level of consciousness, coma, unequal pupils, wide pulse pressure, dysarthria (difficulty speaking), Seizures, paralysis, decreased or absent breath sounds, apnea or cardiac arrest

ASSESSMENT
It is essential to attempt to obtain a diving history or profile, including: time at which signs and symptoms occurred; type of breathing apparatus used; depth, number and duration of dives; aircraft travel following a dive; rate of ascent; previous decompression illness, use of medications or alcohol, transportation to recompression chamber immediately is the optimum treatment; do not delay in field

TREATMENT

Emergency Medical Responder
- Supine if unconscious
- Left lateral Trendelenburg if conscious
- High flow oxygen

EMT
- Dual lumen or supraglottic airway device - **if agency approved**

AEMT
- IV crystalloid

EMT- I
- Cardiac monitor

Paramedic
- Aspirin
- Advanced airway management
- Chest decompression

BURNS

SUBJECTIVE

Cause of burn: explosion, fire, radiation, inhalation, electrocution, lightning, chemical; shortness of breath, airway compromise, inhalation, loss of consciousness, past medical history

Cause of burn: explosion, radiation, fire, electrocution, lightning or chemical

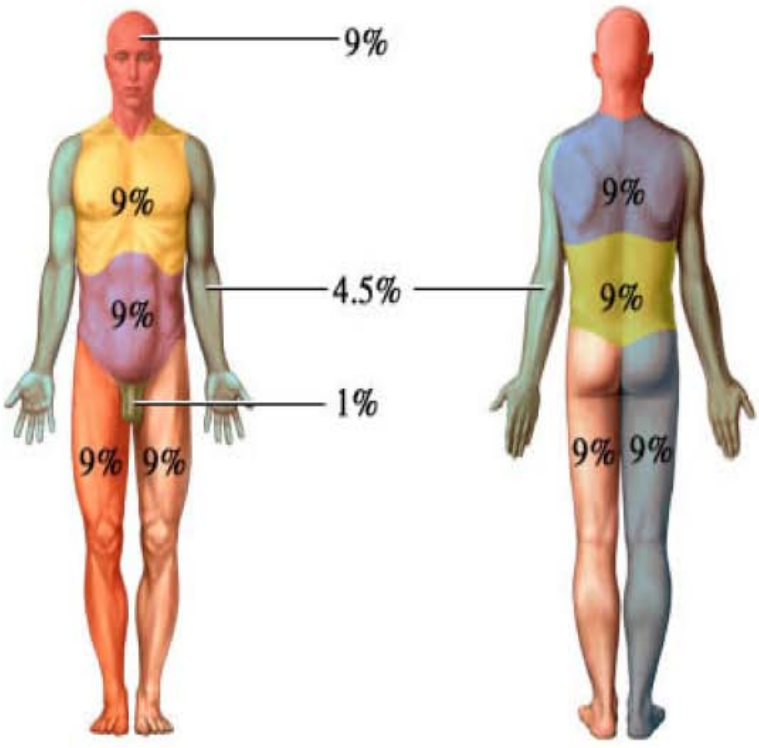
OBJECTIVE

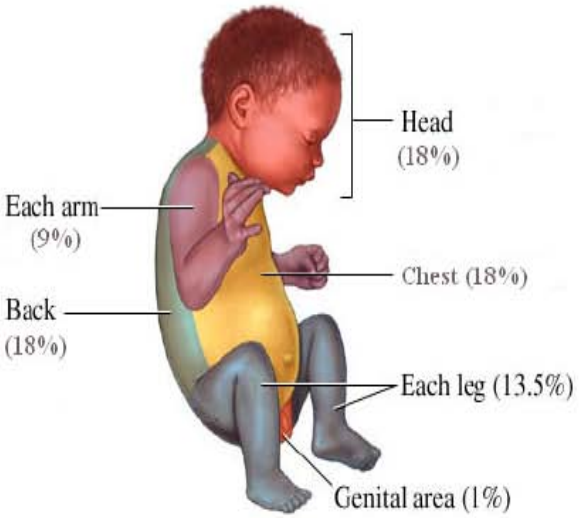
Extent of body surface area (BSA) involved (Rule of Nines) and depth (superficial, partial or full thickness), inhalation injury: soot or blisters around the mouth, singed nasal or facial hair, hoarseness, cough, carbonaceous sputum or respiratory distress; associated injury

ASSESSMENT

Lethal and hard to detect by-products of combustion include carbon monoxide and cyanide gas, burns are usually very painful and anxiety provoking, prevent further burn injury, based on the mechanism of the burn be alert for other injuries from falls, explosion and inhalation, for suspected upper respiratory burns, consider early intubation

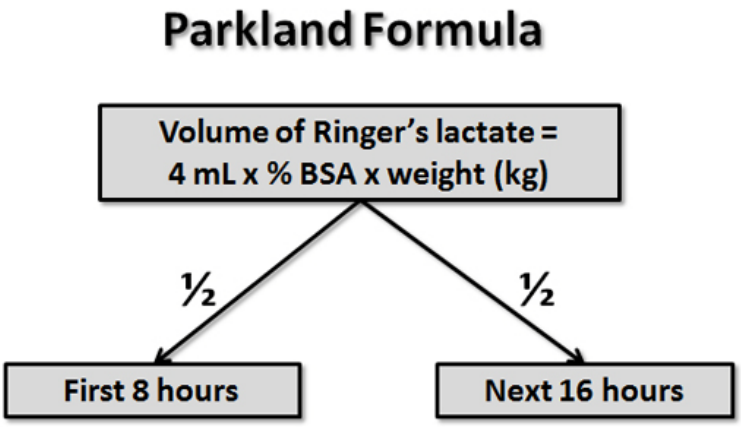
RULE OF NINES





FLUID ADMINISTRATION GUIDELINES FOR BURN PATIENT

Also, refer to following tables and diagrams



PARKLAND BURN FORMULA

QUICK REFERENCE CHART FOR BURN PATIENT FLUID REPLACEMENT USING LACTATED RINGERS

SHOWING CC/HR. FOR FIRST 8 HOURS

	Weight in Kilograms							
	40	50	60	70	80	90	100	110
% BSA								
20	200	250	300	350	400	450	500	550
30	300	375	450	525	600	675	750	825
40	400	500	600	700	800	900	1000	1100
50	500	625	750	825	1000	1125	1250	1375
60	600	750	900	1050	1200	1350	1500	1650
70	700	875	1050	1225	1400	1575	1750	1925
80	800	1000	1200	1400	1600	1800	2000	2200
90	900	1125	1350	1575	1800	2025	2250	2475
100	1000	1250	1500	1750	2000	2250	2500	2750

*****Do not delay transportation to start IV's in the field*****

TREATMENT

PROTECT YOURSELF AND OTHERS FIRST

Emergency Medical Responder

- Oxygen
- Remove smoldering clothing and rings, bracelets, belts or straps
- Large burns (≥20% BSA) cover with dry sterile dressing
- Avoid heat loss
- Small burns (<20% BSA) apply cool wet dressings
- Chemical burns flush area with large amounts of water to dilute and remove chemical
- Decontaminate if unknown substance is involved

EMT

- Dual lumen or supraglottic airway device - **if agency approved**
- Consider early TSE if critical burns are suspected

AEMT

- One or two large bore IVs with Lactated Ringers (preferred)

EMT- I

- Cardiac monitor
- Morphine
- Fentanyl

Paramedic

- Advanced airway management

CARDIAC CHEST PAIN

SUBJECTIVE

Chest or epigastric discomfort lasting minutes to hours – not seconds or days

- May radiate to neck, jaw, shoulder, inner arm or elbow
- May be associated with diaphoresis, nausea, vomiting, SOB, weakness or lightheadedness
- May be brought on by exertion or stress
- May be relieved by rest or Nitroglycerine
- May have past medical history of bypass surgery, angioplasty, Angina, heart attack or Myocardial Infarction

Medications commonly include, but not limited to

- Nitrates (Nitroglycerin, Nitro Stat, Isordil, Nitro patches, Imdur), Calcium Channel Blockers (Norvasc, Nifedipine, Procardia, Adalat, Diltiazem, Dilacor, Cardizem), Beta Blockers (Propranolol, Inderal, Metoprolol, Lopressor, Toprolol, Atenolol, Sotalol (Betapace), Coreg) or Statins (Mevacor, Lipitor, Zocor, Pravachol, Lescol, Rosuvastatin, Crestor)

Typical presentation (anterior, lateral)

- Chest pressure, ache, band, heaviness, crush or “elephant on the chest”
- Lasting minutes to hours – not seconds or days
- May radiate to left arm or jaw

Typical presentation (inferior)

- Epigastric distress, pain or “indigestion”

OBJECTIVE

Examination may be normal, patient may appear ashen or diaphoretic, patient may be hypotensive, bradycardic or have evidence of pulmonary edema (rales), cardiac rhythm is monitored to detect the occurrence of ventricular or atrial dysrhythmias

ASSESSMENT

Diagnosis of cardiac chest pain or (heart equivalent discomfort) is made based on the patient’s history, other causes of chest pain include chest wall trauma, esophageal reflux, gastritis, peptic ulcer disease, pneumonia, pericarditis, pleurisy, pancreatitis, costochondritis, gall bladder disease, aortic dissection, aortic aneurysm, pulmonary embolism and anxiety

SPECIFIC PRECAUTIONS

A. Approximately 20% of AMIs are “silent”, that is without pain
B. Suspicion of cardiac disease causing chest pain or discomfort is based on the history obtained. Read monitor for rhythm interpretation only; ST segment changes are not reliable
C. The probable effectiveness of thrombolytic therapy for reduction of myocardial infarction is enhanced by prompt delivery, therefore, treatment on scene should be rendered with this in consideration and should be the minimum necessary to allow rapid movement without placing the patient at risk

TREATMENT

Emergency Medical Responder

- Oxygen
- Aspirin

EMT

- May assist patient with self-administration of patient's own Nitroglycerin

AEMT

- IV with crystalloid
- Nitroglycerin

EMT- I, Paramedic

- Cardiac monitor
- Morphine – maximum 4mg
- 12 lead EKG
- Follow "ST Elevation (STEMI)" protocol

ST ELEVATION MI (STEMI)

SUBJECTIVE
Heart equivalent chest discomfort of ≤ 12 hours duration **OR** ventricular fibrillation or ventricular tachycardia converted to perfusing rhythm with stable vital signs and age 85 years or less

OBJECTIVE
Defibrillator 12 lead EKG without LBBB or paced rhythm and meeting one of these 2 criteria:

- ST elevations, beginning at the J point
  - ≥ 1 mm ST elevation in
    2 contiguous lateral leads (I, aVL, V4, V5 & V6) OR
    2 contiguous inferior leads (II, III and aVF)
    > 2 mm ST elevation in two contiguous chest leads (V1, V2, & V3)
- Automatic EKG interpretation of "STEMI" or "Acute MI" (Zoll) **OR** "Acute MI Suspected" LifePak 12

If patient had ventricular fibrillation or ventricular tachycardia converted to perfusing rhythm with stable vital signs, then EKG must be obtained after at least 5 minutes of the converted rhythm

ASSESSMENT
Acute Myocardial Infarction with ST elevation is usually best managed with rapid transport to a hospital offering emergent cardiac catheterization services for diagnosis and treatment

TREATMENT

EMT- I

- Minimize on-scene time and transport the patient to appropriate facility using the "Triage and Transport protocol"
- Notify the receiving hospital of the STEMI activation as soon as possible and give estimated time of arrival, cardiologist, if any, if hospital requests patient information, call directly by phone to provide patient name and DOB as requested
- Report criteria for STEMI activation: auto analyzer reading or ST elevation
- A copy of any pre-hospital12 lead EKG obtained will be labeled with the patient's name and date of birth, attached to the labeled EMS 12 lead EKG Report Form, and left with the patient at the receiving hospital
- Two IV's with saline locks in the same arm (18g or 20g preferred)
- Note the specific time of symptom onset and duration of the symptoms

Paramedic

- Metoprolol
- Plavix
- Heparin

CARDIAC DYSRHYTHMIAS

SUBJECTIVE
Syncope, loss of consciousness, palpitations, chest pain, dizziness, history of heart disease, current medications

OBJECTIVE
Vital signs, level of consciousness, respiratory rates, peripheral perfusion

ASSESSMENT
Treatment protocol is based on the patient's condition and specific rhythm

TREATMENT

Emergency Medical Responder
- High Performance CPR
- Oxygen
- AED as soon as possible

EMT
- Dual lumen or supraglottic airway device – **if agency approved**

AEMT
- IV or IO with crystalloid

EMT- I, Paramedic
- Cardiac monitor
- ACLS protocols
  - Ventricular Fibrillation /Pulseless Ventricular Tachycardia
  - Asystole or PEA
  - Bradycardia - Symptomatic
  - Tachycardia - Narrow complex
  - Tachycardia - Wide complex

VENTRICULAR FIBRILLATION/PULSELESS VENTRICULAR TACHYCARDIA (VF/VT)

SUBJECTIVE
Syncope and loss of consciousness

OBJECTIVE
Unconsciousness, unresponsive, pulseless and apneic
AED shows “shockable rhythm”
Cardiac monitor shows ventricular fibrillation or ventricular tachycardia

ASSESSMENT
Ventricular fibrillation or pulseless ventricular tachycardia

TREATMENT

Emergency Medical Responder

- High Performance CPR
- Oxygen
- AED as soon as possible

EMT

- Dual lumen or supraglottic airway device – **if agency approved**

AEMT

- IV or IO with crystalloid

EMT- I

- Initial defibrillation with single
  - Zoll E Series at 120J
  - Medtronic PhysioControl LIFEPAK 12/15 at 200J
  - Child <8 years of age at 2J/kg
- Epinephrine – repeat about every 4 minutes
- Subsequent defibrillation with single shock after cycle of CPR
  - Zoll E Series at 150J then at 200J
  - Medtronic PhysioControl LIFEPAK 12/15 at 300J then at 360J
  - Child <8 years of age at 4J/kg
- Lidocaine
- Amiodarone
- Consider Vasopressin in place of Epinephrine

Paramedic

- Endotracheal intubation may be considered after at least 4 minutes of CPR with no or minimal interruption of CPR, if a dual lumen or supraglottic airway has not been placed, unless unable to adequately ventilate or oxygenate before that time
- Sodium Bicarbonate if Hyperkalemic or if known overdose with tricyclic antidepressants
- Magnesium Sulfate if Torsades de Pointes

ASYSTOLE OR PULSELESS ELECTRICAL ACTIVITY (PEA)

SUBJECTIVE
Syncope and loss of consciousness

OBJECTIVE
Unconsciousness, unresponsive, pulseless and apneic
AED shows “non-shockable rhythm”
Cardiac monitor shows asystole in 2 consecutive leads or pulseless electrical activity (PEA)

ASSESSMENT
Asystole or Pulseless Electrical Activity (PEA)

TREATMENT

Emergency Medical Responder

- High Performance CPR
- Oxygen
- AED as soon as possible

EMT

- Dual lumen or supraglottic airway device – **if agency approved**

AEMT

- IV or IO with crystalloid

EMT- I

- Treatable Causes

5 H’s	5 T’s
Hypovolemia	Tension Pneumothorax
Hypoxia	Tamponade
Hydrogen Ion – Acidosis	“Tablets” toxin, poison, drugs
Hyper/Hypokalemia	Thromboembolism (PE)
Hypothermia	Thromboembolism (AMI)

- Epinephrine – repeat about every 4 minutes
- Consider Vasopressin in place of Epinephrine
- Consider termination of resuscitation efforts after OLMC

Paramedic

- Endotracheal intubation may be considered after at least 4 minutes of CPR with no or minimal interruption of CPR, if a dual lumen or supraglottic airway has not been placed, unless unable to adequately ventilate or oxygenate before that time
- Consider transcutaneous pacing
- Sodium Bicarbonate – if Hyperkalemic or if known overdose with tricyclic antidepressant

BRADYCARDIA - SYMPTOMATIC

SUBJECTIVE
Decreased level of consciousness, cardiac chest pain, dyspnea

OBJECTIVE
Bradycardia, hypotension, diaphoresis, syncope

SPECIFIC PHYSICAL FINDINGS
A. Pulse rate of less than 60 and signs of cardiac hypoperfusion
B. Some of the signs of cardiac hypoperfusion include
   - Hypotension
   - CHF
   - Decreased level of consciousness
   - SOB
   - Chest pain

ASSESSMENT
Symptomatic bradycardia

SPECIFIC INFORMATION NEEDED
A. Treat the patient not the monitor
B. Beware of “relative” bradycardia
C. Look for the cause or causes

TREATMENT
Emergency Medical Responder, EMT
- Oxygen

AEMT
- IV or IO with crystalloid

EMT- I
- Cardiac monitor
- Atropine

Paramedic
- Transcutaneous pacing
- Dopamine (5 - 20 mcg/kg/min) IV or IO
- Epinephrine infusion – **OLMC required**
- Consider antidote for specific drug toxicity
  Glucagon for beta-blocker overdose
  Calcium Chloride for calcium channel-blocker overdose

TACHYCARDIA - NARROW COMPLEX

SUBJECTIVE
Palpitations or rapid heart rate, decreased level of consciousness, cardiac chest pain, dyspnea

OBJECTIVE
Tachycardia with a narrow complex, hypotension, diaphoresis, syncope

ASSESSMENT
Narrow complex tachycardia

TREATMENT

Emergency Medical Responder, EMT
- Oxygen
- Position of comfort

AEMT
- IV or IO with crystalloid

EMT- I
- Cardiac monitoring
- Vagal maneuvers

Paramedic
- Adenosine
- Diltiazem
- Synchronized cardioversion

*****10ml of Calcium Chloride 10% should be given for observed side effects of Diltiazem *****

TACHYCARDIA - WIDE COMPLEX

SUBJECTIVE
Palpitations or rapid heart rate, decreased level of consciousness, cardiac chest pain, dyspnea

OBJECTIVE
Tachycardia with a wide complex, hypotension, diaphoresis, syncope

ASSESSMENT
Wide complex tachycardia

TREATMENT

Emergency Medical Responder, EMT

- Oxygen
- Position of comfort

AEMT

- IV or IO with crystalloid

EMT- I

- Cardiac monitor
- Lidocaine
- Amiodarone

Paramedic

- Synchronized cardioversion
- Magnesium Sulfate for Torsades de Pointes with a pulse

CEREBRAL VASCULAR ACCIDENT (CVA OR STROKE)

SUBJECTIVE
May be taking medication for hypertension or a host of medications for other medical conditions

OBJECTIVE
Pupils may be unequal and reactivity to light may vary, patient assessment should include the evaluation of speech, language, motor responses and sensations, limbs should be evaluated for equal strength and motion, Nuchal rigidity can be checked, but this is a late sign, monitor blood pressure, pulse, respirations, cardiac rhythm and blood sugar

ASSESSMENT
Diagnosis of a stroke (CVA) is made based on the patient's history and physical exam, other causes of an altered mental status can be trauma, Hypoglycemia, seizure disorder, psychiatric disorder and drug ingestion

If the patient was last seen normal within the previous 2 hours, he/she may be a candidate for thrombolytic or other interventional therapy, reduce scene time, transport and report findings of exam to receiving facility

TREATMENT

Emergency Medical Responder
- Oxygen

EMT
- Check blood sugar
- Oral Glucose if airway is protected
- Dual lumen or supraglottic airway device - **if agency approved**

AEMT
- IV with crystalloid or saline lock
- IV Dextrose

EMT- I
- Cardiac monitor

Paramedic
- Advanced airway management

*****Patient is not a candidate for stroke therapy if they have a valid POLST with DNR or Comfort Measures Only*****

CHEST TRAUMA

SUBJECTIVE

History and mechanism of injury: blunt or penetrating, onset of symptoms from time of event, chest pain, difficulty breathing, coughing up blood, history of chest surgery, last oral intake

Blunt: speed of motor vehicle crash; steering wheel damage; passenger restraints; type of weapon if used; type of fall or blast

Penetrating: mechanism; type of weapon; distance from firing; caliber

OBJECTIVE

Patient may appear cyanotic, pale, with cool and clammy skin, respiratory distress, paradoxical chest movement, subcutaneous air, decreased or absent breath sounds, obvious open or closed chest injuries, distended neck veins, tracheal shift or hemoptysis, tachycardia, narrow pulse pressures or hypotension

ASSESSMENT

Diagnosis of chest trauma will be based on patient history, mechanism of injury and physical findings**,** do not overlook other potential injuries; head, spine, abdomen or extremities

TREATMENT

Emergency Medical Responder

- High flow oxygen
- Cover open chest wounds with occlusive dressing
- Spinal immobilization

EMT

- Dual lumen or supraglottic airway device- **if agency approved**

AEMT

- One or two large bore IVs with crystalloid

EMT- I

- Cardiac monitor

Paramedic

- Advanced airway management
- Chest decompression

CHILDBIRTH - CARE OF THE NEWBORN

SUBJECTIVE

Presentation at birth, time of delivery, precipitous or home delivery, complications with pregnancy, due date, multiple births, past medical history, medications, drug or alcohol usage

SPECIFIC INFORMATION NEEDED

A. History of Pregnancy: due date, bleeding (recent, within 1 week), swelling of face or extremities, prior problems with pregnancy; known multiple pregnancy
B. Current Problems: if pain, where, regular, timing, ruptured membranes, urge to push
C. Medical History: medications, medical problems, patient's age, number of prior pregnancies

OBJECTIVE

Respiratory rate and effort, grunting, use of accessory muscles, meconium, skin color, heart rate, muscle tone, and multiple births

ASSESSMENT

Most newborns will quickly respond to stimulation through gently drying and placement upon mother's chest or abdomen and encouragement to nurse

TREATMENT

Emergency Medical Responder, EMT, AEMT, EMT- I, Paramedic

Remove wet blankets or towels and dry infant, cover infant, including head, with dry blanket or towel to maintain body temperature, suction mouth, and then nose with bulb syringe for copious secretions, blow-by oxygen for respiratory difficulty or cyanosis, assess one and five minute APGAR

APGAR SCORING SYSTEM FOR NEWBORNS

Sign	0	1	2	1Min	5min
Appearance (Skin Color)	Blue Pale	Body Pink Extremities blue	Completely Pink		
Pulse Rate (Heart Rate)	Absent	Below 100	Above 100		
Grimace (Irritability)	No Response	Grimace	Cries		
Activity (Muscle Tone)	Limp	Some flexion of extremities	Active Motion		
Respiratory (Effort)	Absent	Slow and irregular	Strong Cry		
			Total Score =		

CHILDBIRTH - UNCOMPLICATED

SUBJECTIVE
Gravid, parity, due date, recent vaginal bleeding, problems with this or prior pregnancies, known multiple births, drug or alcohol use, past medical history, blood pressure during pregnancy

Contractions: onset, frequency, ruptured membranes, urge to push, pain location, type

OBJECTIVE
Vital signs, fetal heart tones (LLQ, RLQ, over bladder), frequency of contractions, respecting privacy, inspect perineum for crowning or bulging, vaginal fluid, bleeding, meconium, abnormal presentation

ASSESSMENT
Childbirth is a natural event and usually is uncomplicated, if you suspect a complicated delivery, refer to the appropriate protocol and request additional resources, if you suspect an uncomplicated delivery and imminent birth is not present, transport mother on left side, if impending birth, follow below protocol

TREATMENT

Emergency Medical Responder, EMT

- Oxygen
- Place mother on left side
- OB pack
- Assist with delivery of head applying gentle pressure and continue to support head
- Feel around neck for nuchal cord, if present gently slip around head
- Suction mouth and then nose with bulb syringe
- Supporting head, assist delivery of anterior shoulder and then the rest of the body
- Keep baby level with placenta until the cord is clamped
- Clamp cord using 2 clamps spaced 6-8 inches from baby's body and cut cord between clamps
- Dry infant and protect from heat loss
- Inspect perineum for tears, apply direct pressure with gauze pad to any bleeding, do not pack inside of vagina
- Let placenta deliver normally and take to hospital
- After placenta delivers, massage uterus by rubbing abdomen firmly

AEMT

- IV with crystalloid

EMT- I, Paramedic

- Cardiac monitor

CHILDBIRTH - POST PARTUM HEMORRHAGE

SUBJECTIVE
Gravid, parity, delivery time and date, quantity of vaginal bleeding, prior problems with pregnancy, drug or alcohol usage, past medical history, medications

OBJECTIVE
Hypotension, tachycardia, estimated blood loss at scene, active bleeding, tears in perineum, delivery of intact placenta

ASSESSMENT
Immediate (first 24 hours) postpartum hemorrhage is usually due to poor uterine muscle tone, cervical, or perineal tears, late postpartum hemorrhage (7-10 days) is usually from presence of retained placental parts, if immediately postpartum, the first priority is delivery of the placenta

TREATMENT

Emergency Medical Responder, EMT

- High flow oxygen
- External uterine massage
- Allow infant to nurse to stimulate uterine contractions or have patient stimulate her own nipples
- Apply direct pressure to active external perineal bleeding

AEMT

- One or two large bore IVs with crystalloid

EMT- I, Paramedic

- Cardiac monitor

CHILDBIRTH - BREECH DELIVERY

SUBJECTIVE
Known breech position, gravid, parity, history of breech delivery, due date, complications during pregnancy, drug or alcohol usage, past medical history

OBJECTIVE
Presenting part, frequency of contractions, meconium

ASSESSMENT
Transport immediately to the closest hospital; be prepared to assist in delivery

TREATMENT

Emergency Medical Responder, EMT

- Notify receiving hospital as soon as possible
- Place mother on high flow oxygen
- Place mother supine or in Trendelenburg position
- If birth is imminent, allow mom to push, do not pull baby
- Support delivered baby and extremities on your hand and arm
- If head does not deliver place a gloved hand into the vagina and protect the umbilical cord so that circulation between the placenta and the fetus is not compromised
  Consider Mauriceau maneuver (**"**A method of delivering the head in an assisted breech delivery in which the infant's body is supported by the right forearm while traction is made upon the shoulders by the left hand.") to help deliver head

AEMT

- IV with crystalloid

EMT- I, Paramedic

- Cardiac monitor

CHILDBIRTH - PRE-ECLAMPSIA/ECLAMPSIA

SUBJECTIVE

Headache, decreased urinary output, weight gain, increased edema, visual disturbances, abdominal pain, currently may be on bed rest, seizures and hypertension

SPECIFIC INFORMATION NEEDED

A. Status of Pregnancy: Gestation, prenatal care, single or multiple fetus, due date, recent hospitalization
B. Past Medical History: Hypertension, problems with prior pregnancies, number of prior pregnancies, seizure disorder, and medications
C. Differential indicators
    1. Pregnancy
        a. Usually after 24th week
        b. May occur postpartum, usually within 4 days
    2. History of Pre-Eclampsia
    3. Excessive weight gain/edema; noticeable puffiness of face and hands

OBJECTIVE

Hypertension, pulmonary edema, cyanosis, hyperreflexia, seizures, coma, usually past 24 weeks gestation

SPECIFIC PHYSICAL FINDINGS

A. Hypertension
    1. BP - 150/110 or an increase of 30 mmHg systolic during pregnancy
    2. Hypertension verified and unrelieved 2-5 minutes post placement of patient in left lateral recumbent position
B. Associated signs and symptoms
    1. Weakness
    2. Nausea and/or vomiting
    3. Edema
    4. Altered mental status or unconscious
    5. Seizure

ASSESSMENT

Pre-Eclampsia is a pregnancy related condition involving hypertension, proteinuria and edema, when seizures occur it is Eclampsia, suspect Eclampsia in third trimester pregnant patients who are seizing, these patients will need Magnesium Sulfate to help reverse the Eclampsia and Ativan (Lorazepam) to control seizures

PRECAUTIONS

A. Magnesium sulfate may cause respiratory depression; be prepared to assist ventilation
B. BP < 130/90 in eclamptic patient may reduce uterine blood flow sufficiently enough to cause devastating fetal distress
C. Unresolved Eclampsia may be fatal to the patient, transport promptly; induced delivery of fetus may be necessary
D. Monitor deep tendon reflexes (DTR)

TREATMENT

Emergency Medical Responder, EMT

- High flow oxygen
- Lay mother on left side
- Keep environmental stimulation at a minimum

AEMT

- IV with crystalloid

EMT- I

- Cardiac monitor

Paramedic

- Advanced airway management
- Magnesium Sulfate
- Lorazepam
- Midazolam
- Hydralazine

Pre-Eclampsia

- 2 gm Magnesium Sulfate IV, slowly over 10 minutes; 4 ml of 50% solution mixed with 50 ml D5W

Contact OLMC for Pre-Eclampsia if

A. Unresolved hypertension after initial Magnesium therapy
B. Prior to IM administration of Magnesium if unable to establish IV/IO access

Eclampsia

A. If B/P >130/90 and seizure not resolved, repeat 2 gm Magnesium Sulfate IV/IO as indicated above.
B. If B/P < 130/90 and seizure not resolved, titrate 2 mg Lorazepam
C. If unable to establish IV access, administer Magnesium Sulfate 2 grams (undiluted) in each buttock, consider IO route if unable to establish an IV
D. If seizure not resolved after 4 gm Magnesium Sulfate, administer 2 mg Lorazepam slow IV or deep IM, may repeat Lorazepam dose if Seizure reoccurs or continues more than 3 minutes after initial dose, Midazolam may be used in place of Lorzepam, the dose shall not exceed 5mg IV
E. Transport immediately, accomplishing as much treatment enroute as possible
F. Administer 10 ml of Calcium Chloride 10% for Magnesium Sulfate overdose

******The definitive treatment for Pre-Eclampsia/ Eclampsia is delivery******

DIABETIC EMERGENCIES

SUBJECTIVE

Altered level of consciousness, rapid or slow onset, confusion, weakness, dizziness, abdominal pain, vomiting, frequent urination, presence or absence of hunger and thirst, or recent weight loss, history of diabetes, recent illness, last meal, last insulin administration, oral hypoglycemic medication, medications commonly include, but not limited to

- Glyburide (Diabeta, Micronase), Glipizide (Glucotrol), Tolbutamide (Orinase), Metformin (Glucophage), Chlorpropamide (Diabinase)

OBJECTIVE

Level of consciousness: confusion, disoriented, combative, comatose, or unresponsive
Skin: pale, moist or warm, dry and pink, or signs of dehydration
Breathing: normal, rapid and deep (Kussmaul), or fruity odor (Ketones)
Pulse: normal or elevated
Blood pressure: hypotensive or normal
Blood sugar: chemstrip less than 70 mg/dl or more than 300 mg/dl
Medical alert tag

ASSESSMENT

Diabetic emergencies are usually due to a blood sugar that is too high (hyperglycemia or ketoacidosis) or too low (hypoglycemia or insulin shock or reaction), patients with hyperglycemia (blood sugar more than 300-400mg/dl, often 600-800mg/dl) often have been sick for several days with vomiting and may have rapid, deep breathing (Kussmaul respirations), warm, dry, pink skin and are usually dehydrated. Initial treatment is with crystalloid, not insulin, patients with hypoglycemia (blood sugar less than 70mg/dl and symptomatic) have usually been sick for a short period, minutes to hours. they are often confused or unconscious and their skin is usually cool and clammy, the immediate treatment is with glucose, which should provide a significant improvement within minutes

TREATMENT

Emergency Medical Responder

- Oxygen
- Oral Glucose if no airway risk and suspected hypoglycemia

EMT

- Check blood sugar

AEMT

- IV or IO with crystalloid
- Administer up to 1L crystalloid
- Dextrose
- Glucagon

EMT- I, Paramedic

- Cardiac monitor

DO NOT RESUSCITATE

SUBJECTIVE
The patient's wishes in terms of heroic life saving measures are to not be resuscitated, this information may be obtained from the patient, family/caretakers or Advanced Directives (POLST form, etc.)

OBJECTIVE
Patient is unresponsive, apneic and pulseless or patient has decreasing consciousness, impending respiratory or cardiac failure with death being imminent

ASSESSMENT
For some patients with certain medical conditions he or she may decide in advance that life-prolonging or resuscitative efforts would not be beneficial or desirable, this is a decision that is made in consultation with the patient's Physician or Nurse Practitioner ahead of time, the decision for a DNR (Do Not Resuscitate) order will be transmitted to EMS field personnel in Oregon via the POLST (Physician Orders for Life-Sustaining Treatment) form, or "DO NOT RESUSCITATE" written on a Physicians prescription pad that must be signed and dated by the patient's Primary Care Physician

TREATMENT

Emergency Medical Responder, EMT, AEMT, EMT- I, Paramedic

A. All patients who are unresponsive, apneic and pulseless or who have impending cardiac or respiratory failure will receive full resuscitation efforts within the EMS Providers abilities and knowledge, EXCEPT
    1. Patient has a valid POLST form with corresponding name and date of birth
    2. POLST form must have the patient's name and date of birth and be signed and dated by a Physician or Nurse Practitioner or have a signed and dated Hospice stamp, EMS Providers will follow the instructions checked in Section A or B only, Section A instructs whether to initiate resuscitation for a patient who is pulseless or apneic, Section B refers to EMS treatment (comfort measures only, limited interventions, advanced interventions or full treatment) in the case of a patient who is not apneic and pulseless, if there is any confusion or discrepancy about the POLST form from the patient, family or caretakers, begin care or resuscitation measures and contact the patient's Physician, Nurse Practitioner, OLMC, or transport the patient to the hospital, document your actions and include the POLST form or a copy as part of your PHCR
B. Obvious death with decapitation, rigor mortis in a warm environment, decomposition or dependent lividity (venous pooling in dependent body parts)
C. Victim of blunt trauma or a penetrating head wound with fixed and dilated pupils
D. Responders may contact **Oregon POLST registry** at **1-877-367-7657**, when a form not readily available, it is preferred to have the following information available when calling registry for quick identification, patient's full name, DOB, residing address, gender, age, last 4 of SSN, and registry ID # (if available)
E. You should provide for patient and family comfort, including first aid measures and clearing of airway
F. If patient is pronounced dead, notify law enforcement or DME
G. Do not move patient or remove medical treatment devices
H. Remember comfort measures may include the administration of certain medications, if you're questioning what you should do, contact OLMC

EPISTAXIS (NOSEBLEED)

SUBJECTIVE
Amount of blood loss, trauma, recent upper respiratory tract infection, intranasal drug use, current medications (aspirin, coumadin), self-treatment, history of nosebleeds, nausea or hypertension

OBJECTIVE
Check for bloody or clear fluid from ears to indicate skull injury, evaluate for airway compromise, hypotension, hypertension and trauma

ASSESSMENT
Most nosebleeds occur on the anterior septum from one side only and will stop spontaneously or with direct pressure if applied appropriately, patients may be very anxious, particularly if the bleeding is persistent, the risk of significant blood loss is generally small, bleeding from the posterior nose is often much more serious, but also very unusual, medical intervention is usually required for posterior bleeds, patients that ingest blood usually experience nausea and vomiting

TREATMENT

Emergency Medical Responder, EMT
- Calm patient
- Have patient refrain from blowing nose and apply direct pressure: pinch soft part of nose, distal nasal septum, for ten minutes or until bleeding stops
- Apply nose clamps if you or the patient is unable to maintain direct pressure manually

AEMT
- IV with crystalloid

EMT- I
- Ondansetron

Paramedic
- Droperidol
- Promethazine

FRACTURES & DISLOCATIONS

SUBJECTIVE
History of trauma and mechanism of injury, localized pain, swelling, deformity or angulations, loss of sensation or motion

OBJECTIVE
Tenderness, swelling, deformity, angulations, discoloration, crepitus, loss of motion or guarding, open wound or exposed bones, arterial compromise demonstrated by cool extremity, loss of pulses or loss of sensation

ASSESSMENT
Diagnosis of a suspected fracture or dislocation is based on the patient's history, mechanism of injury and physical findings, other causes of pain, evaluate for other trauma

TREATMENT

Emergency Medical Responder, EMT
- Oxygen
- Dressing to open wounds
- Immobilize, splint, traction splint, elevate, and apply ice

AEMT
- IV with crystalloid

EMT- I
- Cardiac monitor
- Morphine
- Fentanyl

Paramedic
- In cases of compromised distal circulation, reduction of limb fractures to anatomical position is permitted

HEAD TRAUMA

SUBJECTIVE
History of trauma and the mechanism of injury, changes in consciousness, protective devices worn, such as safety belts or helmets, headache, nausea, vomiting, visual changes, numbness, tingling or paralysis, medical history

OBJECTIVE
Level of consciousness, clear or bloody discharge from ears or nose, Cushing's Triad: bradycardia, hypertension and abnormal respirations, pupil size and reactivity to light, skull or facial lacerations or fractures, assess for further injuries

ASSESSMENT
Head trauma may produce lacerations, fractures or brain injury alterations in the level of consciousness may be due to other medical conditions, hypotension is usually the result from internal injuries such as those found in the chest or abdomen, if the patient is hypotensive, you should look for other causes

TREATMENT

Emergency Medical Responder
- Oxygen
- Spinal immobilization
- Patient restraints

EMT
- Dual lumen or supraglottic airway device - **if agency approved**

AEMT
- IV with crystalloid

EMT- I
- Cardiac monitor
- Consider treatment for nausea/vomiting

Paramedic
- Advanced airway management

HYPERTHERMIA

SUBJECTIVE
Hot environment, exercise, rate of onset, underlying medical conditions, current medications, illicit drugs, headache, nausea, cramps, dizziness, generalized weakness

OBJECTIVE
Core temperature normal or elevated, skin normal, cool and wet, or hot and dry, blood pressures normal or low, altered level of consciousness or seizures

ASSESSMENT
Heat illness may range from heat cramps, treated with removal from heat, to heat exhaustion, treated with hydration, to heat stroke where the body's ability to maintain normal temperature fails, heat stroke is diagnosed based on a hot environment, body temperature greater than 104°F and neurological abnormalities including an altered mental status or Seizures, patients with heat stroke need to have active cooling measures begun immediately

TREATMENT

Emergency Medical Responder, EMT
- Remove patient from heat
- Oxygen
- Active cooling if heat stroke

AEMT
- IV with crystalloids

EMT- I, Paramedic
- Cardiac monitor

HYPERTENSIVE EMERGENCIES

SUBJECTIVE
Asymptomatic or headache, blurred vision, nausea or vomiting, confusion, chest pain or dyspnea, patient may have a history of hypertension and may be on medication to control blood pressure (diuretics, beta blockers, calcium channel blockers, ACE inhibitors), if patient is pregnant, think Pre-Eclampsia

OBJECTIVE
Hypertensive emergencies may present with confusion, coma, nuchal rigidity, pupillary changes, irregular respirations (Cheyne-Stokes), pulmonary edema, chest pain, Seizures, nosebleeds

ASSESSMENT
Hypertension itself is rarely a medical emergency, blood pressure must always be measured on several occasions before treating hypertension, persistent blood pressures greater than 230/120 and altered mental status, pulmonary edema or chest pain may warrant treatment of the blood pressure, elevated blood pressure is often the body's response to maintain adequate blood flow to the brain; lowering the patient's blood pressure may worsen the patient's mental status or result in a stroke

TREATMENT

Emergency Medical Responder, EMT
- Oxygen

AEMT
- IV with crystalloid
- Nitroglycerine

EMT- I
- Cardiac monitor

Paramedic
- Metoprolol
- Hydralazine
- Furosemide **OLMC Required**
- Labetalol **OLMC Required**

HYPOTHERMIA

SUBJECTIVE
Body heat loss to environmentally cool or wet conditions, underlying medical illnesses, current medications, alcohol consumption

OBJECTIVE

MILD	MODERATE	SEVERE
(> 34°C, > 93.2°F)	(30 - 34°C, 86 - 93.2°F)	(< 30°C, < 86°F)
Shivering	Shivering lessens	Stupor
Lethargy	Confusion	Unconscious
Staggering gait	Loss of balance	Dysrhythmias
		Cardiac arrest

ASSESSMENT
Treatment is based on the patient's clinical condition and body temperature, treatment may range from merely removing wet clothes and drying to active re-warming and ACLS measures, if severely hypothermic, (temperature less than 30°C /86°F), for ventricular fibrillation or wide complex tachycardia; perform CPR, defibrillate once, and give no medications until core temperature is > 30°C /86°F (see figure A), if it is known the patient had an extended exposure to wet or cold environment and the patient is unconscious or in cardiac arrest, treat for severe hypothermia

TREATMENT

Emergency Medical Responder
- Eliminate environmental heat loss (remove wet clothes)
- Avoid rough movement and excess activity
- Oxygen, warmed if possible at 42°C to 46°C (108°F to 115°F)
- Heat to head, neck, chest, groin, armpits (only if core temperature is > 34°C /93°F)
- Rapid transport to the nearest facility for active internal rewarming if severely hypothermic

EMT
- Check blood sugar
- Oral Glucose if hypoglycemic and airway is protected
- Dual lumen or supraglottic airway device - **if agency approved**

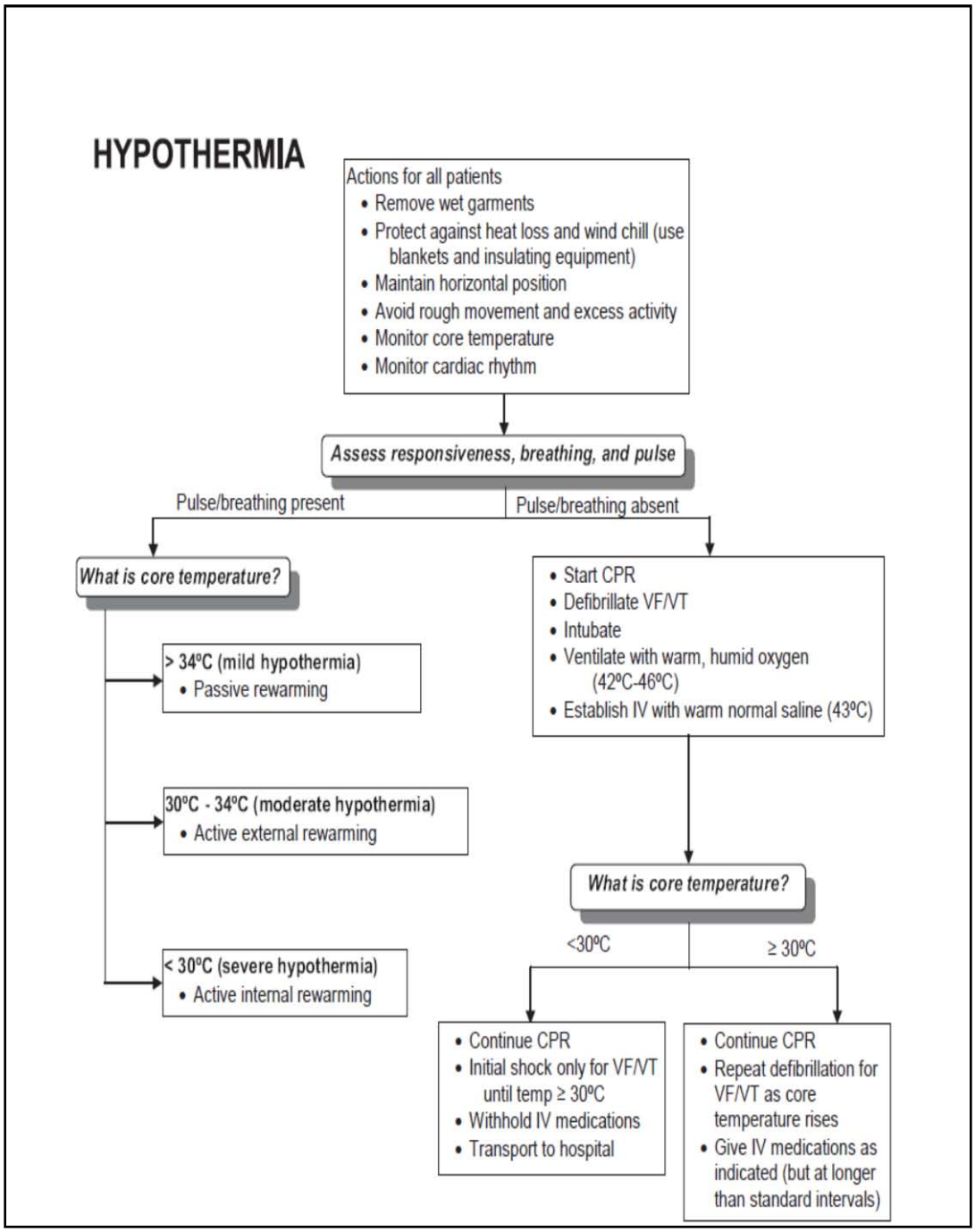
AEMT
- IV with crystalloid, warmed if possible to 43°C (109°F)
- Dextrose

EMT- I
- Cardiac monitor
- Treat per ACLS guidelines

Paramedic
- Advanced airway management

*****No patient is dead until warm and dead *****

Figure A


HYPOTHERMIA
Actions for all patients
• Remove wet garments
• Protect against heat loss and wind chill (use blankets and insulating equipment)
• Maintain horizontal position
• Avoid rough movement and excess activity
• Monitor core temperature
• Monitor cardiac rhythm
Assess responsiveness, breathing, and pulse
Pulse/breathing present
Pulse/breathing absent
What is core temperature?
> 34ºC (mild hypothermia)
• Passive rewarming
30ºC - 34ºC (moderate hypothermia)
• Active external rewarming
< 30ºC (severe hypothermia)
• Active internal rewarming
• Start CPR
• Defibrillate VF/VT
• Intubate
• Ventilate with warm, humid oxygen (42ºC-46ºC)
• Establish IV with warm normal saline (43ºC)
What is core temperature?
<30ºC
≥ 30ºC
• Continue CPR
• Initial shock only for VF/VT until temp ≥ 30ºC
• Withhold IV medications
• Transport to hospital
• Continue CPR
• Repeat defibrillation for VF/VT as core temperature rises
• Give IV medications as indicated (but at longer than standard intervals)

INHALATION INJURIES

SUBJECTIVE

Environment: poorly ventilated spaces, fire, explosion, exhaust, furnaces, gases present (i.e., methane, CO, cyanide), barbecues, and charcoal fires, length of exposure

Type of exposure: steam, dry heat, gases, and fire victim

Symptoms: dyspnea, headache, sore throat, sore mouth, cough, nausea, vomiting and poor coordination

OBJECTIVE

Sooty or blistered airway, singed facial/nasal hairs, stridor, hoarseness, cough, shortness of breath, labored breathing, changes in mentation, unconscious

ASSESSMENT

Inhalation is the most rapid route of toxins into body, onset of symptoms can take up to 12-36 hours, patients may rapidly deteriorate; airway management may need to be aggressive, multiple patients with similar symptoms suggest toxic inhalation

TREATMENT

PROTECT YOURSELF AND OTHERS FIRST

Emergency Medical Responder

- High flow oxygen
- Removal from toxic environment

EMT

- Dual lumen or supraglottic airway device - **if agency approved**

AEMT, EMT- I

- IV with crystalloid
- Albuterol
- Ipratropium Bromide

Paramedic

- Advanced airway management (early intubation if stridor)

INSECT STINGS AND ANIMAL/SPIDER BITES

SUBJECTIVE
Localized pain, burning sensation and itching at the site, anxiety, restlessness, weakness, dizziness, headache or syncope, numbness in affected limb or body part, joint pain or muscle cramps, chest tightening, shortness of breath, abdominal pain, nausea or chills, animal or insect identification, allergies, multiple bites or stings

OBJECTIVE
Stings or puncture marks on skin, redness, swelling, discoloration or blistering at site, Anaphylaxis

Black Widow Spider Bite: progressive muscle spasm of back, abdomen and large muscle groups, vomiting, seizures, paralysis, hypertension, headache, tingling and burning sensation

Brown Recluse or Hobo Spider Bite: reddened area with underlying blister formation and surrounding area of necrosis, over several days area turns dark and becomes ulcerated

Tick Bites: Lyme disease may present with distinctive bull's eye rash surrounding the bite developing over a month and accompanied by flu like symptoms

Animal Bites: contusions or superficial abrasions to severe crush injuries, deep puncture wounds and tissue loss may develop

ASSESSMENT
Insect stings, spider bites, scorpion stings, and marine life stings are typical sources of injected poisons or toxins, gather information from the patient, bystanders and the scene and determine whatever you can about the insect, spider or other possible source of the poisoning

TREATMENT
Emergency Medical Responder

- Scene safety
- Oxygen
- Wound care
- Remove constricting items (clothing, jewelry)
- **Insect stings:** gently remove stinger
- **Tick:** do not remove; refer to hospital
- **Animal bites:** if patient not transported, contact law enforcement

EMT

- Epinephrine for Anaphylaxis
- Dual lumen or supraglottic airway - **if agency approved**

AEMT

- IV or IO with crystalloid
- Diphenhydramine for Anaphylaxis

EMT- I

- Cardiac monitor
- Morphine – **DO NOT** use for stings and/or Anaphylaxis

Paramedic

- Advanced airway management
- Lorazepam
- Midazolam

NAUSEA & VOMITING

SUBJECTIVE

Nausea: unpleasant sensation of feeling the urge to vomit
Retching: spasmodic esophagus and stomach contractions against a closed glottis, often resulting in emesis
Vomiting: forceful abdominal contractions emptying the stomach through the mouth
Emesis: stomach contents

OBJECTIVE

Patient may appear with pale and diaphoretic skin, emesis may contain partly digested food particles, be yellow from bile, black from partly digested blood or red from active upper gastrointestinal bleeding

ASSESSMENT

Nausea and vomiting are unpleasant sensations and actions with many possible causes

TREATMENT

Emergency Medical Responder, EMT

- Keep patient comfortable
- Oxygen

AEMT

- IV with crystalloid
- Administer up to 1L of crystalloid

EMT- I

- Cardiac monitor
- Ondansetron

Paramedic

- Droperidol
- Promethazine

NEAR DROWNING

SUBJECTIVE
Length of exposure, fresh or salt water, temperature, dyspnea, cough, chest pain, headache, nausea, vomiting, neck pain, traumatic injury, bystander treatment

OBJECTIVE
Level of consciousness, rales, respiratory rate, cyanosis, pallor, internal temperature, hypotension

ASSESSMENT
Assess for other injuries: shallow water dives and scuba diving

TREATMENT

Emergency Medical Responder
- Suction airway
- Spinal immobilization
- Oxygen
- Remove wet clothing and warm patient

EMT
- Dual lumen or supraglottic airway device - **if agency approved**

AEMT
- IV with crystalloid

EMT- I
- Cardiac monitor
- Orogastric tube

Paramedic
- Advanced airway management
- Nasogastric tube

PAIN MANAGEMENT

SUBJECTIVE
Patient complaint of pain as a part of an acute illness or injury patient's pain may be rated as uncomfortable to intolerable

OBJECTIVE
Patient in pain may appear pale, diaphoretic, anxious, restless or irritable, patient may be tachypneic or tachycardic, exam may or may not reveal a source of the pain

ASSESSMENT
Pain management should be initiated to control pain to a comfortable level as appropriate and possible, examples of processes causing pain include, but are not limited to: back spasms, migraine headache, cardiac chest pain, orthopedic injury, burns, cancer or kidney stones

TREATMENT

Emergency Medical Responder, EMT
- Make patient comfortable
- Oxygen

AEMT:
- IV with crystalloid

EMT- I, Paramedic
- Morphine
- Fentanyl

Pain Relief
Indications: Abdominal trauma, amputation, burns, fractures/dislocations, insect stings and animal/spider bites, snake bites

Fentanyl
- **Adult:** 50-100 mcg slow IV or IM for fast acting relief of pain. Titrate to effect or 200mcg **Contact OLMC to exceed 200 mcg**
- **Pediatric:** 2-3 mcg/kg slow IV or IM. Titrate to effect or 100 mcg **Contact OLMC to exceed 100 mcg**

Morphine
- **Adult:** 6-8mg every 5 minutes for continued longer acting relief of pain when indicated. Titrate to desired effect or 20mg IV or 10mg IM **Contact OLMC to exceed 20 mg**
- **Pediatric:** 0.05 – 0.2 mg/kg IV or IO every 5 minutes or 0.1-0.2 mg/kg IM. Titrate to effect or 10 mg **Contact OLMC to exceed 10 mg**

*****Morphine is CONTRAINDICATED in stings and/or anaphylaxis*****

POISONS & OVERDOSES

SUBJECTIVE

Determine route of exposure: ingestion, inhalation, injection or skin absorption, description of exposure: type of poison, quantity, and time elapsed since exposure or ingestion, reason for exposure or ingestion: accidental, abuse, neglect, assault or suicidal gesture, past medical history: medication, diseases, psychiatric history or drug abuse, actions taken by bystanders: induced vomiting, antidotes given

OBJECTIVE

CNS: altered level of consciousness, headache, seizures, hallucinations or unconscious
Pupils: constricted (narcotics) or dilated (barbiturates, CO)
Respiratory: normal breathing, tachypnea or shallow respirations
Cardiovascular: tachydysrhythmias (methamphetamine, Cocaine, ASA) or brady dysrhythmias (Digitalis, Organophosphates), hypotension or hypertension
Skin: cyanosis, pallor, diaphoretic, evidence of needle tracks
Gastrointestinal: burns or stains around patient mouth, odor on breath, gag reflex, nausea and vomiting, abdominal pain or tenderness

ASSESSMENT

Accidental or intentional exposure of the body to toxic substances in an amount sufficient to have a damaging or destructive effect

Salivation
Lacrimation
Urination
Defecation
Gastrointestinal Distress
Emesis

Suggests organophosphate poisoning

***Bring all medicine containers, if suspected hazardous material, leave container but obtain correct spelling and other possible identifying information
Oregon Poison Center 800-222-1222***

TREATMENT

PROTECT YOURSELF AND OTHERS FIRST

Emergency Medical Responder

- Oxygen

EMT

- Check blood sugar
- Oral Glucose if no airway risk
- Activated Charcoal in conscious and awake patients
  Only after approval by OLMC
- Dual lumen or supraglottic airway device - **if agency approved**

AEMT

- IV with crystalloid
- Dextrose
- Glucagon for Hypoglycemia
- Narcan

EMT- I

- Cardiac monitor
- Orogstric tube

Paramedic

- Advanced airway management
- Nasal or oral gastric tube if no esophageal injury
- Atropine for Organophosphate poisoning
- Sodium Bicarbonate for symptomatic tricyclic anti-depressant poisoning
- Calcium Chloride for calcium channel blocker or Magnesium poisoning
- Glucagon for beta-blocker poisoning
- Flumazenil for benzodiazepine overdose

RESPIRATORY DISTRESS

SUBJECTIVE
Onset and duration of dyspnea, pain (quality, region, severity, provocation), hemoptysis, cough (sputum, color), hoarseness, dysphagia, time of onset of symptoms, change with position, fatigue, history of injury to area, previous history of similar episodes, exposure to toxic substances, overdose, history of recent surgeries, prior heart or lung problems and medications

OBJECTIVE
Rales, rhonchi, wheezing, stridor, hives, cyanosis, tachycardia, tachypnea, tripod sitting, pursed lip breathing, level of consciousness, temperature, diaphoresis, trauma, subcutaneous emphysema, bruising, paradoxical movement, jugular venous distention, tracheal position, retractions, edema

ASSESSMENT
Respiratory distress has a multitude of causes, differential diagnosis will be made both on subjective and objective findings, many things may lead to respiratory distress: CHF, COPD, asthma, trauma, pulmonary embolism, respiratory infections, croup, epiglottitis, anaphylaxis, foreign bodies, poisonings, inhalation injuries and neurological problems

TREATMENT

Emergency Medical Responder
- Position of comfort
- Oxygen

EMT
- Dual lumen or supraglottic airway device - **if agency approved**
- CPAP

AEMT
- IV with crystalloid

EMT- I
- Cardiac monitor

Paramedic
- Advanced airway management
- Lorazepam

*****Refer to following specific Respiratory Distress protocols for further treatment options as patient presentation indicates *****

RESPIRATORY DISTRESS - ASTHMA

SUBJECTIVE
Known exposure to allergens, symptoms of respiratory infection, increased emotional stress, environmental changes, time of onset of symptoms, history of asthma, tightness in chest, cough, past medical history, recent hospitalizations, medications, frequency of respiratory medication use

OBJECTIVE
Wheezing, decreased or absent breath sounds, prolonged expiratory phase, tachycardia, tachypnea, use of accessory muscles, retraction, cyanosis, decreased level of consciousness, diaphoresis, exhaustion, tripod sitting, one to three word sentences, decreased SaO_2

ASSESSMENT
Due to the narrowing airway passages, inflammation and increased mucus production, coughing, chest tightness and wheezing usually develop, the patient's level of respiratory distress will dictate how aggressive your treatment should be, patients may be using inhalers: Azmacort, Vanceril, Albuterol (Ventolin or Proventil), Ipratropium (Atrovent), Maxaire or be taking Theophylline or Predisone, also consider CHF, COPD, Pneumonia, and cardiac problems

TREATMENT

Emergency Medical Responder
- Position of comfort
- High flow oxygen

EMT
- May assist with self-administration of patient's own metered dose inhaler
- Dual lumen or supraglottic airway device - **if agency approved**
- CPAP
- Albuterol

AEMT
- IV with crystalloid
- Ipratropium Bromide

EMT- I
- Cardiac monitor

Paramedic
- Advanced airway management
- Epinephrine

ASTHMA refractory to updraft
- Epinephrine 1:1000: 0.3 mg / SC (patient < 50 y/o without known coronary artery disease and HR < 150 bpm), alternatively, if intubated 0.5 mg / ET is preferred

RESPIRATORY DISTRESS - CHF/PULMONARY EDEMA

SUBJECTIVE
Duration of symptoms, dyspnea on exertion or at rest, fatigue, orthopnea, paroxysmal nocturnal dyspnea, ankle swelling, chest pain or pressure, cough, sputum color, recent weight gain, past medical history, medications and recent hospitalizations

OBJECTIVE
Rales, rhonchi, wheezing, tachypnea, tachycardia, cyanosis, inability to speak full sentences, need to sit upright, hypertension (early) or hypotension (late), dysrhythmias, jugular vein distention, peripheral edema

ASSESSMENT
Left sided failure leads to pulmonary edema, increased preload and afterload, this has a short onset (2-24 hours). patients are afebrile, have bilateral abnormal breath sounds and clear or pink sputum, cardiac history and may currently be on cardiac medications: Digoxin (Lanoxin), Furosemide (Lasix), HCTZ, Metoprolol (Lopressor), Atenolol (Tenormin), Nitro patches or ACE inhibitors

TREATMENT

Emergency Medical Responder
- Position of comfort
- Oxygen

EMT
- Dual lumen or supraglottic airway device - **if agency approved**
- CPAP

AEMT
- IV with crystalloid
- Albuterol
- BVM for PEEP if tolerated

EMT- I
- Cardiac Monitor
- Nitroglycerin q 5 min. up to 3 doses, maintain systolic BP >90
- Furosemide – 15-20 minutes after initial Nitroglycerin treatment

Paramedic
- Continue Nitroglycerin q 5 min (no max), maintain systolic BP>90
- Advanced airway management

RESPIRATORY DISTRESS - COPD EXACERBATION
(CHRONIC OBSTRUCTIVE PULMONARY DISEASE)

SUBJECTIVE
Duration and onset of symptoms, dyspnea on exertion, fatigue, chest pain or pressure, fever, cough, sputum, color, increased amount of sputum, smoking history, recent illness (especially upper respiratory infection), medications, past medical history, home oxygen, exposure to allergens or irritants

OBJECTIVE
Rhonchi, wheezing, decreased air movement, tachypnea, tachycardia, cyanosis, prolonged expiratory phase, pursed lip breathing, barrel chest, confusion, speaking one to three word sentences

ASSESSMENT
COPD is a chronic disease, which people live with every day, during exacerbations, patients develop respiratory distress, which leads to hypoxia, onset is often over a couple of days, these patients frequently are on home oxygen and use nebulizers: Albuterol (Ventolin or Proventil), Ipratroprium (Atrovent), Corticosteroids (Vanceril, Azmacort) and take respiratory medications (Theophylline or Predisone)

TREATMENT

Emergency Medical Responder
- Position of comfort
- Oxygen

EMT
- May assist with self-administration of patient's own metered dose inhaler
- Dual lumen or supraglottic airway device - **if agency approved**
- CPAP
- Albuterol

AEMT
- IV with crystalloid
- Ipratropium Bromide

EMT- I
- Cardiac monitor

Paramedic
- Advanced airway management

RESPIRATORY DISTRESS - PEDIATRIC

SUBJECTIVE

Duration and onset of symptoms, dyspnea on exertion, fatigue, fever, cough, sputum, color, increased amount of sputum, recent illness, medications, past medical history, exposure to allergens or irritants.

OBJECTIVE

Accessory muscle use, lethargy, cyanosis, wheezing, coughing, rales, ronchi, “seal bark”, stridor, fever, tachypenea, fear, absent or diminished lung sounds, sniffing position, quality of breathing, abnormal breathing, nasal flaring, foreign body airway obstruction, drooling

ASSESSMENT

Respiratory distress in pediatrics can present many ways, all can present with accessory muscle use Asthma and Bronchiolitis can present with wheezing, Croup will present with a “barking” cough, Epiglottitis will present with stridor and fever, cyinosis may be seen with all respiratory issues, foreign body airway obstruction may have little or no air movement, respiratory rates can be much different than adults see chart

AGE	NORMAL RATE PER MINUTE
Premature or Term Newborn	<60
6 months	24-36
1 year	22-30
3-5 years	20-26
8 years	18-22

TREATMENT

Emergency Medical Responder

- Position of comfort
- Oxygen

EMT

- May assist with self-administration of patient’s own metered dose inhaler
- Dual lumen or supraglottic airway device - **if agency approved**
- CPAP

AEMT

- IV with crystalloid
- Albuterol
- Ipratropium Bromide (age greater than 12)

EMT- I

- Cardiac monitor

Paramedic

- Racemic Epinephrine if Croup or Stridor
- Advanced airway management

SEIZURES

SUBJECTIVE
Known seizure disorder, onset, length, frequency, type, and presence of aura, head trauma, drug or alcohol use, diabetes, heart disease, CVA, pregnancy, fever, headache, stiff neck, compliance of medications
Anticonvulsant medications may include but are not limited to: Phenytoin (Dilantin), Phenobarbital, Carbemazepine (Tegretol) and Valproic Acid (Depakote)

OBJECTIVE
Head trauma or mouth injury, level of consciousness, incontinence of urine or stool, observed seizure activity temperature, rashes, petechiae or purpura

ASSESSMENT
With injury, infection or disease, the electrical activity of the brain becomes irregular which brings about sudden changes in sensation, behavior, or movement called Seizures

Grand Mal: generalized major motor Seizure, alternating tonic (contractions) or clonic (successive contractions and relaxations) movements of extremities

Focal Motor: simple partial Seizure, characterized by dysfunction of one area of the body including, tingling, stiffening or jerking

Psychomotor: complex partial Seizure, characterized by abnormal behavior such as confusion, glassy stare, aimless movements, lip smacking or fidgeting with clothing

Petit Mal: Seizure is brief, usually 1-10 seconds, with a temporary loss of concentration

TREATMENT

Emergency Medical Responder

- Place patient on floor or ground; remove objects that might cause harm
- Oxygen
- Place patient into recovery position when seizure has stopped

EMT

- Check blood sugar
- Oral Glucose if no airway risk

AEMT

- IV or IO with crystalloid
- Dextrose

EMT- I

- Cardiac monitor

Paramedic

- Advanced airway management
- Acetaminophen (if pediatric febrile seizure)
- Lorazepam
- Midazolam

SHOCK

SUBJECTIVE
Mechanism of injury: trauma, infection, allergic reaction, toxic exposures, and disease, a feeling of impending doom or signs of fear, dizziness, weakness, feeling cold, thirst, shortness of breath, chest pain, vomiting or diarrhea, bloody stools or emesis, abdominal pain, prior medical illnesses

OBJECTIVE
Confusion, restlessness, agitation, pale, cool, clammy skin, shallow or rapid breathing, rapid or weak pulse, hypotension, delayed capillary refill, abdominal tenderness, rigidity, distention or mass, obvious external trauma: amputations, deformities, bruising

ASSESSMENT
Shock is the failure of the cardiovascular system to provide sufficient oxygenated blood to vital tissues of the body

Hypovolemic: caused by loss of blood or other bodily fluids
Cardiogenic: caused by the heart failing to pump blood adequately to vital body parts
Distributive: neurogenic, anaphylactic, septic, psychogenic, and metabolic increase in vascular dilation or permeability

TREATMENT

Emergency Medical Responder

- Oxygen
- Shock position
- Prevent loss of body heat

EMT

- Dual lumen or supraglottic airway device - **if agency approved**

AEMT

- One or two large bore IV's or IO with crystalloid
- Fluid challenge

EMT- I

- Cardiac monitor

Paramedic

- Advanced airway management
- Dopamine after aggressive fluid resuscitation

Anaphylactic Shock

- Epinephrine infusion **OLMC required**

SNAKE BITES

SUBJECTIVE
Localized pain at site of bite, time of bite, snake identification, metallic or rubber taste in mouth and lips, thirst, blurry or dim vision, weakness, dizziness or lightheadedness, numbness or tingling around face and head, treatment rendered prior to your arrival

OBJECTIVE
One or more fang marks with redness, swelling, ecchymosis or oozing from site, followed later by hemorrhagic blisters, respiratory distress, tachycardia, hypotension, vomiting or diarrhea, bloody urine or gastrointestinal hemorrhage

ASSESSMENT
The seriousness of a snakebite is related to amount of venom injected, the location of the bite, and the type of snake and pre-existing medical conditions, the vast majority of snake bites are non-fatal

TREATMENT

PROTECT YOURSELF AND OTHERS FIRST

Emergency Medical Responder, EMT

- Assure scene safety
- Calm and reassure patient
- Minimize victim's physical activity
- Oxygen
- Splint bitten extremity in dependent position, below the level of their heart
- Remove constricting clothing or jewelry
- Apply constricting band to decrease venous blood flow above and below site **OLMC required**

AEMT

- IV or IO with crystalloid

EMT- I, Paramedic

- Cardiac monitor
- Morphine
- Fentanyl

SPINE TRAUMA

SUBJECTIVE
Mechanism of injury and force used, high-energy transfer; ejection, helmet damage, starred windshield, steering column bent, surface diving accident, Back or neck pain, tingling, Paresthesia, numbness or Paralysis

OBJECTIVE
Diaphragmatic or impaired breathing, head injury, open injury, spinal deformity or tenderness, hypotension, loss of bladder or bowel control, Priapism, Paralysis or numbness, mechanism of injury with high index of suspicion

ASSESSMENT
The presence of spine trauma and the need to immobilize the patient may be indicated by mechanism of injury, the presence of other injuries or by specific signs or symptoms of spinal cord injury, spinal cord injury may mask signs and symptoms of other significant injuries

TREATMENT

Emergency Medical Responder
- Oxygen
- Full spinal immobilization
- Check motor and sensory exam frequently
- Evaluate and treat for other injuries
- Prevent loss of body heat

EMT
- Dual lumen or supraglottic airway device - **if agency approved**

AEMT
- IV or IO with crystalloid

EMT- I
- Cardiac monitor

Paramedic
- Advanced airway management
- Dopamine after aggressive fluid resuscitation
- Atropine

SYNCOPE

SUBJECTIVE
Onset, frequency, stress or anxiety provoking factors, position of patient, Seizure activity, Vertigo, nausea, chest or abdominal pain, diaphoresis, past medical history, medications, previous syncope, recent illness, dietary changes, pregnancy

OBJECTIVE
Orthostatic blood pressure and pulse changes, level of consciousness, cardiac dysrhythmias, pulsating abdominal mass, other injury or bleeding

ASSESSMENT
Syncope implies a brief loss and rapid return of consciousness, the most common causes are vasovagal reactions, and idiopathic (unknown), other common causes include GI bleed, Abdominal Aortic Aneurysm, cardiac dysrhythmia and CVA

TREATMENT

Emergency Medical Responder
- Oxygen
- Shock position

EMT
- Check blood sugar
- Oral Glucose if no airway risk

AEMT
- IV or IO with crystalloid
- Dextrose

EMT- I, Paramedic
- Cardiac monitor

TRAUMA SYSTEM ENTRY

SUBJECTIVE
Mechanism of injury, environmental conditions, co-existing medical illnesses or conditions

OBJECTIVE
Some injuries may be obvious, examine the patient fully to find the hidden injuries, undress the patient appropriately

ASSESSMENT
Entry of a patient into the trauma system speeds care for those who need resuscitation or emergency surgical procedures during the first hour or two after trauma

Eye Opening		Verbal Response		Motor Response		
Spontaneous	4	Oriented	5	Obeys commands		6
To voice	3	Confused	4	Localizes pain		5
To pain	2	Inappropriate words	3	Withdraws (pain)		4
None	1	Incomprehensible	2	Flexion (pain)		3
		None	1	Extension (pain)		2
				None		1

TREATMENT
Emergency Medical Responder
- High flow oxygen
- Cover open wounds with occlusive dressing
- Maintain body heat
- Spinal immobilization
- Notify trauma hospital of entry criteria
- Apply trauma band

EMT
- Dual lumen or supraglottic airway device - **if agency approved**

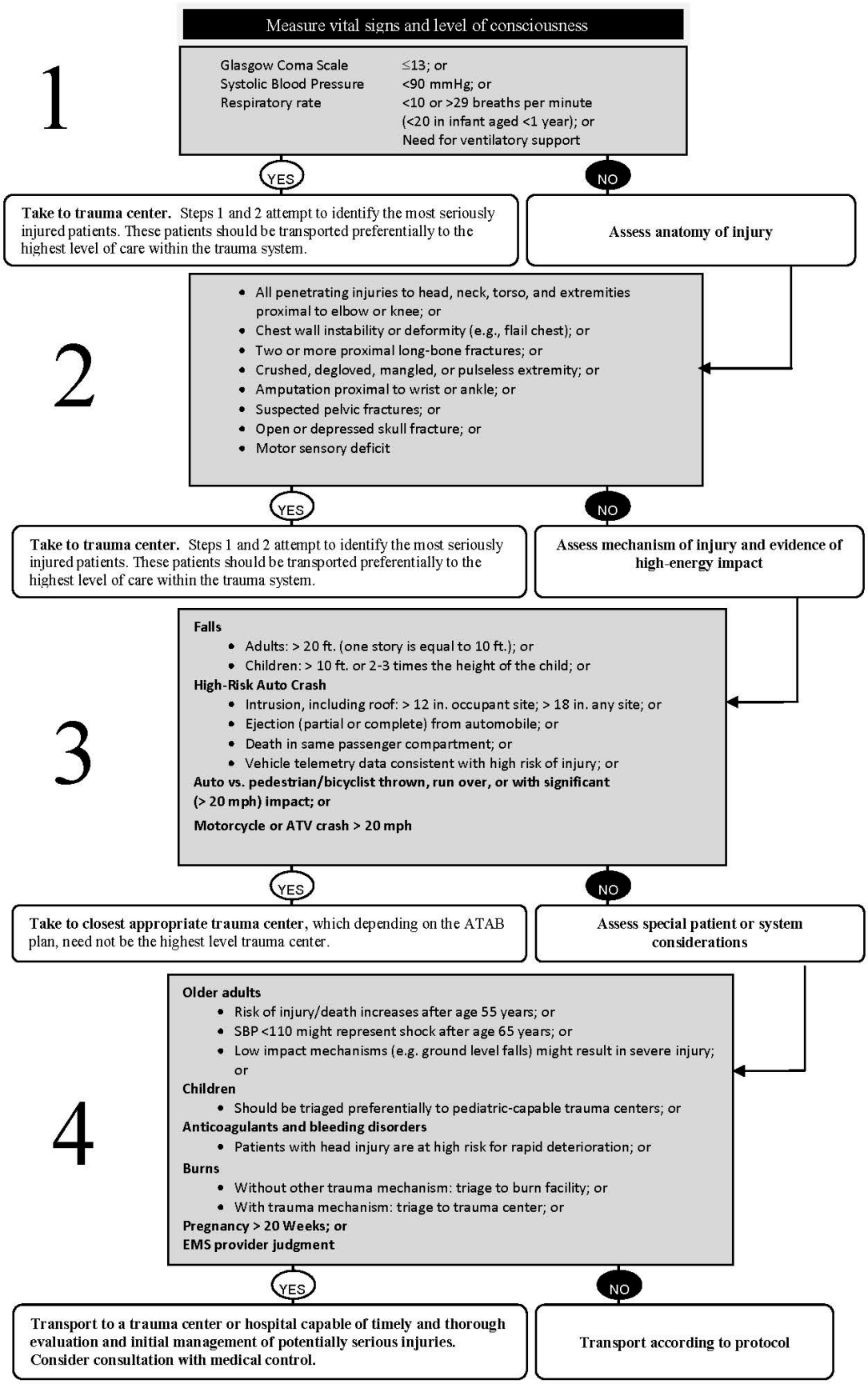
AEMT
- Two large bore IV's or IO with crystalloid

EMT- I
- Cardiac monitor
- Fentanyl
- Morphine

Paramedic
- Advanced airway management
- Chest decompression

A brief radio call to the Designated Trauma Hospital should include
- "Trauma System Entry" **and** the entry criteria
- Estimated time of arrival (ETA)
- Patient age & gender
- Chief complaint and mechanism of trauma
- Vital signs – BP, P, R, LOC
- Brief report of pertinent physical findings
- Treatment rendered and patient response

Guidelines for Field Triage of Injured Patients



UNCONSCIOUS (UNKNOWN)

SUBJECTIVE

Onset and progression of present condition, prior symptoms such as headaches, confusion, Seizures, etc, recent trauma, previous medical or psychiatric illnesses

Environmental indicators: Note odor, and temperature, be observant for medication bottles (bring with), syringes, drug paraphernalia, and notes, check refrigerator for" Vial of Life" if personnel available

OBJECTIVE

Level of consciousness and neurological status, describe deficits and GCS, signs of trauma, odor on breath, needle tracks, abnormal body temperature, blood glucose level, medical alert tags, vital signs

TREATMENT

Emergency Medical Responder

- Maintain airway, exercising appropriate C-spine precautions
- Position patient supine or on side if vomiting
- Oxygen

EMT

- Check blood sugar
- Dual lumen or supraglottic airway – **if agency approved**

AEMT

- IV with crystalloid
- Dextrose
- Glucagon
- Narcan
- Consider treatable causes

EMT- I

- Cardiac monitor

Paramedic

- Advance airway management

VAGINAL BLEEDING

SUBJECTIVE
Cramping or pain, onset of bleeding, clots or tissue, last normal menstrual period, method of birth control, due date if pregnant, history of vaginal trauma, number of pads or tampons per hour, past medical history, medications, referred shoulder pain

OBJECTIVE
Estimated blood loss, hypotension, and abdominal tenderness or guarding

ASSESSMENT
Vaginal bleeding can occur for a variety of reasons: pregnancy, trauma, hormonal imbalance and cancer, patients may be miscarrying and unaware that they were pregnant, tissue fragments or clots should be brought to the hospital, emotional support may need to be provided to the patient and family, in cases of assault, preserve evidence

TREATMENT

Emergency Medical Responder
- Oxygen

EMT
- Shock position

EMT- I, AEMT, Paramedic
- One or two large bore IVs with crystalloid
- Cardiac monitor

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 3

Medications

ACETAMINOPHEN

TRADE NAME
Tylenol, APAP, Panadol

ACTION
Antipyretic, analgesic

INDICATIONS
Fever greater than 39ºC (102.2ºF) in children less than 12 years old

- Who are conscious, awake and have signs and symptoms of sepsis or have a prolonged transport time

OR

- Who have had a Seizure

CONTRAINDICATIONS
- Known sensitivity to Acetaminophen
- Hyperthermia from environmental causes

SIDE EFFECTS & PRECAUTIONS
Significant overdose may cause liver failure, do not give if patient has had appropriate dosage within two hours

ROUTE & DOSAGE

Paramedic

Pediatric: 15 mg/kg oral if conscious and awake, otherwise rectal suppository

ACETAMINOPHEN DOSING

	Weight in Kgs				
	3-5	6-16	17-21	22-32	33+
mg APAP	60 (½ tab)	120	240	325	650

ACETYLSALICYLIC ACID (ASA, ASPIRIN)

TRADE NAME
Ecotrin and others

ACTION
Inhibits platelet aggregation

INDICATIONS
- Cardiac chest pain
- Barotrauma

CONTRAINDICATIONS
- Known sensitivity to Aspirin
- Active GI bleeding

SIDE EFFECTS & PRECAUTIONS
Do not administer if patient is unconscious or unable to protect airway

HOW SUPPLIED
81 mg chewable tablet

ROUTE & DOSAGE

EMR, EMT, AEMT, EMT- I

Cardiac chest pain: 4 tablets (324mg) orally

Paramedic

Barotrauma: 4 tablets (324mg) orally

ACTIVATED CHARCOAL

TRADE NAME
Actidose

ACTION
Absorbs ingested toxic substances and inhibits gastrointestinal absorption by forming a barrier between remaining particulate material and gastrointestinal mucosa

INDICATIONS
- Oral toxic ingestion
- Poisoning or overdose in conscious and awake patients within 1 hour of ingestion

CONTRAINDICATIONS
- Known sensitivity to Activated Charcoal
- Unconscious patient or diminishing level of consciousness
- Ingestions of mineral acids or alkalis, petroleum products or Cyanide

SIDE EFFECTS & PRECAUTIONS
Relatively contraindicated in tricyclic overdoses, administration can result in aspiration or significant particulate obstruction of the airway, do not administer Activated Charcoal in the presence of Ipecac

ROUTE & DOSAGE

EMT, AEMT, EMT- I, Paramedic

Adult: 25- 50 grams orally
Pediatric: 0.5 gm/kg orally

*****Activated Charcoal may be used only after contacting OLMC*****

ADENOSINE

TRADE NAME
Adenocard

ACTION
Slows conduction time through the A-V node and can interrupt the re-entry pathways through the A-V node and can restore normal sinus rhythm in patients with paroxysmal supraventricular tachycardia (PSVT), half-life is less than 10 seconds

INDICATIONS
- Supraventricular tachycardia

CONTRAINDICATIONS
- Known sensitivity to Adenosine
- Known Wolff-Parkinson-White syndrome
- Sick sinus syndrome or second or third degree heart block without functioning pacemaker

SIDE EFFECTS & PRECAUTIONS
Transient asystole may occur, facial flushing, headache, shortness of breath, dizziness, nausea, or chest pain, dysrhythmias may develop including PVCs, PACs, Sinus Bradycardia, Sinus Tachycardia, A-V blocks and Asystole, not initial treatment for wide complex tachycardia, larger doses may be required in the presence of methylxanthines (caffeine, theophylline), will probably not convert Atrial Fibrillation or Flutter, but may slow the rate transiently, if given to patients who have Wolff-Parkinson-White syndrome may cause paradoxical increase in ventricular rate

ROUTE & DOSAGE

Paramedic

Adult: 6 mg rapid IV push over 1- 2 seconds followed by 20 ml saline rapid IV push at next most proximal IV port, preferably through a large bore antecubital site
If no conversion, 12 mg rapid IV push over 1-2 seconds followed by 20 ml saline rapid IV push at next most proximal IV port in 1-2 minutes
May repeat 12 mg dose once in 1-2 minutes

Pediatric: 0.1 mg/ kg rapid IV or IO push over 1- 2 seconds with 10 ml saline rapid IV push at proximal IV port
May repeat with 0.2 mg/kg in 1-2 minutes

ALBUTEROL

TRADE NAME
Proventil, Ventolin

ACTION
Potent, relatively selective beta 2-adrenergic bronchodilator, onset of action is 2- 15 minutes; duration of action is 4-6 hours

INDICATIONS
- Bronchospasm due to Asthma, COPD, CHF, Anaphylaxis or toxic inhalation

CONTRAINDICATIONS
- Known sensitivity to Albuterol

SIDE EFFECTS & PRECAUTIONS
Palpitations, anxiety, nausea and dizziness, stop treatment if frequent PVC's or tachyarrhythmias other than sinus tachycardia develop

ROUTE & DOSAGE

EMT
- May prepare and administer 2.5 mg via nebulizer for known Asthmatic and COPD patients suffering from suspected broncospasm

AEMT, EMT- I
- 2.5 mg via nebulizer with oxygen set at 6 - 10 L/min
- **Contact OLMC to repeat dose**

Paramedic
- May repeat Albuterol

***** Atrovent may be given with the first dose of Albuterol for patients >12yo *****

AMIODARONE

TRADE NAME
Cordarone, Pacerone

ACTION
Antiarrhythmic agent

INDICATIONS
- Ventricular fibrillation or pulseless ventricular tachycardia
- Ventricular tachycardia with a pulse in a stable patient
- After conversion to a perfusing rhythm from ventricular tachycardia or fibrillation

CONTRAINDICATIONS
- Known sensitivity to Amiodarone

SIDE EFFECTS & PRECAUTIONS
If severe signs or symptoms develop, use immediate cardioversion, may cause hypotension, bradycardia, conduction defects, may worsen congestive heart failure, in rare cases it may precipitate the dysrhythmia Torsades de Pointes

ROUTE & DOSAGE

EMT- I, Paramedic

VF/VT with no pulse
- 300 mg IV or IO bolus in 20-30 ml normal saline
- If no perfusing rhythm an additional 150 mg IV or IO bolus in 3 - 5 minutes
  Maximum total dose of 450 mg

VT with a pulse
- 150 mg in 100 ml normal saline IV or IO over 10 minutes
  May repeat once in 10 minutes if no change in rhythm

Post conversion from VF/VT to a perfusing rhythm
- 150 mg in 100 ml normal saline IV or IO over 10 minutes
  As long as you are below the maximum total dose of 450mg

Pediatric dose
- 5 mg/kg in 100ml normal saline up to
  Maximum dose 300mg

ATROPINE SULFATE

TRADE NAME
Atropine

ACTION
Parasympatholytic agent with the following effects: increases heart rate, increases conduction through A-V node, reduces motility and tone of GI tract, reduces tone of the urinary bladder, dilates pupils, dilates bronchi

INDICATIONS
- Symptomatic bradycardia
- Antidote for symptomatic Organophosphate poisoning
- Pretreatment for RSI

CONTRAINDICATIONS
- Known sensitivity to Atropine sulfate

SIDE EFFECTS & PRECAUTIONS
Less likely to be effective in second degree type 2 A-V block and third degree block with wide QRS complexes in the presence of an acute MI
Bradycardia in the setting of an acute MI is common; do not treat rhythm unless the patient is symptomatic or there are signs of poor perfusion

ROUTE & DOSAGE

EMT- I, Paramedic

Symptomatic bradycardia

Adult: 0.5 mg IV or IO push, every 3-5 minutes
Maximum 3 mg

Pediatric: 0.02 mg/kg IV or IO every 3-5 minutes
Minimum single dose 0.1 mg
Maximum single dose 0.5mg in child, 1.0 mg in adolescent

Organophosphate poisoning

Adult: 2 mg IV, IO, IM, SC, ET

Pediatric: 0.03–0.05 mg/kg IV, IO, IM, SC, ET

*****Double dose every 10 minutes until symptoms of Organophosphate poisoning are controlled *****

CALCIUM GLUCONATE / CALCIUM CHLORIDE

TRADE NAME
Calcium Gluconate

ACTION
Electrolyte essential for muscle contraction

INDICATIONS
- Antidote for overdoses of Calcium Channel Blockers or Magnesium
- Topical treatment for Hydrogen Fluoride or Hydrofluoric Acid exposure

CONTRAINDICATIONS
- Known sensitivity to Calcium Gluconate

SIDE EFFECTS & PRECAUTIONS
Will precipitate if infused in same line with Sodium Bicarbonate, use with caution in patients taking Digoxin

ROUTE & DOSAGE

Paramedic

Calcium Channel Blocker, or
Magnesium Sulfate overdose

Adult: 10 ml IV over 5-10 minutes
Pediatric: 0.6 - 0.75 ml/kg

Hydrogen Fluoride or Hydrofluoric Acid exposure

Apply topically - (mix 1 ampule in 1 ounce (30cc) water based lubricant)

CLOPIDOGREL

TRADE NAME
Plavix

ACTION
Inhibitor of platelet activation and aggregation through the irreversible binding of its active metabolite to the P2Y12 class of ADP receptors on platelets, inhibits platelet aggregation by agonists other than ADP by blocking the amplification of platelet activation by released ADP

INDICATIONS
- Acute ST Elevation Myocardial Infarction (STEMI)

CONTRAINDICATIONS
- Known sensitivity to Clopidogrel
- Known of suspected active bleeding such as peptic ulcer or intracranial hemorrhage

SIDE EFFECTS & PRECAUTIONS
Administration with NSAID's or Coumadin can result in GI hemorrhage, administration with Omeprazole may result in decreased effectiveness

HOW SUPPLIED
300 mg pill

ROUTE & DOSAGE

Paramedic

Adult only: 600 mg PO

CRYSTALLOID

TRADE NAME
Normal Saline, 0.9% Saline, Lactated Ringer's

ACTION
Sterile isotonic fluid for IV or IO use

INDICATIONS
- Intravascular volume expansion, fluid challenge, medication administration or catheter flush

CONTRAINDICATIONS
- None

SIDE EFFECTS & PRECAUTIONS
Administer with caution to patients with fluid overload such as pulmonary edema, brain injury, and heart disease or kidney disease. In pediatric patients use a pump, volutrol or syringe to avoid excessive administration

HOW SUPPLIED
Multidose vials
Prefilled syringes
50, 250, 500 and 1,000 ml bags

ROUTE & DOSAGE

AEMT, EMT- I, Paramedic

Lock Flush: 2-5 ml IV or IO
Medication flush: 10-20 ml IV or IO
Volume expansion:
Adult: 200-1,000 ml IV, repeat to desired effect
Pediatric: 10-20 ml/kg IV or IO, repeat to desired effect

*****Lactated Ringers is the preferred fluid for the treatment of shock, burns and major trauma. Whenever available consider its use in place of normal saline*****

DILTIAZEM HYDROCHLORIDE

TRADE NAME
Cardizem

ACTION
Calcium channel blocker which decreases intranodal AV conduction and decreases smooth muscle tone causing arterial dilatation.

INDICATIONS
- Treatment of narrow complex tachycardias
- Slowing of Atrial Fib/ Flutter with RVR
- Rapid conversion of PSVT unresponsive to Adenosine

CONTRAINDICATIONS
- Known sensitivity to Diltiazem Hydrochloride
- Narrow complex tachycardia with severe signs or symptoms use “Synchronized Cardioversion” procedure
- Wolff-Parkinson-White syndrome with narrow complex tachycardia

SIDE EFFECTS & PRECAUTIONS
Likely to cause hypotension, may precipitate cardiac dysrhythmias, may worsen CHF

ROUTE & DOSAGE

Paramedic

Adult: 0.25 mg/kg) IV or IO slowly over 2 minutes
Typically 20-25 mg, max 35 mg

DIPHENHYDRAMINE

TRADE NAME
Benadryl

ACTION
Blocks histamine release, Anticholinergic agent

INDICATIONS
- Less effective and longer acting than Epinephrine for use in mild to moderate Anaphylaxis
- Acute Dystonic Reactions

CONTRAINDICATIONS
- Known sensitivity to Diphenhydramine

SIDE EFFECTS & PRECAUTIONS
Usually sedating but may occasionally cause hyperexcitability, most often in children, anticholinergic and antiparkinsonian effect

ROUTE & DOSAGE

EMT- I, Paramedic

Adult: 25-50 mg IV, IO, IM or orally
Pediatric: 1-2 mg/kg IV, IO, IM or orally

DOPAMINE

TRADE NAME
Intropin

ACTION
Dilates renal and mesenteric arteries, increases cardiac output and causes systemic vasoconstriction

INDICATIONS
- Hypotension not responding to volume replacement
- Symptomatic bradycardia unresponsive to Atropine and pacing

CONTRAINDICATIONS
- Known sensitivity to Dopamine
- Hypotension without adequate volume replacement

SIDE EFFECTS & PRECAUTIONS
Vasoconstriction and myocardial workload increase as dose increases, which may result in cardiac dysrhythmia, Angina or headache, causes tissue necrosis if IV infiltrates, is inactivated in alkaline solutions such as Sodium Bicarbonate

ROUTE & DOSAGE

Paramedic

Adult: 2-20 mcg/kg/min IV or IO infusion titrated to desired effect

Dopamine (Intropin) 400 mg in 250 = 1600 mcg/ml
ADMINISTRATION CHART

	Weight in Kg											
mcg/kg/min	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**
2mcg	2	3	4	5	5	6	7	8	8	9	10	11
5mcg	6	8	9	11	13	15	17	19	21	23	24	26
10mcg	11	15	19	23	26	30	34	38	41	45	49	53
15mcg	17	23	28	34	39	45	51	56	62	68	73	79
20mcg	23	30	38	45	53	60	68	75	83	90	98	105

gtts/min

DROPERIDOL

TRADE NAME
Inapsine

ACTION
Is a neuroleptic (tranquilizing) agent with marked tranquilization and sedation activity, it allays apprehension and provides a state of mental detachment and indifference while maintaining a state of reflex alertness, has potent antiemetic effects through CNS action and lowers the incident of nausea and vomiting from almost all causes except obstruction, produces mild alpha-adrenergic blockade and peripheral vascular dilation and reduces the pressor effect of Epinephrine, potentiates other CNS depressants

INDICATIONS
- Sedation or tranquilization
- Vomiting in patients where Promethazine or Ondansetron is contraindicated

CONTRAINDICATIONS
- Allergy to Droperidol
- Hypotension
- Unconscious patients
- Any patient with known or suspected heart disease or are currently known to be taking cardiac medications
- Pediatric patients, any patient > 50yrs old

SIDE EFFECTS & PRECAUTIONS
Can cause hypotension and compensatory tachycardia, has additive sedative effect on opiate drugs and other sedatives/tranquilizers, can cause extrapyramidal reactions, Droperidol may cause potentially fatal prolongation of the QT interval, Torsades de Pointes, cardiac arrest and ventricular tachycardia, when used with opiates such as Fentanyl or Morphine, respiratory depression and apnea may occur, use caution when administering to patients who have taken other CNS depressant drugs (barbiturates, tranquilizers, alcohol, etc.) and reduce dosage if used, observe for hypotension and treat accordingly, these patients require EKG monitoring and you must be prepared to establish an IV if not done so already, patients are not competent to give informed consent after Droperidol administration

ROUTE & DOSAGE
Paramedic

Chemical restraint: 2.5 mg – 5 mg IVP, IO or IM

Anti-emetic: 1.25 mg IVP, IO or IM

May repeat once in 10-15 min

EPINEPHRINE

ACTION
Naturally occurring catecholamine with both alpha and beta adrenergic effects: increases heart rate, myocardial contractility, myocardial oxygen consumption, systemic vascular resistance and causes arterial vasoconstriction and bronchodilation

INDICATIONS
- VF, Pulseless VT, Asystole, or PEA
- Symptomatic bradycardia
- Anaphylaxis
- Asthma

CONTRAINDICATIONS
- Known sensitivity to Epinephrine
- Cardiac chest pain

SIDE EFFECTS & PRECAUTIONS
Commonly causes anxiety, tremors, palpitations and increases blood pressure, may cause Angina or Myocardial Infarction, use cautiously in patients over 50 years of age or with a history of coronary artery disease, may be inactivated if mixed with alkaline solutions, such as bicarbonate.

ROUTE & DOSAGE

EMT

Anaphylaxis (**hypotension, bronchospasm, angioedema, itching, hives)**
Adult: 0.3 - 0.5 mg = 0.3 - 0.5 ml of 1:1,000 SC
Pediatric: 0.01 mg/kg = 0.01 ml/kg of 1:1,000 SC, maximum 0.5 mg/dose
May repeat in 15 min **afterOLMC**

AEMT

Anaphylaxis (hypotension, bronchospasm, angioedema, itching, hives)
Adult: 0.3 – 0.5 mg = 0.3 – 0.5 ml of 1:1,000 IM
Pediatric: 0.01 mg/kg = 0.01 ml/kg of 1:1,000 IM, maximum 0.5mg/dose
May repeat in 3 - 5 minutes

EMT- I

Anaphylaxis or Asthma
Adult: 0.1 mg = 1 ml of 1:10,000 IV or IO
Pediatric: 0.01 mg/kg = 0.1 ml/kg of 1:10,000 IV or IO, maximum 0.3 mg/dose
May repeat in 3 - 5 minutes

Cardiac arrest (VF/VT,PEA, or Asystole)
Adult: 1 mg of 1:10,000 IV or IO
Pediatric: 0.01 mg/kg = 0.1 ml/kg of 1:10,000 IV or IO
Neonates: 0.01 – 0.03 mg/kg = 0.1 -0.3 ml/kg of 1:10,000 IV or IO
May repeat in 3 – 5 minutes

Paramedic

Cardiac Arrest – if no other route available

Adult: 2 mg of 1:1,000 diluted in 5-10 ml NS ET

Pediatric: 0.1 mg/kg = 0.1 mg/kg of 1:1,000 diluted in 5-10 ml NS ET

Neonates: 0.01 – 0.03 mg/kg = 0.1 – 0.3 ml/kg of 1:10,000 ET

May repeat in 3 – 5 minutes

Anaphylactic Shock or Severe Bradycardia

Epinephrine Infusion OLMC only

Adult: Infuse 2-10 mcg/minute IV or IO, titrated to desired effect

mix 1 mg of 1:1,000 in 250 ml NS = 4 mcg/ml

OR

mix 1 mg of 1:1,000 in 500 ml NS = 2 mcg/ml

Pediatric: Infuse 0.1-1 mcg/kg/minute IV or IO, titrated to desired effect

mix 1 mg of 1:1,000 in 500 ml NS = 2mcg/ml

OR

mix 1 mg of 1:1,000 in 1000 ml NS = 1mcg/ml

ETOMIDATE

TRADE NAME
Amidate

ACTION
A short acting sedative hypnotic agent

INDICATIONS
- Sedation for rapid sequence intubation

CONTRAINDICATIONS
- Known sensitivity to Etomidate
- Sepsis

SIDE EFFECTS & PRECAUTIONS
Administer in a large bore, free flowing IV, respiratory depression, hypotension and cardiopulmonary arrest are more likely in the elderly, those with COPD, renal, heart and liver disease, use with caution in the presence of alcohol, barbiturates, narcotics or benzodiazepines, skeletal muscle jerking or movements occur commonly, duration is 4-10 minutes.

ROUTE & DOSAGE

Paramedic

Adult: 0.3 mg/kg IV or IO over 30 - 60 seconds
Typical adult dose is 20 mg

Pediatric: 0.3 mg/kg IV or IO over 30 - 60 seconds

FENTANYL

TRADE NAME
Sublimaze

ACTION
Potent narcotic analgesic

INDICATIONS
- Extremity fractures, crush or amputation injuries in the absence of head or chest trauma
- Abdominal trauma
- Severe burns

CONTRAINDICATIONS
- Known sensitivity to Fentanyl
- Patients who have received MAO inhibitors within the prior 21 days
- Patients with abdominal trauma with known or suspected pregnancy

SIDE EFFECTS & PRECAUTIONS
Central nervous system depressant, which can cause respiratory depression, peripheral vasodilation, decreased cardiac output or pupillary constriction use cautiously if patient is hypotensive, Naloxone will reverse the effects of this opioid

ROUTE & DOSAGE

EMT- I, Paramedic

Adult: 50 – 100 mcg slow IV, IO or IM, titrate to desired effect
200mcg max dose
Contact OLMC to exceed 200 mcg

Pediatric: 2-3 mcg/kg slow IV, IO or IM titrate to desired effect
Max dose 100mcg
Contact OLMC to exceed 100 mcg

Infusion adult and pediatric: 0.5-4 mcg/kg/hour IV infusion

FLUMAZENIL

TRADE NAME
Romazicon

ACTION
Complete or partial reversal of benzodiazepines

INDICATIONS
- Known benzodiazepine overdose
- Suspected benzodiazepine overdose
- Severe head injury

CONTRAINDICATIONS
- Known sensitivity to Flumazenil
- Patients with evidence of serious tricyclic antidepressant overdose

SIDE EFFECTS & PRECAUTIONS
Use cautiously in patients with head injury, psychiatric disorders or alcohol dependence. Use cautiously in patients whom have received benzodiazepines to treat a potentially life threatening condition, such as Status Epilepticus.

ROUTE & DOSAGE

Paramedic

Adult: 0.2 mg IV or IO over 30 seconds
May repeat at 1 minute intervals to 1 mg max

Pediatric: Must be 1 years of age 0.01 mg/kg IV or IO over 30 seconds
May repeat at 1 minute intervals to 0.05mg/kg or 1 mg max, whichever is lower

FUROSEMIDE

TRADE NAME
Lasix

ACTION
Potent diuretic and mild vasodilator

INDICATIONS
- Acute Pulmonary Edema
- Hypertensive emergency

CONTRAINDICATIONS
- Known sensitivity to Furosemide
- Hypovolemia

SIDE EFFECTS & PRECAUTIONS
Have a urinal available as diuresis may occur in 10-15 minutes. Can lead to dehydration with hypotension and electrolyte depletion.

ROUTE & DOSAGE

EMT- I, Paramedic

- 40 - 80 mg IV or IO
  May repeat in 5 - 10 minutes
- **Only to be given 15-20 after initial Nitroglycerin**
- **For use in children or pregnant patients must contact OLMC**

GLUCAGON HYDROCHLORIDE

TRADE NAME
Glucagon

ACTION
A pancreatic hormone, which increases blood glucose levels by converting glycogen that is stored in the liver to glucose

INDICATIONS
- Documented Hypoglycemic reaction in an unconscious or semi-conscious patient where an IV or IO cannot be established
- Significant beta-blocker poisoning/overdose

CONTRAINDICATIONS
- Known sensitivity to Glucagon Hydrochloride

SIDE EFFECTS & PRECAUTIONS
Use only the dilution supplied by the manufacturer, common side effects include nausea and vomiting, the patient will usually awaken in 15-20 minutes, give supplemental carbohydrate as soon as possible, Glucagon may be available at a patient's home

ROUTE & DOSAGE

AEMT, EMT- I

Hypoglycemia

Adult: 1 mg (1 unit) IM or SC
May be repeated twice if needed

Pediatric: <20 KG: 0.5 mg (0.5 unit) IM or SC >20 KG: 1 mg (1 unit) IM or SC

Paramedic

Beta Blocker Overdose

Adult: 3-5 mg IV or IO every 5 minutes, maximum 15 mg

Pediatric: 50-150 mcg/kg IV or IO

GLUCOSE - DEXTROSE

TRADE NAME
D50, Glucose

ACTION
Dextrose is d-glucose, a six-carbon sugar, and the body's basic energy source

INDICATIONS
Symptomatic Hypoglycemia, blood sugar less than
- 70 mg/dl in an adult and children
- 60 mg/dl in an infant (8 weeks to 1 year)
- 40 mg/dl in a newborn (birth to 8 weeks)

CONTRAINDICATIONS
- None

SIDE EFFECTS & PRECAUTIONS
Avoid if patient has an acute CVA, administer through a free flowing IV as Dextrose infiltration causes tissue necrosis and is a vein irritant

ROUTE & DOSAGE

Emergency Medical Responder, EMT

Adult: 12-48 g orally if patient can protect airway
Pediatric: 0.5 g/kg orally if patient can protect airway

AEMT, EMT- I, Paramedic

Birth to 8 weeks: Dilute with additional 4x volume saline (= D10) Give 5ml/kg IV or IO
8 weeks to 1 year: Dilute with additional equal volume saline (= D25). Give 2ml/kg IV or IO
1 year: (= D50) Give 1ml/kg IV or IO
Adult: 50 ml (=25g) IV or IO

HEPARIN

ACTION
Intravenous anticoagulant

INDICATIONS
- ST Elevation MI
- Invasive pressure monitoring system flush

CONTRAINDICATIONS
- Known sensitivity to Heparin
- Active bleeding
- Recent major surgery, CVA or major trauma (within 1 week)
- Recent CPR (within 24 hours)

SIDE EFFECTS & PRECAUTIONS
May cause CVA or severe bleeding

HOW SUPPLIED
5,000 unit/ml
1,000 unit/ml

ROUTE & DOSAGE

Paramedic

ST Elevation MI: 60u/kg maximum dose of 5,000 unit IV bolus
Pressure line flush: 1,000 units mixed in 1,000 ml crystalloid equipped with a pressure bag

HYDRALAZINE

TRADE NAME
Apresoline

ACTION
Direct vasodilator

INDICATIONS
- Pregnancy Induced Hypertension
- Hypertensive crisis

CONTRAINDICATIONS
- Known sensitivity to Hydralazine
- Coronary Artery Disease
- Mitral Valvular Rheumatic Heart Disease

SIDE EFFECTS & CONTRAINDICATIONS
May cause reflex tachycardia, Myocardial Infarction or palpitations, may cause nausea and vomiting

ROUTE & DOSAGE

Paramedic

Adult: 10-20 mg slow IV or IO
May repeat every 30 minutes to a maximum of 40 mg

Pediatric: 0.1-0.5 mg/kg up to 20 mg slow IV or IO
May repeat every 30 minutes to a maximum of 40 mg

IPRATROPIUM BROMIDE

TRADE NAME
Atrovent

ACTION
Atrovent is an anticholinergic (parasympatholytic) bronchodilator

INDICATIONS
- COPD
- Bronchospasm
- Asthma

CONTRAINDICATIONS
- Known sensitivity to Ipratropium Bromide or Atropine
- Pediatric patient < 12 years

SIDE EFFECTS & PRECAUTIONS
Use with caution in patients with Narrow Angle Glaucoma, Prostate Hypertrophy or Bladder Neck Obstruction

ROUTE & DOSAGE

AEMT, EMT- I, Paramedic
- 0.5 mg via nebulizer, mix with Albuterol
  May **NOT** repeat dose

LABETALOL

TRADE NAME
Trandate

ACTION
Intravenous adrenergic alpha and beta blocker

INDICATIONS
- By Physician order only
- Malignant Hypertension
- Pregnancy Induced Hypertension
- Aortic Aneurysm

CONTRAINDICATIONS
- Known sensitivity to Labetalol
- Hypotension
- Cardiogenic or Hypovolemic Shock
- Bradycardia or heart block
- Congestive Heart Failure

SIDE EFFECTS & PRECAUTIONS
Use with caution in Asthmatics

ROUTE & DOSAGE

Paramedic
- 20 mg q 10 min slow IV push over 2 minutes, maximum dose 300 mg

LIDOCAINE

TRADE NAME
Xylocaine

ACTION
Antiarrhythmic and local anesthetic

INDICATIONS
- Ventricular fibrillation/ventricular tachycardia
- To reduce intracranial pressure during rapid sequence intubation
- To reduce the pain associated with IO fluid administration

CONTRAINDICATIONS:
- Known sensitivity to Lidocaine

SIDE EFFECTS & PRECAUTIONS
Toxicity can produce altered mental status, myocardial depression, and Seizures

ROUTE & DOSAGE

EMT- I

VF/VT
- **Adult:** 1- 1.5 mg/kg IV or IO push
  Repeat 0.75 mg/kg every 5-10 minutes, max dose 3 mg/kg

Wide complex tachycardia
- **Adult:** 1.0 mg/kg IV or IO push
  Repeat 0.5 mg/kg every 5-10 minutes, max dose 3 mg/kg

IO infusion in conscious patients
- 0.5 mg/kg IO

Paramedic

RSI
- 1.5 mg/kg IV or IO before paralysis

Lidocaine Infusion
- If patient converted after 1mg/kg bolus then start drip at 2mg/min
- If patient converted after 2mg/kg bolus then start drip at 3mg/min
- If patient converted after 3mg/kg bolus then start drip at 4mg/kg

LORAZEPAM

TRADE NAME
Ativan

ACTION
Benzodiazepine with anticonvulsant, skeletal muscle relaxant, anxiety reducing, amnesic and sedative effects

INDICATIONS
- Seizure
- Sedation for painful procedures, injuries or combative patients
- Post RSI sedation
- Anxiety

CONTRAINDICATIONS
- Known sensitivity to Lorazepam

SIDE EFFECTS & PRECAUTIONS
Respiratory depression, hypotension and sedation, paradoxical excitement or agitation may occur, use with caution in the presence of other sedating agents (alcohol, barbiturates, benzodiazepines or opiates), needs to be refrigerated

ROUTE & DOSAGE

Paramedic

Adult: 1 - 4 mg IV, IO or IM, maximum dose 8mg
Pediatric: 0.05-0.1 mg/kg IV, IO or IM, maximum dose 4 mg

MAGNESIUM SULFATE

TRADE NAME
Magnesium Sulfate

ACTION
Antiarrhythmic, anticonvulsant, bronchial smooth muscle relaxant, central nervous system depressant

INDICATIONS
- Torsades de Pointes. Refractory VF/VT
- Pre-Eclampsia/Eclampsia
- Alcohol withdrawal seizures or Delirium tremens (DTs)

.

CONTRAINDICATIONS
- None

SIDE EFFECTS & PRECAUTIONS
Toxicity may produce decreased level of consciousness, decreased reflexes, hypotension or respiratory depression, rapid administration may result in flushing, sweating, mild bradycardia or hypotension

ROUTE & DOSAGE

Paramedic

Cardiac arrest: 1 - 2 gm in 10 ml saline IV or IO push

Non-cardiac arrest: 1 - 2 gm in 10 ml saline over 1-3 minutes IV or IO

Pre-Eclampsia: 2 gm IV or IO, slowly over 10 minutes; 4 ml of 50% solution mixed with 50 ml D5W

Contact OLMC for Pre-Eclampsia if

a. Unresolved hypertension after initial Magnesium therapy
b. Prior to IM administration of Magnesium if unable to establish IV access

Eclampsia

a. If B/P >130/90 and seizure not resolved
   May repeat 2 gm Magnesium Sulfate IV or IO as indicated above
b. If B/P < 130/90 and seizure not resolved, titrate 2 mg Ativan
c. If unable to establish IV access, administer Magnesium Sulfate 2 grams (undiluted) in each buttock.

MARK 1 AUTOINJECTOR (Atropine & Pralidoxime Chloride) Specific HazMat training required

ACTION

Atropine - parasympatholytic agent with the following effects: increases heart rate, increases conduction through A-V node, reduces motility and tone of GI tract, reduces tone of the urinary bladder, dilates pupils, dilates bronchi

Pralidoxime (2-PAM) Chloride - reactivates cellular acetylcholinesterase molecules preventing organophosphate cholinesterase poisoning if given soon enough (before “aging” occurs)

INDICATIONS

- Antidote for nerve gas Organophosphate nerve gas exposure or poisoning

CONTRAINDICATIONS

- None

SIDE EFFECTS & PRECAUTIONS

Organophosphate nerve gases - VX, GF, GD (Soman), GB (Sarin), GA (Tabun) – are very rapidly toxic and lethal Protect yourself and others from exposure, rotect yourself and others from exposure

HOW SUPPLIED

Atropine 2 mg/0.7 ml and Pralidoxime 600 mg/2 ml auto-injectors

ROUTE & DOSAGE

EMT, AEMT, EMT- I, Paramedic

- 1-3 Atropine auto-injectors IM into the lateral thigh or upper outer buttocks followed by the same number of Pralidoxime auto-injectors IM in a similar location
- Seek or provide immediate ALS care

MEPERIDINE HYDROCHLORIDE

TRADE NAME
Demerol

ACTION
Narcotic analgesic

INDICATIONS
- Severe cardiac chest pain in a patient intolerant of or allergic to Morphine
- Extremity fractures, crush or amputation injuries in the absence of head, chest and abdominal injuries
- Abdominal pain
- Severe burns
- Musculoskeletal pain

CONTRAINDICATIONS
- Known sensitivity to Meperidine
- Patients on MAO inhibitors

SIDE EFFECTS & PRECAUTIONS
Central nervous system depressant, which can cause respiratory depression, nausea and vomiting or hypotension as well as tachy or brady arrhythmias, use cautiously if patient is hypotensive, Phenothiazines potentiate effect

ROUTE & DOSAGE

Paramedic

Adult: 10-25 mg IV or IO or 50 mg IM if IV unavailable for non-cardiac pain
May repeat every 5 minutes to a maximum total dose of 100 mg

Pediatric: 0.5-0.7 mg/kg IV or IO or 1-1.5 mg/kg IM if IV unavailable
May repeat every 5 minutes to a maximum total dose of 50mg

METOPROLOL

Trade Name
Lopressor

ACTION
Intravenous adrenergic beta-blocker

INDICATIONS
- Acute ST Elevation Myocardial Infarction (STEMI)
- Hypertensive crisis not caused by increased intracranial pressure

CONTRAINDICATIONS
- Hypotension (Below 100 systolic)
- 2º or 3º heart block
- Bradycardia (<60)
- Cardiogenic shock
- Congestive Heart Failure

SIDE EFFECTS & PRECAUTIONS
Use with caution in patients with Asthma and patients with 1º Heart Block, do not use if patient is already taking a beta-blocker

ROUTE & DOSAGE

Paramedic
- 5mg slow IV push q 5 min x 3 if time and blood pressure indicate, maximum of 15mg

MIDAZOLAM

TRADE NAME
Versed

ACTION
A short acting benzodiazepine, causing central nervous system depression, respiratory depression, skeletal muscle relaxation and Amnesia

INDICATIONS
- Sedation for painful procedures (such as transcutaneous pacing or cardioversion), amputations or combative patients
- Seizures resistant to Ativan
- Post RSI sedation
- Anxiety
- Induced hypothermia shivering

CONTRAINDICATIONS
- Known sensitivity to Midazolam

SIDE EFFECTS & PRECAUTIONS
Administer in a large bore, free flowing IV, respiratory depression, hypotension or sedation is common, particularly in the elderly, those with chronic diseases or in the presence of other sedating agents (alcohol, barbiturate, benzodiazepines or opiates), paradoxical excitement or agitation may occur

ROUTE & DOSAGE

Paramedic

Adult: 1-5 mg IV, IO or IM over 1 - 2 minutes
May repeat to a maximum total dose of 10 mg

Pediatric: 0.02 - 0.08 mg/kg IV, IO or IM over - 2 minutes
May repeat to a maximum total dose of 0.15 mg/kg

MORPHINE

TRADE NAME
Morphine Sulfate

ACTION
Narcotic analgesic and vasodilator

INDICATIONS
- Severe cardiac chest pain
- Extremity fractures, crush or amputation injuries in the absence of head or chest trauma
- Abdominal trauma
- Severe burns

CONTRAINDICATIONS
- Known sensitivity to Morphine
- Patients with abdominal trauma with known or suspected pregnancy

SIDE EFFECTS & PRECAUTIONS
Central nervous system depressant, which can cause respiratory depression, peripheral vasodilation, decreased cardiac output or pupillary constriction, use cautiously if patient is hypotensive

ROUTE & DOSAGE

EMT- I, Paramedic
Chest Pain: 1-2mg
Max dose 4mg

All other pain treatments

Adult: 6-8 mg IV or IO every 5 minutes, titrate to desired effect
Max dose IV or IO 20mg
Max dose IM 10mg
Contact OLMC to exceed 20mg

Pediatric: 0.05 0.2 mg/kg IV or IO every 5 minutes OR 0.1-0.2 mg/kg IM
Titrate to desired effect or 10mg
Contact OLMC to exceed 10mg

NALOXONE

TRADE NAME
Narcan

ACTION
Narcotic antagonist

INDICATIONS
- Reverse suspected or known narcotic induced respiratory depression due to: Morphine, Heroin, Fentanyl, Hydromorphone (Dilaulid), Oxycodone (Percodan), Meperidine (Demerol), Methadone (Dolophine), Hydrocodone (Vicodin), Codeine, Diphenoxylate (Lomotil), Propoxyphene (Darvon), Pentazocine (Talwin), Nalbuphine (Nubain)

CONTRAINDICATIONS
- Known sensitivity to Naloxone

SIDE EFFECTS & PRECAUTIONS
The narcotic dependent patient may experience frank withdrawal after administration, be prepared to restrain these patients as they may become angry or violent, the goal is to keep the patient out of respiratory depression but not fully conscious, rapid administration may cause nausea, repeated and larger doses may be needed for desired effect

ROUTE & DOSAGE

EMT- I, Paramedic

Adult: 0.4 - 2 mg titrated to reverse respiratory depression IV, IO, IM, SC or SL
Repeat every 1-3 minutes as needed, maximum 10 mg

Pediatric: 0.1 mg/kg) titrated to reverse respiratory depression IV, IO, IM or SC
Repeat every 1-3 minutes, maximum 10 mg (max 0.4 mg/dose)

NITROGLYCERIN

TRADE NAME
Sublingual: Nitrostat, Nitrolingual Spray
IV: Tridil, NITRO-BID IV (aeromedical or inter-facility transport only)

ACTION
Arterial and venous smooth muscle relaxant

INDICATIONS
- Chest pain of cardiac origin
- Hypertensive emergency
- Pulmonary Edema

CONTRAINDICATIONS
- Known sensitivity to Nitroglycerin
- Sildenafil (Viagra) or Vardenafil (Levitra) within the preceding 24 hours
- Tadalafil (Cialis) use within the preceding 48 hours

SIDE EFFECTS & PRECAUTIONS
May cause hypotension or reflex tachycardia, use caution in patients with blood pressure <100 systolic, Nitroglycerin loses its potency with time, do not shake Nitroglycerin spray prior to administration, warn patients of throbbing headache, flushing, dizziness and burning under the tongue

ROUTE & DOSAGE

EMT

Cardiac chest pain: May only assist a patient with patient's own Nitroglycerin for chest pain

AEMT, EMT- I

Cardiac chest pain
- 0.4 mg SL if blood pressure >90 systolic
  May repeat twice at 3-5 minute intervals while maintaining a systolic BP >90

CHF/Pulmonary Edema
- 0.4 mg SL
  May repeat up to 3 times at 3-5 minute intervals while maintaining a systolic BP >90

Hypertensive emergency
- 0.4 mg SL
  May repeat up to 3 times at 3-5 minute intervals while maintaining a systolic BP >90

Paramedic

Unstable Angina (during inter-facility transport only)
- Titrate IV infusion by 5-10 mcg/min until desired effect, to wean off IV infusion, decrease by 5 mcg every 5-10 minutes until desired response

NITROUS OXIDE

TRADE NAME
Nitronox, N_2O_2

ACTION
Inhalation analgesic

INDICATIONS
- Acute musculoskeletal pain

CONTRAINDICATIONS
- Known sensitivity to Nitrous Oxide
- Inability of patient to self-administer
- Pregnancy in patient, medic or bystanders
- Head injury
- Airway burn or respiratory distress

SIDE EFFECTS & PRECAUTIONS
Respiratory depression, drowsiness, use with caution in patients with chest trauma or lung disease

ROUTE & DOSAGE

AEMT, EMT- I, Paramedic
- Patient self-administered by inhalation

ONDANSETRON

TRADE NAME
Zofran

ACTION
Potent anti-emetic agent, a selective 5-HT_3 receptor antagonist

INDICATIONS
- Nausea or vomiting

CONTRAINDICATIONS
- Known sensitivity to Ondansetron

SIDE EFFECTS & PRECAUTIONS
May cause minor headache, constipation or diarrhea

ROUTE & DOSAGE

EMT- I, Paramedic

Adult: 4-8 mg IV, IO, SC or SL
May repeat once

Pediatric: 4 mg IV, IO, SC or SL
DO NOT repeat

OXYGEN (O2)

TRADE NAME
None

ACTION
Essential for normal cellular metabolism and life, tissue hypoxia causes cell damage and death

INDICATIONS
- Suspected hypoxemia
- Respiratory distress
- Acute chest pain
- Shock
- Trauma
- Cardiopulmonary arrest
- Inhalation injury
- Altered level of consciousness

CONTRAINDICATIONS
- Acute Paraquat poisoning

SIDE EFFECTS & PRECAUTIONS
Supports combustion, possible respiratory arrest in patients with chronic lung disease, but do not withhold oxygen if patient is in respiratory distress

HOW SUPPLIED
Gas

ROUTE & DOSAGE

Emergency Medical Responder, EMT, AEMT, EMT- I, Paramedic
- 1 - 15 liters/minute as needed

OXYMETAZOLINE

TRADE NAME
Afrin

ACTION
Potent sympathomimetic arterial constrictor

INDICATIONS
- Epistaxis
- Pretreatment for nasotracheal intubation

CONTRAINDICATIONS
- Known sensitivity to Oxymetazoline
- Persistent blood pressure greater than 190/110

SIDE EFFECTS & PRECAUTIONS
Tachycardia, Myocardial Ischemia or cardiac dysrhythmia

HOW SUPPLIED
Spray bottle

ROUTE & DOSAGE

Paramedic
- Two sprays into the affected nostril(s)
  Repeat as needed

OXYTOCIN

TRADE NAME
Pitocin

ACTION
Polypeptide hormone that stimulates uterine contraction

INDICATIONS
- Control of postpartum hemorrhage following delivery of the placenta

CONTRAINDICATIONS
- Known sensitivity to Oxytocin
- Pregnancy

SIDE EFFECTS & PRECAUTIONS
Nausea and vomiting, severe uterine cramps

ROUTE & DOSAGE

Paramedic
- 10-20 units added to 1,000 ml of Crystalloid fluid run wide open IV or as needed to control bleeding

PROMETHAZINE

TRADE NAME
Phenergan

ACTION
Phenothiazine antiemetic

INDICATIONS
- To reduce nausea or vomiting

CONTRAINDICATIONS
- Known sensitivity to Promethazine
- Age 2 years or less

SIDE EFFECTS & PRECAUTIONS
Sedation, Acute Dystonic Reaction (best treated with Diphenhydramine), caution in liver disease

ROUTE & DOSAGE

Paramedic

Adult
- 6.25 -12.5 mg slow IV or IO
  May repeat up to 25 mg
- 12.5 - 25 IM if IV unavailable

Pediatric – only if age > 2 years
- 0.25 - 0.5 mg/kg slow IV or IO, max 6.25 mg
- 0.5 - 1.0 mg/kg IM if IV unavailable, max 12.5 mg

RACEMIC EPINEPHRINE

TRADE NAME
Racemic Epinephrine

ACTION
Reduction of mucosal and submucosal edema, bronchodilation, and reduction in airway smooth muscle spasm

INDICATIONS
- Anaphylaxis
- Croup or Stridor in children

CONTRAINDICTIONS
- Known sensitivity to sulfites
- Arrhythmias
- Cardiac disease
- Children under the age of 4
- Diabetes
- Elderly
- Epiglottitis
- Glaucoma
- Hypertension
- Thyroid disease

SIDE EFFECTS & PRECAUTIONS
Angina, dizziness, dysrhythmias, headache, hypertension, nausea/vomiting

ROUTE & DOSAGE

Paramedic

Adult: 0.5 ml (2.25%) in 2.5 to 4.5 ml NS via nebulizer
Pediatric: Same as adult dosing

ROCURONIUM BROMIDE

TRADE NAME
Zemuron

ACTION
Non-depolarizing skeletal muscle relaxant

INDICATIONS
- To prevent fasciculations (defasciculating dose) associated with the use of Succinylcholine for rapid sequence intubation
- To provide paralysis (paralyzing dose) for rapid sequence intubation if Succinylcholine is contraindicated
- To maintain paralysis (maintenance dose) after intubation
- To relieve isolated Masseter muscle spasm due by Succinylcholine

CONTRAINDICATIONS
- Known sensitivity to Rocuronium

SIDE EFFECTS & PRECAUTIONS
Rocuronium causes paralysis, not analgesia or Amnesia; conscious patients must receive sedation. Patient will require airway management and ventilation

ROUTE & DOSAGE

Paramedic

- **Defasciculating dose**
  0.05 mg/kg IV or IO
  Usual adult dose is 5 mg
- **Paralyzing dose**
  0.25-0.75 mg/kg IV or IO
  Usual adult dose is 50-75 mg
- **Maintenance dose**
  0.05-0.25 mg/kg IV 5-50 15 minutes after initial paralysis,
  Then every 12-15 minutes as needed
  OR
  1 mcg/kg/min IV infusion

SODIUM BICARBONATE

TRADE NAME
Sodium Bicarbonate

ACTION
Alkalinizing agent. Raises blood pH

INDICATIONS
- Tricyclic Antidepressants overdoses with hypotension, Dysrhythmias, Seizures or QRS > 0.12
- Hyperkalemia
- Severe acidosis refractory to hyperventilation

CONTRAINDICATIONS
- Alkalosis

SIDE EFFECTS & PRECAUTIONS
May deactivate Catecholamine, precipitates with Calcium in IV tubing, decreases chance of brain viability in cardiac arrest

ROUTE & DOSAGE

Paramedic

Adult: 1 mEq/kg of 8.4% IV or IO
May repeat 0.5 mEq/Kg every 10 minutes

Pediatric: 1 mEq/kg of 4.2% IV or IO
May repeat 0.5 mEq/kg every 10 minutes

SUCCINYLCHOLINE CHLORIDE

TRADE NAME
Anectine

ACTION
Depolarizing skeletal muscle relaxant

INDICATIONS
- Rapid sequence intubation

CONTRAINDICATIONS
- Known sensitivity to Succinylcholine
- Long-standing Quadriplegia, Paraplegia or other neuromuscular disorder
- Known Hyperkalemia
- History of malignant hyperthermia
- History of Masseter spasm
- History of recent significant burns
- Any patient with suspected intracranial pressure

SIDE EFFECTS & PRECAUTIONS
Use with caution in patients with Renal Failure on dialysis that may have Hyperkalemia.
Succinylcholine Chloride causes paralysis, not analgesia or Amnesia; conscious patients must receive sedation, patient will require airway management and ventilation

ROUTE & DOSAGE

Paramedic
- 1-1.5 mg/kg IV, IO or IM

VASOPRESSIN

TRADE NAME
Pitressin

ACTION
Vasopressin is a posterior pituitary hormone,a cting primarily at the renal tubular level, increasing water permeability at the renal tubule and collecting duct, resulting in increased urine osmolality and decreasing urinary flow rate as well as vascular smooth muscle contractions, increases coronary artery flow

INDICATIONS
- Pulseless VF/VT arrest states
- Asystole and PEA

CONTRAINDICATIONS
- Known hypersensitivity to Vasopressin

SIDE EFFECTS & PRECAUTIONS
Vasopressin may cause malignant hyperthermia, Vasopressin during CPR increases coronary perfusion pressure, vital organ blood flow, and cerebral oxygen delivery, for the arrest states of Pulseless VF/VT, Asystole or PEA, Vasopressin may be used once instead of Epinephrine for the first or second dose only, after a single dose of Vasopressin, if no clinical response in 3-5 minutes it is acceptable to return to 1 mg of Epinephrine every 3-5 minutes, Vasopressin is not recommended with pediatric patients

ROUTE & DOSAGE

EMT- I, Paramedic
- 40 units IV or IO
  May on give one time

SECTION 4

Procedures

12 LEAD EKG MONITORING

EMT- I, Paramedic

Indications

- For the stable patient with suspected Miocardial Infarction, with or without chest pain
- Determination of SVT vs. Rapid Atrial Fibrillation
- Confirmation of arrhythmias that can indicate electrolyte abnormalities (i.e. Hyperkalemia)
- To determine activation of STEMI Protocol

Procedure

1. Place patient in supine or semi-inclined position with limbs supported
2. Place 4-Lead limb electrodes on extremities, use shoulders or wrists for LA/RA lead, chest, ankles, or thighs for LL/RL leads (see figure A)
3. Connect 6-Lead attachment to 4-Lead cable
4. Place 6-Lead chest lead (pre-cordial) electrodes on patient (see figure B)
5. When all electrodes are in proper position, press the 12 lead button, and enter patient's age if prompted
6. Ask the patient to remain still to enable successful completion of the 12 lead, the machine will acquire and printout the results automatically

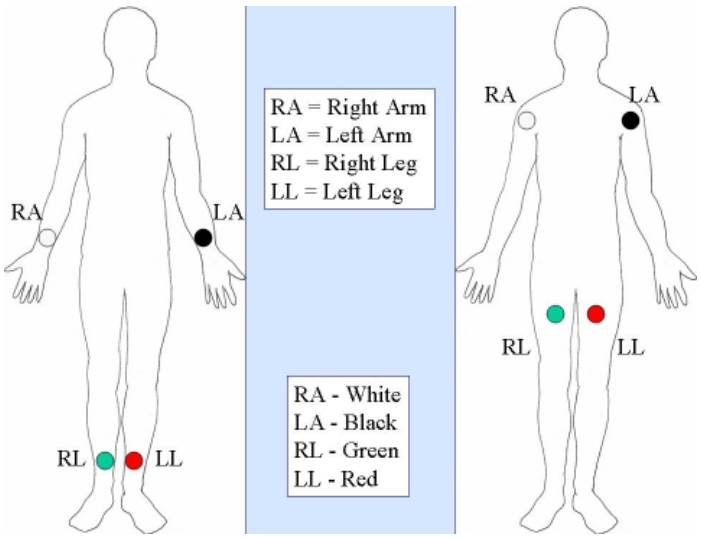
Lead Placement

1. Limb placement

The limb leads record activity from a vertical plane of reference

Lead	Placement
RA/White	Right shoulder at clavicular line, or above anterior right wrist
LA/Black	Left shoulder at clavicular line, or above anterior left wrist
LL/Red	Between 6th & 7th intercostal space/left MCL, or ankle or thigh
RL/Green	Between 6th & 7th intercostal space/right MCL, or ankle or thigh

Figure A



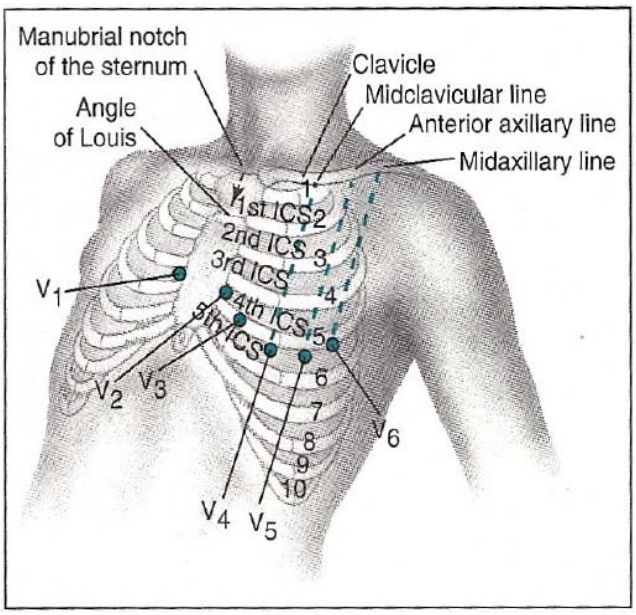
2. **Precordial Leads**
   Certain landmarks help with the location of electrode placement (see figure B)
   a. Angle of Louis- this structure is a ridge on the sternum directly below the manubrial notch at the top of the sternum, directly below and to the sides of the Angle of Louis is the second intercostals space, use this to count down two or more spaces for placement of V1 and V2
   b. Mid-Clavicular Line (MCL) imaginary line from middle clavicle down
   c. Axilla- armpit area, the point where axilla meets the chest determines the Anterior Axillary line V5 is positioned in the horizontal alignment with V4 on the left Anterior Axillary line midway down the axilla is the Mid-Axillary Line. V6 is placed in horizontal alignment with V5 on the Mid-Axillary line

General information- Precordial Leads

The correct placement of precordial leads is very important in performing the 12 lead EKG, the remaining 6 leads of the standard EKG are those created by the placement of six electrodes in a semicircular pattern on the patient's chest, these 6 leads are unipolar in nature and serve to record the heart's electrical activity from a different plane than the limb leads, the precordial leads record the activity from a horizontal or transverse orientation, with the heart's electrical center as a reference point, each electrode receives information that moves in an outward direction along a horizontal plane by using limb and precordial leads, we are able to get a two-dimensional picture of the heart's electrical activity on the EKG paper

Lead	Placement
V1	4th intercostal space to the right of the sternum
V2	4th intercostal space to the left of the sternum
V3	Midway between V2 and V4
V4	On the mid-clavicular line, at the 5th intercostal level
V5	On the anterior axillary line at the 5th intercostal level
V6	On the mid-axillary line, at the 5th intercostal level

Figure B



AMI Recognition

1. **Common abnormal findings**
   - ST Elevation (presumptive evidence of AMI)
   - ST Elevation with Q waves
   - ST Depression (Ischemia)
   - T wave inversion (Subendocardial Infarct or Ischemia)
   - Peaked T wave (Hyperacute Infarction)
   - The presence of Q waves with ST elevation usually indicates an old infarction

Basic Lead Groupings

Leads	Areas of the heart muscle viewed
II, III, aVF	Inferior leads- lower portion of the heart
V1 & V2	Septal leads- muscle between right and left ventricles
V2, V3, &V4	Anterior leads- front of heart
V4, V5, &V6	Lateral pre-cordial leads- lateral aspects of the heart
I & aVL	High lateral leads- lateral aspect from above

2. **Location**

AMI RECOGNITION

I Lateral	aVR	V1 Septal	V4 Anterior
II Inferior	aVL Lateral	V2 Septal	V5 Lateral
III Inferior	aVF Inferior	V3 Anterior	V6 Lateral

Special Information

- While monitoring 12 lead EKG, look for ST segment elevation of 0.4mv (1 mm or more in standard lead or 3mm or more in a precordial lead), monitor in lead with greatest ST elevation
- Do not delay transport of the critical or unstable patient to perform a 12 lead tracing
- When entering patient information refer to monitor specific manual for instructions
- Electromagnetic interference may also cause 12 lead artifact, examples of electromagnetic interference include: radios, cell phones, electric blankets, power cords and fluorescent lights
- 12 lead artifact can be caused by patient or electrode cable movement
- Document “12lead” in the procedures portion of the PHCR

It is essential that all electrodes are in the proper place and that skin preparation has been performed to ensure a clean tracing use a 4x4 to clean and dry chest prior to placing electrodes

AUTOMATIC EXTERNAL DEFIBRILLATOR (AED)

Emergency Medical Responder, EMT, AEMT, EMT- I, Paramedic

INDICATIONS

- Unconscious, unresponsive, pulseless, apneic patient with possible cardiac arrest

PRECAUTIONS

- Patient must be 1 year of age or older
- For children 1 to 8 years of age or < 80 lbs. the rescuer should use pediatric pads

PROCEDURE

1. Begin CPR and follow “CPR High Performance” procedure
2. Prepare equipment
   a. AED
3. Attach AED to leads and to patient, turn on machine, and explain your situation on the tape recorder (if your machine is so equipped)
4. Stop CPR and any other patient movement and allow the AED to determine the underlying cardiac rhythm according to manufacturer’s instruction (resume CPR while the AED is charging if instructed)
5. If the AED determines that a shock is necessary, the AED must be programmed to deliver a single shock, when the AED is prepared for a shock, make absolutely certain that **Nobody** is in contact with the patient or the equipment
6. After the shock has been delivered, immediately begin CPR per the “CPR High Performance” procedure until AED prompts you to pause to check pulse
   a. If pulse is present continue to treat patient per protocols
   b. If patient is remains pulseless and AED determines that a shock is necessary return to step #5
   c. If patient remains pulseless, and AED does not recommend a shock, continue CPR following “CPR High Performance” procedure for 2 minutes and then check for a pulse and return to step #6-a
7. **AT NO TIME**, except for the pulse check, AED rhythm check, and delivery of shock, should CPR be paused

BLOOD SPECIMEN COLLECTION

AEMT, EMT- I, Paramedic

INDICATIONS

- To obtain blood specimens on patients receiving intravenous access in the field.
- At the medic's discretion, any patient who requires the initiation of an IV in the field

PRECAUTIONS

- Use of a syringe to withdraw blood from the catheter hub is allowable but not recommended, due to the potential to hemolyze the specimen

PROCEDURE

1. Obtain an unused collection kit
2. Remove tubes and vacutainer collection device from the collection kit
3. The draw kit contains: a disposable vacutainer collection device and four pre-labeled collection tubes consisting of one red top, one blue top, one green top, and one lavender top tube
4. Initiate peripheral IV site
5. Collect specimens in the following order by connecting the vacutainer device to the IV catheter:
   a. Draw red tube first, this is your waste tube for clearing the line, dispose in sharps container
   b. Blue top
   c. Green top
   d. Lavender top
6. Discard vacutainer device into a sharps container
7. Once the collection is complete, all specimens collected must be placed in the proper collection kit
8. If time permits, label each vial with patients name, f time does not allow label bag with patients name and date
9. Give bag to RN in charge of patient
10. The minimum size IV catheter that can be used to collect a blood specimen is a size 20 gauge 18 gauges will allow for faster fill time of tubes

*****The collection of a blood specimen should not delay the delivery of appropriate care to the patient*****

BLEEDING CONTROL

Emergency Medical Responder, EMT, AEMT, EMT- I, Paramedic

INDICATIONS

- Minimize life threatening blood loss from open wounds

PRECAUTIONS

- Allow bleeding control method to remain visible
- Reassess bleeding site regularly for hemostasis or return of significant bleeding
- Do not place tourniquet over a joint
- If commercial tourniquet is unavailable a BP Cuff may be used, do not use wire, rope, belts or other items that may cut into skin
- Bring hemostatic dressing packaging to hospital

PROCEDURE

1. Identify origin of hemorrhage
2. Apply direct pressure
   a. Do not apply direct pressure to unstable or depressed skull fracture
   b. If bandage soaks through, add additional material (removal of soaked bandages can dislodge clots causing increased bleeding)
3. Pressure bandage
   a. If application of pressure bandage will delay bleeding control, go directly to tourniquet placement or hemostatic dressing
4. Tourniquet placement
   a. For extremity use only
   b. Refer to tourniquet procedure for use
5. Hemostatic Dressing
   a. For extremity and non-extremity use
   b. Refer to hemostatic dressing procedure for use
6. Provide shock management

CENTRAL LINE ACCESS

INDWELLING CATHETERS AND IMPLANTED CENTRAL IV PORTS

Paramedic

INDICATIONS

- To access previously established venous circulation

PRECAUTIONS

- Do not force fluid
- If difficulty encountered do not use central line
- Do not use if catheter is for dialysis purposes
- Do not use without aspirating blood first
- Ensure aseptic technique. Because of placement, central lines can be more susceptible to infection
- Do not unclamp port prior to attaching syringe, air embolism is possible

PROCEDURE

1. Maintain aseptic technique
2. Clean port thoroughly with alcohol prep
3. If the cap is needless, attach 10cc syringe to cap, if not needless remove cap, without touching end to any surface, and attach syringe directly to catheter
4. Unlock clamp prior to aspirating
5. Using gentle backpressure, aspirate 5-10 cc of blood from each port (this will remove Heparin in line and reduce risk of bolusing patient with existing medication)
6. Dispose of syringe in sharps container
7. Flush each port with 10cc of NS, if difficulty in aspirating or flushing is experienced, inspect catheter for kinks or closed clamp, consider having patient cough, take a deep breath, shrug shoulders or turn head side to side if difficulty is unresolved, do not use catheter
8. If line is patent, connect IV line or administer medications as appropriate
9. Leave cap on unused port
10. Advise receiving hospital of central line access, so that Heparin may be reintroduced into catheter

CHEST DECOMPRESSION (NEEDLE THORACENTESIS)

Paramedic

INDICATIONS

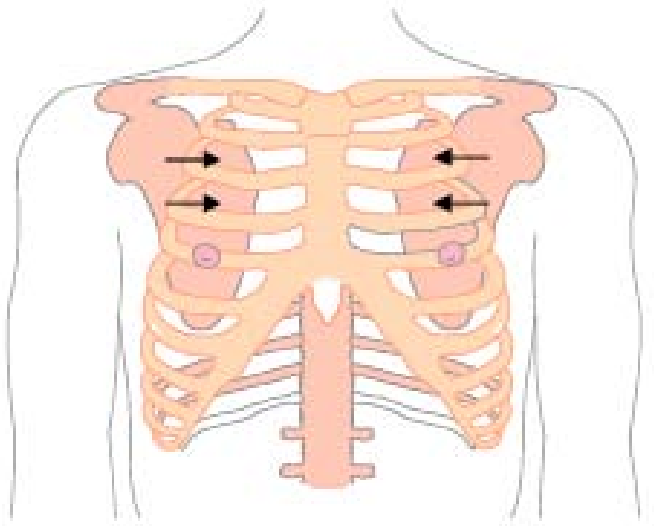
- Rapid decompression of Tension Pneumothorax, which may result from trauma, chest compressions or positive pressure ventilation
- Signs include unilaterally absent breath sounds, hypotension, progressive respiratory distress, distended neck veins, asymmetrical breathing, hyper expanded chest, tracheal shift and increased resistance to ventilation

PRECAUTIONS

- Pneumothorax or lacerations of the lung or blood vessels may occur
- Chest decompression may need to be performed at more than one site or on the other side
- Relief of a Tension Pneumothorax should result in a rapid and significant improvement in the patient's condition

PROCEDURE

1. Prepare equipment
   a. Oxygen
   b. 10 – 16 ga (5 – 8 cm long) IV catheters
   c. 10 ml syringe
   d. Disinfectant solution
   e. Tape
   f. One-way valve (optional)
2. With the patient supine and the chest exposed, clean the second or third intercostals space in the mid-clavicular line
3. Insert the IV catheter by sliding over the top of the third or fourth rib until a "pop" is felt and air is released
4. Advance the catheter and remove the needle and syringe
5. For prolonged transport attach the one-way valve (3-way extension may be used) to the hub of the catheter and secure with tape
6. Auscultate the chest and administer 100% oxygen



COMBITUBE –Dual Lumen Airway Device

EMT (if agency approved)
AEMT, EMT- I, Paramedic

INDICATIONS

- Advanced airway management by EMTs, AEMT, EMT-I or when endotracheal intubation cannot be accomplished

PRECAUTIONS

- Do not use in patients less than 5 feet tall, over 6 feet 8 inches tall, age less than 16 years
- Do not use in patients with an intact gag reflex, with esophageal disease, who have ingested caustic substances, who have a known or suspected foreign body obstruction of the larynx or trachea, or who have a tracheostomy
- EMTs must have received agency specific training and certification before use

PROCEDURE

1. Prepare equipment
   a. Oxygen
   b. BVM
   c. Combitube kit
   d. Suction
   e. Lubricant
2. Hyperventilate with BVM or demand valve for 1-2 minutes with supplemental oxygen while preparing equipment
3. Remove dentures and loose or broken teeth to prevent puncture of balloons
4. With the patient's head in a neutral position, by lifting the tongue and lower jaw upward with one hand, insert the Combitube blindly until the two printed black rings are located between the patient's teeth or alveolar ridges **DO NOT** force the Combitube
5. Inflate the #1blue pilot balloon with appropriate amount of air
6. Inflate the #2 white pilot balloon with appropriate amount of air
7. Place the ventilation device on blue tube #1 and ventilate while listening for lung sounds and watching for chest rise
8. If the chest rises, breath sounds are auscultated and no abdominal insufflations occur, the tube is located in the esophagus and you can continue to ventilate through #1
   a. Tube #2 may be used for removal of gastric air or fluids with a suction catheter
9. If no chest rise occurs and there are absent breath sounds and gastric insufflations is present, leave the tube in place and ventilate the clear tube #2
10. Confirm ventilations by listening for breath sounds and watching for chest rise
11. End tidal CO_2 capnometry
12. Reconfirm tube location frequently, during transport and whenever patient is moved
13. Endotracheal intubation may be performed by deflating the #1 blue balloon and pushing the Combitube to the left of the oral cavity while intubating from the right
14. To remove Combitube, place the patient on their side and deflate both balloons and slowly remove the Combitube; have suction ready

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

EMT, AEMT, EMT- I, Paramedic

INDICATIONS

- Any patient who is complaining of shortness of breath for reasons other than Pneumothorax and is awake and oriented
- Patient is over 12 years old and is able to fit the CPAP mask
- Has the ability to maintain an open airway (GCS>10)
- A respiratory rate greater than 25 breaths per minute
- Has a systolic blood pressure above 90 mmHg
- Uses accessory muscles during respirations
- Signs and Symptoms consistent with Asthma, COPD, Pulmonary Edema, CHF, or Pneumonia

PRECAUTIONS

- Patient with impaired mental status and is not able to cooperate with the procedure
- Has failed at past attempts at non-invasive ventilation
- Has active upper GI bleeding or history of recent gastric surgery
- Complains of nausea or vomiting
- Has inadequate respiratory effort
- Has excessive secretions
- Has a facial deformity that prevents the use of CPAP

CONTRAINDICATIONS

- Need for immediate intubation and or BVM ventilation
- Untreated Pneumothorax
- Uncontrolled vomiting
- Upper airway abnormalities or trauma
- Respiratory failure
- Patient's with a tracheostomy

PROCEDURE

Boussignac CPAP System

1. Make sure patient does not have a Pneumothorax
2. Explain the procedure to the patient
3. Ensure adequate oxygen supply to ventilate device (100% when starting and until Sa02 is >95%)
4. Place the patient on continuous pulse oximetry
5. Adjust Oxygen Flow: 15 L/min = 5 cmH_2O, 20 L/min = 7.5 cmH_2O, 25 L/min = 10 cmH_2O.
6. Place the Boussignac CPAP over the mouth and nose
7. Secure the mask with provided straps or the other provided devices
8. Check for air leaks
9. Monitor and document the patient's respiratory response to the treatment
10. Continue to coach patient to keep mask in place and readjust as needed
11. If respiratory status deteriorates, remove device and consider BVM ventilation and/or endotracheal intubation

PORTO$_2$Vent$_{TM}$ CPAP$_{OS}$

1. Make sure patient does not have a Pneumothorax
2. Explain the procedure to the patient
3. Ensure adequate oxygen supply to ventilate device (100% when starting and until Sa02 is >95%)
4. Place the patient on continuous pulse oximetry
5. Hook O_2 hose to Oxygen outlet and the corrugated mask tubing to the port on front of device
6. Turn flow control button to adjust pressure from 5$_{cm}H_2O$ to 10+ $_{cm}H_2O$ and confirm reading on pressure gauge
7. Secure the mask with provided straps or the other provided devices
8. Check for air leaks **(Oxygen should only be flowing through device during inspiration)**
9. Monitor and document the patient's respiratory response to the treatment
10. Continue to coach patient to keep mask in place and readjust as needed
11. If respiratory status deteriorates, remove device and consider BVM ventilation and/or endotracheal intubation

CPR – HIGH PERFORMANCE

EMR, EMT, AEMT, EMT- I, Paramedic

INDICATIONS

- Any patient with cardiac arrest (unresponsive with absent or abnormal respirations) without a POLST, or Do Not Resuscitate (DNR) order

PRECAUTIONS

- Do not delay the initiation of CPR
- Pulse check should not take more than 5-10 seconds, if definite pulse is not detected, then begin chest compressions

PROCEDURE

1. Manual CPR for at least 2 minutes at least one AED/defibrillation analysis and shock (if indicated)
2. At least 100 chest compressions/minutes
3. BVM ventilations with 100% O2
4. Single provider CPR – Adult, child or infant
   a. 30 compressions/2 breaths for 2 minute cycles
5. Two provider CPR - Adult
   a. 30 compressions/2 breaths for 2 minute cycles
6. Two provider CPR – Child and infant
   a. 15 compressions/2 breaths for 2 minute cycles
7. Compression depth
   a. Adult at least 2”
   b. Child at least 1/3 the depth of the chest – about 2”
   c. Infant at least ½ the depth of the chest – about 1 ½”
8. AED/Defibrillator as soon as available – defibrillation if indicated
   a. Continue chest compressions while charging AED/Defibrillator
   b. Minimal chest compression interruption during shock administration
9. Pulse check begins during CPR to assess quality of CPR and continues when chest compressions stop for rhythm analysis for maximum of 5-10 seconds
10. Dual lumen airway device, supraglottic airway device or endotracheal intubation may be inserted after 4 minutes of CPR if done with no interruption of CPR
11. After an artificial airway has been placed provide 1 breath every 6-8 seconds with continuous chest compressions

*****Termination of CPR in the field requires contacting OLMC*****

CRICOTHYROTOMY - NEEDLE

Paramedic

INDICATIONS

- To establish an emergency airway when other methods have been unsuccessful

PRECAUTIONS

- Punctures or lacerations of the blood vessels, vocal cords or esophagus as well as subcutaneous emphysema may occur
- Needle cricothyrotomy is a temporary measure only; ventilation will be poor with a slight rise in oxygenation in the alveoli

PROCEDURE

1. Prepare equipment
   a. BVM
   b. Oxygen (able to provide greater than 50psi if using ventilator)
   c. Suction
   d. IV catheter attached to a 10 ml syringe
      - Adult: 10 - 14 ga
      - Pediatric: 14 -16
   e. 3 mm endotracheal tube adapter
   f. Disinfectant solution
   g. Tape
   h. Stethoscope
2. Place the patient supine with support under the shoulders and mild hyperextension of the neck
3. Palpate the neck over the trachea and locate the cricothyroid membrane just below the notch of the thyroid cartilage
4. Clean and prep the site over the membrane
5. With the IV catheter, puncture the membrane aiming caudally at a 45° angle, while entering, apply negative pressure to the syringe, when air is met, remove the syringe and stylet, advance the catheter to the hub, and connect the 3 mm adapter and ventilate the patient (one second inhalation to four seconds exhalation)
6. Observe and auscultate the chest for bilateral breath sounds
7. Secure the device and continue to ventilate

CRICOTHYROTOMY - SURGICAL

Paramedic

INDICATIONS

- To establish an emergency airway when other methods have been unsuccessful

PRECAUTIONS

- Punctures or lacerations of the blood vessels, vocal cords or esophagus as well as subcutaneous emphysema may occur
- Needle cricothyrotomy is a temporary measure only; ventilation will be poor with a slight rise in oxygenation in the alveoli
- Surgical cricothyrotomy is a last resort airway for adult patients only

PROCEDURE

1. Prepare equipment
   a. BVM
   b. Oxygen (able to provide greater than 50psi if using ventilator)
   c. Suction
   d. Disinfectant solution
   e. Scalpel with #10 or #20 blade
   f. Tracheal hook
   g. Tracheal introducer
   h. 6.0 endotracheal tube shortened by 50%
   i. Tape
   j. Stethoscope, capnometer and oximeter
2. Position yourself at head of patient on your non-dominant side
3. Prep the anterior neck with disinfectant solution
4. Identify the cricothyroid membrane and stabilize the trachea with the fingers of your non-dominant hand
5. Using the scalpel, puncture the skin and trachea transversely
6. Slide the tracheal hook along the inferior side of the scalpel, rotate the hook 90 degrees in the lower side of the incision to hold the distal trachea before removing the scalpel blade and apply traction to lift the cricoid cartilage up and towards the patient's feet
7. Insert the tracheal introducer into the distal trachea until it stops at the carina before removing the tracheal hook
8. Thread the shortened endotracheal tube into the distal portion of the airway, rotating as needed, before removing the tracheal introducer
9. Inflate the cuff with 5-10 cc of air
10. Confirm tube placement in the trachea with bilateral chest rise, auscultation of bilateral breath sounds, ETCO2 and SpO2 and the patient condition
11. Secure tube and provide ventilation and oxygenation
12. Monitor patient to insure ventilation and for evidence of subcutaneous air

END TIDAL CO2 DETECTOR

EMT, AEMT, EMT- I, Paramedic

INDICATIONS

- Any patient receiving ventilation through an artificial airway (endotracheal tube, dual lumen or supraglottic airway device)

PRECAUTIONS

- Use the pediatric detector on patients weighing less than 15 kg
- After administering medications through advanced airway wait for 6 ventilation cycles before re-attaching detector
- CO_2 detector is to be used to confirm advanced airway in addition to direct laryngoscopic airway visualization, observation of chest rise and skin color, or auscultation of bilateral breath sounds

PROCEDURE

Manual Colorimetric Detector

1. Attach the CO_2 detector between the bag-valve device and the end of the advanced airway
2. When ventilating properly and the advanced airway is in the proper location, the indicator area on the detector will change color at time of expiration depending on the manufacture, typically yellow (~5% CO_2) during expiration and purple (0% CO_2) during inspiration

Electronic Detector

1. Attach the 15mm adapter between the bag-valve device and the advanced airway
2. Attach the small tubing to the electronic detector
3. To confirm proper placement during ventilation the output reading during expiration should measure between 35mm and 45mm Hg (5% CO_2) in conjunction with the regular rise and fall of the CO_2 waveform

ENDOTRACHEAL INTUBATION (ORAL, NASAL AND DIGITAL)

Paramedic

INDICATIONS

- To establish an emergency airway for the patient who cannot provide/protect their own airway

PRECAUTIONS

- Lacerations, dental injury, laryngospasm, right or left main stem or esophageal intubation
- **Oral**: Rapid Sequence Intubation may facilitate procedure
- **Nasal:** Not to be attempted on an apneic patient, one with facial trauma or with suspected airway obstruction
- **Digital:** May be successful when other methods have failed. Use bite block to protect EMTs fingers

PROCEDURE

1. Prepare equipment
   a. Laryngoscope and blades
   b. Endotracheal tube with stylet, average sizes are:
      - Adult female: 6.5 to 8.0
      - Adult male: 7.0 to 8.5
      - Child: 4.0 to 6.0
      - Infant: 3.5 to 4.0
      - Newborn: 2.5 to 3.5
   c. Suction unit
   d. Magill forceps
   e. Lubricant
   f. Bite block
   g. Tube securing device and tape
   h. Syringe for cuffed tubes
2. Preoxygenate patient
3. Selleck maneuver if indicated

Oral Intubation

4. Open patients airway, protecting the cervical spine
5. Insert endotracheal tube into trachea

Nasal Intubation

4. Select the appropriate tube size, which is generally ½ size smaller than the one selected for oral intubation
5. With the head in a neutral position insert the well-lubricated tube into the larger nostril and gently guide the tube posteriorly in an arc until the pharynx is reached
6. While listening to the patient's breath, advance the tube into the trachea during inhalation

Digital Intubation

4. Place a bite block device into the patient's mouth
5. Insert the middle and index finger into the mouth following the curve of the tongue
6. Lift the epiglottis and tongue anteriorly
7. Insert the endotracheal tube between the index and middle fingers and into the trachea

All Endotracheal Intubations

8. Inflate cuff if present
9. Verify tube location by auscultation and observation
10. Secure tube
11. Reconfirm tube location frequently, during transport and whenever patient is moved
12. End tidal CO_2 capnometry

ENDOTRACHEAL TUBE INTRODUCER - Bougie

Paramedic

INDICATIONS

- Patient meets criteria for intubation
- Failed initial intubation attempt
- Predicted difficult intubation

CONTRAINDICATIONS

- Age less than eight (8) or ETT size less than 6.5

PROCEDURE

1. Prepare, position and oxygenate the patient with 100% oxygen
2. Select proper ETT without stylette, test cuff and prepare suction
3. Lubricate the distal end and cuff of the ETT and the distal ½ of the Bougie
4. Using laryngoscopic technique, visualize the vocal cords
5. Introduce the Bougie with the curved tip anteriorly and visualize the tip passing the vocal cords or above the arytenoids if the cords cannot be visualized
6. Once inserted, gently advance the Bougie until resistance or “hold up” is met (if you do not meet resistance you have a probable esophageal intubation and insertion should be reattempted)
7. Withdraw the Bougie **ONLY** to a depth sufficient to allow loading of the ETT while maintaining proximal control of the Bougie
8. Gently advance the Bougie and loaded ETT until you again meet resistance, minimizing the risk of accidental displacement of the Bougie
9. While maintaining a firm grasp on the proximal Bougie, introduce the ETT over the Bougie
10. If you are unable to advance the ETT into the trachea and the Bougie and ETT are adequately lubricated, withdraw the ETT slightly and rotate the ETT 90 degrees counter clockwise to turn the bevel of the ETT posteriorly
11. Once the ETT is correctly placed, hold the ETT securely and remove the Bougie
12. Confirm tracheal placement according to the Endotracheal Intubation Procedure and secure

*****Failure to lubricate the Bougie and the ETT may result in failure to pass ETT*****

EXTERNAL TRANSCUTANEOUS PACING

Paramedic

INDICATIONS

- Symptomatic bradycardia refractory to Atropine, symptomatic heart block and asystole

CONTRAINDICATIONS

- Patients with penetrating or blunt trauma

PRECAUTIONS

- This is a painful procedure, consider pain medication and sedation

PROCEDURE

1. Prepare equipment
   a. High flow oxygen
   b. Pacemaker, cable and pacing electrodes
   c. Midazolam, Lorazepam, or Morphine
2. Administer oxygen and monitor cardiac rhythm. Three/four lead cardiac monitor must be attached for pacing
3. Medicate patient (If indicated)
4. Apply pacer pads to the left anterior chest and left posterior chest (preferred), or right anterior chest and left lateral chest
5. Adjust cardiac monitor gain to sense intrinsic QRS complexes
6. Set mA at 0, attach pacer pads to monitor cable
7. Set pace rate at 70-80 bpm
8. Increase current by 20 mA to obtain capture
9. Ensure mechanical capture by obtaining pulse and blood pressure
10. If unable to obtain mechanical capture, discontinue pacemaker

EZ-IO INTRAOSSEOUS INFUSION

AEMT (Pediatric Only)
EMT- I, Paramedic

INDICATIONS

- When vascular access is necessary, but otherwise unattainable in a patient

CONTRAINDICATIONS

- Use alternate site in presence of contraindication
- Infectious tissue at the insertion site
- Fracture of the bone proximal to the insertion site
- Excessive tissue at the insertion site – must see 5mm of needle exposed
- Previous significant orthopedic procedure or prosthesis at insertion site

PRECAUTIONS

- Only one attempt per bone
- IO infusion in a conscious patient may be painful

PROCEDURE

1. Locate appropriate insertion site and prepare using aseptic technique
   a. Proximal tibia – flat portion of the anteromedial tibia distal to tibial tubercle
   b. Distal tibia – 3 cm proximal to the medial malleolus
   c. Proximal humerus
2. Prepare the EZ-IO driver and appropriate needle set
   a. EZ-IO PD – 15 mm (3-39 kg), if patient fits on the Broselow tape
   b. EZ-IO AD – 25 mm (40 kg and over), it patient is larger than the Broselow tape
   c. EZ-IO LD – 45 mm (40 kg and over), proximal Humerus or if AD not long enough
   d. At least 5mm of needle (to first black mark), must be exposed when needle tip makes contact with bone through the skin before bone insertion
3. Stabilize site and insert appropriate needle set using the EZ-IO driver until sudden decrease in resistance is felt OR needle flange reaches the skin
4. Remove EZ-IO driver from needle set while stabilizing catheter hub
5. Remove stylet from needle set and discard in a sharps container
6. Connect primed EZ-Connect extension tubing
7. Attach a 3-way stopcock to the EZ-Connect extension tubing for all pediatric patients when using the PD needle
8. Flush EZ-IO with normal saline
9. **EMT- I or Paramedic only**, slowly administer 0.5 mg/kg of cardiac Lidocaine 2% IO to conscious patients
10. Confirm placement of free flow of IO infusion without extravasation
11. Syringe bolus or utilize 300 mm HG pressure bag for infusions
12. Secure tubing to patient, dress site, apply additional stabilization if catheter hub is not flush with the skin and apply wristband
13. Monitor EZ-IO site and patient condition for signs of extravasation

HEMOSTATIC DRESSING

Emergency Medical Responder, EMT, AEMT, EMT- I, Paramedic

INDICATIONS

- Life threatening bleeding from an extremity wound that is not controllable by direct pressure or with a tourniquet
- Life threatening non-extremity bleeding not controllable with direct pressure

PRECAUTIONS

- The hemostatic dressing must be in direct contact with the bleeding site
- Assure that the proper side of the dressing is facing the wound
- Direct pressure must be maintained for 2 minutes after hemostatic dressing is applied
- **Sucking Chest wounds:** Use particular care around sucking chest wounds
- **Small Diameter wounds:** Wounds such as small caliber entrance-only bullet wounds require more evaluation and treatment due to the source of bleeding not being at the same location
- **Head and Scalp wounds:** Due to the large volume of blood that is produced from these wounds it is necessary to attempt to remove all moisture away from the wound to reduce the burning sensation from the exothermic reaction created by the use of the hemostatic agent

PROCEDURE

1. Apply direct, firm pressure to wound using sterile gauze dressing or best available substitute
2. If bleeding is stopped or nearly stopped after 1 minute of pressure, wrap and tie bandage to maintain pressure on wound and seek medical care
3. To prevent burning from exothermic reaction, assure area around wound is dry and free from water droplets
4. Remove previously applied bandages making certain to wipe away as much excess blood and liquid in wound area as possible
5. Open the hemostatic bandage and ensure that the proper side is applied to the bleeding site
6. Apply directly on source of bleeding
7. Immediately reapply direct pressure for two minutes, then wrap and protect area with compression bandageTransport patient as soon as possible
8. Be certain hemostatic packaging is transported with patient so Physician or medical staff can follow directions to remove material properly

*****Protect hands with gauze or similar insulating material while applying bandage*****

INDUCED HYPOTHERMIA FOLLOWING ROSC

Paramedic

INDICATIONS

- Return of Spontaneous Circulation following cardiac arrest
- Unconscious with a GCS <5
- Systolic Blood Pressure >90, (may be accomplished with pressors)

CONTRAINDICATIONS

- Traumatic arrest
- Significant and/or suspected hemorrhage
- Age <15
- Pregnancy, known or suspected
- Unable to secure advance airway (dual lumen or supraglottic airway is acceptable)

COOLING METHODS

- Ice packs
- Cool saline

PROCEDURE

1. Remove patients clothing
2. Apply ice packs to axilla, groin and neck
3. Cold saline bolus 30ml/kg to a maximum of 2 Liters
4. Versed 1-5mg IV to a maximum of 10mg for shivering
5. Dopamine 10-20 mcg/kg/min to maintain systolic BP above 90

INTRAOSSEOUS INFUSION (lower extremity)

AEMT (Pediatric Only)
EMT- I, Paramedic

INDICATIONS

- When IV access is unattainable in a critically ill or injured patient

PRECAUTIONS

- Only one attempt per limb
- Avoid growth plate, infection at insertion site and fractured limbs

PROCEDURE

1. Prepare equipment
   a. Intraosseus needle
      - 18 ga for patients 18 months and younger.
      - 15 ga for patients older than 18 months.
   b. Disinfectant solution
   c. Two 5 ml syringes
   d. Crystalloid
   e. Sterile gauze pads
   f. Tape
   g. Three-way stopcock
   h. 60 ml syringe
   i. Extension tubing
2. The preferred insertion site is the proximal tibia; the anteromedial flat surface 1-3 cm distal to the tibial tuberosity
3. Alternate sites are the medial malleolus of the tibia or the anterior aspect of the distal femur
4. Prepare surface with disinfectant solution
5. Penetrate the soft tissue and with a twisting motion penetrate the cortex of the bone until a pop or loss of resistance is felt
6. Remove the stylet
7. While holding the needle firmly, attempt to aspirate marrow or blood – you may not be able to aspirate anything even if the needle is in the marrow
8. If you think that the needle is in the marrow, infuse 5 to 10 ml of crystalloid while palpating for infiltration
9. Secure needle
10. Attach extension tubing
11. Attach stopcock to extension tubing
12. Attach IV solution to stopcock
13. Use 60 ml syringe to administer fluid bolus
14. Flush frequently with 5-10 ml to maintain patency

INTRAVENOUS ADMINISTRATION

AEMT, EMT- I, Paramedic

INDICATIONS

- To access venous circulation

PRECAUTIONS

- Do not attempt at areas of injury or infection
- Splinting devices may be needed to limit motion
- Monitor the IV site for signs of infiltration
- Do not attempt external jugular catheterization unless the vein is visualized

PROCEDURE

1. Prepare equipment
   a. Disinfectant solution
   b. Tourniquet
   c. Crystalloid solution and infusion set OR saline lock
   d. Intravenous catheter
   e. Sterile dressing
   f. Syringe

Extremity Vein

2. Disinfect the largest, most appropriate site
3. Apply the tourniquet
4. Insert catheter at an angle until blood returns
5. Advance the catheter into the vein while removing the needle
6. Attach and irrigate with crystalloid or saline lock
7. Secure catheter and monitor for infiltration

External Jugular Vein

2. Position patient with head turned to side opposite vein
3. Disinfect site
4. Apply finger pressure above clavicle to occlude vein
5. Insert catheter caudally at an angle until blood returns
6. Confirm intravascular location, attach infusion set and secure catheter

KING LTS-D/LT-D – Supraglottic Airway Device

EMT (if agency approved)
AEMT, EMT- I, Paramedic

INDICATIONS

- Advanced airway management by EMTs, AEMT, EMT-I or when endotracheal intubation cannot be accomplished

PRECAUTIONS

- Do not use in patients with an intact gag reflex, with esophageal disease, who have ingested caustic substances, who have a known or suspected foreign body obstruction of the larynx or trachea or who have a tracheostomy
- EMTs must have received agency specific training and certification before use

King Airway is available in eight (8) sizes (6 adult & 2 pediatric)

			Cuff Balloon Volume ml	
Airway Size	**Color**	**Patient Size**	**King LTS-D**	**King LT-D**
Large Adult # 5	Purple	> 6 feet	60-80	70-90
Medium Adult # 4	Red	5-6 feet	50-70	60-80
Small Adult # 3	Yellow	4-5 feet	40-55	45-60
Pediatric # 2.5	Orange	42-52 inches (105-130 cm) or 25-35 kg	n/a	30-40
Pediatric # 2	Green	36-46 inches (90-115 cm) or 12-25 kg	n/a	25-35

PROCEDURE

1. Prepare equipment
   a. High flow oxygen
   b. BVM
   c. King Airway of appropriate size with supplied syringe
   d. Suction
   e. Lubricant (only lubricate posterior side of airway, opposite side from “blue line”)
2. Hyperoxygenate with BVM ventilations for several minutes with supplemental oxygen
3. Remove dentures, loose or broken teeth from airway to prevent puncture of balloon
4. Place patient’s head in a sniffing position, (for suspected cervical spine injuries, patient’s head may remain in neutral position)
5. Insert tube so that the blue orientation line is touching the corner of the mouth
6. Introduce tip into mouth and advance behind base of tongue.
7. As tube tip passes under tongue, rotate tube back to midline (blue orientation line faces chin)
8. Without exerting force, advance tube until base of connector is aligned with teeth or gums.
9. Using the syringe provided, inflate the cuff balloon of the King Airway with the appropriate volume per the above table
10. Attach BMV to the King Airway and while gently bagging the patient to assess ventilation, simultaneously withdraw the King Airway until ventilation is free and easy flowing (large tidal volume with minimal airway pressure)
11. Confirm ventilations by listening for breath sounds, watching for chest rise and monitoring patient’s vital signs and condition
12. Monitor pulse oximetry and end tidal CO_2

NASOGASTRIC/OROGASTRIC TUBE PLACEMENT

Orogastric: EMT- I
Nasogastric: Paramedic

INDICATIONS

- Any pediatric patient who has received assisted ventilation
- Any patient receiving a Combitube with confirmed esophageal placement or King Airway
- To prevent or alleviate abdominal distention in an intubated patient
- Significant poisoning

CONTRAINDICATIONS

- Nasogastric placement in a patient with obvious skull fracture or severe facial injuries
- Any gastric intubation in a patient with ingestion of caustic substances or known esophageal varices

PROCEDURE

1. Prepare equipment
   a. Gastric tubes
      - Less than 1 year 5-8 Fr
      - Pediatric 10-14 Fr
      - Adult 16-18 Fr
   b. Lubricant
   c. Large syringe

Orogastric – with Combitube

2. An EMT-I may only place an orogastric tube after the placement of a Combitube
3. The Combitube **MUST** be confirmed to be an esophageal placement
4. With the BVM on Tube #1, insert the orogastric tube down Tube #2
5. Confirm stomach placement by instilling air and listening to the epigastrium
6. Secure tube
7. Connect to suction at 80 - 120 mm Hg

Orogastric

2. Measure tube from tip of nose to xyphoid process
3. Insert tube into mouth and advance into stomach
4. Confirm location by instilling air and listening to the epigastrium
5. Secure tube
6. Connect to suction at 80 - 120 mm Hg

Nasogastric - Paramedic

2. Measure tube length from earlobe to tip of nose and then to xyphoid process
3. Select the most open nostril for placement
4. Insert the lubricated tube directing it posterior and slide it along the nasal pharynx into the esophagus and into the stomach
5. Confirm location by instilling air and listening to the epigastrium
6. Secure tube
7. Connect to suction at 80 - 120 mm Hg

NEBULIZER ADMINISTRATION

AEMT, EMT- I, Paramedic

INDICATIONS

- Bronchospasm due to COPD exacerbation, CHF, Asthma or Anaphylaxis

PRECAUTIONS

- Patients may not tolerate a specific administration method, facemask, mouthpiece or blow-by

PROCEDURE

1. Prepare equipment
   a. Oxygen source
   b. Nebulizer system
   c. Medication
2. Assemble nebulizer T-piece device and attach to oxygen source
3. Add desired medication to nebulizer
4. Run oxygen at 6-10 liters/minute
5. Attach nebulizer T-piece to mouthpiece, facemask or endotracheal tube

PATIENT RESTRAINT

Physical: Emergency Medical Responder, EMT, AEMT, EMT- I, Paramedic
Chemical: Paramedic

INDICATIONS

- To restrain a physically combative patient to facilitate proper medical care and transport
- Patient restraint (physical or chemical) should be used when a patient is exhibiting combative behavior or is a danger to self or others
- Physical or chemical restraint is only to be used to transport a patient under the Implied Consent law, a police arrest or hold or Physicians hold, in which the patient requires ambulance transport for medical treatment or evaluation

PRECAUTIONS

- Positional asphyxia can occur when a patient's body positioning causes an inability to breathe or an airway obstruction, this is especially true in the prone position, this may cause apnea, especially in the drugged, physically exerted patient
- Restraints that are too tight may cause permanent vascular or nerve damage
- Handcuffs or flex cuffs applied by law enforcement personnel prior to EMS arrival may be left on providing EMS personnel have the keys, but should be replaced with softer restraints whenever possible
- Use caution with sedative agents on patients who have had a chemical irritant sprayed in their face as airway irritation or laryngospasm may occur

PROCEDURE

1. Sufficient manpower should be present to control patient without injuring the medical personnel
2. Assess the need for using physical restraints prior to administering a chemical restraint
3. Restrain the patient on the stretcher in either a supine or lateral recumbent position to keep the airway open and accessible,
4. Immobilize the patient on a backboard with cervical spine precautions if indicated for possible cervical injury
5. Document circulatory status of physically restrained extremities frequently
6. Have Ativan, Midazolam, Droperidol and Dyphenhydramine prepared for injection
7. All four extremities should be secured even if chemical restraint has been effective, to protect the EMS personnel and the patient from harm
8. Monitor vital signs frequently

PELVIC SLING

Emergency Medical Responder, EMT, AEMT, EMT- I, Paramedic

INDICATIONS

- Stabilization of suspected unstable pelvis fractures

PRECAUTIONS

- Once applied, the pelvic sling is to be removed only under the supervision of a Physician

PROCEDURE

1. Remove patient's clothes or objects from pockets and clothing that will be covered by the pelvic sling
2. After visual examination, the pelvic sling is wrapped around the patients pelvis – hips & buttocks - (not abdomen)
3. The pelvic sling is then tightened and securely fastened anteriorly over the pubic symphysis to reduce motion and internal hemorrhage of the unstable pelvis fracture during transport to the hospital
4. Provide further immobilization by placing the patient on a backboard and strapping the patient's knees and the ankles together

******Specific directions and training will depend on the type of pelvic sling used by the agency******

Acceptable methods include

- Bed sheet
- MAST/PASG – abdominal component only
- Commercial devices, such as the SAM Sling®

PORT-A-CATH ACCESS
IMPLANTED CENTRAL VENOUS ACCESS PORTS
Paramedic

INDICATIONS
- To access previously established surgically implanted Port-a-Cath devices

PRECAUTIONS
- This procedure should not be utilized for the sole purpose of TKO or KVO access
- Only appropriate Port-a-Cath needle may be utilized for this procedure
- Ensure aseptic technique. Due to placement, Port-a-Cath can be more susceptible to infection

PROCEDURE
1. Prepare equipment
   a. Gloves
   b. Povidone Iodine swabsticks (3)
   c. Sterile Huber needle (appropriate size and gauge) with attached extension tubing
   d. Sterile 10cc NS flush
   e. Transparent dressing
   f. Alcohol preps
2. Using the first iodine swab cleanse the insertion area from the center out in circular motion
3. Repeat with remaining two (2) iodine swabs, allow area to dry
4. Attach 10cc NS flush to Huber Needle extension tubing
5. Prime tubing to expel air from extension, leave flush attached to tubing, **needle must remain attached to supplied extension tubing prior to entering port**
6. Holding the grip portion of the Huber needle, perpendicular to the portal septum, push the needle firmly through the skin and middle of port until you have reached the full depth of the device
7. Release the clamp on the extension tubing and gently aspirate blood
8. Remove the syringe and attach IV tubing
9. Apply transparent dressing and secure tubing

RAPID SEQUENCE INTUBATION

Paramedic

INDICATIONS

- To provide an airway when it cannot be accomplished because of trismus, combativeness or difficult airway problems in head injured patient, overdose, respiratory difficulty, status epilepticus or other situations where airway protection is required and cannot be accomplished by normal airway management procedures

PRECAUTIONS

- Must have an alternate method of airway management available.
- May cause or potentiate bradycardia
- Succinylcholine Chloride may cause malignant hyperthermia
- Paralysis does not stop the brains seizure activity

PROCEDURE

2-person procedure

1. Prepare equipment
   a. IV, cardiac monitor and SpO2
   b. Suction
   c. Laryngoscope, ET tubes (3 sizes), stylet
   d. Alternate airways
2. Pre oxygenate – Hi-flow oxygen with NRB or BVM if not breathing
3. Premedicate
   a. Lidocaine – 1.5 mg/kg
   b. Atropine – 0.02 mg/kg (minimum dose 0.1mg) for all children $\leq$ 8 years of age or patients whom are bradycardic
4. Sedation
   a. Etomidate – 0.3 mg/kg slow IV push (usual adult dose 20 mg)
   b. Intubate – proceed with intubation if patient is adequately sedated
5. Paralysis - If patient requires additional control for airway management
   a. Rocuronium – defasciculating dose: 5-10 mg
   b. Succinylcholine – 1-1.5 mg/kg (usual adult dose 100-200 mg)
6. Placement and Proof
   a. Place ETT, inflate balloon and secure
   b. Auscultation
   c. Continuous End Tidal CO2 monitoring OR Colormetric device
7. Post intubation
   a. Rocuronium
      - Paralyzing dose: .25-.75 mg/kg (usual adult dose 50-75mg)
      - Continued paralyzing dose: 5-50 mg every 15 minutes or as patient awakens
   b. Midazolam
      - Continued sedation: 1-5 mg

SPINAL CLEARANCE IN THE PREHOSPITAL ENVIRONMENT

Paramedic ONLY

INDICATIONS

- Patients with a risk of cervical, thoracic or lumbar spine injury based on mechanism of injury and findings of spinal pain, tenderness or neurologic abnormality
- A means to rule out the need for cervical spine immobilization on certain patients

PRECAUTIONS

- Any patient immobilized prior to transporting ambulance arrival is to remain immobilized
- Underestimating mechanism of injury
- Patient must meet **ALL** criteria without exception
- If any uncertainty exists regarding the accuracy of assessment then you must error on the side of caution and fully immobilize the patient
- Spinal immobilization is always indicated in trauma patients in the absence of completing this procedure and documenting its completion

PROCEDURE

1. Palpate midline spine for tenderness
   a. Cervical spine tenderness is present if the patient reports pain on palpation to the posterior midline neck from the nuchal ridge to the prominence of the first thoracic vertebra, or if the patient reports pain with direct palpation of any spinous process
2. Evidence of intoxication
   a. Patients will be considered intoxicated if they have either of the following: recent history provided by patient or an observer of intoxication or intoxicating ingestion, evidence of intoxication on exam such as odor of alcohol, slurred speech, ataxia or any behavior consistent with intoxication
3. Normal level of alertness
   a. Altered LOC can include any of the following: GCS of 14 or less, any disorientation to person, place time or event, inability to remember 3 objects at five minutes, delay or inappropriate response to stimuli or other findings
4. No focal neurologic deficit
   a. Any focal neurological finding on motor or sensory examination, this should include checking patient for range of motion while supporting patients head, if cervical or any spine pain is discovered during the course of assessment then immobilization is indicated
5. No painful distracting injuries
   a. Any condition thought by the Paramedic to be producing pain sufficient to distract the patient from a secondary injury to any portion of the spine, such injuries may include, but are not limited to: any long bone fracture, large laceration, degloving injury, crush injury, abdominal injury requiring surgical consultation or any injury causing acute functional impairment
   b. Any injury can be deemed distracting by the Paramedic if it is thought to have the potential to impair a patient's ability to appreciate other injuries
6. Utilize the chart which follows the NEXUS Protocol on the following page as a guide for ruling out the need for spine immobilization

SPINAL CLEARANCE IN THE PRE-HOSPITAL ENVIROMENT

1. **Reliable Patient Exam**

Is Pt calm?
Is Pt cooperative?
Is Pt sober?
Is Pt Alert/Oriented X4?

Does your pt suffer from..
Acute stress reaction
Abnormal Mental Status
Intoxication
Brain Injury
Painful Distracting Injury
Communication Difficulties

→ **YES**

Yes

2. **Sensory Exam**

Is there any posterior midline Cervical spine pain? → **YES** →

NO

C-spine tenderness to direct palpation? → **YES** →

NO

3. **Motor Exam**

Neuro exam(CMS) → **ABNORMAL** →

Normal

Hand/Foot strength → **ABNORMAL** →

Normal

Range of Cervical Motion normal **Painless?** → **PAINFUL** →

NO SPINAL IMMOBILIZATION REQUIRED

IMMOBILIZE

SPINAL IMMOBILIZATION

Emergency Medical Responder, EMT, AEMT, EMT- I, Paramedic

INDICATIONS

- Patients with a high risk of cervical, thoracic, or lumbar spine injury based on neck/back tenderness, neurological abnormality (weakness, numbness or paralysis), or mechanism of injury
- Patients with significant injury above clavicles or multiple trauma

PRECAUTIONS

- Be prepared to tip patient or entire board on side if patient vomits
- Neurogenic shock is likely with significant spinal cord injury, raise foot of backboard to increase systolic pressure to greater than 90
- Use Trendelenburg cautiously, if at all in high-level cord injuries, this position places pressure on diaphragm, limiting patient's ability to breathe
- Think of internal bleeding if shock is severe
- Injury above the level of T-8 removes tenderness, rigidity, and guarding as clues to abdominal injury
- In the severely traumatized patient requiring immediate life saving intervention and rapid transport, rigid cervical collar, continuous manual in-line support during rapid extrication onto a long spine board and transport may be substituted for more time consuming methods
- Airway problems, respiratory difficulty, and shock are common in the traumatized patient, be prepared to treat issues as they arise
- Geriatric patients (over 70) should cause a higher index of suspicion for the EMT due to physiologic aging changes
- Pregnant patients over 5 months gestation fully immobilized on long backboard shall be transported with long back board slanted to left at 30 ° angle, to reduce pressure on inferior vena cava

PROCEDURE

Emergency Medical Responder, EMT-B, AEMT, EMT- I

1. Assess and support ABCs with manual spine care until fully immobilized
2. Oxygen therapy; assist ventilations as needed
3. Immobilize thoracic and lumbosacral spine with spine board; patient's entire body should be securely immobilized by straps affixed directly to the long back board
4. Move patient as little as possible and always move as a unit
5. Secure head only after torso
6. Patients secured in KED additionally should be secured to long back board
7. Use approved padding device (i.e. Back Raft) on all immobilized patients
8. Monitor vitals and transport

Paramedic

1. Patients with thoracic, lumbar or sacral pain may be secured to long board without presence of cervical collar or cervical immobilization device

SYNCHRONIZED CARDIOVERSION

Paramedic

INDICATIONS

- Tachycardia with ventricular rate >150
- Tachycardia with serious signs and symptoms including but not limited to: altered level of consciousness, hypotension, respiratory distress

PRECAUTIONS

- Cardiac arrest
- Electrical therapy is dangerous and can harm responders or others that are in contact with patient
- Cardioversion is painful, pain management and sedation is recommended if time and patient condition allows
- Ensure conductive material is away from patient i.e. Nitroglycerin patches, water, metal floor or furniture etc

PROCEDURE

1. Prepare equipment
   a. Attach electrodes to patient
   b. Attach defibrillation pads to patient
   c. IV/IO with crystalloid
2. Sedation
   a. Midazolam or Ativan
3. Analgesia
   a. Morphine or Fentanyl
4. Activate sync mode on monitor
5. Perform synchronized cardioversion

   Adult synchronized cardioversion

   a. Atrial flutter, supraventricular tachycardia or wide complex tachycardia
      Zoll: 70-75J / 120J / 150J / 200J
      PhysioControl: 100J / 200J / 300J / 360J
   b. Atrial fibrillation
      Zoll: 120J / 150J / 200J
      PhysioControl: 200J / 300J / 360J

   Pediatric synchronized cardioversion

   a. 0.5 – 1 J/kg initial
6. Unsynchronized cardioversion if the defibrillator fails to deliver a shock

TOURNIQUET

Emergency Medical Responder, EMT, AEMT, EMT- I, Paramedic

INDICATIONS

- Life threatening bleeding from an extremity wound that is not controllable by direct pressure
- Life threatening bleeding from a complete or nearly complete amputation proximal to the hand or foot

CONTRAINDICATIONS

- Non-extremity bleeding site

PRECAUTIONS

- Use only commercially provided tourniquets
- Document time of tourniquet application and location
- Notify receiving hospital as soon as possible that a tourniquet has been applied
- **DO NOT** loosen a tourniquet after applied
- The tourniquet is to be removed only under the supervision of a Physician

PROCEDURE

1. Remove patients clothing to expose the extremity and bleeding site
2. Apply tourniquet just proximal to the bleeding wound
3. Do not cover the tourniquet
4. Apply tourniquet tight enough to occlude arterial blood flow
5. Monitor bleeding site for the return of significant bleeding

TRACHEOSTOMY CARE

Paramedic

INDICATIONS

- Tracheostomies must be open and unobstructed in order for a patient to breathe
- Tracheostomy crisis will develop for a variety of reasons: occlusion from mucus plug, accidental removal of tracheostomy or placement of tracheostomy into a false passage, family members usually have extra supplies at the house

PRECAUTIONS

- When placing a whole tracheostomy tube into the stoma you may inadvertently insert it into the soft tissue and create a false passage
- Patients may require intubation through the stoma in order to secure their airway

PROCEDURE

1. Prepare equipment
   a. BVM
   b. Oxygen
   c. Tracheal suction catheter
   e. Brand new tracheostomy tube
   f. Endotracheal tube
2. Assess patients breathing

Apneic patient

3. Attach bag valve mask to tracheostomy tube and attempt to ventilate, continue this if adequate
4. If inadequate results, attempt to suction tracheostomy with sterile technique
5. Re-ventilate
6. If no improvement, remove inner cannula and suction tracheostomy tube
7. Re-ventilate
8. If no improvement, remove the whole tracheostomy tube
9. Cover stoma and attempt to ventilate with BVM over mouth
10. If this works, place a brand new tracheostomy tube, if available, and attempt to ventilate, if this works, continue
11. If does not work, intubate orally, cover stoma and continue to ventilate

Breathing but ventilating poorly

3. Suction tracheostomy tube with sterile technique
4. If no improvement, remove inner cannula
5. Reassess
6. If no improvement, remove the whole tracheostomy tube and insert a brand new tracheostomy tube. If no tracheostomy tube is available, cut an ET tube to same length as patient's tracheostomy tube and pass through stoma
7. Reassess
8. Ventilate or oxygenate as needed

TRANSPORT VENTILATOR

Paramedic

INDICATIONS

- Any patient requiring short-term ventilatory support while being monitored by a Paramedic trained in the use of the ventilator

PRECAUTIONS

- Do not leave patient unattended
- Transport ventilators are for resuscitation management and should not be used as an unattended automatic ventilator
- Recognize changes in atmospheric pressure and altitude as it affects tidal volume
- Trauma patients with a possible Pneumothorax

CONTRAINDICATIONS

- **Auto Vent 3000**
  Patients under 20 Kg.
  Patients requiring greater than 50 cmH_2O
- **Crossvent 3**
  Not for use with infants

PROCEDURE

1. Intubate patient and/or confirm placement
2. Continue with manual ventilations
3. Prepare equipment. (Use the same setting if the patient is already on a hospital ventilator)
   a. High flow oxygen
   b. Prepare ventilator
   c. Check peak pressure
4. Set breaths per minute (BPM)
   a. 12 for an adult
   b. 20 for a child
5. Set inspiratory time (if equipped)
6. Set tidal volume 8-10 ml/kg
7. Occlude the outlet port (check peak pressure)
8. Connect to patient
9. Assess patient, chest rise and fall, lung sounds, Pulse Oximetry, end tidal CO_2 capnometry
10. Change in the patient's lung compliance may result in ventilatory changes, in such an event, reassess and make the appropriate clinical adjustments

UMBILICAL VEIN CATHETERIZATION

Paramedic

INDICATIONS

- Preferred site of vascular access during neonatal resuscitation

PRECAUTIONS

- Sterile procedure
- Cannulate the umbilical vein, not the umbilical arteries. Do not insert the cannula more than 6 cm

PROCEDURE

1. Prepare equipment
   a. 5 Fr umbilical catheter or 2" 16 ga IV catheter without needle
   b. Three-way stopcock
   c. Syringe
   d. Scalpel
   e. Disinfectant solution
   f. Crystalloid
   g. Sterile gauze pad
   h. Tape
   i. Umbilical tape or ligature
   j. Sterile drape
2. Attach NS flush and three-way stopcock to umbilical catheter and flush
3. Sterile prep and drape the cord area
4. Apply mild ligature pressure to umbilical cord near skin to prevent bleeding
5. Cut the cord approximately 2 cm from the skin, leaving a clean, smooth end
6. Insert catheter in the large, thin-walled, single vessel for 2 cm then check for blood return.
   a. If no blood returns, keep advancing in 1 cm increments until blood return or catheter has been inserted 6 cm
   b. Do not use catheter if no blood return
7. Once you have blood return, secure catheter with tape, cover with gauze pad
8. Frequently flush with NS flush 1-2ml

VAGAL MANEUVERS

EMT- I, Paramedic

INDICATIONS

- Narrow complex tachycardias in stable patients

CONTRAINDICATIONS

- An unstable patient, patient refusal, altered mental status, or any cardiac dysrhythmia except for a narrow complex tachycardia

PROCEDURE

1. Trendelenburg position
   a. Raise patients feet 6-18 inches relative to his or her head
2. Increased intra-abdominal pressure
   a. Ask patient to cough
   b. Ask patient to close his or her mouth and bare down “like having a bowel movement”, like having a baby”, “like blowing up a balloon”, or “tighten up your stomach muscles and push”
3. Vagal stimulation
   a. Ask the patient to swallow water
   b. Ask the patient to splash ice water on his or her face

SECTION 5

Critical Patient Transfers

CHEST TUBE MAINTENANCE

Paramedic

INDICATIONS

- Removing free air from the pleural space
- Draining fluid (such as blood) from the pleural space
- Instilling medication into the pleural space
- Thoracostomy tubes are catheters surgically placed through the chest wall into the pleural space
- The Paramedic may not perform placement of thoracostomy tubes

PRECAUTIONS

- Patients with chest tubes require special attention to prevent obstruction or disconnection during transport
- Avoid pulling on thoracostomy tube to prevent accidental dislodging of the tube
- Keep drainage tubing in view and do not permit dependent loops or kinks to form, as this will interfere with flow of drainage leading to increased pleural pressure or formation of clots
- Do not disconnect drainage system or puncture tubing. Tape all connections securely to prevent violation of sterility and loss of negative drainage pressure
- Keep dressing at insertion site secure to prevent air entering the pleural space and maintain aseptic technique

PROCEDURE

1. Prior to transport ensure that the chest tubes are well secured to the patient with sutures and tape, that all connections are well secured, and that the drainage/suction device is operating correctly
2. It is important to maintain the drainage/suction device below the level of the chest tubes at all times to prevent reflux of drainage into the chest
3. It is important to maintain the device in an upright position to ensure delivery of appropriate suction or maintenance of water seal
4. If suction is ordered to be maintained for transport, ensure that the water level in the suction device is at the appropriate level for the ordered suction pressure, and that the suction chamber is having continuous vacuum, indicated by light bubbling
5. Portable battery powered suction devices are not designed to provide continuous high-pressure suction and will tend to overheat if run continuously, they should be used for chest tube suction only as bridging devices between connections to the main suction in the ambulance
6. Ensure that the suction unit is functioning properly in the transporting unit prior to transport

COMPLICATIONS

Complications require immediate intervention, contact the sending hospital to report the problem, the intervention taken and to request further treatment options, below is a list of common problems and appropriate steps to take

- **Accidental withdrawal of tube**
  a. Place occlusive dressing over insertion site
- **Tube becomes partially dislodged**
  a. Clamp the tube close to the chest wall and observe for signs and symptoms of a Tension Pneumothorax
  b. If a Tension Pneumothorax occurs, unclamp the tube long enough for relief of symptoms

- **Malfunction with air leakage**
  a. Clamp the tube close to the chest wall and observe for signs and symptoms of a Tension Pneumothorax
  b. If a Tension Pneumothorax occurs, unclamp the tube long enough for relief of symptoms
- **Kinks or compression of the drainage tube**
  a. Remove kink or compressing object
- **Blocked due to clots**
  a. Observe for signs and symptoms of a Tension Pneumothorax
- **Drained fluid reenters the pleural space**
  a. Place the receptacle below the level of the chest to facilitate gravity drainage
- **Hemorrhage occurs through the chest tube**
  a. Observe for signs and symptoms of shock and treat according to protocol
  b. Divert to the closest appropriate facility

FOLEY CATHETER

Paramedic

INDICATIONS

- Initiate placement of a urinary catheter for trauma patients in a prehospital setting who have received diuretics and where transport time is greater than 30 minutes

PRECAUTIONS

- This is a sterile technique
- Insertion of foley catheter into a male with an enlarged prostate may be impossible
- Use extreme caution with suspected pelvic fractures; do not insert if blood at urethral meatus

PROCEDURE

1. Prepare equipment
   a. 16 Fr catheter tray
2. Open outer wrapper of kit with sterile technique
3. Remove sterile towel and place under patient
4. Put on gloves with sterile technique - everything else is sterile
5. Open disinfectant solution and pour over cotton balls
6. Fill balloon with 6-10cc of saline to check patency, then remove saline
7. Lubricate foley with water soluble jelly
8. Remove catheter from wrapper; place catheter back in sterile box
9. Place foley catheter box within reach

Female patients

10. Have patient bend knees and let legs fall open (as if having a baby)
11. Use non-dominant hand to spread labia apart - this hand is no longer sterile
12. Wipe from top to bottom with one cotton ball at a time, noting location of urethra

Male patients

10. Hold penis with non-dominant hand - this hand is no longer sterile
11. Pull back foreskin and clean head of penis with one cotton ball at a time
12. Clean in circular motion

All patients

13. Insert catheter into urethra and advance until urine flows, then advance another 1-2 inches
14. Inflate balloon with 6-10 cc of saline and secure tubing to patient's leg
15. Monitor urinary output

HALOPERIDOL

TRADE NAME
Haldol

ACTION
Haloperidol is a potent neuroleptic and antipsychotic agent

INDICATIONS
- Sedation and restraint of patients who have a head injury are combative or intubated. Obtained from hospital with Physician orders

CONTRAINDICATIONS
- Known sensitivity to Haloperidol
- Prolonged QT interval
- Pregnancy

SIDE EFFECTS & PRECAUTIONS
Hypotension. Acute Dystonic Reactions are best treated with Diphenhydramine

ROUTE & DOSAGE

Paramedic

Adult: Administer 2.5 mg to 5 mg IV push or IM
May repeat up to 10 mg maximum

Pediatric: 0.03-0.07 mg/kg slow IV or IO
Maximum 2.5 mg

LARYNGEAL MASK AIRWAY (LMA)

Paramedic

INDICATIONS

- Inability to intubate or adequately ventilate a patient

PRECAUTIONS

- Incomplete protection of the airway; the device is only partially suitable for positive pressure ventilation
- Patients at high risk for aspiration such as extended BVM ventilation, pregnant, morbid obesity or upper GI hemorrhage

CONTRAINDICATIONS

- Intact gag reflex

PROCEDURE

1. Pre-oxygenate for 2 minutes and suction patient prior to LMA insertion
2. Select appropriate size
   a. Size 1– infants up to 5 kg
   b. Size 1.5 – infants 5-10 kg
   c. Size 2 – infants and children 10-20 kg
   d. Size 2.5 – children 20-30 kg
   e. Size 3 – children 30-50 kg
   f. Size 4 – adults 50-70 kg
   g. Size 5 – adults 70-100 kg
3. Check cuff of LMA for leakage
4. Carefully deflate cuff of LMA, avoiding wrinkles
5. Place patient's head in sniffing position
6. Open patient's airway
7. Use index finger to press LMA against palate
8. Advance LMA into the pharynx ensuring tip remains flattened
9. Avoid pushing the patient's tongue backwards
10. Use index finger to press LMA into posterior wall
11. Guide LMA into position
12. Secure position of LMA with opposite hand and remove index finger from airway
13. Gently press the LMA posteriorly to ensure full insertion
14. Carefully inflate LMA with appropriate amount of air
15. Confirm placement

NITROGLYCERIN DRIP

ACTION
Organic Nitrate and potent vasodilator with anti-anginal, anti-ischemic, antihypertensive effects, drug of choice for unstable angina, MI, and CHF associated with MI

PRECAUTIONS
- Reduce dose if hypotension occurs
- Reduce dose gradually to avoid rebound symptoms

CONTRAINDICATIONS
- Right sided Myocardial Infarction
- Severe Anemia
- Hypotension or uncorrected hypovolemia
- Cerebral hemorrhage, head trauma or increased cranial pressure
- Closed Angle glaucoma
- Pericardia Tamponade or constrictive Pericarditis
- Patient on Erectile Dysfunction medications

PROCEDURE
1. Confirm prescribed dosage and concentration of drug with sending facility
2. Confirm pump dose being administered
3. Assure enough medication for length of transfer
4. Protect medication from light and bottle breakage
5. If patient has increased chest pain, increase in increments of 5 mcg until pain is relieved
6. If patient becomes hypotensive, reduce in increments of 5 mcg until BP is stabilized
7. Consider fluid challenge prior to reducing Nitroglycerin, ensure clear lung sounds prior and during bolus
8. Do not administer other medications in Nitroglycerin line
9. When possible ensure or establish 2nd access site

ROUTE & DOSAGE
EMT- I, Paramedic

ADMINISTRATION	CONCENTRATION	
	100 mcg/ml	200 mcg/ml
Dose in mcg/min	Flow rate in ml/hr	
5	3	1.5
10	6	3
15	9	4.5
20	12	6
30	18	9
40	24	12
50	30	15
60	36	18
70	42	21
80	48	24
90	54	27
100	60	30

PACKED RED BLOOD CELLS/BLOOD PRODUCTS

ACTION
Red blood cell replacement

INDICATIONS
- Significant blood loss
- Physician order only

CONTRAINDICATIONS
- Any misidentification or inconsistency in labeling of patient or blood
- Religious Objection - Jehovah's Witness

SIDE EFFECTS & PRECAUTIONS
All patients are at risk for Transfusion Reactions/Anaphylactic Reactions, Transfusion Reactions can occur with most blood products but are most common with whole blood, Transfusion Reactions can occur with O-neg blood due to the presence of "minor factors", Transfusion Reactions often begin with anxiety, fever, shortness of breath or Uticaria (Hives), if untreated Hemolysis, Anaphylaxis and Kidney Failure can result, In case of suspected transfusion reaction **immediately** stop the transfusion and remove the entire infusion set from the IV catheter, bag and save the blood and infusion set for later analysis, connect a new infusion set with normal saline and infuse at 100cc/hr or more to maintain blood pressure, Diphenhydramine 50 mg IV will help control the reaction, use Epinephrine 1:1,000 0.3mg SC to maintain blood pressure if necessary, in case of severe reaction use Furosemide 40mg IV and ongoing saline infusion to maintain adequate urine output

HOW SUPPLIED
Packed cells 250ml/bag

ROUTE & DOSAGE

Paramedic
- Simultaneous intravenous saline infusion
- Use appropriate tubing
- Watch for signs of transfusion reaction
- Take pre-transfusion temperature then record temperature 15 min into the transfusion
- Repeat this procedure for each unit transfused, document this with vital signs on accompanied paperwork as well as PHCR
- Maintain and complete paperwork for each unit that was transfused
- Keep one copy with the patient care record
- Return

PROPOFOL

TRADE NAME
Diprivan

ACTION
Sedation

INDICATIONS
- By Physician order only
- Maintenance of sedation in ventilated patients

CONTRAINDICATIONS
- Known sensitivity to Propofol
- Allergy to soybean oil
- Allergy to egg lecithin
- Allergy to glycerol
- Use in a non-intubated patient
- Age less than 3 years

SIDE EFFECTS & PRECAUTIONS
Will cause profound decrease in CNS activity, hypotension and respiratory depression particularly if used with sedatives or narcotics, rarely causes increase in ICP, use with caution in head injured patients or those with acute CVA decrease dose 20-50% if age greater than 55 years or debilitated

ROUTE & DOSAGE

Paramedic
- 5 - 50 mcg/kg/min
- Start at 5 mcg/kg/min for 5 minutes then increase 5-10 mcg/kg/min every 5-10 minutes until desired level of sedation is achieved

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 6

Coos County EMS Mass Casualty Incident (MCI) Planning Guide

Coos County EMS Mass Casualty Incident Planning Guide

The purpose of this planning guide is to assist EMS providers in developing a response plan to address management of a MCI using the principles of the Incident Command System (ICS).

DEFINITION

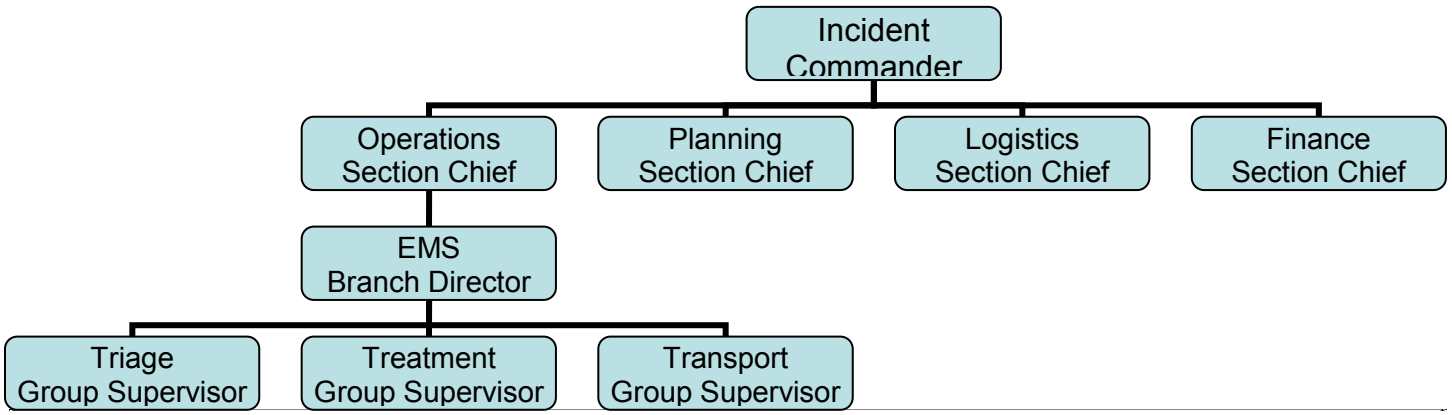
An MCI is an incident with multiple casualties that overwhelms the available resources of the responding agencies.

NOTIFICIATION

1. A “caller” notifies 911 that an incident has occurred.
2. The dispatch center/s dispatches the agencies necessary to respond to the incident.
3. The dispatch center/s provide updates to responding agencies.
4. The first agency on scene assumes the role of Incident Commander.
5. The Incident Commander will notify the closest or designated hospital/s of the estimated number of patients involved.

INCIDENT COMMAND SYSTEM

1. The **Incident Commander** is in charge of the incident.
2. The **Operations Section Chief** manages the operations of the incident. The Operations Section Chief receives direction from the Incident Commander.
3. The **EMS Branch Director** is responsible for the Emergency Medical Operations during the incident. Depending on the size of the incident and available personnel, the EMS Branch Director may further delegate and assign their duties to a Triage Group Supervisor, a Treatment Group Supervisor and a Transportation Group Supervisor. The EMS Branch Director receives direction from the Operations Section Chief.
4. The **Triage Group Supervisor** is responsible for initiating and directing the Triage Group, which is responsible for the rapid assessment and categorization of all patients. The Triage Group Supervisor receives direction from the EMS Branch Director.
5. The **Treatment Group Supervisor** is responsible for initiating and directing the Treatment Group, which will provide on-scene treatment of patients. The Treatment Group Supervisor receives direction from the EMS Branch Director.
6. The **Transportation Group Supervisor** is responsible for ensuring that all patients are transported to the appropriate facility. The Transportation Group Supervisor receives direction from the EMS Branch Director.



FIRST IN CHECKLIST FOR EMS MCI RESPONSE

ARRIVAL

☐ Park vehicle and position yourself and other responders upwind, upgrade and at a safe distance

FIRST IN REPORT

☐ Identify yourself and your unit via radio
☐ Give the “First In Report” via radio and include the following information
- ☐ Description and exact location of incident
- ☐ Possibility of chemical exposure or terrorist act if suspected
- ☐ Type and number of structure or vehicles involved
- ☐ Presence of fire, spilled liquids, vapor leaks or other hazards
- ☐ Estimated number of injuries or casualties
- ☐ Need for evacuation of public from area

ESTABLISH COMMAND

☐ If first agency to arrive, state that you are assuming command by identifying yourself and naming command. For example “……on scene and I will be Highway 42 and 101 command”
☐ Identify and announce location of command post
☐ Request additional resourced needed immediately, (HazMat, Law Enforcement, Ambulances, Rescue, etc.)
☐ Identify and announce safest approach
☐ Identify and announce location of staging area
☐ Request initial notification to closest hospital

INCIDENT ASSESSMENT

☐ Determine Safety Hazards utilizing Emergency Response Guidebook if appropriate
☐ Remain outside of possible contamination zone
☐ Determine need for immediate evacuation
☐ Attempt to determine contaminant type, by placard, witness statement, type of container etc.
☐ Determine medical, fire and explosion hazard if present and establish perimeters and isolation zones as necessary
☐ Estimate the magnitude of the incident
☐ How many injured?
☐ Severity of injuries?

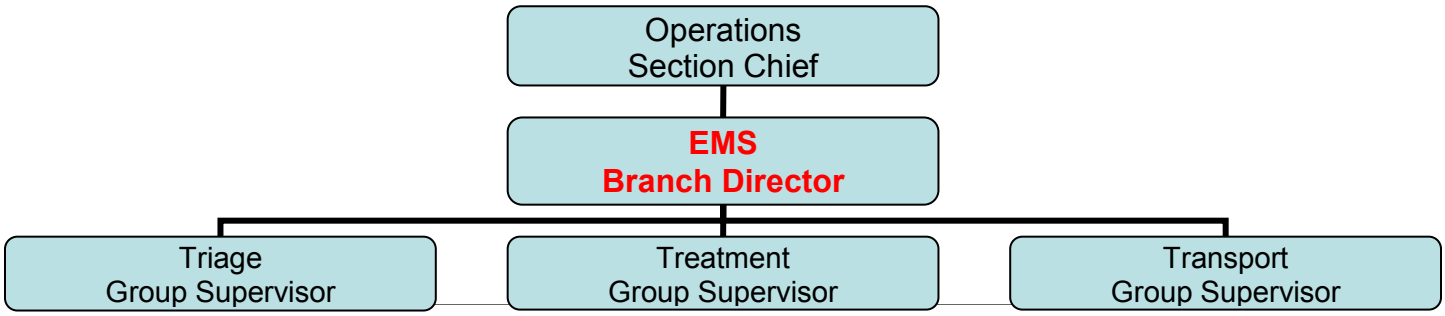
☐ Nature of injuries – burns, blast trauma, water related, etc.
☐ Entrapment of victims
☐ Imminent dangers – further chemical release, collapse of structure/s, explosion, etc.
☐ Request notification to hospital/s, providing update of incident
☐ Determine immediate priorities
☐ Ensure staging area/s are in a safe location

INITIAL ACTIONS

☐ Request communication center to notify all responding units to maintain radio silence unless extremely emergent
☐ Request communication is face-to-face and incoming units respond to staging area for assignment. Responding units do not go directly to the scene
☐ Designate radio frequencies for use on scene
☐ Designate a Staging Area Manager
☐ Designate first arriving EMS crew to begin the triage and treatment of patients if safe

This checklist presents the minimum initial tasks for an Incident Commander to perform during the first minutes of a MCI.
It is imperative that persons assuming command have a working knowledge of the Emergency Response Guidebook for the safety of all responders in the event of a possible hazardous materials incident.

EMS BRANCH DIRECTOR



EQUIPMENT AND SUPPLIES

☐ EMS Branch Director vest
☐ Communications equipment
☐ Personal protection equipment
☐ Clipboard
☐ Paper
☐ Pens/pencils/highlighter
☐ Flashlight

INITIAL DUTIES AND RESPONSIBILITIES

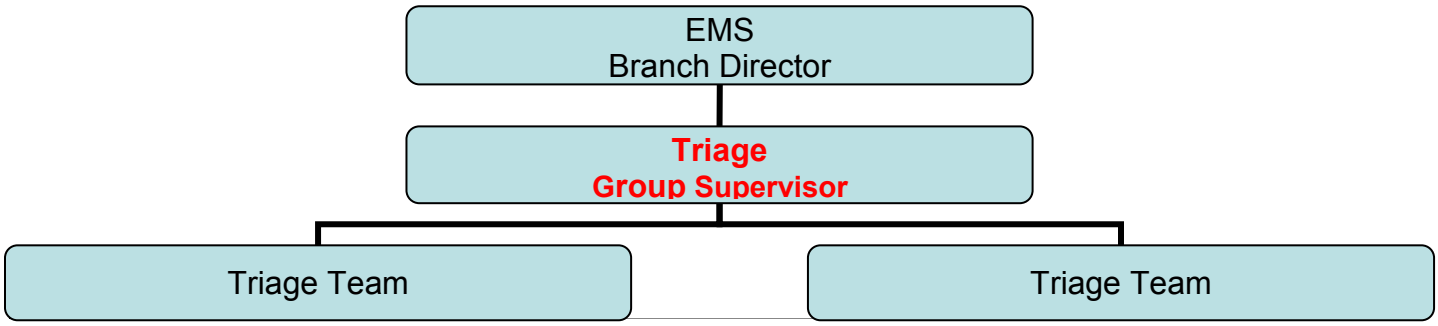
☐ Size-up incident area and scene safety
☐ Put on EMS Branch Director vest
☐ Remain in contact with Operations Section Chief
☐ Supervise personnel assigned to EMS Branch
☐ Ensure safety of EMS responders and others under your command
☐ Assign, brief and direct the following positions if needed
    ☐ Triage Group Supervisor
    ☐ Treatment Group Supervisor
    ☐ Transport Group Supervisor
☐ Determine Treatment and Transport locations
☐ Determine and implement air ambulance landing zone if needed
☐ Determine patient count, including pediatrics and their triage category. Relay this information to the Transport Group Supervisor
☐ Notify the receiving hospital/s with patient counts by triage category and obtain hospital/s capacity to accept patients
☐ Using information from the Triage Group Supervisor, estimate the number of transport units needed and request from Operations Section Chief

☐ Request non-EMS transportation resources for injured from Operations Section Chief if needed

EXTENDED DUTIES AND RESPONSIBILITIES

☐ Request additional medical supplies as needed. Consider mass casualty trailer
☐ Request additional transport units as needed
☐ Estimate and request additional personnel as needed from Operations Section Chief, indicating type and function needed
☐ Request updates as needed from Triage, Treatment and Transportation Group Supervisors
☐ Review group assignments for effectiveness of current operation and modify as needed
☐ Provide updates to the Operations Section Chief
☐ Request Medical Examiner and communicate need for temporary morgue if needed
☐ Monitor EMS personnel for rehabilitation and replacement as needed
☐ Report to Operations Section Chief when triage is completed
☐ Document actions using ICS Forms 206 and 214 and submit to Operations Section Chief

TRIAGE GROUP SUPERVISOR



EQUIPMENT AND SUPPLIES

☐ Triage Group Supervisor vest
☐ Communications equipment
☐ Personal protection equipment
☐ Clipboard
☐ Paper
☐ Pens/pencils/highlighter
☐ Flashlight
☐ Patient triage tags
☐ Triage area identification markers

INITIAL DUTIES AND RESPONSIBILITIES

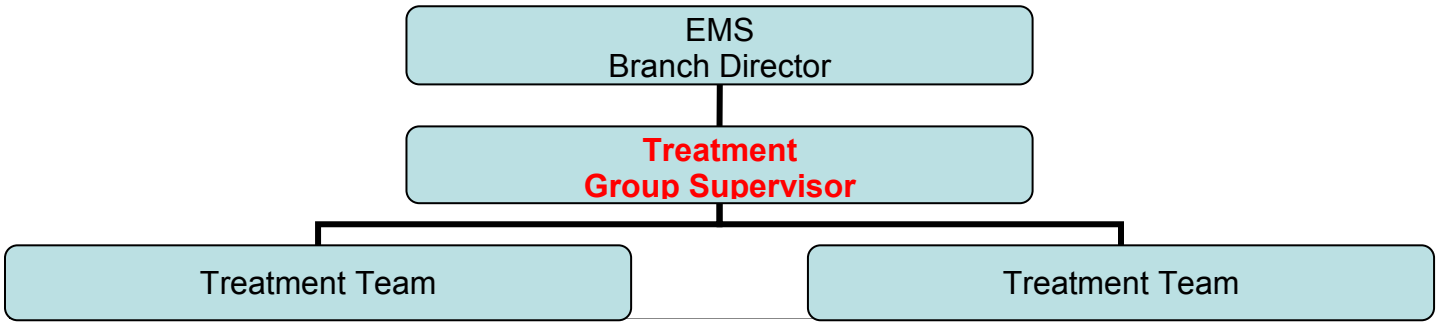
☐ Size up incident and scene safety
☐ Put on Triage Group Supervisor vest
☐ Remain in contact with EMS Branch Director
☐ Establish contact with Treatment Group Supervisor
☐ Assign, brief and direct staff to Triage Team/s
☐ Ensure safety of all members of Triage Team/s and others under your command
☐ Supervise personnel assigned to the Triage Team/s
☐ Select and mark GREEN collection area and announce that anyone who is able to walk is to get up and move to the GREEN collection area
☐ Estimate patient count, including pediatrics, by triage category and report numbers to EMS Branch Director
☐ Assemble and direct Triage Team/s
    ☐ Each patient triaged using a triage system
    ☐ Triage identification is to be placed visibly
    ☐ Triage Team/s report patient count to Triage Group Supervisor

☐ Re-triage as necessary

EXTENDED DUTIES AND RESPONSIBILITIES

☐ Establish system to move patients from Triage to Treatment area/s.
☐ Deceased patients should not be moved
☐ Request adequate personnel to provide triage and movement of all patients
☐ Review group assignments for effectiveness of current operation and modify as needed
☐ Monitor the supply of patient triage supplies and tags/marking system
☐ Provide updates when requested to EMS Branch Director
☐ Monitor personnel for rehabilitation and replacement needs
☐ Document actions using ICS Form 214 and submit to EMS Branch Director
☐ Report to EMS Branch Director when triage duties are completed

TREATMENT GROUP SUPERVISOR



EQUIPMENT AND SUPPLIES

☐ Treatment Group Supervisor vest
☐ Communications equipment
☐ Personal protection equipment
☐ Patient care equipment and supplies
☐ Clipboard
☐ Paper
☐ Pens/pencils/highlighter
☐ Flashlight
☐ Tarps
☐ Cones and barricade tape

INITIAL DUTIES AND RESPONSIBILITIES

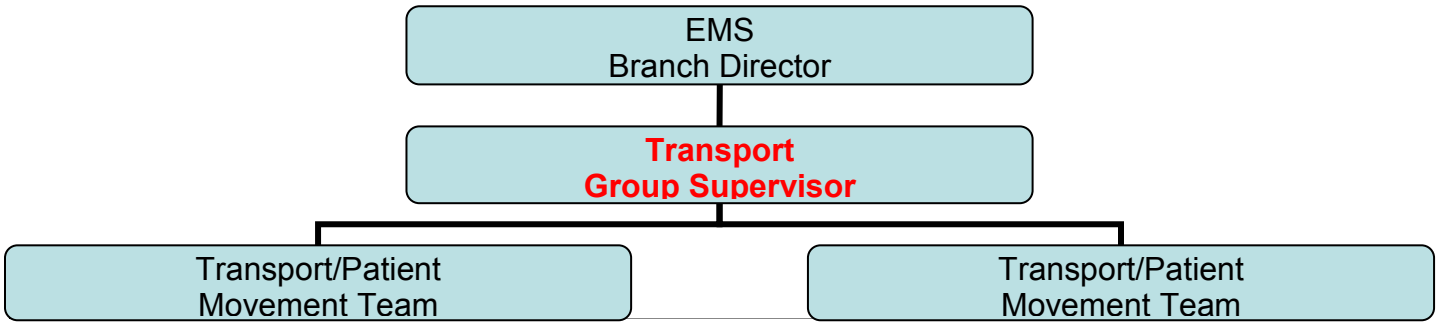
☐ Size-up incident area and scene safety
☐ Put on Treatment Group Supervisor vest
☐ Supervise, brief and direct personnel assigned to Treatment Group
☐ Ensure safety of all members of Treatment Teams and others under your command
☐ Select and mark treatment areas – maintain 3 feet between patients
☐ Advise EMS Branch Director of treatment area locations
☐ Assign Treatment Team leaders to each area if personnel allows
☐ Ensure completion of triage tags and re-triage of patients as needed

EXTENDED DUTIES AND RESPONSIBILITIES

☐ Request adequate personnel to provide treatment of all patients
☐ Review group assignments for effectiveness of current operation and modify as needed

- ☐ Monitor supply of patient treatment equipment and supplies. Request additional supplies, as needed, from EMS Branch Director
- ☐ Establish an area for incoming medical supplies
- ☐ Prioritize patients for movement to Transport Area. Direct patient movement from Treatment Area to Transport Area
- ☐ Keep Transportation Group Supervisor and EMS Branch Director informed of number and category of patients in treatment area
- ☐ Provide updates when requested to EMS Branch Director
- ☐ Monitor personnel for rehabilitation and replacement needs
- ☐ Document actions using ICS Form 214 and submit to EMS Branch Director
- ☐ Report to EMS Branch Director when treatment duties are completed

TRANSPORTATION GROUP SUPERVISOR



EQUIPMENT AND SUPPLIES

☐ Transportation Group Supervisor vest
☐ Communications equipment
☐ Personal protection equipment
☐ Clipboard
☐ Pens/pencils/highlighter
☐ Flashlight
☐ Traffic Cones

INITIAL DUTIES AND RESPONSIBILITIES

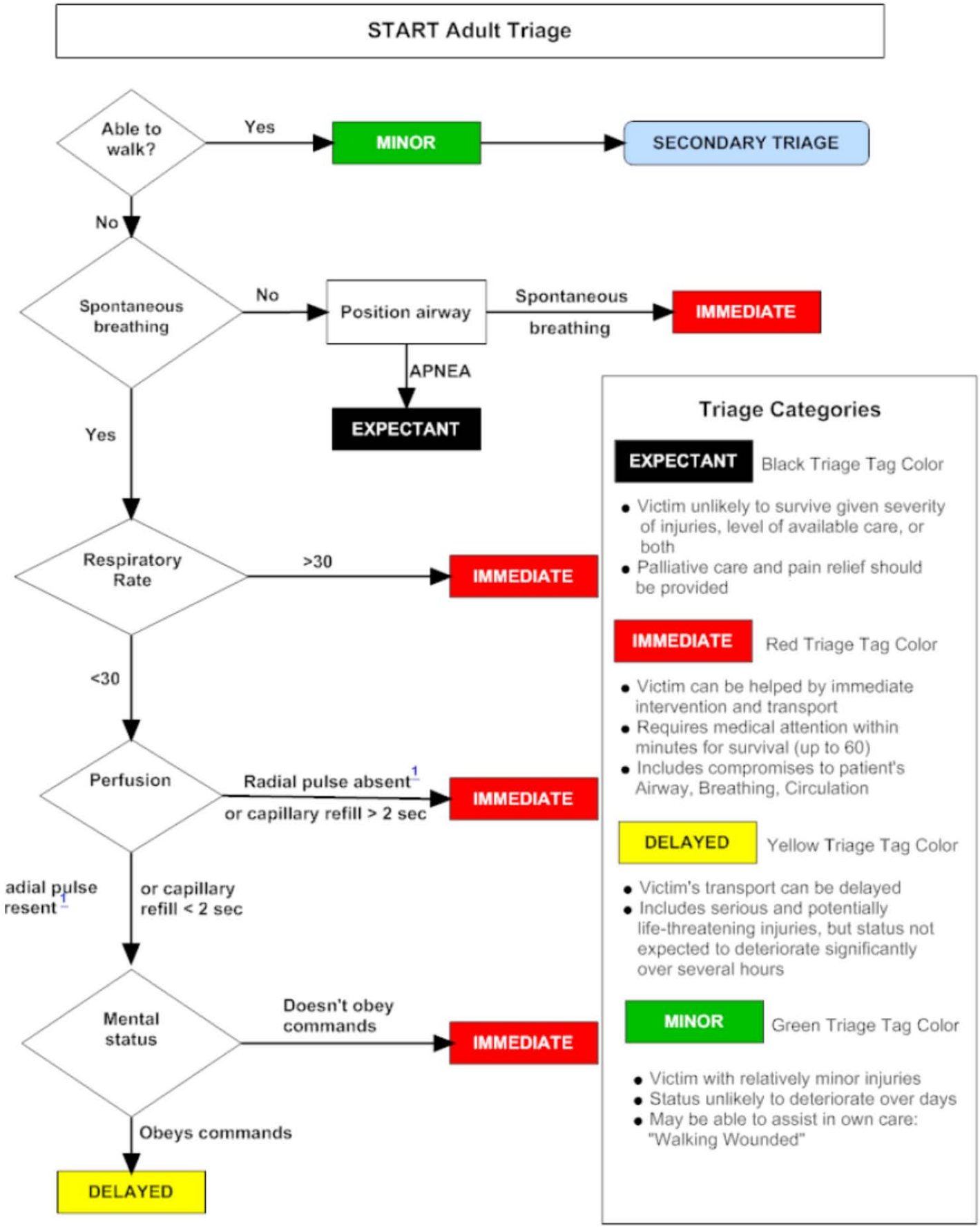
☐ Size-up incident area and scene safety
☐ Put on the Transportation Group Supervisor vest
☐ Ensure safety of members of Transport Patient Movement Teams and others under your command
☐ Establish ambulance staging in a safe area. Avoid the backing of transport units
☐ Assemble, brief, direct and stage Transport Patient Movement Teams
☐ Assign crew to manage landing zone if air transport is to be used.
☐ Request hospital capability information from EMS Branch Director and record information on the Patient Tracking Form
☐ Direct Transport Patient Movement Teams in moving patients from Treatment area to Transport area

EXTENDED DUTIES AND RESPONSIBILITIES

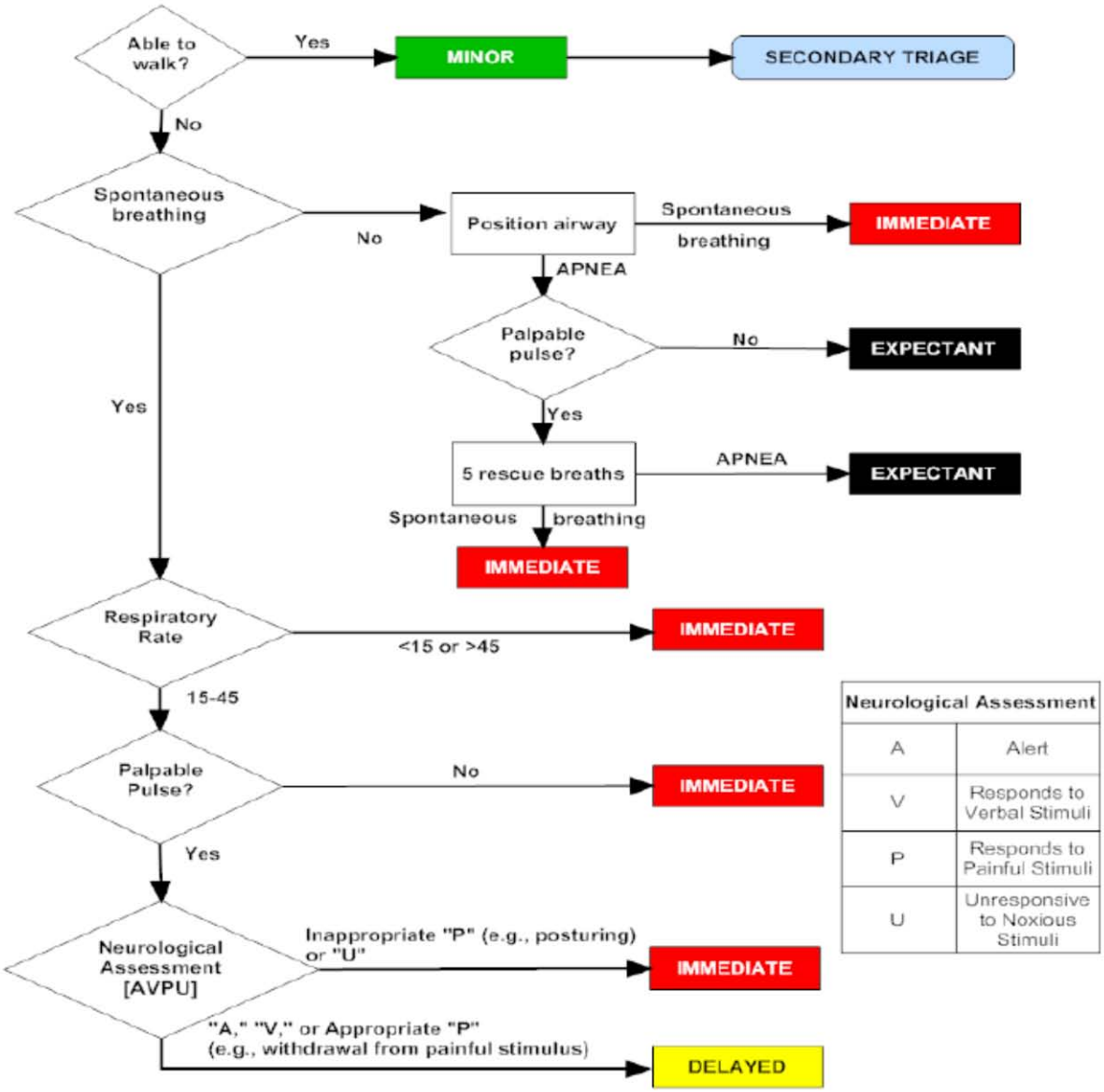
☐ Request adequate personnel to provide movement and transportation of patients
☐ Review group assignments for effectiveness of current operation and modify as needed
☐ Request transport units from EMS Branch Director, as needed

- ☐ Direct movement of transport vehicles in Transport area. **One member of the transport unit must remain with the vehicle at all times**
- ☐ Direct removal of patient care equipment and supplies from transport units, if needed. Stockpile for deliver to patient treatment area
- ☐ Direct movement of patients from Transport area to transport vehicles. The stretchers/cots must be matched to their home vehicles for transport safety
- ☐ Direct transport units to designated hospitals based on capabilities
- ☐ Records the transportation of all patients using the Patient Tracking Form including the triage/patient identification number
- ☐ When patient transport is begun relay to the receiving hospitals the number of victims by treatment priority category (triage tag color) and estimated time of arrival. Provide a brief report with minimum required information
- ☐ Remind transport unit personnel to maintain radio silence unless care requires emergency medical control intervention
- ☐ Instruct transport unit personnel to return to staging when patient transport has been completed
- ☐ Provide updates when requested to EMS Branch Director
- ☐ Monitor personnel for rehabilitation and replacement needs
- ☐ Notify hospital/s and EMS Branch Director when all patients have been transported
- ☐ Document actions using ICS Form 214 and MCI Patient Tracking Form and submit to EMS Branch Director
- ☐ Report to EMS Branch Director when transport duties are completed

TRIAGE INFORMATION


START Adult Triage
Able to walk?
Yes
MINOR
SECONDARY TRIAGE
No
Spontaneous breathing
No
Position airway
Spontaneous breathing
IMMEDIATE
APNEA
EXPECTANT
Yes
Respiratory Rate
>30
IMMEDIATE
<30
Perfusion
Radial pulse absent[1]
or capillary refill > 2 sec
IMMEDIATE
adial pulse resent[1]
or capillary refill < 2 sec
Mental status
Doesn't obey commands
IMMEDIATE
Obeys commands
DELAYED
Triage Categories
EXPECTANT
Black Triage Tag Color
Victim unlikely to survive given severity of injuries, level of available care, or both
Palliative care and pain relief should be provided
IMMEDIATE
Red Triage Tag Color
Victim can be helped by immediate intervention and transport
Requires medical attention within minutes for survival (up to 60)
Includes compromises to patient's Airway, Breathing, Circulation
DELAYED
Yellow Triage Tag Color
Victim's transport can be delayed
Includes serious and potentially life-threatening injuries, but status not expected to deteriorate significantly over several hours
MINOR
Green Triage Tag Color
Victim with relatively minor injuries
Status unlikely to deteriorate over days
May be able to assist in own care: "Walking Wounded"

JumpSTART Pediatric Multiple Casualty Incident Triage



Neurological Assessment	
A	Alert
V	Responds to Verbal Stimuli
P	Responds to Painful Stimuli
U	Unresponsive to Noxious Stimuli

Use JumpSTART if the Patient appears to be a child.

Use an adult system, such as START, if the patient appears to be a young adult.

Triage Categories

EXPECTANT Black Triage Tag Color

- Victim unlikely to survive given severity of injuries, level of available care, or both
- Palliative care and pain relief should be provided

DELAYED Yellow Triage Tag Color

- Victim's transport can be delayed
- Includes serious and potentially life-threatening injuries, but status not expected to deteriorate significantly over several hours

IMMEDIATE Red Triage Tag Color

- Victim can be helped by immediate intervention and transport
- Requires medical attention within minutes for survival (up to 60)
- Includes compromises to patient's Airway, Breathing, Circulation

MINOR Green Triage Tag Color

- Victim with relatively minor injuries
- Status unlikely to deteriorate over days
- May be able to assist in own care: "Walking Wounded"

Comments/Information

Patient's Name

RESPIRATIONS R ☐ Yes ☐ No

PERFUSION P ☐ + 2 Sec. ☐ - 2 Sec.

MENTAL STATUS M ☐ Can Do ☐ Can't Do

Move the Walking Wounded ▶ **MINOR**

No Respirations After Head Tilt ▶ **MORGUE**

☐ Respirations - Over 30 ▶ **IMMEDIATE**

☐ Perfusion - Capillary Refill Over 2 Seconds ▶ **IMMEDIATE**

☐ Mental Status - Unable to Follow Simple Commands ▶ **IMMEDIATE**

Otherwise ▶ **DELAYED**

DMS-CFCA rev 5/12/2006

Made in the USA

ENDORSED BY

PERSONAL INFORMATION	
NAME	
ADDRESS	
CITY ST ZIP	
PHONE	
COMMENTS	RELIGIOUS PREF.

CONTAMINATED

EVIDENCE

MORGUE Pulseless/ Non-Breathing

IMMEDIATE Life Threatening Injury

DELAYED Serious Non Life Threatening

MINOR Walking Wounded

CONTAMINATED

EVIDENCE

Personal Property Receipt/ Evidence Tag *3608318*

Destination _____ *3608318*

Via _____

All Risk™ **TRIAGE TAG** *3608318*

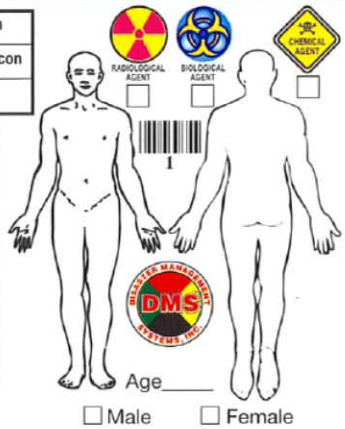
☐S Salivation ☐L Lacrimation ☐U Urination ☐D Defecation ☐G G.I. Distress ☐E Emesis ☐M Miosis

AUTO INJECTOR TYPE ☐1 ☐2 ☐3

AUTO INJECTOR TYPE ☐1 ☐2 ☐3

Yes	No	Primary Decon
Yes	No	Secondary Decon
Solution		

	Blunt Trauma
	Burn
	C-Spine
	Cardiac
	Crushing
	Fracture
	Laceration
	Penetrating Injury



Age____

☐ Male ☐ Female

Other _____

VITAL SIGNS

Time	B/P	Pulse	Respiration

Time	Drug Solution	Dose

MORGUE *3608318* | **MORGUE** *3608318*

IMMEDIATE *3608318* | **IMMEDIATE** *3608318*

DELAYED *3608318* | **DELAYED** *3608318*

MINOR *3608318* | **MINOR** *3608318*

TRIAGE INSTRUCTIONS

TRIAGE TAGS

1. Fill in as much information as available
   - Enter time tag applied
   - Name of patient if readily available
   - Identify male/female
   - Enter home city and state
   - Indicate injuries on diagram on the reverse side of the tag
   - Enter IV or IM treatment rendered
2. Tear off all colored tabs below the determined priority and retain the stubs
3. Attach the tag securely to either the clothing or the body, so that it is clearly visible
4. Identifying numbers should be left with Transportation Group

SORTING

By using START Triage, patients are sorted based on objective criteria on how they present. The severity of injury and therefore treatment and/or transport priority in START Triage is sorted by color code. Triage tags contain these colors so treatment and transport crews can see at a glance which patients have been triage and to what level.

COLOR CODES

- GREEN Minor Injury (walking wounded)
- YELLOW Delayed (can wait)
- RED Immediate
- BLACK Deceased

SCENE SIZE-UP

1. Conduct a scene size up
2. Assure scene safety and well being of other responders
3. Personal protection equipment
4. If there are several patients presenting with the same medical complaint consider HazMat, poisoning etc. Call for appropriate assets
5. Estimate number of patients and communicate to appropriate dispatch or command
6. START Triage where you stand when you come across first patient
7. Clear out the walking wounded by having them walk to designated area
8. If you believe some of the GREEN victims are capable of assisting you, keep them near you to help if needed.
9. Continue by rapidly triaging and appropriately tagging patients as you come across them

*****Remember, further assessment of your patients will be done at various sectors or treatment areas as they are deployed on scene. Patients need to be monitored in their treatment area/s for changes in their condition. Patients can be triaged up or triaged down as their conditions dictate *****

THIS PAGE INTENTIONALLY LEFT BLANK

MCI FORMS

ACTIVITY LOG (ICS 214)

1. Incident Name:	2. Operational Period: Date From: Time From:	Date To: Time To:
3. Name:	4. ICS Position:	5. Home Agency (and Unit):

6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)

7. Activity Log:

Date/Time	Notable Activities

8. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 214, Page 1 Date/Time: _____

ACTIVITY LOG (ICS 214)

1. Incident Name:	2. Operational Period: Date From: Time From:	Date To: Time To:

7. Activity Log (continuation):

Date/Time	Notable Activities

8. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 214, Page 2 Date/Time: _____

ICS 214
Activity Log

Purpose. The Activity Log (ICS 214) records details of notable activities at any ICS level, including single resources, equipment, Task Forces, etc. These logs provide basic incident activity documentation, and a reference for any after-action report.

Preparation. An ICS 214 can be initiated and maintained by personnel in various ICS positions as it is needed or appropriate. Personnel should document how relevant incident activities are occurring and progressing, or any notable events or communications.

Distribution. Completed ICS 214s are submitted to supervisors, who forward them to the Documentation Unit. All completed original forms must be given to the Documentation Unit, which maintains a file of all ICS 214s. It is recommended that individuals retain a copy for their own records.

Notes:

- The ICS 214 can be printed as a two-sided form.
- Use additional copies as continuation sheets as needed, and indicate pagination as used.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Name**	Enter the title of the organizational unit or resource designator (e.g., Facilities Unit, Safety Officer, Strike Team).
4	**ICS Position**	Enter the name and ICS position of the individual in charge of the Unit.
5	**Home Agency** (and Unit)	Enter the home agency of the individual completing the ICS 214. Enter a unit designator if utilized by the jurisdiction or discipline.
6	**Resources Assigned**	Enter the following information for resources assigned:
	• Name	Use this section to enter the resource's name. For all individuals, use at least the first initial and last name. Cell phone number for the individual can be added as an option.
	• ICS Position	Use this section to enter the resource's ICS position (e.g., Finance Section Chief).
	• Home Agency (and Unit)	Use this section to enter the resource's home agency and/or unit (e.g., Des Moines Public Works Department, Water Management Unit).
7	**Activity Log** • Date/Time • Notable Activities	• Enter the time (24-hour clock) and briefly describe individual notable activities. Note the date as well if the operational period covers more than one day. • Activities described may include notable occurrences or events such as task assignments, task completions, injuries, difficulties encountered, etc. • This block can also be used to track personal work habits by adding columns such as "Action Required," "Delegated To," "Status," etc.
8	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

MEDICAL PLAN	1. Incident Name	2. Date Prepared	3. Time Prepared	4. Operational Period

5. Incident Medical Aid Station

Medical Aid Stations	Location	Paramedics Yes	Paramedics No

6. Transportation

A. Ambulance Services

Name	Address	Phone	Paramedics Yes	Paramedics No

B. Incident Ambulances

Name	Location	Paramedics Yes	Paramedics No

7. Hospitals

Name	Address	Travel Time Air	Travel Time Ground	Phone	Helipad Yes	Helipad No	Burn Center Yes	Burn Center No

8. Medical Emergency Procedures

Prepared by (Medical Unit Leader)	10. Reviewed by (Safety Officer)

Coos County Emergency Services Multiple Casulaty Incident Patient Tracking Form

Date:_____ Incident Name:_____ Location:_____

	Tag#	Destination	Category (G,Y,R,B)	Chief Complaint	Transport Unit/Agency	Transport Method	Age/DOB	Sex	Time Left Scene	Notes
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

APPENDIX

COOS COUNTY EMS APPROVED ABBREVIATIONS

A-fib	atrial fibrillation
AAA	abdominal aortic aneurysm
ABD	abdomen
AMA	against medical advice
ASA	aspirin
BBB	bundle branch block
BAH	Bay Area Hospital
bm	bowel movement
BP	blood pressure
BS	breath sounds
BT	bowel tones
BVM	bag valve mask
°C	Celsius/centigrade
CA	carcinoma
CABG	coronary artery bypass graft
cc	cubic centimeter
C/C	chief complaint
CHF	congestive heart failure
CHI	closed head injury
cm	centimeter
CMS	circulation, movement & sensation
CO	carbon monoxide
C/O	complains of
CO2	carbon dioxide
COA	conscious, oriented, alert
CBG	capillary blood glucose
COPD	chronic obstructive pulmonary disease
CP	chest pain or cerebral palsy
CSF	cerebral spinal fluid
CPR	cardiopulmonary resuscitation
CT	computerized tomography
CVA	cerebral vascular accident
CVH	Coquille Valley Hospital
D/C	discontinue
dig	digoxin
DM	diabetes mellitus
DOA	dead on arrival
DOE	dyspnea on exertion
DTs	diagnosis
EBL	estimated blood loss
ECG	electrocardiogram
EJ	external jugular
ET	endotracheal
ETOH	ethyl alcohol
f, ♀	female
°F	Fahrenheit
FB	foreign body
Fe	iron
FHT	fetal heart tones
fib	fibrillation
fr	French
fx	fracture
ga	gauge
GCS	Glasgow coma score
G_P_	gravida/parity
gI	gastrointestinal
gm	gram
grav	pregnancies/gravida
GSW	gunshot wound
GU	genitourinary
GYN	gynecological
HEENT	Head, Eyes, Ears, Nose, Throat
H2O	water
H&P	history & physical
HTN	hypertension
hx	history
IDDM	insulin dependent diabetes mellitus
IM	intramuscular
IO	intraosseous
irreg	irregular
IV	intravenous
J	joules
JVD	jugular venous distention
kg	kilogram
lb	pound
LLQ	lower left quadrant
L/min	liters per minute
LMP	last menstrual period
LOC	level or loss of consciousness
LUQ	left upper quadrant
m, ♂	male
MAE	moves all extremities
mcg	microgram
meq	milliequivalent
mg	milligram
MgSO4	magnesium sulfate
MI	myocardial infarction
min	minute(s)
misc	miscellaneous
ml	milliliter
mm	millimeter

MS	multiple sclerosis
MVC	motor vehicle crash
N/A	not applicable
N&V	nausea and vomiting
Na	sodium
NaCl	sodium chloride
NG	nasogastric
N/V/D	nausea, vomiting, diarrhea
neg	negative
NIDDM	non-insulin dependent diabetes mellitus
NPA	nasopharyngeal airway
NPO	nothing by mouth
NS	normal saline
NSR	normal sinus rhythm
NTG	nitroglycerin
N2O	nitrous oxide
OG	orogastric tube
OPA	oropharyngeal airway
oz	ounce
O2	oxygen
P	pulse or heart rate
PAC	premature atrial contraction
para	number of deliveries
PAT	paroxysmal atrial tachycardia
PE	physical exam
peds	diatrics
PERL	pupils equal & reactive to light
PHCR	pre-hospital care report
PMH	past medical history
po	by mouth
pr	per rectal
prn	as needed
prox	proximal
PSVT	paroxysmal supraventricular tachycardia
pt	patient
PTA	prior to arrival
pulm	pulmonary
PVC	premature ventricular contractions
PVD	peripheral vascular disease
R	respirations
RLQ	right lower quadrant
R/O	rule out
RSI	rapid sequence intubation
RUQ	right upper quadrant
RX	prescription or treatment
rxn	reaction
SaO2	oxygen saturation
SCH	Southern Coos Hospital
SHRB	Sacred Heart River Bend
SL	sublingual
S.O.A.P.	subjective, objective, assessment, plan
SOB	shortness of breath
SC	subcutaneous
ST	sinus tachycardia
stat	at once, immediately
SVT	supraventricular tachycardia
T	temperature
tsp	teaspoon
tx	traction or treatment
URI	upper respiratory infection
UTI	urinary tract infection
vag	vaginal
vo	verbal order
V/S	vital signs
WNL	within normal limits
WPW	Wolff-Parkinson-White
X	multiplied by
y/o	years old
Δ	change
@	at
↑	increase
↓	decrease
1°	primary
2°	secondary
Ψ	psych