

Davis County Emergency Medical Services System

Emergency Medical Services Reference Guidelines



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ATTACHMENTS

1) **Davis County Medical Incident Response Plan (MCI Plan)**

Source: Davis County Government - Sheriff's Office Website

<https://www.daviscountyutah.gov/docs/librariesprovider10/Sheriffs/mci-plan.pdf>

2) **Utah Administrative Rules EMS R426**

Source: Utah Bureau of Emergency Medical Services

Website <http://BEMSP.utah.gov>

3) **Advance Care Directives; Utah Provider Order for Life Sustaining Treatment (POLST) "Life with Dignity/DNR"**

Note: STATE LAW

Source: Utah Bureau of Emergency Medical Services

Website <http://BEMSP.utah.gov>

4) **2017 Utah EMS Cardiac Protocol Guidelines**

Note: DAVIS COUNTY EMS Revised 08/2018

Page 102; **ALLERGIC REACTION AEMT** Epinephrine dosage stricken on new Utah EMS document

Page 102; **BRADYCARDIA (Symptomatic) AEMT** Atropine 0.02 mg/kg IV/IO UTAH EMS document

Source: Utah Bureau of Emergency Medical Services

Website <http://BEMSP.utah.gov>

5) **2017 Utah EMS General Protocol Guidelines**

Note: DAVIS COUNTY EMS Revised 08/2018

Page 127; **PAIN AND ANXIETY MANAGEMENT AEMT** Midazolam dosage approved is 0.2 mg

Source: Utah Bureau of Emergency Medical Services

Website <http://BEMSP.utah.gov>

6) **2017 Utah EMS Medical Protocol Guidelines**

Note: DAVIS COUNTY EMS Revised 08/2018

Page 135; **ALLERGIC REACTION / ANAPHYLAXIS PARAMEDIC** Epinephrine highlighted is stricken on Davis County EMS documents

Page 137; **BETA BLOCKER TOXICITY AEMT** Midazolam dosage approved is 0.2 mg

Page 150; **SEIZURES AEMT** Midazolam dosage approved is 0.2 mg

Page 160; **VIOLENT PATIENT CHEMICAL SEDATION TASER BARB REMOVAL AEMT** Midazolam dosage approved is 0.2 mg

Source: Utah Bureau of Emergency Medical Services

Website <http://BEMSP.utah.gov>

7) **2017 Utah EMS Trauma Protocol Guidelines** Source:

Utah Bureau of Emergency Medical Services Website

<http://BEMSP.utah.gov>

1. MISSION STATEMENT

The Emergency Medical Service Council exists to plan and coordinate quality emergency medical services for Davis County.

Quality is further defined as:

1. Rapid Access, County-Wide 911 availability.
2. Efficient and effective EMS Dispatch.
3. Basic Life Support response in less than four minutes.
4. Advanced Life Support in less than eight minutes.
5. Efficient and Effective Emergency Medical Transportation.
6. Appropriately staffed and maintained hospital emergency rooms.

VISION STATEMENTS

We will ensure that all people of Davis County have access to efficient and effective emergency medical services, regardless of where the need arises. To achieve this vision:

- ❖ We will consistently include all communities and service providers as we actively plan for growth and prepare for future emergency medical service needs.
- ❖ We will base our decisions on meaningful and accurate data.
- ❖ We will foster partnership with all emergency medical service in Davis County, to optimize the use of resources and the delivery of patient care.
- ❖ We will provide guidelines to communities with the expectation of community adherence in order to ensure cohesive emergency medical service in Davis County.
- ❖ We will promote community awareness through prevention services and education.
- ❖ We will standardize patient care protocols.
- ❖ We will communicate effectively through the routine and efficient distribution of information to all members of the emergency medical service system.

VALUES STATEMENTS

- ❖ Community Responsibility – We ensure excellence in the delivery of emergency medical services by fostering teamwork, mutual support and cooperation among all providers.
- ❖ Fiscal Responsibility – We provide planning and coordinating services and perform operating activities according to established budgets and available resources.

- ❖ Organizational Responsibility – We are committed to our mission and to strive toward achieving our vision through honest and open communication without repercussions.
- ❖ Professional Responsibility – We will foster professional excellence through training and education.

2. DEFINITION OF AN EMS SERVICE

(By the National Association of State EMS Officials-NAEMSO)

Emergency Medical Services (EMS) is the integrated system of medical response established and designed to respond, assess, treat, and facilitate the disposition of victims of acute injury or illness and those in need of medically safe transportation. (National Association of State EMS Officials-NAEMSO)

The components of the system include:

- ❖ Staffing/Training
- ❖ Communications
- ❖ Transportation
- ❖ Health Care Facilities
- ❖ System Organization and Management (includes planning and funding)
- ❖ Data Collection, Evaluation, and Research
- ❖ Public Information, Education, and Prevention
- ❖ Disaster Medical Services
- ❖ Quality Assurance/Improvement and medical direction within the entire continuum of emergency care.

3. OPERATIONAL GUIDELINES

INTRODUCTION

The Davis County EMS Council is advisory to the Davis County Board of Health.

PURPOSE

The purpose of this advisory council is the planning, development, and coordination of a functional and comprehensive EMS system. The system consists of all personnel, equipment and facilities necessary for the response to the emergency ill or injured patient, according to the state lead agency standards.

In its advisory capacity the EMS Council shall:

1. Assist the Board of Health in identifying achievable Emergency Medical Services goals and objectives.

2. Support the Board of Health in the acquisition of federal, state and local funds to assist in the development and implementation of the County Emergency Medical Services System.
3. Recommend program priorities considering social, institutional, geographical and funding constraints.
4. Provide a forum for the integration and coordination of all components necessary for the provision of excellent emergency care within Davis County.
5. Consider the following as components of the Davis County EMS System:
(1) Manpower, (2) Training, (3) Communications, (4) Transportation, (5) Facilities, (6) Critical Care Units, (7) Public Safety Agencies, (8) Consumer Participation, (9) Accessibility to Care, (10) Transfer of Patients, (11) Standard Medical Record Keeping, (12) Public Information and Education, (13) Evaluation, (14) Disaster Linkage, (15) Mutual Aid Agreements.
6. Develop long-range Emergency Medical Plans.

DEFINITIONS

Davis County EMS System:

The integration of all emergency medical service components necessary for the provision of excellent emergency care in Davis County.

Davis County EMS Council:

A broadly-based group of persons including but not limited to representatives from the following: local elected officials, provider institutions, Davis County Medical Society, ambulance associations/companies, Davis County Sheriff's Office, Davis County Health Department, local and/or County Fire Chiefs, local Police Chiefs, Highway Patrol, interested citizens, and consumers.

Medical Director:

Physician consultants employed by Davis County EMS agencies, as required by the State of Utah EMS rules and regulations, who provide medical leadership and advice for emergency medical care within the County.

EMS COUNCIL RESPONSIBILITIES

1. The Council will develop for recommendation a master plan for the Davis County EMS System which should include a system of medical audit and system effectiveness and be compatible with state laws, county and city policies and protocols.
2. In addition, the Council will review and formulate recommendations with regard to the following:
 - A. EMS system administration
 - B. Medical direction
 - C. Pre-hospital transport
 - D. Inter-facility transport
 - E. Dispatch
 - F. Communications
 - G. Protocols
 1. Triage
 2. Treatment
 3. Transport
 4. Transfer
 - H. Training
 - I. Financing
 - J. Audit and quality insurance
 - K. Mass casualty
 - L. Public information and education
3. The Council will study and identify the agencies that can function in the system and at what level of EMS service they could operate, i.e.: certification level, communication resources, and facilities.

MEMBERSHIP

Council membership will follow the guidelines of the Resolution by the County Commissioners (Resolution 88-175). Each individual on the Council will have one vote.

COUNCIL STRUCTURE

Direction of the Council is vested in a chairman, or, in his absence, a chairman-elect. The Chairman shall serve for two years. Election of the chairman-elect, who will assume the office January 1st of the succeeding year will be accomplished biennially in November by vote of the Council as a whole. In the event of a vacancy in the office of chairman, the chairman-elect will ascend to the office of chairman, and a new chairman-elect will be elected. The office of executive secretary to the Emergency Services Council will be held by the Director of Health.

In addition to the EMS Council, additional groups may be designated as necessary in the form of ad hoc task forces to address specific problems.

EMS COUNCIL MEETINGS

The Council will meet quarterly or more often as determined by Council members. Meetings should be conducted in a parliamentary fashion. All agenda items requiring action by the Council must be mailed to EMS Council members, along with all supporting relevant information to the issue, at least one week prior to the EMS Council meeting. In order for agenda items to be acted upon a quorum must be present and the item must pass with a majority vote of those present. The quorum is defined as one more than half of the members. Meetings may be cancelled due to lack of agenda items or a quorum.

Standing agenda items:

- ❖ QI
 - Access to EMS
 - EMD
 - EMR
 - BLS
 - ALS
 - Air Ambulance
 - Hospital E.R.'s
 - Disaster preparedness
 - Problem areas
- ❖ State EMS report
- ❖ Task Force updates

Agenda items for discussion may be added to the agenda at any time.

ADMINISTRATIVE SUPPORT

The Davis County Health Department will provide administrative support to the Council and any committees. Such support will include, as requested, the providing of program information, the preparation of agendas, taking minutes at Council meetings and managing correspondence on behalf of the Council.

COUNCIL OFFICER RESPONSIBILITIES

Chairman and Vice-Chairman:

The Chairman will preside at all Council meetings but may at his discretion assign this responsibility to the Chairman-Elect. In the event the Chairman is absent from a Council meeting, the Chairman-Elect will preside.

Task Forces as needed. (Example: QI, Planning, EMS Manual update, Communication, Disaster Preparedness)

To ensure communication to all EMS providers, minutes from the EMS council meetings will be sent to all Davis County provider agencies for dissemination to their staff members.

GENERAL GUIDELINES

- A. Remember: Courtesy to the patient, the patient's family and other emergency care personnel is of utmost importance.
- B. An approved patient care report (PCR) must be completed on all patients. This form may be electronic or hard copy and made accessible to the receiving hospital. Specific pre-hospital care information must also be recorded on all patient contacts as part of the System data collection program.
- C. The specific conditions listed for treatment in this document, although frequently stated as medical diagnoses, are operational diagnoses to guide the paramedic in initiating appropriate treatment. This document is to be used as consultative material in striving for optimal patient care. It is recognized that specific procedures or treatments may be modified depending on the circumstances of a particular case. Also, a medical control physician, when consulted, will either concur or further evaluate the paramedic's clinical findings and suggest an alternate diagnosis and treatment.
- D. In all circumstances, physicians have latitude in the care they give and may deviate from these Medical Protocols if it is felt such deviation is in the best interest of the patient. Nothing in these protocols shall be interpreted as to limit the range of treatment modalities available to medical control physicians to utilize, other than the modalities and the medications used must be consistent with the paramedic's training.
- E. All patient interaction and communications between responders, agencies, and hospitals is considered protected health information and shall be guarded as outlined in the Health Insurance Portability and Accountability Act of 1996 (HIPPA).

4. COUNCIL MEMBERS

Chief Jeff Bassett
South Davis Metro Fire Agency

Chief Dave Olsen
Clinton City Fire Department

Chief Mark Becraft
North Davis Fire District

Chief Guido Smith
Farmington City Fire Department

Lieutenant Jason Boydston
Davis County Sheriff's Office

Chief Derek Tolman
South Weber Fire Department

Chief Aaron Byington
Syracuse City Fire Department

Chief Kevin Ward
Layton City Fire Department

Chief Paul Erickson
Kaysville City Fire Department

Sheriff Kelly Sparks
Davis County Sheriff's Office

EMS Medical Directors

Dr. Christine Anderegg, Medical Director
Syracuse City Fire Department

Dr. Mark Oraskovich, Medical
Layton City Fire Department

Dr. Matthew Feil, Medical Director
Clinton City Fire Department

Dr. Bill Swiler, Medical Director
South Davis Metro Fire

Dr. Scott Fredricksen, Medical Director
Farmington City Fire Department

Dr. Dennis Wyman, Medical Director
Davis County Sheriff's Office

Dr. Summer Grace, Medical Director
South Weber Fire Department

Dr. Blake Yerman, Medical Director
Kaysville City Fire Department

Dr. Shay Holley, Medical Director
North Davis Fire District

At-Large Non-Voting Attendees

Commissioner Lorene Kamalu
Davis County Commission

Davis Hospital Representative

Brian Hatch, Director
Davis County Health Department

IHC Layton Hospital Representative

Tami Goodin,
Utah EMS Bureau

Lakeview Hospital Representative

Scott Zigich, Risk/Safety Compliance Mgr.
Davis School District

McKay-Dee Hospital Representative

Ogden Regional Hospital Representative

5. SELECTION OF INITIAL HOSPITAL/PATIENT TRIAGE

Upon arrival at the scene, paramedics and EMT's should make rapid assessment of the patient to determine if he or she falls into one of the following categories.

PRIORITY 1: Patient's condition is critical and unstable and will probably require rapid transport. These patients will include:

- A. Severe head-spinal cord injuries,
- B. Major trauma or hemorrhage (shock),
- C. Acute respiratory failure,
- D. Cardiac arrest.
- E. Stroke
- F. Acute coronary syndrome
- G. Any patient being of critical nature

PRIORITY 2: Patient's condition is of a less critical nature, is easily stabilized, and transport to the nearest or specialty facility is not a factor.

PRIORITY 3: Informational calls (death protocol cases, radio checks, etc.).

Protocol for Priority 1 Patients:

1. Initiate priority treatment, and, as outlined in Protocol No. 5A-3, "Immediate Transport, MAST (optional), and IV Insertion," begin transport in the case of trauma.
2. Call the closest base station hospital at first opportunity. In trauma, the process of calling the hospital shall in no way add time to the treatment/transport time, or supersede any initial treatment of the patient. This may mean calling the hospital after the transport has begun in some cases.
3. The ED physician should then:
 - a. Give orders to assist in further patient stabilization.
 - b. Determine if his or her facility can adequately care for the patient as per this protocol.
 - c. Determine if transport to another facility would be in order, as per this protocol.
 - d. If the ED physician decides to transport the patient to another facility, (s)he, or an appointed Nurse (RN), is obliged to call the receiving facility and inform the ED physician of the patient.
4. Transfer the patient to the hospital that the ED physician directs. Paramedics or EMT's will contact the receiving hospital, if possible.

Protocol for Priority 2 Patients

Call the agency's base station hospital for telemetry instructions regarding triage.

Special Situations

1. GENERAL FIELD TRAUMA TRIAGE

Purpose: To move patients to the appropriate trauma facility in the most expeditious manner as safely as possible.

- A. Paramedics and EMT's who have responded to a Priority 1 trauma situation will establish contact with the nearest medical control facility and report the blood pressure, capillary refill status, respiratory pattern and rate, status of the abdomen and thorax, and the motor and speech response for the establishment of a Revised Trauma score.
- B. All patients with a Revised Trauma score of ten or less will be transported directly to an appropriate trauma center in the most expeditious manner possible (ground or helicopter) unless it is determined by the field and emergency department personnel that it would be in the best interest of the patient to pass through the nearest medical facility for rapid basic lifesaving procedures prior to secondary transport to the level I trauma center via ground or helicopter.
- C. When there are multiple victims with serious injuries, the field triage officer will use multiple hospitals, triaging patients to appropriate level I, II, and III trauma facilities in the best interest of the patients and to avoid overloading any single facility.
- D. All patients with Revised Trauma scores of eleven or greater will be handled according to the present district protocols.
- E. Obviously dead patients will be handled according to the present district protocols.
- F. A trauma victim with an altered level of consciousness is considered to be so critically injured as to have given implied consent to be treated and transported as per this protocol.

2. NEURO TRAUMA

Patients with isolated head injuries that have a Revised Trauma score of ten or less or Glasgow coma score of 8 or less should be transported to the trauma center.

3. HYPOTHERMIA

Patients in cardiac arrest from hypothermia should be transported to the trauma center.

6. SCENE RELEASE OF PATIENTS

The following procedure is established to prevent unnecessary harm or mortality to patients who, by their own or the emergency team's decision, are not transported. It is also initiated to obtain an informed release when services are refused. Following are listed the circumstances in which the patient may be left at the scene.

1. The patient is a legal adult and refuses transport. The patient must also be of sound mind and capable of making appropriate decisions.
 - A. Retarded or mentally deficient patients are not included in the above provision.
 - B. Patients who are intoxicated and conscious are considered incapable of making their own decisions.
 - C. Seizure victims with a clear history of seizures may, if in an improving postictal state and in control of their airway, be left with responsible relatives, if requested, provided that all parties agree that it would be in the best interest of the patient. A district approved release form should be signed. All febrile seizures and first seizure victims should be encouraged to accept treatment and transport.
 - D. The patient or responsible person must understand the risks of non-transport and alternate care options.
2. The patient is a child or individual not of legal age having mother, father, or legal guardian at the scene who refuses care or transportation of the minor.
 - A. Brothers, sisters, or grandparents, unless appointed legal guardians, cannot deny treatment for the minor.
3. If, in the judgment of the emergency department, the paramedics, EMT's, and the patient, there is no need for emergency ambulance transportation, the information should be properly recorded on the agency's medical care form filled out. Upon completion, the patient may be released. In this case, the "Release from Medical Responsibility" form is not appropriate, since the patient is not refusing care. The patient may then, at his own discretion via private vehicle, seek medical care of his own choosing.
4. If, in the judgment of the emergency department physician, the victim does not require emergency ambulance transportation and treatment information is recorded on the agency's "Refusal of Medical Care" form, the patient may refuse transportation by the ambulance personnel, after being informed of the risks and possible adverse outcomes of his decision. In this case, the "Release from Medical Responsibility" form should be signed. The patient may then, at his own discretion via private vehicle, seek medical care of his own choosing.

5. Only one release form is required from any single patient. When multiple agencies respond on a patient who subsequently refuses care, one form will be signed, and the other agency personnel will record that it was signed on their individual refusal of medical care form.
6. The release form requires a signature from all patients eighteen years, or older, indicating patients wish to refuse care. In these cases of a minor, a legal parent or guardian must sign the release before the patient is released.
7. The following patients will always be transported:
 - A. Unconscious adults.
 - B. Unconscious minors or those with critical injuries or conditions, if no parent/guardian can be contacted.
 - C. Unconscious adult or critically injured patients incapable of making an informed decision.

7. RESUSCITATE / DO NOT RESUSCITATE PROTOCOL

1. EMS personnel shall comply with DNR instructions providing the following criteria are met:

- A. Do Not Resuscitate (DNR) identification and/or documentation are present with the patient. This may be in the form of a document and/or bracelet worn by the patient.
- B. The document and/or bracelet is current and belongs to the patient in question.
- C. No alternative treatment is being requested by the patient, family members, or persons who hold legal power of attorney of the patient.

2. Any variances to the above shall require the following actions:

- A. Identify variable(s): Examples
 - Family members request resuscitation regardless of presence of DNR.
 - Conflict between family members on resuscitation efforts to be performed.
 - Uncertain of obvious death findings.
 - EMS providers are not sure what to do.
- B. Initiate immediate resuscitation efforts **as if indicated**.
- C. Contact on-line medical control ASAP and advise of situation encountered and request medical direction.
- D. Continue or discontinue resuscitation efforts as directed by on-line medical control.

3. EMS providers shall make a reasonable effort to authenticate the documentation and the identification of the patient. This process should not delay immediate resuscitation efforts if indicated.

An attempt should be made to communicate with family members (if present) the need for resuscitation efforts being performed or being discontinued.

4. EMS providers shall recognize and be familiar with the following:

- A. Advance Directive documentation / currently state law. See Attached
- B. State approved "Life with Dignity" documentation. See Attached
- C. Utah EMS DNR Rule R426-100. See Attached

8. PSYCHIATRIC PATIENTS

The purpose of this suggested policy is to establish procedures that law enforcement officers, ambulance workers, mental health workers, and hospital personnel can follow in the initial investigation, transportation, and handling of mentally ill persons in Davis County. For the purposes of this protocol, the definition of a mentally ill person will be one who is dangerous to himself or others.

1. LAW ENFORCEMENT RESPONSE. When a law enforcement officer comes in contact with a mentally ill person in Davis County, he should consider the following.

A. Have any criminal laws been violated?

1) Adult

If the subject has violated a criminal law, and is also suspected of being mentally ill the officer should transport the person to Davis County Jail. While at the jail, the person will be evaluated by a Davis County Mental Health therapist.

The arresting officer should contact mental health as soon as possible to expedite the evaluation process at the jail. If possible, the arresting officer should cause the activation of the emergency mental health call by telephoning either 801-773-7060 or 801-298-3446 prior to arrival at the jail. If an adult offender is evaluated and recommended for involuntary admission to a mental health facility, the sheriff's office will provide transportation.

2) Juvenile

If the person is a juvenile, under age 18, and has committed a felony offense, they should be transported to a Juvenile Detention Center. If the juvenile has committed any other criminal offense and they are suspected of being mentally ill, the juvenile should be transported to either the police station, hospital, or mental health facility for an evaluation by mental health.

In the case of juvenile offenders who are evaluated and involuntarily admitted to a mental health facility, the agency having jurisdiction will provide transportation of the juvenile to the mental health facility.

Juveniles who are violent and out-of-control will be transported in the same manner that is outlined in the remainder of this policy.

B. If no criminal laws have been violated, and probable cause exists that the person is mentally ill, the officer should contact Davis County Mental

Health for an evaluation of the person for possible involuntary admission to a hospital or mental health facility.

2. MENTAL HEALTH AND AMBULANCE RESPONSE TO MENTALLY ILL PERSONS

Davis County Mental Health, in cooperation with Davis Hospital & Medical Center and Lakeview Hospital, has established two sites to facilitate more expedient evaluations of mentally ill persons for possible involuntary admission to a hospital or mental health facility.

Davis County Mental Health will provide an expedient evaluation of persons when the law enforcement officer deems there is probably cause to believe the person is mentally ill and requires involuntary commitment at a hospital or mental health facility.

A. All law enforcement agencies in Kaysville and North should transport their mentally ill persons for evaluation to Davis Hospital & Medical Center, telephone 801-773-7060. Once it is determined that a situation is a mental health crisis and immediate safety concerns have been addressed, responding members should be aware of the following considerations and should generally:

- Evaluate safety conditions.
- Introduce themselves and attempt to obtain the person's name.
- Be patient, polite, calm, courteous and avoid overreacting.
- Speak and move slowly and in a non-threatening manner.
- Moderate the level of direct eye contact.
- Remove distractions or disruptive people from the area.
- Demonstrate active listening skills (e.g., summarize the person's verbal communication).
- Provide for sufficient avenues of retreat or escape should the situation become volatile.

First responders generally should not:

- Use stances or tactics that can be interpreted as aggressive.
- Allow others to interrupt or engage the person.
- Corner a person who is not believed to be armed, violent or suicidal.
- Argue, speak with a raised voice or use threats to obtain compliance.

B. Law enforcement agencies in Davis County should transport their mentally ill persons to the closest appropriate facility for a mental health evaluation. Davis Behavioral Health crisis workers are available 24 hours a day, 7 days a week at 801-773-7060.

C. Call Out of Mental Health Workers. A law enforcement officer having probable cause to believe the person is mentally ill should request that

a mental health worker respond to one of the evaluation sites mentioned above. This can be accomplished by telephone.

- D. Law Enforcement Officers Responsibilities. Law enforcement officers who come in contact with persons who are possibly mentally ill and, in the opinion of the officer require an evaluation by Davis County Mental Health, will stay with the person until the mental health worker releases the officer or the subject person is involuntarily admitted to a hospital or mental health facility. The law enforcement officer will fill out the state form, "Emergency Application for Involuntary Commitment Without Certification." The law enforcement officer will transport or follow the ambulance to the facility where an evaluation will be conducted by Davis County Mental Health Personnel. In the case of ambulance transport of mental subjects, the law enforcement officer will provide a copy of the state form to the ambulance personnel for their records.

- E. Transportation of Mentally Ill Persons. Mentally ill persons can be transported in police vehicles at the discretion of the law enforcement officer who has jurisdiction.
 - 1) Ambulance response. Ambulance personnel may transport non-violent mental subjects at the request of family members, public safety organizations, hospitals, or mental health workers. The ambulance personnel will request jurisdictional police assistance if the person becomes violent or makes threats of violence. At all times, the individual being transported is expected to pay for services.

 - 2) Violent, out-of-control mentally ill persons. A police officer may request an ambulance to assist with transportation of a violent, out-of-control mental subject. It will be the responsibility of the requesting police agency to provide protection and assistance to the ambulance personnel and their equipment while the mental subject is being transported by the ambulance to the hospital or mental health facility.

 - 3) Violent, out-of-control mentally ill persons who require restraints. If, in the opinion of the police officer who has determined that the patient is mentally ill, violent, and needs involuntary admission and that this person is violent to the extent that he may be harmful to himself, police officers, or EMS personnel in attendance, it will be deemed appropriate to restrain the mentally ill, violent patient as follows.
 - i) Mechanical restraints. Mechanical restraints should be attempted as a first means to control a violent patient. These may include handcuffs, soft leather restraints, and other EMS

splinting devices. If the patient is able to be adequately controlled with these mechanical restraints, no further restraints will be used.

- ii) Chemical restraints. In instances where mentally ill, violent patients are unable to be adequately constrained using the above mechanical restraints, it may be appropriate to use chemical restraints. If, in the judgment of the police officer and EMS personnel, the patient may be of further harm to himself or exposes EMS personnel and police officers to risk, i.e. through blunt trauma by kicking or hitting, through biting, or through exposing EMS personnel and police officers to bodily fluids that could possibly cause disease transmission, it will be appropriate for the paramedics in Davis County to respond to the scene for the purpose of administering a sedative drug to chemically restrain the patient. Prior to administering, paramedics will follow their usual evaluation process in communication with their base hospital physician for authority to give the medication. Once chemical sedation has been given to the patient, the paramedics will be required to place and maintain an intravenous line and accompany the patient to the hospital.

- F. Law Enforcement Protection Requested at the Hospitals. It has been requested that the police officer who has jurisdiction over a mental subject that is being evaluated for involuntary admission to a hospital or mental health facility stand by and provide public safety duties until the mental health worker or the emergency room doctor releases the officer. Every effort will be made by mental health workers and hospital staff to expedite the admitting process so that the jurisdictional police officer may return to his respective service area and duties.
- G. Condition/Fitness/Health/Welfare Status Checks. Law enforcement officers will continue to provide condition/fitness/health/welfare status checks in appropriate jurisdictions, as needed, following a Davis County Mental Health status evaluation.
- H. Other Transportation Requests by Mental Health. Transportation of patients from one local area hospital to another, other than emergency situations, will be provided by the Davis County Sheriff's Office. Mentally ill subjects that have been involuntarily ordered into custody by a court will be handled by the Davis County Sheriff's Office, including transportation of the mental subject. The sheriff's office may request the assistance of the police agency having jurisdiction where the court order will be served.

9. MEDICAL INCIDENT RESPONSE PLAN

Please refer to the Davis County Sherriff's office Medical Incident Response plan. Plan will follow the National Incident Management System (NIMS) command structure.

The plan is divided into three areas or protocols:

1. On-Scene
2. Casualty Collection Points (CCP)
3. Mass Casualty Trailers (MCI Trailers)

**DAVIS COUNTY
MEDICAL INCIDENT
RESPONSE PLAN**

(MCI Plan)

ANNEX A



DAVIS COUNTY MEDICAL INCIDENT RESPONSE PLAN

Davis County EMS

Davis County Sheriff
South Davis Metro Fire
Farmington Fire
Kaysville Fire
Layton Fire
Clearfield Fire
Syracuse Fire
Clinton Fire
Sunset Fire
South Weber Fire
Davis Hospital
Lakeview Hospital

MEDICAL INCIDENT RESPONSE PLAN

This Plan identifies emergency medical response disaster protocols and procedures in Davis County. All EMS providers in Davis County should familiarize themselves with this plan through training and exercising. It is the purpose of this plan to formally standardize disaster medical operations within Davis County. This plan will follow the National Incident Management System (NIMS) command structure. By doing so, all jurisdictions that respond to a medical disaster in Davis County will do so in a fully integrated manner thus enhancing resource effectiveness and efficiency. The plan is divided into three Areas or Protocols: 1) On-scene, 2) Casualty Collection Points (CCP), and 3) Mass Casualty Trailers (MCI trailers).

MEDICAL INCIDENT RESPONSE PLAN

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MEDICAL PLAN OVERVIEW

This Plan is a joint effort between all EMS providers in Davis County. It identifies and outlines emergency medical response disaster protocols and procedures in Davis County. All EMS providers in Davis County should familiarize themselves with this plan through training and exercising.

The purpose of this plan is to formally standardize disaster medical operations within Davis County. By doing so, all jurisdictions that respond to a medical disaster in Davis County will do so in a fully integrated manner thus enhancing resource effectiveness and efficiency. This plan will follow the National Incident Management System (NIMS) command structure. The goal is to make response to a Mass Casualty Incident in Davis County, a standardized procedure complete with guidelines which all EMS providers are familiar with, and can subscribe to. This will decrease confusion at an incident because only one system will be used for response throughout the county, no matter the jurisdiction.

The plan is divided into three Areas or Protocols:

- 1) On-scene
- 2) Casualty Collection Points (CCP), and
- 3) Mass Casualty Trailers (MCI trailers).

The On-scene Protocol describes:

- 5 levels of MCI response
- Standard Operating Guidelines for resources on-scene ICS
- Medical Branch Positions
- Documentation Forms

The Casualty Collection Points (CCP) Protocol describes:

- Activation of the CCPs

The On-scene Protocol and the MCI trailers are used by EMS responders at a single site Mass Casualty Incident. The Casualty Collection Point Protocol is for use by a city or the county to gather injured victims from a widespread incident. The CCP Protocol is only activated by a city or county EOC. It is a location where citizens can gather wounded from all around the city(ies) or county, and have a single community site where citizens can transfer the wounded over to the EMS system.

ON-SCENE PROTOCOL

Introduction:

The “On-Scene Protocol” of the Davis County Medical Incident Response Plan outlines a specific on-scene management system. The Plan includes a triage system which will be consistently applied in all mass casualty incidents in the county, by all jurisdictions and agencies responsible for, or supportive of, emergency medical services. The On-Scene Protocol is comprised of five (5) levels:

- Level 1 - Medical Priority Dispatch 1- 5 Patients
- Level 2 - Expanded Medical Emergency 6 - 15 Patients
- Level 3 - Major Medical Emergency 16 - 35 Patients
- Level 4 - Medical Disaster 36+ Patients
- Level 5 - CCP Activation EOC Activated

Level 1, Emergency Medical is a normal day-to-day operational response and is **not** a declaration of extraordinary circumstances. However, for clarity and consistency, normal day operational response needs to be defined within the on-scene protocol for comparison and to demonstrate where it fits operationally within the overall incident response plan. Level 2 - Expanded Medical Emergency , Level 3 - Major Medical Emergency, Level 4 - Medical Disaster protocols, and Level 5 - CCP Activation, **are** a declaration of an extraordinary medical situation requiring additional resources and formalized ICS medical branch positions.

Response levels 1 through 4 are protocols which are formally declared by on-scene commanders or medical supervisors to alert dispatch that additional resources will be required. Commanders will communicate the response level information to dispatch. The levels are determined by the number of casualties at an incident, and Commanders/Medical Supervisors will formally “*declare*” the incident.

Response Level 5, CCP Activation, is part of the on-scene protocol that denotes an extremely extraordinary medical incident that affects a large area, and possibly the entire county. However, this response level, is not declared by an on-scene commander, but rather, it is declared by a city or county Emergency Operations Center (EOC). The EM functional representative in the EOC should be able to declare level 5, but only after counseling with the Chief Elected Official.

Note: Refer to the appropriate response level on the following pages for resource guidelines.

Summary:

Level 1 – Medical Priority Dispatch	Normal day-to-day operations. Declared by dispatch and confirmed by ICS
Level 2 - Expanded Medical Emergency	Declared by Incident Command, confirmed by dispatch. Extraordinary circumstances requiring additional resources, and notifications. Mass Casualty Incident trailers are deployable at these levels.
Level 3 - Major Medical Emergency	
Level 4 - Medical Disaster	
Level 5 - CCP Activation	EOC Activated. Activates one or more Casualty Collection Points in the county.

Operational Guidelines

The following response levels have been developed for "Mass-Casualty Incidents" and correspond with all jurisdictional response plans within Davis County.

<u>Level # - Name of protocol</u>	<u>Number of patients/Who declares</u>
Level 1 - Medical Priority Dispatch	1 - 5 Patients / Dispatch
Level 2 - Expanded Medical Emergency	6 - 15 Patients / On-scene command Level
3 - Major Medical Emergency	16 - 35 Patients / On-scene command
Level 4 - Medical Disaster	36+ Patients / On-scene command
Level 5 - CCP Activation	Non-specific / City or County EOC

Declaration of a Response Level

First arriving responders must declare and communicate the response level to Dispatch. The level is dependent upon the number of casualties (for levels 1-4) and will guide resource allocation to the incident if the protocol is followed correctly. Responders and dispatchers should refer to the appropriate resource guidelines which will be outlined later.

Level 1

Dispatch will declare Level 1 emergencies. Level 1 emergencies are normal day-to-day operations and need only be dispatched following the guidelines established by the medical priority dispatch system. The "Level 1" emergency response need not be formally declared. It is normal day-to-day medical response.

Level 2 - 4

Dispatchers can and should indicate to first responders what level of incident that they may be responding to if the numbers of injured are greater than a Level 1 emergency. 911 call takers are generally the first to receive such information and should inform dispatchers of the potential for a higher level response if so indicated by the caller. *On-scene command will declare levels 2 - 4. If dispatch notifies first responders while they are enroute that an incident may be a high level response, then those first responders, while enroute, have the option of requesting additional resources at that time.* This will depend upon the

information coming from what they deem to be reliable sources. However, only upon arrival of the first responding units, will the actual level be officially declared. It is important to note that the actual response level is not officially declared until a trained public safety responder is on scene. ***On-scene responders do not declare a Level 5.*** Resources outlined in levels 1-4 are suggested. On-scene Commanders have the option of requesting more or fewer resources as outlined here-in.

<u>Level # - Name of protocol</u>	<u>Who declares</u>
Level 1 - Medical Emergency	Dispatch
Level 2 - Expanded Medical Emergency	On-scene command
Level 3 - Major Medical Emergency	On-scene command
Level 4 - Medical Disaster	On-scene command
Level 5 - CCP Activation	City or County EOC

Level 5

A Level 5 emergency, Casualty Collection Point (CCP) Activation, will only be declared by a City or County Emergency Operations Center. *The determination for activation of a CCP is not “numbers” oriented; i.e., determined by the number of victims, but rather, it is determined by the severity of the incident.* A Level 5 emergency will be characterized by an incident that 1) effects the entire county, 2) has overwhelmed the EMS system **and** both hospitals in the county, 3) disrupts transportation of injured to the hospitals, and 4) hinders ability of hospital workers to report to their duty stations at the hospitals. The activation of a Level 5 medical response would be due to a catastrophic event that basically effects the entire county. It would also, more than likely, require the intervention of State resources and possibly federal response resources from the U.S. Public Health Services.

If a Level 5 emergency is declared, then a CCP Commander will be dispatched to that site. This will usually be an engine company or medic unit depending upon the availability of resources. Citizens who are C.E.R.T. volunteers will assist at these CCPs and will be under the direction of a Branch Director. If such a director is not available, then the most qualified C.E.R.T. volunteer will command the site until such time as a qualified replacement arrives. A qualified replacement is an EMT or Paramedic who is familiar with and understands the mission and capabilities of the C.E.R.T. program. CCPs are, but not limited to the pre-determined Points of Distribution (PODs) which can be found on pages 56-60 in this plan.

On-scene Resources

The intent of the On-scene Protocol is to create an easy method whereby resources can be requested by on-scene commanders. ***By creating this protocol, dispatch can easily anticipate additional resources that Commanders will need by referring to the checklists provided for each response level. All that an on-scene Commander need do, is to declare the type of incident and dispatch can automatically deploy an additional predetermined number and type of resources as outlined in this plan unless otherwise instructed by the IC.*** This is based upon the procedure that on any given call, dispatch will use the medical priority system which does not delineate numbers of resources. Standard dispatch is “no more than, 1 engine, 1 rescue and 1 ambulance.” All response levels will take this “base” number, and will direct dispatch to deploy “additional” resources. “Additional” resources are in addition to this initial Level 1 dispatch. Therefore, for example, an “additional 2 engines” will mean that there will be 3 engines on site because of the initial Level 1 dispatch. Commanders do retain the right to request additional or fewer resources than outlined in this plan.

Additionally, the On-scene Protocol provides for the planning, maintenance, and use (deployment) of Mass Casualty Incident (MCI) Trailers. These trailers will be staged strategically throughout the county and will be a quick response support to an incident commander for medical supplies at an MCI. These trailers will be stocked with supplies sufficient to handle 15 victims. There will be 3 trailers, all of which can be requested at an incident if necessary.

Note: Refer to the appropriate response levels on the following pages for resource guidelines.

Summary - On-scene Resources

Level 1 - Medical Priority Dispatch (1-5)

- Medical Priority Dispatch
 - Usually this is 1 Engine Company, 1 Medic unit, 1 Ambulance
- All subsequent levels listed below are based upon initial dispatch “plus” additional resources
 - All subsequent levels are based upon Level 1 resources being present
 - All subsequent levels assume initial dispatch of a *complete* Level 1 response
- IC can request additional resources without moving to a higher level (i.e. request 1 ambulance)

Level 2 - Expanded Medical Emergency (6-15)

- Deploy an *additional* 1 Engine Company, 1 Medic Unit, 3 Ambulances, 3 Chief Officers
 - This will make a total deployment of 2 engines, 4 ambulance, 2 Medic Units, and 3 Chief Officers onsite.
- Deploy 1 EMS Helicopter (Designate a landing zone / Standby fire engine for safety)
- Notify Hospitals

Level 3 - Major Medical Incident (16-35)

- Deploy an *additional* 2 Engines, 2 Ambulances, and 1 Medic Unit, 1 Chief Officer,
 - This will make a total deployment of 4 engines, 6 ambulances, 3 Medic Units, and 4 Chief Officers onsite
- Deploy 2 EMS Helicopters (Designate a landing zone / Standby fire engine for safety)
- Deploy 1 MCI Trailers
- Deploy 1 UTA/School Bus
- Deploy MCC Unit (Mobile Command Center)
- Notify out of County Hospitals and obtain a bed count if possible
- Note:
 - Consider additional air ambulance and/or UTA/School buses
 - Notify Red Cross
 - Consider additional MCI Trailer (2nd trailer)

Level 4 - Medical Disaster (36+)

- Deploy an *additional* 3 Engines, 3 Ambulances, 3 Medic Units, 2 Chief Officers
 - This will make a total deployment of 7 Engines, 9 Ambulances, 6 Medic Units, 6 Chief Officers onsite.
- Deploy 4 EMS Helicopters (Designate a landing zone / Standby fire engine for safety)
- Deploy 2 MCI Trailers
- Deploy 2 UTA/School buses
- Deploy MCC (Mobile Command Center)
- Notify out of County Hospitals and obtain a bed count if possible
- Note:
 - Place additional air ambulances on stand-by
 - Consider additional MCI trailer as necessary
 - Consider Scene Support units
 - Notify Red Cross

Level 5 - CCP Activation (Non-specific)

- EOC Activated (City or County)
- Deploy EMS Resources as available to activated sites
- Deploy at least one engine company and/or Medic Unit if possible to CCP
- Establish a Branch Supervisor for the CPP

Recommended Triage Principles

RECOGNITION OF THE ADOPTION OF THE S.T.A.R.T. PROGRAM FOR TRIAGE

Davis County officially adopts the S.T.A.R.T. Triage system (Simple Triage and Rapid Transport) as the triage system to be used **during** a disaster situation. The objective of triage is to accomplish the greatest medical good for the greatest number of patients. S.T.A.R.T. is not used for normal daily protocol.

A primary goal of triage is to select the patients in greatest need of urgent care. It is recognized that triage in a mass casualty situation offers little time or resources for doing CPR, taking blood pressures, or even counting accurate pulse rates. However, minimal intervention to stabilize the airway or to control hemorrhage is done at the same time as the initial triage.

S.T.A.R.T. Triage allows the first responders to triage patients in 60 seconds or less, depending on three simple observations. These physical assessments are:

- Respiration;
- Pulse, and;
- Mental Status.

The S.T.A.R.T. plan does *not attempt to make diagnoses*.

Triage personnel must tag ALL patients. IT IS A TIME CONSUMING AND OFTEN FATAL MISTAKE TO TRIAGE IN THE FIELD WITHOUT TAGGING A PATIENT. Patients are tagged so that rescuers arriving later can immediately turn their attention to the patients most in need. A triage tag has been adopted by this jurisdiction in conjunction with the State Department of Health.

Triage personnel must rate or place the injured into one of four categories:

<u>Category</u>		<u>Tag</u>
1. Immediate	-	Red Surveyor Tape
2. Delayed	-	Yellow
3. Minor	-	Green
4. Deceased	-	Black or Black/White Stripe
(non salvageable)		

Immediate: Ventilation present only after positioning the airway;
OR respirations over 30 per minute;
OR radial pulse not present and/or perfusion greater than 2 seconds;
OR patient fails to follow simple commands.

Delayed: Any patient who does not fit either the immediate or minor categories.

Minor: These patients are separated from the general group at the start of triage by ordering, "Anyone who can walk...," followed by an area assignment for the patients to walk to. These patients are ambulatory and can move out of the triage area into an assigned treatment area or they can even be asked to assist medical personnel.

Deceased: No ventilation present even after attempting to position the airway **twice**.

NOTE: *There is only one Triage Officer per 10 victims. This is a very important concept.*

“Immediate” Category

Patients designated as “Immediate,” are those that have life threatening injuries that are correctable, and with immediate definitive care, their life can be saved. These are the Golden Hour Patients.

Basic S.T.A.R.T. triage defines immediate as :

Respiration- Greater than 30/min. or less than 10/min. and where the airway must be physically or mechanically maintained.

OR:

Pulse- Absent radial pulse.

OR:

Fails to follow simple commands.

Mental-

NOTE: *These patients are tagged “Red.”*

“Delayed” Category

Patients designated as “Delayed,” are those requiring therapy, but can be delayed without significant risk to life or limb. In addition, where resources are truly overwhelmed, those patients whose chances of survival are not dependent on extensive and/or highly sophisticated procedures to sustain life.

Basic S.T.A.R.T. triage defines Delayed as :

Ventilation- Between 10 and 30/min.

AND:

Radial Pulse- Radial pulse present.

AND:

Mental-Status Follows simple commands - Non-ambulatory.

NOTE: *These patients are tagged “Yellow.”*

“Minor” Category

Patients classified as “Minor,” are those whose therapy, if required, can be delayed with little risk to life or limb. In addition, where the mechanism of injury warrants a complete physical assessment, patients should be offered, and, a complete physical performed. These patients may not require, or may refuse, transport to a hospital for a complete physical; however, documentation should be completed prior to release. These patients are also sometimes referred to as the “Walking Wounded.”

Basic S.T.A.R.T. defines Minor as :

Ventilation- Between 10 and 30/min.

AND:

Radial Pulse- Radial pulse present.

AND:

Mental- Follows simple commands - Ambulatory.
Status

A simple triage methodology in a multi-casualty situation used to identify “minor” status victims, is to yell out to the victims, “Anyone who can hear me and walk, come to me.” Other quick methods to separate or sort the “greens” from the rest of the injured may be used. This example is just an illustration of one quick method to separate out the “walking wounded,” or “greens.”

NOTE: *These patients are tagged “Green.”*

Reverse Triage / Inverted Triage Situations

Although S.T.A.R.T is extremely effective in most triage situations, there are occasions where “Reverse Triage” or “Inverted Triage” may play a vital role in treating the most viable victims first that would otherwise be sorted less effectively.

This form of triage has regained much popularity in countries inflicted with terror incidents involving explosive devices such as IED’s and countries commonly impacted by pandemics and other disease outbreaks. Note: This form of triage does not follow a single set criteria, however, is dynamic in nature. Example: The reverse triage process for multiple victims involved in an “IED” incident is considerably different from the process used for multiple victims involved in a “Lightning Strike” incident. This process must be announced by the individual declaring “Reverse Triage” or “Inverted Triage”.

In the event “Reverse Triage” or “Inverted Triage” is declared, it must be announced by Incident Command ASAP. Failure to declare this strategy early into an incident will compromise the effectiveness of the entire triage operations.

IED / Explosives - Incidences involving explosives and/or suspected secondary devices designed to target rescue responders. Rapidly removing all ambulatory victims to a “Safe Zone” or “Treatment Area” away

from the scene as 1st priority will greatly increase the overall survivability of all victims. Non-ambulatory victims become secondary priority. This will aid in the reduction of potential secondary device victims, while allowing security forces establish a safer perimeter to protect victims and rescuers from additional attacks while providing ongoing searches for secondary devices. This form of Triage places priority on “mobility” of patients regardless of regular triage criteria.

Pandemic - Situations where medical personnel are potentially among affected population. Regardless of triage status, it may be advantageous to ensure medical personnel are treated as “Priority” so they may continue providing care. This especially applies when dispensing vaccines or other medications. Healthcare providers should receive priority treatment whenever possible, regardless of symptomatic status.

Lightning Strikes - Involving multiple victims – Victims without a pulse potentially have a higher chance of survival if treated immediately even though they would normally be classified as “Deceased” or meet “Black” triage criteria. This triage process would require treating “Pulseless” victims as first priority.

Cold Water - Involving multiple victims – Victims without a pulse potentially have a higher chance of survival when BLS treatment is rendered immediately even though they would normally be classified as “Deceased” or meet “Black” triaging criteria. This triage process would require treating “Pulseless” victims as first priority.

Mass-Casualty Incident Treatment Tag “Example”

Instruction / Sample

Note: The treatment tags are numbered. The numbers will be used for patient tracking and documentation. These tags are intended for use in the treatment areas.

Shade in injury site or sites.

Circle type of injury(s).

Other: Briefly write in explanation of injury(s).

Vital Signs:

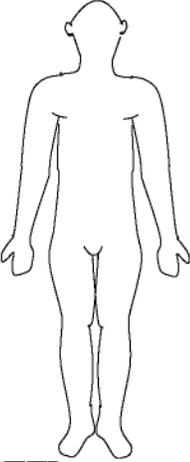
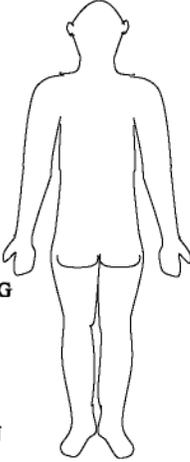
Fill in the time vitals were taken. Blood pressure/Pulse/Respirations. *Keep the stub you tear off so the patient can be tracked after transport.*

The tags will be a single color. **Patient triage is indicated by colored surveyor tape, not the tag.**

Number on the tag is used for patient tracking. When a patient is moved through a treatment or transportation area, then a supervisor, or worker can remove the most bottom portion of the tag, and retain it for documentation.

Documentation will include, writing the time of patient transfer on the *retained part of the tag*. Other information could include transport name and number as well as destination.

Note: This will not replace official documentation on ICS forms, or upon the State MICU/Polaris form. But, it will help facilitate such documentation.

354254 TREATMENT TAG 354254 PART 1 No. 354254 CALIFORNIA FIRE CHIEF'S ASSOCIATION			
FRONT		BACK	
	C-SPINE CARDIAC BLUNT TRAUMA PENETRATING INJURY BURN FRACTURE LACERATION		
OTHER:			
VITAL SIGNS: ORIENTED <input type="checkbox"/> DISORIENTED <input type="checkbox"/> UNCONSCIOUS <input type="checkbox"/>			
TIME	PULSE	B/P	RESPIRATION
No.354254			

Mortality Management Guidelines During Disaster Operations

In the event of a major disaster within the State of Utah, it may be some time before bodies can be collected and cared for by the Office of the Chief Medical Examiner.

Therefore, the following guidelines have been prepared to aid local agencies in handling the dead until the OME can relieve those agencies of that responsibility.

Handling the Dead

When it becomes necessary to remove bodies from disaster sites due to rescue work, or health and safety of others, a set of specific procedures must be followed:

1. **DO NOT** remove any personal effects from the body. The personal effects must remain with the body at all times.
2. Attach tag or label to the body with the following information:
 - a. Date and time found
 - b. Exact location where found, including floor/room number.
 - c. Name/address of deceased, if known
 - d. If identified, how and when
 - e. Name/phone of the person making identity and/or filling out tag
 - f. If the body is contaminated, so state
3. Place the body in a disaster pouch, or in plastic sheeting, and securely tie to prevent unwrapping. Attach a second tag to the sheeting or pouch.
4. If personal effects are found and are thought to belong to a body, place them in a separate container and tag. Do not assume any loose effects belong to a body. Document location where they were found.
5. Move the properly tagged body with their personal effects to one locale, i.e., garage or other cool building, preferably one with refrigeration.

****Note: Portable air-conditioning may be obtained or self-contained refrigerated van/trucks or rail cars can be used. Do not use a vehicle or storage area with floors that can become permeated with body fluids or other liquids.***

6. Notify your local law enforcement agency of the location/identity of the body.
7. Keep insects and other animal life away from the body. In case of extreme heat or direct sunlight, move the body to a cool shaded area or refrigerated room as soon as possible.
8. Bodies must be secured or safeguarded at all times, even after the arrival of the OME or his authorized representative. Security at all times must be coordinated with local Law Enforcement and the OME.

Response Levels 1-5 Medical Branch Checklists

The following checklists are provided as initial guidelines for first arriving EMS units. These checklists also outline the initial resources that should be sent by dispatch once a “Level” is declared. Declaration should only take place once initial responders on-scene have “declared” the MCI Level. On-scene Commanders have the option of requesting additional or fewer resources as the incident requires.

The guidelines will be used *automatically* by dispatch to deploy or dispatch additional units once a level is declared, unless otherwise directed by the On-scene Command. The deployments for each level are based upon a full Level 1 deployment PLUS the additional units listed under EMS Response on each checklist. A full Level 1 deployment is 1 engine, 1 ambulance and 1 Paramedic Rescue. It is intended that the automatic dispatching of additional units based upon the level declared will assist the commander during an intense period of initial response.

The guidelines are initial actions only. On-scene command can request additional, or fewer resources as deemed necessary.

Level 1 - Medical Priority Dispatch 18
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Level 3 - Major Medical Emergency 20
Level 4 - Medical Disaster..... 21
Level 5 - CCP Activation 23

**Level 1 - Medical Priority Dispatch
(1 - 5 Patients)**

1. EMS RESPONSE
 - Medical Priority Dispatch
 - Baseline response is “usually” 1 Engine, 1 Ambulance, and 1 Medic Unit
2. ESTABLISH COMMAND
 - Upon arrival on-scene “declare command”
 - Radio the type of situation and "confirm the incident"
 - Establish the total number of victims and categories
 - Radio the exact location of the incident and best access route for in-coming equipment
3. QUICKLY TRIAGE AND TAG ALL PATIENTS USING THE “ S.T.A.R.T “ TRIAGE CONCEPT
 - One (1) triage officer
 - Triage officer stays with victims (mother hen concept) until all are moved to an established treatment area at the scene or until he/she transitions to treatment officer role
 - Tag patients with treatment tag if requested or coordinated with Treatment Area. If Triage Officers tag patients in the triage area with treatment tags, then Triage Officers should retain one of the detachable sections of the tag and record times for documentation.
4. DETERMINE WHAT ADDITIONAL RESOURCES ARE NEEDED
 - Additional Response determined by Incident Commander
 - Rule of thumb (Personnel):
 - 1 firefighter/EMT/PM/Responder for each immediate patient
 - 1 firefighter/EMT/Responder for each 3 delayed patients
 - 2 firefighter/ for each hose line
 - 2-3 firefighters per rescue operation (air bag, jaws, etc.)
5. QUICKLY OVERVIEW SCENE SAFETY
 - Do you have adequate medical personnel and resources?
 - Are hose lines for fire safety in place with adequate personnel?
 - Is traffic or crowd situation under control or endangering medical operations?
 - Are patients and medical response staff in unsafe locations?
 - If Hazardous Material (Firefighting)
 - Note wind direction and weather
 - Work within appropriately established cold, warm and/or hot zones
 - Stay aware/briefed on all aspects of Haz-Mat operations/hazard
 - Consider medical operations/equipment that may affect hazardous condition
6. DIRECT INCOMING PERSONNEL AND EQUIPMENT
7. COORDINATE WITH ASSISTING AGENCIES (LAW, FIRE, EMS, ECT.)
8. OVERSEE THE SITUATION AND ADJUST RESOURCES AS NEEDED

**Level 2 - Expanded Medical Emergency
6 - 15 Patients**

1. EMS RESPONSE
 - Deploy an *additional* 1 Engine, 3 Ambulance, and 1 Medic Unit, 3 Chief Officers
 - This will make a total deployment of 2 engines, 4 ambulances, 2 Medic Units, 3 Chief Officers onsite
 - Notify Hospitals
 - Deploy 1 EMS air ambulance
2. ESTABLISH COMMAND
 - Upon arrival at scene “declare command.”
 - Radio the type of situation and "declare the incident level" (2-Expanded Medical Emergency)
 - Establish the total number of victims and categories
 - Radio the exact location of the incident and best access route for in-coming equipment
 - Establish staging and/or ingress and egress traffic plan
3. QUICKLY TRIAGE AND TAG ALL PATIENTS USING THE “ S.T.A.R.T “ TRIAGE CONCEPT
 - One (1) triage officer per ten (10) victims
 - Triage officer stays with 10 victims (mother hen concept) until all ten are moved to an established treatment area at the scene
 - Tag patients with treatment tag if requested or coordinated with Treatment Area. If Triage Officers tag patients in the triage area with treatment tags, then Triage Officers should retain one of the detachable sections of the tag and record times for documentation.
4. DETERMINE WHAT ADDITIONAL RESOURCES ARE NEEDED
 - Additional response determined by the Incident Commander or Medical Branch Director
 - Rule of thumb (Personnel):
 - 1 Firefighter/EMT/ PM/Responder for each immediate patient
 - 1 Firefighter/EMT/Responder for each 3 delayed patients
 - 2 firefighter per hose line
 - 2-3 firefighters per rescue operation (airbags, jaws, etc./)
5. QUICKLY OVERVIEW SCENE SAFETY
 - Do you have adequate medical personnel and resources?
 - Are hose lines for fire safety in place with adequate personnel?
 - Is traffic or crowd situation under control or endangering medical operations?
 - Are patients and medical response staff in unsafe locations?
 - If Hazardous Material (Firefighting)
 - Note wind direction and weather
 - Work within appropriately established cold, warm and/or hot zones
 - Stay aware/briefed on all aspects of Haz-Mat operations/hazard
 - Consider medical operations/equipment that may affect hazardous condition
6. CONSIDER DESIGNATING A MEDICAL BRANCH DIRECTOR
7. DIRECT INCOMING PERSONNEL AND EQUIPMENT
8. OVERSEE THE SITUATION AND ADJUST RESOURCES AS NEEDED. COORDINATE WITH ASSISTING AGENCIES (LAW, EMS, ETC.) CONSIDER UNIFIED COMMAND
9. CONTACT CRITICAL INCIDENT STRESS DEBRIEFING TEAM
10. CONDUCT AN INCIDENT DEBRIEFING AND CRITIQUE

**Level 3 - Major Medical Incident
16 - 35 Patients**

1. EMS RESPONSE
 - Deploy an *additional* 2 Engines, 2 Ambulances, 1 Medic unit, 1 Chief Officer
 - This will make a total deployment of 4 Engines, 6 Ambulances, and 3 Medic Units, 4 Chief Officers onsite.
 - Deploy 2 EMS Helicopters (Designate a landing zone / Standby fire engine for safety)
 - Deploy 1 UTA/School Bus
 - Deploy 1 MCI Trailer
 - Deploy MCC (Mobile Command Center)
 - Notify out of County Hospitals and obtain a bed count if possible.
 - Note:
 - Consider additional air ambulance and/or UTA/School buses
 - Notify Red Cross
 - Consider additional MCI Trailer (2nd trailer)
2. ESTABLISH COMMAND
 - Upon arrival at scene “declare command.”
 - Radio the type of situation and “declare the incident level” (3-Major Medical Incident)
 - Establish the total number of victims and categories
 - Radio the exact location of the incident and best access route for in-coming equipment
 - Establish staging and/or ingress and egress traffic plan
 - Establish Communications Plan
3. QUICKLY TRIAGE AND TAG ALL PATIENTS USING THE “ S.T.A.R.T “ TRIAGE CONCEPT
 - One (1) triage officer per ten (10) victims
 - Triage officer stays with 10 victims (mother hen concept) until all ten are moved to an established treatment area at the scene
 - Tag patients with treatment tag if requested or coordinated with Treatment Area. If Triage Officers tag patients in the triage area with treatment tags, then Triage Officers should retain one of the detachable sections of the tag and record times for documentation.
4. REQUEST ADDITIONAL FIRE AND LOCAL EMS RESOURCES
 - Additional response determined by Incident Commander or Medical Branch Director
 - Rule of thumb (Personnel):
 - 1 EMT/PM 1 immediate patient - 1 EMT / 3 delayed patients
 - 2 firefighter per hose line - 2-3 firefighters per rescue operation
5. QUICKLY OVERVIEW SCENE SAFETY
 - Do you have adequate medical personnel and resources?
 - Are hose lines for fire safety in place with adequate personnel?
 - Is traffic or crowd situation under control or endangering medical operations?
 - Are patients and medical response staff in unsafe locations?
 - If Hazardous Material (Firefighting)
 - Note wind direction and weather
 - Work within appropriately established cold, warm and/or hot zones
 - Stay aware/briefed on all aspects of Haz-Mat operations/hazard
 - Consider medical operations/equipment that may affect hazardous condition
6. BUILD MEDICAL BRANCH AS APPROPRIATE
 - Note:** Position checklists for all categories are found on pages 27-44.
7. COORDINATE WITH ASSISTING AGENCIES (LAW ENFORCEMENT, EMS, ETC.)
8. ESTABLISH UNIFIED COMMAND
9. CONTACT CRITICAL INCIDENT STRESS DEBRIEFING TEAM
10. CONDUCT AN INCIDENT DEBRIEFING AND CRITIQUE
11. OVERSEE THE SITUATION AND ADJUST RESOURCES AS NEEDED.

**Level 4 - Medical Disaster
36+ Patients**

1. EMS RESPONSE
 - Deploy an *additional* 3 Engines, 3 Ambulances, 3 Medic Units, 2 Chief Officers
 - This will make a total deployment of 7 Engines, 9 Ambulances, 6 Medic Units, 6 Chief Officers onsite.
 - Deploy 4 EMS Helicopters (Designate a landing zone / Standby fire engine for safety)
 - Deploy 2 MCI Trailers
 - Deploy 2 UTA/School buses
 - Notify out of County Hospitals and obtain a bed count if possible.
 - Note:
 - Place additional air ambulances on stand-by
 - Consider additional MCI trailers as necessary
 - Consider Scene Support units
 - Notify Red Cross
 -
2. ESTABLISH COMMAND
 - Upon arrival at scene “declare command.”
 - Radio the type of situation and "declare the incident" (4-Medical Disaster)
 - Establish the total number of victims and categories
 - Radio the exact location of the incident and best access route for in-coming equipment
 - Establish staging and/or ingress and egress traffic plan
 - Establish Communications Plan
3. QUICKLY TRIAGE AND TAG ALL PATIENTS USING THE “ S.T.A.R.T “ TRIAGE CONCEPT
 - One (1) triage officer per ten (10) victims
 - Triage officer stays with 10 victims (mother hen concept) until all ten are moved to an established treatment area at the scene
 - Tag patients with treatment tag if requested or coordinated with Treatment Area. If Triage Officers tag patients in the triage area with treatment tags, then Triage Officers should retain one of the detachable sections of the tag and record times for documentation.
4. REQUEST ADDITIONAL FIRE AND LOCAL EMS RESOURCES
 - Additional response determined by the Incident Commander or Medical Branch Director
 - Rule of thumb (Personnel):
 - 1 EMT/ PM /1 immediate patient - 1 EMT / 3 delayed patients
 - 2 firefighter per hose line - 2-3 firefighters for each rescue operation
5. QUICKLY OVERVIEW SCENE SAFETY
 - Do you have adequate medical personnel and resources?
 - Are hose lines for fire safety in place with adequate personnel?
 - Is traffic or crowd situation under control or endangering medical operations?
 - Are patients and medical response staff in unsafe locations?
 - If Hazardous Material (Firefighting)
 - Note wind direction and weather
 - Work within appropriately established cold, warm and/or hot zones
 - Stay aware/briefed on all aspects of Haz-Mat operations/hazard
 - Consider medical operations/equipment that may affect hazardous condition
6. BUILD MEDICAL BRANCH AS APPROPRIATE
 - Note:** Position checklists for all categories found on pages 27-44
7. OVERSEE THE SITUATION & RESOURCES AS NEEDED
8. DIRECT INCOMING PERSONNEL & EQUIPMENT

9. COORDINATE WITH ASSISTING AGENCIES (LAW ENFORCEMENT, EMS, ETC.)
10. ESTABLISH UNIFIED COMMAND
11. CONTACT CRITICAL INCIDENT STRESS DEBRIEFING TEAM
12. CONDUCT AN INCIDENT DEBRIEFING AND CRITIQUE (OPERATIONAL)

**Level 5 - Casualty Collection Point (CCP) Activation
Non-specific number of Patients**

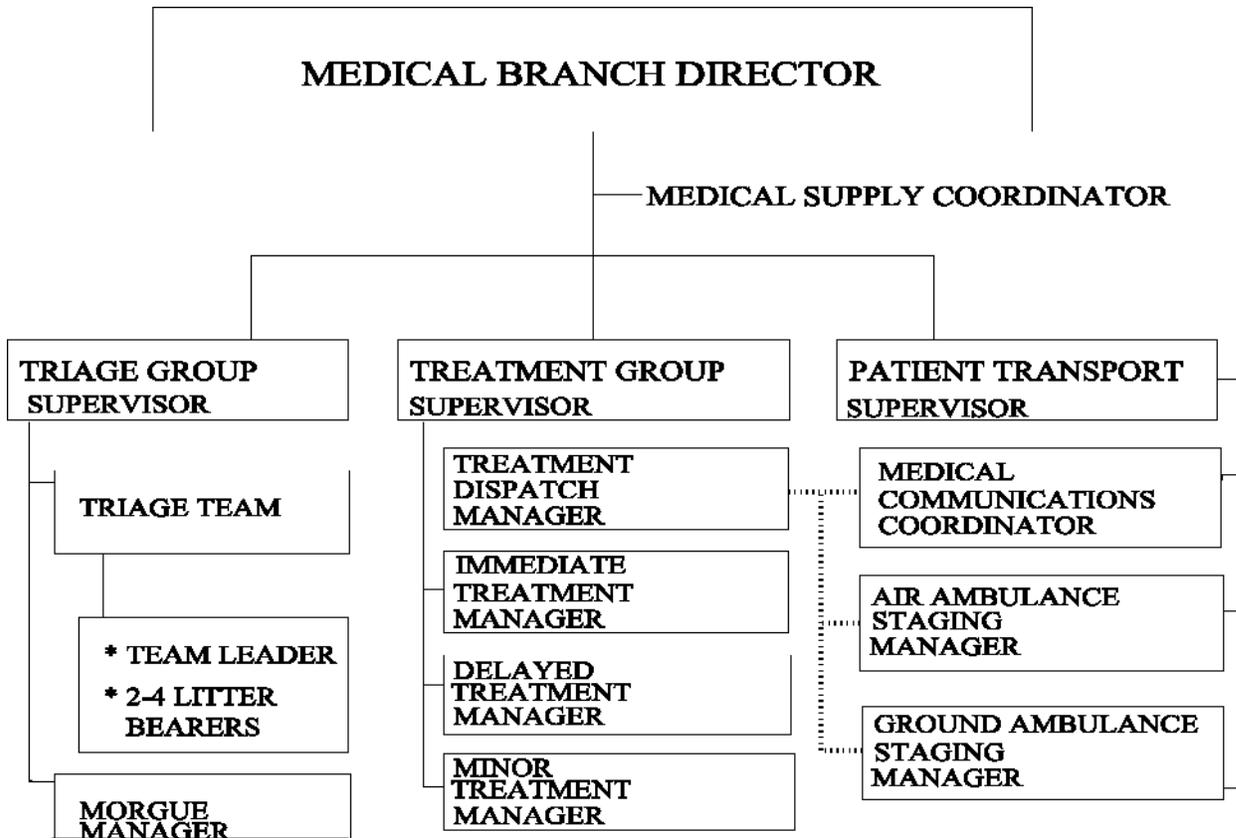
1. EMS RESPONSE
 - Deploy at least one Engine Company and/or Medic unit if possible to each CCP
 - Establish a Branch Supervisor for the CCP
 - Deploy available EMS personnel to CCP as needed. (prioritized)
2. ESTABLISH COMMAND
 - Upon arrival at scene “declare command.”
 - Use school name as tactical name for command
 - Establish the total number of victims and categories
 - Radio the exact location of the CCP and best access route for in-coming equipment
 - Establish staging and ingress and egress traffic plan
 - Establish Communications with C.E.R.T. team leadership *if present.*
 - Transfer command from C.E.R.T. to Fire/EMS
 - Establish Joint or Unified Command with C.E.R.T.
2. QUICKLY ASSESS ALL PATIENTS - VERIFY TRIAGE USING THE “ S.T.A.R.T “ TRIAGE CONCEPT
 - Quickly re-assess patients in “Red” treatment area first,
 - Assign Treatment Group Supervisor and develop Treatment Area organization
3. DEVELOP MEDICAL BRANCH ORGANIZATION
 - Assume Medical Branch Director position
 - Coordinate triage activities with C.E.R.T. Triage Group Supervisor
 - Develop appropriate Transportation Group
 - Liaison with C.E.R.T. Team Leader
 - Reassign C.E.R.T. members as necessary
4. REQUEST ADDITIONAL FIRE AND LOCAL EMS RESOURCES
 - Additional response determined by the Incident Commander or Medical Branch Director
 - Rule of thumb (Personnel):
 - 1 EMT/PM /1 immediate patient - 1 EMT/3 delayed patients OR
 - 1 C.E.R.T./1 immediate patient -1 C.E.R.T./3 delayed patients
5. DOCUMENTATION
 - Designate/assign aide to maintain logs, forms, and patient information.
 - Document patient destination
6. NOTIFICATION
 - Notify City or County EOC of on-scene information
 - Submit patient situation report to EOC
 - See pages 46-51 for information documentation forms

ICS Medical Branch Position Description Checklist

The ICS Medical Branch Position Description Checklists are intended to assist on-scene incident management with position responsibilities and tasks. They provide a clearer understanding of the coordination required at the scene between the different medical response personnel and helps to create an effective and efficient ICS Medical Branch.

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 Air Ambulance Staging Manager44

Medical Branch ICS Structure

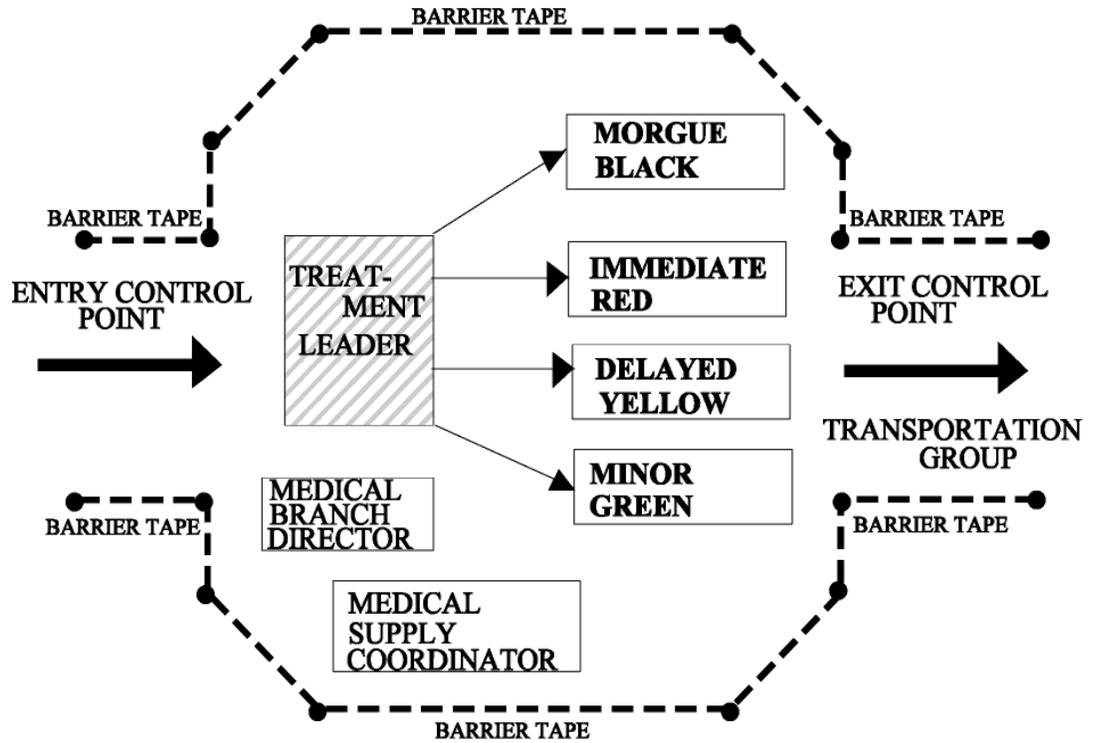


NOTE: Positions titles (Branch Director, Group Supervisor) may change based upon size of operations. Branches may become Groups, Groups may become teams. Size of organization is based upon needs of the incident and the resource requirements.

This plan uses the above “Branch” model. Adapt titles (Branch Director, Group Supervisor) as necessary. This illustration also does not show a “Division” model, but is fully acceptable within the basic ICS principles.

- A Triage Team is comprised of one (1) Triage Officer who is also the Team Leader, and 2 - 4 Litter Bearers.

MEDICAL BRANCH SCHEMATIC



NOTE:

This illustration is an attempt to assist the responder in visualizing the physical layout needed to facilitate the Medical Branch's response. The Triage Group would likely be, in this illustration, to the left of the Entry Control Point, conducting triage and field transportation functions. The Treatment Group would be working within the barrier tape in their respective Treatment Areas, and the Transportation group would be working at the Exit Control Point. Notice the location of the Medical Branch Director and the Medical Supply Coordinator. Deceased should be left in place of death for investigation and scene management. Treatment area morgue is for deceased in that area. Refer to pages 16 and 34 for additional guidelines on mortality management.

Medical Branch Director

- DEFINITION:** Battalion Chief, Captain, Acting Captain, Paramedic, EMT-I
- SUPERVISED BY:** Incident Commander or Operations Section Chief
- SUBORDINATES:** Treatment Group, Triage Group, and Transportation Group Supervisors/or Division Supervisors.
- FUNCTIONS:** Coordinate and supervise EMS operations as a Branch within the Operations Section. Establish command and control of Medical Branch activities to assure best medical care.
- DUTIES:**
1. Receive briefing from IC or Ops Section Chief. Manage all Medical Branch activities.
 2. Establish and supervise a Medical Branch at a level of personnel and other resources sufficient to handle the magnitude of the incident.
 3. Liaison and coordinate with the Medical Group Supervisors (Triage, Treatment and Transport Supervisors) depending on how the Branch is organized. Establish coordination between these Group Supervisors.
 4. Liaison and coordinate with the other Branches that have been created, depending upon how the Operations Section is organized. Ensure law enforcement or OME involvement as necessary.
 5. Establish priorities and action plan, using the appropriate Operational Guidelines for the various declared levels. Direct trained personnel to appropriate Group Supervisors.
 6. Coordinate the amount and types of additional EMS and fire and rescue equipment needed, such as medical caches, ambulances, helicopters, UTA/School buses, protective hose lines, extrication equipment, air packs, backboards, medical supplies, splints, bandages, I.V.'s, etc..
 7. Coordinate incoming and outgoing routes of ground travel with the Staging Manager and the Transportation Group Supervisor. Set boundaries for treatment and transportation areas. Ensure security, traffic control and access is established.
 8. Coordinate air operations with the Transportation Group Supervisor and the Air Ambulance Staging Manager or Landing Zone Manager depending on how Branch is organized.

Note: Assign a safety standby Engine Company or other appropriate measure to the designated helicopter landing zone
 9. Provide for the needs of your personnel: Rest/Rehabilitation, Rotation, Relief
 10. Maintain records. Use Form #1 - Multi-Casualty Branch Worksheet. Determine need for scribe. Track treatment tags. Log all calls.

Medical Branch Director Continued....

OPERATIONAL CONSIDERATIONS:

1. Establish Branch Command Location for Group Supervisors
 - A. Safe area close to Triage/Treatment/Transport Areas and within law enforcement perimeter control.
2. Ambulance traffic pattern and Patient Loading Areas (Transportation Group Supervisor).
3. Treatment Areas - Consider isolating from each other:
 - a. Immediate
 - b. Delayed
 - c. Minor
 - d. Morgue
 1. Consider security and remoteness.
 2. Not a high priority if resources are in short supply.
 3. Trauma condition of bodies and the proximity of dead to living and response personnel. Cover and/or move bodies if traumatic stress is a consideration as well as to show respect to the dead.

Refer to Mortality Management Guidelines During Disaster Operations on page 16.

Medical Supply Coordinator

DEFINITION: Qualified personnel as assigned (EMT/Firefighter)

SUPERVISED BY: Medical Branch Director

SUBORDINATES: Personnel as required, "Assistants"

FUNCTION: Acquire, maintain control of, and distribute appropriate medical equipment and supplies within the Medical Branch. Establish supplies at positions near treatment areas. (See Medical Branch Schematic)

DUTIES:

1. Receive briefing from Medical Branch Director
2. Acquire, distribute, maintain status of medical equipment and supplies within the medical branch. Establish supplies at positions near treatment areas. (See Medical Branch Schematic)
3. Request additional medical supplies (medical caches, ambulance supplies, hospital supplies) as needed through the Medical Branch Director.
4. Coordinate and distribute medical supplies with Treatment Area Managers.
If logistics section is established, this position would report to and receive direction from the Supply Unit Leader.
5. Use Inventory List Form #5. Track source of all supplies for reimbursement purposes.
6. Alert ambulances to drop off supplies in a specific area before leaving for the hospital. Alert additional ambulances (air & ground) to allocate additional supplies from hospitals on return trip if necessary.
7. Request, utilize and manage supplies from MCI trailers as necessary.

Triage Group Supervisor

DEFINITION: Qualified Unit Leader

SUPERVISED BY: Medical Branch Director or Division Supervisor

SUBORDINATES: Medical Teams / personnel

FUNCTION: Assume responsibility for providing triage management and movement of all from within the Triage Area. When triage is completed, he/she may be reassigned as needed.

- DUTIES:**
1. Receive briefing from Medical Branch Director
 2. Implement S.T.A.R.T triage process; brief and supervise Triage Officers as necessary. Use one (1) Triage Officer for every ten (10) patients.
 3. Form Field Transportation Teams (litter bearers), 2-4 members per team, for transport of victims from triage areas to treatment areas. Assemble and supply as many teams as deemed necessary to perform task. Assign (2) teams to every (1) Triage Officer. This will create a Triage Team. (See ICS Medical Branch)

*Note: You may use untrained volunteers to augment **transport** personnel in this area. However, assure that there is a minimum of one (1) EMT on each transport team. If each team has one (1) EMT, then the EMT can monitor patients during triage transport, and maintain airways if necessary.*
 4. Acquire medical supplies from the Medical Supply Coordinator for triage areas. (i.e. backboards, stretchers, c-collars, bandages, splints etc.)
 5. Coordinate with Treatment Group Supervisors to assure that the Field Transportation Teams (Litter Bearers) are delivering patients to the correct treatment areas.
 6. Maintain area security and control of the triage area in coordination with the Branch Director and/or law enforcement.
 7. Create and isolate a Triage Area Morgue if necessary. Refer to Mortality Management Guidelines During Disaster Operations on page 16. Coordinate with Branch Director, Office of Medical Examiner (OME), and Treatment Group Supervisor.

****Note: Remember***

- ***Assign only one (1) Triage Officer for every ten (10) patients***
- ***Assign 2-4 litter bearers (Field Transporters) to each Triage Officer***

Triage Group Supervisor Continued....

- RESPONSIBILITIES
1. Manage and coordinate all triage activities at the incident scene.
 2. Assemble Triage Teams
 - 1 Triage Officer (Team Leader)
 - Field Transport Team of 2 to 4 Litter Bearers
 3. Direct the triage and movement of injured from the triage area to the treatment area.
 4. Establish and maintain a safe triage area.

OPERATIONAL
CONSIDERATIONS:

1. Assess resource needs
 - A. Personnel (Triage Officers and Litter bearers)
 - B. Equipment and supplies
 - C. Relief Units
2. Inform Medical Branch Director of minimum needs
3. Consult with Triage Officers (triage team leaders)
4. Give job assignments
 - a. Safety
 - b. Records
 - c. Triage Personnel
 - d. Transporters
5. Establish morgue location if necessary. Assign a Morgue Leader, refer to Morgue Leader position description on page 34 and the Mortality Management Guideline During Disaster Operations on page 16

****Note: Do not allow deceased patients to be removed from their original locations unless absolutely necessary. If possible, take pictures and mark locations of the deceased. This information is essential to the medical Examiner. Upon arrival of the Medical Examiner's Office (OME), the OME may take charge of all OME-related functions within the morgue area.***

6. SAFETY SHALL BE THE NUMBER ONE PRIORITY

Triage Officer / Triage Team Leader

DEFINITION: Medically qualified personnel – ALS or BLS Triage

SUPERVISED BY: Group Supervisor

FUNCTION: To Triage patients on-scene (S.T.A.R.T. Triage), assign them to appropriate treatment areas, coordinate movement of patients to respective treatment areas, and to monitor assigned patients for as long as they are in the Triage Area (Mother hen concept).

- DUTIES:**
1. Receive briefing form Triage Group Supervisor
 2. Report to designated on-scene triage location with triage equipment.
 3. Direct and manage activities of Triage Team. This includes the Litter Bearers assigned to you.
 4. Triage and tag (10) injured patients. Classify patients with tags, “Red”, “Yellow”, or “Green”.
 5. Provide appropriate medical treatment (ABC’s) to patients prior to movement, according to S.T.A.R.T. Field Guide.
 6. Direct movement of patients to proper treatment areas with Litter Bearers Field Transport: **Move Immediate “Reds” First!**

****Note: Use formula of one (1) Triage officer for every ten (10) patients. Triage Officers do not transport. Triage Officers stay with their respective (10) patients until they are out of the Triage Area and are in the Treatment Area. “Mother Hen” concept to their (10) patients. Once triage is accomplished, Triage Officers can perform limited treatment as time permits while waiting for transporters to move victims to treatment areas.***

7. When all ten (10) victims are carried to the Treatment Area, report with assigned transport team to the Triage Group Supervisor for rehab. or reassignment.

Field Transport Team

DEFINITION: Qualified personnel consists of at least one BLS provider who is able to render care while transporting. These persons are litter bearers, and assist the triage area by transporting the injured to the treatment areas. Untrained volunteers can assist EMT's in this function.

SUPERVISED BY: The Triage Officer

FUNCTION: Assume responsibility for transporting patients from the disaster site/triage area to a treatment area (immediate/delayed/minor) on a backboard or other appropriate device and render medical care during transport if necessary.

- DUTIES:**
1. Receive briefing and assignment form Triage Group Supervisor. Transport Teams are assigned directly to Triage Officer. Together they comprise a Triage Team. Triage Teams are led by the Triage Officer and can consist the Triage Officer and 2 or 4 litter bearers.
 2. Acquire appropriate equipment from the Medical Supply Coordinator to accomplish tasks. (Backboards, c-collars, etc.)
 3. Under Triage Officers direction at disaster site, properly manage patients with c-collars, backboards, dressings, etc....while transporting patient to appropriate treatment area.
 4. *Guideline:* Each Field Transport Team should carry no more than 10 Patients form the triage area to the respective treatment area before going to rehab. or being reassigned/rotated.
 5. Obtained additional help from untrained volunteers or bystanders to assist:
(Remember: at least one EMT per Field Transport Team)
 6. Report back to Triage Group Supervisor with Triage Officer (Team Leader) for rehab. or reassignment.

Morgue Manager

- DEFINITION:** Personnel assigned (firefighter, law enforcement, medical examiner)
- SUPERVISOR:** Triage Group Supervisor / OME representative
- FUNCTION:** Tag / Account / Document all fatalities in medical incident in Triage Area.
- DUTIES:** Locate, tag, and mark locations of all deceased in the Triage Area.

Do Not move deceased to morgue area without permission or contact from representative from the coroner's office. Maintain dignity of the deceased.

Coordinate if necessary with Treatment Group Supervisors or Treatment Area Morgue.

RESPONSIBILITIES:

1. Manage all Morgue Area activities as outlined in the Mortality Management Guidelines during Disaster Operation on pg. 16
2. Keep area off limits to all personnel unless except those needed.
3. Coordinate with law enforcement and assist the coroner's office as necessary.
4. Keep identity of deceased confidential. Maintain records including tentative identity (if available), where the deceased was found, etc.
5. Establish an Incident Morgue location if necessary. Ensure that it is secluded from direct site if possible. Assign security. Coordinate with Treatment Group Supervisor of movement if any of victims who become unsalvageable while in a treatment area. Advise Triage Group Supervisor of location.

OPERATIONAL CONSIDERATIONS:

1. Assess resource needs
 - a. Equipment and supplies (Body bags, Tags, Privacy Screens)
 - b. Personnel / Relief Personnel
 - c. Law enforcement, OME
2. Give job assignments (Security, Documentation, Litter Bearers,)
3. Morgue location
 - a. Remove form triage area. (OME permission needed)
 - b. Not readily available to other patients
 - c. Accessible to vehicle (ambulance, OME, law enforcement)

Note: Do not move deceased to morgue area without the permission from the coroner's office. Follow Mortality Management Guidelines.

Treatment Group Supervisor

DEFINTION: Paramedic level or above

SUPERVISED BY: Medical Branch Director

SUBORDINATES:

1. Treatment Dispatch Manager
2. Immediate Treatment Manager
3. Minor Treatment Manager
4. Delayed Treatment Manger

FUNCTION: Assume responsibility for treatment, prepare for transport, and coordination of patient treatment in treatment areas. Coordinate movement of patients from triage area to treatment area and from treatment to transportation locations.

DUTIES:

1. Receive briefing from Medical Group Supervisor. Use form #1 "Multi-Casualty Branch Worksheet," Form #2 "Treatment Area Worksheet." Develop organization sufficient to handle assignment.
2. Manage all activities within the Treatment Group. Implement, direct, and supervise Treatment Dispatcher, and Immediate, Delayed, and Minor Treatment Area Managers.
3. Plan layout. See Medical Branch schematic pg. #26.
4. Designate Treatment Mangers and Treatment Areas as appropriate. Isolate Morgue and Minor Treatment Areas from Immediate and Delayed Treatment Areas. Coordinate with Triage Group Morgue Manger if necessary.
5. Request sufficient and qualified emergency medical personnel to staff Treatment Areas. Request medical supplies as needed. Consider communications, equipment supplies, relief personnel, and record keeping/tracking.
6. Communicate and coordinate patient movement with Triage Group Supervisor.
7. Receive patients from Field Transport Teams and direct them to appropriate treatment areas. DON NOT RETRIAGE AT THIS TIME OR LOCATION.
8. Designate/assign an aid to maintain logs, forms, and patient information.
9. Maintain triage assessment of patients throughout treatment areas.
10. Keeps areas off limits to all personnel except needed. Acquire law enforcement assistance to enforce treatment area security.
11. Communicate and coordinate movement with Patient Transportation Supervisor. THE MOST CRTICAL PATIENTS SHOULD BE TRANSPORTED FIRST.

Treatment Dispatch Manager

DEFINITION: Paramedic / EMT

SUPERVISED BY: Treatment Group Supervisor

FUNCTION: Provide coordination between Treatment Area Managers and the Transportation Groups Staging Managers and Medical Communications Coordinator for priority transport.

RESPONSIBILITIES:

1. Receive assignment and briefing from Treatment Group Supervisor. Coordinate treatment dispatch function with Treatment Managers and Transportation Group
2. Establish and maintain communication with treatment managers
3. Verify patient transportation priority “Red”, “Yellow”, or “Green”.
4. Designate aid to maintain appropriate forms and patient information if necessary.
5. Establish and maintain communications with Medical Communications Coordinator for transportation of patients.

THE MOST CRITICAL PATIENTS SHOULD BE TRANSPORTED FIRST

- a. Coordinate patient loading and ambulance departure/destination.
 - b. Direct movement of patients to loading locations
7. Maintain appropriate records. Use form #2 “Treatment Area Worksheet.”

OPERATIONAL

CONSIDERATIONS:

1. Need direct communications with Hospital Communications Coordinator
2. Need direct communication with Air and Ground Staging Managers
3. Need direct communication with Treatment Group Supervisors & Treatment Managers.
4. Assess resource needs
 - a. Communications
 - b. Equipment and supplies
 - c. Records and other personnel.

Immediate Treatment Manager

DEFINITION: Paramedic / EMT-I

SUPERVISED BY: Treatment Group Supervisors

SUBORDINATES: Medical personnel or teams assign to Immediate Treatment Area

FUNCTION: Responsible for treatment and re-triage of patients assigned to Immediate Area

DUTIES:

1. Receive briefing from Treatment Group Supervisor and brief subordinates.
2. Receive patients from Field Transport Teams. Reassess and treat appropriately.
3. Request or establish medical personnel as necessary.
4. Assign treatment personnel to patients received in the Immediate Treatment Area

Note: Rule of thumb: 1 EMT / 1 patient

5. Designate aid to maintain appropriate forms and patient information.
6. Assure that patients are prioritized for transportation.
7. Coordinate transport of patients with Treatment Dispatch Manager. Notify Treatment Dispatch Manager of patient's readiness and priority for transportation.
8. Assure that appropriate patient information is recorded. Use form #2 Treatment Area Worksheet.

Delayed Treatment Manager

DEFINITION: Firefighter / EMT

SUPERVISED BY: Treatment Group Supervisor

SUBORDINATES: Medical personnel or teams assigned to Delayed Treatment Area

FEUNCTION: Responsible for treatment and re-triage of patients assigned to Delayed Treatment Area.

DUTIES:

1. Receive briefing from Treatment Group Supervisor and brief subordinates.
2. Receive patients from Field Transport Teams. Reassess and treat appropriately.
3. Request or establish medical personnel as necessary.

Note: Rule of thumb: 1 EMT / 3 patients

4. Assign treatment personnel to patients received in the Delayed Treatment Area.
5. Assure proper prioritization and re-evaluation of patients for re-assignment to Immediate Treatment Areas if condition worsens.
6. Designate aid to maintain appropriate forms and patient information.
7. Assure that patients are prioritized for transportation.
8. Coordinated transport of patient's with Treatment Dispatch Manager and the Immediate Treatment Area Manager. Notify Treatment Dispatch Manager of Patient's readiness and priority for transportation.
9. Assure that appropriate patient information is recorded. Use form #2 Treatment Area Worksheet.

Minor Treatment Manager

- DEFINITION:** Firefighter / EMT
- SUPERVISED BY:** Treatment Group Supervisor
- SUBORDINATES:** Medical personnel or teams assigned to Minor Treatment Area.
- FUNCTIONS:** Responsible for treatment and re-triage of patients assigned to Minor Treatment Area.
- DUTIES:**
1. Receive briefing from Treatment Group Supervisor and brief subordinates.
 2. Receive patients from Field Transport Teams and ambulatory patients. Reassess and treat appropriately.
 3. Request medical personnel as necessary. Assign treatment personnel to patients received in the Minor Treatment Area.
- Note: Do not overuse critical medical resources here. One EMT can take care of several injured, or recruit other "Greens" to assist in the care.***
4. Assure proper prioritization and re-evaluation of patients for re-assignment to Delayed Treatment Areas if condition worsens.
 5. Treatment of patients triaged to the Minor Treatment Area.
 6. Assure that appropriate patient information is recorded prior to patient release or transportation. Designate aid to maintain appropriate forms and patient information. Use form #2 Treatment Area Worksheet.
 7. Coordinated transport of patient's with Treatment Dispatch Manager and the Immediate and/or Delayed Treatment Area Manager. Notify Treatment Dispatch Manager of Patient's readiness and priority for transportation.

Triage Group Supervisor

- DEFINTION:** Qualified Manager
- SUPERVISED BY:** Medical Branch Director
- SUBORDIANTES:** Medical Communications Director, Ground Ambulance Manger, Air Ambulance Manager.
- FUNCTION:** Coordination of patient transportation and maintenance of records related to patient identification, injuries, mode of transportation and destination.
- DUITIES:**
1. Receive briefing from Medical Branch Director. Develop organization sufficient to handle assignments.
 2. Ensure establishment of hospital communications. Ensure activation of hospital alert system. Maintain records of all hospitals being utilized and their handling capabilities for proper dispatching. Use Form #3 Hospital Resource Availability.
 3. Designate Ambulance Staging Managers. Coordinate staging areas.
 4. Assign an aid to maintain forms and patient information, if necessary.
 5. Direct the transportation of patients as determined by the Treatment Group Supervisor. Ensure proper coordination between Treatment Dispatch Manager and the Transportation Group.
 6. Assure that patient information and destination is recorded. Use Form #4 Ambulance Staging Resource Status, Form #3 Hospital Resource Availability. Coordinate with Treatment Group Supervisor and Medical Communications Coordinator, use Form #2 Treatment Area Worksheet.
 7. Control all ambulance loading activities and movements. Maintain an accurate account of injured sent to hospitals and their classification. Patient destination will be determined by medical personnel through the Medical Communications Coordinator.
 8. Request additional ambulances as required.
 9. Assume Transportation Recorder and Ambulance Manager functions until they have been activated.
 10. Notify Ambulance Staging Manger of ambulance requests.
 11. Establish ground ambulance staging area with the Medical Branch Director and Ground Ambulance Staging Manager.
 12. Establish air ambulance landing zones with the Medical Branch Director and Ground Ambulance Staging Manager.

OPERATIONAL
CONSIDERATIONS:

1. A command location for patient transportation function. Remain in close proximity to the Treatment Group Supervisor, Medical Branch Director, and the transportation area.
2. Develop and ambulance traffic pattern (if possible) to avoid confusion. Use Medical Branch schematic.
3. Designate staging areas early in the operations.
4. Security and safety in the transportation area are a priority.
5. Ensure documentation of patient destinations. (Critical for family notifications)
6. Ensure documentation of State MICU / Polaris forms to be completed for each victim.

Medical Communications Coordinator

- DUTIES:** Qualified Coordinator
- SUPERVISED BY:** Transportation Group Supervisor
- SUBORDINATES:** Transportation Recorder and personnel as required
- FUNCTION:** Maintain communication with hospitals and other facilities to assure proper patient transportation and destination. Coordinate information through Transportation Group Supervisor, the Dispatch Treatment Manager and both air and ground ambulance staging managers.
- DUTIES:**
1. Establish a communications link with hospitals.
 2. Determine hospital availability. Obtain hospital availability information. Use Form #3 Hospital Resource Availability.
 3. Designate aid to maintain appropriate forms and patient information (if necessary).
 4. Receive basic patient information and injury status from Treatment Dispatch Manager. Communicate patient disposition to destination facility.
 5. Communicate appropriate hospital availability to Treatment Dispatch Manager.
 6. Select patient destinations for patients leaving the treatment area.
 7. Record and maintain appropriate transportation records. Use Form #2 Treatment Area Worksheet. (Coordinate with Treatment Dispatch Manager)
 9. Maintain close liaison and information coordination with the Transportation Group Staff and Treatment Dispatch Manager.
 10. Coordinate patient loading and destination assignments with the Treatment Dispatch Manager and staging managers. Select mode of transportation of patients leaving the treatment areas.

Ground Ambulance Staging Manager

DEFINITION: Personnel as assigned

SUPERVISED BY: Transportation Group Supervisor

SUBORDIANES: Personnel as required

FUNCTION: Manage the ground ambulance staging area

- DUTIES:**
1. Receive briefing form the Transportation Group Supervisor
 2. Establish appropriate staging area for ground ambulances. Notify Transportation Group Supervisor of location.
 3. Develop organization sufficient to handle assignment.
 4. Manage all ground ambulance staging activities. Control apparatus parking and movement.
 5. Establish ambulance ingress and egress (route of travel) for incident action plan.
 6. Plan layout of Staging area. Consider immediate and future needs. Refer to medical branch schematic.
 7. Provide ambulances upon request. Coordinate activities with Transportation Group Supervisor and Treatment Dispatch Manager.
 8. Maintain records as required. Use Form #4 Ambulance Staging Resource Status.
 9. Assure that necessary supplies are unloaded from the ambulance for treatment area needs. (For use at the scene through the Medical Supply Coordinator) Provide a medical supply resource inventory.
 10. Establish immediate contact with ambulance agencies at the scene.
 11. Recommend additional transportation resources as necessary.

Air Ambulance Staging Manager

- DEFINITION:** Personnel assigned who are trained in landing zone management
- SUPERVISED BY:** Transportation Group Supervisor
- SUBORDINATES:** Personnel as assigned
- FUNCTION:** Manage the air ambulance staging area and dispatch air ambulances as needed.
- DUTIES:**
1. Receive briefing from Transportation Group Supervisor. Coordinate all activities with group supervisor.
 2. Establish appropriate staging area for air ambulances. Manage all air ambulance staging area activities. Use standard landing zone practices.
 3. Plan layout of staging area and establish landing zones for air ambulances. Develop organization sufficient to handle assignments. Consider immediate and future needs.
 4. Maintain tight security and safety zones for landing management. Coordinate law enforcement needs with Group Supervisor if necessary.
 5. Notify Transportation Group Supervisor of staging locations.
 6. Provide air ambulances upon request. Coordinate group patient loading with Transportation Group Supervisor and the Treatment Dispatch Manager.
 7. Maintain record as required. Use Form #4 Ambulance Staging Resource Status.
 8. Air ambulances, upon return trips, may be requested to bring supplies to the scene. Assure that supplies are obtained and given to the Medical Supply Coordinator.
 9. Establish communications with air ambulances over appropriate pre-designated frequencies.
 10. Recommend additional transportation resources as appropriate.

ICS Medical Branch Forms

Multi-Casualty Medical Branch Worksheet – Form #1.....46
Treatment Area Worksheet - Form #2 47
Hospital Resource Availability – Form #3..... 48
Ambulance Staging Resource Status – Form #4..... 49
Medical Supply Inventory List – Form # 5 50
Davis County EMS Incident Worksheet – Form #651

MULTI-CASUALTY-MEDICAL BRANCH WORKSHEET

Incident Command/Name:	Date:	Time:
Incident Commander:		
Operations Section Chief:		
Staging Area Manager:	Location:	
Medical Branch Director:		
Medical Supply Coordinator:		
Triage Group Supervisor:	Treatment Group Supervisor	Patient Transport Group Supervisor:
Triage Team/Members Leader:	Treatment Dispatch Manager:	Medical Communications Coordinator:
Field Transport Team Leader:	Immediate Area Manager:	Air Ambulance Staging Manager:
Field Transport Team Leader:	Delayed Area Manager:	Ground Ambulance Staging Manager:
	Minor Area Manager:	

OME: _____ <u>Needed?</u> Y N	Locations: _____	Buses _____ <u>Needed?</u> Y N
Air Ambulances _____ Y N	_____	Ground Staging: _____
Red Cross _____ Y N	Details: _____	Air Staging: _____
Radio Frequencies: _____ _____ _____	_____ _____ _____	Radio Frequencies: _____ _____ _____

CASUALTY COLLECTION POINTS (CCP) PRTOCOL

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CASUALTY COLLECTION POINT (CCP) PROTOCOL

CCP Overview

The Casualty Collection Point (CCP) protocol is an emergency, or disaster response concept that will allow for, or at least take into consideration, an emergency that has wide spread impact throughout the community, and as such, overwhelms and paralyzes the normal EMS response. A disaster that would create this kind of scenario might, for example, be an earthquake that injures hundreds of citizens throughout the county, perhaps affecting main transportation routes and possibly damaging Davis County's two hospitals. Hundreds of injured spread throughout the county would overwhelm the EMS system and cause it to be unable to respond to the hundreds of calls for medical assistance. If this were the case, some kind of gathering the wounded would be critical.

If this scenario were compounded by damage to the highway infrastructure, victims would then become isolated from emergency medical care. If victims are unable to be transported to the hospitals, then the hospital employees would have the same dilemma and would be unable to report to their duty stations at their respective hospitals.

If an earthquake affect the county to the extent that there are hundreds of injured, then it stands to reason that the hospitals in Davis County would also receive some type of damage. Therefore the basic premise of a large earthquake injuring hundreds from across the county also creates a very plausible situation wherein transportation is hindered and damages to medical infrastructure will also occur.

Casualty Collection Points (CCP) are created for extreme situations where the EMS system is completely overwhelmed and unable to respond to all incidents without some kind of protocol that will allow for activation of locations where the injured can be taken by citizens and then transferred to the county EMS system. Rather than attempt to send the already overwhelmed EMS to each victim, the victim, through private or organized means can be brought to the EMS system, triaged and transported appropriately via CCP.

Locations

In Davis County, there are 70 pre-determined locations where CCP's could be activated. (See pages 56-60 for list) These sites coincide with the Points of Distribution (POD) locations. Each site is capable of hosting a CCP. The purpose in identifying multiple sites for a CCP is to have in reserve multiple areas which can be chosen to implement CCP's assuming many pre-determined sites may be damaged by the same incident requiring the activation of the CCP.

CCP Planning Concept

Activation

Activation of a CCP is the jurisdiction of the local city or county in which the CCP is located. The city EOC or county EOC may exercise the authority to open a CCP. A policy decision by Chief Elected Officials, under advisement from that jurisdiction's chief medical or fire officer is all that is needed for a city to activate a CCP.

Notification between hospitals, county wide EMS providers, and county emergency management is necessary to ensure successful incident action planning.

Advisement and/or requests for activation may also come from the hospitals or other jurisdictions within Davis County. It would be anticipated that a situation warranting activation of a CCP were to exist in one jurisdiction, then it is highly likely that this same situation exists in other jurisdictions within Davis County. Activation of any CCP in Davis County would warrant EOC activation for the affected city as well as the county.

Command and Control

Once a CCP is activated, there needs to be a command and control element at that facility to organize and manage the medical operations. Due to the nature that would warrant activation of a CCP, it is highly likely that the Community Emergency Response Team (C.E.R.T.) would be activated. If EMS resources are not available, command and control would rest with the community's C.E.R.T. leadership. If EMS resources were available, a medical officer would be expected assume command of the CCP site.

Command and Control - C.E.R.T.

When activated, the CCP will require several personnel to conduct search and rescue, transport the injured to the site, conduct triage and treatment and coordinate transportation of victims to a medical facility if possible. C.E.R.T. personnel will be required to staff at a minimum the following management positions:

Incident Commander -	Oversee operations / liaison with city EOC
Medical Supply Coordinator -	Oversee logistics / Distribute and document medical supply needs and use.
Search & Rescue Group Supervisor -	Coordinate searching, triaging and field transportation of injured to the CCP site.
Treatment Group Supervisor -	Oversee CCP treatment areas
Transportation Group Supervisor -	Coordinate transportation of victims to medical facilities.
Communications Coordinator-	A.R.E.S. communication team members provide with city / county EOC's and with area hospitals.

C.E.R.T. team members will use the ICS Medical Branch positions and will follow that protocol at CCP sites.

Command and Control – Fire/EMS

Upon activation of a CCP, if fire/EMS resources are available, they are to take command of the CCP. If they are unavailable, then C.E.R.T. will command the site for the city or county. Only fully qualified fire/EMS personnel who are trained in C.E.R.T. capabilities and methodologies are to assume the role of IC. In the case of limited resources, most operational management positions should be retained by C.E.R.T. leadership, thus freeing fire/EMS resources to oversee patient management. Fire and EMS commanders must, upon arrival at the CCP, make contact and establish liaison with C.E.R.T. leadership. On-site medical branch protocols are still in effect at a CCP.

MCI Trailers

When an MCI incident occurs, up to three (3) MCI trailers may be deployed to that specific site for use by fire/EMS personnel. These three (3) trailers were constructed and staged to support county and region wide fire/EMS resources. If the situation is such that local EMS supplies are insufficient, or will be overwhelmed at an MCI, Incident Commanders shall have the authority to request any or all of the MCI trailers, take the necessary supplies and apply them to the specific MCI site.

If an Incident Commander orders the use off any of the MCI trailers, then full documentation of what was taken, what was used, and where it was taken must be made.

Based upon on-site protocol listed earlier in this plan, MCI trailers will be automatically deployed as follows:

<u>Response Level Declaration</u>	<u>Number of Trailers Dispatched</u>
Level 1 – Medical Priority Dispatch	No Trailer Dispatched
Level 2 – Expanded Medical Emergency	No Trailer Dispatched
Level 3 – Major Medical Emergency	One Trailer Dispatched
Level 4 – Medical Disaster	Two MCI Trailers
Level 5 – CCP Activation	Can Deploy all Three

Trailers should be dispatched automatically when a response level is declared by on-scene command. If additional trailers are or will be requested, then on-scene command will need to notify dispatch of the specific request.

Authority to Use

Any fire/EMS commander has authority to use an MCI trailer. This use is automatic upon declaration of a response level and augmented with a special request for additional trailers from Incident Command.

MCI Trailer Storage / Deployment Locations

1. Fruit Heights Public Works Building
2. South Davis Metro Fire Station #81
3. Layton City Fire Department Station #53

DAVIS COUNTY, UTAH POINT OF DISTRIBUTION LIST						DATE ENTERED	DATE SENT	DATE REVISED
For Full Assessment Unit POD Capability Ratings see RVIII UT POD Database						9-Jan-08		05-Mar-08
#	Site ID #	Facility Name	TYPE	City	Facility Address	Facility Phone #	Latitude	Longitude
1	UT4089401119011	West Bountiful Elementary School	TYPE III	West Bountiful	750 West 400 North West Bountiful, UT 84087	801-402-2000	40.53.668	111.54.023
2	UT4087831119001	Woods Cross Elementary School	TYPE III	Woods Cross	745 West 1100 South Woods Cross, UT 84087	801-402-1800	40.52.698	111.53.998
3	UT4087331118822	Bountiful Elementary School	TYPE III	Bountiful	1620 South 50 West Bountiful, UT 84010	801-402-1350	40.52.433	111.52.958
4	UT4088231118879	Washington Elementary School	TYPE III	Bountiful	340 West 650 South Bountiful, UT 84010	801-402-1950	40.52.903	111.53.308
5	UT4088291118747	Oak Hills Elementary School	TYPE III	Bountiful	1235 East 600 South Bountiful, UT 84010	801-402-1650	40.52.952	111.51.308
6	UT4087681118678	Valley View Elementary School	TYPE III	Bountiful	1395 South 600 East Bountiful, UT 84010	801-402-2050	40.52.550	111.52.131
7	UT4086121118857	Boulton Elementary School	TYPE III	Bountiful	2611 Orchard Drive Bountiful, UT 84010	801-402-1300	40.51.684	111.53.108
8	UT4085041119000	Adelaide Elementary School	TYPE III	Bountiful	731 West 3600 South Bountiful, UT 84010	801-402-1250	40.51.024	111.54.05
9	UT4084191119050	Orchard Elementary School	TYPE III	North Salt Lake	205 E. Center St. North Salt Lake, UT 84054	801-402-1700	40.50.527	111.54.422
10	UT4084641118746	North Canyon Park	TYPE III	Bountiful	3900 S. Bountiful Blvd. Bountiful, UT 84010	801-298-6220	40.50.757	111.52.553
11	UT4086511118719	Muir Elementary School	TYPE III	Bountiful	2275 S. Davis Blvd. Bountiful, UT 84010	801-402-1550	40.51.929	111.52.281
12	UT4089211118602	Holbrook Elementary School	TYPE III C	Bountiful	1018 East 250 North Bountiful, UT 84010	801-402-1450	40.53.523	111.51.661
13	UT4090141118744	Tolman Elementary School	TYPE III	Bountiful	300 East 1200 North Bountiful, UT 84010	801-402-1900	40.54.086	111.52.534
14	UT4089561118856	South Davis Recreation Center	TYPE II	Bountiful	550 North 200 West Bountiful, UT 84010	801-298-6220	40.52.719	111.53.096
15	UT4089791118888	Meadowbrook Elementary School	TYPE III	Bountiful	700 North 325 West Bountiful, UT 84010	801-402-1600	40.53.803	111.53.267
16	UT4103241119736	Angel Street Park	TYPE II	Kaysville	150 S. Angel St. Kaysville, UT 84037	801-546-4046	41.01.935	111.58.419

17	UT40980611191122	Davis County Fairgrounds	TYPE II	Farmington	151 S. 1100 W. Farmington, UT 84025	801-451-4080	40.58.763	111.54.541
18	UT4098211119296	Eagle Bay Elementary School	TYPE II	Farmington	1933 Clark Ln Farmington, UT 84025	801-402-3800	40.58.913	111.55.666
19	UT4092051118770	Centerville Elementary School	TYPE III C	Centerville	350 N. 100 E Centerville, UT 84014	801-402-1400	40.55.277	111.52.608
20	UT4090661118741	J.A. Taylor Elementary School	TYPE III	Centerville	295 Pages Ln Centerville, UT 84014	801-402-1500	40.54.409	11152.55100
21	UT4093161118790	Stewart Elementary School	TYPE III	Centerville	1155 N. Main St Centerville, UT 84014	801-402-1850	40.55.832	111.52.803
22	UT4094741118857	Reading Elementary School	TYPE III	Centerville	360 W. 2025 N Centerville, UT 84014	801-402-1750	40.56.858	111.53.026
23	UT4097561118832	Woodland Park	TYPE III	Farmington	300 S 200 E Farmington, UT 84025	801-451-0953	40.58.523	111.53.015
24	UT4097881118836	Monte Vista Elementary School	TYPE III C	Farmington	100 S 200 E Farmington, UT 84025	801-402-3050	40.58.731	111.53.005
25	UT4097691118895	Farmington Elementary School	TYPE III	Farmington	50 W 200 S Farmington, UT 84025	801-402-2950	40.58.629	111.53.365
26	UT4097871118875	Main City Park	TYPE III	Farmington	100 S. Main Farmington, UT 84025	801-451-0953	40.58.691	111.53.299
27	UT4100071119048	Knowlton Elementary School	TYPE III	Farmington	801 Shepard Lane Farmington, UT 84025	801-402-3000	41.00.034	111.54.295
28	UT4101361119223	Windridge Elementary School	TYPE III	Kaysville	1300 S. 700 E Kaysville, UT 84037	801-402-3550	41.00.780	111.55.394
29	UT4101791119396	Ponds Park South	TYPE III C	Kaysville	1000 S 50 W Kaysville, UT 84037	801-546-4046	41.00.864	111.56.248
30	UT4102871119395	Columbia Elementary School	TYPE III	Kaysville	378 S 50 W Kaysville, UT 84037	801-402-3350	41.01.683	111.56.358
31	UT4103561119362	Kaysville Elementary School	TYPE III	Kaysville	50 N. 100 E. Kaysville, UT 84037	801-402-3400	41.02.106	111.56.065
32	UT4103181119195	Burton Elementary School	TYPE III	Kaysville	827 E 200 S Kaysville, UT 84037	801-402-3150	41.01.920	111.55.172
33	UT4105161119190	Morgan Elementary School	TYPE III	Kaysville	1065 Thornfield Rd Kaysville, UT 84037	801-402-3450	41.03.086	111.55.134
34	UT4105071119429	Creekside Elementary School	TYPE III C	Kaysville	275 W Mutton Hollow Rd Kaysville, UT 84037	801-402-3650	41.03.072	111.52.517
35	UT4110051120068	Fisher Park	TYPE III	Clearfield	920 South 1000 East Clearfield, UT 84015	801-525-2790	41.06.031	112.00.470
36	UT4110341120073	South Clearfield Elementary School	TYPE III	Clearfield	990 East 700 South Clearfield, UT 84015	801-402-2500	41.06.182	112.00.447
37	UT4110801120067	Hill Field Elementary School	TYPE III	Clearfield	389 S 1000 E Clearfield, UT 84015	801-402-2350	41.06.479	112.00.390
38	UT4111371120210	Wasatch Elementary School	TYPE III	Clearfield	270 E Center St Clearfield, UT 84015	801-402-2650	41.06.812	112.01.233

39	UT4112011120454	Holt Elementary School	TYPE III	Clearfield	448 N 1100 W Clearfield, UT 84015	801-402-2400	41.07.224	112.02.699
40	UT4112781120308	Doxey Elementary School	TYPE III	Clearfield	944 N. 250 W Clearfield, UT 84015	801-402-2250	41.07.666	112.01.837
41	UT4114291120307	Sunset Elementary School	TYPE III	Clearfield	2014 N 250 W Clearfield, UT 84015	801-402-2550	41.08.556	112.01.844
42	UT4115031120295	Fremont Elementary School	TYPE III	Clearfield	160 W 2525 N Clearfield, UT 84015	801-402-2300	41.09.029	112.01.739
43	UT4114661120548	Parkside Elementary School	TYPE II	Clearfield	2262 N 1500 W Clearfield, UT 84015	801-402-1150	41.08.811	112.03.210
44	UT4113981120472	Clinton Elementary School	TYPE III	Clearfield	1101 W 1800 N Clearfield, UT 84015	801-402-2150	41.08.376	112.02.789
45	UT4114001120804	West Clinton Elementary School	TYPE II	Clearfield	2826 W 1800 N Clearfield, UT 84015	801-402-2700	41.08.405	112.04.821
46	UT4112531120827	Lakeside Elementary School	TYPE III	Clearfield	2941 W 800 N Clearfield, UT 84015	801-402-2900	41.07.471	112.05.003
47	UT4111811120989	West Point Elementary School	TYPE III	Clearfield	3788 W 300 N Clearfield, UT 84015	801-402-2750	41.07.140	112.05.969
48	UT4108551120838	Fremont Park	NC	Syracuse	1950 S 3000 W Syracuse, UT 84075	801-614-9660	41.05.008	112.04.056
49	UT4109051120740	Canterbury Park	TYPE III C	Syracuse	2500 W 1600 S Syracuse, UT 84075	801-614-9660	41.05.025	112.04.020
50	UT8109191120644	Syracuse Elementary School	TYPE III	Syracuse	1503 S 2000 W Syracuse, UT 84075	801-402-2600	41.05.029	112.03.051
51	UT4109411120485	Cook Elementary School	TYPE III	Syracuse	1175 W 1350 S Syracuse, UT 84075	801-402-2200	41.05.038	112.02.054
52	UT4107591120399	Bluff Ridge Elementary School	TYPE III	Syracuse	2680 S. 775 W Syracuse, UT 84075	801-402-2850	41.04.034	112.02.025
53	UT4108731120262	Antelope Elementary School	TYPE III	Clearfield	1810 S. Main Clearfield, UT 84015	801-402-2100	41.05.014	112.01.035
54	UT4107051119696	Crestview Elementary School	TYPE III	Layton	185 W. Golden Ave Layton, UT 84040	801-402-3200	41.04.224	111.58.182
55	UT4106001119732	Layton Elementary School	TYPE III	Layton	319 W Gentile St Layton, UT 84041	801-402-3500	41.03.601	111.58.339
56	UT4104431119916	Heritage Elementary School	TYPE III	Layton	1354 Weaver Lane Layton, UT 84041	801-402-1200	41.02.703	111.59.430
57	UT4106371120260	Sand Springs Elementary School	TYPE III	Layton	242 N. 3200 W Layton, UT 84041	801-402-3850	41.03.064	112.01.572
58	UT4106991120069	Ellison Park	TYPE II	Layton	700 N 2200 W Layton, UT 84041	801-336-3900	41.04.079	112.00.242
59	UT4108391119952	Vae View Park	TYPE III	Layton	1600 N. Main Layton, UT 84041	801-336-3900	41.04.967	111.59.837
60	UT4108281119992	Vae View Elementary School	TYPE III	Layton	1750 W. 1600 N Layton, UT 84041	801-402-2800	41.04.968	111.59.837
61	UT4108901119768	Lincoln Elementary School	TYPE III	Layton	591 W. Antelope Dr. Layton, UT 84041	801-402-2450	41.05.340	111.58.610
62	UT4108271119662	Woodward Park	TYPE III C	Layton	1505 N. 25 E. Layton, UT 84041	801-336-3900	41.04.926	111.57.975

63	UT4110281119317	Mountain View Elementary School	TYPE III	Layton	2025 E. 3100 N Layton, UT 84040	801-402-3700	41.06.250	111.55.70 7
64	UT4109381119238	Oak Forest Park	TYPE II C	Layton	2250 E 2400 N Layton, UT 84040	801-336-3900	41.05.562	111.55.46 4
65	UT4109531119260	Adams Elementary School	TYPE III	Layton	2200 E. 2500 N Layton, UT 84040	801-402-3100	41.05.738	111.55.51 2
66	UT4108091119181	East Layton Elementary School	TYPE III	Layton	2470 E. Cherry Ln Layton, UT 84040	801-402-3250	41.04.852	111.55.11 8
67	UT4107421119340	Andy Adams Park	TYPE III	Layton	1713 E. Gordon Ave Layton, UT 84040	801-336-3900	41.04.477	111.55.99 0
68	UT4107451119540	King Elementary School	TYPE III	Layton	601 E. Gordon Ave Layton, UT 84041	801-402-3300	41.04.495	111.57.28 9
69	UT4106381119525	White Sides Elementary School	TYPE III	Layton	233 Colonial Ave Layton, UT 84041	801-402-3600	41.03.789	111.57.17 9
70	UT4106611119606	Layton Commons Park	TYPE III	Layton	437 N. Wasatch Dr. Layton, UT 84041	801-336-3900	41.03.986	111.57.65 2
71								
72								
73								
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RVIII UT POD ASSESSMENT SURVEY SUMMARY POINTS OF CONTACT FOR DAVIS COUNTY

UT State Primary State Point of Contact:	FEMA RVIII Coordination & Planning Branch Chief:
Utah Division of Homeland Security Office of Emergency Services Program Manager Joe Thornton 801-538-3740 Email: jthornton@utah.gov Room 110, State Office Building Salt Lake City, Utah 84114 1-800-753-2858 FAX 801-538-3770	FEMA Assessment Lead: Brad Bonnema DHS/ FEMA RVIII DOD LG BLDG 710 POBOX 25267 DFC Denver, CO80225-0267 Office: 303-235-4800 Cell: 303-842-4777 Fax: 303-235-4652 Email: brad.bonnema@dhs.gov
Davis County Primary Point of Contact:	FEMA RVIII Assessment Planning Unit Specialist:

<p>Davis County Sheriff's Office Davis County Emergency Services Coordinator: Sgt. Brent Peters 800 West State Street Farmington, Utah 84025 Office: (801) 451-4100/Cell: 801 541-1373 Fax: (801) 451-4167 E-Mail: bpeters@co.davis.ut.us</p>	<p>Planning Specialist: Maggie Jo Holmes DHS/ FEMA RVIII DOD LG BLDG 710 POBOX 25267 DFC Denver, CO80225-0267 Office: 303-235-4800 Fax: 303-235-4652</p>	
<p>Davis County Secondary Point of Contact:</p>		
RVIII CO POD ASSESSMENT SURVEY SUMMARY KEY		
TYPE II	TYPE II FULLY CAPABLE	7
TYPE III	TYPE III FULLY CAPABLE	54
TYPE II C	TYPE II CAPABLE WITH/ WITHOUT MITIGATION	1
TYPE III C	TYPE III CAPABLE WITH MITIGATION	7
NC	TYPE III NOT CAPABLE	1
TYPE II OSA	OSA CAPABLE STAGING AREA	0
TYPE II MOB	MOBILIZATION CENTER/ FOSA	0
	TOTAL SITES ASSESSED	70

UTAH ADMINISTRATIVE CODE

Note: STATE LAW COMPLIANCE REQUIRED

- [R426-1-100. Authority and Purpose.](#)
- [R426-1-200. General Definitions.](#)
- [KEY](#)
- [Date of Enactment or Last Substantive Amendment](#)
- [Notice of Continuation](#)
- [Authorizing, Implemented, or Interpreted Law](#)

R426. Health, Family Health and Preparedness, Emergency Medical Services.

R426-1. General Definitions.

R426-1-100. Authority and Purpose.

This rule establishes uniform definitions for all R426 rules. It also provides administration standards applicable to all R426 rules.

R426-1-200. General Definitions.

The definitions in Title 26, Chapter 8a are adopted and incorporated by reference into this rule, in addition:

- (1) "Advanced Emergency Medical Technician" or "AEMT" means an individual who has completed an AEMT training program, approved by the Department, who is licensed by the Department as qualified to render services enumerated in this rule.
- (2) "Affiliated Provider" means a licensed EMS individual's secondary employer or employers.
- (3) "Air Ambulance" means a specially equipped and permitted aircraft, especially a helicopter or fixed wing airplane, for transporting patients.
- (4) "Air Ambulance Personnel" mean the pilot and patient care personnel who are involved in an air medical transport.
- (5) "Air Ambulance Service" means any publicly or privately owned organization that is licensed or applies for licensure under R426-3 and provides transportation and care of patients by air ambulance.
- (6) "Air Ambulance Service Medical Director" means a physician knowledgeable of potential medical complications which may arise because of air medical transport, and is responsible for overseeing and assuring that the appropriate air ambulance, medical personnel, and equipment are provided for patients transported by the air ambulance service.
- (7) "Categorization" means the process of identifying and developing a stratified profile of Utah hospital trauma critical care capabilities in relation to the standards defined under R426-5-7.
- (8) "Certify," "Certification," and "Certified" mean the official Department recognition that an individual has completed a specific level of training and has the minimum skills required to provide emergency medical care at the level for which he is certified.
- (9) "Competitive Grant" means a grant awarded through the Emergency Medical Services

Grants Program on a competitive basis for a share of available funds.

(10) "Complaint, Compliance, and Enforcement Unit or CCEU" means the investigative unit of the Department.

(11) "Continuing Medical Education" means a Department-approved training relating specifically to the appropriate level of certification designed to maintain or enhance an individual's emergency medical skills.

(12) "County or Multi-County EMS Council or Committee" means a group of persons recognized as the legitimate entity within the county to formulate policy regarding the provision of EMS.

(13) "Course Coordinator" means an individual who has completed a Department course coordinator course and is certified by the Department as capable to conduct Department-authorized EMS courses.

(14) "Department" means the Utah Department of Health.

(15) "Emergency Medical Dispatcher" or "EMD" means an individual who has completed a Department approved EMD training program, and is licensed by the Department as qualified to render services enumerated in this rule.

(16) "Emergency Medical Service Dispatch Center" means a call center designated by the Department for the routine acceptance of calls for emergency assistance, staffed by trained operators who utilize a selective medical dispatch system to dispatch licensed ambulance and paramedic services.

(17) "Emergency Medical Responder" or "EMR" means an individual who has completed a Department approved EMR training program, and is licensed by the Department as qualified to render services enumerated in this rule.

(18) "Emergency Medical Technician" or "EMT" means an individual who has completed a Department approved EMT training program and is licensed by the Department as qualified to render services enumerated in this rule.

(19) "Emergency Medical Technician Intermediate Advanced" means an individual who has completed a Department approved EMT- IA training program and is licensed by the Department as qualified to render services enumerated in this rule.

(20) "Emergency vehicle operator" means an individual on the roster of an EMS provider who may, in the normal course of the individual's duties, drive an ambulance or an emergency medical response vehicle.

(21) "EMS" means Emergency Medical Services.

(22) "Emergency Medical Incident" means any instance in which an Emergency Medical Services Provider is requested to provide or potentially provide emergency medical services.

(23) "EMS Instructor" means an individual who has completed a Department EMS instructor course and is certified by the Department as capable to teach EMS personnel.

(24) "EMS stand-by event" means the on-site licensed ambulance, paramedic service, or designated quick response unit at a scheduled event or activity provided by the local 911 exclusive license provider or their designee.

(25) "Exclusive License" means the sole right to perform the licensed act in a defined geographic service area, and that prohibits the Department of Health from performing the licensed act, and from

granting the right to anyone else.

(26) "Grants Review Subcommittee" means a subcommittee appointed by the EMS Committee to review, evaluate, prioritize and make grant funding recommendations to the EMS Committee.

(27) "Ground Ambulance" means a vehicle which is properly equipped, maintained, permitted and used to transport a patient to a patient destination such as a patient receiving facility or resource hospital.

(28) "Inclusive Trauma System" means the coordinated component of the State emergency medical services (EMS) system composed of all general acute hospitals licensed under Title 26, Chapter 21, trauma centers, and pre-hospital providers which have established communication linkages and triage protocols to provide for the effective management, transport and care of all injured patients from initial injury to complete rehabilitation.

(29) "Inter-facility Transfer" means an ambulance transfer of a patient, who does not have an emergency medical condition as defined in UCA 26-8a-102(6)(a), and the ambulance transfer of the patient is arranged by a transferring physician for the particular patient, from a hospital, nursing facility, patient receiving facility, mental health facility, or other licensed medical facility.

(30) "Individual" means a human being.

(31) "Level of Care" means the capabilities and commitment to the care of the trauma patient available within a specified facility.

(32) "Level of License" means the official Department recognized step in the licensure process in which an individual has attained as an EMS provider.

(33) "Licensed EMS Individual" means a person licensed by the Bureau of Emergency Medical Services and Preparedness to perform an EMS function.

(34) "Meritorious Complaint" means a complaint against a licensed ambulance provider, designated agency, or licensed provider(s) that is made by a patient, a member of the immediate family of a patient, or health care provider, that the Department determines is substantially supported by the facts or a licensed ambulance provider, designated agency, or licensed provider(s):

(a) has repeatedly failed to provide service at the level or in the exclusive geographic service area required licensee;

(b) has repeatedly failed to follow operational standards established by the EMS Committee;

(c) has committed an act in the performance of a professional duty that endangered the public or constituted gross negligence; or

(d) has otherwise repeatedly engaged in conduct that is adverse to the public health, safety, morals or welfare, or would adversely affect the public trust in the emergency medical service system.

(35) "Matching Funds" means that portion of funds, in cash, contributed by the grantee to total project expenditures.

(36) "On-line Medical Control" which refers to physician medical direction of pre-hospital personnel during a medical emergency; and

(37) "Off-line Medical Control" which refers to physician oversight of local EMS services and personnel to assure their medical accountability.

(38) "Medical Director" means a physician certified by the Department to provide off-line medical control.

(39) "Mid-level Provider" means a licensed nurse practitioner or a licensed physician assistant.

- (40) "Net Income" means the sum of net service revenue, plus other regulated operating revenue and subsidies of any type, less operating expenses, interest expense, and income.
- (41) "Paramedic" means an individual who has completed a Department approved Paramedic training program and is licensed by the Department as qualified to render services enumerated in this rule.
- (42) "Paramedic Ground Ambulance" means the provision of advanced life support patient care and transport by licensed paramedic personnel in a licensed ambulance.
- (43) "Paramedic Rescue Service" means the provision of advanced life support patient care by licensed paramedic personnel without the ability to transport patients.
- (44) "Paramedic Unit" means a vehicle which is properly equipped, maintained and used to transport licensed paramedics to the scene of emergencies to perform paramedic services without the ability to transport patients to a designated hospital or designated patient receiving facility.
- (45) "Paramedic Tactical Service" means the retrieval and field treatment of injured peace officers or victims of traumatic confrontations by licensed paramedics who are trained in combat medical response.
- (46) "Paramedic Tactical Unit" means a vehicle which is properly equipped, maintained, and used to transport licensed paramedics to the scene of traumatic confrontations to provide paramedic tactical services.
- (47) "Patient Care Report" means a record of the response by each responding Emergency Medical Services Provider unit to each patient during an EMS Incident.
- (48) "Patient Receiving Facility" means a Department designated medical clinic or designated resource hospital that is approved to receive patients transported by a licensed ambulance provider.
- (49) "Per Capita grants" mean block grants determined by prorating available funds on a per capita basis as delineated in 26-8a-207, as part of the Emergency Medical Services Grants Program.
- (50) "Permit" means the document issued by the Department that authorizes a vehicle to be used in providing emergency medical services.
- (51) "Person" means an individual, firm, partnership, association, corporation, company, or group of individuals acting together for a common purpose, agency, or organization of any kind public or private.
- (52) "Physician" means a medical doctor licensed to practice medicine in Utah.
- (53) "Pilot" means an individual licensed to operate an air ambulance.
- (54) "Pre-hospital Care" means medical care given to an ill or injured patient by a designated or licensed EMS provider outside of a hospital setting.
- (55) "Primary Affiliated Provider" or "PAP" means a licensed EMS individual's primary or main employer or provider.
- (56) "Primary emergency medical services" means an organization that is the only licensed or designated service in a geographical area.
- (57) "Provider" means a Department licensed or designated entity that provides emergency medical services.

(58) "Provisional License" means temporary terms and conditions placed on a licensed EMS individual's license until completion of an investigation or a final adjudication or conclusion of the pending matter.

(59) "Quick Response Unit" or "QRU" means an entity that provides emergency medical services to supplement local licensed ambulance providers or provide unique services.

(60) "Quick Response Vehicle" or "QRV" means a vehicle which is properly equipped, maintained, permitted and used to perform assistive services at a scene. A QRV may transport or deliver a patient to a licensed ambulance provider access point. The QRV may include an automobile, an all-terrain vehicle or a watercraft.

(61) "Resource Hospital" means a facility designated by the EMS Committee to provide on-line medical control for the provision of pre-hospital emergency care.

(62) "Restricted License" means a licensed EMS individual may not function in their EMS capacity for an interim period of time.

(63) "Scene" means the location of initial contact with the patient.

(64) "Selective Medical Dispatch System" means a Department-approved reference system used by a designated local dispatch agency to dispatch aid to medical emergencies which includes:

- (a) systemized caller interrogation questions;
- (b) systemized pre-arrival instructions; and
- (c) protocols matching the dispatcher's evaluation of injury or illness severity with vehicle response mode and configuration.

(65) "Specialized Life Support Air Ambulance Service" means a level of care which requires equipment or specialty patient care by one or more medical personnel in addition to the regularly scheduled air medical team.

(66) "Training Officer" means an individual who has completed a department Training Officer Course and is certified by the Department to be responsible for an EMS provider organization's continuing medical education, license renewal records, and testing.

KEY: Emergency Medical Services

Date of Enactment or Last Substantive Amendment: January 11, 2019

Notice of Continuation: October 9, 2018

Authorizing, and Implemented or Interpreted Law: 26-8a

**Advance Care Directives (“Life with Dignity”/DNR)
January 2011**

Note: STATE LAW COMPLIANCE REQUIRED

UTAH COMMISSION ON AGING

POLST

UTAH PHYSICIAN ORDER
FOR LIFE-SUSTAINING
TREATMENT

A LIFE WITH DIGNITY ORDER

UtahCode§75-2a-106



JANUARY 2011

BACKGROUND

WHAT IS A POLST?

The POLST is a standing *medical order* directing a patient's end-of-life care treatment. POLST forms are authorized as Life With Dignity Orders under Utah law, §75-2a-106. The POLST enables an authorized provider to put *transferable* orders in place addressing *specific* life-sustaining treatments. The POLST encourages communication between providers and patients about difficult end-of-life care decisions. In addition, it is the only legal mechanism that allows a Utahn to have a DNR/DNAR order outside of a licensed health care facility. It is a tool that providers can — and *should* — use to help their patients get the end-of-life care they want.

In contrast to an Advance Healthcare Directive, which typically becomes effective only after certain future events occur, a POLST becomes effective the moment it is signed. The directions in a POLST should not be contingent on a future changes in condition; the POLST applies as soon as the treatment is medically indicated.

The POLST should be used to document patient preferences. The form should be completed only after the provider has thoroughly explored the patient's preferences.

No person can be forced to complete a POLST.

WHO BENEFITS FROM A POLST?

Providers should discuss the POLST with patients:

- Who are facing life-threatening illness
- Who have specific preferences about life-sustaining measures (e.g. Jehovah Witness preference for no transfusion)
- Who want a DNR order when living outside of a licensed health facility

In contrast to Advance Directives, which benefit all adults, the POLST is less helpful to individuals who are not in these three categories.

LIABILITY PROTECTION

The POLST law provides criminal and civil liability protection for providers who follow a completed POLST in good faith. It also protects providers who provide life-sustaining care if there is reason to question the validity of a POLST or if there is reason to think a patient's wishes are not reflected in the document. The POLST does not provide liability protection for providers who fail to provide life-sustaining treatment when a POLST contains an order expressing a preference for life-sustaining treatment.

HEALTHCARE FACILITY OBLIGATIONS

Utah Department of Health regulations (R432-31-11) require licensed health care facilities to ensure that all individuals receiving services who have current POLST/Life With Dignity Orders, receive assistance to complete new orders that comply with current rule and law requirements by January 31, 2011.

POLICIES AND PROCEDURES

Most health care facilities are obligated to have policies and procedures that address how they will:

- Determine upon admission whether an individual has a current POLST form
- Identify individuals who do not have a POLST but who should be offered the opportunity to complete one
- Identify circumstances under which the individual will be offered the opportunity to amend an existing POLST form
- Maintain the POLST form in a prominent location in the individual's medical record
- Identify circumstances under which it would decline to follow a POLST form

TRAINING

Licensed health care facilities must train relevant health care, quality improvement, and record keeping staff on the requirements of Title 75, Chapter 2a, of the Advance Health Care Directive Act, the requirements of Utah Administrative Rule 432-31, and on the facility's policies and procedures established pursuant to Rule 432-31.

TRANSFERRING PATIENTS

A POLST is fully transferable between all health care facilities

- The health care providers in the receiving facility must read the POLST and determine next steps in accordance with the facility's policies and procedures
- A facility that discharges an individual with a POLST form must provide a copy of the POLST to the individual or to the individual's surrogate decision-maker, when appropriate.
- A facility that transfers an individual with a POLST to another facility must provide a copy of the POLST to the receiving facility.
- A facility shall allow an individual to complete, amend, or revoke a POLST at any time upon request.

HIPAA permits the transfer of the POLST form to the receiving facility.

THE FORM

THE FORM

The POLST form is available on the forms page of the Utah Department of Health, Health Facility Licensing Certification and Resident Assessment forms web page, www.health.utah.gov/hflcra. Only POLST forms approved by the Department of Health may be used, and form may not be altered in layout or style, including font style and size.

WHO AUTHORIZES ?

A Patient with Capacity

If the patient has the capacity to make health care decisions (see statutory definition and procedures before a patient is deemed to lack capacity), the patient should authorize and sign the POLST. Family or friends can be involved in discussing the POLST to the extent the patient wants, but a surrogate should not authorize a POLST if the patient has medical decision-making capacity.

A Patient Who Lacks Capacity

If the patient lacks decision-making capacity, the highest-ranking surrogate who is reasonably available can authorize the POLST. The patient must be included in the process of making the decisions, to the greatest extent possible.

PREPARING THE FORM

The POLST must be prepared by:

1. A physician
2. An APRN
3. A physician assistant

OR

A licensed nurse or a licensed social worker, acting, under the supervision of the physician, APRN, or PA who will sign the form, may prepare the form with the patient or surrogate, but the form must be signed by the physician, APRN or physician assistant.

The POLST may not be prepared by any person who does not meet these requirements. *The POLST is NOT a "do it yourself" form.*

REVIEWING THE FORM

The POLST should be reviewed at least annually, and

1. When the person is transferred from one care setting or care level to another,
2. When there is a substantial change in the person's health status, and
3. When the person's preferences change.

THE FORM

VOIDING THE FORM

The patient or surrogate may revoke a POLST by:

- a. Orally informing emergency service personnel;
- b. Writing "void" across the form;
- c. Burning, tearing, or otherwise destroying or defacing the form
- d. Asking another adult to void or destroy the form for the patient
- e. Signing or directing another adult to sign a written revocation on the person's behalf;
- f. Stating, in the presence of an adult witness, that the person wishes to revoke the order; or
- g. Completing a new life with dignity order.

A surrogate can revoke or change a POLST completed by the patient only if doing so is consistent with the patient's preferences. A surrogate's instructions may not override a patient's previously expressed preferences.

SIGNING THE FORM

If the surrogate who is authorizing the POLST is doing so on the phone, a person at the patient's location may sign at the direction of the surrogate.

COPIES AND FAXES

Copies and faxes of POLST forms are valid. A provider should make sure that, if a POLST is changed, copies of the new form are provided to others who may still have the version that has been revoked.

OUT-OF-STATE USE

A POLST may or may not be legally enforceable in other states, but an individual with a POLST should travel with it when out-of-state.

A Utah provider may honor a POLST from another state that either meets the requirements of Utah's law or that meets the requirements of the law of the state in which it was made.

HEALTH CARE DECISION-MAKING CAPACITY

75-2 a-103(13) Definitions

Health care decision making capacity means an adult's ability to make an informed decision about receiving or refusing health care, including:

- (a) the ability to understand the nature, extent, or probable consequences of health status and health care alternatives;
- (b) the ability to make a rational evaluation of the burdens, risks, benefits, and alternatives of accepting or rejecting health care; and
- (c) the ability to communicate a decision.

75-2 a-104. Capacity to make health care decisions -- Presumption -- Overcoming presumption.

- (1) An adult is presumed to have:
 - (a) health care decision making capacity; and
 - (b) capacity to make or revoke an advance health care directive.
- (2) To overcome the presumption of capacity described in Subsection (1)(a), a physician, an APRN, or, subject to Subsection (6), a physician assistant who has personally examined the adult and assessed the adult's health care decision making capacity must:
 - (a) find that the adult lacks health care decision making capacity;
 - (b) record the finding in the adult's medical chart including an indication of whether the adult is likely to regain health care decision making capacity; and
 - (c) make a reasonable effort to communicate the determination to:
 - (i) the adult;
 - (ii) other health care providers or health care facilities that the person who makes the finding would routinely inform of such a finding; and
 - (iii) if the adult has a surrogate, any known surrogate.
- (3) (a) An adult who is found to lack health care decision making

HEALTH CARE DECISION-MAKING CAPACITY

75-2a-104. Capacity to make health care decisions – Presumption – Overcoming presumption. (Cont.)

capacity in accordance with Subsection (2) may, at any time, challenge the finding by:

(i) submitting to a health care provider a written notice stating that the adult disagrees with the physician's finding; or

(ii) orally informing the health care provider that the adult disagrees with the finding.

(b) A health care provider who is informed of a challenge under Subsection (3)(a), shall, if the adult has a surrogate, promptly inform the surrogate of the adult's challenge.

(c) A surrogate informed of a challenge to a finding under this section, or the adult if no surrogate is acting on the adult's behalf, shall inform the following of the adult's challenge:

(i) any other health care providers involved in the adult's care; and

(ii) the health care facility, if any, in which the adult is receiving care.

(d) Unless otherwise ordered by a court, a finding, under Subsection (2), that the adult lacks health care decision making capacity, is not in effect if the adult challenges the finding under Subsection (3)(a).

(e) If an adult does not challenge the finding described in Subsection (2), the health care provider and health care facility may rely on a surrogate, pursuant to the provisions of this chapter, to make health care decisions for the adult.

(4) A health care provider or health care facility that relies on a surrogate to make decisions on behalf of an adult has an ongoing obligation to consider whether the adult continues to lack health care decision making capacity.

(5) If at any time a health care provider finds, based on an examination and assessment, that the adult has regained health care decision making capacity, the health care provider shall record the results of the assessment in the adult's medical record, and the adult can direct the adult's own health care.

(6) A physician assistant may not make a finding described in Subsection (2), unless the physician assistant is permitted to make the finding under the physician assistant's delegation of services agreement, as defined in Section 58-70a-102.

PRIORITY OF SURROGATE DECISION-MAKERS

1. Agent appointed in an Advance Health Care Directive or in a Power of Attorney for Healthcare document. in Subsection (1) may act as a surrogate if the person:
 - (a) has health care decision making capacity;
 - (b) has exhibited special care and concern for the patient;
 - (c) knows the patient and the patient's personal values; and
 - (d) is reasonably available to act as a surrogate.
2. Court-appointed guardian who has been granted the authority to make health care decisions.
3. The adult's spouse, unless the adult is divorced or legally separated; or
4. The following family members:
 - (A) a child;
 - (B) a parent;
 - (C) a sibling;
 - (D) a grandchild; or
 - (E) a grandparent.

No person may direct an adult's care if a person of a higher priority class is able and willing to act as a surrogate for the adult.

A court may disqualify a person described in Subsection (1)(b) from acting as a surrogate if the court finds that the person has acted in a manner that is inconsistent with the position of trust in which a surrogate is placed.

If no person named above is reasonably available to act as a surrogate, a person who is 18 years of age or older, other than those designated

FOR MORE INFORMATION

Go to the Utah Commission on Aging tab at www.aging.utah.edu
or email maureen.henry@utah.edu.

Health facilities should contact the Utah Department of Health, Health Facility
Licensing, Certification, and Resident Assessment

Toll Free: (800) 662-4157

Salt Lake Area: (801) 538-6158

Emergency medical services questions should be directed to:

Toll-free: (800) 284-1131

Salt Lake Area: (801) 273-6666

Utah EMS Protocol Guidelines: Cardiac



January 1, 2017

Cardiac Patient Care Guidelines

These guidelines were created to provide direction for each level of certified provider in caring for cardiac patients. All of these directions, dosages and provisions are subject to change with a later notice or revision of the guidelines. The OLMC physician will always be the final word on treatment in the field. If there are ever any discrepancies between the guidelines and the OLMC physician these should be documented and brought to the attention of the physician at the receiving hospital. If the explanation is not sufficient to the provider, then they may bring the issue to their medical director or the BEMSP for review.

General Approach to Cardiac Patient Care Guidelines

- Assess your patient prior to initiating a guideline.
- More than one guideline may apply.
- If conflicts arise between treatment guidelines, contact OLMC for clarification.
- Providers may provide treatment up to the level of their certification only.
- Air Medical Transport Service personnel function under their own clinical guidelines.
- Contact your receiving hospitals and OLMC as soon as clinically possible for each patient.
- OLMC with a physician may change your treatment plan.
- Any variations to a guideline by the OLMC or physician should be clarified to ensure that the provider has properly characterized the situation.
- The OLMC Physician has the final word on treatment once contact is made.
- The OLMC Physician must approve usage of dosages in excess of the guidelines.

General Pediatric Considerations

- Pediatric reference based tape dosing is preferred over calculated dosages for infants and children.
- Pediatric lowest acceptable systolic blood pressures are: birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

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🕒 This symbol and yellow highlighted instructions precedes any treatment that requires OLMC prior to initiating the treatment unless otherwise specified.

CARDIAC ARREST

ALL PROVIDERS / EMT

- ① Focused history and physical exam
 - Assess for evidence that resuscitation should not be attempted per the **Death Determination Guideline**.
- ❑ Continuous ECG, CO₂, and Pulse Oximetry monitoring when available
- ❑ **Treatment Plan**
 - **Assess for presence of a pulse, respirations, and consciousness. If absent,**
 - **Begin chest compressions for 2 min**
 - **Apply AED and shock if advised.**
 - AEMT/PM: Apply cardiac monitor/defibrillator and shock if Vtach/Vfib
- ❑ **Key Considerations**
 - Effective chest compressions are critical
 - Minimize interruptions in chest compressions
 - Rate: 100-120/min
 - Depth: >2 cm (adult) / 1/3 of chest depth (pediatric)
 - Allow full chest recoil after each compression
 - After each shock, immediately perform 2 minutes of chest compressions before checking pulse
 - Rotate compressors every 2 minutes
 - Consider the Pit Crew model as an approach to treatment
 - Pre-defined roles, as determined by a specific EMS agency, for members of an integrated team of first responders, BLS, and ALS.
 - Designated individuals for chest compressions
 - Designated individual for overall code leadership/management
 - Designated individual for airway management
 - Additional roles to be assigned as determined by specific agency based on provider availability include: IO/IV access, medication administration, CPR quality monitoring, cardiac rhythm monitoring, defibrillation.
 - Consider transition of roles as additional providers become available to ensure maximal use of resources
 - Assume cardiac origins for all adult arrests unless evidence to the contrary. Consider underlying causes and treat when possible.
 - **H's & T's** - Treat as appropriate with confirmed or suspected Hypovolemia, Hypoxia, Hydrogen ion (Acidosis), Hyperkalemia, Hypothermia, Hypoglycemia, or specific Toxins.
- ❑ Pregnancy >20 weeks gestation
 - Perform manual displacement of the uterus to the patient's left. If unable to perform manual displacement, place wedge-shaped cushion or multiple pillows under patient's right hip to achieve 30 degree lateral tilt.
 - Transport pregnant patients to the nearest emergency department without delay while attempting to provide continuous compressions and defibrillation if applicable. There is potential to perform emergency cesarean section.
- ❑ Pediatric Population
 - Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years = 70mmHg + (age x 2), >10 years = 90mmHg.
 - Pediatric Defibrillation:
 - Age < 1 year: Manual defibrillator with pediatric paddles/pads preferred in patients <1. If not available, an AED may be used, preferably with pediatric pads.
 - Age 1 – 8 years: AED may be used with pediatric pads preferred
- ❑ As nationally-established cardiac care guidelines (e.g. ACLS, PALS) are updated, these may be integrated into performance, as per agency medical director.

ADULT

EMT

- Respiratory Management.
- **Witnessed arrest**, presumed cardiac etiology: Place an NP / OP airway and a non-rebreather mask during the first 2-3 cycles of CPR/defibrillation. After 2-3 cycles, apply asynchronous BVM breaths at a rate of 1 breath every 6-8 seconds, if available
- **Unwitnessed arrest or evidence of a non-cardiac cause**: Apply asynchronous BVM breaths at a rate of 1 breath every 6-8 seconds

AED

- Defibrillate immediately if AED advises shock.
- Resume CPR immediately after each shock and continue for 2 minutes
- Check pulse

AEMT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed adult dosing.

EMT

- Respiratory Management:
 - Place an NP or OP airway and apply asynchronous BVM breaths at a rate of 1 breath every 4-6 seconds

AED

- Defibrillate immediately if AED advises shock
 - Resume CPR immediately after each shock and continue for 2 minutes
 - Check pulse

AEMT

ALL RHYTHMS

- Begin CPR, as above
- ❑ Advanced airway, vascular access and fluid therapy per the *IV/IO Access and Fluid Therapy Guidelines*
- ❑ Consider placement of a supraglottic device after first 2-3 cycles of CPR/defibrillation
- ❑ Placement of supraglottic device should not interrupt chest compressions
- ❑ **Epinephrine**
- ❑ **1 mg (0.1 mg/ml = 1:10,000) IV/IO push**
 - Repeat every 3-5 minutes as long as patient remains pulseless
 - Begin 1000cc IV NS Bolus

SHOCKABLE RHYTHM (VF/VT) PRESENT

- ❑ **Defibrillation**
- ❑ **360J** for a monophasic defibrillator or **200J** for a biphasic
- ❑ Resume CPR immediately after shock and continue for 2 minutes
- ❑ Check rhythm and pulse
- ❑ **Anti-arrhythmics**
- ❑ May use any **ONE** anti-arrhythmic available
 - **Amiodarone** 300 mg IV/IO, second dose is 150mg IV/IO
 - **Lidocaine** 1-1.5 mg/kg IV push or one time dose of 1.5 mg/kg. May repeat every 3-5 min up to 3 mg/kg.
- ❑ **Contact OLMC before terminating resuscitative efforts in the field**

PARAMEDIC

ALL RHYTHMS

- May consider endotracheal intubation
- ❑ Intubation must not interfere with chest compressions

SHOCKABLE RHYTHM (VF/VT) PRESENT

- ❑ **Magnesium**
- ❑ Give **2 gm** IV over 2 minutes for torsades de pointes
- ① **Contact OLMC for further orders or therapies**

ALL RHYTHMS

- Begin CPR, as above
- ❑ BVM and advanced airway, vascular access and fluid therapy per the *IV/IO Access and Fluid Therapy Guidelines*
- ❑ **Epinephrine**
- ❑ **0.01 mg/kg = 0.1 ml/kg (0.1 mg/ml = 1:10,000) IV/IO push**
- ❑ Repeat every 3-5 minutes as long as patient remains pulseless
 - Begin 20ml/kg bolus of NS, reassess and repeat if needed to a max of 60cc/kg

SHOCKABLE RHYTHM (VF/VT) PRESENT

- ❑ **Defibrillation**
- ❑ **2 J/kg** for the first shock with either a monophasic or biphasic defibrillator. Second and subsequent shocks at **4 J/kg**
- ❑ Resume CPR immediately after shock and continue for 2 minutes
- ❑ Check rhythm and pulse
- ❑ **Anti-arrhythmics**
- ❑ May use any **ONE** antiarrhythmic available
 - **Amiodarone** 5 mg/kg IV/IO. May repeat up to 2 times. Do not exceed 300mg
 - **Lidocaine** 1 mg/kg IV/IO/ET. May repeat every 3-5 min up to 3 mg/kg.
- ❑ **Contact OLMC before terminating resuscitative efforts in the field**

PARAMEDIC

ALL RHYTHMS

- May consider endotracheal intubation, if unable to adequately ventilate with BVM (preferred) or supraglottic airway
- ❑ Intubation must not interfere with chest compressions

SHOCKABLE RHYTHM (VF/VT) PRESENT

- ❑ **Magnesium**
- ❑ Give **25-50 mg/kg** IV/IO for torsades de pointes. Maximum 2 grams
- ① **Contact OLMC for further orders or therapies**

BRADYCARDIA (Symptomatic)

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
 - Assess for signs of poor perfusion, hypotension, altered mental status, signs of shock, chest pain, or acute heart failure.
 - Obtain a blood glucose level.
- ❑ Continuous ECG, CO₂, 12 lead ECG, and pulse oximetry monitoring, when available
- ❑ **Treatment Plan**
 - Only treat bradycardia IF the patient is unstable (hypotension or signs of poor perfusion).
 - If patient is a newborn, follow the **Newborn Resuscitation Guideline**.
 - Identify and treat the underlying cause:
 - Hypoxia
 - Shock
 - 2nd or 3rd degree heart block
 - Toxin exposure (beta-blocker, calcium channel blocker, organophosphate, digoxin)
 - Electrolyte disorder (hyperkalemia)
 - Increased intracranial pressure (ICP)
 - Hypothermia
 - Acute MI
 - Pacemaker failure
 - Maintain airway; assist with breathing as necessary, provide oxygen
- **Pediatric patient (<8-year-old)**
 - Aggressive oxygenation with high flow oxygen and assisted ventilations with a BVM, as indicated.
 - Persistent heart rate <60/min and signs of poor perfusion following aggressive oxygenation and ventilation: begin chest compressions.
- Ensure patient warmth.
- **Key Considerations**
 - In pregnant patients of >20 weeks' gestation: Place wedge-shaped cushion or multiple pillows under patient's right hip to displace uterus to the left, off of the vena cava.
 - As nationally-established cardiac care guidelines (e.g. ACLS, PALS) are updated, these may be integrated into performance, as per agency medical director.
 - Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per **IV/IO Access and Fluid Therapy Guidelines**
- ❑ **Atropine 0.5 mg** IV/IO
 - Repeat as needed every 3 minutes
 - Maximum total dose of 3mg
- ❑ **Epinephrine: 1 mg (0.1 mg/ml/1:10,000)** IV/IO push
 - Repeat every 3-5 minutes

- ❑ Supportive care of airway, vascular access and fluid therapy per **IV/IO Access and Fluid Therapy guidelines**
- ❑ **Atropine 0.02 mg/kg** IV/IO
 - Minimum single dose of 0.1 mg
 - Maximum single dose of 0.5mg
 - Repeat Atropine every 3-5 minutes as needed until Max 1mg for child and 2mg for adolescents.

PARAMEDIC

PARAMEDIC

SYMPTOMATIC BRADYCARDIA

- ❑ **Transcutaneous pacing (TCP)** at an initial rate of 80

IF BRADYCARDIA IS SEVERE WITH SIGNS OF POOR PERFUSION

beats per minute if the patient does not respond to medications

- ❑ Consider Sedation for TCP as per the ***Violent Patient / Chemical Sedation Protocol***

① **Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters.**

① **Epinephrine 2–10 mcg/min** IV/IO infusion for persistent hypoperfusion. Titrate to maintain a SBP >100 mmHg.
And/or

① **Norepinephrine initial dose: 0.5-1 mcg/minute** IV/IO titrated to effect. For patients in refractory shock: 8-30mcg/min

① **Transcutaneous pacing (TCP)** at an initial rate of 100 beats per minute, if the patient does not respond to medications

① Consider Sedation for TCP as per the ***Violent Patient / Chemical Sedation Protocol***

① **Contact OLMC for dosages above those provided or use of medication NOT fitting the**

guideline parameters

① **Epinephrine 0.1–2 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

CARDIAC CHEST PAIN (ACUTE CORONARY SYNDROME)

ALL PROVIDERS

- ❑ Focused history and physical exam
 - Assess for signs or symptoms suggestive of ischemia or infarction.
 - Ask patient to describe the pain utilizing the O-P-Q-R-S-T mnemonic.
 - Onset of the event, Provocation or Palliation, Quality of the pain, Region and Radiation, Severity, Time (history)
 - Determine whether the patient (male or female) has taken erectile dysfunction medications such as Viagra, Levitra or Cialis within the last 24 hours.
- ❑ Continuous ECG, CO₂, and pulse oximetry monitoring, when available.
- ❑ **Treatment Plan**
 - Chest pain patients should only receive oxygen therapy as needed to target O₂ saturations ~94%
- ❑ **Key Considerations**
 - As nationally-established cardiac care guidelines (e.g. ACLS, PALS) are updated, these may be integrated into performance, as per agency medical director.
 - Assess blood glucose level.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

EMT

- ❑ **325 mg baby aspirin** po if patient is >18 years old and no reported allergies to aspirin
 - Administer even if patient takes a daily dose
- ❑ **Nitroglycerin 0.4 mg** SL every 5 minutes, up to 3 doses, as long as symptoms persist and SBP >100 mmHg
 - Do not administer nitroglycerin if patient (male or female) has taken erectile dysfunction medications within 24 hours

AEMT

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guidelines***
- ❑ IV access prior to administration of nitroglycerin is preferable, if possible
- ❑ 12 Lead EKG (If available)
- ❑ If the patient has a STEMI then transport to the closest available STEMI/PCI receiving center (if available) and give advanced notification of ECG findings and transmission of ECG if possible.
 - Confirm that a catheterization lab will be available for the patient. If NOT then consider transporting to a different STEMI/PCI receiving center
 - Confirm with online medical control if needed
- ❑ **Normal Saline 500 mL** IV over 30 minutes, unless there are signs of congestive heart failure
- ❑ **Nitroglycerin 0.4 mg (every 5 minutes) (max of 3 doses)** SL as long as symptoms persist and SBP >100 mmHg
 - Administer with caution in patients with known inferior ST-Elevation MI
 - Do not administer nitroglycerin if the patient (male or female) has taken erectile dysfunction medications within the last 24 hours
 - If hypotension occurs following nitroglycerin administration, administer 500mL bolus of NS and withhold further nitroglycerin.
- ❑ Pain medications per ***Pain and Anxiety Management Guideline***

- ❑ Chest pain with cardiac origin is a rare in children, consider other causes;
 - Asthma
 - Foreign body
 - Infection
 - Trauma

PARAMEDIC

📞 Contact OLMC for further instructions.

PARAMEDIC

📞 Contact OLMC for further instructions.

CONGESTIVE HEART FAILURE / PULMONARY EDEMA

ALL PROVIDERS

- ❑ Focused history and physical exam
 - Determine whether the patient (male or female) has taken erectile dysfunction medications such as Viagra, Levitra or Cialis within the last 24 hours.
 - Assess blood glucose level.
- ❑ Continuous cardiac monitoring, CO₂, 12 lead ECG, and pulse oximetry monitoring, when available
- ❑ **Treatment Plan**
 - Maintain airway; assist with breathing as necessary, provide oxygen as needed to target SpO₂ 90-94%.
- ❑ **Key Considerations**
 - Do not use nitroglycerin if the patient has taken erectile dysfunction medications in the last 24 hours.
 - Spinal motion restriction per **Selective Spinal Immobilization Guideline**
 - In pregnant patients of >20 weeks gestation: Place wedge-shaped cushion or multiple pillows under patient's right hip and manually displace the uterus.
 - Current nationally established certification programs (e.g. ACLS, PALS) may be used in lieu of these resuscitation guidelines.
 - Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

EMT

- ❑ Assist patient with prescribed nitroglycerin SL every 5 minutes, up to 3 doses, as long as dyspnea or chest pain persist and SBP >100 mmHg
 - Do not administer nitroglycerin if the patient (male or female) has taken erectile dysfunction medications within the last 24 hours

📞 Contact On-Line Medical Consultation

AEMT

AEMT

- ❑ Advanced airway, vascular access and fluid per **IV/IO Access and Fluid Therapy guidelines**
 - IV access prior to nitrates is preferred if possible
 - Limit fluid bolus to 250–500 mL NS
- ❑ **Nitroglycerin 0.4 mg SL** every 5 minutes (max of 3 doses) if dyspnea or chest pain persist and SBP >100 mmHg. Maximize nitroglycerin before considering morphine
- ❑ **Morphine Sulfate 2 – 4 mg IV** once if SBP >100 mmHg
- ❑ **CPAP/BiPAP** – Consider when the patient is awake and cooperative and needs assistance with oxygenation and ventilation
 - Explain the procedure to the patient
 - **CPAP** - Provide 10 L/min oxygen and PAP at 10 cm H₂O
 - **BiPAP** – Provide 10 L/min oxygen and IPAP at 10 cm H₂O with EPAP at 5 cm H₂O

📞 Contact On-Line Medical Consultation

- ❑ Advanced airway, vascular access and fluid per **IV/IO Access and Fluid Therapy guidelines**
- ❑ **CPAP/BiPAP** – ONLY use when the patient is on the machine at home. Maintain home settings and bring machine with the patient. If unable to adequately ventilate return to BVM or advanced airway

📞 Contact OLMC to discuss further settings and treatment above the initial setup.

PARAMEDIC

PARAMEDIC

① **Epinephrine 2 mcg/min** IV/IO infusion for shock. Titrate up to 10 mcg/min to maintain a SBP >100 mmHg

OR

① **Norepinephrine 1 mcg/min** IV/IO for shock. Titrate up to 30 mcg/min to maintain SBP >100 mmHg.

① Contact OLMC to discuss further settings, dosage, and treatment.

① **Epinephrine 0.1–2 mcg/kg/min** IV/IO infusion for shock. Titrate to maintain a SBP >70 + (age in years x 2) mmHg.

EKG INSTRUCTIONS

ADULT

PEDIATRIC (<15 years of Age) NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

- ❑ Perform 12 Lead EKG (If available) on the following patients:
 - Pain in chest or upper abdomen
 - New cardiac dysrhythmia
 - Unexplained syncope or near syncope
 - Unexplained acute general weakness
 - Acute dyspnea suggestive of congestive heart failure
 - Cardiac arrest if spontaneous circulation returns
 - Concern for ACS/STEMI
- ❑ Do **NOT** attempt an EKG if the following are present:
 - Severe trauma
 - Cardiac or respiratory arrest with ongoing resuscitation
 - Life-threatening situation when an EKG would hinder your ongoing efforts
 - Uncooperative patient
- ❑ Acquire and transmit EKG to a STEMI/PCI Receiving Center (if available) or nearest EKG receiving facility depending on local availability
 - All completed EKG's should be transmitted from the field
 - Remember that not all automated readings are correct
- ❑ If the patient has a STEMI/PCI then transport to the closest available STEMI/PCI Receiving Center.
 - Advise receiving hospital of possible STEMI as soon as identified and in advance of arrival.
 - Confirm that a catheterization lab will be available for the patient. If NOT then consider transporting to a different STEMI/PCI receiving center, based on medical control guidance

- ❑ 12 Lead EKG (If available) on the following patients:
 - Pain in chest or upper abdomen
 - New cardiac dysrhythmia
 - Unexplained syncope or near syncope
 - Unexplained acute general weakness
 - Acute dyspnea suggestive of congestive heart failure
 - Post arrest if spontaneous circulation returns
 - Concern for ACS/STEMI
- ❑ Do **NOT** attempt an EKG if the following are present:
 - Severe trauma
 - Cardiac or respiratory arrest with ongoing resuscitation
 - Life-threatening situation when an EKG would hinder your ongoing efforts
 - Uncooperative patient
- ❑ Acquire and transmit ECG as per adult recommendations

① Destination guidelines as per OLMC

PARAMEDIC

PARAMEDIC

LEFT VENTRICULAR ASSIST DEVICE (LVAD)

ALL PROVIDERS

- ❑ Focused history and physical exam
 - Assess for evidence that resuscitation should not be attempted per the **Death Determination Guideline**.
 - Evaluate for Medic Alert Bracelet with instructions. Follow instructions as able.
 - The device consists of an implanted, continuous flow pump attached to the left ventricle, an external control device, and power supply secured by a harness.
 - Every patient should have a backup equipment bag for his or her LVAD.
 - Patients and families are usually well educated on the power supply of their LVAD and the use of the backup controller/driver. Utilize them and follow their directions on scene.
 - Continuous ECG, rhythm analysis, blood pressure, and pulse oximetry saturation assessment.
 - Patients with continuous flow assist devices will not have a palpable pulse. Assess for signs of adequate perfusion using skin signs, mentation, and blood pressure.
- ❑ **Treatment Plan**
 - Check to see if the patient is responsive.
 - Check if the LVAD is functioning by listening for a HUM.
 - Check the patient's rhythm.
 - Check for alarm lights and sounds – Red high-priority alarms are URGENT.
 - Check cable connections.
 - Check power source.
 - Change controller if needed.
 - Priority is placed on restarting the pump. If unable to restart pump, begin chest compressions on upper half of the sternum.
- ❑ **Key Considerations**
 - Determine type of device – Heart Mate II, Jarvik 2000, or Heartware
 - Patients or their families should have a phone number to their LVAD coordinator. This person should be used as online medical control (OLMC).
 - Preferably transport to the specialty center that implanted the device, as directed by OLMC
 - IF the number is not available, contact either of the LVAD coordinators below for assistance:
 - University of Utah: 801-581-2121 (ask for LVAD coordinator)
 - Intermountain Medical Center: 801-507-LVAD

ADULT

EMT

- ❑ BLS airway support as needed

AEMT

- ❑ Supportive care of airway, vascular access and fluid therapy per **IV/IO Access and Fluid Therapy Guidelines**
- ❑ LVADs are preload dependent and a fluid bolus may improve perfusion

PARAMEDIC

- ❑ ACLS medications as indicated

NEWBORN RESUSCITATION

ALL PROVIDERS / EMT

- Focused history and physical exam: Term baby? Breathing? Tone?
- Continuous ECG, CO₂, and pulse oximetry monitoring, when available
- Treatment Plan**
 - If the newborn is apneic, slow to respond, has slow or gasping respirations, or persistent central cyanosis**
 - **First 30 seconds:** Warm, dry, and stimulate the baby. Consider suction (bulb syringe) mouth, then nose.
 - Evaluate respirations, heart rate, and activity
 - **Next 30 seconds:** If after first 30 seconds the baby remains apneic, lethargic, and/or has HR <100, then perform 30 seconds of positive pressure ventilation (PPV) with BVM with a rate of 40-60 breaths/minute
 - Watch for chest rise to ensure adequate ventilations. If none, reposition mask seal and increase pressure slightly
 - Target O₂ saturations to 90 – 92%; excessive oxygenation can be harmful to the newborn brain
 - Target PPV efforts to improving tone and increasing heart rate; titrate up O₂ if HR remains <100 despite adequate PPV
 - **Next 30 seconds:** If after an additional 30 seconds of effective PPV the baby continues to have a HR<60, begin CPR with a breath/compression ratio of 1:3.
 - use 2 thumb encircling technique for CPR, rate of 120 compressions/min
 - Check glucose and treat if <30 mg/dl
- Key Considerations**
 - As nationally-established neonatal resuscitation guidelines (NALS, NRP, etc.) are updated, these may be integrated into performance, as per agency medical director
 - Keep baby as warm as possible

AEMT

- Advanced airway placement may be indicated when:
 - BVM has been ineffective despite repositioning infant and checking equipment
 - Chest compressions are necessary
- IV or IO at a keep open rate (approx 10ml/hr) after boluses to avoid volume overload
 - IV required only when required for fluid resuscitation or parenteral medication
 - IO infusions are only indicated when life-threatening conditions are present
- Epinephrine**
 - **0.01-0.03 mg/kg = 0.1-0.3 ml/kg (0.1 mg/ml/1:10,000)** IV or IO for HR <60/min despite 30 seconds of effective CPR with PPV
 - Repeat every 3-5 minutes until spontaneous heart rate remains >60 bpm

EVIDENCE OF HYPOPERFUSION OR HYPOVOLEMIA

- NS (IV or IO) @ 10 mL/kg syringe bolus over 5-10 min
- Run D10 if available for maintenance fluid at 10 ml/hr after bolus
- Additional boluses require physician approval

PARAMEDIC

- Endotracheal intubation may be indicated when:
 - BVM has been ineffective despite repositioning infant and checking equipment
 - Chest compressions are necessary
 - Insert a gastric tube in all intubated patients
 - Suction the trachea using a suction catheter through the endotracheal tube or directly suction the trachea with a meconium aspirator for poor chest rise despite successful intubation
- Dextrose 10%** per **Glucose Emergencies - Hypoglycemia/Hyperglycemia Guidelines**

OPTIONAL ORDERS BY MEDICAL CONSULTATION ONLY

- Sodium bicarbonate 1-2 mEq/kg IV or IO-use caution; not recommend except in specific cases

POST CARDIAC ARREST RETURN OF SPONTANEOUS CIRCULATION (ROSC)

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
 - Blood glucose assessment
- ❑ Continuous ECG, CO2, and pulse oximetry monitoring, when available
- ❑ **Treatment Plan**
 - Preferential transport to a STEMI/PCI receiving center, if available.
 - **Initiate Targeted Temperature Management (TTM):**
 - **Inclusion Criteria:**
 - Cardiac arrest with ROSC
 - >14 years of age
 - Unable to follow commands
 - **Contraindications:**
 - POLST order specifying “Do not attempt resuscitation”
 - Coma unrelated to cardiac arrest (e.g. Intoxication, sepsis, trauma, CVA, status epilepticus)
 - Patient is awake and alert
 - Maintain body temperature at/below 36 degrees C. / 97 degrees F. by:
 - Keeping patient uncovered
 - Ice packs to groin, axilla, neck
 - Water spray and fan

① **Pediatric Considerations:** Contact OLMC for consideration of Targeted Temperature Management

1.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guideline*
- ❑ **Lidocaine 0.5-1.5 mg/kg IV** (if not given during the arrest), followed by continuous infusion of 2-4 mg/min

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy guidelines*
- ① Monitor closely for hypotensive shock. Consult with OLMC for direction if blood pressure is less than pediatric lowest acceptable systolic blood pressures
 - Birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

PARAMEDIC

PARAMEDIC

- **Epinephrine (1:1000) 2–10 mcg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg.
- And/or**
- **Dopamine 2-20 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg. (Goal is to maintain a mean arterial pressure (MAP) >70 mmHg)

TACHYCARDIA (With a Pulse)

ALL PROVIDERS

- Focused history and physical exam
 - Assess blood glucose level
- Continuous ECG, CO₂, and Pulse Oximetry monitoring when available
- Perform a 12 EKG if possible.
- Treatment Plan** (develop and implement plan based on assessment findings, resources, and training)
 - Identify and treat the underlying cause (e.g. hypotension, pain, medication, heart failure, etc.)
- Key Considerations**
- Spinal motion restriction per **Selective Spinal Immobilization Guideline**
- Pregnancy >20 weeks gestation - Place wedge-shaped cushion or multiple pillows under patient's right hip.
- Current nationally established certification programs (e.g. ACLS, PALS, etc.) may be used in lieu of these resuscitation guidelines.
- Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

ADULT

PEDIATRIC (<15 years of Age) NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

- Vascular access and fluid therapy per **IV/IO Access and Fluid Therapy Guidelines**
- Supraventricular Tachycardia (SVT)**
- Obtain a 12 Lead EKG, if possible
- Maneuvers to increase vagal tone: valsalva, ice pack to face, Trendelenburg, urination, etc.)

- Vascular access and fluid therapy per **IV/IO Access and Fluid Therapy Guidelines**
- Supraventricular Tachycardia (SVT)**
- Infants: rate usually greater than 220 bpm with no variation
- Children: rate usually greater than 180 bpm with no variation
- Obtain a 12 Lead EKG is possible, if possible
- Maneuvers to increase vagal tone: valsalva, ice pack to face, Trendelenburg, urination, etc.)

PARAMEDIC

PARAMEDIC

Supraventricular Tachycardia (SVT)

- **Adenosine**
 - Indicated for patients with prior SVT who have responded to adenosine previously
 - **Initial dose: 6 mg IV**
 - **May repeat once: 12mg IV**

Stable Wide Complex (QRS > 120 msec) Tachycardia

- Transport to ED with IV in place and careful monitoring

Unstable Tachycardia – Synchronized Cardioversion

Signs/Symptoms of Unstable Tachycardia

- Acute cardiac chest pain
- Acute congestive heart failure / pulmonary edema
- Altered mental status
- SBP <90 mm Hg
- Signs of shock:
 - Cool, clammy, or pale skin
 - Weak or thready pulse

Synchronized Cardioversion

- Indicated for unstable patients
- These are initial doses.
- Narrow Regular: **50-100J** (mono- or bi-phasic)
- Narrow Irregular: **120-200J** biphasic and 200J monophasic
- Wide Regular: **100J** (mono- or bi-phasic)
- Wide Irregular: defibrillate without synchronization

Consider Sedation prior to Cardioversion as per the Violent Patient/Chemical Sedation Guideline

Supraventricular Tachycardia (SVT)

- **Adenosine**
 - Indicated for patients with prior known SVT who have responded to adenosine previously
 - **Initial dose: 0.1mg/kg IV (to max 6mg)**
 - **May repeat once: 0.2mg/kg IV (to max 12mg)**

Stable Wide Complex (QRS > 120 msec) Tachycardia

- Transport to ED with IV in place and careful monitoring

Unstable Tachycardia – Synchronized Cardioversion

Signs/Symptoms of Unstable Tachycardia

- Acute congestive heart failure / pulmonary edema
- Altered mental status
- Low BP for age
- Signs of shock:
 - Cool, clammy, or pale skin
 - Weak or thready pulse

Synchronized Cardioversion

- Indicated for unstable patients
- Initial energy dose is 0.5-1 J/kg
- If no response, double energy dose to 2 J/kg

Consider Sedation prior to Cardioversion as per Violent Patient/Chemical Sedation Guideline

Utah EMS Protocol Guidelines: General



UTAH DEPARTMENT OF
HEALTH

January 1, 2017

General Patient Care Guidelines

These guidelines were created to provide direction to each level of certified provider in caring for all types of patients. All of these directions, dosages and provisions are subject to change with a later notice or revision of the guidelines. The OLMC physician will always be the final word on treatment in the field. If there are ever any discrepancies between the guidelines and the OLMC physician these should be documented and brought to the attention of the physician at the receiving hospital. If the explanation is not sufficient, the provider should bring the issue to their medical director or the BEMSP for review.

General Approach to General Patient Care Guidelines

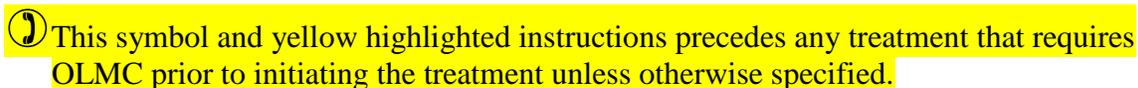
- Assess your patient prior to initiating a guideline.
- More than one guideline may apply.
- If conflicts arise between treatment guidelines, contact OLMC for clarification.
- Providers may provide treatment up to the level of their certification only.
- Air Medical Transport Service personnel function under their own clinical guidelines.
- Contact the receiving hospital and OLMC as soon as clinically possible for each patient.
- OLMC physician may change your treatment plan.
- Any variations to a guideline by the OLMC or physician should be clarified to ensure that the provider has properly characterized the situation.
- The OLMC Physician has the final word on treatment once contact is made.
- OLMC physician must approve usage of dosages in excess of the guideline.

General Pediatric Considerations

- Pediatric reference based tape dosing is preferred over calculated dosages for infants and children.
- Pediatric lowest acceptable systolic blood pressures are: birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

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 This symbol and yellow highlighted instructions precedes any treatment that requires OLMC prior to initiating the treatment unless otherwise specified.

AIRWAY AND TRACHEOSTOMY MANAGEMENT

ALL PROVIDERS

- ❑ Focused history and physical exam
 - Assess ABC's for evidence of current apnea, airway reflex compromise or difficulty in ventilatory effort.
 - Assess medical conditions, burns or traumatic injuries that may have or will compromise the airway.
- ❑ Continuous cardiac, ETCO₂, and pulse oximetry monitoring, when available.
- ❑ Obtain a 12 Lead EKG when available.
- ❑ **Treatment Plan**
 - Provide basic airway maneuvers to all compromised airways, i.e. jaw-thrust, airway adjuncts, and oxygen.
 - Identify and treat underlying reversible medical conditions (narcotic overdose, hypoglycemia, etc.).
 - Provide supplemental oxygen and assisted ventilation for the patient to maintain an oxygen saturation 90-94% and ETCO₂ of 35-45.
 - Always ensure proper care of the C-spine during airway treatment per the **Selective Spinal Immobilization Guideline**.
 - Keep NPO. Stop any GI Feedings and do not use GI tube during resuscitation.
 - Infants and young children are primary nose breathers. Suction oral and nasal passages as needed to keep clear.
 - Tracheostomy/Home Ventilator
 - Primary caretakers and families are your best resource for understanding the equipment they are using.
 - Disconnect the ventilator and assist ventilations with BVM if the patient is apneic, unresponsive, or if has severe respiratory distress or depression.
 - If unable to ventilate, suction the tracheostomy, then reattempt ventilatory efforts.
 - If still unable to ventilate, attempt traditional BVM (place a gloved finger over the trach to occlude during the instillation of breath).

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Provide 100% oxygen to the patient
- ❑ Ventilate with BVM when apneic or exhibiting respiratory distress. Consider a nasal or oral airway when NOT contraindicated (facial fractures, intact gag response, etc)
- ❑ Maintain a ventilatory rate of 10-12 breaths per minute
- ❑ Do not hyperventilate the patient

AEMT

EMT

- ❑ Provide 100% oxygen to the patient
- ❑ Ventilate with BVM when apneic or exhibiting respiratory distress. Consider a nasal or oral airway. BVM is the preferred method of ventilation below the age of 10 years old.
- ❑ Recommended pediatric ventilatory rates:
 - ❑ Infant (0-12 month): 25 breaths per minute
 - 1-3 yrs: 20 breaths per minute
 - 4-6 yrs: 15 breaths per minute
 - >6 years: 12 (Same as adult)
- ❑ Do not hyperventilate the patient

AEMT

- ❑ Consider an appropriately sized supraglottic airway device (SGD) if unable to ventilate with BVM
- ❑ **CPAP/BiPAP** – Consider when the patient is awake but needs assistance with oxygenation and ventilation such as in a CHF/Pulmonary Edema patient or COPD patient.
 - Explain the procedure to the patient
 - Initially apply the mask and begin the CPAP or BiPAP according to training instructions.
 - CPAP - Provide 10 L/min oxygen and PAP of 5 cm H₂O to begin.
 - BiPAP – Provide 10 L/min oxygen and IPAP at 15 cm H₂O with EPAP at about 5 cm H₂O
 - If unable to adequately ventilate return to BVM and consider insertion of supraglottic airway and bag ventilation.

① Contact OLMC to discuss further settings and treatment above the initial setup

- ❑ Consider an appropriately-sized supraglottic airway device if unable to ventilate with BVM
- ❑ **BiPAP/CPAP** – ONLY use when the patient is on the machine at home. Maintain home settings and bring machine with the patient. If unable to adequately ventilate return to BVM and consider insertion of a supraglottic airway.

PARAMEDIC

- ❑ **Endotracheal Intubation** - Consider orotracheal intubation using an endotracheal tube (ETT) when indicated
 - Document TWO confirmation methods to verify endotracheal placement. (e.g. ETCO₂, CO₂ detection device, or esophageal intubation detector)
 - Secure the ETT for transport
 - Consider NG/OG tube placement or opening active G-tubes for all intubated patients
 - Consider sedation after intubation
 - After 3 unsuccessful attempts at endotracheal intubation use a supraglottic airway device or BVM with appropriate oral/nasal airway.
- ❑ **Surgical Airway - Cricothyrotomy**
 - Consider only when all other methods of oxygenation, ventilation and securing the airway have failed.
 - Gather all equipment before beginning the procedure
 - Once the procedure is done insert a 5.0 or 6.0 cuffed ETT, inflate cuff, and secure
- ❑ **Tracheostomy Assistance**
 - Provide supplemental oxygen
 - Suction the patient appropriately
 - Replace Tracheostomy tube if needed
 - IF unable to ventilate, pass an appropriately sized ETT through the stoma 1-2 inches
 - IF unable to pass a tracheostomy tube or endotracheal tube use BVM, orotracheal intubation or Supraglottic device to ventilate the patient.
- ① Contact OLMC for further instructions
- ❑ **Ventilator Management**
 - Work with the family to troubleshoot the machine
 - Address tracheostomy as above
 - If you need to disconnect for transport provide adequate BVM ventilations similar to home

PARAMEDIC

- ❑ **Endotracheal Intubation** - Consider orotracheal intubation using an endotracheal tube (ETT) when indicated
 - BVM ventilations are the preferred method of ventilation in children, even for long transports. However, if oxygenation or ventilation is inadequate with BVM, a trial of a supraglottic airway is indicated. In the rare instance that a supraglottic airway is ineffective, then proceed to ETT
 - For longer transports, be aware of gastric distension during BVM, which may limit ventilation. An NG/OG tube can be placed to decompress the stomach
 - Pediatric ETT's are sized according to age and are in mm:
 - Preemie: 2.5
 - 0-3 months: 3.0
 - 3-7 months: 3.5
 - 7-15 months: 4.0
 - 15-24 months: 4.5
 - 2-15 years: Formula is (age+16) ÷ 4
 - Document TWO confirmation methods to verify endotracheal placement. (e.g. ETCO₂, CO₂ detection device, or esophageal intubation detector)
 - Secure the ETT for transport
 - Consider NG/OG tube placement or opening active G-tubes for all intubated patients
 - Consider sedation after intubation
 - After 3 unsuccessful attempts at endotracheal intubation use a supraglottic airway device or BVM with appropriate oral/nasal airway.
- ❑ **Surgical Airway – Cricothyrotomy**
 - Open Surgical Cricothyrotomy is contraindicated in ages < 12 years old.
 - Needle Cricothyrotomy can be used below 12 years of age.
 - Consider only when all other methods of

respiratory rate settings

🕒 Contact OLMC for further instructions as needed.

oxygenation, ventilation and securing the airway have failed.

- Gather all equipment before beginning the procedure
- Once the procedure is done insert an appropriately sized cuffed ETT and secure.
- Contact OLMC for further instructions as needed.

☐ **Tracheostomy Assistance**

- Provide supplement oxygen
- Suction the patient appropriately
- Replace tracheostomy tube, if needed
- IF unable to ventilate, pass an appropriately sized ETT through the stoma 1-2 inches
- IF unable to pass a tracheostomy tube or ETT use BVM, orotracheal intubation or SGD
- Contact OLMC for further instructions

☐ **Ventilator Management**

- Work with the family to troubleshoot the machine
- Address tracheostomy as above
- If you need to disconnect for transport provide adequate BVM ventilations similar to home respiratory rate settings
- Contact OLMC for further instructions as needed.

ALTERED MENTAL STATUS

ALL PROVIDERS

- ❑ Focused history and physical exam
 - Blood glucose, oxygen saturation and temperature assessment
- ❑ Continuous cardiac, ETCO₂, and pulse oximetry monitoring, when available.
- ❑ Obtain a 12 Lead EKG when available
- ❑ **Treatment Plan**
 - Assess for trauma.
 - Assess for stroke and score per the **Suspected Stroke Guideline**.
 - Assessment for possible overdose, substance abuse or other potential toxin. Evaluate the scene for supportive evidence.
 - Gather and collect any evidence on scene that may assist in the treatment of the patient (medication bottles, pills, notes, etc.)
- ❑ **Key Considerations**
 - Consider non-accidental trauma, especially in pediatric and elderly patients
 - Consider hypoglycemia in pediatric patient
 - Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.
 - If poisoning suspected, you may contact Utah Poison Center at 1-800-222-1222 for guidance.

A - Alcohol	T – Trauma/Temp
E - Electrolytes	I – Infection
I – Insulin	P – Psychogenic
O - Opiates	P – Poison
U - Uremia	S – Shock/Seizure

AEIOUTIPPS: Possible causes of Altered Mental Status

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Apply 100% oxygen to the patient
- ❑ Apply warming or cooling techniques as indicated
- ❑ Consider physical restraints as needed to protect the patient and/or rescue personnel
- ❑ **Naloxone 0.4–2 mg** (per dose) IM/IN (intranasal) for suspected narcotic overdose. May repeat once

EMT

- ❑ Apply 100% oxygen to the patient
- ❑ Apply warming or cooling techniques as indicated
- ❑ Consider physical restraints as needed to protect the patient and/or rescue personnel
- ❑ **Naloxone 0.1 mg/kg** (max 2mg per dose) IM/IN (intranasal) for suspected narcotic overdose. May repeat once

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per **IV/IO Access and Fluid Therapy Guideline**
- ❑ Consider chemical restraints per the **Violent Patient/Chemical Restraint Guideline**, as needed, to protect the patient and/or rescue personnel

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per **IV/IO Access and Fluid Therapy Guideline**
- ❑ If evidence of poor perfusion, give NS 20mL/kg IV
- ❑ Consider chemical restraints per the **Violent Patient/Chemical Restraint Guideline**, as needed, to protect the patient and/or rescue personnel
- ❑ If blood glucose is less than 60mg/dl
 - Give **D10W 2ml/kg (200mg/kg)** for neonates <30days
 - Give **D10W 5ml/kg (500mg/kg)** for all other children

PARAMEDIC

PARAMEDIC

DEATH DETERMINATION AND TERMINATION OF RESUSCITATION

ALL PROVIDERS

- ❑ **General Crime Scene Management Principles** as appropriate.
- ❑ **Treatment Plan**
 - **EMS may not initiate resuscitation** when:
 - Bodily injury or condition incompatible with life such as:
 - Obvious death, decomposition, and/or rigor mortis
 - Obvious fatal wounds without signs of life
 - Dependent lividity
 - Adult apneic/pulseless patient in asystole who:
 - Had an unwitnessed arrest AND an estimated time interval of greater than 15 minutes from collapse to the initiation of CPR
 - Could not have resuscitation started within 15 minutes of arrest due to scene difficulties such as extrication, location, or unsafe environment
 - Is a patient in a multi-victim incident where insufficient resources preclude initiating resuscitative measures
 - Is a drowning victim with a reasonably determined submersion time of greater than one (1) hour prior to exam
 - Is an arrest resulting from blunt or penetrating trauma in whom all signs of life are absent, including pupillary reflexes, spontaneous movement, response to pain, spontaneous respirations, or organized electrical activity on the cardiac monitor
 - Written or verbal orders that request no resuscitation:
 - A verbal order by a licensed physician in the State of Utah who is present on scene pronouncing the patient dead
 - A verbal order by the OLMC physician
 - A Do Not Resuscitate (DNR) written order, bracelet, or necklace from any U.S. state.
 - A signed Physician/Provider Order for Life-Sustaining Treatment (POLST) form from any U.S. state indicating that the patient does not desire resuscitative efforts
 - Immediate family member request honoring the patient's wishes to NOT start CPR, AND has had a known chronic or terminal illness, WITH the full agreement of all relatives AND EMS personnel on scene AND with concurrence of OLMC. If EMS is uncomfortable with the request, then resuscitative efforts should be started
 - OLMC should be consulted for any difficult or questionable case
 - **Termination of CPR** may be done in the following circumstances **with the concurrence of the OLMC**:
 - A valid DNR or POLST form is discovered after resuscitative efforts were initiated
 - Resuscitative efforts were initiated when criteria to not resuscitate were present (as above)
 - A verbal order pronouncing the patient dead by a licensed physician in the State of Utah who arrives on scene
 - Order by the OLMC physician
 - Adult cardiac arrest - resuscitation attempts may be terminated if the patient is in asystole after 20 minutes of ACLS on scene if ALL of the following criteria are met:
 - Arrest was not witnessed by EMS personnel
 - No shockable rhythm was identified at any time during the resuscitation
 - No ROSC occurred at any time during the resuscitation
- ① **Must contact OLMC for approval prior to termination of resuscitation efforts**
- **Special Considerations for Resuscitation**
 - All traumatic and non-traumatic pediatric arrests should be transported to the hospital with resuscitative efforts carried out en-route, unless it is an obvious death on scene
 - Arrests not due to cardiac cause or trauma. The following situations require hospital transport and/or prolonged resuscitation attempts
 - Hypothermia
 - Active Internal Bleeding

- Drug/toxin overdose
 - Drowning
 - Electrocution or Lightning Strike
- Dangerous, violent or otherwise unsafe or difficult scene situation. EMS personnel safety and patient respect are of the utmost importance. Assessing the scene to insure a safe and secure environment to continue resuscitation is important. If any concerns about scene safety or personnel security, the patient should be promptly loaded and transported to the hospital.
 - Pregnant mother >25 weeks pregnant. Initiate early hospital transport for possible advanced care and possible delivery of the baby
- **Following** determination of obvious death or termination of resuscitative efforts:
- Call dispatch to reduce any responding transport(s) to non-emergent.
 - Document time of death and circumstances according to system and agency guidelines.
 - Turn the body over to the appropriate law enforcement agency.
 - Evaluate for, document, and report any indication of non-accidental trauma per the **Non-Accidental Trauma/Abuse Guideline**.
 - Contact the closest patient receiving facility and make them aware of the actions taken, declare a time of death and explain the disposition of the patient

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT
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PARAMEDIC

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KEY POINTS/CONSIDERATIONS

There will always be patients and circumstances that deserve special consideration (pediatric drowning or pregnant patients for instance). OLMC should be consulted if there are ever any questions. Always be sensitive to the patient's desires, family concerns, and on-scene environment to insure an understanding by all who observe your actions that everything that could and should have been done to resuscitate the patient was done.

FAMILY CENTERED CARE

ALL PROVIDERS

- ❑ Family Centered Care is a mutually collaborative health care effort between family, patient and provider and has proven to be the gold standard in dealing with the pediatric patient and their families.
- ❑ Demonstration of Family Centered Care is by one's actions and behaviors when caring for patients.
- ❑ **Treatment Plan**
 - Family centered care is demonstrated in practice, not just policy development.
 - Collaboration with Families: Empower the patient and the family by involving them in the care as well as the decision-making process.
 - Cultural Competency: Respect, sensitivity, and an understanding of the unique cultural and religious differences.
 - Be aware of any language barriers.
 - If at all possible, engage an interpreter that is able to understand some of the emotional issues as well as medical terminology associated with the patient.
 - An understanding of the hierarchy of the family is key to a positive outcome.
 - Developmental Competency: Use appropriate language for the age.
 - When in pain or hurt children often regress to childhood issues or more infantile responses. They may still need attachment items late in life.
 - Describe what you will be doing.
 - Use eye contact and touch when appropriate.
 - Be respectful at all times.
 - ① Infants: General calming measures (Soft voices, gentle pats, pacifiers or rocking), allowing parents to stay close and bonded with the child and help them to anticipate the situation if possible.
 - ① Toddlers: Use toys, teddy bear, blanket, etc. for comfort. Parents or family members are often a great source of comfort and nurturing, so allow them to be present.
 - ① School Age: Attachment objects, honesty about procedures, and imaginary/magical (e.g. "I made the car crash," "I told a lie, and this is why mom is hurt") perspective of young children. Include the child in conversations about his/her treatment when possible.
 - ① Adolescents: Physician and provider honesty is key as well as paying attention to pain. Help them to participate in their own care and take their views seriously. Focus on giving them some sense of control. Pain management is important. Adolescents as well as adults are afraid of pain. The anticipation of pain can be worse than the pain itself. Some transitional objects/toys/stuffed animals can also be useful. Respect their privacy and modesty as much as possible. Allow them to discuss what is happening both with and without caregivers around.
- ❑ **Key Considerations**
 - Family Centered Care = compassion
 - Include family members in resuscitation and care decision making as they desire and are capable. If possible, designate a crew member to be a liaison to the family in order to facilitate communication and continuity.

ADULT

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PARAMEDIC

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

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PARAMEDIC

IV / IO ACCESS

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
 - Vital sign assessment, blood glucose, oxygen and temperature assessment.
 - Consider IV/IO placement for fluid therapy or medications as needed.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

- ❑ **IV – Peripheral**
 - Preferred site is usually the hand or forearm except in resuscitation when antecubital is preferred
 - Place the largest gauge catheter possible
 - If unsuccessful in the arm, then try feet or legs
- ❑ **IO - Interosseous**
 - If during the resuscitation of a critical patient you are unable to obtain an IV after 2 attempts or 90 seconds, then an IO is indicated
 - Place the IO in the tibia or humeral head
 - Avoid fractured bones, infection sites, excessive edema or excessive tissue over the site
 - Consider a pressure bag for fluid therapy if an IO is placed
 - **NOTE:** in conscious patients **20-50mg of 2% Lidocaine** should be given SLOWLY through the IO before a fluid bolus, lessen the initial pain of infusion
- ❑ **IV Fluid Therapy**
 - All IV's are set at KVO/TKO unless giving a bolus of fluid
 - Bolus with NS or LR only
 - Refer to the ***Shock and Fluid Therapy Guideline for fluid management***

- ❑ **IV – Peripheral**
 - Preferred site is usually the hand or forearm except in resuscitation when antecubital is preferred
 - Place the largest gauge catheter possible
 - If unsuccessful in the arm, then try feet or legs
- ❑ **IO - Interosseous**
 - If during the resuscitation of a critical patient you are unable to obtain an IV after 2 attempts or 90 seconds, then an IO is indicated
 - Insert the appropriate sized needle for age and weight
 - The approved sites in children are the tibia and proximal humerus
 - Avoid fractured bones, infection sites, excessive edema or excessive tissue over the site
 - Consider a pressure bag or syringe boluses for fluid therapy if an IO is placed
 - **NOTE:** in conscious patients **0.5mg/kg of 2% Lidocaine** should be given SLOWLY through the IO before a fluid bolus, to lessen the initial pain of infusion
- ❑ **IV Fluid Therapy**
 - All IV's are set at KVO/TKO unless giving a bolus of fluid
 - Bolus with NS or LR, 20mL/kg then reassess
 - Refer to the ***Shock and Fluid Therapy Guideline for further fluid management***

PARAMEDIC

PARAMEDIC

NAUSEA / VOMITING

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
 - Blood glucose, temperature and oxygen saturation assessment
- ❑ Continuous cardiac, ETCO₂, and pulse oximetry monitoring, when available
- ❑ **Treatment Plan**
 - Nothing by mouth (NPO)
 - Place the patient in an upright or lateral recumbent position
 - Obtain a 12 lead EKG, if available, for:
 - Greater than 40 years old
 - Associated with chest or abdominal pain
 - Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

- | | |
|---|--|
| <ul style="list-style-type: none"> ❑ Vascular access and fluid therapy per <i>IV/IO Access and Fluid Therapy Guidelines</i> ❑ Document level of consciousness before and after giving medication ❑ Ondansetron (Zofran) – 4mg IV/IM/PO ❑ Promethazine (Phenergan) - 12.5–25 mg IV titrated to effect if SBP >100 or peripheral pulse present <ul style="list-style-type: none"> • Dilute with 5–10 mL of NS and administer over 30 seconds • Promethazine (Phenergan) 25 mg IM if no vascular access ⌚ IF the patient experiences extreme anxiety, abnormal muscular contractions or an allergic reaction contact OLMC and be prepared to administer Benadryl as a treatment. | <ul style="list-style-type: none"> ❑ Vascular access and fluid therapy <i>per IV/IO Access and Fluid Therapy Guidelines</i> ❑ Document level of consciousness before and after giving medication. ❑ Ondansetron (Zofran) - 0.1mg/kg IV/IM/PO to a maximum of 4mg ⌚ Promethazine (Phenergan) – NOT recommended, requires OLMC contact. ⌚ If blood glucose is less than 60mg/dl <ul style="list-style-type: none"> • Give D10W 2ml/kg (200mg/kg) for neonates <30days • Give D10W 5ml/kg (500mg/kg) for all other children |
|---|--|

PARAMEDIC

PARAMEDIC

AEMT

- ❑ Vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guidelines*

The order in which medications below are listed is not intended to indicate hierarchy, order, or preference of administration

Dosages should be reduced by half for patients with evidence of drug or alcohol intoxication

Pain Control

- ❑ **Morphine Sulfate 4** q10 minutes IV/IO/IM titrated to effect
- OR
- ❑ **Fentanyl 25-50 mcg** q10 minutes IV/IO/IM/IN

Anxiety Control**Midazolam**

- **IV/IO – 5 mg**, may repeat once in 10 minutes, if needed. Total max dose: 10mg
- **Intranasal (IN) – 5 mg**, may repeat once in 10 minutes to a max dose of 10mg
- **Intramuscular (IM) – 10 mg** once

Diazepam

- **IV/IO – 5 mg** every 10 min to the desired effect or max dosage of 20 mg
- **Intramuscular (IM) – 10 mg** once (IM not preferred, unless no other options)

Lorazepam

- **IV/IO – 2 mg** every 5 min. to the desired effect or max dose of 4 mg
- **Intramuscular (IM) – 4 mg** once

📞 Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters.

PARAMEDIC**AEMT**

- ❑ Vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guidelines*

The order in which medications below are listed is not intended to indicate hierarchy, order, or preference of administration

Dosages should be reduced by half for patients with evidence of drug or alcohol intoxication

Pain Control

- ❑ **Morphine Sulfate 0.1 mg/kg** (max of 4mg per dose) IV/IM/IO titrated to effect
- OR
- ❑ **Fentanyl 1 mcg/kg** (max 50 mcg per dose) IV/IM/IO. Use 2 mcg/kg for IN (intranasal) (max 100mcg per dose). May repeat x 1 if needed after 10-15 min

📞 For additional doses, contact OLMC

Anxiety Control**Midazolam**

- **IV/IO - 0.1 mg/kg** (max 5 mg), may repeat once in 10 minutes, if needed. Total max dose: 10 mg
- **Intranasal (IN) - 0.2 mg/kg (max 5 mg)**, may repeat once in 10 minutes, if needed. Total max dose: 10 mg
- **Intramuscular (IM) – 0.15 mg/kg** (max 5 mg) once

Diazepam

- **IV/IO - 0.1 mg/kg** (max 5 mg), may repeat once in 10 minutes, if needed. Total max dose: 10 mg
- **Intramuscular (IM) – 0.2 mg/kg** (max 10 mg) once (IM not preferred unless no other options)

Lorazepam

- **IV/IO – 0.05 mg/kg** (max 2 mg), may repeat once in 10 minutes, if needed. Total max dose: 4 mg
- **Intramuscular (IM) – 0.05 mg/kg** (max 4 mg) once

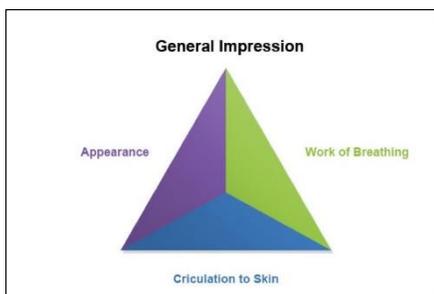
📞 Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters.

PARAMEDIC

PEDIATRIC ASSESSMENT

ALL PROVIDERS / EMT

- ❑ The pediatric assessment should be modified for the developmental level of each patient
- ❑ Continuous cardiac, ETCO₂, and pulse oximetry monitoring, when available
- ❑ **Treatment Plan** (develop and implement plan based on assessment)
 - Use the Pediatric Assessment Triangle (defined by the AAP) to form a general impression of the child.



- **Appearance:** Evaluate tone, interactiveness, consolability, gaze, and speech or cry
- **Breathing:** Evaluate abnormal airway sounds, abnormal positioning, retractions, and nasal flaring.
- **Circulation/Skin Color:** Evaluate for pallor, mottling, delayed capillary refill and cyanosis

- If the patient looks ill and has poor perfusion, start CPR when the heart rate is less than:
 - 80bpm for infants (up to 1 year of age)
 - 60bpm for children (1 year to 8 years)
- Look on scene for the CHIRP red bag. It contains current medical information on the child with special healthcare needs.
- Perform the pediatric assessment with guidance from the **Family Centered Care Guideline**.
- Pay careful attention to the wide variety of normal vital signs. Do not assume that the pediatric patient is fine when they have vitals meeting the normal adult parameters.

Normal Pediatric Vital Signs

Age of Patient	HR		RR		Systolic BP	Temp	
0 days - < 1 mo	<80	>205	<30	>60	<60	<36	>38
> 1mo - < 3 mos	<80	>205	<30	>60	<70	<36	>38
> 3 mos - < 1 yr	<75	>190	<30	>60	<70	<36	>38.5
> 1 yr - < 2 yrs	<75	>190	<24	>40	<70+ (age x 2)	<36	>38.5
> 2 yrs - < 4 yrs	<60	>140	<24	>40	<70+ (age x 2)	<36	>38.5
> 4 yrs - < 6 yrs	<60	>140	<22	>34	<70+ (age x 2)	<36	>38.5
> 6 yrs - < 10 yrs	<60	>140	<18	>30	<70+ (age x 2)	<36	>38.5
> 10 yrs - < 13 yrs	<60	>100	<18	>30	<90	<36	>38.5
> 13 yrs - < 18 yrs	<60	>100	<12	>16	<90	<36	>38.5

- ❑ **Key Considerations**
 - Obtaining a full set of vital signs, **including blood pressures**, should be a priority.
 - Parents are often the best resource for a baseline understanding of their child, especially in the case of the child with special healthcare needs.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

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PARAMEDIC

SHOCK and FLUID THERAPY

ALL PROVIDERS / EMT

- Focused history and physical exam
 - Blood glucose, oxygen saturation and temperature assessment
 - Consider shock in patients with one or more the following:
 - Vital signs: HR >100, SBP of <90mmHg for adults, SBP <70 + (age in years x 2) mmHg for children, or RR >20 BPM
 - Skin signs: cold clammy skin, febrile, or delayed capillary refill
 - Mental status: altered, lethargic, or irritable (esp. in infants).
- Evaluate for the source including distributive (e.g. infection, anaphylaxis), hypovolemic (e.g. hemorrhagic, vomiting/diarrhea, heat exposure), neurologic (i.e. spinal injury), or cardiogenic
- Sepsis Alert** – Contact the hospital and institute a Sepsis Alert if:
 1. Suspected or documented Infection
 2. Two or more of the following criteria are met:
 - a. Temp >100.4 °F (38°C) or <96.8°F (36°C)
 - b. RR >20 BPM
 - c. Heart Rate >90 bpm
 3. Signs of hypoperfusion – SBP <90mmHg or MAP <65mmHg
 4. ETCO2 <25mmHg
- Continuous cardiac, ETCO2, and pulse oximetry monitoring, when available
- Obtain a 12 Lead EKG when available
- Treatment Plan**
 - Address the underlying cause of the shock, if possible
 - Administer 10-15 lpm of oxygen to keep oxygen saturations between 90-94%.
 - Ensure patient warmth, resuscitate with warm IV fluids, when available
 - Pregnancy >20 weeks gestation - Transport in partial left lateral decubitus position. Place wedge-shaped cushion or multiple pillows under patient's right hip and shoulders to elevate R side 45 degrees
 - Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

- ❑ Vascular access per **IV/IO Access Guideline**
 - Insert 2 large bore IVs

 - ❑ **Traumatic Shock – Permissive Hypotension**
 - If SBP >80-90:
 - No IV fluid bolus
 - Place saline locks on IVs or run at TKO rate
 - If SBP <80-90:
 - Give fluid bolus 500mL at a time, reassess and repeat as needed to:
 - Maintain SBP to 80-90 mmHg **WITHOUT** a CLOSED HEAD INJURY.
 - Maintain SBP to 110-120 mmHg **WITH** a CLOSED HEAD INJURY.
 - Once minimum blood pressures have been achieved the patient should have a saline lock and no further fluid boluses should be administered until the BP falls below the limits.

 - ❑ **Non-Traumatic Shock** – Give IV NS bolus 500 ml at a time, reassess and repeat up to a maximum of 2 liters as required for reversal of signs of shock
 - ① Call OLMC if the patient remains hypotensive after 2 liters has been administered

 - ❑ **Cardiogenic Shock** - In patients with CHF, pulmonary edema, and cardiogenic shock, IV fluids should be withheld, to avoid worsening shock
 - Apply high flow oxygen
 - Rapidly transport to hospital

 - ❑ **Kidney Failure (i.e. dialysis patients)** - Give 500mL fluid boluses up to a maximum of 1 liter and reassess for reversal of the signs of shock
-
- ❑ Vascular access and fluid per **IV/IO Access Guideline**
 - Insert 2 large bore IVs

 - ❑ **Traumatic Shock** – Give fluid bolus of NS 20 mL/kg at a time, reassess and repeat up to a maximum of 60 mL/kg total. Reassess for reversal of the signs of shock
 - ① If the patient remains hypotensive after 60mL/kg of NS call OLMC

 - ❑ **Non- Traumatic Shock** - Provide 20mL/kg boluses up to a maximum of 60mL/kg and reassess for reversal of the signs of shock
 - ① If the patient remains hypotensive after 60mL/kg of NS call OLMC

 - ❑ **Cardiogenic Shock** - In patients with CHF, pulmonary edema and cardiogenic shock, IV fluids should be withheld, to avoid worsening shock
 - Apply high-flow oxygen
 - Rapidly transport to the hospital

 - ❑ **Kidney Failure (i.e. dialysis patients)** - Give 10 mL/kg fluid boluses up to a maximum of 20mL/kg and reassess for reversal of the signs of shock
 - ❑ Call OLMC if the patient remains hypotensive after 20 ml/kg has been administered

PARAMEDIC

① **Epinephrine (1 mg/ml/1:1000) 2–10 mcg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg

OR

① **Norepinephrine** initial dose: **0.5 – 1 mcg/kg/min** IV/IO for hypoperfusion. Titrate to maintain a SBP > 100 mmHg. For patients in refractory shock: 8-30 mcg/minute

PARAMEDIC

① **Epinephrine (1 mg/ml/1:1000) 0.1–1 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

OR

① **Norepinephrine** initial dose: **0.05 - 0.1 mcg/kg/min**, titrate to max of 2 mcg/kg/min to maintain SBP >70 + (age in years x 2) mmHg

Utah EMS Protocol Guidelines: Medical



January 1, 2017

Medical Patient Care Guidelines

These guidelines were created to provide direction for each level of certified provider in caring for medical patients. All of these directions, dosages and provisions are subject to change with a later notice or revision of the guidelines. The OLMC physician will always be the final word on treatment in the field. If there are ever any discrepancies between the guidelines and the OLMC physician these should be documented and brought to the attention of the physician at the receiving hospital. If the explanation is not sufficient, the provider should bring the issue to their medical director or the BEMSP for review.

General Approach to Medical Patient Care Guidelines

- Assess your patient prior to initiating a guideline.
- More than one guideline may apply.
- If conflicts arise between treatment guidelines, contact OLMC for clarification.
- Providers may provide treatment up to the level of their certification only.
- Air Medical Transport Service personnel function under their own clinical guidelines.
- Contact the receiving hospital and OLMC as soon as clinically possible for each patient
- OLMC physician may change your treatment plan.
- Any variations to a guideline by the OLMC physician should be clarified to ensure that the provider has properly characterized the situation.
- The OLMC physician has the final word on treatment once contact is made.
- The OLMC physician must approve usage of dosages in excess of the guidelines.

General Pediatric Considerations

- Pediatric reference based tape dosing is preferred over calculated dosages for infants and children.
- Pediatric lowest acceptable systolic blood pressures are: birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

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- ① This symbol and yellow highlighted instructions precedes any treatment that requires OLMC prior to initiating the treatment unless otherwise specified.

ALLERGIC REACTION / ANAPHYLAXIS

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam.
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring, when available.
- ❑ **Treatment Plan**
 - Eliminate the source of exposure, if possible. May require moving the patient to another location
 - Maintain airway.
 - Apply cold pack to bite or sting site as necessary.
 - Monitor closely for hypotension.
- ❑ Key Considerations
 - If the patient has any respiratory distress and is conscious, treat and transport them in a position of comfort, including leaving a child in parent's lap.
 - Determine if anaphylaxis is present:
 - **Non-anaphylactic Allergic Reaction:** Symptoms involving only **one** organ system (i.e. itching, rash, or localized angioedema that does not involve the airway or is not associated with vomiting)
 - **Anaphylaxis:** More severe and is characterized by an acute onset involving:
 - **Hypotension** after exposure to a likely allergen OR
 - **Two or more** of the following occurring rapidly after exposure to a likely allergen:
 - Skin and/or mucosal involvement (urticaria, itching, face/lips/tongue swelling)
 - Respiratory compromise (dyspnea, wheezing, stridor, hypoxemia)
 - Persistent gastrointestinal symptoms, particularly in infants/young children (vomiting, abdominal pain)
 - **Do not delay administering epinephrine.** Give IM epinephrine as soon as the diagnosis of anaphylaxis has been established.

ADULT
(>25 kg / 55lbs)

PEDIATRIC
(< 25 kg / 55 lbs)

EMT

- Give or assist patient with **epinephrine autoinjector (0.3 cc)** IM for anaphylaxis
- **OR** administer **epinephrine (1:1000) 0.3 cc** IM, as per AEMT guideline below
- Assist patient with using own albuterol inhaler for wheezing
- O₂ as needed to maintain SaO₂ above 90%.

EMT

- Give or assist patient with **epinephrine autoinjector ("Jr." 0.15 cc)** IM for severe respiratory distress and/or shock from anaphylaxis.
 - If >25kg then use adult autoinjector (0.3 cc) IM
- **OR** administer **epinephrine (1:1000) 0.15 cc** IM, as per AEMT guideline below.
 - If > 25 kg, then give 0.3 cc IM
- Assist patient with own albuterol inhaler if wheezing is present
- O₂ as needed to maintain SaO₂ above 90%.

AEMT

AEMT

- ❑ **Epinephrine (1:1000) 0.3 cc IM**
 - May repeat every 10 minutes until symptoms improved
- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guideline***
- ❑ **Diphenhydramine 50 mg IV/IO/IM** for allergic reaction with urticaria/itching
- ❑ If **WHEEZING** is present:
 - **Albuterol 2.5 mg** nebulized every 10 minutes until symptoms improve
- ❑ If **STRIDOR** is present:
 - **Epinephrine (1:1000) 2mL** mixed with 3 mL of NS nebulized every 10 minutes until symptoms improve

PARAMEDIC

- ❑ **Epinephrine (1:1000) 2–10 mcg/min IV/IO** infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg.

- ❑ **Epinephrine (1:1000) 0.15 cc IM**
 - May repeat every 10 minutes until symptoms improved
 - If >25 kg, then use **0.3 cc IM**
- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guideline***
- ❑ **Diphenhydramine 1 mg/kg to max of 50 mg IV/IO/IM** for allergic reaction with urticaria/itching
- ❑ If **WHEEZING** is present:
 - **Albuterol 2.5 mg** nebulized every 10 minutes until symptoms improve
 - Start with **1.25 mg** if patient is <1 yr in age.
- ❑ If **STRIDOR** is present:
 - ❑ **Epinephrine (1:1000) 2mL** mixed with 3 mL of NS nebulized every 10 minutes until symptoms improve

PARAMEDIC

- **Epinephrine (1:10,000) 0.01 mg/kg or 0.1ml/kg IV/IO** for severe or persistent hypotension, despite multiple doses of IM epinephrine

May repeat every 5 min if shock persists

- ⌚ **Epinephrine (1:1000) 0.1–2 mcg/kg/min IV/IO** infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg.

BETA BLOCKER TOXICITY

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
 - Attempt to quantify type and amount of beta blocker ingested, whether accidental or intentional, and identify any potential co-ingestants.
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring, when available.
- ❑ Perform and transmit 12 lead EKG
- ❑ **Treatment Plan**
 - Patients suspected of intentional overdose do not have the right to refuse care and law enforcement may be needed to ensure appropriate treatment is received.
 - Do NOT treat unless the patient is symptomatic. Consult OLMC if unsure.
 - Identify specific medication taken: long-acting vs. immediate acting, dose, quantity, and time of ingestion.
 - Perform blood glucose assessment on all patients. Pediatric patients, particularly, may develop hypoglycemia.
- ❑ **Key Considerations**
 - Beta-blocker toxicity can result in severe bradycardia, hypotension, respiratory distress, and shock.
 - Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

- ❑ Supportive care of airway, vascular access, and fluid therapy per **IV/IO Access and Fluid Therapy Guideline**
- ❑ **Atropine:** For bradycardia with hypotension
 - **1 mg IV**, repeat every 5 minutes as needed, to a max total dose of 3 mg
- ❑ **Epinephrine:** For bradycardia/hypotension unresponsive to atropine
 - **0.1 mg (1 cc of 1:10,000) IV/IO** push
 - Repeat every 3-5 minutes as needed to maintain SBP

PARAMEDIC

- ❑ A patient with beta blocker overdose may require higher than usual doses of vasopressor medications for ACLS treatment

SYMPTOMATIC BRADYCARDIA

- ❑ **Transcutaneous pacing (TCP)** at an initial rate of 80 beats per minute if the patient does not respond to medications

Consider Sedation for TCP:

AEMT

- ❑ Supportive care of airway, vascular access, and fluid therapy per **IV/IO Access and Fluid Therapy Guideline**
- ❑ **Atropine:** For bradycardia with hypotension
 - **0.2 mg/kg IV**, repeat every 5 minutes as needed, to a max total dose of 1 mg
- ❑ **Epinephrine:** For bradycardia/hypotension unresponsive to atropine
 - **0.01 mg/kg** (0.1 mL/kg of 1:10,000) IV/IO
- ❑ **Refer to OLMC for additional doses**

PARAMEDIC

- ❑ A patient with beta blocker overdose may require higher than usual doses of vasopressor medications for PALS treatment

IF BRADYCARDIA IS SEVERE with SIGNS OF POOR PERFUSION

- ❑ **Transcutaneous pacing (TCP)** at an initial rate of 100 beats per minute if the patient does not respond to medications

Consider Sedation for TCP:

- ❑ Choose **ONE** benzodiazepine for treatment and maximize dosing. Contact OLMC before changing to a different medication.
- ❑ **Midazolam (Versed)**
 - Dosage is cut in half if the patient has received narcotics or alcohol
 - Consider the size of the patient for dosing
 - **IV/IO - 2-4mg** every 5 minutes to the desired effect or max dose of 10mg
 - **Intranasal (IN)** - Give **0.4 mg/kg** to a maximum of 10mg as a one-time dose
- ❑ **Diazepam**
 - **IV/IO – 5-10mg** every 5 min to the desired effect or max dose of 30mg
- ❑ **Lorazepam**
 - **IV/IO – 1-2mg** every 5 min. to the desired effect or max dose of 4mg

🕒 **Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters**

🕒 **Contact OLMC for consideration of glucagon administration**

🕒 **Epinephrine (1:1000) 2–10 mcg/min IV/IO infusion for persistent bradycardia with hypotension unresponsive to atropine. Titrate to maintain a SBP >100 mmHg**

- ❑ Choose **ONE** benzodiazepine for treatment and maximize dosing. Contact OLMC before changing to a different medication
- ❑ **Midazolam (Versed)**
 - Dosage is cut in half if the patient has received narcotics or alcohol
 - Consider the size of the patient for dosing
 - **IV/IO - 0.1 mg/kg to max dose of 4mg.**
Do NOT exceed adult dosing
 - **Intranasal (IN)** - Give **0.2 mg/kg** to a maximum of **5 mg** as a one-time dose
- ❑ **Diazepam**
 - **IV/IO - 0.1 mg/kg** to max dose of 10mg
Do NOT exceed adult dosing
- ❑ **Lorazepam**
 - **IV/IO – 0.1mg/kg** to 4mg.
Do NOT exceed adult dosing.

🕒 **Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters**

🕒 **Contact OLMC for consideration of glucagon administration**

🕒 **Epinephrine (1:1000) 0.1–2 mcg/kg/min IV/IO infusion for persistent bradycardia with hypotension unresponsive to atropine. Titrate to maintain a SBP >70 + (age in years x 2) mmHg**

CHILDREN WITH SPECIAL HEALTHCARE NEEDS

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
 - Blood glucose, core body temperature and oxygen saturation assessment.
 - Look for an EMSC Red Pack with a health information vial or a Life with Dignity (POLST) Order for instructions on care.
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring, when available.
- ❑ **Treatment Plan**
 - Treat with consideration for the family per the **Family Centered Care Guideline**.
 - Do not become overwhelmed by equipment used by the patient. Focus on ABC's and ask parents and caregivers for guidance with equipment.
 - Common equipment issues for children with special healthcare needs:
 - Feeding Tube
 - Most common EMS complaints; tube has come out, is blocked, is leaking, or skin site has unusual drainage or bleeding.
 - If draining or bleeding, apply sterile dressing and use pressure.
 - If tube is malfunctioning or displaced, assess for dehydration and treat per **Shock and Fluid Therapy Guideline**. Do not try to replace or remove the tube.
 - Keep patient NPO and nothing per feeding tube.
 - If a percutaneous (through the skin) G-tube has come out, place an 8Fr suction catheter in the stoma 2-3 inches to prevent full site closure.
 - Tracheostomy and Ventilator/BiPAP
 - For tracheostomy care refer to the **Airway and Tracheostomy Management Guideline**
 - Assess ventilations
 - If the ventilator is working properly and patient needs transport for non-respiratory medical evaluation; keep on ventilator/BiPAP for transport.
 - If ventilator is not working or child is in respiratory distress for any reason; remove from ventilator and assist ventilations with BVM and 100% oxygen.
 - Oral, nasal, and tracheostomy suctioning to remove copious secretions as needed.
 - External Central IV Line (Broviac/PICC etc.)
 - Do NOT use the central line for administration of anything.
 - Most common EMS complaint; tube has come out, is broken, leaking, blocked or skin site has unusual drainage or bleeding.
 - This is a direct line to the central venous system, if the tube is leaking or broken, clamp line above the damaged point, cover the opening with a sterile gauze and transport.
 - If the tube has come out completely or the site is draining or bleeding, cover with a sterile gauze and apply pressure.
- ❑ **Key Considerations**
 - Family members are many times the best resource for patient care, particularly with equipment management.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

PARAMEDIC

PARAMEDIC

DROWNING OR SUBMERSION

ALL PROVIDERS

- ❑ Focused history and physical exam
 - Blood glucose, core body temperature and oxygen saturation assessment.
 - Assess the scene for other environmental issues or possible toxins.
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring, when available.
- ❑ **Treatment Plan**
 - Safely remove patient from the water
 - Place patient supine
 - Remove wet clothing and wrap in blankets
 - Ensure patient warmth
 - If concern for spinal injury: spinal motion restriction per **Selective Spinal Immobilization Guideline**.
 - Scuba divers “Dive Computer” or Dive Log Book should be transported with the patient.
- ❑ **Key Considerations**
 - Airway maintenance is the primary consideration.
 - Unlike the “CAB” strategy used in standard cardiac arrest, patients suffering cardiac arrest from drowning require an “ABC” approach with emphasis prompt airway management and supplemental ventilations.
 - There can be co-existing conditions depending on the type of submersion injury including trauma, hypothermia, and intoxication.
 - Hypotension is associated with a worse outcome, monitor closely and treat per the **Shock and Fluid Therapy Guideline**, as needed.
 - Initiation of in-water ventilations may increase survival; in-water chest compressions are futile.
 - Submersion in cold water will often cause severe hypothermia, notify receiving hospital so that appropriate resources can be mobilized.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

EMT

- ❑ If breathing spontaneously apply oxygen at 15 LPM via non-rebreather mask to maintain oxygen saturations >95%
- ❑ Ventilate with BVM when apneic or exhibiting respiratory distress. Consider a nasal or oral airway
- ❑ Initiate 5 rescue breaths followed by 30 chest compressions, then use a 30:2 compression:ventilation ratio

- ❑ If breathing spontaneously apply oxygen at 15 LPM via non-rebreather mask to maintain oxygen saturations >95%
- ❑ Ventilate with BVM when apneic or exhibiting respiratory distress. Consider a nasal or oral airway
- ❑ Initiate 5 rescue breaths followed by 30 chest compressions, then use a 15:2 compression:ventilation ratio

AEMT

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per **IV/IO Access and Fluid Therapy Guideline**
 - Albuterol 2.5 every 10 minutes via nebulization for bronchospasm/wheezing until symptoms subside
 - Reassess patient after each dose to determine need for additional dosing

- ❑ Advanced airway, vascular access and fluid therapy per **IV/IO Access and Fluid Therapy Guideline**
 - Albuterol 2.5 every 10 minutes via nebulization for bronchospasm/wheezing until symptoms subside. Start with 1.25 mg if age <1yr
 - Reassess patient after each dose to determine need for additional dosing

PARAMEDIC

PARAMEDIC

- ❑ Consider CPAP in awake patients with respiratory distress

- ❑ Consider CPAP in awake patients with respiratory distress

① **Epinephrine (1:1000) 2–10 mcg/min IV/IO**
infusion for hypoperfusion. Titrate to maintain a
SBP >100 mmHg

② **Epinephrine (1:1000) 0.1–2 mcg/kg/min IV/IO**
infusion for hypoperfusion. Titrate to maintain a SBP
>70 + (age in years x 2) mmHg

FEVER MANAGEMENT

ALL PROVIDERS

- Focused history and physical exam
- Assess temperature.
- Cardiac monitor, ETCO₂, and pulse oximetry monitoring, when available.
- Treatment Plan**
 - If temperature is >100.4°F (>38.0°C) and the patient does not have any contraindications, consider antipyretic medications.
 - Contraindications include abdominal pain, allergy to medications, vomiting, active bleeding or concern from parents.
 - Avoid acetaminophen in patients with liver problems.
 - Ibuprofen is contraindicated in children <6 months old.
 - Ibuprofen is contraindicated in the immune-compromised patient (on chemotherapy, with autoimmune disorders, etc.)
 - For temperatures greater than 103°F or 39.5°C
 - Begin passive cooling techniques including removing excess clothing.
 - For temperatures greater than 106°F or 41°C
 - Refer to the **Temperature and Environmental Emergencies Guideline**.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- Acetaminophen 1000 mg** by mouth
- Ibuprofen 800 mg** by mouth

EMT

- Acetaminophen 15mg/kg** by mouth or rectum – Recognize that acetaminophen comes in various concentrations:
 - Children's Liquid: 160mg/5mL
 - Chewable Tablets: 80mg or 160mg
 - Junior Strength caplets: 160mg
 - Rectal Suppositories: 80mg, 120mg and 325mg and may be cut to an estimated dose
- Ibuprofen 10mg/kg** by mouth – Ibuprofen comes in various concentrations and is **contraindicated in children under 6 months old**
 - Children's Liquid: 100mg/5mL
 - Chewable Tablets: 50mg or 100mg
 - Junior Strength Caplets: 100mg

AEMT

- Advanced Airway, IV/IO Access, and Fluid Therapy Guidelines** as needed

AEMT

- Advanced Airway, IV/IO Access, and Fluid Therapy Guidelines** as needed

PARAMEDIC

PARAMEDIC

GLUCOSE EMERGENCIES HYPOGLYCEMIA / HYPERGLYCEMIA

ALL PROVIDERS

- ❑ Focused history and physical exam
 - Blood glucose assessment (heel stick is preferred in newborns or infants).
 - Hypoglycemia is defined as blood glucose level <50 mg/dl for adults, <60 mg/dl for children, and <40 mg/dl for the term neonate (<30days of age) with any degree of altered mentation.
- ❑ **Treatment Plan**
 - Insulin pump in place: Hypoglycemic patient with altered mentation -
 - Care is directed at treating hypoglycemia first, then stopping administration of insulin.
 - Turn off insulin pump, if able.
 - If no one familiar with the device is available to assist, disconnect pump from patient by either:
 - Using quick-release where the tubing enters the dressing on patient's skin.
 - OR-**
 - Completely remove the dressing, thereby removing the subcutaneous needle and catheter from under patient's skin.
 - When mental status returns to normal, patient should be strongly encouraged to eat.
 - Criteria for scene release of hypoglycemic patient:
 - Patient does not want to be transported.
 - Return to apparent normal mental capacity following treatment.
 - Insulin only. The patient does not have access to oral medications for diabetes.
 - No suicidal ideations or recent suicide attempt.
 - There is at least one responsible party that can assist them in their recovery and is comfortable in their care.
 - OLMC has been contacted and agrees to the release.
 - Children should be transported for evaluation regardless of improvement in the field.
- ❑ **Key Considerations**
 - Do NOT attempt to give oral glucose to those who are unconscious, cannot swallow or whose gag reflex is diminished.
 - Transport any patient who is at risk for prolonged hypoglycemia such as long acting insulin or oral hypoglycemic overdose.
 - If the patient is hypoglycemic and has a seizure, recheck blood glucose every 15 minutes to check for recurrent low blood sugar that may need treatment.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ **Dextrose Oral glucose 15 grams** if patient is able to protect airway
 - Repeat in 15 minutes as needed

EMT

- ❑ **Dextrose Oral glucose 7.5 grams** if patient is able to protect airway
 - Repeat in 15 minutes as needed

AEMT

- ❑ Vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guideline*
- HYPOGLYCEMIA**
- ❑ **Dextrose 50% 25 grams** IV/IO. May repeat as necessary
- ❑ **OR Dextrose 10%:** Infuse **125 ml**, then recheck blood sugar. If still low, may repeat
- ❑ **Glucagon 1 mg** IM if no IV/IO access

HYPERGLYCEMIA

- ❑ **Normal Saline 1000 mL** IV/IO over 30–60 minutes (BS >300 mg/dL)

AEMT

- Vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guideline*
- HYPOGLYCEMIA**
- ❑ Infants up to 1 year
 - **Dextrose 10% 5 mL/kg** IV/IO: may repeat as necessary
- ❑ Children greater than 1 year
 - **Dextrose 25% 2 mL/kg** IV/IO: repeat as necessary (D25 = 25 mL D50 mixed with 25 mL)

- Sterile Water)
- **OR Dextrose 10% 5 mL/kg IV/IO:** repeat as necessary
 - ☐ **Glucagon 0.1 mg/kg (max dose of 1 mg)** IM if no IV/IO access

HYPERGLYCEMIA

- ☐ **Normal Saline 20 mL/kg IV/IO** over 30–60 minutes for hyperglycemic patient (BS >300 mg/dL)

PARAMEDIC

PARAMEDIC

IMMUNOCOMPROMISED PATIENTS

ALL PROVIDERS

- ❑ Focused history and physical exam
 - Blood glucose, temperature and oxygen saturation assessment.
 - Assess for reasons why they may have a weak immune system such as congenital syndromes, chemotherapy, transplant surgery, autoimmune disorder, or steroid usage.
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring, when available.
- ❑ **Treatment Plan**
 - Assess and treat airway compromised, respiratory distress, altered mental status, etc
 - Assess for overwhelming sepsis or shock and treat per the Shock and Fluid Therapy Guideline.
 - If febrile (temperature >100.4°F or 38.0°C) and has no signs of altered mental status, give acetaminophen orally.
- ❑ **Key Considerations**
 - Family members are often the best resource for patient care information.
 - Due to patient's inability to fight infection, patient may become very ill in a short period of time. These patients may present in overwhelming shock or sepsis, or respiratory distress.
 - Protect patients from infectious exposure during transport.
 - All EMS providers should use universal precautions (strict hand washing, gloves) and masks should be worn by ill providers.
 - These patients are at risk for low platelets and anemia, bleeding is a risk.
 - No rectal medications for treatment.
 - Avoid Ibuprofen with these patients.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ For Fever:
 - **Acetaminophen (Tylenol) 1000 mg** by mouth.

EMT

- ❑ For Fever:
 - **Acetaminophen (Tylenol) 15mg/kg** by mouth or rectum – Recognize that Acetaminophen comes in various concentrations:
 - Children's Liquid: 160mg/5mL
 - Chewable Tablets: 80mg or 160mg
 - Junior Strength caplets: 160mg

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guideline***

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guideline***

PARAMEDIC

PARAMEDIC

OBSTETRICAL EMERGENCIES

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
 - Do not perform pelvic exam
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring when available.
- ❑ Administer high flow oxygen to mother
- ❑ **Treatment Plan**
 - **Imminent Deliveries:** normal delivery procedures
 - Attempt to prevent explosive delivery.
 - As delivery occurs, do not suction nose and mouth. Wipe nose and mouth to clear excess secretions
 - Instruct the mother to stop pushing.
 - Keep newborn at level of vagina until cord is cut.
 - Place one clamp 2 inches away from baby, place second clamp 2 inches farther, cut cord between the clamps.
 - Keep newborn warm and dry with vigorous stimulation.
 - Allow infant to nurse.
 - In multiple births, do not allow babies to nurse until all have been delivered.
 - APGAR score at 1 minute and again at 5 minutes
 - **Special Situations – TRANSPORT TO THE CLOSEST HOSPITAL**
 - **Excessive hemorrhage** following delivery or delayed placenta delivery.
 - Unless multiple birth is anticipated, begin fundal massage.
 - Paramedics should begin Oxytocin (Pitocin) –see below.
 - **Nuchal cord:** cord is wrapped around the infant's neck
 - Attempt to slip cord over the head.
 - If cord is too tight to remove, immediately clamp in two places and cut between clamps.
 - **Prolapsed cord or limb presentation:** cord or limb out of the vagina before the baby – DO NOT ATTEMPT DELIVERY
 - Maintaining a pulsatile cord as the objective, insert two fingers of gloved hand into vagina to raise presenting portion of newborn off the cord.
 - If possible, place mother in Trendelenburg position. Otherwise, use knee-chest position.
 - Keep cord moistened with sterile saline.
 - Continue to keep pressure off cord throughout transport.
 - **Breech presentation** (coming buttocks first)
 - Position mother with her buttocks at edge of bed, legs flexed.
 - Support baby's body as it delivers.
 - As the head passes the pubis, apply gentle upward pressure until the mouth appears over the perineum. Immediately suction mouth, then nose.
 - If head does not deliver, but newborn is attempting to breath, place gloved hand into the vagina, palm toward newborn's face, forming a "V" with the index and middle finger on either side of the nose. Push the vaginal wall from the face. Maintain position throughout transport.
 - **Shoulder Dystocia:** head is out but shoulder will not pass
 - Position mother with buttocks off the edge of the bed and thighs flexed upward as much as possible.
 - Apply firm, open hand pressure above the symphysis pubis.
 - If delivery does not occur, maintain airway patency as best as possible, immediately transport.
 - **Stillborn/Abortion**
 - All products of conception should be carefully collected and transported with the mother to the hospital. Anything other than transport should be coordinated with on-line medical consultation and/or law enforcement.
- ❑ **Key Considerations**
 - Attempt to attain a sanitary environment

- Transport in left lateral decubitus position

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

- Vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guideline*
- Treat seizures as per *Seizure Guideline*

AEMT

- Vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guideline*
- Treat seizures as per *Seizure Guideline*

PARAMEDIC

- Oxytocin (Pitocin)** Intramuscular.
 - Give **10 units IM.**
- ① **IV/IO Infusion may be started if bleeding continues by adding 40 units to 1000mL NS and titrating the infusion to decrease bleeding and patient comfort.**
- ① In the event of uterine inversion, make one attempt to put the uterus back into place. Using the palm of the hand, push the fundus of the inverted uterus toward the vagina. If unsuccessful, cover uterus with moistened sterile gauze.

PARAMEDIC

- Refer to the *Newborn Resuscitation Guideline*

OPTIONAL ORDERS BY OLMC ONLY

- ① **High-risk preterm labor when delivery is imminent:** (1) Rapidly infuse 1 liter of NS, (2) Albuterol 2.5 mg via nebulization, (3) Magnesium Sulfate 1gram IV and titrate per OLMC.

OVERDOSE

ALL PROVIDERS

- ❑ Focused history and physical exam
 - Assess blood glucose, temperature, and oxygen saturation.
 - Assess the time and circumstances of the ingestion.
 - Assess scene for additional information on toxins, poisons, medications or other possible concerns.
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring, when available.
- ❑ **Treatment Plan**
 - Consider a 12 lead EKG.
 - Patients who have attempted suicide by overdose CANNOT be released and MAY be taken in against their will. Police may need to assist in ensuring the transport.
- ❑ **Key Considerations**
 - Transport any pill bottles, open containers, or potential chemicals that may have been ingested.
 - Transport suicide notes or other pre-ingestion communications.
 - In cases of pure heroin overdose, patients should be offered ED transport, but they may refuse and be left at scene after naloxone administration.
 - All oral opioid overdoses must be transported, as re-sedation will occur after naloxone administration.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ **Naloxone 0.4–2 mg** (per dose) IN (intranasal) / IM (intramuscular) for suspected narcotic overdose. May repeat as necessary to maintain respirations

EMT

- ❑ **Naloxone 0.1 mg/kg (per dose)** IN (intranasal) / IM (intramuscular) for suspected narcotic overdose. May repeat as needed to maintain respirations

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guideline*
- ❑ **Naloxone 0.4–2 mg** (per dose) IV/IM/IO/IN (intranasal) for suspected narcotic overdose. May repeat as needed to maintain respirations

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guideline*
- ❑ **Naloxone 0.1 mg/kg (max 2mg per dose)** IV/IM/IO/IN (intranasal) for suspected narcotic overdose. May repeat as needed to maintain respirations

PARAMEDIC

- ① **Sodium bicarbonate 1 mEq/kg** slow IV/IO push for tricyclic antidepressant overdose with sustained HR >120 bpm, QRS >0.10, hypotension unresponsive to fluids, or ventricular dysrhythmias
- ① **Epinephrine (1:1000) 2–10 mcg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg

PARAMEDIC

- ① **Sodium bicarbonate for tricyclic antidepressant overdose: Contact OLMC**
- ① **Epinephrine (1:1000) 0.1–2 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

RESPIRATORY DISTRESS

ALL PROVIDERS

- ❑ Focused history and physical exam:
 - Determine the need to treat under the **Allergic Reaction/Anaphylaxis Guideline**
 - Determine the need to treat under the **Congestive Heart Failure Guideline**
 - Assess blood glucose, temperature and oxygen saturation
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring, when available
- ❑ Consider a 12 lead EKG
- ❑ **Treatment Plan**
 - Remove any obvious obstructions to the airway
 - For choking infants apply a sequence of 5 back blows and 5 chest thrusts until the item is dislodged
 - For choking adults and children, use the abdominal thrust ("Heimlich) maneuver.
 - Maintain airway, administer 10-15 lpm of oxygen via NRB
- ❑ **Key Considerations**
 - Recall that infants and small children are primarily nose breathers, consider oral and nasal suctioning for copious secretions
 - Keep patient NPO for any respiratory distress and if children have a RR >60

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Assist with administration of prescribed metered dose inhaler or nebulizer medication per dosing instructions. If MDI dosing instructions are not available, give second dose at 20 minutes if needed

EMT

- ❑ Assist with administration of prescribed metered dose inhaler or nebulizer medication per dosing instructions. If MDI dosing instructions are not available, give second dose at 20 minutes if needed
- ❑ Allow the patient to achieve and remain in a position of comfort (the parents arms if desired) and keep them as calm as possible.

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per **IV/IO Access and Fluid Therapy Guidelines**
- ❑ For **ANAPHYLAXIS**:
 - See **Anaphylaxis/Allergic Reaction Guideline**
- ❑ For **WHEEZING**:
 - **Albuterol 2.5 mg/3cc NS** nebulized
 - Repeat nebs as needed
 - Patient respiratory status must be reassessed after each dose to determine need for additional treatment
- ❑ For **STRIDOR**:
 - **Epinephrine (1:1000) 2 ml (2mg)** mixed with 3mL of normal saline nebulized

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per **IV/IO Access and Fluid Therapy Guidelines**
- ❑ For **ANAPHYLAXIS**:
 - See **Anaphylaxis/Allergic Reaction Guideline**
- ❑ For **WHEEZING**:
 - **Albuterol 2.5 mg/3 cc NS** nebulized
 - For infants < 1yr: **albuterol 2.5 mg/3cc NS** nebulized if wheezing persists after nasal suctioning
- ❑ For **STRIDOR** (croup):
 - **Epinephrine (1:1000) 2mL (2mg)** added to 3mL of Normal Saline via nebulizer
- ① Patient respiratory status must be reassessed after each dose to determine need for additional treatment. Call OLMC for additional doses.

PARAMEDIC

PARAMEDIC

- ❑ **Magnesium sulfate 2gm** IV over 15-30 minutes for severe wheezing unresponsive to albuterol
- ❑ **CPAP/BiPAP** – Consider when the patient is awake but needs assistance with oxygenation and ventilation such as in a CHF/Pulmonary Edema patient or COPD patient.
 - Explain the procedure to the patient
 - Initially apply the mask and begin the CPAP or BiPAP according to training instructions.
 - CPAP - Provide 10 L/min oxygen and PAP of 5 cm H₂O to begin.
 - BiPAP – Provide 10 L/min oxygen and IPAP at 15 cm H₂O with EPAP at about 5 cm H₂O
- ❑ **Magnesium sulfate 40 mg/kg** IV over 15-30 minutes for severe wheezing unresponsive to albuterol
- ❑ **BIPAP/CPAP** – ONLY use when the patient is on the machine at home. Maintain home settings and bring machine with the patient. If unable to adequately ventilate return to BVM or advance to intubation

🕒 **Contact OLMC to discuss further settings and treatment above the initial setup**

🕒 **Lidocaine 2% 40-60 mg (2–3 mL) added to Albuterol for adult patients with “cough variant asthma” with severe coughing inhibits respiratory function (with or without audible wheezes)**

SEIZURES

ALL PROVIDERS

- ❑ Focused history and physical exam
 - Blood glucose, temperature and oxygen saturation assessment
 - Determine possibility of third trimester pregnancy, if appropriate
 - Assess scene for possible toxin, overdose or trauma
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring, when available
- ❑ **Treatment Plan**
 - Do not restrain, but do provide protection from injury during the tonic-clonic phase
 - Spinal motion restriction per **Selective Spinal Immobilization Guideline**
 - Ensure patients experiencing febrile seizures are not excessively dressed or bundled
 - Any child <12 months old with seizure activity should be encouraged to be transported
- ❑ **Key Considerations:**
 - Intranasal (IN) and intramuscular (IM) routes are preferred for first line administration of benzodiazepines
 - Intravenous (IV) administration of benzodiazepines is appropriate once an IV is in place
 - Rectal administration is not recommended

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Maintain open airway with patient in the recovery position
- ❑ Assist patient's family or caretaker with any home medication treatments

EMT

- ❑ Maintain open airway with patient in the recovery position
- ❑ Assist patient's family or caretaker with any home medication treatments

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per **IV/IO Access and Fluid Therapy Guidelines**
- ❑ **Benzodiazepines:**
 - Dosage is cut in half if the patient has received narcotics or alcohol
- **Midazolam**
 - **IN/IM/IV/IO – 5 mg**, may repeat once in 5 minutes, if needed. Total max dose: 10mg
- **Diazepam**
 - **IV/IO – 5 mg**, may repeat every 5 minutes, if needed. Total max dose: 20mg
 - **Intramuscular (IM) – 10 mg**, may repeat once in 10 minutes, if needed. Total max dose: 20 mg (IM not preferred unless no other options)

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per IV/IO Access and Fluid Therapy Guidelines
- ❑ **Benzodiazepines:**
 - Dosage is cut in half if the patient has received narcotics or alcohol
- **Midazolam**
 - **Intranasal (IN): 0.2 mg/kg**(max 5 mg), may repeat once in 5 minutes, if needed. Total max dose: 10 mg
 - **Intramuscular (IM): 0.15 mg/kg** (max 5 mg): may repeat once in 10 minutes, if needed. Total max dose: 10 mg
 - **IV/IO - 0.1 mg/kg** (max 5 mg), may repeat once in 5 minutes, if needed. Total max dose: 10 mg
- **Diazepam**
 - **IV/IO - 0.1 mg/kg** (max 5 mg), may repeat every 5 minutes, if needed. Total max dose: 10 mg
 - **Intramuscular (IM): 0.2 mg/kg** (max 10 mg), may repeat every 10 minutes, if needed. Total max dose: 20 mg (IM not preferred unless no other options)

- **Lorazepam**
 - **IV/IO/IM – 1-2mg, may repeat** every 5 minutes, if needed. Total max dose: 4mg

□ Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters

PARAMEDIC

- Pregnant females with eclampsia/seizures
 - **Magnesium sulfate - 4 gm IM** or 4 IV/IO gm over 15 to 30 min

- **Lorazepam**
 - **IV/IO/IM – 0.1mg/kg** (max 2 mg), may repeat every 5 minutes, if needed. Total max dose: 4 mg.

□ Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters

PARAMEDIC

- **Magnesium Sulfate –** For pediatric patients who are pregnant and having a seizure contact OLMC

SUSPECTED STROKE

ALL PROVIDERS

- ❑ Focused history and physical exam
 - Blood glucose, temperature and oxygen saturation assessment
 - Keep NPO
- ❑ Cardiac monitor, blood pressure, ETCO₂, and pulse oximetry, when available.
- ❑ 12 Lead EKG if available
- ❑ **Treatment Plan**
 - Rapidly transport
 - Transport to a Stroke Receiving Facility if they will arrive at the facility in less than 120 minutes from the confirmed onset of the stroke like symptoms.
 - Transport to a Primary Stroke Center if they would arrive at a stroke-receiving center later than 120 minutes from the confirmed onset of the stroke like symptoms
 - If you do not have a Stroke Receiving Facility or Primary Stroke Center, transport to local hospital or consider air medical transport
 - If you are unable to confirm the onset time of the stroke-like symptoms, or they started more than 12 hours prior to transport, then transport to the closest appropriate facility or to the facility of the patient's choice
 - Alert the appropriate emergency department that you are transporting a suspected stroke patient as soon as you have made a destination decision
- ❑ **Pediatric Considerations**
 - Children can have strokes as well as adults. Some risk factors include; sickle cell disease, congenital or acquired heart disease. Children with head and neck infections, systemic conditions, such as inflammatory bowel disease and autoimmune disorders. Also at risk are children with head trauma or dehydration.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Evaluate and Document Cincinnati Stroke Scale criterion during assessment (if any of these 3 findings is abnormal, the probably of stroke is 72%)
 - **Facial Droop**
 - Normal: Both sides of face move equally
 - Abnormal: One side of face does not move at all
 - **Arm Drift**
 - Normal: Both arms move equally or not at all
 - Abnormal: One arm drifts compared to the other
 - **Speech**
 - Normal: Patient uses correct words with no slurring
 - Abnormal: Slurred or inappropriate words or mute

EMT

- ❑ Evaluate and Document Cincinnati Stroke Scale criterion during assessment (if any of these 3 findings is abnormal, the probably of stroke is 72%)
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 - Normal: Patient uses correct words with no slurring
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AEMT

- ❑ Advanced airway, vascular access and fluid therapy per *IV-IO Access and Fluid Therapy Guidelines*

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per *IV-IO Access and Fluid Therapy Guidelines*

PARAMEDIC

PARAMEDIC

TEMPERATURE AND ENVIRONMENTAL EMERGENCIES

ALL PROVIDERS / EMT

- ❑ Scene and patient management
 - Remove patient from hot or cold environment, when possible
 - Focused history and physical exam
 - Body temperature and blood glucose assessment.
 - Assess level of consciousness; apply the ***Altered Mental Status Guideline*** if applicable.
 - Assess for underlying causes; medications, toxins, CNS lesions or other medical conditions.
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring when available
- ❑ **Treatment Plan**
 - **Heat Related**
 - Temperature elevation **WITHOUT** altered mental status (Heat Exhaustion)
 - Slow cooling with ice packs, wet towels, and/or fans to areas in the vicinity of carotid, femoral, brachial arteries.
 - If patient is alert and not nauseated, oral rehydration with water or balanced electrolyte solution.
 - Severe muscle cramps may be relieved by gentle stretching of the muscles.
 - Temperature elevation **WITH** altered mental status (Heat Stroke)
 - Aggressive cooling to unclothed patient utilizing fine mist water spray and fans in conjunction with ice packs to groin and axilla while maintaining modesty. NOT Recommended for children and infants.
 - Aggressive cooling should be stopped if shivering begins.
 - Monitor closely for dysrhythmia, recognize and treat with the appropriate ***Cardiac Patient Care Guideline***
 - Cool IV fluids should be administered (AEMT and PM only)
 - Benzodiazepines may be used for shivering (AEMT and PM only)
 - **Cold Related**
 - Protect patient from further heat loss (application of blankets, removal of wet clothing, warm environment, etc.).
 - Suspicion of cardiac arrest in cold environment, assess for 30-45 seconds to confirm pulselessness.
 - Confirm body temperature and treat accordingly
 - **Severe: <86°F (30°C)**
 - Use active external rewarming (heated oxygen, warm packs to neck, armpits, groin, etc.)
 - Administer warm IV fluids, if available
 - Cardiac arrest: Chest compressions and ventilations. Limit defibrillation attempts to 3 and no external pacing. Likelihood of successful defibrillation improves as patient is warmed.
 - Handle the patient gently during transport because rough movement may precipitate arrhythmias.
 - **Moderate: 86-93°F (30-34°C)**
 - Use warm packs to neck, armpits, and groin
 - **Mild: >93°F (34°C)**
 - Warm with blankets, warm environment, etc.
 - Frostbite precautions – Do not rub or use dry external heat. Re-warm with 40°C water if possible.
- ❑ **Key Considerations**
 - Avoid refreezing of cold extremities. If refreezing cannot definitely be avoided during transport, do not start the thawing process.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guidelines***

Heat Emergencies

- Cool fluid therapy: 500 – 1000 cc NS bolus
- Benzodiazepines for shivering:
 - Midazolam 2 mg IV, may repeat once, if needed
 - Diazepam 10 mg IV, may repeat once, if needed
 - Lorazepam 2 mg IV, may repeat once, if needed

Cold Emergencies

- Warm fluid therapy: 500 – 1000 cc NS bolus

PARAMEDIC

- ❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guidelines***

Heat Emergencies

- Cool fluid therapy: 20 ml/kg IV bolus
- Benzodiazepines for shivering:
 - Midazolam 0.3 mg/kg IN/IV/IM (max 2 mg), may repeat once, if needed
 - Diazepam 0.1 mg/kg IV/IM (max 10 mg), may repeat once, if needed
 - Lorazepam 0.1 mg/kg IV/IM (max 2 mg), may repeat once, if needed

Cold Emergencies

- Warm fluid therapy: 20 cc/kg NS bolus

PARAMEDIC

- ❑ **Cold emergencies**

- Withhold anti-arrhythmic meds until temperature >86°F (30°C)

- ❑ **Cold emergencies**

- Withhold anti-arrhythmic meds until temperature >86°F (30°C)

TOXIC EXPOSURE - CARBON MONOXIDE

ALL PROVIDERS / EMT

- ❑ Scene and patient management
 - Safely and rapidly remove patient from source of exposure.
 - Collect environmental CO levels if equipment is available.
- ❑ Focused history and physical exam
 - Estimation of exposure time.
 - Pulse oximetry readings are unreliable in carbon monoxide exposures
- ❑ Cardiac monitor and ETCO₂, when available
- ❑ **Treatment Plan**
 - Administer 100% high-flow oxygen via non-rebreather mask.
 - Any exposure to carbon monoxide related to a closed space fire (such as a house fire) often also results in cyanide exposure and should be treated with hydroxycobalamin.
- ❑ Key Considerations
 - Patients with symptoms of headache, nausea, tachycardia, neurologic changes, or a CO monitor reading >10% should be transported.
 - Pregnant patients: the fetus is very sensitive to even low levels of CO. All pregnant patients exposed to CO should be transported, regardless of the symptoms or the CO level.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

- ❑ Advanced airway management, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guidelines*
- ❑ **Closed Space Fires: Consider hydroxocobalamin (CYANOKIT®) 5 g** (contained in a single vial), administered by IV/IO infusion over 15 minutes (approximately 15 mL/min)

PARAMEDIC

- ❑ **Epinephrine (1:1000) 2–10 mcg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg.

AEMT

- ❑ Advanced airway management, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guidelines*
- ① **Closed Space Fires: hydroxocobalamin (CYANOKIT®) 70mg/kg** over 15 minutes IV/IO (approximately 15ml/min) not to exceed a max dose of 5 grams under direction of OLMC or Poison Control

PARAMEDIC

- ❑ **Epinephrine (1:1000) 0.1–2 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg.

TOXIC EXPOSURE - CYANIDE

ALL PROVIDERS / EMT

- ❑ Scene Management
 - If properly trained and equipped, safely and rapidly remove patient from the source of exposure.
 - Request HazMat response as appropriate.
 - Industries in which to consider cyanide exposure:
 - Electroplating and Metallurgy
 - Organic chemicals production
 - Photographic developing
 - Manufacture of plastics
 - Fumigation of ships
 - Some mining processes especially gold/copper
 - Patients and EMS providers may be exposed to cyanide in the following ways:
 - Breathing air, drinking water, touching soil, or eating foods that contain cyanide.
 - Breathing smoke during closed-space fires.
 - Breathing air near a hazardous waste site containing cyanide.
 - Eating foods naturally containing cyanide compounds, such as tapioca, lima beans, apricot seeds and almonds. However, the portions eaten in the United States contain relatively low amounts of cyanide.
- ❑ Focused history and physical exam
 - Be alert for exposure related signs and symptoms:
 - Acute dyspnea/tachypnea without cyanosis
 - Nausea/vomiting
 - Seizures
 - Hyper or hypotension
 - Total body erythema (redness)
 - Cardiac monitor, CO₂, and Pulse Oximetry monitoring when available
- ❑ Treatment Plan
 - Administer high flow oxygen immediately and continuously
 - Pulse oximetry readings may not be accurate because of cyanide interaction
 - Cardiac monitor and ETCO₂, when available

ADULT

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guidelines*
- ❑ Hydroxocobalamin (CYANOKIT®) for adults is 5 g (contained in a single vial), administered by IV/IO infusion over 15 minutes (approximately 15 mL/min)

PARAMEDIC

- ① Epinephrine (1:1000) 2–10 mcg/min IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg.

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guidelines*
- ① Hydroxocobalamin (CYANOKIT®) can be used in children. Administer 70mg/kg over 15 minutes IV/IO (approximately 15ml/min) not to exceed a max dose of 5 grams under direction of OLMC or Poison Control

PARAMEDIC

- ① Epinephrine (1:1000) 0.1–2 mcg/kg/min IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg.

TOXIC EXPOSURE - HYDROFLUORIC ACID

ALL PROVIDERS / EMT

- ❑ Scene Management
 - Industrial Exposures in which to consider hydrofluoric acid
 - Aluminum processing
 - Chemical plants
 - Construction – waste products
 - Creation of chlorofluorohydrocarbons for refrigerants, aerosols, foams, plastics, and specialty solvents
 - Dry Cleaning Spotting Solutions
 - Electroplating
 - Foundry cast sand removal
 - Glass etching or cleaning
 - Meat packing industry
 - Petroleum refineries for high octane gasoline
 - Semiconductor silicon etching or cleaning
 - Stainless steel “pickling”
 - Stone etching or polishing
 - Uranium processing
- ❑ Focused history and physical exam
- ❑ Cardiac monitor, CO2, and pulse oximetry monitoring, when available
- ❑ **Treatment Plan**
 - **Skin Exposure**
 - Immediate irrigation. Clothing, jewelry etc., is removed as irrigation is taking place.
 - Soak burned skin in magnesium hydroxide antacid preparations (milk of magnesia, Mylanta, Maalox).
 - **Eye Exposure**
 - Continuous rinsing for a minimum of 15 minutes or until a calcium ocular solution is available.
 - **Oral ingestion** – conscious/alert patient only – OT recommended for the pediatric patient.
 - If patient is able to swallow, administer any calcium or magnesium based antacid (milk of magnesia, Mylanta, Maalox). In the absence of these products, have patient drink approximately 8-16 oz. of water. Consult OLMC for questions.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guidelines*

PARAMEDIC

- ❑ **Calcium Gluconate Gel** for application – Mix 25mL of 10% Calcium Gluconate in 75mL of a sterile water-soluble lubricant. Apply topically or if hand exposure possibly in a glove

AEMT

- ❑ Advanced airway, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guidelines*

PARAMEDIC

- ① **Contact OLMC or Poison Control for instructions**

TOXIC EXPOSURE - ORGANOPHOSPHATES / NERVE AGENTS

ALL PROVIDERS

Cx

- Scene management
 - If properly trained and equipped, safely and rapidly remove patient from the source of exposure.
 - Request HazMat response as appropriate
 - Be aware of exposure Level
 - Mild – miosis (constricted pupils) only or no symptoms
 - Moderate – Other “S.L.U.D.G.E.M.” symptoms
 - Severe – Unconscious, in respiratory distress, seizing, flaccid or apneic
- Focused history and physical exam.
 - Assess for “S.L.U.D.G.E.M.” presentation (Salivation, Lacrimation, Urination, Defecation, Gastrointestinal cramping, Emesis and Miosis).
- Cardiac monitor, CO2, and pulse oximetry monitoring, when available
- Treatment Plan**
 - Irrigate immediately
 - Remove clothing, jewelry etc. as irrigation is taking place
- Key Considerations**
 - Always protect yourself from exposure before entering a treatment zone.
 - Nerve agents, organophosphates and carbamates are the general categories of these toxic substances.
 - These agents may be used in fertilizers or as pesticides, herbicides, fungicides, fire retardants, or biowarfare agents.

ADULT

EMT

- Advanced airway, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guidelines*
- Atropine/Pralidoxime kits** (Mark I, Duodote, etc.)
 - Mild Exposure with no symptoms may require no treatment
 - Moderate Exposure with evidence of SLUDGEM give 1-2 Kits
 - Severe Exposure with respiratory distress and SLUDGEM give 3 Kits

AEMT

PARAMEDIC

- Atropine sulfate 2 mg** rapid IV (preferred) or IM repeated every 15 minutes until you have:
 - Control of bronchorrhea (excessive watery sputum)
 - Control of bronchoconstriction, (as reflected by level of oxygenation and ease of ventilation)
 - Reversed dangerous bradyarrhythmias or AV-blocks

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- Advanced airway, vascular access and fluid therapy per *IV/IO Access and Fluid Therapy Guidelines*
- ① **Contact OLMC or Poison Control for instructions**

AEMT

PARAMEDIC

- ① **Contact OLMC or Poison Control for instructions**

VIOLENT PATIENT / CHEMICAL SEDATION / TASER BARB REMOVAL

ALL PROVIDERS

- ❑ **Scene management**
 - Contact Law Enforcement if the patient is determined to be a threat to EMS providers, themselves, or others or if assistance with patient control is otherwise needed.
 - Remove patient from the stressful environment and remove any possible weapons from scene.
 - Before touching any patient that has been Taser'd, ensure law enforcement has disconnected the wires from the hand-held unit.
- ❑ Focused history and physical exam
 - Blood glucose, temperature and oxygen saturation assessment.
 - Always assess for a possible medical condition, exposure or trauma including possible abuse.
 - Note medications/substances on scene that may contribute to the agitation, or may be for treatment of a relevant medical condition
- ❑ Cardiac monitor, ETCO2, and pulse oximetry monitoring, when available
- ❑ **Treatment Plan**
 - **Taser'd patient:** Removal of Taser probes
 - EMS providers may remove probes that are not embedded in the face, neck, groin, breast, or spinal area.
 - To remove probes:
 - Place one hand on the patient in the area where the probe is embedded and stabilize the skin surrounding the puncture site. Place other hand firmly around the probe.
 - In one fluid motion, pull the probe straight out from the puncture site and repeat procedure with second probe.
 - The following patients should be transported to an Emergency Department for evaluation:
 - Patient with probes embedded in the face, neck, groin, breast, or spinal area
 - Patient with significant cardiac history
 - Patient having ingested stimulants (including methamphetamines, phencyclidine/PCP, cocaine, spice, bath salts, designer drugs, etc).
 - Patients exhibiting bizarre behavior or those with abnormal vital signs
- ❑ **Key Considerations**
 - Chemical sedation should be considered for patients that cannot be calmed by non-pharmacologic methods and who are a danger to EMS providers, themselves, or others.
 - Selection of chemical restraint medications should be based upon the patient's clinical condition, current medications, and allergies. Consult OLMC when necessary to assist in the selection of medications in difficult cases.
 - Generally speaking, it is preferable to choose ONE drug for management of agitation and maximize dosing of that medication prior to adding another medication.
 - Consider a reduction in the initial dosage of chemical restraint medications if the patient has taken narcotics or alcohol (e.g. begin with 50% of the recommended initial dose to assess response).

The order in which medications below are listed is not intended to indicate hierarchy, order, or preference of administration

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT

- ❑ Attempt to calm or gently restrain the patient with verbal reassurance. Engage the assistance of any family or significant others in the process.

AEMT

EMT

- ❑ Attempt to calm or gently restrain the patient with verbal reassurance. Engage the assistance of any family or significant other's in the process.

AEMT

- ❑ Vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guidelines***

Midazolam

- **IV/IO – 5 mg**, may repeat once in 10 minutes, if needed. Total max dose: 10mg
- **Intranasal (IN) – 5 mg**, may repeat once in 10 minutes to a max dose of 10mg
- **Intramuscular (IM) – 10 mg** once

Diazepam

- **IV/IO – 5 mg** every 10 min to the desired effect or max dosage of 20 mg
- **Intramuscular (IM) – 10 mg** once (IM not preferred, unless no other options)

Lorazepam

- **IV/IO – 2 mg** every 5 min. to the desired effect or max dose of 4 mg
- **Intramuscular (IM) – 4 mg** once

① Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters.

PARAMEDIC

Ketamine

- **Intramuscular (IM) – 4 mg/kg** once (max 300 mg)
- **IV/IO – 1 mg/kg** every 10 min to the desired effect (max dose 200 mg)

Haloperidol

- **Intramuscular (IM) - 5-10mg** once
- **IV/IO – 2-5 mg** every 10 min to the desired effect (max dose 10 mg)

① Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters.

- ❑ Vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guidelines***

Midazolam

- **IV/IO - 0.1 mg/kg** (max 5 mg), may repeat once in 10 minutes, if needed. Total max dose: 10 mg
- **Intranasal (IN) - 0.2 mg/kg (max 5 mg)**, may repeat once in 10 minutes, if needed. Total max dose: 10 mg
- **Intramuscular (IM) – 0.15 mg/kg** (max 5 mg) once

Diazepam

- **IV/IO - 0.1 mg/kg** (max 5 mg), may repeat once in 10 minutes, if needed. Total max dose: 10 mg
- **Intramuscular (IM) – 0.2 mg/kg** (max 10 mg) once (IM not preferred unless no other options)

Lorazepam

- **IV/IO – 0.05 mg/kg** (max 2 mg), may repeat once in 10 minutes, if needed. Total max dose: 4 mg
- **Intramuscular (IM) – 0.05 mg/kg** (max 4 mg) once

① Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters.

PARAMEDIC

① Contact OLMC for consultation prior to giving ketamine or haloperidol to children

Ketamine

- **Intramuscular (IM) – 3 mg/kg** once (max 300 mg)
- **IV/IO – 1 mg/kg** once (max dose 200 mg)

Haloperidol

- <6 years old – NOT recommended
- 6-12 years old: **0.15 mg/kg IM (max 3 mg)** once
- 12 years and older: **5-10mg IM** once

Utah EMS Protocol Guidelines: Trauma



January 1, 2017

Trauma Patient Care Guidelines

These guidelines were created to provide direction for each level of certified provider in caring for trauma patients. All of these directions, dosages, and provisions are subject to change with later notice or revision of the guidelines. The OLMC physician will always be the final word on treatment in the field. If there are ever any discrepancies between the guidelines and the OLMC physician these should be documented and brought to the attention of the physician at the receiving hospital. If the explanation is not sufficient, the provider should bring the issue to their medical director or the BEMSP for review.

General Approach to Trauma Patient Care Guidelines

- Assess your patient prior to initiating a guideline.
- Destination decisions for trauma patients should be in accordance with the **Utah Trauma Field Triage Guidelines**.
- Early notification allows the receiving physician to activate the receiving hospital's trauma alert system.
- Providers should describe: vital signs, including GCS/AVPU, injuries, mechanism of injury and any complicating factors that will affect treatment (as per the **Utah Trauma Field Triage Guidelines**) so that the hospital may activate the appropriate level of trauma response.
- Consider air transport for critically injured patients with long transport times to a trauma center (over 60 minutes).
- Consider delivery to the nearest hospital if your patient is unstable for a prolonged transport or the patient has a compromised airway that you cannot secure.
- More than one guideline may apply.
- If conflicts arise between treatment guidelines, contact OLMC for clarification.
- Providers may provide treatment up to the level of their certification only.
- Air Medical Transport Service personnel function under their own clinical guidelines.
- Contact your receiving hospitals and OLMC as soon as clinically possible for each patient.
- OLMC with a physician may change your treatment plan.
- Any variations to a guideline by the OLMC physician should be clarified to ensure that the provider has properly characterized the situation.
- The OLMC Physician has the final word on treatment once contact is made.
- The OLMC Physician must approve usage of dosages in excess of the guidelines.

General Pediatric Considerations

- Pediatric reference tape-based dosing is preferred over calculated doses for infants and children.
- Pediatric lowest acceptable systolic blood pressures are: birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg. These are the blood pressures to use for Pediatrics (<15 years old) under step one of the Utah Trauma Field Triage Guidelines.

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Ⓢ This symbol and yellow highlighted instructions precedes any treatment that requires OLMC prior to initiating the treatment unless otherwise specified.

Utah Trauma Field Triage Guidelines



Step One

Glasgow Coma Scale ≤ 13
 Systolic Blood Pressure (mmHg) < 90 mmHg
 Respiratory rate < 10 or > 29 breaths per minute*
 (< 20 in infant aged < 1 year),
 or need for ventilatory support

No

Assess anatomy of Injury

Step Two

- All penetrating injuries to head, neck, torso and extremities proximal to elbow or knee
- Chest wall instability or deformity (e.g., flail chest)
- Two or more proximal long-bone fractures
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis

No

Assess mechanism of injury and evidence of high-energy impact

Step Three

- Falls
 - Adults: > 20 feet (one story is equal to 10 feet)
 - Children: > 10 feet or two or three times the height of the child
- High-risk auto crash
 - Intrusion, ** Including roof: > 12 inches occupant site; > 18 inches any site
 - Ejection (partial or complete) from automobile
 - Death in same passenger compartment
 - Vehicle telemetry data consistent with a high risk of injury
- Auto vs. pedestrian/bicyclist thrown, run over, or with significant (> 20 mph) impact"
- Motorcycle crash > 20 mph

No

Assess special patient or system considerations

Step Four

- Older adults"
 - Risk of injury/death increases after age 55 years
 - SBP < 110 might represent shock after age 65 years
 - Low impact mechanisms (e.g. ground level falls) might result in severe injury
- Children
 - Should be triaged preferentially to pediatric capable trauma centers
- Anticoagulants and bleeding disorders
 - Patients with head injury are at high risk for rapid deterioration
- Burns
 - Without other trauma mechanism: triage to burn facility***
 - With trauma mechanism: triage to trauma center**
- Pregnancy > 20 weeks
- EMS provider judgment

No

Transport according to protocol

Yes

Transport to a trauma center. Steps One and Two attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the defined trauma system.

Yes

Transport to a trauma center, which, depending upon the defined trauma system, need not be the highest level trauma center.

Yes

Transport to a trauma center or hospital capable of timely and thorough evaluation and initial management of potentially serious injuries. Consider consultation with medical control.

When in doubt, transport to a trauma center

Utah Trauma System Advisory Committee
Guidelines for Transport of Trauma Patients to Freestanding Emergency Departments

The following types of patients are NOT candidates for transport to a freestanding ED (FSED):

1. Critically-injured patients with unstable vital signs or other life-threatening conditions UNLESS the patient's airway is not maintainable with EMS advanced or basic airway management techniques and the FSED is the closest ED
2. Traumatic cardiac arrest patients
3. Patients meeting Steps 1-3 criteria of the Utah Trauma Field Triage Guidelines.
4. Patients with head injuries who are over 65 years old OR who are taking anticoagulants
5. Patients with angulated long bone fractures
6. Patients with suspected open fractures or dislocations
7. EMS provider judgement

These guidelines may be modified during a disaster situation

GENERAL TRAUMA MANAGEMENT

ALL PROVIDERS / EMT

- Focused history and physical exam
- Continuous cardiac monitoring, ETCO₂, and pulse oximetry, when available
- Treatment Plan**

Primary Survey:

- ① Hemorrhage Control: Assess for and stop severe hemorrhage
- ① Airway:
 - Assess airway patency, ask patient to talk to assess stridor and ease of air movement
 - Evaluate for injuries that may lead to airway obstruction including unstable facial fractures, expanding neck hematoma, blood or vomitus in the airway, facial burns/inhalation injury
 - Evaluate mental status for ability to protect airway (AVPU="P" or "U" or GCS <8). These patients will require airway protection.
 - Establish a patent airway (with cervical spine precautions)
- Breathing:
 - Assess respiratory rate and pattern, symmetry of chest wall movement, and presence of breath sounds bilaterally
 - If absent or diminished breath sounds in a hypotensive patient, consider tension pneumothorax
 - For open chest wound, place an occlusive dressing sealed on 3 sides
- Circulation:
 - Assess vital signs / check for radial pulse
 - If pelvis is unstable, place pelvic binder or sheet to stabilize pelvis
- Disability (quick neurologic evaluation)
 - Assess pupils, motor movement of extremities, and mental status (AVPU)
- Exposure/Environment:
 - Rapid evaluation of entire body (including back) to assess for injuries
 - Prevent hypothermia
- ① Treat for pain and anxiety per the ***Pain and Anxiety Management Guideline***.

Key Considerations

- ① Scene times should be as short as possible for severely injured patients (Goal: 10 minutes). Perform required procedures enroute to the trauma center.
- ① Severely injured trauma patients should be preferentially transported to a trauma center, as per the ***Field Trauma Triage Guideline***.
- ① **Withholding and termination of resuscitative efforts**
 - Resuscitative efforts should be withheld for trauma patients with the following:
 - Decapitation
 - Hemicorpectomy
 - Signs of rigor mortis or dependent lividity
 - Blunt trauma patients who are apneic, pulseless, and have no organized activity on the cardiac monitor
 - Resuscitative efforts may be terminated in patients with traumatic arrest who have no return to spontaneous circulation after 15-30 minutes of resuscitative efforts, including minimally interrupted CPR
- ① Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

- Establish vascular access and begin fluid therapy per ***IV/IO Access*** and ***Shock and***

- Vascular access and fluid therapy per ***IV/IO Access*** and ***Shock and Fluid Therapy***

5

Fluid Therapy Guidelines

- ❑ **Suspected Tension Pneumothorax:** Evidence of chest trauma + hypotension:
 - Immediate needle decompression of affected side
- ❑ **Traumatic Arrest**
 - Consider bilateral needle decompression based on mechanism of injury

Guidelines

- ❑ **Suspected Tension Pneumothorax:** Evidence of chest trauma + hypotension:
 - Immediate needle decompression of affected side
- ❑ **Traumatic Arrest**
 - Consider bilateral needle decompression based on mechanism of injury

PARAMEDIC

PARAMEDIC

AMPUTATIONS / TOOTH AVULSIONS

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring, when available
- ❑ **Treatment Plan**
 - Maintain airway, apply oxygen as needed to maintain SaO₂ 90-94%.
 - Unless this is an isolated injury, consider spinal motion restriction per the **Selective Spinal Immobilization Guideline**.
 - Treat for pain and anxiety per the **Pain and Anxiety Management Guideline**.
 - Monitor closely for signs of shock, especially in amputations above the wrist or ankle.

Amputated Body Parts and/or Tissue

- Apply direct pressure to control hemorrhage. A tourniquet is frequently required to control hemorrhage from amputation or near-amputation, when direct pressure is ineffective or impractical.
 - If amputation is incomplete, cover stump with sterile dressing saturated in NS, splint affected digit or limb in baseline physiologic position.
 - All easily retrievable tissue should be transported.
 - Rinse part(s) with NS.
 - Wrap tissue in sterile gauze moistened with NS.
 - Place tissue into plastic bag or container.
 - Place bag/container into separate container filled with ice (if available)
 - Do not allow tissue to come into direct contact with ice, do not freeze, and do not submerge in water.

Tooth Avulsion

- If tooth is out over 30 minutes, broken, or cannot be re-implanted on scene.
 - Handle tooth by chewing surface only (avoid touching the root).
 - Rinse with water. Do not scrub, dry, or wrap tooth in tissue or cloth.
 - Place tooth in container of (**in order of preference**)
 - Patient's saliva (place in patient's mouth, if patient awake and alert)
 - Alternatively, it may be placed in a container with milk or normal saline
- If tooth is out less than 30 min, you may attempt re-implantation (only permanent teeth) on scene (Primary or "baby" teeth should not be re-implanted).
 - Do not try to re-implant if more than 2 teeth are involved.
 - The tooth must be cleanly avulsed with the entire root present.
 - Only re-implant if it is one of the front 6 upper or lower teeth.
 - Patient must be conscious and cooperative.
 - Gently insert tooth back into the appropriate location without forcing it. Do not worry about positioning well.

❑ **Key Considerations**

- Consider transportation of extremity amputation patients directly to a trauma center.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

Advanced airway, vascular access and fluid therapy per **IV/IO Access and Shock and Fluid Therapy Guidelines**

Advanced airway, vascular access and fluid therapy per **IV/IO Access and Shock and Fluid Therapy Guidelines**

PARAMEDIC

PARAMEDIC

BURNS – THERMAL / ELECTRICAL / LIGHTNING

ALL PROVIDERS / EMT

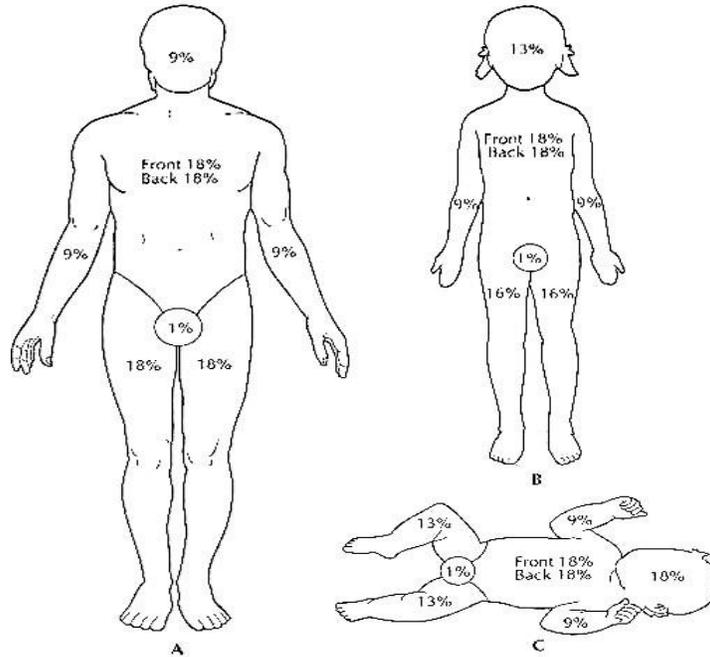
- ❑ Scene and patient management
 - Thermal Burns
 - Stop the burning process.
 - Do not pull material out of the wound but cut clothing around it.
 - Electrical Burns
 - Safely evacuate patient from electrical source.
 - Do not touch the patient until you are sure that the electrical source is disconnected.
 - When multiple patients are struck simultaneously by lightning or a high voltage source, those in respiratory and/or cardiac arrest should be given the highest priority of care, even those who appear dead on initial evaluation. These patients may be in ventricular fibrillation and resuscitated with CPR and defibrillation.
- ❑ Focused history and physical exam
 - Identify potential entry and exit wounds for electrical burns – both sites will generally be a full thickness burn site.
- ❑ Cardiac monitor, ETCO₂, and pulse oximetry monitoring, when available. Avoid placing monitor attachments over burned skin if possible.
- ❑ **Treatment Plan**
 - Initiate early oxygen therapy with high flow O₂.
 - In the unconscious patient, implement spinal motion restriction per the **Selective Spinal Immobilization Guideline**.
 - If patient in shock, fluid resuscitation as per **Shock and Fluid Therapy Guideline** (AEMT/Paramedic)
 - With electrical burns anticipate heart rhythm irregularities.
 - Assess for circulatory compromise from circumferential extremity burns or ventilator compromise from circumferential chest burns.
 - Remove items that may constrict swelling tissue.
 - Estimate size and depth of burn using the percentage chart (below).
 - Dressings: Cover burns with dry dressings.
 - Closely monitor patient's temperature and prevent hypothermia.
 - Treat for pain and anxiety per the **Pain and Anxiety Management Guideline**.
 - Burn patients with major trauma should be transported to a trauma center as per the Utah Trauma Field Triage Guideline
 - Consider air ambulance transportation for long transport times, inability to control pain after maximal doses of analgesics, and airway concerns that might necessitate advanced airway management
 - Consider transport directly to a designated burn center for the following:
 - Inhalation injuries
 - Partial or Full Thickness (2nd or 3rd degree) burns (>20% BSA in adults or >15% in pediatrics).
 - Circumferential burns
 - Partial or full thickness burns involving face, hands, or genitalia
- ❑ **Cyanide or carbon monoxide (CO) poisoning**
 - Signs: muscular weakness, confusion, agitation, unconsciousness, or profound shock
 - Most common in closed-space fires
 - Apply 100% NRB oxygen
- ❑ **Key Considerations**
 - Electrical Burns are frequently more serious than they appear.
 - Identifying the source as AC or DC voltage with the amperage will be helpful in the treatment.
 - Consider 12-lead ECG for patients with electrical burns
 - Care for traumatic injuries should precede care for the burn.
 - If patient is initially hypotensive after burn (first hour), it is NOT a result of the burn: strongly suspect underlying trauma.
 - Keep patients warm! Patients are prone to hypothermia due to heat loss from the burns.
 - Consider Child Abuse as a cause. Circumferential scald burn to hands, feet, buttocks, and genitalia are common burns seen in child abuse (especially in children <5 years old)
 - Do not overhydrate patients with IV fluid. See proper fluid rates for burns below.
 - Definitions:
 - Superficial (1st Degree) Burns – red, painful, without blisters.

- Partial Thickness (2nd Degree) Burns – red, painful/hypersensitive, swollen, with either intact or ruptured blisters.
- Full Thickness (3rd Degree) Burns – dark, leathery, painless, waxy, and does not blanch.

❑ **Parkland Formula**

- 4 ml X weight (kg) X %BSA = total fluid (ml) to be administered in 24 hrs
- 1/2 of total should be given in first 8 hrs, the remainder in the next 16 hrs

❑ **Calculation of Burn Surface Area (%BSA): based only on 2nd and 3rd degree burn totals**



ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

- ❑ Advanced airway, vascular access per **IV/IO Access** and **Fluid Therapy Guidelines**
 - If possible, avoid placing IV through burned skin
- ❑ **IV Fluid therapy:** If 2nd + 3rd degree >10% BSA begin:
 - LR or NS at 500 cc/hr (no bolus)
 - If time from burn is >30 min, begin fluids using Parkland Formula

PARAMEDIC

AEMT

- ❑ Advanced airway, vascular access per **IV/IO Access** and **Shock and Fluid Therapy Guidelines**
 - If possible, avoid placing IV through burned skin
- **IV Fluid therapy:** If 2nd or 3rd degree >10% BSA begin:
 - LR or NS infusion rates (no bolus)
 - <5 years old: 125 cc/hr
 - 5-13 years old: 250 cc/hr
 - >13 years old: 500 cc/hr
 - If time from burn is >30 min, begin fluids using Parkland Formula

PARAMEDIC

- ❑ If evidence of possible airway burn (singled nasal hair, carbonaceous sputum, hoarse voice, or stridor), consider early intubation
- ❑ If signs of cyanide toxicity present:
hydroxycobalamin (Cyanokit) 5 gm IV over 15 min
- ❑ High voltage electrical injury or direct lightning strike
 - LR or NS at 500 cc/hr (no bolus)
 - If diagnosed with rhabdomyolysis prior to transport, increase fluid replacement to keep urine output >2ml/kg/hr
- ❑ If signs of cyanide toxicity present:
hydroxycobalamin (Cyanokit) 70 mg/kg IV over 15 min
- ❑ High voltage electrical injury or direct lightning strike
 - LR or NS infusion rates (no bolus)
 - <5 years old: 125 cc/hr
 - 5-13 years old: 250 cc/hr
 - >13 years old: 500 cc/hr
 - If diagnosed with rhabdomyolysis prior to transport, increase fluid replacement to keep urine output >2ml/kg/hr

HEAD INJURY (TRAUMATIC BRAIN INJURY)

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
- ❑ Cardiac monitor, CO₂, and Pulse Oximetry monitoring when available
- ❑ **Treatment Plan**
 - Maintain airway. Administer oxygen to maintain SaO₂ 90-94%.
 - Consider spinal motion restrictions per the **Selective Spinal Immobilization Guideline**
 - Elevate head 30 degrees.
 - Monitor the level of consciousness during the transport
 - **Severe TBI** (GCS <8 or AVPU “P” or “U”):
 - Adult: Consider endotracheal intubation for airway protection (Paramedic only)
 - Pediatrics: Continue effective BVM. Utilize airway adjuncts, if needed to ensure adequate chest rise, ventilation, and oxygenation.
 - **Do not hyperventilate** unless patient shows signs of herniation: unilateral pupillary dilation or posturing. In this case, increase respiratory rate by ~10% above normal target respiratory rate (see Mild Hyperventilation Guide). Target ETCO₂: 30-35 mmHg.

Mild Hyperventilation Guide for Signs of Herniation

Age	Normal Ventilation Rate	Mild Hyperventilation Rate
Neonate	40	44
Infant	30	33
Child	20	22
Adult	10	12

- Open skull fractures should be covered with dry sterile dressings. Do not apply pressure unless needed to stop severe hemorrhage.
- ❑ **Key Considerations**
 - TBI may be painful. However, excessive pain medications can cloud serial neurological assessments. Pain medications should generally be avoided in a patient with altered mental status after TBI. If pain is severe, give small doses only until pain is manageable.
 - Patients with TBI may be confused or combative. Consider restraints if needed to protect patient or personnel.
 - Loss of memory, prolonged confusion or altered mental status associated with trauma may indicate a significant head injury.
 - Avoid hypoxia (SaO₂ should be 90-94%).
 - Do not allow the patient to be hypotensive. Try and keep SBP >110 using the **Shock and Fluid Therapy Guideline**.
 - Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

ADULT

PEDIATRIC (<15 years)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

- | | |
|--|--|
| <ul style="list-style-type: none"> ❑ Advanced airway, vascular access, and fluid therapy per IV/IO Access and Shock and Fluid Therapy Guidelines ❑ Check blood pressure every 5-10 minutes. ❑ Follow the Traumatic Brain Injury pressure management under the Shock and Fluid Therapy Guideline. | <ul style="list-style-type: none"> ❑ Advanced airway, vascular access, and fluid therapy per IV/IO Access and Shock and Fluid Therapy Guidelines ❑ Check blood pressure every 5-10 minutes. ❑ Initiate NS 20ml/kg for hypotension OR if unable to obtain blood pressure ❑ If hypotensive patient shows no improvement with initial treatment, may repeat NS 20 ml/kg up to a total of 60 ml/kg |
|--|--|

PARAMEDIC

- ❑ Persistent hypotension unresponsive to fluids

① **Epinephrine (1:1000) 2–10 mcg/min IV/IO** infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg.

And/or

① **Norepinephrine 0.3-3 mcg/min IV/IO** infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg.

PARAMEDIC

- ❑ Persistent hypotension unresponsive to fluids

① **Epinephrine (1:1000) 0.1–2 mcg/kg/min IV/IO** infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg.

And/or

① **Norepinephrine** initial dose: **0.05 - 0.1 mcg/kg/min**, titrate to max of 2 mcg/kg/min to maintain SBP >70 + (age in years x 2) mmHg

HEMORRHAGE CONTROL, EXTREMITY AND CRUSH INJURIES

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
- ❑ **Treatment Plan**
 - Maintain airway, administer oxygen to maintain SaO₂ 90-94%.
 - Assess for deformity, swelling, tenderness, crepitus, open or closed fractures, hemorrhaging, lacerations, ecchymosis, instability, decreased function or pulses, loss of sensation of distal extremities.
 - **Epistaxis**: bleeding from the nose should be controlled by first having the patient sit and lean forward (unless there is a need for spinal motion restriction). Apply direct pressure by pinching the fleshy portion of the nostrils.
 - Cover lacerations or puncture wounds on the neck near the great vessels or trachea with an occlusive dressing.
 - **Crush syndrome** should be considered for the following patients:
 - Entrapped/compressed patients or limbs under a load for more than 30 minutes
 - Patients with little or no movement for more than 4 hours (e.g. older patient falls, overdoses, etc.)
 - Patients with crush syndromes are prone to cardiac dysrhythmias and electrolyte abnormalities. They should be placed on a cardiac monitor and the rescuer should be ready for possible cardiac arrest.
 - Cover **abdominal eviscerations** with a moist sterile dressing.
 - Do not attempt to replace organs.
 - Cover **extruded eye** or **deflated globe** with a moist sterile dressing and protective covering.
 - Do not apply pressure or attempt to replace in socket.
 - Cover both eyes.
 - In large, partially attached **avulsions**, the tissue should be returned to its' baseline position and stabilized whenever possible.
 - Elevate the limb such that the wound is above the heart.
 - **Impaled objects** should be stabilized in place and covered with dry sterile dressings. The exceptions would be:
 - Objects through the cheek where there is the possibility of airway compromise.
 - Objects that would interfere with chest compressions.
- ❑ **Extremity hemorrhage control:**
 - Apply direct pressure to the bleeding site, followed by a pressure dressing
 - If direct pressure/pressure dressing is ineffective or impractical:
 - If the bleeding site is amenable to tourniquet placement, apply a tourniquet to the extremity
 - If the bleeding site is not amenable to tourniquet placement (i.e. junctional injury), tightly pack the wound with hemostatic gauze followed by direct pressure and a pressure dressing.
 - Tourniquet should be placed 2-3 cm proximal to the wound, not over a joint, and tightened until the bleeding stops and the distal pulse is eliminated. If bleeding or distal pulse still present, place a second tourniquet proximal to the first.
 - For thigh wounds, consider placement of two tourniquets, side by side, and tighten sequentially.
 - When a tourniquet is initially placed to stop obvious severe hemorrhage, an attempt may be made to replace it with a pressure dressing after patient is stabilized. The tourniquet should NOT be removed/replaced if:
 - Transport time is short (less than 30 minutes)
 - Amputation or near-amputation
 - Unstable or complex multiple-trauma patients
 - Unstable clinical or tactical situation
- ❑ **Fractures/dislocations:**
 - Stabilize suspected fractures/dislocations
 - If distal vascular function is compromised, gently attempt to restore normal anatomic position. Pain medication should be considered prior to any manipulation.

- If extremity is deformed but vascular function is normal, splint in current position, to limit movement of suspected fracture.
- Elevate extremity above heart level, when possible, to minimize swelling.
- ☐ Treatment for pain and anxiety per the ***Pain and Anxiety Management Guideline***.
- ☐ **Key Considerations**
 - Tourniquets are painful and the conscious patient will likely require pain medication.
 - Commercial tourniquets are strongly preferred over improvised tourniquets.

ADULT

PEDIATRIC (<15 years of Age)

NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

AEMT

- ☐ Advanced airway, vascular access and fluid therapy per ***IV/IO Access*** and ***Shock and Fluid Therapy Guidelines***
- ☐ For crush injury patients, when possible, initiate IV/IO access and consider administration of 1 liter NS bolus prior to release from entrapment

- ☐ Advanced airway, vascular access and fluid therapy per ***IV/IO Access*** and ***Shock and Fluid Therapy Guidelines***
- ☐ For crush injury patients, when possible, initiate IV/IO access and consider administration of NS 20 mg/kg bolus prior to release from entrapment

PARAMEDIC

PARAMEDIC

NON-ACCIDENTAL TRAUMA/ABUSE

ALL PROVIDERS

- ❑ Scene and patient management
 - Contact Law Enforcement if someone on scene is a threat to themselves or others.
 - Separate any possible assailants, including parents, from the patient.
 - Remove patient from the stressful environment and remove any possible weapons.
 - Non-accidental trauma includes any act of commission or omission that results in harm to a person's physical, developmental, or emotional state.
- ❑ Focused history and physical exam
 - Blood glucose, Temperature and Oxygen Saturation assessment.
 - Always consider the possibility of abuse when evaluating any medical condition or trauma.
- ❑ Continuous cardiac monitor, ETCO₂, and pulse oximetry, when available.
- ❑ **Treatment Plan**
 - Suspect: Look for suspicious circumstances or actions from patient or caregiver
 - Listen to and document circumstances of the event.
 - Evaluate the environment in which you find the patient.
 - Protect: Be the patient advocate
 - Make all efforts to remove patient from the situation.
 - Respect: Communicate appropriately with family
 - Avoid confrontation with caregivers.
 - Be nonjudgmental and avoid accusations.
 - Consider law enforcement assistance.
 - Collect: Provide good documentation of incident.
 - Document using direct quotation when possible.
 - Document objectively without speculation.
 - Report: You have the responsibility to report suspected child or elder abuse and neglect to the ED **and also** to law enforcement or the Division of Family Services.
- ❑ **Key Considerations**
 - Non-accidental trauma, abuse, or neglect can occur in patients of any age and in all ethnic and socio-economic groups.
 - Risk factors include children under age of 5, the elderly, drug or alcohol abuse, and a history of domestic violence.
 - In children under the age of two the most common form of child abuse is **Abusive Head Injury (AHI)**. Mortality of AHI is 25%. For those that live, there is significant morbidity, usually associated with traumatic brain injury.
 - Do not directly engage a hostile patient, parent, assailant or perpetrator. If situation becomes unsafe for EMS personnel, call for police assistance.
 - If anxious or agitated, attempt non-pharmacological options to calm a patient. Consider pain and anxiety management per the ***Pain and Anxiety Management Guideline***.

SNAKE BITES

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
 - Identify and document the type of snake, appearance, location, and distinguishing marks.
 - Obtain an accurate time of injury.
 - Clarify any first aid provided by friends or family prior to arrival.
 - Coral Snakes in North America – “Red on Yellow = Poison Fellow, Red on Black = Safe with attack”.
 - Signs of envenomation include paresthesias, metallic taste, chills, nausea, vomiting, headache, dysphagia, cramps, hypotension, fever, local edema, blebs, and discoloration.
- ❑ Continuous cardiac monitor, ETCO₂, and pulse oximetry, when available.
- ❑ **Treatment Plan**
 - Ensure scene safety by moving the patient to a safe distance, away from the snake.
 - Splint limb and place at the level of the heart.
 - Keep patient calm and movement to a minimum. You may need to treat for pain and/or anxiety to help achieve this goal per ***Pain and Anxiety Management Guideline***.
 - Remove items that may constrict swelling tissue, such as rings or bracelets.
- **Key considerations**
 - Do not start the IV in the affected limb.
 - Do not apply ice to the limb.
 - Do not try to capture the snake.
 - Do not bring a live snake to the ED.
 - Remember that snakes can reflexively envenomate up to 1 hour after death.
 - Pictures of the snake can be helpful.
 - Any snakebite can be dangerous and should be evaluated in the ED.
 - Watch for signs of shock and allergic reaction.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

AEMT

- ❑ Advanced airway, vascular access, and fluid therapy per ***IV/IO Access*** and ***Shock and Fluid Therapy Guidelines***

AEMT

- ❑ Advanced airway, vascular access, and fluid therapy per ***IV/IO Access*** and ***Shock and Fluid Therapy Guidelines***

PARAMEDIC

Persistent hypotension unresponsive to fluids

- ① **Epinephrine (1:1000) 2–10 mcg/min IV/IO** infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg.
- ① **Norepinephrine 0.3-3 mcg/min IV/IO** infusion for hypoperfusion. Titrate to maintain a SBP >100 mmHg.

PARAMEDIC

Persistent hypotension unresponsive to fluids

- ① **Epinephrine (1:1000) 0.1–2 mcg/kg/min IV/IO** infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg.
- And/Or**
- ① **Norepinephrine** initial dose: **0.05 - 0.1 mcg/kg/min**, titrate to max of 2 mcg/kg/min to maintain SBP >70 + (age in years x 2) mmHg

SELECTIVE SPINAL IMMOBILIZATION

ALL PROVIDERS

□ Assessment

- Assess the scene, to determine the risk of injury. Mechanism alone should not determine if a patient requires cervical spine immobilization. However, mechanisms that have been associated with a higher risk of cervical spine injury are the following:
 - Motor vehicle collisions, including automobiles, motorcycles, ATVs, and snowmobiles
 - Axial loading injuries to the spine, such as diving accidents
 - Severe injuries to the torso
 - Falls >10 feet
- Assess the patient in the position in which he/she was found. Initial assessment should focus on determining whether or not a cervical collar needs to be applied.
- Assess for mental status, neurologic deficits, spinal pain or tenderness, any evidence of intoxication, or other severe/painful injuries

□ Treatment Plan

- Immobilize the patient with a cervical collar if there is any of the following:
 - Patient complains of neck or spine pain
 - Any neck or spinal tenderness with palpation
 - Any abnormal mental status (including extreme agitation) or any neurologic deficit
 - Any evidence of alcohol or drug intoxication
 - Another severe or painful distracting injury is present
 - Torticollis in children
 - A communication barrier that prevents accurate assessment
- If none of the above apply, a cervical collar need not be placed on the patient, unless the treating medic otherwise feels there is a high risk of cervical spine injury.
- Patients with a penetrating injury to the neck should not receive spinal immobilization, regardless of whether they are exhibiting neurologic symptoms or not. Doing so can lead to delayed identification of injury or airway compromise and has been associated with increased mortality in such patients.
- Extrication:
 - From a vehicle: After placing a cervical collar, if indicated as above, adults and children in a booster seat should be allowed to self-extricate, if they are able. For infants and toddlers already strapped in a car seat with a built-in harness, remove the car seat and infant together, leaving the infant secured in the car seat.
 - Other situations requiring extrication: A padded long board may be used for extrications, using the lift and slide technique.
- Helmet removal: If a helmet needs to be removed, it is recommended to remove the face mask followed by manual removal (rather than the use of automated devices) of the helmet, while keeping the neck manually immobilized. Occipital padding should be applied, as needed, with the patient in a supine position, in order to maintain neutral cervical spine positioning.
- Patients should not routinely be transported on long boards, unless the clinical situation warrants long board use. An example of this may be facilitation of immobilization of multiple extremity injuries or an unstable patient where removal of a board will delay transport and/or other treatment priorities. In these rare situations, long boards should be padded or have a vacuum mattress applied to minimize secondary injury to the patient. Pediatrics – use a pediatric specific backboard for those <8 years old OR use a towel or pad to raise the child's body (not their head) to insure appropriate spinal alignment on an adult board. Age <2 should be immobilized in a car seat or age appropriate papoose device.
- Assess neurological function before, during, and after application of Spinal Immobilization

□ Key Considerations

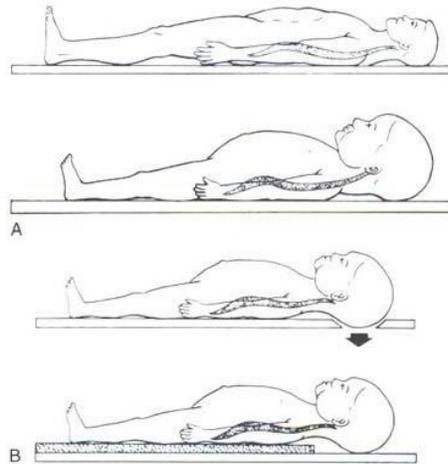
- Patients who are likely to benefit from immobilization should undergo this treatment.
- Patients who are not likely to benefit from immobilization, and who have a low likelihood of spinal injury, should not be immobilized.
- Patient should be "log rolled," with maintenance of spinal alignment, for examination of the spine for tenderness and deformities.
- Ambulatory patients who are alert and cooperative may be safely immobilized on a gurney with cervical collar and straps and will not generally require a spine board.

□ Pediatric Considerations

- Age <2 should be immobilized in a car seat or age appropriate papoose device.
- Children who are <5 years old should be immobilized with an appropriately-sized cervical collar or soft towel rolls and tape, if tolerated. If attempts at immobilization result in more distress and fighting to get free, then the immobilization should be minimized.
- Children under the age of 8 cannot have their cervical spines reliably assessed in the field and should have a cervical collar placed if the mechanism or physical exam warrants it.
- Use a pediatric specific backboard for those <8 years old OR use a towel or pad to raise the child's body (not their

head) to insure appropriate spinal alignment on an adult board. (See figure below)

- ① Contact OLMC for further instructions if the patient refuses immobilization despite the provider's assessment for the need for spinal immobilization.



ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed Adult dosing.

EMT
AEMT
PARAMEDIC

EMT
AEMT
PARAMEDIC

PART VI. APPENDICES TO THE EMS PROTOCOLS

Appendix A - Cardiac Defibrillation

Manual Defibrillation:

Patients found in cardiac arrest and determined to be in ventricular fibrillation (V-fib) or ventricular tachycardia (V-tach) without pulses.

Equipment:

- Cardiac monitor/defibrillator
- Defibrillation/pacing pads

Procedure:

- 1) Establish ABC's, continue/begin CPR
- 2) Place defibrillation pads on patient's chest.
- 3) Determine rhythm to be ventricular fibrillation or unstable ventricular tachycardia
- 4) Select energy level at 200j and press charge button
- 5) Recheck rhythm, confirm shockable rhythm, and "clear" area
- 6) Press shock button and deliver defibrillation attempt
- 7) Watch for evidence that shock was delivered (Muscle contractions)
- 8) Assess for pulses and reassess rhythm after each defibrillation attempt
- 9) If VF/VT persists, increase joule setting, and immediately defibrillate again according to protocols and ACLS recommendations

Complications:

- Rescuer defibrillation may occur if you forget to "clear" the area or lean against metal stretcher or patient during the procedure
- Skin burns from poor contact with defibrillation pads/paddles

Automatic External Defibrillator (AED) Candidates:

Patients found in cardiac arrest and determined to be in ventricular fibrillation (V-fib) or ventricular tachycardia (V-tach) without pulses. **Only** those patients receiving CPR will be attached to the AED. The AED is to be used in all patients in cardiac arrest who are viable enough to receive CPR other than children under 9 yrs. old or 25 kg, or cardiac arrest caused by trauma.

Equipment:

- Automatic External Defibrillator (AED) **Monophasic or biphasic**
- Defibrillation/pacing pads

Procedure:

- 1) With body substance isolation (BSI) precautions donned, establish unresponsiveness, stop CPR, check for spontaneous pulses and spontaneous respirations
- 2) Resume/begin CPR
- 3) Attach defibrillation pads to patient and turn on defibrillator
- 4) Stop CPR, “clear” the patient and analyze rhythm
- 5) If defibrillator advises shock
 - a) “clear” patient, visualize that no one is touching the patient
 - b) deliver shock at 360j (or biphasic equivalent)
- 6) Resume/begin CPR
- 7) After 2 min CPR re-analyze rhythm
- 8) If machine advises shock, deliver second shock at 360j (or biphasic equivalent) **after** “clearing” patient
- 9) Resume/begin CPR
 - a) After 2 min CPR re-analyze rhythm
- 10) If machine advises shock, deliver third shock at 360j (or biphasic equivalent) **after** “clearing” patient
- 11) Resume/begin CPR
- 12) If pulses return, manage patient’s airway and breathing appropriately. Follow Post Cardiac Arrest (ROSC) protocol and transport immediately.
- 13) If no pulse, resume CPR for two minutes then repeat defibrillation at 360j (or biphasic equivalent).
- 14) If, after any rhythm analysis, the defibrillator advises no shock, check carotid pulses
 - a) If pulses are present, manage patient’s airway and breathing appropriately. Transport immediately.
 - b) If no pulses are present, resume CPR for two minutes then repeat analysis of rhythm.
- 15) Only six shocks are allowed. Should the patient not convert, transport immediately. Should the patient lose pulses or fibrillate during transport to the hospital following a successful defibrillation, begin CPR. Pull the ambulance to the side of the road and turn

off the motor. Analyze rhythm and deliver up to two additional sets of three stacked shocks according to protocols and/or medical control. Following defibrillation continue transport.

Internal Cardiac Defibrillator (ICD) General Guidelines:

- 1) Treat a patient with an implantable cardiac defibrillator (ICD) like any other patient.
- 2) If ICD discharges while you are touching the patient, you may feel a slight sensation. It will not harm you.
- 3) Do not wait for the device to fire in the presence of VT or VF. Begin CPR and defibrillate with external paddles/pads as necessary. This will not harm the device.
- 4) ICD's are implanted under the skin in the left lower abdominal area or left upper chest just below the clavicle.
- 5) Patients with and ICD will carry a wallet card or Medic-Alert bracelet with important data regarding cutoff rate.
- 6) ICD's will deliver the first shock within 10-30 seconds after recognizing the arrhythmia.
- 7) Subsequent shocks will be delivered every 10-30 seconds.
- 8) An ICD will generally only shock 4-5 times (depending on model), and requires 35 seconds of non-VT/VF rhythm, including asystole, to reset itself.

Appendix B - Cardioversion

Candidates:

Used only in emergency situations when there is a rapid rhythm associated with inadequate cardiac output and signs of poor perfusion (confusion, unconsciousness/coma, angina, systolic BP < 100mmHg, dyspnea)

- Ventricular Tachycardia with pulses
- Supraventricular Tachycardia
- Unknown wide complex tachycardia

Equipment:

- Cardiac monitor with defibrillator
- Defibrillation/pacing pads

Procedure:

- 1) If practical, start IV prior to procedure
- 2) IV Versed may be used if time permits in conscious patients prior to cardioversion
- 3) Attach defibrillation pads and extremity leads. Select lead that gives upright QRS complex (usually Lead II)
- 4) Press synchronizer button
- 5) Set energy level according to ACLS protocols
- 6) Press charge button
- 7) Verbalize "clear" and visually ensure that the patient area is clear
- 8) When completed charged, hold shock button until defibrillator delivers counter shock.
- 9) If the rhythm remains unchanged, increase energy levels according to ACLS and continue at the direction of medical control.
- 10) If the rhythm cardioverts into or progresses to ventricular fibrillation, immediately increase the energy to 200j and defibrillate without synchronization of the monitor. Follow appropriate ACLS protocols.

Complications:

- Ventricular fibrillation and asystole occur rarely
- Muscle pain and cramps in the conscious patient

Appendix C - Continuous Positive Airway Pressure (CPAP)

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP):

Continuous Positive Airway Pressure has been shown to rapidly improve vital signs, gas exchange, the work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in the patients who suffer from shortness of breath from congestive heart failure and acute cardiogenic pulmonary edema. CPAP is also shown to improve dyspnea associated with pneumonia, chronic obstructive pulmonary disease (asthma, bronchitis, emphysema). In patients with CHF, CPAP improves hemodynamics by reducing preload and afterload.

Indications:

Dyspnea / Hypoxemia secondary to congestive heart failure, acute cardiogenic pulmonary edema, pneumonia, chronic obstructive pulmonary disease (asthma, bronchitis, emphysema) and:

- A. Any patient who is complaining of shortness of breath for reasons other than pneumothorax or chest trauma
- B. Is awake and oriented
- C. Has the ability to maintain an open airway (GCS>10)
- D. Has a respiratory rate greater than 25 breaths per minute
- E. Has a systolic blood pressure above 90 mmHg
- F. Uses accessory muscles during respirations

Contraindications:

1. Pneumothorax
2. Respiratory arrest
3. Agonal respirations
4. Unconscious
5. Shock associated with cardiac insufficiency
6. Penetrating chest trauma
7. Persistent nausea/vomiting
8. Facial anomalies / stroke obtundation / facial trauma
9. Has active upper GI bleeding or history of recent gastric surgery

Procedure:

1. Assess patient for signs / symptoms of pneumothorax
2. Place patient in a sitting position
3. Assess vital signs and SpO₂ frequently
4. Attach ECG monitor
5. If BP <90 systolic contact Medical Control prior to beginning CPAP
6. Begin at lowest level of positive pressure available
7. Explain the procedure to the patient:
 - i. Patient requires reassurance to be used effectively.
 - a. Example: "You are going to feel some pressure from the mask but this will help you breathe easier."
 - ii. Place delivery device over mouth and nose.
 - iii. Instruct patient to breathe in through their nose slowly and exhale through their mouth as long as possible (count slowly and aloud to four then instruct to inhale slowly).

8. For CHF/Pulmonary Edema, titrate to 10cm/H₂O. For all other SOB, titrate to 5cm/H₂O
9. Check for air leaks
10. Treatment should be given continuously throughout transport to ED.
11. Continue to coach patient to keep mask in place and readjust as needed
12. If respiratory status / level of consciousness deteriorates, remove device and begin bag valve mask ventilation.
13. Documentation on the patient care record should include:
 - a. CPAP level
 - b. Frequent SpO₂ and Vital Sign assessment
 - c. Response to treatment
 - d. Any adverse reactions
 - e. End Tidal CO₂

Special Notes:

1. CPAP should be used with an appropriate size mask that fits the patient face snugly
2. Advise receiving hospital as soon as possible so they can prepare for the patient's arrival
3. Do not remove CPAP until transfer of care has taken place at receiving hospital
4. Continuous reassessment of patient airway
5. A nebulizer may be used to administer medications in the treatment of asthma

Appendix D - Endotracheal Intubation

Candidates:

The following categories of patients, both adult and pediatric, are potential candidates for endotracheal (ET) intubation in the Davis County EMS System:

- Cardiac arrest (non-traumatic)
- Traumatic cardiac arrest
- Respiratory arrest
- Patients with decreased level of consciousness (i.e., Glasgow Coma Score < 8) - trauma and non-trauma
- Conscious patients with respiratory distress who are unable to ventilate adequately - trauma and non-trauma

Equipment:

- Endotracheal tubes various sizes (3 to 9) with soft high volume, low pressure cuffs
- Laryngoscope with adult and pediatric straight and curved blades and spare batteries and bulbs
- McGill forceps
- Bag/valve/mask apparatus capable of delivering 100% oxygen with pediatric and adult masks
- 10 cc syringe
- 1" adhesive tape, cloth tracheal tape, or commercially designed securing device, for securing tube
- Stylette for endotracheal tube
- Oral and nasal airways of pediatric and adult sizes
- Good suction with both tonsillar suction and suction catheters available
- Intubation monitoring device (bulb, syringe, or capnographer)

Procedure:

- 1) Maintain airway and ventilation prior to intubation with oral airway and positive pressure ventilation.
- 2) Assemble equipment; select appropriate size tube and blade; check operation of key elements, including suction equipment. Put on personal protective equipment.
- 3) Position patient supine with head in "sniffing" position. If cervical spine injury suspected, have second person maintain neutral position with in-line manual stabilization and performs Sellick's maneuver throughout procedure. Remove all potential airway obstructions.
- 4) Hyperventilate patient with Bag Valve Mask (BVM) with 100% O₂ for a minimum of 3 minutes before attempting intubation. Hyperventilation should be repeated for a minimum of one minute anytime 30 seconds without ventilation has elapsed for an intubation attempt.
- 5) Holding the laryngoscope blade in the left hand, insert it into the right side of the mouth. Advance the blade along the curvature of the tongue, moving the tongue to the left, out of the field of view.

- 6) Lift the laryngoscope straight up and slightly towards the patient's feet to expose and visualize the epiglottis and vocal cords. Do not pry back on the blade. With a straight blade, the blade is inserted so the tip lifts the bottom edge of the epiglottis. With a curved blade, the blade tip is inserted into the vallecula just above the epiglottis, indirectly raising the epiglottis when lifted. It may be necessary to slowly withdraw the blade until the epiglottis and vocal cords come into view. Suction as needed for visibility. If unable to view identifiable structures, have assistant place slight downward pressure on the patient's cricoid cartilage (Sellick's maneuver).
- 7) Stop and ventilate the patient if more than 30 seconds has elapsed for the intubation attempt.
- 8) While directly visualizing the vocal cords, pass the tip of the ET tube between the cords until the proximal end of tube cuff is ½-1 inch beyond.
- 9) Manually secure position of the ET tube while removing the laryngoscope, then the stylet.
- 10) Inflate the cuff with 5-10 ml of air and check the pilot balloon. Suction the tube and oropharynx as needed.
- 11) Continue to manually stabilize the tube and ventilate the patient with 100% O₂ with a bag-valve device.
- 12) Immediately assess tube placement by auscultating breath sounds bilaterally then auscultating over the epigastrium. A second method to verify tube placement is required and may include use of an end-tidal CO₂ detector, an endotracheal tube detector device, an aspirator syringe, or revisualization of the cords and ET tube. Remove or reposition tube as necessary.
- 13) If proper tube placement is confirmed, hyperventilate the patient for at least three minutes.
- 14) Mark tube depth and stabilize the ET tube with tape or other device. Repeat lung auscultation to check position of the tube after taping procedure is completed. The patient should also be reassessed for proper tube position after any significant movement of the patient (onto the stretcher, down stairs, into the ambulance, etc.) This responsibility belongs to the paramedic and may not be delegated to a First Responder.
- 15) May consider sedation of intubated patients with Versed.

Complications:

- Esophageal intubation
- Intubation of right mainstem bronchus
- Upper airway trauma due to excess force with laryngoscope or to traumatic tube placement
- Vomiting and aspiration during traumatic intubation or intubation of patient with intact gag reflex
- Hypoxia due to prolonged intubation attempt
- Cervical cord damage in trauma victim with unrecognized spine injury
- Dental trauma
- Tension pneumothorax

Appendix E – Influenza

Influenza:

Patient Assessment:

If there HAS NOT been an influenza outbreak reported in the geographic area EMS providers should assess all patients as follows:

1. EMS personnel should stay more than 6 feet away from patients and bystanders with symptoms and exercise appropriate routine respiratory droplet precautions while assessing all patients for suspected cases of swine-origin influenza.
2. Assess all patients for symptoms of acute febrile respiratory illness (fever plus one or more of the following: nasal congestion/rhinorrhea, sore throat, or cough).
 - If no acute febrile respiratory illness, proceed with normal EMS care.
 - If symptoms of acute febrile respiratory illness, then assess all patients for travel to a geographic area with confirmed cases of swine-origin influenza within the last 7 days or close contact with someone with travel to these areas.
 - If travel exposure, don appropriate PPE for suspected case of swine- origin influenza.
 - If no travel exposure, place a standard surgical mask on the patient (if tolerated) and use appropriate PPE for cases of acute febrile respiratory illness without suspicion of swine-origin influenza (as described in PPE section).

If the CDC confirmed an influenza outbreak in the geographic area:

1. Address scene safety:
 - If PSAP advises potential for acute febrile respiratory illness symptoms on scene, EMS personnel should don PPE for suspected cases of swine-origin influenza prior to entering scene.
 - If PSAP has not identified individuals with symptoms of acute febrile respiratory illness on scene, EMS personnel should stay more than 6 feet away from patient and bystanders with symptoms and exercise appropriate routine respiratory droplet precautions while assessing all patients for suspected cases of swine-origin influenza.
2. Assess all patients for symptoms of acute febrile respiratory illness (fever plus one or more of the following: nasal congestion/rhinorrhea, sore throat, or cough).
 - If no symptoms of acute febrile respiratory illness, provide routine EMS care.
 - If symptoms of acute febrile respiratory illness, don appropriate PPE for suspected case of swine-origin influenza if not already on.

Personal protective equipment (PPE):

- When treating a patient with a suspected case of swine-origin influenza as defined above, the following PPE should be worn:
 - Fit-tested disposable N95 respirator and eye protection (e.g., goggles; eye shield), disposable non-sterile gloves, and gown, when coming into close contact with the patient.
- When treating a patient that is not a suspected case of swine-origin influenza but who has symptoms of acute febrile respiratory illness, the following precautions should be taken:
 - Place a standard surgical mask on the patient, if tolerated. If not tolerated, EMS personnel may wear a standard surgical mask.
 - Use good respiratory hygiene – use non-sterile gloves for contact with patient, patient secretions, or surfaces that may have been contaminated. Follow hand hygiene including hand washing or cleansing with alcohol based hand disinfectant after contact.
- Encourage good patient compartment vehicle airflow/ ventilation to reduce the concentration of aerosol accumulation when possible.

Infection Control:

EMS agencies should always practice basic infection control procedures including vehicle/equipment decontamination, hand hygiene, cough and respiratory hygiene, and proper use of FDA cleared or authorized medical personal protective equipment (PPE).

Interim recommendations:

- Pending clarification of transmission patterns for this virus, EMS personnel who are in close contact with patients with suspected or confirmed swine-origin influenza A (H1N1) cases should wear a fit-tested disposable N95 respirator, disposable non-sterile gloves, eye protection (e.g., goggles; eye shields), and gown, when coming into close contact with the patient.
- All EMS personnel engaged in aerosol generating activities (e.g. endotracheal intubation, nebulizer treatment, and resuscitation involving emergency intubation or cardiac pulmonary resuscitation) should wear a fit-tested disposable N95 respirator, disposable non-sterile gloves, eye protection (e.g., goggles; eye shields), and gown, unless EMS personnel are able to rule out acute febrile respiratory illness or travel to an endemic area in the patient being treated.
- All patients with acute febrile respiratory illness should wear a surgical mask, if tolerated by the patient.

Inter-facility Transport:

EMS personnel involved in the inter-facility transfer of patients with suspected or confirmed swine-origin influenza should use standard, droplet and contact precautions for all patient care activities. This should include wearing a fit-tested disposable N95 respirator, wearing disposable non-sterile gloves, eye protection (e.g., goggles, eye shield), and gown, to

prevent conjunctival exposure. If the transported patient can tolerate a facemask (e.g., a surgical mask), its use can help to minimize the spread of infectious droplets in the patient care compartment. Encourage good patient compartment vehicle airflow/ventilation to reduce the concentration of aerosol accumulation when possible.

Interim Guidance for Cleaning EMS Transport Vehicles After Transporting a Suspected or Confirmed Influenza Patient:

The following are general guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a suspected or confirmed influenza patient. This guidance may be modified or additional procedures may be recommended by the Centers for Disease Control and Prevention (CDC) as new information becomes available.

Routine cleaning with soap or detergent and water to remove soil and organic matter, followed by the proper use of disinfectants, are the basic components of effective environmental management of influenza. Reducing the number of influenza virus particles on a surface through these steps can reduce the chances of hand transfer of virus.

Influenza viruses are susceptible to inactivation by a number of chemical disinfectants readily available from consumer and commercial sources.

After the patient has been removed and prior to cleaning, the air within the vehicle may be exhausted by opening the doors and windows of the vehicle while the ventilation system is running. This should be done outdoors and away from pedestrian traffic. Routine cleaning methods should be employed throughout the vehicle and on non-disposable equipment.

For additional detailed guidance on ambulance decontamination EMS personnel may refer to "[Interim Guidance for Cleaning Emergency Medical Service Transport Vehicles during an Influenza Pandemic](#)" on the CDC website.

EMS Transfer of Patient Care to a Healthcare Facility:

When transporting a patient with symptoms of acute febrile respiratory illness, EMS personnel should notify the receiving healthcare facility so that appropriate infection control precautions may be taken prior to patient arrival. Patients with acute febrile respiratory illness should wear a surgical mask, if tolerated. Small facemasks are available that can be worn by children, but it may be problematic for children to wear them correctly and consistently. Moreover, no facemasks (or respirators) have been cleared by the FDA specifically for use by children.

Appendix F – Intraosseous Access

EZ-IO Device (Adult & Pediatric)

Candidates

- The EZ-IO may be attempted only on the critically ill or injured patient when IV fluids and/or medications must be immediately administered to prevent the patient's death.
- It is to be used when routine IV access is unsuccessful or difficult to establish.

Indications

- All patients who:
 - a. Need IV fluids or medications and a peripheral IV cannot be established in 2 attempts or 90 seconds AND exhibit 1 or more of the following:
 - i. An altered mental status (GCS of 8 or less)
 - ii. Respiratory compromise (SpO₂ < 80 after appropriate oxygen therapy, respiratory rate < 10/min or > 40/min)
 - iii. Hemodynamic instability (Systolic BP < 90mmHg)
 - b. EZ-IO may be considered PRIOR to peripheral IV attempts in the following situations:
 - i. Cardiac arrest (medical or traumatic)
 - ii. Profound hypovolemia with alteration of mental status

Contraindications

- Recently fractured bone at the site
- Previous intraosseous attempt in same bone
- Pre-existing medical condition (involving the extremity, bone disorders, etc.)
- Cellulitis, infection, osteomyelitis, trauma, or burns at site
- Inability to locate landmarks

Equipment:

Arm Board
Tape or Kerlix
Needle (15g & 18g IO needles)
Alcohol Wipe
Betadine
IV set up with tubing and fluid (Volutrol or Metriset)
Syringe 3-5cc
Pressure Bag

Insertion Location:

- Identify insertion site: Proximal tibia one finger breadth medial to tibial tuberosity (anteromedial)
 - For tibial site: Insert the needle through the skin at a 90-degree angle of the transverse plane on the tibial plateau. This is located on the medial anterior surface, 2-3 cm distal to the tibial tuberosity. Use a slight downward angle (towards the foot) to avoid hitting the epiphyseal plate.
- Proximal Humerus
 - Insertion site is located directly on the most prominent aspect of the greater tubercle. Slide thumb up the anterior shaft of the humerus until you feel the greater tubercle, this is the surgical neck. Approximately 1 cm (depending on patient anatomy) above the surgical neck is the insertion site.
 - Ensure that the patient's hand is resting on the abdomen and that the elbow is adducted (close to the body).

Considerations

Flow rates:

- a. Due to the anatomy of the intraosseous space, flow rates will be slower than those achieved with IV catheters.
- b. Initially infuse a rapid bolus of 10mL of normal saline.
- c. Use a pressure bag to ensure continuous infusion.

Pain:

- a. Insertion of the EZ-IO in conscious patients causes mild to moderate discomfort but is usually no more painful than a large bore IV.
- b. 10 mL infusion can cause severe discomfort for conscious patients.
- c. Prior to 10 mL flush on alert patients, SLOWLY administer 40mg (or 2mLs) IV Lidocaine through the EZ-IO hub.

Procedure

If the patient is conscious, advise them of the EMERGENT NEED for this procedure and obtain consent.

- Prepare equipment
- Position patient and stabilize the extremity.
- Locate and cleanse insertion site using aseptic technique.
- Insert EZ-IO needle set. (Consider insertion complete when less resistance is encountered from driver)
- Remove EZ-IO driver from needle set while stabilizing catheter hub.
- Remove stylet from needle set and dispose in sharps container.
- Confirm placement (Aspiration of marrow, stands w/o support, ease of flushing)
- If the patient is conscious, administer 40mg (2mLs) 2 Lidocaine 10 and wait 15 seconds.
- Bolus the EZ-IO catheter with 10ml of normal saline.

- Connect the IV tubing and secure needle.
- Place a pressure bag on solution being infused and adjust the flow rate, as desired.
- Monitor EZ-IO site and patient condition and document use of EZ-IO in the patient care report.

Complications:

- Infiltration at insertion site if improperly inserted
- Slow infusion from clotting of marrow
- Osteomyelitis & Infection
- Fracture
- Compartment Syndrome

Appendix G – Medications

Medication profiles given in this section are for guidance and informational purposes only. This section is not intended to provide specific orders for patient care. See protocols for approved system practice.

Acetylsalicylic Acid

<u>Generic Name:</u>	Acetylsalicylic Acid
<u>Trade Name:</u>	Aspirin ASA, Ecotrin
<u>Classification:</u>	Antiplatelet effect, nonnarcotic analgesic, antipyretic
<u>Action/Kinetics:</u>	To reduce risk of death and/or nonfatal MI in patients with a previous MI or unstable angina pectoris. Impedes clotting by blocking prostaglandin synthesis, which prevents formation of the platelet-aggregating substance thromboxane A ₂ .
<u>Indications:</u>	Dose for cardiac patients fitting criteria, even if absence of chest pains, is a 160-325mg. Aspirin given orally if patient has no history of allergy.
<u>Contraindications:</u>	Hypersensitivity to drug. Patients with active ulcer disease
<u>Adverse Effects:</u>	Bleeding gums, signs of GI bleeding, and petechiae. Aspirin will increase bleeding time.
<u>How Supplied:</u>	160 mg, 325mg tablets. (May also use 4 baby aspirin chewable 81 mg ea., for a total of 324 mg)
<u>Dosage:</u>	Give one aspirin 325mg. or 4 baby aspirin chewable (chewing is preferable to swallowing) give within minutes of arrival.
<u>Precautions:</u>	Use with caution in patients with GI lesions, impaired renal function, hypoprothrombinemia, vitamin K deficiency, thrombocytopenia, or severe hepatic impairment.

Activated Charcoal

<u>Generic Name:</u>	Activated Charcoal
<u>Trade Name:</u>	SuperChar, InstaChar, Actidose, Liqui-Char
<u>Classification:</u>	Absorbent/Antidote
<u>Action/Kinetics:</u>	Absorbs poison compounds to its surface, which reduces the poisons absorption by the body. Very effective in binding ASA, amphetamines, Strychnine, Dilantin, Theophylline and Phenobarbital.
<u>Indications:</u>	Poisoning and oral overdose in a conscious patient with an intact gag reflex.
<u>Contraindications:</u>	<ul style="list-style-type: none">• Special consideration of patients with decreased level of consciousness.• Of no value in poisoning due to methanol, acids/alkalis, iron tablets, or lithium• Cyanide poisoning• Should not be given before ipecac
<u>Adverse Effects:</u>	Nausea/vomiting. Diarrhea. Black stools.
<u>How Supplied:</u>	Pre-mixed in water, frequently available in plastic bottle containing 12.5g of activated charcoal.
<u>Dosage:</u>	1 gram/kg for adults and children. Usual adult dose 25-50g. Usual pediatric dose 12.5-25g.
<u>Precautions:</u>	None

Adenosine

<u>Generic Name:</u>	Adenosine
<u>Trade Name:</u>	Adenocard
<u>Classification:</u>	Antiarrhythmics
<u>Action/Kinetics:</u>	A naturally occurring nucleoside that acts on the AV node to slow conduction and inhibit reentry pathways. Useful in PSVT. Rapidly metabolized—Half-life is <5 seconds.
<u>Indications:</u>	To convert acute PSVT to normal sinus rhythm. Diagnostic agent for distinguishing supraventricular from ventricular tachycardia, as well as broad QRS complex tachycardias.
<u>Contraindications:</u>	Patients with hypersensitivity to the drug. Those in second- or third-degree heart block, sick sinus syndrome, or symptomatic bradycardia. Unstable patient with SVT is treated with synchronized cardioversion.
<u>Adverse Effects:</u>	Chest pain, PVC's, dizziness, dyspnea and or shortness of breath, facial flushing, headache, lightheadedness, blurred vision, nausea, metallic taste, and numbness. More serious symptoms are persistent arrhythmias, bronchospasm, and hypotension.
<u>How Supplied:</u>	6mg/2ml and 12mg/2ml in pre-loaded syringes ready to be administered.
<u>Dosage:</u>	The initial dose is 6-mg. rapid bolus over 1-3 seconds. The dose should be followed quickly by a 20-ml saline flush. Then elevate the extremity. Repeat 12mg. in 1-2 minutes if needed.
	Pediatric 0.1mg/kg rapid IV push with saline flush.
<u>Precautions:</u>	Could produce bronchoconstriction in-patients with asthma. Patients who develop high level heart block after a single dose should not receive additional doses. Use with caution in-patients receiving digoxin and verapamil in combination. Therapeutic levels of theophylline and methylxanthines affect the response of adenosine. Dipyridamole potentiates its effect.

Albuterol

<u>Generic Name:</u>	Albuterol Sulfate Inhalation Solution, 0.083%
<u>Trade Name:</u>	Ventolin, Proventil
<u>Classification:</u>	Bronchodilators
<u>Action/Kinetics:</u>	Relaxes bronchial, uterine, and vascular smooth muscle by stimulating beta2-adrenergic receptors.
<u>Indications:</u>	Indicated for the relief of bronchospasm in patients two years of age and older with reversible obstructive airway disease and acute attacks of bronchospasm.
<u>Contraindications:</u>	Hypersensitivity to the drug.
<u>Adverse Effects:</u>	Tachycardia, hypertension, bronchospasm, bronchitis, nasal congestion, tremors, dizziness, nervousness, headache, and sleeplessness.
<u>How Supplied:</u>	Unit dose plastic vial containing albuterol sulfate inhalation solution 0.083%, 2.5mg/3ml. Usual dose for adults and children weighing at least 15 kg is one vial 2.5 mg of albuterol administered by nebulization. Inhalation solution will be delivered over approximately 5 to 15 minutes.
<u>Precautions:</u>	Used with caution in patients with cardiovascular disorders, especially coronary insufficiency, cardiac arrhythmia's and hypertension. MAO inhibitors, tricyclic antidepressants, may potentiate action on CV system. Propranolol, and other beta blockers inhibit the effect of Albuterol.

Albuterol – Patient Assisted Inhalers

<u>Generic Name:</u>	Albuterol Sulfate Inhalation Solution, 0.083%
<u>Trade Name:</u>	Ventolin, Proventil, Bronkosol, Bronkometer, Alupent, Metaprel
<u>Classification:</u>	Bronchodilators
<u>Action/Kinetics:</u>	Beta agonist bronchodilator dilates bronchioles reducing airway resistance.
<u>Indications:</u>	<ul style="list-style-type: none">• Patient exhibits signs and symptoms of respiratory emergency• Patient has physician-prescribed hand-held inhaler• Medical control gives specific authorization for use
<u>Contraindications:</u>	<ul style="list-style-type: none">• Patient is unable to use device (not alert, responsive)• Inhaler is not prescribed for patient• No permission has been given by medical control• Patient has already taken maximum prescribed dose prior to EMS arrival
<u>Adverse Effects:</u>	Tachycardia, hypertension, bronchospasm, bronchitis, nasal congestion, tremors, dizziness, nervousness, headache, and sleeplessness.
<u>How Supplied:</u>	Hand-held metered dose inhaler. Dosage: Number of inhalations dependent on medical control orders.
<u>Precautions:</u>	Used with caution in patients with cardiovascular disorders, especially coronary insufficiency, cardiac arrhythmia's and hypertension. MAO inhibitors, tricyclic antidepressants, may potentiate action on CV system. Propranolol, and other beta blockers inhibit the effect of albuterol.

Amiodarone Hydrochloride

<u>Generic Name:</u>	Amiodarone Hydrochloride
<u>Trade Name:</u>	Cordarone
<u>Classification:</u>	Antiarrhythmic
<u>Action/Kinetics:</u>	Blocks sodium channels at rapid pacing frequencies, causing an increase in the duration of the myocardial cell action potential and refractory period, as well as alpha- and beta-adrenergic blockade. The drug decreases sinus rate, increases PR and QT intervals, results in development of U waves, and changes T-wave contour. After IV use, amiodarone relaxes vascular smooth muscle, reduces peripheral vascular resistance (afterload), and increases cardiac index slightly.
<u>Indications:</u>	Used in a wide variety of atrial and ventricular tachyarrhythmia's and for rate control of rapid atrial arrhythmias in patients with impaired LV function when digoxin has proven ineffective
<u>Contraindications:</u>	Marked sinus bradycardia due to severe sinus node dysfunction, second- or third-degree AV block, syncope caused by bradycardia (except when used with a pacemaker). Cardiogenic shock. Lactation.
<u>Adverse Effects:</u>	Cough and progressive dyspnea. Worsening of arrhythmias, symptomatic bradycardia, sinus arrest, SA node dysfunction, CHF edema, hypotension, cardiac conduction abnormalities, cardiac arrest, abnormal involuntary movements, headache, N&V, abdominal pain, flushing, and shock.
<u>How Supplied:</u>	Injection: 50 mg/mL
<u>Dosage:</u>	Cardiac Arrest: 300mg IV push. Consider repeating 150 mg IV push in 3-5 minutes. Maximum cumulative dose 2.2 g IV/24 hours. Wide complex tachycardia (stable): 150 mg rapid infusion IV (15 mg/min) over first 10 minutes. May repeat 150 mg rapid infusion IV every 10 minutes as needed.
<u>Precautions:</u>	May produce vasodilation and hypotension. May have negative inotropic effects. May prolong QT interval. Do not routinely use with other drugs that prolong QT interval. Use with caution if renal failure is present.

Ativan

<u>Generic Name:</u>	Ativan
<u>Trade Name:</u>	Lorazepam
<u>Classification:</u>	Benzodiazepine, sedative-hypnotic, anticonvulsant
<u>Action/Kinetics:</u>	Though the drug is still widely used as an anticonvulsant, it is relatively weak and of shorter duration than diazepam. Rapid IV administration may be followed by respiratory depression and excessive sedation. Lorazepam is frequently used to treat anxiety and stress. In emergency care, it is used to treat alcohol withdrawal and grand mal seizure activity. Benzodiazepines act on the limbic, thalamic, and hypothalamic regions of the CNS to potentiate the effects of inhibitory neurotransmitters, raising the seizure threshold in the motor cortex. It may also be used in conscious patients during cardioversion to induce amnesia and sedation.
<u>Indications:</u>	<ul style="list-style-type: none">• Status epilepticus• Acute anxiety states• Acute alcohol withdrawal• Procedural (cardioversion) sedation
<u>Contraindications:</u>	<ul style="list-style-type: none">• Hypersensitivity to the drug• Acute narrow & Open angle glaucoma• Hypotension• Head injury• CNS depression• Respiratory depression
<u>Adverse Effects:</u>	<ul style="list-style-type: none">• Hypotension• Reflex tachycardia• Respiratory depression• Ataxia• Psychomotor impairment• Confusion• Nausea/Vomiting
<u>Dosage:</u>	Adult Status Epilepticus: 2 mg slow IV (<2 mg/min) or IM. Agitation / Anxiety Relief: 0.5 - 2 mg slow IV (<2 mg/min) or IM Pediatrics Status Epilepticus: 0.1 mg / kg (max 2 mg per dose) slow IV (<2 mg/min) or IM
<u>Precautions:</u>	Lorazepam may precipitate CNS depression and psychomotor impairment when the patient is taking CNS depressant medications. Should not be administered with other drugs because of possible precipitation (incompatible with most fluids; should be administered into an IV of normal saline solution). Use caution in combining benzodiazepines with opioids, as this can cause significant respiratory depression or apnea, with higher risk than either class of medications alone.

Special
Considerations:

- Pregnancy safety: Category D - dangerous to fetus, but benefits to mother MAY outweigh risks
- Must be diluted 1:1 with normal saline prior to IV administration, and given not more than 2mg/minute
- Has short duration of anticonvulsant effect
- Reduce dose by 50% in elderly patients
- Resuscitation equipment should be readily available, monitor respirations carefully
- Antidote; Flumazenil (Ramazicon)
- Refrigerate at 36-46EF

Atropine Sulfate

<u>Generic Name:</u>	Atropine Sulfate
<u>Trade Name:</u>	Atropine
<u>Classification:</u>	Antiarrhythmic, anticholinergic, antidote, cardiac stimulant
<u>Action/Kinetics:</u>	Anticholinergic that inhibits acetylcholine at the parasympathetic neuroeffector junction, blocking vagal effects on the SA and AV nodes; this enhances conduction through the AV node and speeds heart rate, increases heart contractility, improves automaticity, and dilates peripheral vessels.
<u>Indications:</u>	Treatment of symptomatic sinus bradycardia, second- and third-degree heart block. Antidote in organophosphate poisoning.
<u>Contraindications:</u>	Hypersensitivity to the drug, unstable cardiovascular status, myocardial ischemia, glaucoma, and COPD
<u>Adverse Effects:</u>	Postural hypotension, Blurred vision, dryness of the mouth, GI reflux, nausea, vomiting, tachyarrhythmias, and urinary retention. May also cause ventricular tachycardia or ventricular fibrillation.
<u>How Supplied:</u>	0.1mg/ml total of 10ml to equal 1mg of Atropine.
<u>Dosage:</u>	Adult For bradycardia, 0.5mg to 1mg. IV every three to five minutes as needed, up to a total of 3mg. Pediatric 0.02 mg/kg or 0.2 cc/kg IV/IO/ET up to 5cc for child or 10cc for adolescent (minimum dose 0.1mg or 1cc). May be repeated once in 5 minutes.
<u>Precautions:</u>	Use with caution in presence of myocardial ischemia and hypoxia. Avoid in hypothermic bradycardia. Usually not effective in second degree block type II and third-degree blocks with wide QRS complexes. Antacids decrease absorption of med.

D-Glucose / Glucose

<u>Generic Name:</u>	D-Glucose or Glucose
<u>Trade Name:</u>	Dextrose
<u>Classification:</u>	Nutritional (carbohydrate)
<u>Action/Kinetics:</u>	Dextrose and water provide calories and increases blood glucose concentrations.
<u>Indications:</u>	<ul style="list-style-type: none">• Diabetics who are unable to take oral fluids due to altered level of consciousness and low blood glucose.• Unknown, unconsciousness
<u>Contraindications:</u>	Delirium tremens with hydration, diabetic coma while blood sugar is excessive, intracranial or intraspinal hemorrhage.
<u>Adverse Effects:</u>	Pulmonary edema, exacerbated hypertension, heart failure, Hyperglycemia, (during infusion), hyperosmolar syndrome (mental confusion, loss of consciousness), hypokalemia, reactive hypoglycemia (after infusion).
<u>How Supplied:</u>	50 ml prefilled syringe of D ₅₀ W IV
<u>Dosage:</u>	Adult Vascular access and fluid therapy per <i>IV/IO Access and Fluid Therapy Guideline</i> HYPOGLYCEMIA <ul style="list-style-type: none">• Dextrose 50% 25 grams IV/IO. May repeat as necessary• OR Dextrose 10%: Infuse 125 ml, then recheck blood sugar. If still low, may repeat Pediatric Vascular access and fluid therapy per <i>IV/IO Access and Fluid Therapy Guideline</i> HYPOGLYCEMIA <u>Infants up to 1 year</u> <ul style="list-style-type: none">• Dextrose 10% 5 mL/kg IV/IO: may repeat as necessary <u>Children greater than 1 year</u> <ul style="list-style-type: none">• Dextrose 25% 2 mL/kg IV/IO: repeat as necessary (D25 = 25 mL D50 mixed with 25 mL 13 Sterile Water)• OR Dextrose 10% 5 mL/kg IV/IO: repeat as necessary
<u>Precautions:</u>	Use with caution in patients with cardiac or pulmonary disease, hypertension, renal insufficiency, urinary obstruction, or hypovolemia. Avoid extravasation may cause tissue sloughing, necrosis, and phlebitis.

Diazepam

<u>Generic Name:</u>	Diazepam
<u>Trade Name:</u>	Valium
<u>Classification:</u>	CNS depressant; anticonvulsant, antianxiety, skeletal muscle relaxant
<u>Action/Kinetics:</u>	Depresses/decreases the excitability and functional activity of four areas of the CNS: <ul style="list-style-type: none">• Limbic system (Emotions and behavioral responses)• Reticular formation (Wakefulness and alertness)• Cerebral cortex (origin of seizures and convulsions)• Spinal cord (skeletal muscle tone and activity)
<u>Indications:</u>	<ul style="list-style-type: none">• Status epilepticus• Sedation prior to cardioversion• Relief of nervous anxiety and tension• Moderate skeletal muscle spasms
<u>Contraindications:</u>	Pregnancy, patients with respiratory depression, hypotension
<u>Adverse Effects:</u>	Drowsiness, dizziness, ataxia, respiratory depression and arrest, hypotension, decreased level of consciousness.
<u>How Supplied:</u>	10mg/1cc vial or 10mg/1cc pre-loaded syringe.
<u>Dosage:</u>	Adult 5-10mg IV/IM slow IV push, maximum dose 40mg. Pediatric 0.1mg/kg IM/IV slow IV push, 0.5mg/kg rectally
<u>Precautions:</u>	Drug dependence.

Diphenhydramine Hydrochloride

<u>Generic Name:</u>	Diphenhydramine Hydrochloride
<u>Trade Name:</u>	Benadryl
<u>Classification:</u>	Antihistamine, CNS depressant, antiemetic, antvertigo agent, sedative-hypnotic
<u>Action/Kinetics:</u>	Competes with histamine for H1-receptor sites on effector cells. Prevents, but does not reverse, histamine-mediated responses. It also has anticholinergic (antispasmodic), antiemetic, and sedative effects. It has a rapid onset and is widely distributed throughout the body.
<u>Indications:</u>	Supplemental therapy to epinephrine in anaphylaxis and other uncomplicated allergic reactions requiring prompt treatment. Is an antidote specific to phenothiazine medications (Dystonia). For control of nausea, vomiting, or motion sickness.
<u>Contraindications:</u>	Hypersensitivity to the drug, during acute asthmatic attacks, in newborns, premature neonates, or breast-feeding women. Avoid use in patients taking MAO inhibitors. Also, patients with glaucoma, peptic ulcer, and COPD
<u>Adverse Effects:</u>	Palpitations, hypotension, tachycardia, confusion, decreased level of consciousness, insomnia, headache, vertigo, restlessness, tremor, seizures, blurred vision, nausea and vomiting, thickened bronchial secretions, and anaphylactic shock.
<u>How Supplied:</u>	Vial 50mg/ml for injection IV or IM
<u>Dosage:</u>	Adult 25mg. IV or 50mg IM (See protocol) Pediatric 1mg/kg IM. Children may be more prone to paradoxical responses than adults.
<u>Precautions:</u>	Use with extreme caution in patients with asthma or COPD, increased intraocular pressure, hyperthyroidism, CV disease, hypertension. Drug to drug and alcohol use causes increased CNS depression.

Dopamine

<u>Generic Name:</u>	Dopamine
<u>Trade Name:</u>	Intropin
<u>Classification:</u>	Vasopressor
<u>Action/Kinetics:</u>	<ul style="list-style-type: none">• Increases cardiac output by improving heart rate, contractility, and stroke volume• In high doses, can cause vasodilation of the heart, kidney, and GI tract
<u>Indications:</u>	To increase cardiac output and blood pressure in shock states not caused by hypovolemia. Is especially effective in cardiogenic shock.
<u>Contraindications:</u>	Hypotension due to hypovolemia and presence of tachyarrhythmia's or ventricular fibrillation
<u>Adverse Effects:</u>	Nausea/vomiting, hypertension, ventricular irritability, headache, tissue necrosis with infiltration, may cause fixed and dilated pupils in high doses
<u>How Supplied:</u>	800mg mixed in 500cc's of dextrose
<u>Dosage:</u>	Adult 2-20mcg/kg/min. Titrate to systolic blood pressure of 100mmHg or adequate perfusion. Set drip rate at ½ patients weight in kilograms. Pediatric Rarely used in prehospital situation. Use with extreme caution under direction of medical control.
<u>Precautions:</u>	Do not mix with Sodium Bicarbonate

Epinephrine

<u>Generic Name:</u>	Epinephrine Hydrochloride
<u>Trade Name:</u>	Adrenalin
<u>Classification:</u>	Cardiac stimulant, bronchodilator, antiallergic, and vasopressor
<u>Action/Kinetics:</u>	Stimulates alpha and beta-adrenergic receptors within the sympathetic nervous system. A potent cardiac stimulant, it strengthens the myocardial contraction (positive inotropic effect) and increases cardiac rate (positive chronotropic effect). Increases myocardial and cerebral blood flow during CPR.
<u>Indications:</u>	Cardiac arrest: VF, pulseless VT, asystole, pulseless electrical activity. Anaphylaxis, severe allergic reactions, and profound bradycardia or hypotension after other drugs tried maybe used as a gtt.
<u>Contraindications:</u>	Patients with angle-closure glaucoma, shock (other than anaphylactic shock), organic brain damage, cardiac dilation, coronary insufficiency, cerebral arteriosclerosis or labor and delivery. Do not use to treat overdose of adrenergic blocking agents.
<u>Adverse Effects:</u>	Nervousness, tremor, headache, agitation, dizziness, weakness, cerebral hemorrhage, palpitations, hypertension, tachycardia, anginal pain, nausea and vomiting, and dyspnea.
<u>How Supplied:</u>	Prefilled syringe 0.1mg/ml (1:10,000), total of 10cc = 1 mg.-vial 1 mg/ml (1:1,000) total of 1 cc
<u>Dosage:</u>	Adult Cardiac arrest: 1 mg (10 ml of 1:10,000 solution) administered every 3-5 minutes during resuscitation. Tracheal route: 2 mg. diluted in saline. Anaphylaxis: 0.3 mg (1,1000) SC Pediatric Cardiac arrest: (1:10,000) Give 0.1mg/kg or 0.1 cc/kg up to 10cc. Tracheal route: (1:1000) Give 0.1 mg/kg or 0.1 cc/kg up to 10cc. Anaphylaxis: (1:1000) 0.01 mg/kg (0.01 cc/kg) SC or IM up to 0.3 cc if patient was exposed to commonly recognized allergen and has respiratory distress or hypotension.
<u>Precautions:</u>	High doses do not improve survival or neurologic outcome and may contribute to post resuscitation myocardial dysfunction. Raising blood pressure and increasing heart rate may cause myocardial ischemia, angina and increased myocardial oxygen demand. Higher doses maybe required to treat poison/drug-induced shock. The effects of the drug maybe potentiated by tricyclic antidepressants.

Epinephrine – Patient Assisted Auto-Injector

<u>Generic Name:</u>	Epinephrine
<u>Trade Name:</u>	Adrenalin, Epi-pen
<u>Classification:</u>	Cardiac stimulant, bronchodilator
<u>Action/Kinetics:</u>	<ul style="list-style-type: none">• Dilates bronchioles• Constricts blood vessels
<u>Indications:</u>	Patient meets all of the following criteria: <ul style="list-style-type: none">• Patient exhibits signs of a severe allergic reaction, including either respiratory distress or shock (hypo perfusion)• Medication is prescribed for this patient by a physician• Medical control gives specific authorization for its use.
<u>Contraindications:</u>	None when used in a life-threatening situation
<u>Adverse Effects:</u>	Increased heart rate, pallor, dizziness, chest pain, headache, nausea/vomiting, excitability, anxiety
<u>How Supplied:</u>	Liquid administered by an auto-injector (an automatically injectable needle-and-syringe system).
<u>Dosage:</u>	Adult One adult auto-injector (.3mg) Pediatric One infant/child auto-injector (.15mg)
<u>Precautions:</u>	If patients condition continues to worsen (decreasing mental status, increasing breathing difficulty, decreasing blood pressure) obtain medical direction to administer additional dose of epinephrine, treat for shock (hypo perfusion) and prepare to initiate basic life support measures (CPR, AED) If patient's condition improves, provide oxygen and treat for shock. Transport immediately. Request ALS response early if not initially dispatched. Continually monitor patients airway, breathing, and circulatory status.

Etomidate

<u>Generic Name:</u>	Etomidate
<u>Trade Name:</u>	Amidate
<u>Classification:</u>	Non-barbiturate hypnotic, Anesthetic
<u>Description:</u>	A short acting sedative and anesthetic agent with no analgesic property
<u>Onset and Duration:</u>	Onset: Within 15-45 seconds Duration 3-12 minutes
<u>Indications:</u>	Etomidate has become the induction agent of choice for most emergent RSIs because of its rapid onset, its hemodynamic stability, and cerebral perfusion pressure, and its rapid recovery.
<u>Contraindications:</u>	Dose should be adjusted in hemodynamically compromised patients.
<u>Adverse Effects:</u>	Nausea and vomiting, dysrhythmias, breathing difficulties, hypotension, hypertension, involuntary muscle movement, pain at injection site
<u>Drug Interactions:</u>	Effects may be enhanced when given with other CNS depressants
<u>Dosage:</u>	Adult: 0.3mg/kg IV/IO push. Pediatric: Same as adult
<u>Precautions:</u>	Pregnancy Safety: Category C-no studies done. Carefully monitor vital signs. Can suppress adrenal gland production of steroid hormones which can cause temporary gland failure.

Furosemide

<u>Generic Name:</u>	Furosemide
<u>Trade Name:</u>	Lasix
<u>Classification:</u>	Diuretic and antihypertensive
<u>Action/Kinetics:</u>	Restricts reabsorption of sodium and water in the kidney tubule and promotes increased urine formation and excretion. Extremely potent and has a rapid onset of action of 5 minutes and may last for 2 hours.
<u>Indications:</u>	Acute pulmonary edema, in patients with systolic blood pressure >90 (without signs and symptoms of shock), edema associated with congestive heart failure, hypertensive emergencies, and post-cardiac arrest cerebral edema (increased intracranial pressure).
<u>Contraindications:</u>	Hypovolemic states, hypokalemia, hypersensitivity to the drug, and is rarely used in children, pregnancy, and breast-feeding mothers.
<u>Adverse Effects:</u>	Vertigo, headache, dizziness, paresthesia, restlessness, dehydration, orthostatic hypotension, transient deafness (with too-rapid IV infusion), blurred or yellow vision. Abdominal pain, nausea and vomiting, muscle spasm, and electrolyte imbalance.
<u>How Supplied:</u>	Vials of 40mg/4cc's
<u>Dosage:</u>	Adult 40 mg IV for pulmonary edema (per protocol) or amount designated by medical control MD. Pediatric 1mg/kg IV administered slowly.
<u>Precautions:</u>	Use cautiously in patients with hepatic cirrhosis. If patient is taking antihypertensives, or is at increased risk of hypotension.

Glucagon

<u>Generic Name:</u>	Glucagon
<u>Trade Name:</u>	GlucaGen
<u>Classification:</u>	Antihypoglycemic, antidote, and diagnostic agent
<u>Action/Kinetics:</u>	Induces liver glycogen breakdown, releasing glucose from the liver. Blood glucose is raised within 10 minutes. Has a half-life of 8 to 18 minutes.
<u>Indications:</u>	Treatment of severe hypoglycemia, Helpful in reversing adverse beta- blockade of beta-adrenergic blocking agents and calcium channel blockers.
<u>Contraindications:</u>	Known hypersensitivity to drug, and in patients with pheochromocytoma or with insulinoma (tumor of pancreas).
<u>Adverse Effects:</u>	Hyperglycemia (excessive dosage), nausea and vomiting hypersensitivity reactions (anaphylaxis, dyspnea, hypotension, rash), increased blood pressure, and pulse; this maybe greater in patients taking beta-blockers.
<u>How Supplied:</u>	One vial containing 1 mg. (1 IU) powder and one vial containing 1/ml of sterile water to be reconstituted.
<u>Dosage:</u>	Adult 1 mg IM if not IV.IO access Pediatric 0.1 mg/kg (max dose of 1 mg) IM if no IV/IO access
<u>Precautions:</u>	Give with caution to patients that have low levels of releasable glucose (e.g., adrenal insufficiency, chronic hypoglycemia, and prolonged fasting). Potentiates oral anticoagulants. Depletes glycogen stores especially in children and adolescents.

Glucose – Patient Assisted Medication

<u>Generic Name:</u>	Glucose, oral
<u>Trade Name:</u>	Glucose, Insta-glucose
<u>Classification:</u>	Carbohydrate
<u>Action/Kinetics:</u>	Increases blood sugar levels
<u>Indications:</u>	Patient meets all of the following criteria: <ul style="list-style-type: none">• Altered mental status• Known history of diabetes mellitus
<u>Contraindications:</u>	<ul style="list-style-type: none">• Unconsciousness• Known diabetic who has not taken insulin for days• Patient who is unable to swallow
<u>Adverse Effects:</u>	None when given properly. May be aspirated by the patient without gag reflex.
<u>How Supplied:</u>	Gel, in toothpaste type tube
<u>Dosage:</u>	Administer one tube between the patients cheek and gums.
<u>Precautions:</u>	None. Monitor patient for improvements in mental status.

Haloperidol

<u>Generic Name:</u>	Haloperidol
<u>Trade Name:</u>	Haldol
<u>Classification:</u>	Anti-psychotic/tranquilizer
<u>Action/Kinetics:</u>	Depresses cerebral cortex, hypothalamus, and limbic system, which control activity and aggression.
<u>Indications:</u>	Management of psychotic disorders, combative, explosive, and aggressive patients.
<u>Contraindications:</u>	Patients with severe CNS depression, Parkinson's Disease, pregnancy, and seizure patients.
<u>Adverse Effects:</u>	Over sedation, tachycardia, orthostatic hypotension, hypertension, EKG changes, nausea/vomiting, laryngospasm, bronchospasm, seizure, involuntary movements of the neck and facial muscles, hyperpyrexia (elevated body temperatures).
<u>How Supplied:</u>	One vial containing 5mg
<u>Dosage:</u>	Adult 5-10mg IM Pediatric Not to be used in pediatric pre-hospital patients.
<u>Precautions:</u>	None

Ipratropium Bromide

<u>Generic Name:</u>	Ipratropium Bromide
<u>Trade Name:</u>	Atrovent
<u>Classification:</u>	Bronchodilator
<u>Action/Kinetics:</u>	Inhibits vagally mediated reflexes by antagonizing acetylcholine at muscarinic receptors on bronchial smooth muscle.
<u>Indications:</u>	Either Alone or with other bronchodilators, especially beta adrenergics, is used for treatment of bronchospasm associated with chronic obstructive pulmonary disease, including asthma chronic bronchitis and emphysema.
<u>Contraindications:</u>	Hypersensitivity to the drug, Atropine and its derivatives, and those with a history of hypersensitivity to soy lecithin or related food products such as soybeans and peanuts.
<u>Adverse Effects:</u>	Dizziness, headache, nervousness, palpitations, hypertension, cough, blurred vision, rhinitis, epistaxis, GI distress, chest pain, flu-like symptoms.
<u>How Supplied:</u>	In a unit dose vial containing 2.5 ml (0.5 mg)
<u>Dosage:</u>	One-unit dose vial added to the nebulized albuterol. May repeat neb of albuterol 2.5 mg. with Atrovent 0.5mg. x1.
<u>Precautions:</u>	Used cautiously in patients with angle-closure glaucoma, prostatic hyperplasia, and bladder-neck obstruction. Avoid leakage around the face mask, temporary blurring of vision or eye pain may occur.

Ketamine

<u>Generic Name:</u>	Ketamine
<u>Trade Name:</u>	Ketamine
<u>Classification:</u>	General anesthetic and sedative with analgesic properties.
<u>Description:</u>	Ketamine is a dissociative anesthetic agent, structurally similar to phencyclidine (PCP). It is unique among sedative agents in that it provides analgesia along with its amnestic and sedative effects.
<u>Indications:</u>	<ul style="list-style-type: none">• As an induction agent in the performance of the Rapid Sequence Induction procedure• As a sedative in Excited Delirium• Pain Management
<u>Requirements:</u>	When Ketamine is given, Pulse Oximetry (SpO ₂) and constant patient engagement of the patient must be performed. End Tidal Capnography (EtCO ₂) and EKG monitoring should be performed when available and appropriate.
<u>Adverse Effects:</u>	<p>Laryngospasm: This very rare adverse reaction presents with stridor and respiratory distress.</p> <ul style="list-style-type: none">○ After every administration of Ketamine:○ Prepare to provide respiratory support including bag-valve-mask ventilation and suction which are generally sufficient in rare cases of laryngospasm.○ Institute cardiac monitoring, pulse oximetry and continuous waveform capnography○ Establish IV or IO access, check blood glucose.○ Establish and maintain physical restraint. <p>Emergence Reaction: Presents as anxiety, agitation, apparent hallucinations or nightmares as Ketamine is wearing off. For severe reactions, consider benzodiazepine.</p> <p>Nausea and Vomiting: Always have suction available after Ketamine administration. Give antiemetic as needed.</p> <p>Hypersalivation: Suction usually sufficient. If profound hypersalivation causing airway difficulty, consult Medical Control for Atropine 0.5mg/IV.</p>
<u>Dosage:</u>	Rapid Sequence Induction: 1-2 mg/kg (IV/IO) Excited Delirium: 4mg/kg (IM) – 1 mg/kg (IV/IO) q 10 minutes <ul style="list-style-type: none">• Max Dose IM 300 mg• Max Dose IV/IO 200 mg
<u>Onset & Duration:</u>	<ul style="list-style-type: none">• 1-5 Min IM administration• 30 Sec- 1 Min IV administration

Special
Considerations:

- Some patients experience an “emergence phenomenon” in which a patient experiences disturbing dreams as they emerge from Ketamine induced sedation.
- Emergence phenomena are less of a concern when Ketamine is used as an induction agent for RSI after which the patient is generally sedated with benzodiazepines for a substantial period.

Lidocaine Hydrochloride

<u>Generic Name:</u>	Lidocaine Hydrochloride
<u>Trade Name:</u>	Xylocaine
<u>Classification:</u>	Antiarrhythmic
<u>Action/Kinetics:</u>	Decreases ventricular excitability without depressing the force of ventricular contractions by increasing the stimulation threshold of the ventricle during diastole. Onset of action should occur within 2 minutes and last approximately 10 to 20 minutes. Metabolized in the liver and excreted in the urine.
<u>Indications:</u>	Cardiac arrest from VF/VT (class II B) Stable VT, wide-complex tachycardias of uncertain type, wide-complex PSVT (class IIB). Used to stabilize patients converted from VT/VF. Occasionally used in control of symptomatic criteria PVC's.
<u>Contraindications:</u>	Hypersensitivity to the drug. Stokes-Adams syndrome, Wolff-Parkinson- White syndrome, severe degrees of SA, AV, or intraventricular block (when no pacemaker is present.).
<u>Adverse Effects:</u>	Anaphylaxis, bradycardia, hypotension, cardiovascular collapse, seizures, malignant hyperthermia, respiratory depression, tremors, lightheadedness, confusion, tinnitus, blurred or double vision, and vomiting
<u>How Supplied:</u>	5 ml prefilled syringe (100 mg. total)
<u>Dosage:</u>	Adult V tach - Lidocaine 100 mg. (1.0-1.5 mg/kg) IV over two minutes. Use ½ dose, i.e., 50 mg. if patient is over age 70 or if CHF or hepatic failure present. Repeat 0.5 to 0.75 mg/kg every 5 to 10 minutes; maximum total dose: 3 mg/kg. Cardiac arrest from VF/VT - Lidocaine 100 mg. (1.5 mg/kg) may repeat lidocaine 100mg. IV or 200 mg. ET followed by defib. Drip – 2gm/500cc's administered 1-4mg/min. Always preceded by a bolus. Pediatric Cardiac Arrest – 1mg/kg IV/ET/IO Drip – 120mg/100cc's at 1-2.5cc's/kg/hr IV
<u>Precautions:</u>	Do not administer with sinus bradycardia, second- or third-degree AV blocks and idioventricular rhythms. Prophylactic use in AMI patients is not recommended. Discontinue infusion immediately if signs of toxicity develop. Elderly clients who have hepatic or renal disease or who weigh less than 45.5 kg. Should be watched closely for adverse side effects. Toxicity can occur due to reduced metabolism of lidocaine.

Midazolam HCl

<u>Generic Name:</u>	Midazolam HCl
<u>Trade Name:</u>	Versed
<u>Classification:</u>	Short-acting benzodiazepine CNS depressant, anxiolytic, amnestic, anticonvulsant, and anesthetic induction agent
<u>Action/Kinetics:</u>	A short-acting benzodiazepine and CNS depressant 3-4 times as potent as diazepam. Depressant effects are dependent on dose, route of administration, presence of other medications, and age of patient. It can depress the ventilatory response to CO ₂ stimulation. It diminishes patient recall. Onset of action is 1-5 min with IV dosing, 5-15 min with IM dosing, and 10 min with IN dosing. Duration of action is generally less than 2 hours.
<u>Indications:</u>	Midazolam HCl can be given IV/IM/IN for: <ul style="list-style-type: none">• Procedural sedation / anxiolysis / amnesia• Sedation of intubated and mechanically ventilated patients• Anticonvulsant effect in status epilepticus
<u>Contraindications:</u>	<ul style="list-style-type: none">• Hypersensitivity to the benzodiazepines• Acute narrow-angle glaucoma• Not recommended in pregnancy, childbirth, breastfeeding, shock, coma, and acute alcohol intoxication with depressed vital signs
<u>Adverse Effects:</u>	<p>WARNING: Serious cardiac and respiratory events have been associated with the use of IV Midazolam HCl. These include airway obstruction, apnea, hypotension, depressed saturations, respiratory and cardiac arrest.</p> <p>Risk increases with patients over age 55, concomitant use of opioid analgesics, and rapid administration. It should only be given in the setting of continuous respiratory and cardiac monitoring.</p> <p>Other effects can include paradoxical behavior, excitement, coughing, headache, hiccups, nausea, vomiting, and nystagmus (especially in children)</p>
<u>How Supplied:</u>	Vial 2ml (total 10mg) -- 5 mg/ml
<u>Dosage:</u>	<p>Adult status seizure (>5min duration):</p> <ul style="list-style-type: none">• IV -- 2.5 - 5 mg slowly(1-2 min)• IM -- 5 - 10 mg• IN -- 10 mg, divide dose between nostrils (use atomizer) <p>Child status seizure (>5min duration):</p> <ul style="list-style-type: none">• IV – 0.1 mg/kg with max 5 mg• IM -- 0.2 mg/kg with max 10 mg• IN -- 0.2 mg/kg, divide dose between nostrils (use atomizer) <p>Agitation (intubated patient, behavioral emergencies):</p> <ul style="list-style-type: none">• Administer 2.5 – 5 mg IV or 5 – 10 mg IM <p>Cardioversion:</p> <ul style="list-style-type: none">• Administer 2.5 - 5 mg IV if patient alert

Precautions:

Use cautiously in patients with uncompensated acute illness and in elderly or debilitated patients. Administer slowly over at least 2 minutes. Use with caution in neonates. Versed does not protect against the intracranial pressure or against the pulse and blood pressure rise associated with intubation. Erythromycin may alter the metabolism of Versed. Oral contraceptives prolong the half-life. Sedatives effects may be antagonized by theophylline.

Use caution in combining benzodiazepines with opioids, as this can cause significant respiratory depression or apnea, with higher risk than either class of medications alone.

Morphine Sulfate

<u>Generic Name:</u>	Morphine Sulfate
<u>Trade Name:</u>	Morphine Sulfate (names may vary if preservative free)
<u>Classification:</u>	Narcotic analgesic, pulmonary edema
<u>Actions/Kinetics:</u>	<p>An opium-derivative, narcotic analgesic, which is a CNS depressant. Induces sleep and inhibits perception of pain by binding to opiate receptors, decreasing sodium permeability, and inhibiting transmission of pain pulses.</p> <p>Causes peripheral vasodilation, thereby decreasing venous blood return to the heart.</p> <p>Relieves pulmonary congestion, and lowers myocardial oxygen need. Detoxified in the liver and excreted in the urine. Onset 2-3 minutes, peak 30 minutes, and duration is 3-6 hours.</p>
<u>Indications:</u>	<p>Analgesic of choice in pain associated with myocardial infarction that is unresponsive to nitrates. Treatment of acute pulmonary edema associated with left ventricular failure, (if blood pressure is adequate). Used for sedation, to decrease anxiety and facilitate induction of anesthesia. Used for management of pain in trauma, kidney stones, etc.</p>
<u>Contraindications:</u>	<p>Hypersensitivity to opiates, acute bronchial asthma, heart failure secondary to lung disease, upper airway obstruction, acute alcoholism, convulsive states, and paralytic ileus.</p>
<u>Adverse Effects:</u>	<p>Seizures (with large doses), hypotension, bradycardia, cardiac arrest, or may see tachycardia, and hypertension. Nausea and vomiting, rash, itching, urine retention, respiratory depression and arrest, hypothermia, and increased intracranial pressure may also be seen.</p>
<u>How Supplied:</u>	<p>Vial 10 mg/ml =1ml or 10mg/1ml pre-filled syringe</p>
<u>Dosage:</u>	<p>For persistent pain, give Morphine sulfate 2-10 mg IV titrated to obtain pain relief. (Use caution in presence of COPD).</p> <p>Pediatric dose: 0.1-0.2mg/kg IV/IM</p>
<u>Precautions:</u>	<p>Causes hypotension in volume-depleted patients. Administer slowly and titrate to effect. May cause apnea in asthmatic patients. May also cause increase ventricular response rate in presence of supraventricular tachycardia's. Use with caution in the elderly, head injuries with increased intracranial pressure, COPD, severe hepatic or renal disease.</p> <p>Use caution in combining benzodiazepines with opioids, as this can cause significant respiratory depression or apnea, with higher risk than either class of medications alone.</p>

Naloxone Hydrochloride

<u>Generic Name:</u>	Naloxone Hydrochloride
<u>Trade Name:</u>	Narcan
<u>Classification</u>	Narcotic (opioid) antagonist, Antidote
<u>Actions/Kinetics:</u>	Overcomes effects of narcotic overdose including respiratory depression, sedation, and hypotension. It does not have any narcotic effect itself. It exhibits essentially no pharmacologic activity. Diagnostic agent in unconsciousness of unknown origin. Onset of action is within 2 minutes. Duration of action is dependent on dose and route of administration
<u>Indications:</u>	Indicated for complete or partial reversal of known or suspected narcotic-induced respiratory depression and overdose. Antidote for natural and synthetic narcotics.
<u>Contraindications:</u>	Hypersensitivity to the drug.
<u>Adverse Effects:</u>	May see VF, tachycardia, hypertension, nausea, vomiting, and diaphoresis, in higher doses. Tremors and withdrawal symptoms in narcotic-dependent patients.
<u>How Supplied:</u>	2mg/2cc's pre-loaded syringe
<u>Dosage:</u>	If suspected narcotic overdose consider 2 mg Narcan IV. For physical findings consistent with narcotics overdose, may give 2 mg. Narcan IV. Pediatric dose: .01 mg/kg IV/IM
<u>Precautions:</u>	May precipitate acute withdrawal symptoms in narcotic addicts. Effects of drug may not outlast effects of narcotics. Use with caution in patients with cardiac disease or those receiving cardiotoxic drugs. It is ineffective against respiratory depression caused by barbiturates, anesthetics, other nonnarcotic agents, or pathologic conditions.
<u>Precautions:</u>	May precipitate acute withdrawal symptoms in narcotic addicts. Effects of drug may not outlast effects of narcotics. Use with caution in patients with cardiac disease or those receiving cardiotoxic drugs. It is ineffective against respiratory depression caused by barbiturates, anesthetics, other nonnarcotic agents, or pathologic conditions.

Nitroglycerin

<u>Generic Name:</u>	Nitroglycerin
<u>Trade Name:</u>	Nitrostat
<u>Classification:</u>	Antianginal, coronary vasodilator, antihypertensive
<u>Actions/Kinetics:</u>	Primary action is relaxation of the vascular smooth muscle and dilatation of peripheral arteries and veins. Although venous effects predominate, nitro produces dilation of both arterial and venous beds. Promotes peripheral pooling of blood and decreases venous return to the heart, reducing left ventricular pressure (preload). Arteriolar relaxation reduces systemic vascular resistance and arterial pressure (afterload). Also increases blood flow through the collateral coronary vessels. Onset: 1-2 minutes Duration: 3-5 minutes.
<u>Indications:</u>	<ul style="list-style-type: none">• Control of pain associated with angina pectoris/myocardial infarction.• Relief of pulmonary edema caused by left-sided heart failure.
<u>Contraindications:</u>	<ul style="list-style-type: none">• The patient has hypotension, or a systolic blood pressure below 100.• The patient has a head injury• The patient has already taken the maximum prescribed dose
<u>Adverse Effects:</u>	Headache, transient episodes of light-headedness related to blood pressure changes, hypotension, syncope, crescendo angina, rebound hypertension, and anaphylactoid reactions. Abd pain and vomiting may also be seen.
<u>How Supplied:</u>	Tablets 0.4mg S.L. (1/150).
<u>Dosage:</u>	One tablet S.L. 0.4 mg (gr. 1/150). May repeat same dosage for chest pain patient every 5 minutes x 3 if SBP remains 100 or greater if medical control gives authorization.
<u>Precautions:</u>	If patient is wearing a nitroglycerin patch or paste, an additional administration may not be appropriate. If patient is taking prescribed Viagra, consult medical control regarding nitro administration.

Nitroglycerin – Patient Assisted Medications

<u>Generic Name:</u>	Nitroglycerin
<u>Trade Name:</u>	Nitrostat
<u>Classification</u>	Antianginal, coronary vasodilator, antihypertensive
<u>Actions/Kinetics:</u>	Primary action is relaxation of the vascular smooth muscle and dilatation of peripheral arteries and veins. Although venous effects predominate, nitro produces dilation of both arterial and venous beds. Promotes peripheral pooling of blood and decreases venous return to the heart, reducing left ventricular pressure (preload). Arteriolar relaxation reduces systemic vascular resistance and arterial pressure (afterload). Also increases blood flow through the collateral coronary vessels. Onset: 1-2 minutes Duration: 3-5 minutes.
<u>Indications:</u>	Patient must meet all of the following criteria <ul style="list-style-type: none">• The patient complains of chest pain• The patient has a history of heart problems• The patients physician has prescribed nitroglycerin• The systolic blood pressure is greater than 100 systolic• Medical control gives specific authorization for its use.
<u>Contraindications:</u>	<ul style="list-style-type: none">• The patient has hypotension, or a systolic blood pressure below 100.• The patient has a head injury• The patient is an infant/child• The patient has already taken the maximum prescribed dose
<u>Adverse Effects:</u>	Headache, transient episodes of light-headedness related to blood pressure changes, hypotension, syncope, crescendo angina, rebound hypertension, and anaphylactoid reactions. Abd pain and vomiting may also be seen.
<u>How Supplied:</u>	Tablets 0.4mg S.L. (1/150).
<u>Dosage:</u>	One tablet S.L. 0.4 mg (gr. 1/150). May repeat same dosage for chest pain patient every 5 minutes x 3 if SBP remains 100 or greater if medical control gives authorization.
<u>Precautions:</u>	If patient is wearing a nitroglycerin patch or paste, an additional administration may not be appropriate. If patient is taking prescribed Viagra, consult medical control regarding nitro administration.

Ondansetron

<u>Generic Name:</u>	Ondansetron
<u>Trade Name:</u>	Zofran
<u>Classification:</u>	Anti-emetic
<u>Actions/Kinetics:</u>	Prevention and control of severe nausea. Can be used in adult and pediatric patients.
<u>Indications:</u>	<ul style="list-style-type: none">• When non-sedating anti-emetic is desirable• Prevention and treatment of severe nausea
<u>Contraindications:</u>	<ul style="list-style-type: none">• Known hypersensitivity/allergy to Zofran• Patient's <2 yrs. of age – ABSOLUTE contraindication
<u>Adverse Effects:</u>	Headache, dizziness, diarrhea, may cause pain at injection site.
<u>How Supplied:</u>	4mg/2ml (2mg/ml) single dose vial
<u>Dosage:</u>	Adult 4mg IV (over 2-5 minutes) OR 4mg IM injection. May repeat up to 8 mg with medical control approval. Pediatric 0.1 mg/kg IV/IM. Max dose 4mg. NOT TO BE USED IN PATIENT'S UNDER 2 YRS OF AGE
<u>Precautions:</u>	Use with caution in patients with impaired liver function. Rate of administration should not be less than 30 seconds. NOTE: Zofran has no effect on motion sickness.

Rocuronium Bromide

<u>Generic Name:</u>	Rocuronium Bromide
<u>Trade Name:</u>	Zemuron
<u>Classification:</u>	Neuromuscular blocker- Non-depolarizing
<u>Action/Kinetics:</u>	Rocuronium Bromide is a non-depolarizing neuromuscular blocking agent with a rapid to intermediate onset depending on dose and intermediate duration. It acts by competing for cholinergic receptors at the motor endplate. Has no analgesic properties and the patient maybe conscious, but unable to communicate by any means. Patients should be pre-medicated with a sedative (Etomidate/Ketamine) as Rocuronium has no effect on patient's level of consciousness.
<u>Indications:</u>	To induce neuromuscular blockade for the facilitation of endotracheal intubation. Actions: First muscles affected include eyes, face, and neck; followed by limbs, abdomen, and chest; diaphragm affected last. Recovery usually occurs in the reverse order and may take longer than 60 minutes.
<u>Contraindications:</u>	None
<u>Adverse Effects:</u>	Anaphylactoid reactions, respiratory depression, apnea, bronchospasm, cardiac arrhythmias, MH, muscle fasciculation.
<u>Dosage:</u>	Adult 1.0 mg/kg slowly administered (30-60 seconds)
<u>Onset and Duration</u>	30 seconds to 1 minute, lasting 26-60 minutes. Caution in patients with
<u>Precautions:</u>	known significant hepatic disease, pulmonary hypertension and valvular heart disease.

Sodium Bicarbonate

<u>Generic Name:</u>	Sodium Bicarbonate
<u>Trade Name:</u>	Sodium Bicarbonate
<u>Classification:</u>	Electrolyte replenisher, alkalizing agent
<u>Actions/Kinetics:</u>	Neutralizes excess acids, returning blood and body fluid to a more normal pH, in which metabolic processes and medications work more effectively.
<u>Indications:</u>	Metabolic acidosis caused by circulatory insufficiency resulting from shock or severe dehydration, severe renal disease, cardiac arrest w/prolonged CPR, tricyclic overdoses, and hyperkalemia.
<u>Contraindications:</u>	None
<u>Adverse Effects:</u>	Gastric distention, belching, flatulence, hypokalemia, metabolic alkalosis, hypernatremia, hyperosmolarity, hyperirritability or tetany. Extravasation of IV sodium bicarbonate may cause chemical cellulitis with tissue necrosis.
<u>How Supplied:</u>	Prefilled syringe 8.4% sodium bicarbonate solution (50-mEq/50 ml)
<u>Dosage:</u>	Adult Drug overdose: Consider Na Bicarb 50 mEq IV in tricyclic ingestions. Symptomatic renal patient: Consider Na Bicarb 50 mEq IV. Cardiac arrest-asystole-PEA: Consider Na Bicarb 50 mEq (1 amp) or 1 mEq/kg if arrest interval long or return of circulation after prolonged resuscitation. All subsequent doses ½ dose every 10 minutes. Pediatrics Cardiac arrest asystole-PEA: Consider (1 mEq/cc) if arrest interval long or upon spontaneous circulation. Give 1 mEq/kg or 1cc/kg IV/IO up to 50 cc.
<u>Precautions:</u>	Not recommended for routine use in cardiac arrest patients. Sodium bicarbonate inactivates norepinephrine, and dopamine, and forms a precipitate with calcium. Use with caution in the elderly with renal or cardiovascular insufficiency with or without CHF.

Sublimaze

<u>Generic Name:</u>	Sublimaze
<u>Trade Name:</u>	Fentanyl
<u>Classification:</u>	Narcotic Analgesic
<u>Action/Kinetics:</u>	Fentanyl is a potent synthetic narcotic with similar actions to those of Morphine and Demerol, but action is more prompt (<5min) and less prolonged (half-life 90 min). Fentanyl exhibits less hemodynamic effects than does Morphine or Demerol. Fentanyl is also less likely to cause nausea/vomiting.
<u>Indications:</u>	<ul style="list-style-type: none">• Patients with significant pain due to injury or medical condition.• Pre-treatment agent for rapid sequence intubation (RSI).
<u>Contraindications:</u>	<ul style="list-style-type: none">• Known allergy to Fentanyl or hypersensitivity to opiates.• Major trauma to head, chest, abdomen or pelvis.• Airway compromise, respiratory depression/insufficiency.• Evidence of shock (hypotension).• Myasthenia Gravis
<u>Adverse Effects:</u>	Sedation/decreased level of consciousness, respiratory depression/arrest, bradycardia, hypotension or hypertension, mild nausea and/or vomiting, increased intracranial pressure.
<u>How Supplied:</u>	100mcg/2cc's pre-filled syringe/unit dose vial
<u>Dosage:</u>	Adult 1-2 mcg/kg slowly IV/IM. Expected dose: 25-50 mcg's. Max Dose: 100 mcg's Pediatric 0.5-1 mcg/kg slowly IV/IM. Max Dose: 50 mcg's.
<u>Precautions:</u>	Rule out significant trauma prior to administration. Continuously monitor vitals, oximetry, and mental status before and after administration. Fentanyl should be administered SLOWLY (over 2 minutes). High doses may cause chest wall and jaw muscular rigidity with resultant difficult ventilation. Respiratory depression may outlast pain control effects. Use caution in combining benzodiazepines with opioids, as this can cause significant respiratory depression or apnea, with higher risk than either class of medications alone.

Succinylcholine

<u>Generic Name:</u>	Succinylcholine
<u>Trade Name:</u>	Anectine
<u>Classification:</u>	Neuromuscular blocker- Depolarizing
<u>Description:</u>	Competes with the acetylcholine receptor of the motor end plate on the muscle cell resulting in muscle paralysis.
<u>Onset and Duration:</u>	30 seconds to 1 minute, lasting 3 to 5 minutes.
<u>Indications:</u>	To induce neuromuscular blockade for the facilitation of endotracheal intubation.
<u>Contraindications:</u>	A history of malignant hyperthermia (MH), burns greater than 24 hours. Use with caution in children, cardiac disease, hepatic disease, renal disease, peptic ulcer disease, rhabdomyolysis, hyperkalemia.
<u>Adverse Effects:</u>	Anaphylactoid reactions, respiratory depression, apnea, bronchospasm, cardiac arrhythmias, MH, muscle fasciculation.
<u>Drug Interactions:</u>	None noted.
<u>Dosage:</u>	Adult: 1.5mg/kg Pediatric: 2.0mg/kg
<u>Special Considerations:</u>	IV administration in infants and children can potentially result in profound bradycardia and, in some cases, asystole. The incidence of bradycardia is greater after the second dose. The occurrence of bradycardia can be reduced with the pretreatment of Atropine. Phase 2 blocks--Following infusion or repeated doses of succinylcholine, phase 2 block may occur. The receptor blockade takes on characteristics of a non-depolarizing neuromuscular block.

Vecuronium

<u>Generic Name:</u>	Vecuronium
<u>Trade Name:</u>	Norcuron
<u>Classification:</u>	Nondepolarizing neuromuscular blocker
<u>Description:</u>	Operates by competing for the cholinceptors at the motor end plate thereby producing skeletal muscle paralysis
<u>Onset and Duration:</u>	One minute, lasting 30-40 minutes
<u>Indications:</u>	To induce neuromuscular blockade for the facilitation of endotracheal intubation.
<u>Contraindications:</u>	Use with caution in heart disease, liver disease, and myasthenia gravis.
<u>Adverse Effects:</u>	Muscle paralysis, apnea, dyspnea, respiratory depression, sinus tachycardia, urticaria.
<u>Drug Interactions:</u>	
<u>Dosage:</u>	Adult: 0.1mg/kg IV/IO Pediatric: 0.01mg/kg IV/IO. Pediatric patients (10 to 16 years of age) have approximately the same dosage requirements (mg/kg) as adults and may be managed the same way. Younger pediatric patients (1 to 10 years of age) may require a slightly higher initial dose and may also require supplementation slightly more often than adults. Infants under 1 year of age but older than 7 weeks are moderately more sensitive to Vecuronium bromide on a mg/kg basis than adults and take about 1 1/2 times as long to recover.
<u>Special Considerations:</u>	Pregnancy class C. No studies done.

Appendix H – Nasogastric Tube Placement

Candidates:

Placement of nasogastric tubes is indicated to relieve gastric distention, to relieve vomiting during transport, to relieve abdominal pain caused by solid organ disease, and to empty stomach contents in GI bleeds.

Equipment:

- Nasogastric tubes of appropriate size
- Emesis basin
- 30cc syringe
- Lidocaine or lubricating jelly

Procedure:

- 1) Have patient sitting or semi-upright if possible. Keep head in midline. Lay infants on right side
- 2) Measure tube length before insertion; nose to ear to xiphoid process (usually corresponds to second black line on standard adult tube).
- 3) Lubricate tube.
- 4) Gently insert through one nostril (left is most useful if not occluded by septal deformity). Apply tube horizontally or slightly downward.
- 5) Have patient swallow as he feels the tube in the back of the throat. Slight flexion with the patient sitting forward produces best positioning.
- 6) Continue passage to correct length.
- 7) After insertion, listen over epigastrium as air is injected through the tube via irrigation syringe. If bubbling is heard, apply suction.
- 8) If patient chokes, cannot talk, or becomes cyanotic, tube is in the trachea. Remove, allow patient to ventilate and start again.
- 9) Secure tube with tape to nose or cheek.

Complications:

- Insertion into cranial vault in patient with cribiform plate fracture. Do not place in patients with suspected facial fractures.
- Tracheal intubation
- Vomiting and aspiration of gastric contents

Contraindications:

- Facial fractures or nasal bleeding
- If endotracheal tube is in place, cuff may need to be released before tube will pass into esophagus
- Tube is not indicated if transport time is short

Appendix I – Needle Thoracostomy

Candidates:

Needle thoracostomy may be indicated for patients in PEA or in respiratory distress, either spontaneous or as a result of trauma, where there is strong evidence of tension pneumothorax. Evidence of a tension pneumothorax may include the following signs and symptoms:

- Progressive respiratory distress
- Indications of developing shock, including: weak, rapid pulse; hypotension, due to ↓ cardiac output; and cyanosis
- Uneven chest wall movement
- Decreased or absent breath sounds on affected side
- Hyperexpanded chest on affected side
- Neck vein distension (may not be present)
- Tracheal shift away from affected side (late sign)
- Presence of subcutaneous emphysema or air in tissues

Equipment:

- Supplemental oxygen for patient
- Betadine prep
- 14 gauge over the needle catheter (3 ¼" long)
- 35 or 50 cc syringe (optional)
- Band-Aid or small dressing

Procedure:

- 1) There are two sites that can be used:
 - a) The 2nd intercostal space in the anterior mid-clavicular line.
 - b) The 4th or 5th intercostal space in the mid-axillary line or anterior axillary line.
- 2) Clean area at midclavicular line with alcohol and/or Betadine.
- 3) Select appropriate needle. Adults: 14g. 3 1/4" needle through catheter. Peds: 14-16 g. 1 3/4" needle through catheter.
- 4) Position needle at midclavicular line in the middle of the 3rd rib and puncture the skin.
- 5) Insert the needle into the pleuritic cavity by hitting the rib with the needle and sliding over the top. This avoids the blood vessels and nerves, which are located on the bottom of the ribs.
- 6) Advance the catheter over the needle and then remove needle.
- 7) Dress area and secure catheter to chest.
- 8) Do not clamp tubing. Reassess patient and observe for change or relief of signs and symptoms.
 - a) trachea returns to midline
 - b) decrease in respiratory distress

- c) decrease in distended neck veins
- d) improvement in patient's color.

Complications:

- Laceration of intercostal blood vessels
- Creation of pneumothorax if none existed previously
- Laceration of trachea
- Laceration of esophagus
- Laceration of superior vena cava
- Infection

Appendix J – Pelvic Sheet or Other Commercial Pelvic Splint (T-POD, or Pelvic Binder)

A simple sheet, folded on the diagonal, can be used to stabilize the pelvis. When wrapped around the pelvis and tied in front, this device can align the pelvic bones and stabilize the pelvis. T-POD is the Trauma Pelvic Orthotic Device, the pelvic binder and a sheet used as a pelvic splint all surround the pelvis and bring the iliac crests into a normal alignment without encumbering the legs, the perineal area or the upper abdomen. Indications Suspected pelvic fracture. Precautions Placement of any of these devices under the patient must be done carefully to minimize unnecessary movement of the patient. Unnecessary movement may exacerbate internal bleeding.

Techniques Sheet:

- Fold the sheet on the diagonal and opposite ends to center to create a 20-24in. width.
- Place the folded sheet under the patient, on a backboard or pram prior to moving patient.
- Place sheet so that the top edge of the sheet is even with the top of the iliac crest.
- Tie the sheet in a square knot, pulling both ends simultaneously to minimize movement of the patient.

T-POD or Pelvic Binder:

- Unwrap the device and disconnect the front connector.
- Place the device under the patient, on a backboard or pram prior to moving patient.
- Place the device so that the top edge is even with the top of the iliac crest.
- Wrap the edges around the pelvis and secure the edges with the Velcro of the front connector
- The T-POD requires tightening by use of the strings in the front. Assess vital signs frequently.

Complications and Special Notes When assessing the pelvis, DO NOT rock the pelvis; apply gentle inward pressure on the iliac crests and downward pressure on the iliac crest of each side, placing one hand under the buttock and the other on the iliac crest. Assessment of distal circulation, sensation and movement both before and after application of the splint. If possible, use two people to apply and tighten the devices. This will help minimize any unnecessary movement of the patient.

Appendix K – Peripheral IV Access

Candidates:

Adult and pediatric patients determined to need fluid administration for volume expansion or as a route for medication administration. A Saline Lock may be placed for patients requiring IV access for medications only.

Equipment:

- Assorted over the needle catheters
- IV fluid, Normal saline (NS) or Lactated ringers (LR)
- IV tubing (Select Set, microdrip, or blood set)
- IV extension tubing
- Alcohol Wipes
- Biocclusive dressing and tape
- Saline Lock
- Saline Flush

Procedure:

- 1) Apply tourniquet proximal to proposed site. Alternatively, use blood pressure cuff blown up to 40 mm Hg.
- 2) Clean insertion site with alcohol prep.
- 3) Hold vein in place by applying gentle traction on vein distal to point of entry.
- 4) Puncture the skin with the bevel of the needle upward, about 0.5 to 1 cm from the vein and enter the vein from the side or from above.
- 5) Note blood return and advance the catheter either over or through the needle (depending on tip).
- 6) Release tourniquet.
- 7) Remove needle and connect tubing. Immediately dispose of needle in sharps container.
- 8) Open IV tubing clamp full to check flow and placement, then slow rate to TKO or as directed.
- 9) Secure tubing with tape, making sure of at least one 180 degree turn in the taped tubing to be sure any traction on the tubing is not transmitted to the cannula itself.
- 10) Anchor with arm board or splint as needed to minimize chance of losing line with movement.

Procedure of Saline Lock

1. Follow steps 1-5 of IV procedures
2. After removal of needle, blood can be taken for laboratory procedures
3. Place Saline Lock on catheter
4. Use 10cc Saline Flush to flush Saline Lock
5. Follow steps 6-10

Complications:

- Infiltration with formation of hematoma and pain at insertion site
- Infection (phlebitis)
- Thrombosis
- Catheter shear and pulmonary embolus
- Cannulation of artery

Considerations:

- Antecubital veins are useful access sites for patients in shock, but if possible, avoid areas near joints (or splint well)
- Start distally and, if successive attempts are necessary, you will be able to make additional proximal attempts on the same vein without extravasating IV fluid.

Appendix L – Removal of Taser Barbs

Indication:

To remove the remaining barb after use of a Taser by Law Enforcement agencies

Procedure:

1. Perform patient assessment. Always wear PPE.
2. Monitor vitals and LOC. Insure that vitals are in the normal limits for the situation.
3. Contact Medical Control if unsure whether to transport.
4. Expose the area where Taser barb has implanted under the skin.
5. Cut wires from the barb if they are still attached.
6. Make an “L” with your non-dominant had and stabilize the extremity (or area) in the general proximity of the probe. Keep your hand several inches away from the probe itself, and do not attempt to stretch the skin immediately around the probe.
7. Holding tension, use a needle-nose pliers (or similar tool) with gripping strength and grasp the end of the barb protruding out of the skin near the wire lead and firmly pull out the barb with one quick jerking motion.
8. Assess the skin where the barb was removed. Control any bleeding and dress the wound.

Precautions:

Patients should be in police custody and monitored by police for the safety of medical personnel. Do not remove Taser barbs from the face, neck or groin area, or imbedded in bone. These patients must be seen at the Emergency Department.

Taser emit two barbs. Make sure both are removed. Treat all barbs as a bio-hazard and dispose as you would any other sharps. Some law enforcement agencies may direct you to place the probe back into the cartridge as evidence.

Caution:

Where both implanted barbs and wires are still connected to the Taser Gun, shock can still be delivered.

Do not forget the potential trauma that may have occurred before or after the patient was hit by the Taser (i.e. falls, bean bagged, mace etc.).

Remember that the process of removing a Taser probe is not a time-critical emergency. Calm and decisive actions by the EMS provider will deliver the best patient care and help prevent biohazard exposure.

Appendix M - Surgical Airways

Percutaneous Trans Tracheal Ventilation (PTV) Protocol:

Candidates:

Adult and pediatric patients who require ventilation but whose airways cannot be maintained using any nonsurgical approach. Examples are patients with:

- Upper airway obstruction
- Severe facial trauma
- Heavy oropharyngeal bleeding

Equipment:

- 12 or 14-gauge over-the-needle catheter
- 5 or 10 cc syringe
- Alcohol/betadine preps
- Adhesive tape and/or cloth securing tape
- Bag valve mask

Procedure:

- 1) Prepare equipment, including a 10-14-gauge catheter-over-needle, suction equipment, oxygen and put on protective eye wear, mask and sterile gloves;
- 2) Position patient with neck in neutral, midline position.
- 3) Hyperventilate patient if any ability to ventilate.
- 4) Quickly prep anterior neck with antiseptic.
- 5) Locate the cricothyroid membrane; the notch just below the “Adam’s apple” (thyroid cartilage) and just above the next cartilage (cricoid cartilage).
- 6) Stabilize trachea and insert needle at 45-degree angle towards feet through cricothyroid membrane while aspirating with syringe. Stop advancing the needle as soon as air is aspirated.
- 7) Advance catheter over needle, angling downward and placing well into trachea. Withdraw the needle, then re-aspirate to confirm placement.
- 8) Attach the bag valve mask to the catheter using a 3.0 ET tube adapter and ventilate.
- 9) Observe chest rise and auscultate breath sounds bilaterally.
- 10) Stabilize catheter.

Complications:

- High pressure during ventilation and air entrapment may cause pneumothorax
- Esophagus and/or thyroid perforation if the needle is advanced to far
- Hemorrhage at the insertion site
- It does not allow direct suctioning of secretions
- Subcutaneous emphysema may occur

Cricothyrotomy Protocol:

Candidates:

Any adult patient who requires ventilation but whose airway cannot be maintained using any nonsurgical approach. Examples are patients with:

- Upper Airway Obstruction
- Severe Maxillofacial Trauma
- Heavy Oropharyngeal Bleeding

Contraindications:

- Children Under 10 Years of Age
- Tracheal Transection
- Inability to Identify Anatomical Landmarks

Procedure:

- 1) Prepare equipment: scalpel (#20 or #15), tracheal hook, 4.0 mm ET or tracheostomy tube, syringe, hemostat, suction equipment, oxygen and bag-valve device.
- 2) Put on protective eye wear, mask and sterile gloves;
- 3) Position patient with neck in neutral, midline position.
- 4) Hyperventilate patient if any ability to ventilate.
- 5) Quickly prep anterior neck with antiseptic.
- 6) Position yourself at head of patient
- 7) Locate the cricothyroid membrane; the notch just below the “Adam’s apple” (thyroid cartilage) and above the next cartilage (cricoid cartilage).
- 8) If anatomy is fully defined through skin, stabilize trachea with non-operating hand and with other hand make a single horizontal incision of approximately 1.5cm in length through both the skin and cricothyroid membrane. If the anatomy is not readily and unambiguously identified through the skin, an initial vertical incision should be created to allow more precise palpation of the anatomy and identification of cricothyroid membrane.
- 9) Maintain scalpel in airway while a tracheal hook is placed parallel to the scalpel on the caudad side of the blade. The hook is rotated to orient it in a caudad direction to put gentle traction on the cricoid ring.
- 10) The scalpel is then removed from the airway leaving the tracheal hook in place.
- 11) The tracheal hook is now used to lift the airway toward the skin incision providing modest stoma dilation. Use a motion similar to the up and away direction used with laryngoscopy.
- 12) With adequate control of the airway using the hook placed on the cricoid ring, an ETT or tracheostomy tube is readily placed into the airway directing the tip down the trachea until the cuff is completely in the trachea. Confirm placement with confirmation device.
- 13) Ventilate patient with bag-valve device and supplemental oxygen or with oxygen-powered demand valve.
- 14) Observe chest rise and auscultate breath sounds bilaterally.

15) Control any bleeding with direct pressure and dress incision site.

Complications:

- Prolonged execution time
- Hemorrhage
- Aspiration
- Possible misplacement
- False passage
- Perforation of the esophagus
- Injury to the vocal cords and carotid and jugular vessels lateral to the incision
- Subcutaneous emphysema

Appendix N – Therapeutic Hypothermia

Therapeutic Hypothermia	
<p>Purpose/Objective: To improve mortality & neurologic outcome of survivors of cardiac arrest through the use of induced hypothermia conditions. The immediate pre-hospital goal is to initiate mild therapeutic hypothermia, seeking a reduction in body temperature of at least 1.5°C, in all eligible comatose post arrest patients.</p> <p>Overview: Induced Therapeutic Hypothermia consists of three phases: induction, maintenance, & re-warming. While most aspects of all three phases will occur at the receiving hospital, when practical to do so, EMS personnel will initiate the induction phase while on scene or during transport to an appropriate receiving center.</p>	
Inclusion Criteria Patient must meet all of the following criteria	Contraindications Therapeutic hypothermia shall not be initiated if ANY of the following are present
<ol style="list-style-type: none"> 1. Cardiac arrest w/return of spontaneous circulation (ROSC) 2. 18 yrs. of age or older 3. CPR started within 15 minutes of arrest 4. Initial body temperature of >34°C/93.2°F 5. GCS of 8 or less 6. Pt. intubated with confirmed patent airway 	<ol style="list-style-type: none"> 1. DNR order or terminal condition 2. Coma unrelated to cardiac arrest (ie.. OD/intoxication, trauma, CVA, epilepsy) 3. Uncontrolled bleeding 4. Pregnancy (ie... known pregnancy or female with gravid uterus) 5. Mean Arterial Pressure (MAP) <80, (Use fluid &/or EPI drip to maintain MAP > 80) 6. Unable to establish endotracheal intubation 7. EtCO₂ < 20mmHg
Procedure	
1. Confirm patient eligibility and lack of contraindications as described above.	
2. Confirm ET tube placement via A) Visualization, B) Chest rise & fall, C) Appropriate breath sounds, & D) Confirmation device.	
3. Maintain EtCO ₂ at > 20mmHg. Do <u>not</u> hyperventilate the patient. Target EtCO ₂ is 40mmHg	
4. Establish bilateral large bore IV / IO access	
5. Obtain 12 lead EKG	
6. Maintain MAP at >80. Target MAP is 90-100. If necessary use Epi Drip at a rate of 2-10 mcg/kg/min to maintain target MAP.	
7. To maintain appropriate sedation, administer Versed 0.1 mg/kg IV/IO push; total amount not to exceed 10mg	
8. Rapidly infuse cold (4°C/40°F) NS at 30ml/kg; bolus not to exceed 2L / 2000cc's	
9. Remove outer clothing. To protect patient modesty, undergarments should be left in place	
10. Place several ice packs in the patient's groin & axilla (armpits)	
11. Closely monitor patient & discontinue cooling if patient awakens or develops unstable arrhythmia, sustained MAP < 80mmHg, or severe bleeding	

Therapeutic Hypothermia
Transport Decision
1. Do not delay transport to initiate therapeutic hypothermia
2. All cardiac arrest patient who are receiving therapeutic hypothermia treatment, shall be transported, based on patient condition, either by ground ambulance or helicopter, to appropriate receiving facility capable of continuing therapeutic hypothermia / post arrest care.
3. Notify receiving facility of initiation of therapeutic hypothermia care & other necessary/appropriate patient care information. Recommend activation of STEMI alert protocols.
Documentation Requirements In addition to regular documentation requirements, the following therapeutic specific information will be included in the patient care report / narrative
1. Vital signs including initial temperature as well as patient temperature upon arrival at the receiving center.
2. Signs of shivering
3. IV fluid administration
4. Medications administered (Name, time, dose & route)
5. EtCO ₂ value at time of initiation & at arrival at receiving center
6. Any change in responsiveness, improvement in level of consciousness
7. 12 lead EKG impression / results
8. EKG changes / dysrhythmias

Appendix O -Transcutaneous/External Cardiac Pacing

Candidates:

Adult and pediatric patients with bradycardia who are clinically unstable, unconscious or unresponsive to Atropine. Adult and pediatric patients in asystole. Must be done immediately in resuscitation sequence if considered.

Equipment:

- Cardiac Monitor/Defibrillator Capable of External Pacing
- Defibrillation/Pacing Pads

Procedure:

- 1) Place chest leads, if not already done, in Lead II position, attach to pacing machine and obtain hard copy recording of patient's baseline rhythm. Adjust gain to obtain tall QRS complexes.
- 2) Apply pacing electrodes to chest, to left of sternum and on left posterior chest wall.
- 3) Connect to pacing machine. In females, place the precordial electrode under the breast but not over the diaphragm. If authorized to pace pediatric patients, use pediatric pacing electrodes for patients < 15 kg.
- 4) Set pacing rate to 80 or 10-20 higher than the patient's intrinsic heart rate. If patient has no QRS complexes, set rate at 80.
- 5) Set milliamp setting at zero. Turn pacer power on and observe the pacing artifact on the ECG to assure it is well positioned during diastole. Slowly increase the milliamp setting while observing the ECG and feeling for a pulse to determine if capture is achieved (usually at a setting of between 40 to 80 mA). A pulse oximeter, if available, may be helpful to monitor the patient's pulse. Once capture is obtained, set milliamp setting 10% higher. If capture cannot be obtained, try moving the precordial pacing electrode around to a more effective location.
- 6) Contact a medical control physician if orders are needed for sedation for the conscious patient. Muscle fasciculations will typically be seen at about 50 mA and the patient will experience pain at levels above about 40-50 mA.
- 7) Obtain an ECG tracing of the patient's paced rhythm. Closely monitor the patient's ECG, pulse and, if applicable, pulse oximeter during packaging and transport to assure pacing capture if maintained.

