SANDOVAL COUNTY FIRE DEPARTMENT

COUNTY FIRE DISTRICT EMS PROTOCOLS 2006

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SECTION 1-SYSTEM GUIDELINES

STATEMENT OF PURPOSE

These Protocols are designed to guide the practice of the volunteer emergency medical service personnel within the primary jurisdiction of Sandoval County. An effort has been made to coordinate the EMS protocols used by the SCFD paid staff. When differences between protocols arise in mutual aid situations, EMS personnel should function according to the protocols of the EMT in charge of patient care. Although the Sandoval County EMS Protocols define who is in charge of each patient encounter, it may sometimes be helpful to contact on-line medical control in order to resolve conflicts between providers or agencies. Every attempt must be made to provide the best patient care possible in spite of disagreements.

DISCLAIMER

Every attempt has been made to reflect sound medical guidelines and protocols based on currently accepted standards of care for out of hospital emergency medicine. The working group urges the reader to speak to their respective service point of contact for any specific questions that may arise. The working group assumes no responsibility directly or indirectly for this document. It is the reader's responsibility to stay informed of any new changes or recommendations made at the state or service level.

Activities of EMS personnel must be in compliance with all applicable federal, state, county and local laws and regulations including: PRC Regulation 18 NMAC 4.2 "Ambulance and Medical Rescue Services" and the Federal Controlled Substances Act.

This document was developed specifically for the Sandoval County area, and modified specifically for the Sandoval County area. As such, these protocols may need to be modified if used in other EMS systems. Other EMS systems may obtain a disk copy of this protocol by written request from their Medical Director. Contact Sandoval County Fire Department - EMS Division for further information.

CONTINUOUS QUALITY IMPROVEMENT (CQI)

Designation of Condition: To maximize the quality of care in EMS, it is necessary to continually review all EMS activity and identify areas of excellence and potential sources of risk. This method allows for optimal and continuous improvement.

- Departmental Guidelines
  - All EMS runs will be reviewed by senior department EMS personnel on a monthly basis and an appropriate Run Review form completed.
  - Any minor protocol discrepancies will be discussed within the department and will be brought to the attention of the medical director at the time the run forms are delivered for review.
  - Specific QA forms deemed necessary for review by the EMS Board will be forwarded to the County QA director by the 5th of the month or by the EMS Board meeting preceding your departmental case reviews.
  - Any significant discrepancies will be brought to the attention of the medical director as soon as they are discovered.
  - Monthly department EMS training will be held on various EMS related topics.
- Medical Director Guidelines:
  - EMS runs will be reviewed in a timely manner and a record will be maintained of these runs. Records will be maintained in the respective departments.
  - Department Case Reviews will be held a minimum of 3 – 4 yearly. During these sessions, interesting or problematic runs will be discussed and any potential teaching points will be made. These reviews may be combined with other in-service training.
  - NO EMS Run Reports or logbooks will be falsified. Any changes can only be done when documented appropriately.

CONTROL OF PATIENT CARE (ALSO SEE THE INTERAGENCY INTERACTION GUIDELINES)

Designation of Condition: To facilitate the transition of patient care between the various EMS responders and on-scene personnel.

- The individual with the highest level of training is in control of patient care while awaiting a transport unit.
- In the event that caregivers have the same level of training, the person arriving first on the scene shall be in control of patient care until the SCFD Medic Unit with the transporting EMT-Intermediate/EMT-Paramedic arrives on scene. At this point, the SCFD transport EMT-I/P shall assume control of patient care and should receive a patient report from the most appropriate on scene caregiver.
- If another transport capable agency will be transporting a patient, they shall receive a patient report from the most appropriate on scene caregiver, and assume responsibility for the patient at the time the patient is placed onto their gurney.
- Providers from outside a given district will be subordinate to providers from the district in which a call originates UNLESS:
    - The patient has been turned over to an outside transport service.
    - A provider of higher training level shows up from a service or district with whom there is a mutual aid agreement.
    - A provider of a higher training level who is known to be licensed in New Mexico shows up on a scene and has permission to treat from the local medical director.
- The rank structure for medical care (ICS should still take place when necessary):
    - Local Medical Director
    - EMT-P
    - EMT-I
    - EMT-B
    - Family Nurse Practitioner, Nurse, Physician Assistant (these providers may function at a rank equal to EMT-B, EMT-I, or EMT-P as designated by their local medical director)*
    - First Responder

*A person who is a recognized active EMS service member but not an EMT may assist in patient care up to and within that provider's scope of practice BUT only up to the level of the highest pre-hospital provider on scene**, subject to the direction, control and approval of the on-scene EMS provider.** The presence of other health care providers does not release an EMS service from the staffing requirements as outlined by the Public Regulatory Commission.

Nurses and mid-level providers are valued members of the EMS team, and must commit to continuing education and refresher courses identical to licensed EMS providers. Nurses and mid-level providers are encouraged to attend a formal EMS course to assist with familiarization of the EMS system. Current EMS, nursing, and mid-level provider regulations do not adequately address the issue of nurses and mid-level providers functioning in the field.

DOCUMENTATION OF PATIENT CARE

Designation of Condition: To clarify the need to do proper documentation on all patient encounters.

- An EMS run report will be generated for every patient encounter. The DCHARTE format will be used as a guideline for the narrative section of the report.
- The senior EMS personnel will generally be responsible for ensuring that a Department and Medical Director approved run report is generated. However, it is understood that if the patient is transported by volunteer staff, the crewmember that provides the care enroute during transport should generate the report.
- The names of all crewmembers or caregivers who participated in patient care should be included on the report.
- Any changes or additions to a report after a copy has been given to the transport agency or after it has been signed will be documented as an addendum.
- This will include the term: “Addendum,” followed by Time and Date. Then the specific items can be added, followed by the writer’s initials.
- All non-patients and patients that are NOT transported will be documented on an EMS Liability Release Form as well as a EMS report form.
- All reports are confidential and all information will be treated as such and only released as applicable by local, state and federal law. All reports that contain patient information will be kept in a secure area to ensure confidentiality.

DO NOT RESUSCITATE / ADVANCED DIRECTIVES

Designation of Condition: This guideline is designed to assist the medical personnel at the scene when a patient or patient's family states that a patient has a Living Will or is a hospice patient, but does not have the EMS – DNR.

- Initiate basic life support (CPR).
- Ask to review the documented Living Will or Physician Do Not Resuscitate (DNR) Order. (See appendix)
- If documents are present, proceed with basic life support measures only.
- Contact MCEP
- If written documentation is not available; treat to your appropriate level of care.
- Resuscitation should be done in cases of attempted suicide.
- Generally, a Living Will or other advance directive does not exclude palliative care / comfort measures.

EMS DNR

Designation of Condition: EMS providers may encounter EMS-DNR orders in the field setting. An EMS-DNR order is a legally recognized advance directive applicable to pre-hospital care providers. Presence of an EMS-DNR order requires that EMS responders not perform certain resuscitation measures. Other advance directives such as hospital or nursing home DNR orders or personal living wills may be encountered in the pre-hospital setting, but should not be routinely followed without on-line Medical Control consultation.

The following guidelines will help when an EMS-DNR situation is encountered:

- If the care provider believes an EMS-DNR order may be present, attempt to locate the order while continuing with appropriate care.
- Identify the patient. This may be done with standard picture identification or by confirmation of identification by family members or others associated with the patient.
- If an EMS-DNR order is located, or the patient wears an EMS-DNR bracelet, and the identity has been verified, then the care provider must proceed as follows:
- If the patient is in respiratory and/or cardiac arrest, do not perform:
    - External chest compressions
    - Artificial ventilation
    - Intubation or other advanced airway adjuncts
    - Defibrillation or pacing
    - Cardiac medications
- If the patient is not in arrest, EMS care providers may administer the following, as long as the patient or authorized decision-maker does not refuse.
    - Oxygen
    - Suctioning
    - Basic Airway Management, excluding Combitube
    - Control of bleeding
    - Paramedics and Intermediates may administer analgesics, as appropriate.
    - Other comfort care to assist the patient

Note: The patient may revoke the EMS-DNR at any time verbally or by defacing the written order or bracelet. Should this occur, every action consistent with the standard of care should immediately be taken.

EMS-DNR orders should not be followed in cases of suspected homicide or attempted suicide.

If a written DNR is not available and it seems appropriate not to resuscitate the patient; the crew may contact MCEP for guidance.

DEAD AT SCENE

Designation of Condition: Upon arrival at a scene in which the patient is obviously dead and resuscitation efforts would be to no avail. Resuscitation efforts of any kind may be withheld on the decedent. The following criteria should be used:

- Presence of Rigor Mortis
- Livormortis
- Obvious external exsanguination
- Decapitation
- Decomposition
- Visible brain contents
    - Blunt traumatic arrests (after consideration of potentially reversible causes)
    - Penetrating traumatic arrests with a transport time of more than ten minutes
    - Sustained time down prior to arrival without CPR in progress with presenting rhythm of Asystole in warm adults (Consider MCEP Contact)

Note: Hypothermic arrests, near-drowning events, and most medical pediatric arrests deserve full resuscitative attempts. **CONTACT MEDICAL CONTROL** for direction.

DIVERSION OF EMS UNITS

Designation of Condition: To promote optimal patient care through the coordinated efforts of the EMS and hospital systems. To allow for proper patient destination based on patient request and facility status during times when the facility staff feels it is temporarily incapable of providing optimal care to further patients.

- All hospital systems must work to keep their facilities on an open status. They must maintain their system screens to allow field personnel to appropriately route patients to hospitals that are staffed, equipped and prepared to administer emergency care appropriate to the needs of the patient.
- Current protocol for patient destination should be maintained including patient request and closest hospital.
- When possible, all EMSystem status requests should be followed. Early contact with Albuquerque Base will help to facilitate patients to the closest appropriate open hospital.
- Cardiac arrest or unstable airway patients will still go to the closest facility, unless they are on "*total divert"* status. MCI protocols may alter the patient destination decisions.
- If a circumstance arises when a field paramedic feels it is mandatory to go to a closed hospital because of risk to the patient or provider, they should advise the receiving hospital that they are overriding closed status and give a med report and ETA. These cases will prompt mandatory QI reporting to the appropriate medical director.
- If a unit is on the property of a hospital (cross the driveway), you should not leave the facility. Advise the facility you are already on the hospital grounds.

EMERGENCY DEPARTMENT PATIENT TURNOVER

Designation of Condition: Expedite appropriate and timely of turnover of pre-hospital patients to the Emergency Department staff.

- Expeditious and complete patient turnover will be the goals of all personnel involved.
- It is assumed that the responsibility for patient care reverts to the E.D. staff when the patient enters the E.D. rather than after a formal turnover report. EMS personnel will strive to do what is right for the patient and keep continuity of care until report is given.
- It is expected that ED staff will receive pre-hospital personnel in a timely manner on arrival to ED and direct them to the appropriate bed or ED area.
- Pre-hospital personnel will assist in moving patient to the hospital gurney and give a complete pre-hospital report.
- Except when dictated by call volume, EMS run reports will be left at the hospital when the patient is turned over to the hospital staff. This should be a very rare occurrence.
- It is expected that complete turnover will be completed within 15 minutes of ED arrival or when the relevant EMS run report is complete, whichever is longer.
- If the above criteria is not met and the patient remains on the pre-hospital gurney greater than 15 minutes, pre-hospital personnel will seek a safe place to unload the patient and give the written run report to the first available ED staff RN and then return to service.
- There is no obligation for EMS personnel or equipment to be utilized once in the E.D. area.

EMTALA RISK

Designation of Condition: To minimize EMTALA risk to hospitals by EMS transport units

- It is expected that all hospitals will adhere to current status for ED and inpatient statuses that is reflected in the EMSystem window at Albuquerque Base. EMS units should inquire as to the hospitals status when they request med channel clearance from Albuquerque Base Dispatch.
- When circumstances arise and an EMS transport unit is on a hospital's property, the EMS unit will not divert to another hospital.
- If you get a divert order from the facility and you are on their property, you will advise the facility that you are on their property and will not be diverting.
- Upon arrival advise the staff of the EMTALA risk and tell them that an internal quality assurance will be generated and will be reviewed by the medical director.
- Radio reports will be done as early as possible during transport to minimize EMTALA risk.

HELICOPTER USAGE

Designation of Condition: To better facilitate appropriate usage of helicopter resources

- Critical or serious trauma or medical patients when ground transport will take longer than 30 - 45 minutes (excluding cardiac arrest patients from any cause…helicopter transport is not appropriate for these patients).
- Multiple trauma victims and inability of ground personnel to mange and transport adequately.
- Trauma patients in situations where ground transport is compromised (ex: mechanical failure, remote location or poor road conditions).
- Trauma victims with long extrication times.
- Disaster situations.
- Requests for helicopter transport should be made through Regional Dispatch.

HOSPITALS

Contact Albuquerque Base on Med Channel 2 for clearance on med channels.

HOSPITAL	MED RADIO CHANNEL	TRAUMA DESIGNATION	PHONE NUMBER	CATH CAPABLE
ALBUQUERQUE AREA				
Lovelace Medical Center - Gibson	3	0	262-3588	Yes (Until 10/01/06)
Kaseman Presbyterian Hospital	7	0	291-2122	
Presbyterian Hospital	7	0	841-1404	Yes
Lovelace Medical Center - Downtown	6	0	727-8165	(as of 10/01/06)
Lovelace West Mesa Medical Center	6	0	727-2050	
Presbyterian – Rio Rancho ED	7	0	462-8901	
Lovelace Women’s Hospital	6	0	727-7703	
University Hospital	1	1	272-2411	Yes
Veterans Administration Hospital	3	0	256-2793	Yes
Heart Hospital	6	0	724-2375	Yes
St. Vincent Hospital	5	2	995-3934	Yes
Santa Fe PHS Indian Hospital	5	0		
Los Alamos Medical Center	5	0	662-2455	

INVOLUNTARY RESTRAINT & TRANSPORT

Designation of Condition: The patient exhibits violent, combative and/or uncooperative behavior that results from a medical or psychiatric condition, and such behavior places the patient or others in imminent danger.

Indications For Use: The application of mechanical restraints is allowed only when all less restrictive measures of control have failed (e.g., verbal de-escalation), and the patient's behavior continues to pose a threat to him/her or others. Involuntary restraint is also appropriate when an EMT makes a good faith judgment that a patient is incapable of making an informed decision about his own safety or need for medical attention and is reasonably likely to suffer disability or death absent medical intervention. The application of restraints should always be done out of necessity, to ensure patient or provider safety and never as a matter of provider convenience.

Procedure: Establish Primary Management

1. Request law enforcement at the earliest opportunity, and
2. Ensure the presence of sufficient personnel to safely apply restraints.
3. Explain to the patient and family why restraints are necessary.
4. Apply restraints in a humane manner, affording the patient as much dignity as possible.
5. Use the least restrictive method of restraint necessary to protect the patient and still insure provider safety during transport.
6. **Devices:** Restraint devices that are appropriate for EMS utilization include: spine board, KED, vacuum splint, soft gauze, blankets and sheets. Prone or "hobble" restraints are not appropriate for EMS.
7. Obtain vital signs at the earliest opportunity. Violent and combative behavior may be secondary to hypoxia, hypoglycemia, or CNS infection. Obtain O2 saturation and BGL as soon as it is feasible. Assess for fever. Treat trauma and seizure if applicable.
8. All restrained patients require continuous monitoring of the airway, circulatory and respiratory status; as well as the need for continued restraint.

All cases of restraint will undergo medical director quality assurance review.

Under State Law 24-10B1, EMS Systems ACT, Section 24-10B-13, any person may be transported to health care facility by an EMT when the EMT makes a good-faith judgment that the person is incapable of making an informed decision about his own safety or need for medical attention and is reasonable likely to suffer disability or death absent the medical intervention available at such a facility.

- Contact MCEP on all involuntary restraint & transport cases. If MCEP contact is unavailable, the licensed caregiver on scene may make the decision to transport the patient against their will per the above guideline. If MCEP contact is made, explain your situation and the need to transport or restraint against patient's will. If the MCEP agrees, restrain the patient and transport with police assistance. It may be helpful to put the MCEP in communication with the police officers at the scene if they are hesitant to help. If handcuffs are used or patient is judged dangerous despite restraint, police will accompany the patient in the back of the transport unit. If a law officer refuses, this should be documented on the patient report.
- Perform a brief mental status exam to include:
  - Level of consciousness, and orientation to person, place, time, situation
  - Intent to harm self or others
- Take a brief history, including drug / alcohol use, medications and mental illness.

ALS PROVIDERS

- Use of medications in disturbed patients – this option is only available to EMT-P and should be used only when physical restraint is impossible or insufficient. Keep in mind that use of medications may alter subsequent examination at the hospital.
- Monitor oxygen saturation levels and End Tidal CO2, and support the patient's oxygenation and ventilation status as indicated.
- Administer Valium 2 – 10 mg slow IV push or IM. Contact Medical Control for higher doses if necessary.
- All sedation cases will be reviewed by the medical director.

CAREFULLY document the history, physical examination, and reason for restraint and treatment rendered. When appropriate, obtain names of officers, witnesses, and the MCEP.

MEDICAL CONTROL

EMS providers in Sandoval County provide care under the designated practice of a physician. This may take the form of Direct or Indirect Medical Control. Indirect medical control is represented by these protocols or the protocols specific to the service in which the provider functions. A physician who is in direct communication with the pre-hospital provider at the time care is being given provides the direct Medical Control. This is ideally done by a Medical Control Emergency Physician (MCEP). For situations not covered by these protocols, or when physician contact is required by these protocols, Direct Medical Control must be established according to the following guidelines:

Guidelines for Direct Medical Control

- If pre-established physician-patient relationship exists and this physician is on scene, it shall take precedence over these protocols, and said physician shall have direct medical control until he expressly relinquishes it to the MCEP. The EMS providers are not bound to follow the orders of this physician but instead are governed by these protocols. Every reasonable effort should be made to assist in patient care.
- A physician physically present at the scene who offers to assist in the patients care may be allowed to do so if the following conditions are met:
    - The physician identifies himself to the EMS provider in charge of patient care as a currently licensed physician in the State of New Mexico.
    - The physician agrees to accompany the patient to the hospital and to provide care until care can be appropriately transferred to an MCEP.
    - The physician agrees to sign the EMS Run Form in the “Medical Control” space.
    - If the on-scene medical intervention orders conflict with these protocols, he shall be placed in contact with the MCEP. If a conflict remains, the EMS personnel shall be obligated to carry out the orders of the MCEP.
- Emergent Direct Medical Control is available by contacting the MCEP at any one of the hospitals listed prior. It is preferable to make contact with the MCEP at the hospital to which the patient is being transported, but this is not always possible. Direct medical control is also available through the Service Medical Director or the County Medical Director although this is typically not appropriate in emergency situations.

MCEP CONSULT

EMS providers are encouraged to request a physician consult for patients that they feel might merit the immediate attention of the receiving Emergency Department Physician, or for on scene decisions such as patient refusals. When requested, a direct report from the EMS provider to the Physician should be accomplished soon after the patient arrival in the ED. This protocol is intended for both medical and trauma related events.

LICENSED MEDICAL PHYSICIAN AT SCENE

Designation of Condition: This guideline will be in the form of a card or sheet of paper that can be presented to a physician at the scene of a medical emergency.

An EMS standard of care and comprehensive written protocol has been established and are monitored by the Sandoval County EMS Medical Director. By showing proof that you are a licensed New Mexico Medical Physician, you may take responsibility for the patient’s care if you accept full responsibility for maintaining the established county EMS Standard of Care. This includes patient management and the issuing of orders conforming to the established protocols, riding to the hospital, and signing the EMS run form.

MINOR (UNDER 18 YEARS) TRANSPORT GUIDELINES

Designation of Condition: These guidelines are designed to help crews with the difficult job of handling minor patients and the situation when a minor patient has a child.

- For a minor to make a decision regarding healthcare, they must be emancipated. To be legally emancipated, they must be at least 16 years of age and…
  - Married
  - Divorced
  - Active military
  - Legally declared emancipated in a court of law
- Pregnancy in and of itself does not emancipate a minor
- An emancipated minor can make decisions for her minor child.
- When in doubt, use EMS Act, Section 24-10B. -9.1, to transport the patient against their will. Error on the side of transport versus cancellation.
- When in doubt, contact an MCEP.
- In discussion with several attorneys, it is clear that an un-emancipated minor mother cannot make decisions for her minor child. No consensus was obtained as to who has legal control over the minor's child unless guardianship has been established. This would be an area to utilize the EMS Act noted above, an MCEP, or law enforcement if necessary.

Notes: When dealing with the emancipation issues, document statements made by the parties involved when the appropriate documentation (marriage certificate, court order, etc.) is not readily available. Remember to error on the side of patient care.

OFFICE OF THE MEDICAL INVESTIGATOR

Designation of Condition: To facilitate interactions between EMS personnel and the Office of the Medical Investigator

The Unattended Home Death

- When a death occurs outside of a licensed nursing home or hospital facility and the private personal physician of the decedent does not attend the death, that death is considered an unattended death. By law, all unattended deaths fall under the jurisdiction of the OMI and it is necessary for the OMI to conduct a full investigation.
- In all cases of unattended death law enforcement must be contacted. EMS personnel should simultaneously dispatch law enforcement and OMI on all deaths.
- All unattended deaths are to be considered a crime scene by EMS until told otherwise by law enforcement on scene. For this reason, extreme care must be exercised for preservation of the crime scene. Any medical equipment that is used on the patient should be left with the patient (example: IV lines, airway devices, etc.). If external blood loss is caused by EMS (example IV attempts) it should be noted in the EMS run report as well as verbalized to the first arriving law enforcement officer.
- The body of the deceased should not be moved until law enforcement and OMI are on scene. No one should be allowed to remain in the room of the deceased alone until law enforcement is on scene.
- An EMS report shall be filled out on scene, and left for law enforcement and OMI.

Death of Potential Violent Origin

- In addition to all of the elements outlined in the Unattended Home Death guideline, extra awareness of crime scene preservation must be exercised.
- For motor vehicle accidents, this includes: skid marks, debris scattering patterns, clothing location, etc. EMS personnel should realize that on occasion simple placement of units (unmarked vehicles or private owned vehicles) might place them into the crime scene and subject to the control and authority of law enforcement on scene.
    - Weapons or sources of injury should not be touched, moved or altered in any way. The only exception to this is when EMS personnel on scene feel that there is a legitimate threat of harm for themselves or additional personnel on scene. In most cases, this means that the scene was not secure and probably should not have ever been entered. If the scene is not safe and you do not have the resources to make it safe, leave the scene. EMS safety always takes precedence over patient safety.

Death on Native American Lands

- When a death occurs on Native American Land, assure that Tribal Officials, the police from the specific pueblo (if available), and/or BIA Police are notified and on the scene. The death will be handled by these officials in accordance to the laws and traditions of the specific pueblo, and may or may not involve the Office of the Medical Investigator. Please document the circumstances as appropriate, and leave the report for the law enforcement officials present.

REFUSAL OF TREATMENT/LIABILITY RELEASE

Designation of Condition: To clarify the appropriate use of the liability release

- An EMS Liability Release must be completed on all refusals/non-transports.
  - All blanks in the top section should be completed on all patients; the top three fill-ins should be completed on all non-patients.
  - Appropriate initials and signatures, including witnesses, are necessary to make this a legal document.
- Documentation for refusal of treatment should include:
  - LOC: Patient is awake, oriented and able to comprehend the seriousness of his/her injury or illness.
  - Vital signs: Should be within normal limits if the patient allows you to take them.
  - Careful explanation to the patient and/or family of the possible implications of the injury/illness including possibility of death if applicable.
  - Ask the patient or legal guardian to sign a refusal of treatment form (the patient cannot be forced to do this).
  - Witness signature for refusal, even if patient did not sign. It is preferable to obtain this from a family member, but EMS personnel are adequate if necessary.
  - Clear documentation that patient is not impaired by drugs or alcohol.
- If the patient is awake, oriented and able to comprehend the seriousness of the injury or illness and refuses treatment of a potentially life-threatening process, an attempt should be made to put the patient and/or family in contact with an MCEP.
- If the patient is ill/injured but is not awake, not oriented, or not able to comprehend his/her illness (impaired from alcohol, drugs, head injury, chronic disease, etc.):
  - Law Enforcement should be summoned to assist and the patient should be transported based on the Involuntary Restraint and Transport guideline.
  - Consider contacting an appropriate MCEP to discuss the case with the Police and/or the patient.
  - After MCEP/Police intervention, transport the patient if there is a reasonable possibility of danger to life or limb or the patient may not have access to care.
- Read the proper section of the liability release to the patient and document in that in the narrative
- No person shall be refused treatment or transport because of inability to pay, race, color, creed, religion, or type of illness.

REPONSE IN PRIVATELY OWNED VEHICLES (POV)

Use of a privately owned vehicle (POV) is encouraged when:

- It can shorten response times, and
- Permit EMT's of higher training level to arrive at a scene sooner.

Providers should obey all traffic laws and not exceed the speed limit. There should be no use of emergency lights or sirens in personal vehicles.

POVs should not be used for patient transport.

Recommended jump kit equipment at each level is as follows:

First Responder

- Gloves, goggles and other protective equipment are necessary
- Two-way radio communication
- Gauze
- Kerlix
- Tape
- Pocket Mask and Manual Suction
- Oral Airway
- Nasal Pharyngeal airway
- Stethoscope
- BP Cuff
- Bag-Valve Mask
- Suction
- ASA

EMT-B (all of the above plus)

- Combitube/LMA
- Oral glucose
- Epi-Pen or a vial of Epinephrine 1:1000 and two 0.3 cc syringes
- Naloxone and appropriate delivery devices

EMT-I (all of the above plus)

- One bag NS
- IV tubing
- D5OW
- Epinephrine 1:1,000
- Epinephrine 1:10,000
- Nitroglycerine
- Albuterol
- Syringes
- Needles

EMT-P (all of the above plus)

- Laryngoscope
- Endotracheal tubes

Continued on next page

Optional equipment for all levels of providers

Oxygen cylinder with regulator

Oxygen tubing

Automatic or semi-automatic external defibrillator

All contents of jump kits should be properly maintained to ensure that all equipment is in working order and that all drugs and fluids are not outdated and are kept within environmental norms. The pharmacy inspection process should inspect all kits on its routine schedule.

TRANSFER OF CARE RESPONSIBILITY & DELEGATION

Designation of Condition: To facilitate proper transfer of care through the various stages of patient care

- Generally, an EMS provider will remain with the patient and remain responsible for patient care until another licensed EMS provider of equal of higher training and capability receives an oral report and assumes responsibility for patient care.
    - One exception to this guideline is in the case of transferring patient care to SCFD Medic Units if the Medic Unit personnel deem ILS level transport appropriate.
    - In this case, the Medic Unit Paramedic is ultimately responsible for the care administered to the patient during transport, even if an ILS caregiver attends the patient during transport.
- EMT-Paramedics are not required to remain with a patient if ALS care has not been initiated, and is not warranted or required.
- An EMT-Paramedic may transfer care to an EMT-Intermediate level of care, if there is no reasonable expectation that the patient will require a higher level of care following a full patient assessment and examination.
- Transfer to a lower level of care is acceptable in a MCI, even if a higher level of care is desirable, to ensure the greatest benefit for the greatest number of patients.
- Law enforcement has NO AUTHORITY in transport decisions unless a law enforcement officer elects to take a patient into custody. The law enforcement officer is then responsible for ALL actions and decisions occurring as a result of their direct orders. Liability and system consequences should be clearly relayed to law enforcement officers. Whenever a conflict exists, contact Medical Control.
- EMS transport personnel will maintain charge and control of the patient after arrival at the hospital until:
    - Proper unloading has occurred. EMS personnel are solely responsible for unloading. Hospital personnel should stay outside the ambulance unless assistance is required.
    - A full patient report is provided to the appropriate receiving personnel.

TRANSPORT GUIDELINES

- Scene times should be kept to a minimum. It is understood that extrication, weather conditions, safety factors or other on-scene problems may unavoidably delay transport. The best judgment of the senior EMS personnel present must be used to minimize delays without endangering any caregivers. On-scene law enforcement and fire suppression should be consulted if there is a concern for the safety of the caregivers.

Trauma Patients (see trauma triage algorithm on page 26)

Category 1 – Transport as soon as possible via the most expeditious and safe method. If ground transport from time of initial patient contact will take more than 30 – 40 minutes, then contact Regional Dispatch and request aeromedical support from one of the helicopter services.

- Attempt to limit the scene time to less than 10 minutes (exception is cases of prolonged extrication).
- Critical airway procedures should be performed at the scene if necessary.
- Spinal immobilization and MAST placement should not delay transport, unless there is no one to assist the primary caregiver once they get enroute.
- Less critical airway and IV procedures should be performed enroute unless awaiting transport.
- Early intercept for non-paramedic units.
- Transport to UNMH unless MCI guidelines are being followed.

Category 2 – Transport as soon as possible via the most expeditious and safe method. If ground transport from time of initial patient contact will take more than 30 – 40 minutes, then consider contacting Regional Dispatch to request aeromedical support from one of the helicopter services.

Critical airway procedures should be performed at the scene if necessary.

- Spinal immobilization and MAST applications should be performed enroute unless awaiting transport.
- Less critical airway and IV procedures should be performed enroute unless awaiting transport.
- Early intercept for non-paramedic units.
- Transport to UNMH unless MCI guidelines are begin followed.

Category 3 – Generally transport by ground unless multiple casualties or ground transport unavailable.

- Spinal immobilization should be performed at the scene.
- Airway procedures and IV's should be initiated enroute when possible.
- Transport to UNMH unless MCI guidelines are being followed.

AT THE TIME OF THIS PRINTING, ALL CATEGORIZED PATIENTS SHOULD GO TO UNMH IN THE ALBUQUERQUE AREA.

Medical Patients – scene times should be kept to a minimum at all times.

- Procedures which are deemed critical should be initiated at the scene.
- Less critical procedures should be performed enroute when possible.
- Medical patients may be transported via a helicopter service if the patient is critical and ground transport may take more than 30 – 40 minutes.

Continued on next page

Stable - Patient is stable, with no apparent risk of developing a life-threatening or disabling condition. Non-emergent transport is appropriate.

Serious - Patient is at moderate risk of developing a life-threatening or disabling condition. Most circumstances will merit non-emergent transport.

Critical - Patient has a severe and acute life threatening or disabling condition. Immediate intervention is required. Emergency transport is at the EMS provider's discretion. Examples include penetrating and/or blunt trauma injuries to chest and/or abdominopelvic cavity with unstable vitals, or if patient presents with vitals indicating s/he is likely to deteriorate.

Air Transport - If it appears that ground transport will take more than 30 – 40 minutes, then consider air transport of serious and critical patients. Air transport may be of benefit in MCI situations as well. Do consider the local weather conditions when contemplating using the air services.

Rescue Unit Transport – on occasion it is necessary that registered medical rescue units transport patients. This is permissible and encouraged if in the best interests of the patients. The transporting vehicle must be configured as an ambulance with an enclosed patient compartment. There must be a minimum of one EMT-B in the patient compartment. Request ALS intercept anytime if the patients condition warrants.

ALS intercept – an Advanced Life Support intercept is necessary when a patient is transported by a rescue or ambulance needs care from a provider of a higher training level. The benefit should outweigh the risk of time delay and roadside danger.

- This should be arranged as far in advance as possible.
- A safe rendezvous location and time should be arranged over the radio directly or through dispatch.

Choice of Hospital

- Sandoval County, being primarily a rural setting, lends itself to long transport times. The patient's choice of hospitals will often take the transport unit out of service for a longer period of time without adequate coverage for its district. All efforts should be made to reasonably shorten the time at the hospital and return to district.
- Trauma patients should be categorized according to the trauma protocol and transported to appropriate facility as outlined.
- In cases of medical cardiac arrest, the patient should be transported to the closest facility capable of caring for the patient.
- Patients without a preference should be transported to the closest facility capable of treating the patient.

TRAUMA DESIGNATION ALGORITHM- ALBUQUERQUE METRO

Category 1 Trauma

Assess physiologic status

- Hemodynamic compromise [1]
- Respiratory compromise [2]
- Unconscious or deteriorating mental status

If yes to any of the above, transport to Level 1 Trauma Center (University Hospital) unless MCI procedures are in place.

If no, continue trauma triage

Category 2 Trauma

Assess anatomical injury

- All penetrating injuries to head, neck, torso, or proximal extremities[3]
- Flail chest
- Trauma with burns of 10% or > or inhalation injuries
- 2 or more suspected proximal long bone fractures
- Potential multi-system trauma
- Limb paralysis
- Amputation proximal to distal phalangeal joint
- Open or suspected depressed skull fracture
- Unstable pelvis or suspected pelvic fracture
- Altered mental status [4]

If yes to any of the above, transport to Level 1 Trauma Center (University Hospital) unless MCI procedures are in place.

If no, continue trauma triage

Category 3 Trauma

Assess mechanism of injury and risk for occult injury

- Ejection from vehicle
- Death in same vehicle
- Falls > 15 feet
- Pregnant > 20 weeks
- Evidence of high energy event of clinical significance [5,6]

If yes to any of the above, transport to Level 1 Trauma Center (University Hospital) unless MCI procedures are in place.

If the patient has none of the indicators listed for Category 1, 2, or 3, then the patient meets "non-category" trauma criteria and may be transported to a:

- Level 1 trauma center (University Hospital) or
- Presbyterian, Albuquerque Regional Medical Center or Lovelace Medical Center or
- Requested facility or
- Closest facility by proximity or access or Capacity status
- If the patient or paramedic requests a non-listed facility, contact MCEP at requested facility and follow their guidance prior to transport

Footnotes

1. Hypotension, pallor, tachycardia, or diaphoresis
2. Tachypnea (hyperventilation) alone will not necessarily initiate this level of response

Continued on next page

3. Non-life threatening, minor injuries excluded
4. Altered mental status (secondary to sedative or hypnotic will not necessarily initiate this level of response)
5. High-energy event of clinical significance = large release of uncontrolled energy to patient. These events may include rollover crashes, motorcycle, ATV or bicycle crashes, auto versus pedestrian impacts, significant assaults or altercations, or extrication times > 20 minutes. Assume patient is injured until proven otherwise (multi-system injuries may be present) and exercise clinical judgement considering direction and velocity of impact, patient kinematics, physical size and vehicle damage. Age and co-morbid factors/conditions should be considered in triage level decisions.
6. IF a patient with evidence of a high energy event of clinical significance but without any clinical signs or symptoms of injury refuses transport to the trauma center and requests another facility, the paramedic will contact the MCEP at the requested facility and follow their guidance.

TRAUMA & MEDICAL DESIGNATION – ST. VINCENT'S HOSPITAL

St. Vincent's Hospital in Santa Fe does not utilize the Category I, 2, 3 system. Instead, the simply refer to their trauma and medical patient's as Stable, Serious, or Critical as per below. Additionally, crews should refer to the Trauma Stat activation guideline in the Appendix for further direction on transporting trauma to St. Vincent's Hospital

Medical and Trauma Designation Criteria

Stable - Patient is stable, with no apparent risk of developing a life-threatening or disabling condition. Non-emergent transport is appropriate.

Serious - Patient is at moderate risk of developing a life-threatening or disabling condition. Most circumstances will merit non-emergent transport.

Critical - Patient has a severe and acute life threatening or disabling condition. Immediate intervention is required. Emergency transport is at the EMS provider's discretion. Examples include penetrating and/or blunt trauma injuries to chest and/or abdominopelvic cavity with unstable vitals, or if patient presents with vitals indicating s/he is likely to deteriorate.

TRANSPORT-CAPABLE MEDICAL RESCUES

Designation of Condition: Emergency transport of a critically ill/injured patient to the nearest appropriate certificated ambulance service may be appropriate in the following conditions and only after all appropriate assessment and treatment modalities have been initiated.

- The nearest appropriate certificated ambulance provider must be greater than 15 minutes away in order to initiate transport. In no case should the ambulance be delayed for a rendezvous point.
- Indications for Use: The Medical Rescue vehicle must comply with the intent of Regulation 18 NMAC 4.2 regarding minimum equipment requirements.
- Designation of Condition: Life threatening patient presentation including but not limited to:
    - Medical Cardiac Arrest*
    - Respiratory Arrest
    - Acute respiratory distress
    - Overdoses resulting in unconsciousness
    - Critical burns, as defined within the protocols.
    - Multi-Systems Trauma with hemodynamic instability.
    - Penetrating Trauma to the head, neck, chest, abdomen
- Certificated ambulance service may elect to terminate resuscitation while the patient is still in the medical rescue. This will take the rescue out of service for the duration of any law enforcement/OMI investigation.
- Transporting a critical patient to a helicopter landing zone may be appropriate if the patient has one or more of the above conditions.
- It is recognized that there may be an occasion during a high level MCI to have a medical rescue transport stable patients directly to a hospital.

SECTION 2 - TREATMENT GUIDELINES

Notes:

ASSESSMENT GUIDELINES

A complete assessment up to the responder's capability includes the following, as appropriate:

- Level of consciousness
- History of chief complaint
- Pertinent past medical history
- Physical exam
- Skin color / temperature
- Lung sounds
- Cardiac monitor including 12 lead EKG (if available)
- Neurological exam, including papillary reaction, coordination and general movement
- Vital Signs, including:
  - Respiratory effort, rate and depth
  - Pulse rate, strength, regularity, and site
  - Blood Pressure
  - Oxygen saturation and/or capnometry/capnography if available
- Mental Status exam
- Full documentation on appropriate EMS response form

PRIMARY MANAGEMENT

PERFORM COMPLETE ASSESSMENT TO LEVEL OF TRAINING

For all patients, ensure or establish AIRWAY PATENCY

ALL EMS PROVIDERS

- Positioning maneuvers
- Suction (oropharangeal, nasopharangeal, stomal)
- Nasopharangeal airway
- Oropharangeal airway
- Pertinent medical history

BLS AND ABOVE PROVIDERS

- Combitube airway
- Laryngeal Mask Airway (LMA) insertion after appropriate training and sign-off

ALS PROVIDERS

- Suction (endotracheal)
- Laryngoscopic visualization
- Magill forceps manipulation
- Nasotracheal intubation (blind or visualized)
- Endotracheal intubation
- Stomal intubation
- Surgical Cricothyrotomy

For all patients, ensure and establish ADEQUATE VENTILATION & OXYGENATION

ALL EMS PROVIDERS

- Pulse Oximetry
- Administer Oxygen commensurate with level of respiratory distress
- Bag Valve Mask
- Time cycled Oxygen-powered ventilator

ALS PROVIDERS

- Needle chest decompression
- Capnometry / Capnography

For all patients, ensure and establish ADEQUATE CIRCULATION

ALL EMS PROVIDERS

- Supine positioning
- Trendelenburg positioning
- CPR
- SAED

BLS AND ABOVE PROVIDERS

- Perform glucometry: capillary, or venous with ILS assistance
- Initiate cardiac monitoring

ILS AND ABOVE PROVIDERS

- Peripheral IV access, and/or external jugular access, and fluid administration
- Establishment of pediatric intraosseous (IO) vascular access as defined by State Regulations and current PALS

ALS PROVIDERS

- Utilize pre-existing vascular access as primary site, as necessary: ACLS as per specific protocols, defined herein or per current ACLS.

ADMINISTERING A PATIENT'S OWN MEDICATIONS

BLS AND ABOVE PROVIDERS

Treatment indications: When it is deemed necessary that a patient is in need of their own specific medication. The medications allowed are bronchodilators (such as albuterol inhalers) for acute bronchoconstriction, Epi-Pen for life threatening bronchoconstrictive conditions, and nitroglycerin for pain from suspected coronary syndrome. The only situation this guideline should be put to use is when (1) a caregiver arrives on scene and does not have these medications in their response pack, (2) the additional personnel who do have these medications are delayed, and (3) the delay is deemed detrimental to the patient.

Administering a patient's own medication may be performed only when the caregiver:

- Establishes that medications are the patient's, are not expired and that they are for the current appropriate complaint.
- Asks the patient if they have taken these or any other medication as of yet and if so, how much.
- Obtains a list of the medications that the patient is prescribed
- Obtains a complete set of vital signs
- CONTACT MEDICAL CONTROL. If the physician agrees, the EMT may appropriately administer the medication.
    - If Medical Control contact is impossible, and the patient is suffering from a life threatening allergic or bronchial constriction process, and will benefit from the administration of the patient's Epi-Pen or bronchodilator, then the EMT may administer these drugs per the prescription instructions.
    - If the EMT is considering the administration of nitroglycerin, the EMT must have Medical Control contact. If this contact is impossible, nitroglycerin may not be administered.

AIRWAY MANAGEMENT

Notes:

AIRWAY MANAGEMENT - INTUBATION

Treatment Indications: Paramedics should intubate patients who are apneic or severely hypoxic, and unresponsive to oxygen and basic airway maneuvers (jaw thrust, foreign body removal, etc.) or who may have impending airway problems (facial burns, severe asthma, impending respiratory arrest, etc).

ALS PROVIDERS

Pre-medication

- If Closed Head Injury (CHI) is suspected, and patient is not hypotensive, administer Lidocaine 1.5 mg/kg IVP prior to intubation.
- If the patient is extremely agitated for any reason (hypoxia, head trauma, etc), please refer to the Altered Mental Status – Agitation guideline.
- Immediately following intubation, the ET tube must be confirmed by at least three indicators and appropriately documented.

  Indicators include, but are not limited to the following:

  - Visualize tube passing through the cords, misting in the tube, bilateral equal breath sounds, absence of breath sounds over the epigastrum, use of bulb-syringe and/or Toomey syringe, pulse oximetry, equal chest rise, improving/stabilizing vital signs and skin condition.
  - EMS providers may use a Toomey/suction tip syringe or bulb syringe to verify tracheal placement of an ET tube or a Combitube. If free air is easily drawn into the syringe, the ET tube is almost certainly in the trachea. Since the majority of Combitube placements are in the esophagus, the esophagus will collapse around the tube preventing drawing of free air.
- Once intubated, the patient should be ventilated with the Transport Ventilators if available.
- Prior to releasing an intubated patient to a receiving hospital, physician or respiratory therapist, the EMT-P must confirm & document tube placement and patency.

AIRWAY MANAGEMENT (TRAUMA PATIENT)

Treatment Indications: The patient is unable to adequately maintain an airway in the presence of trauma.

ALL EMS PROVIDERS

- Establish Primary Management
- In-line manual spinal stabilization as appropriate

BLS AND ABOVE PROVIDERS

- Basic airway maneuvers to include the use of suction, bag-valve-mask ventilation, and the use of oropharyngeal and nasopharyngeal airways as appropriate.
- If the patient is not breathing and endotracheal intubation capability is not soon available, the neck should be stabilized with axial motion (in-line) restriction, and a Combitube, Combitube SA, or Laryngeal Mask Airway (LMA) inserted (assuming the caregiver has received appropriate training and sign-off).

ALS PROVIDERS

- If the patient is not breathing adequately or is in respiratory arrest, the neck should be stabilized with axial motion restriction (in-line) and the trachea orally intubated without extension of flexion of the head.
- Consider Lidocaine administration for head injury as outlined in the Airway Management & Intubation (ALS) guideline, and if the patient is agitated, refer to the Altered Mental Status – Agitation guideline.
- In the unresponsive breathing patient, consider nasotracheal intubation if facial bones appear intact.
- If the attempt at an axially immobilized oral intubation is not successful, consider:
  - Nasotracheal Intubation (if breathing)
  - Combitube or LMA
  - Surgical Cricothyrotomy

CRICOTHYROTOMY – VERTICAL APPROACH

Treatment Indications: Cricothyrotomy may be attempted on an unconscious adult patient with immediate life threatening airway compromise and when other modalities of airway management are ineffective or contraindicated. It is included in the Trauma – Airway Guideline as this procedure is most used in the presence of trauma. However, there are also medical situations where it may be appropriate.

ALS PROVIDERS

- Establish Primary Management
    - Locate and identify cricothyroid membrane and prep with betadine.
    - Identify the thyroid cartilage and palpate the inferior border. The cricoid cartilage is the hard cartilaginous ring inferior to the thyroid cartilage. The cricothyroid membrane is situated between the two structures.
    - Make a vertical incision through the skin over the cricothyroid membrane 2 - 3 cm in length with sufficient depth to expose the cricothyroid membrane.
    - **Horizontally** puncture the membrane with the scalpel to facilitate access to the trachea.
    - Insert and maintain airway with a cuffed Endotracheal tube (in most adults, a 6 mm tube will suffice). Advance cuff 2 cm past the opening. Check for chest excursion and auscultate lung fields. Inflate cuff. Reassess (visualize, palpate, auscultate, check compliance).
    - Confirm tube placement by required methods, and document.
    - Verify correct placement of tube by visualizing oropharynx to ensure tube is not misdirected.
    - Secure the tube and ventilate with high-flow Oxygen.
    - The EMS Chief and Medical Director will review all cricothyrotomy cases as soon as possible.

MEDICAL EMERGENCIES

Notes:

ABDOMINAL PAIN

Treatment indications: Sudden onset of pain, demanding immediate medical or surgical treatment. Causes can include appendicitis, food poisoning, abdominal aortic aneurysm, gastritis, gall bladder problems, kidney stone, intestinal obstruction, ectopic pregnancy, ulcers, and ovarian cyst.

ALL EMS PROVIDERS

- Primary Management
- Maintain airway, O2 via nasal cannula if practical, especially if nausea and vomiting is present. Suction as necessary. If higher O2 flow is indicated, use as needed, keeping airway clear and watch for vomiting. Nothing by mouth.
- Place patient in POC, transport, ILS/ALS if needed.
- Gather patient history carefully. If woman is of childbearing age, suspect ectopic pregnancy.
- Watch for shock, treat and transport expeditiously.

BLS AND ABOVE PROVIDERS

- Consider MAST if indicated.

ILS AND ABOVE PROVIDERS

- 1 to 2 large bore IV's NS, titrate to maintain LOC, HR & end organ perfusion.
- In the past Morphine Sulfate (MS) is contraindicated for abdominal pain. However, if a patient has a history of kidney stones, and is reporting pain as similar to that of previous episodes, contact an MCEP, explain the situation, and obtain an order for MS if appropriate. This is limited to presentations indicative of kidney stones.

ACUTE MOUNTAIN SICKNESS (AMS)

Treatment Indication: A condition due to hypobaric hypoxia with unclear pathophysiology. Acute Mountain Sickness may appear at altitudes as low as 6500 ft, and is characterized by headache, fatigue, nausea, dyspnea, sleep disturbance, and rapid, forceful heartbeat. Exertion aggravates the symptoms. Unless dehydration is severe or hyperventilation is excessive, AMS will often subside within a few days without treatment, and will certainly respond to basic level EMS care and descent from the higher altitude. However, altitude illness is a continuum, and can include the following complications.

Complications of AMS include the following life threatening conditions:

- High Altitude Pulmonary Edema (HAPE) – Caused by extracellular fluid shifts within the lungs. Signs and symptoms include: SOB, hypoxia, cyanosis, wet cough (rales/rhonchi), and possibly blood tinged sputum.
- High Altitude Cerebral edema (HACE) – Caused by fluid redistribution resulting in cerebral edema, thought to be vasogenic, may be multi-factoral. Signs and symptoms include headache, nausea/vomiting, altered LOC, and syncope.

ALL EMS PROVIDERS

- Establish Primary Management
- Descend to a lower altitude
- Position of comfort
- Pulse Oximetry
- Oxygenation
- Glucometry

ILS AND ABOVE PROVIDERS

- Advanced airway management as necessary, initiate IV NS, support vital signs as appropriate.
- CONTACT MEDICAL CONTROL. For patients with HAPE, MSO4 and furosemide may both be effective, but both are considered controversial due to the potential for respiratory depression with MSO4, and for furosemide exacerbating the dehydration that accompanies HAPE.
- Consider transporting to a facility with a hyperbaric chamber. At the time of this printing, only Presbyterian Hospital has an available hyperbaric chamber.

AIRWAY OBSTRUCTION

Treatment Indications: The patient is unable to maintain an airway due to a foreign body or other obstruction.

ALL EMS PROVIDERS

- Establish Primary Management
- Follow current CPR guidelines

ALS PROVIDERS

- If patient is unconscious, proceed to direct laryngoscope and remove the foreign body with McGill forceps.
- If unable to clear airway, Surgical Cricothyrotomy may be used as a last resort.
- Medical control should be contacted as soon as possible but should not delay initiation of the procedure.

ALLERGIC REACTIONS & ANAPHYLAXIS

Treatment Indication: Signs and symptoms may include any or all of the following: Decreased blood pressure, weak rapid pulse accompanied by shortness of breath, upper airway swelling and/or wheezing triggered by an allergic reaction. Large (Urticarial) rash is usually present.

ALL EMS PROVIDERS

- Primary Management
- Initiate rapid transport
- Secure airway and administer oxygen per respiratory distress protocol
- Remove offending agent (e.g. – stinger) in appropriate manner (scrape, not tweezers)
- Do brief history and physical, and check vital signs and lung sounds.

BLS AND ABOVE PROVIDERS

Remember that not all patients who are having an allergic reaction need epinephrine therapy. Epinephrine should be administered only to those patients exhibiting the respiratory and/or cardiovascular effects of a severe allergic reaction and/or anaphylaxis.

- If the patient is in respiratory distress and/or cardiovascular compromise with SxS of shock
  - Epinephrine 1:1000, 0.3 cc SC in pre-filled epi-pen or low dose 0.3 cc TB syringe.
    - The Epi-Pen Jr. may be utilized for Pediatric patients
- Maximum allowable single dose is 0.3cc. Repeat dosing requires MCEP contact.

ILS PROVIDERS

Anaphylaxis/Severe Allergic Reaction with SxS of respiratory and/or cardiovascular compromise

- For significant respiratory distress or hypotension, administer Epinephrine 1:1000
  - Adult: 0.3 mg 1:1000 IM
- Pediatric: 0.01 mg/kg IM (maximum 0.3mg).
- May repeat epinephrine once after 3 – 5 minutes if patient has not sufficiently improved. A MCEP should be contacted if a third dose is considered.
- If <u>only</u> wheezing is present with no complaint or evidence of upper airway involvement, go to Asthma Protocol.
- Establish an IV of NS and titrate to maintain systolic BP at least 90. This commonly requires 1 – 2 liters
- Cardiac Monitor
- Albuterol 2.5 – 5.0 mg nebulizer if wheezing present
- Benadryl 25 – 50 mg IV or IM may be given
  - Pediatric dosage – 2 mg/kg (maximum dose of 50 mg)

For patients with SxS of a moderate allergic reaction (hives, itching), with NO indications of respiratory compromise and/or cardiovascular compromise:

- Establish an IV of NS and titrate to the patient's vital signs
- Administer diphenhydramine 25 – 50 mg IV or IM to the adult, or 2 mg/kg (maximum of 50 mg) to the pediatric patient.

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ALS PROVIDERS

- Secure airway per airway obstruction protocol, as needed.
- Cardiac Monitor
  - If adult patient is perfusing too poorly to absorb the Epinephrine SQ / IM, and/or continues to deteriorate with unresolved airway compromise or hypotension, administer Epinephrine 1:100,000 mg SIVP. To obtain Epi 1:100,000, discard 9 cc of Epinephrine 1:10,000, then replace this with 9 cc of NS. Titrate over 5 - 10 minutes SIVP, repeating once if necessary.
- Dopamine (Intropin) can be administered concurrently with Epinephrine, as necessary for refractory hypotension, starting at 10 mcg/kg/min.
- If UNABLE to initiate isotonic IV, consider other appropriate routes of administration including Epinephrine IM or ET and/or Diphenhydramine (Benadryl) IM.

ALTERED MENTAL STATUS – DEPRESSED LEVEL OF RESPONSE

Treatment indication: A depressed level of consciousness that may be due to head injury, drugs, hypoxia, or other metabolic problems.

ALL EMS PROVIDERS

- Establish Primary Management
- For inadequate respiration, proceed according to respiratory distress protocol, initiating oxygen at the most appropriate rate and delivery method.
- Brief history and vital signs – May not be possible with patient who is actively seizing.
- DO NOT GIVE ANYTHING BY MOUTH UNLESS PATIENT IS CAPABLE OF SELF-ADMINISTRATION.
- Perform glucometry. If hypoglycemia is confirmed and patient is alert enough to self-administer, administer simple sugar – honey, orange juice with added sugar or oral glucose preparation.
- If the patient has altered mental status or is unstable in any way, maintain an airway, administer oxygen, begin transport and arrange ALS / ILS intercept.
- Restrain as necessary according to restraint protocol, and consider police involvement.

BLS PROVIDERS

- Check blood glucose level.
- Administer Naloxone:
- Adult: 0.4 mg IM/SC up to 1.2 mg, or 2.0 mg IntraNasal. Contact MCEP if a larger dose is needed.
- Pediatric: 0.01 mg/kg IM/SC up 1.2 mg, or 2.0 mg IntraNasal. Contact MCEP if a larger dose is required.
- Naloxone is titrated to adequate spontaneous respirations.

ILS PROVIDERS

- Initiate IV of NS; titrate to maintain LOC, HR and end organ perfusion.
- If hypoglycemia is confirmed, administer 50% Dextrose;
    - Adult: 25 grams of Dextrose SIVP if blood level is <60 mg/dl and associated signs of hypoglycemia exist. Titrate to patient mental status.
    - Pediatric: 1 gram/kg of D25 solution SIVP. To make D25: dilute D50 1:1 with Normal Saline. D25 should be used on patients ranging from 1 – 2 months to 8 years of age. Beyond that administer D50 at 1 gm per kg.
    - Neonate: administer 1 gram per kg. SIVP of D10 over twenty minutes.
- Administer naloxone
    - Adult: increments of 0.4 mg IVP/SC/IM, or 2.0 mg Intranasal, titrating to adequate RR and depth.
    - Pediatric: 0.01 mg/kg slow IV/IM/SC/IO up 1.2 mg, or 2.0 mg Intranasal. Contact MCEP if a larger dose is required.
    - An additional 2.0 mg may be given if no response and propoxyphene (Darvon) overdoes is suspected. (high doses may be required for synthetic narcotics).
    - In cases of suspected multi-substance abuse, consider administration of sufficient amount of medication to restore consciousness, following appropriate restraint/safety measures.
    - Patient may awaken quickly and be combative. Consider law enforcement involvement; be prepared to restraint if needed.
    - If still unresponsive, secure a definitive airway (Combitube).

ALS PROVIDERS

- Advanced airway management if needed (no gag reflex and not responding to medication).
- Monitor for cardiac changes.

NOTES:

- If the patient is known or suspected to have overdosed on narcotics, it is appropriate to try naloxone prior to ruling out hypoglycemia.
- The action of naloxone is shorter than most narcotics so you may have to repeat naloxone enroute.
- Addicts may go into acute withdrawal when given naloxone, be prepared for nausea/vomiting and agitation.
- A dose (or two) of glucose will not harm diabetics in keto-acidosis.
- Patients in shock (diabetic keto-acidosis, etc.) need volume support. Titrate fluids to the patient's vital signs.

ALTERED MENTAL STATUS – AGITATION

Treatment indication: A confused, agitated, and potentially harmful state resulting from any reason, which may include hypoxia, head injury, alcohol and other drug use, metabolic disturbances, etc.

ALL EMS PROVIDERS

- Establish Primary Management
- For inadequate respiratory effort, proceed according to respiratory distress protocol, initiating oxygen at the most appropriate rate and delivery method.
- Brief history and vital signs – May not be possible with patient who is agitated.
- DO NOT GIVE ANYTHING BY MOUTH UNLESS PATIENT IS CAPABLE OF SELF-ADMINISTRATION.
- Perform glucometry. If hypoglycemia is confirmed and patient is alert enough to self-administer, administer simple sugar – honey, orange juice with added sugar or oral glucose preparation.
- Maintain an airway, administer oxygen, begin transport and arrange ALS / ILS intercept.
- Restrain as necessary according to restraint protocol, and consider police involvement.

BLS PROVIDERS

- Check blood glucose level if not done earlier.
- If respiratory effort is depressed, consider naloxone administration per the Depressed Altered Mental Status guideline
- If the patient's agitation appears to be due to hypoxia or head trauma, attempt to ventilate the patient with a BVM and 100% oxygen.

ILS PROVIDERS

- Initiate IV of NS; titrate to maintain LOC, HR and end organ perfusion.
- If hypoglycemia is confirmed, administer 50% Dextrose per the Depressed Altered Mental Status guideline;
- If the patient's respiratory status is diminished, administer naloxone and per the Depressed Altered Mental Status guideline.

ALS PROVIDERS

- If the patient's agitation appears to be due to hypoxia, acidosis, head trauma, etc. and the agitation is thwarting efforts to assist the patient (i.e.: patient has non-purposeful movements, fighting oxygenation and ventilation, is at risk for attempting or attempting to pull IV lines, is combative and violent), then:
    - Valium 2 – 10 mg slow IVP may be used if the Paramedic determines that sedation is crucial to adequately caring for the patient.
- Prepare to manage the airway and ventilation status of the patient, to include BVM or intubation with an ET or MLA/LMA.
- Monitor for cardiac changes.

CARBON MONOXIDE INHALATION POISONING

Treatment Indications: Exposure to CO, headache, nausea, vomiting, cherry red skin (late sign), and flu like symptoms, may appear intoxicated. Pulse oximetry will not provide accurate readings for true oxygen saturation.

ALL EMS PROVIDERS

- Ensure scene safety (SCBA for responders if necessary), ventilate scene.
- Request a gas monitor and/or notify the appropriate utility company.
- Establish Primary Management, after patient removal.
- Administer oxygen 15 lpm by non-rebreather mask or assist ventilations with 100% Oxygen via bag valve mask if any of level of respiratory distress.
- Assure the safety of asymptomatic people at the scene prior to transport.
- All patients should be evaluated in the emergency department.

ILS AND ABOVE PROVIDERS

- Initiate an IV NS, and titrate to the patient's hemodynamic and perfusion status.
- If wheezing is detected, consider:
    - Albuterol (Proventil) nebulizer for adults and children >8 yrs., 5.0-10.0 mg as needed, and 2.5 mg for children who appear to be <8 yrs. Some patients may need continuous nebulizer treatment during entire transport.
- Cardiac monitor

Consider transporting to a facility with a hyperbaric chamber. At the time of this printing, Presbyterian Hospital has the only emergently available hyperbaric chamber.

CROUP

Condition Information & Treatment Indications: Croup is a viral infection of the upper airway, most commonly occurring in pediatric patients 6 months to 4 years of age and is more prevalent in the fall and winter. Often, the child will have a mild cold or other infection, and do well until evening. Then the child will often develop the classic harsh, barking cough. Another form of croup called spasmodic croup occurs mostly in the middle of the night without any prior upper respiratory infection. Aside from the seal-like barking cough, the patient will often exhibit a low-grade (usually not more than 100 – 101°F or 37.8 – 38.3°C) fever, inspiratory stridor, nasal flaring, tracheal tugging, and retractions. If the croup is severe and progressive, the child may develop restlessness, tachycardia, and cyanosis. It is sometimes difficult to differentiate between croup and epiglottitis, so an exam of the oropharynx is prohibited. While croup can result in complete airway obstruction and respiratory arrest, this is extremely rare.

ALL EMS PROVIDERS

- Establish Primary Management
- Keep the child as comfortable as possible, which generally means in the arms of a parent.
- No invasive procedures unless lifesaving intervention is required.
- Humidify oxygen using a nebulizer set-up and a few milliliters of normal saline, and administer “blow-by” oxygen at about 6 lpm. If at all possible, the parents should assist.
- Allow child to assume position of comfort.
- Notify receiving facility ASAP.

BLS PROVIDERS

- If the attack is moderate to severe and there is wheezing is present, initiate a “blow-by” 2.5 mg albuterol nebulizer.

ALS PROVIDERS

- If the nebulized NS and/or albuterol are not effective and patient is in significant respiratory distress, mix 5 mg (5cc) of epinephrine 1:1000 in 3 cc of normal saline, and administer via nebulizer. The caregiver may repeat this once after twenty minutes if the patient is severe and did not significantly improve after the first administration.
- If ventilating the patient becomes necessary, but the caregiver is unable to adequately ventilate with bag valve mask, then proceed to intubation. An ET tube one-half size smaller than usual should be used. Have suction available and use cricoid pressure.

DIABETIC EMERGENCIES

Treatment indication: Patient with signs & symptoms or history of hypoglycemia or hyperglycemia, which may include diabetics on insulin and/or oral agents, and patients with a history of chronic alcohol use. A complete assessment including past medical history, history of present illness, a primary and secondary physical exam, and particularly blood glucometry with documentation of hypoglycemia should be completed prior to administration of Dextrose. If a glucometer is not available and there is a strong suspicion of a hypoglycemic episode, proceed with the Hypoglycemia protocol. All attempts should be made to transport any patient that requires EMS intervention.

ALL EMS PROVIDERS

- Establish Primary Management
- History and physical assessment, to include blood glucometry.
- DO NOT GIVE ANYTHING BY MOUTH UNLESS PATIENT IS CAPABLE OF SELF- ADMINISTRATION.
- If hypoglycemic, administer simple sugar – honey, orange juice with added sugar or oral glucose preparation.
- If the patient has altered mental status or is unstable in any way, maintain an airway, administer oxygen, begin transport and arrange for ALS/ILS intercept.

BLS AND ABOVE PROVIDERS

- Assess blood glucose level if not done by previous providers.

ILS/ALS PROVIDERS

- Initiate IV of NS, titrate to maintain LOC, HR & end organ perfusion.
- **IF HYPOGLYCEMIC**, Administer Dextrose:
    - Adult Dose (for patients over the age of 8 y/o): 25 grams of Dextrose 50% SIVP if the patient's BGL is <60 mg/dl and associated signs of hypoglycemia exist. Titrate to the patient's mental status.
    - Pediatric: 1 gram/kg of D25% solution SIVP or IO if BGL is <70 mg/dl and other SxS of hypoglycemia exist.
        - To make D25%: discard 25 cc of the preloaded ampule of D50%, and replace it with 25 cc of normal saline, giving you 12.5 grams in 50 cc, or D25%. This should be used on patients 2 months to 8 years of age.
    - Neonate: 1 gram/kg of D10% SIVP or IO of over twenty minutes.
        - To create D10%, discard 40 cc of the preloaded ampule of D50%, and replace with 40 cc of normal saline. This gives you 5 grams of dextrose in 50cc, or D10%.

If an IV is not obtained after three attempts, hypoglycemia has been documented, future success is unlikely, and the transport time is at least 20 minutes, then administer Glucagon. Be prepared for emesis after administration. The deltoid is the preferred administration site.

- Adult: (>12 y/o) 1 mg glucagon IM
- Pediatric:
    - 6-11 y/o - 0.75 mg IM
    - 3 - 5 y/o - 0.5 mg IM
    - < 3 y/o - 0.25 mg IM
- If the patient regains consciousness and can maintain their airway, give oral carbohydrates.
- Continue with IV or IO attempts if patient does not regain consciousness.
- Glucagon may be repeated once in twenty minutes if no improvement and no IV has been initiated,
- Watch for nausea, vomiting and/or anaphylaxis.
- Follow glucagon with oral carbohydrates as soon as the patient is capable, or IV dextrose as soon as possible.

(Continued on next page)

- **IF HYPERGLYCEMIC**
    - If glucometry reading is greater than 300 mg/dl, lung fields are clear and patient does not have a history of pulmonary edema or congestive heart failure:

ALL EMS PROVIDERS

- Establish Primary Management

ILS PROVIDERS

- IV bolus as necessary to support vital signs. Bolus in 250 cc increments, re-evaluate LOC, VS, and lung sounds between boluses.

ALS PROVIDERS

- Advanced airway management as needed.

NOTE: Contact MCEP when dextrose is given and patient refuses transport. All efforts must be made to transport when EMS interventions have been initiated.

EPIGLOTTITIS

Condition Information and Treatment Indications: Epiglottitis is an acute infection and inflammation of the epiglottis and surrounding tissue & structures. It is usually caused by a bacterial infection, predominantly H. Influenza type B. Because of the availability of a vaccination for this bacterium, incidence in children has become rather unusual in the United States. In fact, epiglottitis is now seen more in adults than children, by a margin of over 2 : 1. Patients with epiglottitis will generally present with an extremely sore throat, difficulty swallowing, and drooling. Fever often accompanies these symptoms, and in children, there is usually no history of a previous upper respiratory infection. When severe, the patient will be stridorous and in respiratory distress. Particularly with children, consider foreign body aspiration in your differential diagnosis.

ALL EMS PROVIDERS

- Establish Primary Management
- If the patient is a child, make all attempts to keep the child with a parent.
- Perform NO invasive procedures unless lifesaving intervention is required.
- Administer humidified oxygen, using a nebulizer and 3 – 5 cc's of normal saline; for children, do this only if it does not upset the child.
- Allow the patient to assume their position of comfort.
- Notify receiving facility ASAP.
- Bronchodilators are not indicated, unless wheezes (not stridor) are auscultated.

ALS PROVIDERS

- If the patient is deteriorating, administer Epinephrine 1:1000 5 cc in 3 cc of normal saline via nebulizer for pediatrics and adults up to age 35. CONTACT MEDICAL CONTROL for adults >35 years old.
    - This treatment, while effective for croup, has not proven to be as effective for epiglottitis. Do not expect dramatic improvement, and if the patient is deteriorating, prepare to provide airway and ventilatory support.
- If ventilating the patient becomes necessary, a gentle two-person ventilation technique has proven to be effective. If the caregiver is unable to adequately ventilate with bag valve mask, then proceed to intubation. An ET tube one-half size smaller than usual should be used. Have suction available and use cricoid pressure.
    - If complete occlusion occurs, it may be necessary to proceed to surgical cricothyrotomy for patients who are at least 12 years of age.

EXTRA-PYRAMIDAL REACTIONS

Treatment Indication: A response to a particular medication, typically a phenothiazine (Phenergan, Thorazine) or a butyrophenone (Haldol, droperidol) marked by acute dystonia (muscle spasms) or akathisia (motor restlessness).

ALL EMS PROVIDERS

- Establish Primary Management

ILS AND ABOVE PROViDERS

- Enroute, initiate an isotonic IV. Titrate to maintain LOC, HR, and end organ perfusion.
- If altered LOC, assess Blood Glucose Level

ALS PROVIDERS

- Administer diphenhydramine 25 – 50 mg IVP or IM
    - Pediatric dose is 1mg/kg IVP or IM

FAINTING / SYNCOPE

Treatment Indications: Patient experiences a sudden loss of consciousness. A thorough history is vital as it may lead the EMS care provider to the source of the problem. Syncope is almost always a result of another medical emergency, and should be considered a cardiac event until ruled out through thorough assessment. Look for the underlying complaint or signs.

ALL EMS PROVIDERS

- Establish Primary Management
- Detailed past medical history and history of present illness is required.
- Obtain base line vital signs, including orthostatics, if possible.
- Consider cardiac monitoring.

BLS AND ABOVE PROVIDERS

- Assess blood glucose level

ALS AND ABOVE PROVIDERS

- Initiate isotonic IV, titrate to maintain LOC, HR & end organ perfusion.
- Complete all appropriate ALS level assessments (12 Lead, etc).

FEVER

Treatment Indication: Fever is a natural body response primarily to infection or heat emergencies, but should last a relatively short period of time. Rapid temperature elevation in children may cause febrile seizures.

It is important to distinguish fever from an infection versus hyperthermia from environmental exposure, or even malignant hyperthermia from certain medications or illicit drugs. In fever caused by infection, the hypothalamus is telling the body to produce heat, a defense mechanism used to defeat the infectious agent. Acetaminophen resets the body's thermostat, thus lowering the fever. In environmental or malignant hyperthermia, or in extreme fever associated with infection (>105 degrees Fahrenheit), proceed with aggressive cooling measures.

ALL EMS PROVIDERS

- Establish Primary Management
- If temperature > 101.5 degrees Fahrenheit (38.6 Celcius) or if patient feels extremely hot, responders may apply cool moist towels to the body.
- If conscious and alert, patient may drink fluids.

BLS PROVIDERS

- ALS intercept required only if deceased LOC or history of seizure.
- For both pediatric and adult patients with fevers due to an infectious cause, acetaminophen (Tylenol and other commercial preparations) in liquid form may be administered per the label's instructions, especially for transport times over 20 minutes. Patient must be alert, have a gag reflex and not be allergic to acetaminophen.
    - The New Mexico State Scope of Practice states that the dose is 10mg/kg for acetaminophen. However, this is a difficult drug calculation to complete, and may lead to an overdose of the adult patient. Administer the acetaminophen per the instructions on the bottle. If the bottle is a children's preparation, it still may be used for adults, but do not exceed a dose of 750 mg for the adult.

ILS PROVIDERS

- If signs of dehydration or shock potential are present: enroute, initiate IV of NS, titrate to maintain LOC, HR and organ end perfusion.
- If febrile seizures occur, follow seizure protocol and gently cool patient by whatever reasonable means possible, but do not use cold IV fluid.

ALS PROVIDERS

- Treat recurrent seizures per the seizure guideline.

HYPERVENTILATION SYNDROME

Treatment Indications: Patient with rapid, deep respiration, anxiety, dyspnea and sometimes numbness or cramping of hands and around mouth. Although this may result from severe anxiety, other life-threatening conditions cannot be excluded.

ALL EMS PROVIDERS

- Establish Primary Management
- DO NOT use rebreathing therapy (e.g. breathing into a paper bag).
- Maintain high index of suspicion for true hypoxia and do a thorough history and physical exam. Apply a pulse oximeter.
- Administer at least 2 – 4 lpm of oxygen by nasal cannula initially, and then increase to a partial or non-rebreather mask at 10-15 lpm if necessary.
- Reassure patient and attempt to coach patient to breath slower.
- A decision to not transport should be made only after consultation with MCEP.
- Consider ALS intercept.

NARCOTIC OVERDOSE (KNOWN OR SUSPECTED)

ALL EMS PROVIDERS

- Establish Primary Management
- Consider scene safety/law enforcement
- Establish Primary Management
- This patient requires, as a minimum, ILS Provider level of care
- Take samples of suspected agent to hospital if available

BLS AND ABOVE PROVIDERS

- Assess blood glucose level
- Naloxone (Narcan)
  - Adult:
    - IM/SQ: increments of 0.4 mg as needed
    - IN: 1 mg in each nare for a total of 2 mg. (A concentration of 2mg in 2cc of naloxone must be used for this route of administration)
  - Pediatric:
    - 0.01 mg/kg slow SQ/IM/IN (one half dose administered in each nare for IN) up to 1.2 mg.
- Contact MCEP if a larger dose is required.
- Naloxone is titrated to adequate spontaneous respirations, not necessarily to the patient's level of response
- If patient's respiratory rate and volume do not improve despite naloxone administration, secure the airway with the most appropriate definitive airway (Combitube or LMA)

ILS AND ALS PROVIDERS

- Initiate IV of NS & titrate to maintain LOC, HR and end organ perfusion.
- Naloxone
  - Adult:
    - IV/IM/SQ: increments of 0.4 mg as needed to a total of 2 mg.
    - An additional 2.0 mg may be given if no response and propoxyphene (Darvon) or other synthetic opiate overdose is suspected.
    - IN: 1 mg in each nare for a total of 2 mg. (A concentration of 2mg in 2cc of naloxone must be used for this route of administration)
  - Pediatric:
    - 0.01 mg/kg slow IV/IM/IO/IN (one half dose administered in each nare for IN) up 1.2 mg.
- Contact MCEP if a larger dose is required.
- In cases of suspected multi-substance abuse, consider administration of sufficient amount of medication to restore consciousness, following appropriate restraint/safety measures.
- Patient may awaken quickly and be combative. Consider law enforcement involvement; be prepared to restrain if needed.
- If still unresponsive, secure a definitive airway (Combitube, LMA, or for ALS providers, ETT).
- If prompt improvement does not occur, see protocol for Unconscious/Unresponsive.
- Cardiac monitoring, treat as appropriate.

ORGANOPHOSPHATE EXPOSURE

Treatment Indication: Evidence of ingestion, inhalation or injection of an organophosphate substance.

- **S** = Excessive Salivation
- **L** = Excessive Lacrimation (tearing)
- **U** = Urination
- **D** = Defecation
- **G** = Gastric irritability
- **E** = Emesis

ALL EMS PROVIDERS

- Establish Primary Management

ILS AND ABOVE PROVIDERS

- Initiate isotonic IV; titrate to maintain LOC, HR and end organ perfusion.

ALS PROVIDERS

- If patient presents with signs and symptoms indicative of an organophosphate ingestion/overdose (SLUDGE), administer Atropine Sulfate 1 mg q 1 - 3 minutes up to 6 mg; Titrate to drying of secretions.
- **CONTACT MEDICAL CONTROL** for additional Atropine Sulfate orders

POISONING / OVERDOSE / TOXIC INGESTION

Treatment Indication: Patient presents with signs, symptoms and history suggesting exposure to poisons or overdose. Take any drugs (Prescription and OTC) or containers to hospital with the patient.

ALL EMS PROVIDERS

- Identify substance and estimate amount ingested, inhaled or injected
- If altered LOC, assess Blood Glucose Level
- If Tricyclic Antidepressants are suspected, ALS intercept is required

Note: New Mexico Poison Control is NOT recognized as ON-LINE Medical Control. Poison Control does have a value in identifying certain medications/substances and providing treatment guidelines to the receiving facility.

ILS AND ABOVE PROVIDERS

- Initiate isotonic IV; titrate to maintain LOC, HR and end organ perfusion.

ALS PROVIDERS

- Cardiac monitoring and treat as appropriate.
- See TCA protocol if suspected.
- Symptomatic Calcium Channel Blocker or Beta-blocker overdose exhibiting hypotension (unresponsive to fluid bolus) and/or dysrhythmias may benefit from an administration of Calcium Chloride 10% 10 ml SIVP over 10 minutes (if transport time still exceeds 15 minutes). **(Not for patients on Digoxin)**
- Additionally, consider contacting Medical Control for Glucagon order in symptomatic Beta-blocker and/or Calcium Channel Blocker overdoses (bradycardia, hypotension, etc) to be administered 3 - 5 mg IVP bolus q 3 - 5 minutes until desired response or max dosage of 10 - 15 mg. The limiting factor is that this amount of glucagon is rarely available.

PSYCHIATRIC EMERGENCIES

Treatment Indication: The patient will be alert, but may have other mental status alterations, such as: disorders of perception and thought, inappropriate situational behavior, appearance and attitude, abnormal affect or mood, poor insight and poor judgment, and disordered speech or speech content. Signs and symptoms may include: depression and suicidal behavior/ideation, hallucinations, pressured speech, loose associations, racing thoughts, grandiose or paranoid ideation, delusions, hysteria, extreme anxiety, or any other aggressive actions that could cause harm to the patient or others.

Field Treatment:

- Establish Primary Management
- Make sure the scene is safe
- Approach the patient in a calm, slow, reassuring and honest manner. Multiple people attempting to intervene may increase the patient's confusion and agitation.
- Protect the patient from injury. Involuntary restraint should be considered if indicated by patient behavior and if necessary to render care and protect rescuers. Refer to "Involuntary Emergency Transport" & the "Agitation" guidelines.
- Remove patient from stressful environment if possible. Remember psychiatric episodes can be extremely difficult for the patient and their families.
- Be sure to consider and treat all possible trauma/medical causes for aberrant behavior per protocols. Be aware that medical illnesses including hypoglycemia, hypoxia, stroke, head injury, CNS infection, etc. may mimic psychiatric illness. Do not assume the patient's condition is purely psychiatric.
- All patients will be assessed and evaluated by EMS regardless of transport status.
- Patient Exam: ABC's, Vital signs, and a thorough medical and psychiatric history. (Including all current medications), O2, IV and monitor as necessary. Do not agitate or irritate the patient with a prolonged exam

Transport: Patients may be transferred directly to a mental health facility if one of the following conditions applies:

- Patient has no signs or symptoms of a concomitant acute or chronic medical illness or injury, and has a history of a psychiatric illness which is consistent with current presentation
- Prior acceptance of patient has been arranged by a mental health facility.
- After consultation with MCEP of the receiving facility a joint decision is made that the patient does not require an ED evaluation and that the patient is appropriate for transport to a mental health facility.
- Law Enforcement officers may transport directly to a mental health facility if vital signs fall within stated parameters and the paramedic does not suspect any other underlying traumatic or medical causes.

Vital signs parameters

- HR of 60-90
- RR of 12-25
- O2 SAT. >90%
- Systolic BP 90-150
- BGL 70-200
- In all other situations, paramedics will transport psychiatric/mental patients directly to the emergency department for evaluation.

RESPIRATORY DISTRESS – ASTHMA

Treatment Indication: Constriction of the small airways of the lungs, increased secretions and wheezing. The patient almost always has a history of asthma and is suffering some degree of dyspnea. Physical exam reveals respiratory distress, decreased air movement and wheezing. Wheezing may not be present. Lack of wheezing with decreased breath sounds is often a sign of impending respiratory arrest.

ALL EMS PROVIDERS

- Establish Primary Management

BLS PROVIDERS

- For the patient with wheezes and SOB:
  - Albuterol 5mg in 3ccNS and, for the patient weighing less than 40 kg, 2.5mg albuterol in 3ccNS
  - Providers are encouraged to deliver nebulized Albuterol via assisted ventilation for patients who are unable to provide effective respiratory exchange.
  - Do not delay on-scene care waiting for the medication to take effect.

If asthma attack is severe and life threatening (e.g. cyanosis, inability to speak, impending respiratory arrest, unresponsive to Albuterol, silent chest, poor SaO_2):

- Adult Patient - Administer 0.3 mg Epinephrine 1:1000 SQ with a 0.3 cc syringe only. An Epi-Pen or a similar device may be utilized as well. If an Epi-Pen is utilized, administer it into the antero-lateral thigh per the instructions on the device.
- Pediatric Patient – If available, utilize an Epi-Pen Jr, which delivers half of the adult dose. This device is also delivered into the antero-lateral thigh.

Epinephrine should be administered ONLY WITH ON-LINE MEDICAL DIRECTION to patients with a history of coronary artery disease and/or hypertension or over the age of 45.

Cardiac monitoring is required for all patients receiving Epinephrine and all patients receiving at least 10 mg of Albuterol.

ILS PROVIDERS

- Consider initiating isotonic IV at a rate of 250 – 500 cc per hour; titrate to maintain LOC, HR and end organ perfusion. Dehydration is often a component of asthma, contributing to the mucus plugging that occurs, and fluid administration may be helpful.
- Albuterol nebulizer:
  - Children who appear to be < 8 years, 5.0 mg
  - Adults and children > 8 years, 5.0 - 10.0 mg, as needed. Repeat 5.0 mg per nebulizer treatment as necessary, with cardiac and vital sign monitoring for toxicity. Some patients may need continuous nebulizer treatment during entire transport.
- If not done before, and the patient is in extreme distress/status asthmaticus, administer 0.3 mg Epinephrine 1:1000 IM to the adult patient, and 0.01 mg/kg Epinephrine 1:1000 IM to the pediatric patient (less than 30 kg). This may be repeated prn q 3 - 5 minutes up to a maximum of three doses. Contact an MCEP if repeated doses are needed.

ALS PROVIDERS

- Mix prediluted 0.5 mg Ipratropium (Atrovent) with prediluted albuterol 5.0 for first ALS administered nebulizer.
- For adult patients refractory to the above treatments, administer 2 Gm $MgSO_4$ diluted in 50 – 100 cc slow IV push over several minutes.
- If intubation is required, asthmatics should not be hyperventilated, but SaO_2 should be maintained at 92% or greater with controlled ventilation.

RESPIRATORY DISTRESS – COPD/PNEUMONIA

Treatment Indications:

- COPD – shortness of breath, often accompanied by wheezing, rales, and rhonchi. This patient usually has a long history of smoking and may be on home oxygen.
- Pneumonia, CHF, pulmonary contusion, and partial airway obstruction are other causes of respiratory distress. It may be difficult to distinguish between these in the field but their treatment is similar.

ALL EMS PROVIDERS

- Establish Primary Management
- Position of Comfort
- Apply Oxygen at 2 – 4 LPM and apply a pulse oximeter. The level of oxygen should be increased to 10 – 15 LPM as necessary using partial non-rebreather mask.
- Brief history and physical with emphasis on breath sounds.
- Oxygen should not be withheld in the severely ill patient out of fear of respiratory arrest and if high oxygen requirements are necessary. Be prepared to assist ventilations with a bag valve mask if respirations are >30 or <10 or if the patient is in moderate to severe distress.
- Initiate rapid transport and ILS/ALS intercept.

BLS PROVIDERS AND ABOVE

- If wheezing is present, administer an albuterol nebulizer:
    - Adults and children > 8 years, 5.0mg, as needed. Repeat 5.0 mg per nebulizer treatment as necessary, with cardiac and vital sign monitoring. Some patients may need continuous nebulizer treatment during entire transport.
    - Providers are encouraged to deliver nebulized Albuterol via BVM for patients who are unable to provide effective respiratory exchange.
    - If the patient is febrile, consider acetaminophen administration per the Fever Guideline.

ILS PROVIDERS AND ABOVE

- Enroute, start an IV of NS. Titrate to maintain LOC, HR and end organ perfusion, and consider bolus for dehydration, especially with pneumonia patients.
- Do not delay on scene care waiting for the medication to take effect.
- Cardiac monitoring is required for all patients receiving > 10 mg of Albuterol.

ALS PROVIDERS

- If the patient is suspected to be septic from pneumonia, consider treating per the Hypotension Guideline, including fluid administration and Dopamine administration if appropriate.
- If intubation is required, follow the intubation and agitation guidelines as appropriate.

SEIZURES / CONVULSIONS

Treatment Indications: Uncontrolled, disorganized impulses in the CNS resulting in uncontrolled contraction of skeletal musculature. Most seizures spontaneously end within 5 minutes with a postictal state of varying in length with unconsciousness or altered LOC. Seizures do not usually require a paramedic level response and intervention if thre is a history of seizures, and the patient has a normal, single seizure. Status Epilepticus exists when witnessed seizure activity continues for > 10 minutes or multiple seizures recur without a return to full mental capacity. These do require paramedic level intervention.

ALL EMS PROVIDERS

- Establish Primary Management
- Protect patient and provider from injury. Maintain airway and place nothing in the mouth.
- Oxygen at 10-15 lpm via PNB
- Have suction available
- Obtain history of seizure activity including onset, duration, type, medication taken and prior history

BLS ANDABOVE PROVIDERS

- Assess blood glucose level, treat if < 60 mg/dl.

ILS AND ABOVE PROVIDERS

- Initiate IV of NS, titrate to maintain LOC, HR & end organ perfusion

ALS PROVIDERS

- If seizure is prolonged (greater than 10 minutes) or if more than two seizures reoccur without an intervening lucid period, administer **Diazepam**
    - Adult: 2 - 10 mg SIVP, up to a maximum of 20 mg.
    - Children: 0.1 - 0.2 mg/kg SIVP or IO.
        - Diazepam may be administered rectally via a lubricated 3 cc syringe. The pediatric rectal dose is 0.3 - 0.5 mg/kg.
    - Titrate for effect, may repeat dose as needed for seizure control.

<u>CONTACT MEDICAL CONTROL</u> for Diazepam administration > 20 mg in Adults, 10 mg in children and 5 mg in infants.

For seizures unresponsive to the above, notify Medical Control early of an incoming Status Epilepticus patient, and consult for any additional medications.

See Eclampsia protocol for treatment of pregnancy related seizures

STROKE – CEREBROVASCULAR ACCIDENT

Designation of Condition: Patient presentation with signs, symptoms and history consistent with a cerebrovascular insult/accident.

ALL EMS PROVIDERS

- Establish Primary Management
- A detailed history and time of onset is critical, however, you may be able to obtain this information enroute. Do not delay transport any more than necessary.
- Utilize the Cincinnati Prehospital Stroke Scale© ***
- Initiate rapid transport to a facility with a CT Scanner
- Administer high flow oxygen at 10 – 15 lpm via non-rebreather, and closely monitor and maintain the patient's airway if necessary.
- If BVM ventilation is needed, most patients will be ventilated at a rate of about 12 ventilations per minute. If the patient exhibits signs of significantly increasing intracranial pressure and impending herniation (e.g. development of unilateral/asymmetrical pupil dilation, unreactive pupils, or extensor posturing), then ventilate at a rate of 16 – 20 ventilations per minute.
- As of this writing (June, 2006), aspirin is still not recommended for any type of stroke patient.

ILS PROVIDERS

- Initiate IV of NS, titrate to maintain LOC, HR & end organ perfusion, including a BP of at least 90 mmHg.
- Assess the blood glucose level. If <60, administer D50% 12.5 Grams; recheck the BGL, and if still <60, administer another 12.5 Gm.
- At the time of this printing, no Stroke Centers have been established.

ALS PROVIDERS

- Follow airway management protocols as appropriate, including Lidocaine pre-intubation administration and Altered Mental Status – Agitation guideline if necessary.

***The Cincinnati Prehospital Stroke Scale© (Kothari R, et al. *Acad Emerg Med 1997; 4:986-990)*Facial Droop (have patient show teeth or smile):

- Normal – both side of face move equally.
- Abnormal – one side of face does not move as well as the other side.

Arm Drift (patient closes eyes and holds both arms straight out for 10 seconds):

- Normal – Both arms move the same *or* both arms do not move at all (other findings, such as pronator grip, may be helpful)
- Abnormal – one arm does not move *or* one arm drifts down compared with the other.

Abnormal Speech (have the patient say "you can't teach an old dog new tricks"):

- Normal – patient uses correct words with no slurring.
- Abnormal – patient slurs words, uses the wrong words, or is unable to speak.

TRICYLIC ANTIDEPRESSANT OVERDOSE

Treatment Indication: Patient will have ingested a known or suspected tricyclic substance (Elavil, Thorazine, Mellaril, Prolixin, Navane, Amitriptyline, Flexeril and many more).

ALL EMS PROVIDERS

- Establish Primary Management

ILS PROVIDERS

- Initiate at least one IV of NS, and titrate the IV to the patient's blood pressure if hypotensive, otherwise administer 500 cc bolus, then TKO. Multiple IV lines are encouraged.

ALS PROVIDERS

- If the patient has any one of the following,
  - Heart rate > 110
  - QRS widening > 1.2 mm
  - Decreased LOC or unresponsive
  - Ventricular arrhythmia's
  - Seizures
  - Hypotension
- Then administer:
  - Sodium Bicarbonate (NaHCO3) 1 mEq/kg IVP, followed by NaHCO3 infusion mixed 1 mEq/kg in 1 liter of NS and running at 300 – 400 cc/hr.
- A Terminal R in lead AVR on the 12 lead may be an early sign of TCA use & abuse.
- CONTACT MEDICAL CONTROL

UNCONSCIOUS / UNRESPONSIVE

Designation of Condition: The patient will have a pulse, but will be unconscious from an undetermined cause.

ALL EMS PROVIDERS

- Establish Primary Management
- Assess and ensure a patent airway, rate and depth of respirations, and circulation. Combitube insertion should not be considered until hypoglycemia and/or the possibility of a narcotic overdose has been ruled out.
- If you believe the patient was traumatically injured, consider spinal motion restriction.
- Assess Blood Glucose Level
- Cardiac monitoring

BLS AND ABOVE PROVIDERS

- If narcotic overdose is suspected and hypoglycemia has been ruled out as a cause of the unresponsiveness, administer naloxone per Narcotic Overdose Protocol

ILS AND ABOVE PROVIDERS

- Initiate isotonic IV, titrate to maintain LOC, HR and end organ perfusion
- If Blood Glucose Level is < 60 mg/dl with signs and symptoms consistent with hypoglycemia, administer Dextrose per Diabetic Emergencies protocol.
- Dextrose should not be administered to an unconscious patient who has a normal glucose level, and no history of present illness (HPI) or past medical history (PMH) consistent with hypoglycemia.
- Never withhold Dextrose from any hypoglycemic patient.
- If no change, administer Naloxone per Narcotic Overdose protocol.
- Aggressive Airway management required:
  - If the patient fails to respond to any of the above treatments and the patient is in a deep state of unconsciousness (no gag reflex), a LMA/MLA should be considered.
- Consider ALS intercept

ALS PROVIDERS

- Consider intubation as appropriate
- Perform all appropriate ALS assessments and care.

VACCINATIONS

- **Treatment Condition:** To optimize the ability for County EMS personnel to administer immunologic agents within their own or surrounding departments.
- Administration of Hepatitis B vaccine will follow all appropriate manufacture guidelines and the County SOG's.
- Any question regarding the administration of the vaccine should be referred to the EMS Chief or medical director.

CARDIAC EMERGENCIES

Notes:

GENERAL GUIDELINES

The cardiac patient must be assessed and reassessed frequently, especially prior to each therapeutic intervention. All cardiac patients will be given Oxygen at a flow rate sufficient to treat any component of shortness of breath. If the patient is not extremely short of breath, a flow rate of ~~2~~– 4liters per minute via nasal cannula is recommended. Cardiac patients should be allowed to seek a position of comfort, unless they are in shock, in which case supine positioning is preferred. Cardiac emergencies in pediatric patients are very unusual, and necessitate some modifications, but the goal should remain to assure the patients oxygenation, ventilation, and circulatory status.

- EMT Basics and EMT Intermediates should obtain cardiac monitoring of patients with cardiac-related chest pain. A ten-second EKG tracing strip should be recorded on all cardiac patients if possible. This strip should be turned over to the receiving facility or paramedic intercept, as appropriate. Bizarre rhythm changes should be recorded via EKG tracing strip.
- Paramedic level response is warranted for all patients in cardiac arrest or with active pain/discomfort suggestive of an AMI. A thorough assessment and detailed history as well as a differential diagnosis technique should be accomplished on every cardiac patient. Team assessments and team decision are encouraged when attempting to define the cause of the complaint.
- In the case of a cardiac arrest when resuscitation attempts appears to be futile, EMT – B's and EMT-I's, must CONTACT MEDICAL CONTROL to solicit orders for field termination of resuscitation. Generally, these are patients presenting in Asystole, and for whom paramedic level care is greater than 20 minutes away. While a specific downtime is not required, patients who have been in cardiac arrest greater than thirty minutes and are in asystole generally do not survive.

ALS PROVIDERS

- CODE SUMMARY documentation is mandatory for all unstable cardiac patients. Two Code Summary strips should be obtained, one for the facility and one attached to the internal copy of the EMS Run Report for Quality Assurance purposes. When defibrillation is indicated, it should be performed as quickly as possible. Patients should be reassessed after any rhythm change or intervention.
- All patients in cardiac arrest for whom resuscitation is initiated require immediate advanced airway, intravenous line, rhythm appropriate medications and cardiac monitoring, although defibrillation may take precedence. Patients in cardiac arrest may be managed in the field, as appropriate. All other cardiac patients require transport at the earliest reasonable opportunity.
- Paramedics who are volunteers for any of the districts for Sandoval County Fire Department must contact Medical Control to solicit orders for field termination of resuscitation. Consider field termination of resuscitation efforts on all adult cardiac arrest patients who are unresponsive to appropriate defibrillation, successful airway control, ventilation and rhythm appropriate medications*.

*excluding hypothermic and/or pediatric patients.

CHEST PAIN /SUSPECTED MYOCARDIAL INFARCTION

Treatment Indications: Signs and symptoms may include all, some or none of the following: severe substernal chest pain/discomfort that may radiate to the neck, jaw, or down arm; shortness of breath, sweats (diaphoresis), apprehension, nausea, and vomiting. When in doubt, treat as AMI

ALL EMS PROVIDERS

- Primary Management
- Start oxygen, a minimum of 4 LPM via nasal cannula, increasing for increased distress.
- May give two to four (2 – 4) chewable "children's" aspirin (162 mg) if not allergic and suspect cardiac related chest pain.
- Transport as soon as feasible.
- Allow patient to assume most comfortable position. In most cases, no exertion should be permitted, with the caregivers assisting the patient as much as possible.
- Arrange early ALS intercept for all chest pain patients.

BLS PROVIDERS

- Begin cardiac monitoring for intercept, enroute.
- Without delaying transport, consider obtaining 12-lead EKG (if available).

ILS PROVIDERS

- Enroute, initiate IV NS at keep open rate with 18 - 20 gauge catheter. Titrate to LOC, HE and end organ perfusion.
- If SBP >100/HR>60 give NTG 0.4 mg SL every 5 minutes to a maximum of 3 doses. You must have an IV started prior to giving NTG. (NTG contraindicated if patient has taken Viagra, Cialis, Levitra, or any other medication for erectile dysfunction in prior 48 hours.)
- If SBP >100/HR>60 is maintained and 3 NTG have been given, and a paramedic is on scene and agrees with the decision, ILS caregivers may administer Morphine Sulfate 2 – 10 mg, titrating 2 – 10 mg every 2 – 5 minutes to the desired effect and patient's hemodynamic status. If a paramedic is not on scene, the ILS caregiver must contact a MCEP for orders for Morphine Sulfate, and administer as previously described.
- If time permits, a second IV NS should be started to keep open rate.

ALS PROVIDERS

- Obtain 12 Lead ECG.
    - If S – T changes are noted in Leads II, III, and aVF, suspect an inferior MI. Approximately 40% of inferior MI's are a right ventricular infarction (RVI). If there are indications of an inferior MI, accompanied by hypotension, distended neck veins, and generally clear lung sounds, you must have a high index of suspicion of RVI. RVI makes the administration of nitroglycerin potentially detrimental to the patient by reducing the preload and cardiac output.
    - If RVI is suspected, obtain a standard 12 lead, then obtain an additional 12 lead utilizing V4R, and ideally V5R & V6R. If there are S-T elevations, the RVI is basically confirmed, and nitroglycerin therapy should ideally not be utilized for these patients. Proceed to cautious morphine sulfate therapy for pain relief for patients with RVI.
- If chest pain is unrelieved after 2 or 3 NTG doses and the patient is hemodynamically stable, administer Morphine Sulfate, 2 – 20 mg IV, titrating 2 - 4 mg every 5 minutes to effect and blood pressure.
- Should a patient need more than 20 mg of morphine, contact Medical Control for orders.

ATRIAL FIBRILLATION/FLUTTER, SYMPTOMATIC

Treatment Indications: The patient appears unstable with a heart rate > 150 bpm with Atrial Flutter or Atrial Fibrillation on the rhythm strip with the patient complaining of SOB, chest pain or hypotension and has decreased mental status.

ALL EMS PROVIDERS

- Establish Primary Management

ILS PROVIDERS

- Initiate IV of NS, titrate to maintain LOC, HR & end organ perfusion with frequent assessing of the patient's breath sounds

ALS PROVIDERS

Field cardioversion is associated with a risk of embolic complications, especially in patients with atrial fibrillation that is longer in duration than 48 hours. It should be reserved for the severely symptomatic patients with any combination of chest pain, SOB, hypotension, or an altered mental status. Additionally, adenosine should NOT be used for patients in atrial fibrillation or atrial flutter, especially if a history of pre-excitation syndrome exists (ie, a delta wave, characteristic of Wolf Parkinson White syndrome). Adenosine can cause a paradoxical increase in the ventricular response to the rapid atrial impulses of atrial fibrillation.

- Contact MCEP if feasible for consultation and orders for treatment. However, if this will delay appropriate treatment for a critical patient, proceed with the following treatment guidelines.
- Sedate with Valium 2 – 10 mg SIVP as appropriate
- Atrial Fibrillation – Synchronized cardioversion at 100 Joules; if not successful, proceed to 200, 300 & 360 Joules as needed for conversion
- Atrial Flutter – Synchronized cardioversion at 50 Joules to 100, 200, 300 & 360 Joules as needed for conversion
- Transport and contact MCEP
    - 2006 AHA standards state there is evidence to support administering Magnesium Sulfate (1 gram in 250cc) over 5 – 60 minutes, with the more rapid infusion for unstable atrial fibrillation patients. Consider consulting with an MCEP regarding this option for unstable A-fib patients refractory to cardioversion. An MCEP order is required for this treatment option.

SUPRAVENTRICULAR TACHYCARDIA

Treatment Indications: The patient will have a heart rate >150 beats per minute with a Supraventricular focus by history or a QRS complex < 0.12 seconds and EKG consistent with SVT. EKG tracings are to be made during any of the following ALS procedures. Patients often have a history of recent episodes. Exclude other causes (i.e.: increased HR secondary to GI bleed, fever, sepsis, etc).

Consider compensation Tachycardia and global clinical picture before treating rhythm.

ALL EMS PROVIDERS

- Establish Primary Management
- ALS intercept required

ILS PROVIDERS

- Initiate IV of NS, titrate to maintain LOC, HR and end organ perfusion, with frequent assessment of the patient's breath sounds.

ALS PROVIDERS

- Stable
  - Initiate continuous cardiac monitoring and recording prior to conversion efforts.
  - Use the Valsalva Maneuver and/or the Valsalva Maneuver in combination Trendlenberg position
  - Adenosine 6 mg rapid IVP (1-2 seconds) followed by 20 cc NS flush
  - If unchanged, repeat Adenosine 12 mg rapid followed by 20 cc NS flush
  - If unchanged, repeat Adenosine 12 mg once more with flush
- Unstable

  If the patient is unstable with a narrow complex SVT, you may administer adenosine while preparations are being made for cardioversion. However, if this necessitates the initiation of an IV or other significant delays, and the patient appears critically unstable, proceed directly to cardioversion. Critically unstable patients will demonstrate severe chest pain, severe SOB, profound hypotension, or a significantly altered mental status.
  - Adenosine 6 mg rapid IVP (1-2 seconds) followed by 20 cc NS flush
  - If unchanged, repeat Adenosine 12 mg rapid followed by 20 cc NS flush
  - If unchanged, repeat Adenosine 12 mg once more with flush
  - If unsuccessful and patient continues to present unstable with hypotension, decreased LOC & chest pain:
  - Sedate with Valium 2 – 10 mg as appropriate (maximum of 2 mg increments)
  - Synchronized Cardioversion at 100 Joules
  - Synchronized Cardioversion at 200 Joules
  - Synchronized Cardioversion at 300 Joules
  - Synchronized Cardioversion at 360 Joules

BRADYCARDIA, SYMPTOMATIC

Treatment Indications: The patient will present with a hemodynamically unstable Bradycardia (blood pressure < 90 mmHg systolic, decreased LOC, and a heart rate of < 60 bpm with associated signs and symptoms including: chest pain, shortness of breath, etc.)

ALL EMS PROVIDERS

- Establish Primary Management
- High flow oxygen via non-rebreather mask
- ALS intercept required

ILS PROVIDERS

- Initiate IV of NS, titrate to maintain LOC, HR & end organ perfusion

ALS PROVIDERS

- Begin transcutaneous pacing at a rate of 70 bpm. Begin increasing by 20 mA increments until electrical capture obtained, then increase by 5 mA increments until mechanical capture is obtained.
    - Atropine may be considered first line for patients with no SxS of myocardial ischemia or high degree block (2^{nd} Degree Type II or 3^{rd} Degree AV blocks). Additionally, Atropine is preferred over pacing for vagal induced bradycardias.
- IV access required, as the patient may require sedation/analgesia. Valium 2 – 10 mg and/or 2 – 10 mg of Morphine may be administered for pain control and sedation during pacing. However, noninvasive pacing should not be delayed in order to initiate a peripheral IV. Ideally, both procedures should be performed simultaneously. Titrate slowly secondary to additional decreased blood pressure, and diligently monitor the airway.
- If Atropine therapy is administered, give Atropine Sulfate IV or ET 0.5 mg every 3 – 5 minutes or up to a maximum of 3 mg. The goal is a heart rate of at least 60 bpm and a blood pressure >90mm/Hg systolic.
    - In the setting of a acute MI or with a third degree heart block or Mobitz type II second degree heart block, Atropine should be considered only after attempts to pace have failed.
- If above treatment is not effective or no pacer available:
- Dopamine IVPB Drip, start at 5-20 mcg/kg/min., titrate to heart rate and BP.

NOTE: Never treat third degree heart block and ventricular escape beats with Lidocaine.

CARDIOGENIC SHOCK

Treatment Indications: Cardiogenic shock can be due to failure of heart muscle, valvular insufficiency or heart rhythm disturbances (too fast or too slow). The most common cause is an acute myocardial infarction with subsequent loss of ventricular output. The SxS associated with any of the causes will usually be similar, with the patient usually presenting with a decreased level of response, hypotension, pale, cool, diaphoretic skin and other general SxS of shock. Additionally, the classic cardiogenic shock patient will develop pulmonary edema, with accompanying shortness of breath, wet, noisy respirations (rales/crackles/rhonchi), possibly pink frothy sputum and cyanosis. These patients require expeditious transport.

ALL EMS PROVIDERS

- Establish Primary Management
- High Flow oxygen via non-breather
- If necessary, assist the patient's ventilations with a BVM
- ALS intercept required

ILS PROVIDERS

- Initiate IV of NS, titrate to maintain LOC, HR and end organ perfusion. If BP < 80 mmHg and lungs are clear, administer a fluid challenge of 250 ml and reassess the patient's status, especially lung sounds.

ALS PROVIDERS

- If rate related, correction of the rate problem is a priority
    - For bradycardia, treat according to the Bradycardia Guideline, utilizing transcutaneous pacing and/or atropine, and dopamine when appropriate.
    - For tachycardia, treat according to the Tachycardia Guideline, utilizing appropriate vagal maneuvers, electrical intervention and/or adenosine when appropriate.
- If the cardiogenic shock is not related to the heart rate, initiate a Dopamine drip @ 5-20 mcg/kg/min. The goal is increased perfusion (increasing systolic BP to 90 – 100 and improved mental status) without significantly increasing the heart rate.
- For continued respiratory distress or respiratory failure, treat with the most appropriate of the following:
    - Endotracheal intubation per the Airway Management – Intubation Guideline

PULMONARY EDEMA & CONGESTIVE HEART FAILURE

Treatment Indications: Patient presenting with signs, symptoms and history of moderate / severe SOB and /or hypotension. The patient will usually present with shortness of breath (wet noisy respirations/crackles) and possibly pink frothy sputum (pulmonary edema). It should be noted that a fever suggests an infectious cause (i.e. pneumonia) rather than cardiac origin.

ALL EMS PROVIDERS

- Establish Primary Management, and position the patient in an upright sitting position.
- High Flow oxygen via non-breather
- If necessary, assist the patient's ventilations with a BVM
- ALS intercept required

ILS PROVIDERS

- Initiate IV of NS, titrate to maintain LOC, HR and end organ perfusion
- If wheezing noted, consider Albuterol nebulizer 2.5 mg.

ALS PROVIDERS

- If the systolic blood pressure is > 100 mmHg, assure that a patent IV is in place, then administer:
  - Nitroglycerin 0.4 mg sublingual q 3 – 5 minutes, until the shortness of breath is relieved or the systolic blood pressure drops below 90 mmHg.
  - NTG contraindicated if patient has taken Viagra, Cialis, or Levitra in prior 48 hours.
- Lasix 20-80 IVP
  - Consider higher dose (double the patient's normal oral dosage) for the patient already prescribed Lasix
  - Contact Medical Control if the patient does not have any history of CHF, and/or is not already on oral diuretics
- Morphine Sulfate 2-20 mg titrated to effect
  - Morphine Sulfate dosages above 20 mg require Medical Control consult
  - Morphine is typically most helpful in low dosages of 2 mg increments
- If the patient becomes obtunded and/or is in danger of complete respiratory collapse, perform endotracheal intubation per the Airway Management – Intubation Guideline

VENTRICULAR TACHYCARDIA, STABLE

Treatment Indications: The patient will have demonstrated Sustained Ventricular Tachycardia (broad QRS tachycardia) on the monitor and must be conscious and alert, have a blood pressure > 90 mm Hg, and will be free of significant SOB, chest pain and diaphoresis.

ALL EMS PROVIDERS

- Establish Primary Management
- ALS intercept required

ILS PROVIDERS

- Initiate IV of Ns, titrate to maintain LOC, HR and end organ perfusion

ALS PROVIDERS

- Lidocaine 1.5 mg/kg IVP.
- Repeat Lidocaine 0.75 mg/kg every 5 minutes until a total dose of 3 mg/kg has been given
    - Lidocaine maintenance drip and dose should be reduced by one-half for patients over 70 years old, and in those with liver failure or congestive heart failure
- After suppression of the dysrythmia, or when the full loading dose has been given, initiate IVPB Lidocaine drip at 2 – 4 mg/min.
- If no response to above, and rhythm is possibly an SVT with aberrancy, administer Adenosine per the Supraventricular Tachycardia Guideline
- If rhythm is thought to be Tordsades de Pointes (polymorphic ventricular Tachycardia), draw up 2 grams Magnisium Sulfate 50% with a 10 cc syringe, then add enough normal saline to have a total of 10 cc of volume, and administer this over 1 minute.

VENTRICULAR TACHYCARDIA, UNSTABLE

Treatment Indications: Sustained ventricular tachycardia (wide QRS Tachycardia) will be present on the monitor. The patient will have a pulse, but the rate will generally be >150 bpm and the patient will be hypotensive with decreased mental status, significant SOB, severe chest pain or diaphoresis.

ALL EMS PROVIDERS

- Establish Primary Management
- ALS intercept

ILS PROVIDERS

- Initiate IV of NS, titrate to maintain LOC, HR & end organ perfusion

ALS PROVIDERS

- Sedate with Valium 2 – 10 mg SIVP if time and patient condition allows, but if critical, do not delay electrical therapy
- If monomorphic:
    - Synchronized Cardioversion * @ 100 Joules; if ineffective then:
    - Synchronized Cardioversion * @ 200 Joules; if ineffective then:
    - Proceed to Synchronized Cardioversion * @ 300, & 360 Joules, as needed
- If after the 4 synchronized cardioversions the patient remains in V-Tach and unstable, administer Lidocaine 1.5 mg/kg IVP or ET
- Synchronized Cardioversion * 360 Joules
- Repeat Lidocaine 0.75 mg/kg x 2 (up to 3 mg/kg max dose)
- Synchronized Cardioversion * @ 360 Joules after each bolus of Lidocaine
- After suppression of the dysrythmia, or when the full loading dose has been given, initiate IVPB Lidocaine drip at 2 – 4 mg/min.
- If rhythm is thought to be Tordsades de Pointes (polymorphic ventricular Tachycardia), draw up 2 grams Magnesium Sulfate 50% with a 10 cc syringe, then add enough normal saline to have a total of 10 cc of volume, and administer this over 1 minute.

* Defib if cardioversion is delayed and the heart rate is >160 bpm in a symptomatic patient.

CARDIAC ARREST (NON TRAUMATIC) – ADULT & PEDIATRIC

Treatment Indication: Unconscious and unresponsive patient without respiratory effort and no palpable pulses.

ALL EMS PROVIDERS

- A paramedic level of response should be dispatched simultaneously to all cardiac arrest responses. If there is any doubt, the EMS response team should insure that an ALS unit is enroute at the first opportunity. EMS personnel should never wait for paramedic assistance before utilizing semi-automatic defibrillation. Early access to EMS and early defibrillation are critical to successful cardiac resuscitation.

Does patient meet Dead at Scene criteria? If not, proceed:

- Determine cardiopulmonary arrest and time last seen conscious.
- Consider moving the patient to where safe and effective resuscitation can occur, and establish Primary Management
- Start CPR at the compression-to-ventilation ration of 30:2 until defibrillator attached.
- Attach defibrillation pads; Utilize pediatric pads for children 1 – 8 years old, if available. Analyze rhythm; if defibrillation is indicated, call out "CLEAR!" and then defibrillate.
    - Deliver one shock and initiate chest compressions, assuring adequate quality of the compressions. AHA 2006 recommends not checking a pulse until 2 minutes of compressions have been performed after a defibrillation attempt. The rescuer performing chest compressions should be relieved every two minutes by another rescuer.
    - Perform the two minutes of CPR at the compression-to-ventilation ration of 30:2. At the end of the two minute period, check a pulse, re-analyze the cardiac rhythm, and defibrillate again if the AED advises. Continue this "shock –2 minutes of CPR – shock" sequence as needed.
    - If two rescuers are available during a pediatric resuscitation, a compression to ventilation rate of 15:2 may be used. There are no changes for two rescuer CPR in the adult.
- If the AED advises that no shock is needed, initiate CPR at the 30:2 rate. Defibrillate at any time the AED advises to do so, following the above guideline.
- Place a nasopharyngeal and/or an oropharyngeal airway as soon as feasible. Nasopharyngeal airways are not appropriate for small children; thusly the appropriate oropharyngeal airway should be used for these patients. Utilize a BVM or ATV with mask and high flow oxygen for the two ventilations at the appropriate time during the chest compressions. Deliver enough tidal volume to observe chest rise on the patient (if using an ATV, this will usually be about 600 - 800 cc for adults).
- Secure the airway with the appropriate Combitube, Laryngeal Mask Airway, or other approved device as soon as possible. Once the airway is placed, initiate ventilations at a rate of 10 ventilations per minute for both adult and pediatric patients. There is no pause in chest compressions for ventilations after this type of airway is placed.
    - If pulses return, but breathing is inadequate or absent, the adult patient should be ventilated at a rate of about 12 ventilations per minute, and the pediatric patient should be ventilated at a rate of 12 – 20.
- Consider placing the patient onto a long spine board, and transport when feasible if ILS/ALS not scene. Hostile scenes, emotional bystanders, hypothermic victims and pediatric cardiac arrest victims are unique situations that may merit early transportation of the patient while continuing resuscitation.

Guideline continues to next page

ILS PROVIDERS

- Initiate isotonic IV or possibly and IO for pediatric patients; if the patient was defibrillated and remains in V-Fib, venous access will ideally be initiated during the two minutes of chest compressions following the first shock. If arrest may be due to hypovolemia, initiate a second large bore IV at the first opportunity, and run them wide-open, frequently checking breath sounds.

- Administer epinephrine 1:10,000; if the patient was defibrillated, administer the Epi 1:10,000 as soon as possible after the 2 minutes of compressions following the first shock; if the patient was not defibrillated, but is pulseless, administer the Epi 1:10,000 as soon as possible.
    - Adult: 1 mg 1:10,000 followed by a 20 cc saline flush every 3 minutes IVP up to 6 milligrams. If there has been no change in the patient's status after 6 milligrams and ALS is not on scene, contact an MCEP for advice and possible termination of resuscitation orders.
- Pediatric: Obtain IV/IO, and administer 0.01 mg/kg of Epi 1:10,000. Repeat this dosage every 3 minutes, until pulses return, the resuscitation efforts cease, or the patient is handed off to ALS providers or a hospital.
    - Initiate transport in most situations involving pediatric codes. If transport has not been initiated, and the resuscitation has progressed for 30 minutes, contact an MCEP for possible termination of resuscitation.
- For all cardiac arrests, consider other reversible causes, i.e. hypoglycemia (BGL), drug overdose, etc.

ALS PROVIDERS

Paramedics will generally adhere to accepted ACLS & PALS Guidelines, with some exceptions. The treatments for specific rhythms and conditions can be found by finding the specific dysrythmia in this document.

VENTRICULAR FIBRILLATION & PULSELESS VENTRICULAR TACHYCARDIA

Treatment Indications: The patient is unconscious, unresponsive, apneic, pulseless and shows ventricular fibrillation on the monitor. This protocol assumes that the patient is remaining in V-Fib/Pulseless V-Tach

ALL EMS PROVIDERS

- Establish Primary Management, and **continue per the Cardiac Arrest Protocol**

ILS PROVIDERS

- Initiate IV of NS, titrate to maintain LOC, HR & end organ perfusion
- Epinephrine and other treatment modalities per the **Cardiac Arrest Protocol**

ALS PROVIDERS

- If the onset of V-Fib was witnessed and monitored, a precordial thump may be administered.
- Defibrillate once @ 200 Joules
- Immediately initiate CPR at the 30:2 compression to ventilation ratio, continuing for 2 minutes (AHA guidelines advise to perform 2 minutes of CPR following a defibrillation without performing a rhythm or pulse check until this 2 minute period of CPR is completed).
    - During this 2 minutes of CPR, assure IV access and intubation of patient if possible
    - Once patient is intubated, compressions and ventilations are no longer synchronized. Ventilate the patient at a rate of 8 – 10 breaths with enough volume to cause gentle chest rise (about 600 – 800 cc of tidal volume for most patients) and perform chest compressions at a rate of 100 per minute.
- Defibrillate at 300 joules if indicated, and immediately initiate compressions for two minutes.
- Administer epinephrine 1:10,000 x 1.0 mg IVP followed by a 10 – 20 cc flush, and repeat this every 3 – 5 minutes as long as the patient remains pulseless during the resuscitation. Venous access is preferable to the ET route. If ET is your only option, give 2 milligrams of Epi 1:1000 diluted in 5 cc's via the ET route, repeating this at the same dosage every 3 – 5 minutes until venous access is achieved.
    - AHA standards indicate that the Epinephrine may be given before or after the second and subsequent defibrillations (i.e: while the defibrillator is charging). However, it should not be given until the rhythm is determined and a pulse is checked, as it is a possibility that Epi will not be indicated.
    - High dose (3 – 5 mg) epinephrine should be utilized <u>only</u> for calcium channel or beta blocker overdose
- After two minutes of compressions, check for a pulse and determine the patient's rhythm.
- Defibrillate @ 360 Joules if indicated, and immediately initiate compressions for two minutes
- Administer Lidocaine 2% 1.5 mg/kg IVP (or ET if necessary). Repeat doses of 0.75 mg/kg may be given every 5 minutes to a maximum of 3 mg/kg.
- After two minutes of compressions, check the rhythm and pulse, and defibrillate @ 360 Joules if indicated. Continue this "2 minutes of Compressions –Rhythm Check – Defibrillation", administering the appropriate medications at the appropriate times for the duration of the resuscitation.
- In cases of known or suspected hyperkalemia, renal failure, or hypocalcemia, administer 10 cc of Calcium Chloride 10% SIVP, flush the line, then administer Sodium Bicarbonate 1mEq/kg SIVP. If the patient history merits, this may be done early on in the resuscitation, i.e. after the first or second defibrillation. Additionally, Calcium Chloride may be administered for an arrest preceded by a Calcium Channel Blocker (verapramil, nifedipine, etc) overdose, and Sodium Bicarbonate may be administered in an arrest preceded by a tricyclic antidepressant overdose. If an opiate OD preceded the arrest, administer 0.4 – 2.0 mg naloxone. If hypoglycemia is found, administer D50%.
- If rhythm is thought to be torsades de pointes (polymorphic ventricular tachycardia), draw up 2 grams Magnesium Sulfate 50% and enough NS to have a total of 10 cc of volume, and administer this over 1 minute.
- For persistent Ventricular Fibrillation or Pulseless Ventricular Tachycardia after medications and without conversion at any point after 30 minutes, resuscitation may be terminated per the General Guidelines for Cardiac Emergencies.

ASYSTOLE

Treatment Indications: The patient will be unconscious, unresponsive, pulseless and apneic and show asystole on the monitor (confirmed with ten second strips in at least two leads).

ALL EMS PROVIDERS

- Establish Primary Management
- If the adult patient presents in asystole and the down time was unclear or unknown, look for other signs of obvious death and consider not initiating resuscitation per the Dead at Scene Guideline.
- If the adult patient was a witnessed deterioration into asystole, or was defibrillated into asystole, continue with the asystole treatment guideline.

ILS PROVIDERS

- Initiate IV of NS, titrate to maintain LOC, HR & end organ perfusion
- Epinephrine 1:10,000 per Cardiac Arrest Protocol

ALS PROVIDERS

- Confirmation of condition, in multiple leads, initiate or continue CPR, and assure at least one patent IV and proceed with securing an advanced airway, preferably an ET tube.
- Administer epinephrine 1:10,000 x 1.0 mg IVP, and repeat this every 3 – 5 minutes as long as the patient remains pulseless during the resuscitation. Venous access is preferable to the ET route. If ET is your only option, give 2 milligrams of Epi 1:1000 diluted in 5 cc's via the ET route, repeating this at the same dosage every 3 – 5 minutes until venous access is achieved.
    - High dose (3 – 5 mg) IVP epinephrine should be utilized only in the event of a calcium channel or beta blocker overdose
- Atropine Sulfate, IVP or ET, 1 mg q 5 minutes until there is a change in rhythm, or a total of 3 mg has been given
- In cases of known or suspected hyperkalemia, renal failure, or hypocalcemia, administer 10 cc of Calcium Chloride 10% SIVP, flush the line, then administer Sodium Bicarbonate 1mEq/kg SIVP. If the patient history merits, this may be done early on in the resuscitation, i.e. after the epinephrine. Additionally, Calcium Chloride may be administered for an arrest preceded by a Calcium Channel Blocker (verapramil, nifedipine, etc) overdose, and Sodium Bicarbonate may be administered in an arrest preceded by a tricyclic antidepressant overdose. If an opiate OD preceded the arrest, administer 0.4 – 2.0 mg naloxone. If hypoglycemia is found, administer D50%.
- AHA standards no longer support pacing in any asystolic cardiac arrest.
- At this point, or at any point after CPR has been in progress for 30 minutes, resuscitation may be terminated after MCEP consult.

PULSELESS ELECTRICAL ACTIVITY

Treatment Indications: The patient will be unconscious, unresponsive, pulseless, apneic and shows organized electrical activity on the monitor.

In addition to severe cardiac disease, potentially treatable causes of PEA include hypovolemia, tension pneumothorax, hypoxemia, acidosis, pulmonary embolism, pericardial tamponade, vagotonia, drug overdoses, hypothermia and cardiac perfusion problems. If a Bradycardia exists concurrently, attempts to increase the heart rate are appropriate.

ALL EMS PROVIDERS

- Establish Primary Management
- Treat underlying cause

ILS PROVIDERS

- Establish at least one large bore IV line of NS and begin fluid bolus of 20 ml/kg.
- Assure proper ventilation and oxygenation.
- Administer Epinephrine 1:10,000 per the Cardiac Arrest Guideline

ALS PROVIDERS

- Continue or initiate CPR
- Administer epinephrine 1:10,000 x 1.0 mg IVP, and repeat this every 3 – 5 minutes as long as the patient remains pulseless during the resuscitation. Venous access is preferable to the ET route. If ET is your only option, give 2 milligrams of Epi 1:1000 diluted in 5 cc's via the ET route, repeating this at the same dosage every 3 – 5 minutes until venous access is achieved.
    - High dose (3 – 5 mg) IVP epinephrine should be utilized only in the event of a calcium channel or beta blocker overdose
- If the PEA rate is bradycardic, administer Atropine Sulfate, IVP or ET, 1 mg q 5 minutes until there is a change in rhythm, or a total of 3 mg has been given.
    - Pacing may be attempted at the paramedic's discretion; if so, initiate pacing at a rate of 70 and 140mA. Do not delay compressions more than absolutely necessary.
- In cases of known or suspected hyperkalemia, renal failure, or hypocalcemia, administer 10 cc of Calcium Chloride 10% SIVP, flush the line, then administer Sodium Bicarbonate 1mEq/kg SIVP. If the patient history merits, this may be done early on in the resuscitation, i.e. after the first epinephrine. Additionally, Calcium Chloride may be administered for an arrest preceded by a Calcium Channel Blocker (verapramil, nifedipine, etc) overdose, and Sodium Bicarbonate may be administered in an arrest preceded by a tricyclic antidepressant overdose. If an opiate OD preceded the arrest, administer 0.4 – 2.0 mg naloxone. If hypoglycemia is found, administer D50%.
- Consider field termination of resuscitation efforts after MCEP consult on all adult cardiac arrest patients who are unresponsive to appropriate defibrillation, successful airway control, ventilation and rhythm appropriate medications * or at any point after CPR has been in progress for 30 minutes.

*Excluding hypothermic cardiac arrests.

CARDIAC ARREST – HYPOTHERMIA

Treatment Indications: Cardiac arrest with the presence of a suspected or confirmed depressed core temperature <95 degrees Fahrenheit.

ALL EMS PROVIDERS

- Establish Primary Management. Ventilate with warm humidified oxygen, if available, at a maximum rate of 10 per minute.
- Check pulse for 30 - 45 seconds. If ANY pulse is detected, DO NOT perform chest compressions.
- If the patient is in cardiac arrest, begin CPR. Defibrillate if indicated.
- If the patient's core temperature is below 86° F, additional defibrillation should be deferred until the temperature is above 86° F. If core temperature is not obtainable, then proceed per the Cardiac Arrest Guideline, with modifications as noted below.
- Secure the airway with a Combitube or LMA.

ILS PROVIDERS

- Initiate IV of warmed NS, titrate to maintain LOC, HR & end organ perfusion
- Administer 1 mg of Epinephrine 1:10,000.
- If the patient's core temperature is below 86° F, additional epinephrine should be deferred until the temperature is above 86° F. If core temperature is not obtainable, then proceed per the Cardiac Arrest Guideline, except doubling the time interval between repeated epinephrine administrations to 6 – 10 minutes instead of 3 – 5 minutes.

ALS PROVIDERS

- Assure the securing of the airway, placing an ETT if necessary, and assure venous access.
- Defibrillate once if necessary and administer the first line epinephrine, lidocaine, and atropine as indicated.
- If the patient's core temperature is below 86° F, additional medications should be deferred until the temperature is above 86° F. If core temperature is not obtainable, then proceed per the appropriate Guideline depending on the patient's ECG rhythm, except doubling the recommended time interval between repeated medication administrations.
- Attempt rewarming by any means possible (removal of patient's wet clothes, significantly heat the patient care compartment, warm blankets, warmed IV solution, etc)
- If pulse is obtained, but is ventricular tachycardia with a pulse, treat per the Ventricular Tachycardia Guideline if the patient's temperature is 86° or above. If the temperature is not obtainable, treat per the Ventricular Tachycardia Guideline.
- If pulse is obtained, but bradycardic, do not treat bradycardia or atrial fibrillation unless you are certain the patient's temperature is above 86°.
- CONTACT MEDICAL CONTROL

PEDIATRIC ASYSTOLE

Treatment Indications: The patient will be at least 3 months of age and up to approximately 10 or 11 years of age, unconscious, unresponsive, pulseless, apneic and demonstrate asystole on the monitor (confirmed in at least 2 leads).

ALL EMS PROVIDERS

- Establish Primary Management, being particularly vigilant in oxygenation and ventilation.
- Follow the Cardiac Arrest Guidelines found in this document.

ILS PROVIDERS

Establish IV of NS

- IO access should be considered after 2-3 failed IV attempts
- Epinephrine 1:10,000, IVP or IO, 0.01 mg/kg, repeating every three to five minute as long as the patient remains pulseless during the resuscitation.

ALS PROVIDERS

- Epinephrine, IVP or IO (1:10,000) 0.01 mg/kg (0.1 cc/kg) to a maximum of 1 mg. Repeat at same dose every 3 – 5 minutes for remainder of resuscitation.
    - Vascular access (IV/IO) is considered superior to the ET route. If you do not have vascular access, but the patient is intubated with an ET tube, administer 0.1 mg/kg (0.1 cc/kg) epinephrine1:1,000 diluted in 3cc NS to a maximum of 10 mg. Repeat at same dose every 3 – 5 minutes until vascular access is obtained.
- Atropine Sulfate 0.02 mg/kg IV/IO; ET dose is 0.03 mg/kg. Repeat this once if needed after 3 – 5 minutes.
    - Minimum single dose for each administration: 0.1 mg; Maximum single dose for each administration 0.5 mg (1.0 mg for an adolescent).
- Pacing is not recommended for asystolic arrest
- As with an adult cardiac arrest, treat appropriately with the following medications if there are specific conditions or potential causes that warrant their administration:
    - Known or suspected hyperkalemia, renal failure, or hypocalcemia:
        - Calcium Chloride 10% - 20 mg/kg IV/IO Slow IVP
    - Calcium channel blocker overdose:
        - High Dose Epinephrine (3 mg 1:1000) every 5 minutes IV/IO
        - Calcium Chloride 10% - 20 mg/kg IV/IO Slow IVP
    - Opiate OD
        - Naloxone 2.0 mg IV/IO/ET
    - Tricyclic Overdose:
        - 1 mEq/kg Sodium Bicarbonate followed by an infusion of 1 mEq/kg in 1 liter of NS at 500 cc/hr
    - Hypoglycemia
        - Dextrose 25%, 1 gm/kg
- Generally, pediatric cardiac arrest patients should be transported. However, in cases of obvious death, contact an MCEP for consultation regarding cessation of the resuscitation.

PEDIATRIC BRADYCARDIA

Treatment Indications: The patient will be at least 3 months of age and up to approximately 10 or 11 years of age, and will present with a hemodynamically unstable Bradycardia and decreased LOC.

ALL EMS PROVIDERS

- Establish Primary Management
- If HR <60 with signs of poor perfusion (decreased LOC, etc) despite oxygenation & ventilation, begin compressions at 30 compressions to 2 ventilation, or if two rescuers are providing CPR, 15 compressions to 2 ventilations.
- If patient's HR is >60, but the respiratory effort is inadequate, initiate ventilations with a BVM @ 12 – 20 ventilations per minute. Ventilate gently, with enough volume to cause gentle chest rise.

ILS PROVIDERS

- Establish IV/IO of NS

ALS PROVIDERS

- Assess for symptoms of hypotension or poor perfusion
- Secure airway, utilizing an advanced airway if needed.
    - If patient is intubated, but has perfusing rhythm >60, ventilate at 12 – 20
    - If CPR is in progress, ventilate at 10 times per minute
- Epinephrine, IVP or IO (1:10,000) 0.01 mg/kg (0.1 cc/kg) to a maximum of 1 mg. Repeat at same dose every 3 – 5 minutes for remainder of resuscitation.
    - Vascular access (IV/IO) is considered superior to the ET route. If you do not have vascular access, but the patient is intubated with an ET tube, administer 0.1 mg/kg (0.1 cc/kg) epinephrine1:1,000 diluted in 3cc NS to a maximum of 10 mg. Repeat at same dose every 3 – 5 minutes until vascular access is obtained.
- Rapid transport
- If epinephrine is administered three times without improvement, or increased vagal tone or AV block is suspected, administer Atropine Sulfate 0.02 mg/kg IV/IO; ET dose is 0.03 mg/kg. Repeat this once if needed after 3 – 5 minutes.
    - Minimum single dose for each administration: 0.1 mg; Maximum single dose for each administration 0.5 mg (1.0 mg for an adolescent).
- If the epinephrine is transiently effective, but bradycardia recurs, consider the initiation of an epinephrine infusion if time allows.
    - Mix 1.5 mg in 250 cc of NS on a microdrip infuser (Buretrol, Volutrol, etc). Initiate at 5 microdrops per kilogram per minute (equivalent to 0.5 micrograms per kilogram per minute). Titrate to a HR of 100.
- Consider pacing at 100 beats per minute if pacer and pediatric pads available
- As with an adult cardiac arrest, treat appropriately with the following medications if there are specific conditions or potential causes that warrant their administration:
    - Known or suspected hyperkalemia, renal failure, or hypocalcemia: Calcium Chloride - 20 mg/kg IV/IO SIVP
    - Calcium channel blocker overdose: High Dose Epinephrine (3 mg 1:1000) every 5 minutes IV/IO and Calcium Chloride 10% - 20 mg/kg IV/IO Slow IVP
    - Opiate OD: Naloxone 2.0 mg IV/IO/ET
    - Tricyclic Overdose: 1 mEq/kg Sodium Bicarbonate followed by an infusion of 1 mEq/kg in 1 liter of NS at 500 cc/hr
    - Hypoglycemia: Dextrose 25%, 1 gm/kg

PEDIATRIC PULSELESS ELECTRICAL ACTIVITY

Treatment Indications: The patient will be at least 3 months of age and up to approximately 10 or 11 years of age, pulseless and apneic with an organized rhythm on the ECG monitor. Consider, and expeditiously treat, underlying causes such as hypovolemia, hypoxemia, acidosis, tension pneumothorax, cardiac tamponade, drug overdose, etc.

ALL EMS PROVIDERS

- Establish Primary Management, being particularly vigilant in oxygenation and ventilation.
- Follow the Cardiac Arrest Guidelines found in this document.

ILS PROVIDERS

- Establish IV of NS
  - IO access should be considered after 2-3 failed IV attempts
- Epinephrine 1:10,000, IVP or IO, 0.01 mg/kg, repeating every three to five minute as long as the patient remains pulseless during the resuscitation.

ALS PROVIDERS

- Epinephrine, IVP or IO (1:10,000) 0.01 mg/kg (0.1 cc/kg) to a maximum of 1 mg. Repeat at same dose every 3 – 5 minutes for remainder of resuscitation.
  - Vascular access (IV/IO) is considered superior to the ET route. If you do not have vascular access, but the patient is intubated with an ET tube, administer 0.1 mg/kg (0.1 cc/kg) epinephrine1:1,000 diluted in 3cc NS to a maximum of 10 mg. Repeat at same dose every 3 – 5 minutes until vascular access is obtained.
- If PEA rhythm is less than 60 – 80, administer Atropine Sulfate 0.02 mg/kg IV/IO; ET dose is 0.03 mg/kg. Repeat this once if needed after 3 – 5 minutes.
  - Minimum single dose for each administration: 0.1 mg; Maximum single dose for each administration 0.5 mg (1.0 mg for an adolescent).
- Pacing is not recommended for PEA arrest
- As with an adult cardiac arrest, treat appropriately with the following medications if there are specific conditions or potential causes that warrant their administration:
  - Known or suspected hyperkalemia, renal failure, or hypocalcemia:
    - Calcium Chloride - 20 mg/kg IV/IO Slow IVP
  - Calcium channel blocker overdose:
    - High Dose Epinephrine (3 mg 1:1000) every 5 minutes IV/IO
    - Calcium Chloride - 20 mg/kg IV/IO Slow IVP
  - Opiate OD
    - Naloxone 2.0 mg IV/IO/ET
  - Tricyclic Overdose:
    - 1 mEq/kg Sodium Bicarbonate followed by an infusion of 1 mEq/kg in 1 liter of NS at 500 cc/hr
  - Hypoglycemia
    - Dextrose 25%, 1 gm/kg
- Generally, pediatric cardiac arrest patients should be transported. However, in cases of obvious death, contact an MCEP for consultation regarding cessation of the resuscitation.

PEDIATRIC SUPRAVENTRICULAR TACHYCARDIA

Treatment Indications: The patient will usually have a heart rate >220. The monitor will show a rhythm with a Supraventricular origin and a QRS of <0.08 seconds.

ALL EMS PROVIDERS

- Establish Primary Management
- Expeditious transport

ILS PROVIDERS

- IV of NS, as needed, enroute.

ALS PROVIDERS

- Assure oxygenation and ventilation and venous access.
- Obtain 12 Lead ECG
- Diagnostic Clues
  - Sinus Tachycardia: Compatible history with known cause; p waves present/normal; R-R interval may be variable, but P – R interval is constant; Infant HR usually < 220, child HR usually < 180
  - SVT – History is vague, non-specific, and non-explanatory of reason for tachycardia; Patient may have hx of abrupt rate changes; P waves absent or abnormal; HR is not variable; Infant HR usually > 220, child usually > 180
- STABLE
  - Assure treatment of possible causes: hypovolemia, hypoxia, acidosis, hypoglycemia, etc.
  - Transport
- UNSTABLE – Patient showing signs and symptoms of hypoperfusion (diminished LOC, etc)
  - If venous access is in place:
    - Adenosine 0.1 mg/kg, maximum dose of 6 mg, follow with a rapid NS 5 ml bolus
    - Adenosine can be doubled and repeated once if SVT persists. Max total dose is 12 mgs.
    - If no response, sedate if needed and/or if time allows with 0.1 – 0.2 mg/kg Valium (max dose of 5mg) and proceed with synchronized cardioversion @ 1 joule/kg; repeat @ 2 joules/kg
  - If venous access is unavailable or delayed go directly to synchronized cardioversion
  - Rapid Transport

PEDIATRIC VENTRICULAR FIBRILLATION & PULSELESS VENTRICULAR TACHYCARDIA

Treatment Indications: The patient will be unconscious, unresponsive, pulseless, and apneic. The monitor will show ventricular fibrillation.

ALL EMS PROVIDERS

- Establish Primary Management with particular vigilance in securing and maintaining oxygenation and ventilation
- Follow the Cardiac Arrest Guideline for Defibrillation and CPR guidelines.

ILS PROVIDERS

- Establish IV of NS
  - IO access should be considered after 2-3 failed IV attempts
- Administer Epinephrine 1:10,000 IVP or IO, 0.01 mg/kg (0.1 cc/kg), repeating that dose every 3 – 5 minutes as long as the patient remains pulseless

ALS PROVIDERS

- If defibrillation has not been performed, defibrillate once at 2 Joules/kg, followed by 2 minutes of CPR.
  - During the 2 minutes of CPR, assure the airway is secured with the most appropriate advanced airway (ET/LMA), and assure venous access (IV/IO).
- After 2 minutes of CPR, check a pulse and determine the patient's rhythm. If indicated, defibrillate at 4 Joules/kg, and initiate CPR for 2 minutes.
- Administer Epinephrine 1:10,000 0.01 mg/kg (0.1cc/kg), and repeat this dose every 3 – 5 minutes if indicated.
- After 2 minutes of CPR, check a pulse and determine the patient's rhythm. If indicated, defibrillate at 4 Joules/kg, and initiate CPR for 2 minutes. Continue this pattern of "Defib - 2 minutes of CPR – Pulse/Rhythm Check – Defib" as indicated for the duration of the resuscitation.
- Administer Lidocaine 1 mg/kg IVP/IO, repeating every 5 minutes to a maximum total dose of 100 mg.
- If rhythm is thought to be torsades de pointes (polymorphic ventricular tachycardia), draw up 50 mg/kg (maximum of 2 grams) Magnesium Sulfate 50% and enough NS to have a total of 10 cc of volume, and administer this over 1 minute.
- As with an adult cardiac arrest, treat appropriately with the following medications if there are specific conditions or potential causes that warrant their administration:
  - Known or suspected hyperkalemia, renal failure, or hypocalcemia:
    - Calcium Chloride - 20 mg/kg IV/IO Slow IVP
  - Calcium channel blocker overdose:
    - High Dose Epinephrine (3 mg 1:1000) every 5 minutes IV/IO
    - Calcium Chloride - 20 mg/kg IV/IO Slow IVP
  - Opiate OD
    - Naloxone 2.0 mg IV/IO/ET
  - Tricyclic Overdose:
    - 1 mEq/kg Sodium Bicarbonate followed by an infusion of 1mEq/kg in 1 liter of NS at 500 cc/hr
  - Hypoglycemia
    - Dextrose 25%, 1 gm/kg
- Generally, pediatric cardiac arrest patients should be transported. However, in cases of obvious death, contact an MCEP for consultation regarding cessation of the resuscitation.

PEDIATRIC VENTRICULAR TACHYCARDIA

Treatment Indications: The patient will have a pulse and show sustained ventricular Tachycardia (wide complex QRS greater than 0.08 seconds) on the ECG monitor

ALL EMS PROVIDERS

- Establish Primary Management
- Expeditious Transport

ILS PROVIDERS

- IV of NS, as needed for unstable patient, enroute

ALS PROVIDERS

- STABLE
  - Assure IV access and treatment of possible causes: hypovolemia, hypoxia, acidosis, hypoglycemia, etc.
  - Lidocaine: 1:0 mg/kg IVP
  - If no response, rebolus Lidocaine 0.5 mg/kg every 5 minutes to a maximum dose of 100 mg.
  - It rhythm converts, initiate a Lidocaine drip at 1 mg/min.
  - Assess efficacy of ventilation/perfusion at regular intervals
  - If rhythm is not responsive to Lidocaine, CONTACT MEDICAL CONTROL for orders to proceed with administration of Adenosine
    - Adenosine 0.1 mg/kg, maximum dose of 6 mg, follow with a rapid NS 5 ml bolus
    - Adenosine can be doubled and repeated once if SVT persists. Max total dose is 12 mgs.
  - If no response, consider proceeding to the Unstable V-Tach Guideline.
- UNSTABLE – Patient showing signs and symptoms of hypoperfusion (diminished LOC, etc)
  - If venous access is in place, sedate if needed and/or if time allows with Valium 0.1 – 0.2 mg/kg (max dose of 5 mg) IVP/IO
  - Perform synchronized cardioversion @ 1.0 Joule/kg; if unsuccessful, repeat synchronized cardioversion @ 2.0 joules/kg
  - If unsuccessful, administer 1mg/kg lidocaine if venous access is available; wait approximately 1 minute, then perform the third synchronized cardioversion @ 2 joules/kg.
    - If venous access is not yet available, proceed with the third synchronized cardioversion. After this third synchronized cardioversion, secure venous access, and initiate lidocaine therapy.
  - If the third cardioversion is unsuccessful, wait 5 minutes and repeat the lidocaine @ 1 mg/kg (max total dose of 100mg), wait approximately 1 minute, and perform synchronized cardioversion @ 2 joules/kg.
    - If rhythm converts after any defibrillation, mix 1 gram lidocaine in 250 cc and administer a Lidocaine drip at 0.5 mg per minute (about 8 microdrops per minute).
  - If after four synchronized cardioversions, the patient is still in an unstable V-Tach, CONTACT AN MCEP for consultation and orders to continue electrical therapy.

NEONATAL RESUSCITATION

Treatment Indications: The patient is a newborn who requires resuscitative intervention. Extent and level of intervention is patient condition dependent.

ALL EMS PROVIDERS

- Establish Primary Management
- DO NOT delay delivery if birth appears imminent.
- After delivery of head:
  - Past recommendations were that in the presence of meconium, the baby's mouth and nose were suctioned before the shoulders delivered. This has shown no benefit, and is no longer recommended.
  - If meconium is present and the baby is vigorous after delivery (APGAR = >8), quickly suction meconium and any other secretions only by mouth as completely and quickly as possible (intubation has been shown to NOT be needed for vigorous babies, even with the presence of meconium). Warm and dry baby.
  - If the baby is not vigorous (APGAR <7), place in supine position in slight Trendelenburg position, and open/maintain airway. If ALS providers capable of neonatal intubation are not present, suction meconium and any other secretions, but do not suction for more than 10 seconds at a time without ventilating. After clearing the airway as much as possible, stimulate the baby by flicking the feet and/or rubbing the baby's back.
  - Initiate blow-by high flow oxygen if the baby has adequate respiratory effort, but do not chill the baby.
  - If respiratory rate is less than 30 breaths per minute, or the baby is apneic, gasping, or has persistent central cyanosis despite high flow blow-by oxygen AND/OR the baby's HR< 100, begin ventilations with the appropriate bag valve mask and 100% oxygen at a rate of 40 to 60 ventilations per minute, and provide tactile stimulation.
  - Palpate the brachial or femoral pulse, the umbilical cord, or if necessary, use a stethoscope to auscultate at the apical area of the heart. If the heart rate is less than 60 or absent, begin compressions.
    - Encircle the newborn's chest and place both thumbs on the lower one-third of the sternum. Compress at a rate of 100 times per minute. The compression to ventilation ratio is as follows: One rescuer – 30 compressions to 1 ventilation; Two rescuer – 15 compressions to 2 ventilations.
  - If the heart rate increases to above 60 bpm, discontinue compressions, but do not hesitate to begin compressions if the HR drops below 60 at any time. Continue ventilations at a rate of 40 – 60 per minute.
  - Rapid Transport / Contact ALS if possible.

ILS PROVIDERS

- Establish IV (IO after 2 failed attempts) of NS
- Perform glucometry utilizing heel stick blood or venous blood & if BGL is < 60 mg/dl, administer 1 gram per kilogram SIVP of D10% over twenty minutes
- If non-addict mother has used narcotics within the past four hours, consider naloxone 0.1mg/kg IV or IO for the infant with respiratory depression unresponsive to conventional resuscitation.
- DO NOT administer naloxone to infants of addicted mothers.

(Continued on next page)

ALS PROVIDERS

- If meconium is present and the baby's APGAR is < 7 after delivery, quickly cut the cord, and without over-stimulating the baby, intubate the baby (a size 2.5 or 3.0 is usually adequate), and with a meconium aspirator attached to the ET tube, suction as you pull the tube out slowly. Re-intubate, and repeat the procedure with a clean ET tube, suctioning until the meconium clears (it is unusual to have to do this more than twice). Once the airway is clear, ventilate with a bag valve mask and 100% oxygen.
- If ventilation is difficult and/or the baby remains non-vigorous and will need prolonged ventilation, intubate with a clean ET tube, and continue ventilation with 100% oxygen.
- If IV or IO access has been obtained, and there is reason to suspect hypovolemia due to dehydration, hemorrhage, or third-spacing, bolus the neonate with 10cc per kg of LR or NS over 5 – 10 minutes. Repeat if necessary.
- Administer medications ONLY if compressions and positive pressure ventilation with 100% oxygen do not raise the HR >60.
    - If all of the above treatments have not increased the baby's HR to >60, then administer Epinephrine 1:10,000 0.01-0.03 mg/kg (0.1-0.3 ml/kg). Repeat every 3-5 minutes. For ET medication administration, follow with normal saline/sterile water flush not to exceed 3 ml.
        - If IV or IO access has not been obtained, Epi may be given via the ET tube. ALS providers may also attempt to cannulate the umbilical vein (it is larger than the two arteries, with thinner walls) with the catheter off of a 20-gauge angiocath. Slip the catheter into the vein until the tip is just below the skin…there should be a free flow of blood. Attach the IV tubing, and secure it with umbilical tape. If the catheter inserts too far, it will lodge against the liver and not function.

OBSTETRIC/GYNECOLOGICAL EMERGENCIES

Notes:

CHILDBIRTH – ASSISTING WITH A FIELD DELIVERY

Treatment Indications: An imminent delivery indicated by one or more of the following: the mom reporting that the baby is coming; reported rectal pressure (urge for bowel movement) from the mother; crowning of the baby's head; a strong urge to push with contractions; etc. Obtaining the mother's history of previous pregnancies and the length of labor during those pregnancies may provide additional insight. If a decision is made to assist with a delivery at a residence or anywhere other than the back of a transporting unit, there should be no factors that indicate the need for immediate transport, such as a prolonged rupture of membranes (> 24 hours), abnormal presentation, prolapsed cord, known multiple fetuses, a known maternal drug abuse history, or other known potential fetal or maternal complications.

ALL EMS PROVIDERS

- Position the mother appropriately. While the supine position might seem the best for the caregivers assisting the mother, it often contributes to decreased maternal cardiac output, an increase in the mother's back pain, and less effective contractions. Consider a semi-sitting or left lateral recumbent maternal position. Don't be surprised if the mother would rather attempt to deliver the baby in a squatting or "hands and knees" position.
- Prepare yourself for assisting the delivery. Open the OB kit before you need its contents. Don the appropriate personal protective equipment.
- Create a clean field for delivery, with a towel or drape under the mother's buttocks, another below the vaginal opening, and one across her lower abdomen.
- Place oxygen on the mother at an appropriate flow rate
- As the baby's head emerges, if the amniotic sac has ruptured, look for signs of meconium staining and prepare to treat appropriately. If the sac has not ruptured, tear the sac to release the fluid. Assure the sac is removed from the baby's face prior to a first breath.
- Apply gentle counter – pressure to the baby's head with the palm of a hand to prevent an unexpected precipitous delivery. As soon as possible during delivery of the head, check for a nuchal umbilical cord (wrapped around the baby's neck), and if present, slip it over the head. If it is too tight to do this, quickly but carefully place two umbilical clamps about 2 inches apart and, ideally with bandage or umbilical scissors (rather than a scalpel), cut the cord between the clamps.
    - **If the rather drastic action of cutting a nuchal cord is taken, the baby's only supply of oxygen is cut off. The remainder of the delivery should take place as quickly as possible to facilitate stimulation of the baby's respiratory effort.**
- Once the entire head is delivered, ask the mom if she can momentarily stop pushing and/or to pant. If meconium or significant fluids are present, gently suction the mouth and nose with a bulb syringe.
    - **In the absence of meconium or significant fluids, suctioning the baby while the head is still at the perineum and the body is undelivered has been shown to have less value than traditionally thought. Aggressive suctioning can cause bradycardia, tissue trauma, and irritation of nasal membranes that causes rebound mucous production & nasal congestion. Use your best judgment, and gently suction the baby as soon as you feel it is necessary.**
- The head should turn towards the mother's left or right; with the mother's next contraction, gently guide the baby's head downward (toward the mother's buttocks) to allow delivery of the upper shoulder, and then guide the baby's body upward (toward the mother's abdomen) to deliver the lower shoulder. At this point, the rest of the baby will deliver quickly. The caregiver must be prepared to support the infant's body as it emerges.
- Once fully delivered, note the time of birth, and initiate drying, warming, positioning, appropriate suctioning and, if necessary, stimulation of the infant. Place the baby on the mother's abdomen, with the head below the body to facilitate drainage of fluid from the airway. Administer oxygen blow-by (without cooling the baby) as needed. Clean, dry and wrap baby in clean sheet, towel, or blanket. Cover the baby's head, and put the baby to the mother's breast. Perform the APGAR assessment on the baby (detailed on the next page).
    - **If the baby's respirations and movement are depressed or abnormal despite above, refer to the Neonatal Resuscitation guideline.**

- Cutting the cord is not necessarily a priority, and in fact, delaying the cord cutting until at least it stops pulsating is beneficial to the baby. Transport should not be delayed to cut the cord. If cutting the cord during transport is indicated, then once the cord stops pulsating (about 4 – 7 minutes after delivery) clamp the umbilical cord about 6 - 7 inches from the baby, and again about 9 - 10 inches from the baby, and cut the cord between the clamps.
- The placenta may take up to 30 minutes to deliver. After it delivers, gently massage the uterine fundus to help decrease maternal hemorrhage.

ILS AND ABOVE PROVIDERS

- Initiate large bore IV of NS to mother, titrate to maintain LOC, HR & end organ perfusion.

Evaluation at Birth: The APGAR scoring system:

- Obtain APGAR assessment score at earliest reasonable opportunity (1 & 5 minutes)

Evaluation Factor	0	1	2
Appearance (Skin Color)	Body and Extremities blue, pale	Body pink, extremities blue	Completely pink
Pulse rate	Absent	Below 100 per minute	100 per minute or above
Grimace (Irritability)	No Response	Grimace	Cough, sneeze, or cry
Activity (Muscle Tone)	Limp	Some flexion of extremities	Active motion
Respiratory effort	Absent	Slow and irregular	Strong Cry

CHILDBIRTH, ABNORMAL

Treatment Indications: Breech birth, Limb presentation or Prolapsed cord.

- ALS response is required. Consider a helicopter response if available.
- Initiate emergent transport at the earliest opportunity, and meet the ALS transport unit enroute.
- Ensure maternal primary management including high flow oxygenation 12 – 15 lpm via PNB (regardless of respiratory distress).
- Contact the receiving hospital ASAP in order for obstetrical care to be available immediately upon arrival of the patient.
- Specific care for particular abnormal presentations is found in the following guidelines.

CHILDBIRTH, FULL BREECH DELIVERY

Condition Information: Breech presentations are most commonly associated with preterm birth, placenta previa, multiple births, and uterine and fetal anomalies. Approximately 4 percent of all live births are breech births.

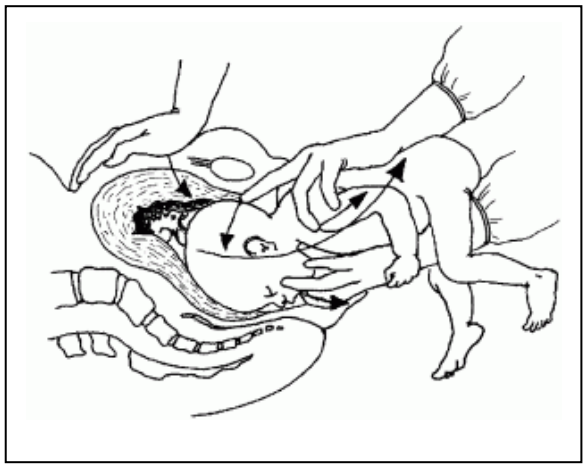
ALL EMS PROVIDERS

- Prepare for delivery as described for a normal delivery (draping, etc)
- Generally, breech deliveries are better dealt with in a hospital. Positioning the mother on her left side, and asking her if she can avoid pushing and breathe through contractions, may delay birth until she can be transported to an appropriate facility. But with the long transports in Sandoval County, delivery may be imminent and unavoidable.
- Since some breech births are preterm, the infant may deliver without significant difficulties, and in fact, could deliver rather rapidly, depending on gestational age.
- Once the breech delivery begins, the lower extremities will often quickly deliver. Support the infant's body, and if the baby's head delivers spontaneously, proceed with suctioning airway (mouth and nose), then dry and wrap baby as you would with a normal delivery.
- If the gestational age and size is more advanced, some assistance may be required for the delivery of the hips. The breech baby is often facing the mother's right or left side. Usually, the baby's anterior (closest to mother's abdomen) hip will deliver first, and as you support the baby's body gently upward, the posterior (closest to mom's back) hip will deliver. If the legs have not delivered by now, they will usually come free at this point, and the baby will emerge up to the umbilicus.
- Once the umbilical cord is visualized, if it is pulled taut, it should be pulled gently down and out of the vagina to create slack for the remainder of the delivery. To reduce the risk of asphyxia, the head should be born within 5 minutes of this point. Encourage the mom to push HARD with contractions.
- The shoulders are usually not a problem to deliver, but if there is any difficulty, they are usually delivered by depression of the buttocks and extracting the anterior shoulder with a gloved finger. The baby's body is then raised gently, and the posterior shoulder should deliver.
- The baby will now usually rotate into a face down/bottom up position. Support the body as necessary.
- Do NOT pull on the baby, despite the temptation. Lift the body slightly, just to where the body is parallel to the floor, but NOT extending the baby's neck.
- Have a caregiver apply gentle pressure directly above the pubic bone (<u>below the fundus</u>, and just above the pubic bone) to flex the baby's head down. When the mother pushes, the head will usually deliver. (This is NOT the Mauriceau maneuver).
- If the head does not deliver, continue rapid transport and assure ALS intercept. Create an airspace for which the baby to breath by inserting two gloved fingers in a "V" shape into the vagina, and push the vaginal wall tissue away from the baby's face. You may thread oxygen tubing into this space @ 6 – 8 liters per minute. Keep the baby's body warm by draping with towels, etc, and keep the umbilical cord warm and moist if it is still pulsating.

BREECH DELIVERY CONTINUED

ALS PROVIDERS

- If the head does not deliver within 4 – 6 minutes, perform the MAURICEAU Maneuver as defined below:
  - Having a caregiver support the body, insert your gloved hand with two gloved fingers in a "V" shape, much as described above for creating an airway for the baby.
  - Place your fingers on the fetal maxilla, applying enough pressure to tuck and flex the child's head. The maneuver is to tuck, NOT PULL, the head.
  - Place your other hand gently over the occiput to aid in flexion, and during the next contraction.
  - During the mother's next contraction, have her push hard, during which another caregiver should apply suprapubic pressure to assist with the flexion of the head and assist with the delivery.



- Be prepared for maternal hemorrhage, with or without successful delivery of the baby. Establish IV access and treat appropriately

CHILDBIRTH - LIMB PRESENTATION

Condition Information: Limb presentations occur when the fetus is in a transverse lie in the uterus, and the arm or leg protrudes from the vagina. This is seen in less than 1% of deliveries, and is most often associated with preterm birth and multiple gestation situations. This is a life-threatening situation for the fetus.

ALL EMS PROVIDERS

- Place mother in knee-chest position (prone, resting on her knees and upper chest), and secure her as well as possible for transport. Deliver high flow oxygen to the mother
- Transport immediately to a hospital with caesarian section capability (Women's Hospital, Presbyterian Medical Center, and UNMH). Air support is certainly a consideration if your transport time will be more than 30 – 40 minutes. Advise the receiving hospital of the situation as soon as possible.

ILS AND ABOVE PROVIDERS

- Initiate an IV of NS, titrating to the mother's blood pressure.

CHILDBIRTH - PROLAPSED CORD

Condition Information: Umbilical cord prolapse occurs when the umbilical cord precedes the fetal presenting part, causing the cord to be compressed between the fetus and the bony pelvis. This shuts off fetal circulation, potentially a fatal event for the fetus. This occurs once in every 250 deliveries. Cord prolapse is associated with premature rupture of the amniotic membranes, prematurity, multiple gestation, and abnormal fetal presentation (breech, transverse, etc).

ALL EMS PROVIDERS

- Place mother in knee-chest position (prone, resting on her knees and upper chest), and secure her as well as possible for transport. Administer high flow oxygen to the mother.
- Insert a gloved hand into the vagina and gently but effectively push the presenting part that is compressing the cord off of the cord.
    - Uterine contractions will be forcing the baby down toward you at regular intervals.
    - Once your hand is in the vagina, the caregiver will often remain in that situation until the baby is delivered by caesarian section at the hospital.
    - Once this maneuver is completed, a pulsating cord is reassuring if the caregiver feels it against their hand. However, do NOT compress on the cord to see if it is pulsating, as it could cause a vasospasm of the cord vessels.
- If the cord protrudes outside of the vagina, keep it moist and warm as possible with saline and dressings.
- The fetus' best hope for survival is rapid transport and early caesarian section, so transport expeditiously but safely to a facility capable of providing the necessary care (Women's Hospital, Presbyterian Medical Center, and UNMH). Air support is certainly a consideration if your transport time will be more than 30 – 40 minutes. Advise the receiving hospital of the situation as soon as possible.

CHILDBIRTH - WRAPPED (NUCHAL) CORD

Condition Information: This occurs when the umbilical cord wraps around the fetal neck. When found during an otherwise normal delivery, intervention is required. This is not an uncommon condition.

ALL EMS PROVIDERS

- As soon as possible during delivery of the head, check for a nuchal umbilical cord. If present, slip it over the head.
- If it is too tight to do this, quickly but carefully place two umbilical clamps about 2 inches apart and, ideally with bandage or umbilical scissors (rather than a scalpel), cut the cord between the clamps.
    - If the rather drastic action of cutting a nuchal cord is taken, the baby's only supply of oxygen is cut off. The remainder of the delivery should take place as quickly as possible to facilitate stimulation of the baby's respiratory effort.

CHILDBIRTH – SHOULDER DYSTOCIA

Condition Information: Shoulder dystocia is one of the most frequently occurring complications of labor and delivery. Shoulder dystocia occurs after delivery of the head, when the width of the fetal shoulders is wider than the maternal pelvic inlet, and the anterior fetal shoulder becomes impacted against the maternal symphysis pubis. While it makes sense that this would occur with a very large fetus, about half of all cases occur with average sized fetuses. Risk factors include gestational diabetes, prior shoulder dystocia, post-term pregnancy, a short maternal stature, and abnormal pelvic structure.

Condition Description: Labor may appear to be progressing normally, although slowly. The head may emerge after a long & slow crowning process. Once emerged, the head will either rotate very slowly, or not at all. The fetal head then appears to pull back against the perineum. At this point, if you check for a nuchal cord, you will find the head tightly applied to the perineum and it will be difficult to actually reach the neck. The fetal head will begin to change color – purple to black, and if you try to assist in the delivery of the shoulder, you will feel resistance and be unable to do so. True shoulder dystocia is a bone – on – bone impaction, and is a true threat to the fetus' life.

ALL EMS PROVIDERS

- If the mother is on the gurney (or the floor), create space beneath her bottom by placing pillows or a bedpan under her buttocks. This will allow for more room for the head later in the delivery.
- Assure ALS response, initiate transport, and utilize air transport if appropriate.
- Do NOT pull on the baby's head.
- Initiate high flow oxygen for the mother.

ILS AND ABOVE PROVIDERS

- McRobert's Maneuver
    - Have the mother grasp her knees and pull her thighs back onto or alongside her abdomen, as if she was trying to put her knees into her armpits. Her shoulders should be flat on the surface of which she is lying.
    - While the mother is in the McRobert's position, have another caregiver stand on the mom's side that the baby is facing away from, and apply deep pressure straight down just above the mother's pubic bone (NOT pressure on the fundus). This will hopefully adduct the anterior shoulder, reducing the diameter of the shoulder girdle, and allow the anterior shoulder to deliver. The caregiver should use a steady pressure initially, but if unsuccessful, should apply the pressure in a rocking motion.
    - With both of these maneuvers applied, have the mother push with a focused effort. Guide the head downward with a gentle pressure, but DO NOT STRESS THE NECK.
    - If the shoulder is released, be prepared for a quick delivery of a slippery infant.

The McRobert's maneuvers will resolve most cases of shoulder dystocia. However, if they do not, proceed to the:

- Gaskin Maneuver
    - Have the mother flip herself over to her hands and knees.
    - Grasp the fetal head, and gently guide it downward attempting to deliver the posterior shoulder (which is now uppermost).
    - The turning from the mother's back to her hands and knees changes the angle of the pelvis, enlarges the pelvic diameter, and often shifts the fetal position to allow for delivery.
    - Again, if the shoulder releases, the baby will deliver quickly
- If none of these are successful, rapidly transport the mother, repeating the above maneuvers enroute.
- If delivery is accomplished, the baby will often need aggressive resuscitation.
- Prepare for significant postpartum bleeding, and treat appropriately.

CHILDBIRTH – HEAVY VAGINAL BLEEDING (POSTPARTUM HEMORRHAGE) FOLLOWING DELIVERY

Condition Information: Postpartum hemorrhage is the loss of more than 500 cc of blood immediately following delivery, occurring in about 5% of deliveries. The most common cause is uterine atony, or lack of uterine muscle tone. There can be many other causes, including placenta previa, abruptio placentae, retained placental parts, clotting disorders, and vaginal or cervical tears.

ALL EMS PROVIDERS

- Place the patient in Trendelenburg position.
- Firmly massage the fundus after the delivery of the placenta.
    - This will be uncomfortable for the mother, but is important in stimulating the uterus to contract.
- Place dressings against the vaginal area. DO NOT place anything inside the vagina.
- Cold packs may help in the stopping of bleeding, if the mother can tolerate it.
- Put baby to breast as suckling may assist in stopping bleeding.
- Initiate high flow oxygen, and treat her for shock.

ILS PROVIDERS

- Enroute, initiate 1-2 large bore IVs of NS, titrate to maintain LOC, HR & end organ perfusion. Aggressive fluid resuscitation is encouraged.

ALS

- If bleeding cannot be controlled, mix 20 units of pitocin/oxytocin in 1000 cc's of LR or NS and administer this @ 125cc/hr, titrating to bleeding cessation.
- If IV access is unavailable, administer 10 units of pitocin/oxytocin intramuscularly.
    - If IV access is obtained following the 10 units IM and the patient is still actively bleeding, mix 10 units of pitocin/oxytocin in 1000 cc's of LR or NS and administer this @ 125cc/hr, titrating to bleeding cessation.

PREECLAMPSIA – MILD AND SEVERE

Condition Information: Preeclampsia is a hypertensive disorder of pregnancy, and is a complication seen in approximately 6% of pregnancies. Hypertensive emergencies of pregnancy account for 15% of all maternal deaths during pregnancy, so early recognition is imperative. Preeclampsia is categorized as either mild preeclampsia or severe preeclampsia. These designations are further explained below. When preeclampsia progresses to seizures or coma, the condition is termed eclampsia. The eclampsia treatment guideline can be found immediately after this preeclampsia treatment guideline.

MILD PREECLAMPSIA

Treatment Indications: Mild preeclampsia is defined as a sustained blood pressure of 140/90 or above. Edema is often listed as a signature sign of preeclampsia, but edema is fairly commonplace in pregnancy, and about a third of mild preeclampsia patients present with no edema at all, so it is a rather unreliable sign for mild preeclampsia. Patients with mild preeclampsia are often managed at home on bed rest, but it is conceivable to be called to assist and transport a patient with this condition.

ALL EMS PROVIDERS

- Establish and maintain an airway and appropriate oxygenation.
- Position the patient on her left side in the left lateral recumbent position to avoid supine hypotension syndrome.
- Maintain low stimulus environment with low level lighting and minimizing extraneous noise.

ILS AND ABOVE PROVIDERS

- Establish venous access with an isotonic solution at a TKO rate.
- Perform field glucose determination. If < 60 mg/dl, administer Dextrose 50% per the hypoglycemia guideline.
- ECG Monitoring

SEVERE PREECLAMPSIA

Treatment Indications: Severe preeclampsia may develop suddenly and present with any of the following: a systolic pressure of 160 mm/Hg or greater and/or a diastolic pressure of 110mmHg or greater; generalized edema apparent in the face, hands, sacral area, lower extremities, and the abdominal wall; headache, blurred vision and other visual disturbances (visual disturbances can indicate an impending seizure); nausea, vomiting, and anxiety; Abdominal pain (especially RUQ) and epigastric pain caused by liver edema and swelling (another sign of impending seizure); hyperactive reflexes and clonus.

ALL EMS PROVIDERS

- Same as for Mild Eclampsia

ILS PROVIDERS

- Same as for Mild Eclampsia

ALS PROVIDERS

- Contact an MCEP and administer Magnesium Sulfate per the following:
    - Patient's systolic BP > 160 and/or diastolic BP > 110, contact MCEP for an order of 2 Gm $MgSO_4$ IV diluted in 50 – 100 cc and administer slow IV push over several minutes.
    - Patient's systolic BP > 150 and/or diastolic BP > 100 and the patient exhibits at least 2 signs and symptoms of severe pre-eclampsia (severe headache, blurred vision, or abdominal pain) contact MCEP for an order of 2 Gm $MgSO_4$ diluted in 50 – 100 cc and administer slow IV push over several minutes.

ECLAMPSIA

Condition Information: When preeclampsia progresses to seizures or coma, the condition is termed eclampsia. The usual presentation is tonic-clonic seizures lasting less than a minute following signs of severe preeclampsia. Partial seizures (various SxS of focal type seizure with consciousness maintained) or complex partial seizures (various SxS of focal type seizure with alteration of level of response) also can occur. Some patients will progress directly into coma without an observed seizure. Most patients who develop eclampsia show marked edema, increased BP and other SxS of severe preeclampsia (see previous guideline), but up to 30% of eclamptic patients do not have these classic SxS.

ALL EMS PROVIDERS

- Establish and maintain an airway with suction, and administer high flow oxygen.
- Protect the patient from injury, as with any seizure.
- Ventilate the patient as necessary.

ILS PROVIDERS

- Establish venous access with an isotonic solution at a TKO rate.
- Perform field glucose determination. If < 60 mg/dl, administer Dextrose 50% per the hypoglycemia guideline.
- ECG Monitoring

ALS PROVIDERS

- Dilute 4 Gm $MgSO_4$ in 50 – 100 cc and administer slow IV push over 5 – 10 minutes.
- Initiate a $MgSO_4$ drip at 30 mg/min (Mix 4 Gm of $MgSO_4$ in 250 cc NS, and run it at 120 cc/hr with minidrip tubing).
    - Magnesium is contraindicated in patients with renal failure.
    - If magnesium is administered too rapidly (i.e., faster than parameters listed above) or the patient receives an overdose, severe hypotension, arrhythmia, respiratory and/or cardiac arrest may occur. In this event, and if your transport time is greater than 15 minutes:
        - Administer 10 ml Calcium Chloride 10% over 10 minutes.
- If seizure continues after $MgSO_4$ administration, proceed to diazepam administration, preparing as well to actively manage the patient's airway due to respiratory depression.
    - Adult: 2 – 20 mg titrated to cessation of seizure activity. Contact an MCEP for orders of diazepam greater than 20 mg.
    - Diazepam may be administered rectally via a lubricated 3cc syringe if IV access is unavailable.
- Transport ASAP

ECTOPIC PREGNANCY

Condition Information and Treatment Indications: This condition should be suspected in any woman of childbearing age complaining of abdominal pain, mild or severe. Additionally, the patient may have signs and symptoms of shock, syncope, and possibly vaginal bleeding, although at least 30% of patients. Ectopic pregnancy occurs in nearly 1 of every 45 reported pregnancies, and accounts for 10% of all maternal deaths. Field diagnosis is difficult, with a high index of suspicion appropriate treatment and transport being the most critical actions for the patient. Final diagnosis will be made in the E.D.

ALL EMS PROVIDERS

- Establish primary management
- Rapid transport

ILS AND ABOVE

- Initiate 2 large bore IV of NS; titrate to maintain LOC, HR and end organ perfusion.

Notes

ASSAULT/RAPE (CRIMINAL SEXUAL PENETRATION AND/OR ASSAULT)

Documentation is essential. Assure that Law enforcement activation and response has occurred or is at least in progress. Protect and preserve evidence and the scene. Comfort and reassure the victim. Advise the patient against, eating, drinking, bathing, smoking and urinating if possible. Encourage the patient to wear or at least bring the clothing he or she was wearing at the time of the assault, if possible. Any victim of sexual assault should be encouraged to receive a Sexual Assault Exam at an Emergency Department or at the Sexual Assault Nurse Examiner (SANE) Program. NM State law mandates reporting of all suspected child abuse cases, and Child Protective Services should be contacted if appropriate.

ALL EMS PROVIDERS

- Establish Primary Management
- Treat injuries as appropriate.
- Transport any patient to the appropriate Emergency Department presenting with any of the following conditions:
    - Any history of loss of consciousness or other sign of head injury; incoherent or combative behavior; an altered mental status, or suspected intoxication/overdose
    - An oxygen saturation <90%, or a pulse >110, or a systolic BP <90 mmHg or >180 mmHg, or any dysrhythmia
    - Any history of compromised airway, or the potential for such based on a history of attempted strangulation or ligature restraint
    - Significant trauma and/or uncontrolled bleeding
    - Any indication of suicidal behavior or ideation
- Unless the patient's injuries warrant transport to a trauma center, the patient should be transported to their hospital of choice, hospital of insurance or the closest hospital. This patient will be transported later to SANE for evaluation when cleared by the emergency department.
- Minimize the number of caregivers having contact with the patient.
- Unless significant uncontrolled bleeding is suspected, vaginal and perianal exposure and examination is not appropriate.
- If the patient is otherwise uninjured and does not want or need transport to an Emergency Department, but wants the Sexual Assault Exam and further counseling and information, you may contact the SANE (Sexual Assault Nurse Examiner) Program at 884-SANE. You will speak with a SANE nurse, and will inform them that you have an individual that is appropriate for transport to meet with the SANE personnel at Carrie Tingley Hospital (CTH). It is preferable that the patient be transported via privately owned vehicle or law enforcement. However, if a transport service is the only alternative, the patient should be offered transport. It is prudent to advise the patient that this is a billable transport but there are ways to get the bill paid. SANE has the details
    - In the instance that the patient is transported by EMS, the caregiver should give a report to the SANE nurse via phone or through Regional Dispatch. There is no Med Radio communication possible.
    - The CTH ambulance entrance is on the west side of the hospital, and a door at that location is open daily from 0600 – 1800. If after hours, press the buzzer, and advise the answering CTH personnel that you are there to see a SANE nurse, and the personnel should electronically open the door.
    - If arriving between the hours of 0830 – 1630, the SANE client can be taken directly to Exam Room 4 on the Second floor. If after hours and no SANE personnel are on site, the SANE client will be directed to the appropriate waiting area by CTH employees. EMS staff personnel are not obligated to wait with the patient at this time, and may clear the scene.

BITES: ANIMAL/INSECT/SNAKE/HUMAN

ANIMAL/INSECT: Animal bites, except in rare instances, are not life or limb threatening. More limbs are endangered because of inappropriate treatment than from the bite itself.

ALL EMS PROVIDERS

- Establish Primary Management
- Remove constrictive clothing and jewelry.
- Gently irrigate wound with sterile saline and dress.
- Notify Animal Control / Law Enforcement in the event of an animal bite.

ILS PROVIDERS

- If fluid replacement is needed while enroute to the hospital, initiate an IV of NS and titrate to maintain LOC, HR & end organ perfusion.
- In the event of isolated extremity involvement, pain relief may be appropriate according to the pain relief guideline. If in doubt, contact an MCEP for advice.

ALS PROVIDERS

- If the patient was bitten by a Black Widow and severe signs and symptoms are present, consider administering 2.5mg – 10 mg of diazepam.

HUMAN: All human bites should be evaluated in an emergency department because of the high risk for infection. Primary field care as above is indicated.

SNAKE BITE: More limbs are lost because of inappropriate treatment with ice, tourniquets and "cut and suck" than from the bites. Try to determine type of snake. Bring the dead snake to the hospital if possible. Do not delay transport. If the snake is alive and in the vicinity, do not attempt to secure or kill snake.

ALL EMS PROVIDERS

- Establish Primary Management
- Remove constricting clothing or jewelry.
- Flush with sterile saline. Immobilize affected area below heart level. Keep patient calm.
- Mark inflammation boundaries, if present.
- Notify the hospital to assure anti-venom resources.
- Maintain extremity in neutral position.
- If patient has anaphylactic type response, treat appropriately per anaphylaxis/allergic reaction guideline.
- If the snake is an elapid (coral snake) or of an exotic variety (cobra, mamba, adder, etc. found at pet stores, or private owners), obtain what type of snake it is if it does not delay transport. Additionally, <u>for coral and exotic bites only</u>, apply an ace type or kerlix type wrap, starting above the bite and extending below the bite. It should be done similarly to how you would wrap a sprained ankle (approximately 50 mmHg of pressure), which is enough to occlude lymphatic flow, but not venous or arterial flow. Do NOT use this technique with the more common Pit Vipers (rattlesnakes, etc).

ILS PROVIDERS

- Enroute, initiate IV of NS and titrated to maintain LOC, HR and & end organ perfusion.

ALS PROVIDERS

- Consider Morphine Sulfate 2-20 mg; titrated as needed for pain control.
- Contact MEDICAL CONTROL for higher Morphine Sulfate orders.

BURNS

Superficial – red skin (like sunburn)

Superficial Partial Thickness – red skin, often with blisters

Deep Partial Thickness – blistering (very painful) often difficult to distinguish from full thickness.

Full Thickness – all skin layers & possibly deeper structures involved (may be pain free), often lacks blanching and tenderness, dry leathery, often charred appearance.

Rules of Nines: (Table represents anterior & posterior)

	ADULT	CHILD
HEAD	9%	18%
CHEST-BACK	18%	18%
ARM	9%	9%
LEG	18%	13.5%
PUBIC-PERINUEM	1%	1%

- The palm of a patient's hand represents 1% body surface area.
- Be alert for patients with respiratory problems from smoke or chemical inhalation, respiratory tract burns or burns involving the face, head or chest.
- Major burns should be transported to the Regional Burn Center (University Hospital) as soon as possible. Local stabilization may be required before transport to University Hospital. Major burns are categorized as:
  - Partial thickness burns > 10% in adults and > 5% in children.
  - Full Thickness injuries > 5% body surface area
  - All severe full-thickness burns involving hands, face, eyes, ears, feet and perineum.
  - Circumferential burns.
  - All burns that compromise circulation.
  - All burns with evidence of respiratory involvement or inhalation.
  - All high voltage electrical injuries.
  - Burns with associated multi-system trauma.
  - All high-risk patients (underlying medical problems, especially respiratory).
- Moderate Burns should be transported to a facility that is capable of treating them. Moderate burns include:
  - All Partial thickness burns of <10% in adults and <10% in children
  - Full thickness injuries of <5% body surface area.

ALL EMS PROVIDERS

- Establish Primary Management
- Chemical Burns – identify contaminant, flush with water for a minimum of 10 minutes.
- Brush off dry chemicals before irrigation.
- Gently wash with water for a minimum of 10 minutes if burning process has started.
- Estimate depth and percent of area injured.
- Partial Thickness burns <10% of adult and <5% of child, may be cooled with water for 10 – 15 minutes and covered.
- Cover with sterile burn sheets and keep warm.
- When burns are associated with severe trauma, trauma protocols will supersede burn protocols.

- Burns with suspected airway involvement (facial burn, singed nasal hair, carbonaceous sputum, change in voice or wheezing), and burns >20% body surface area require paramedic intervention.
- All major and moderate burns deserve paramedic assessment and intervention.
- Immediate stabilization should take place at closest hospital facility with early activation of aeromedical transport.
- In the absence of available aeromedical support, ground transport should consider transportation of any serious burns directly to University Hospital in Albuquerque.
- CONTACT MEDICAL CONTROL to discuss patient destination decisions, as appropriate.

ILS PROVIDERS

- Enroute initiate IV, preferably Lactated Ringers and titrated to maintain LOC, HR & end organ perfusion. If burned surface area >20% bolus patient with 20cc/kg.
- Consider repeating bolus of 20cc/kg as necessary.
- DO NOT place IV in burned skin region unless absolutely necessary.
- 2” catheters are preferred.
- Consider ALS intercept for pain medications.

ALS PROVIDERS

- For pain control and anxiety, depending on hemodynamic and airway stability, administer IVP Morphine Sulfate 2-20 mg as needed.
    - In patients in extreme distress, consider the administration of 2 –10 mg of Valium SIVP. If patient is extremely agitated to the degree that it makes care problematic, see the Altered Mental Status – Agitation guideline.
- For airway control in the presence of a respiratory burn with signs of airway compromise, refer to ALS Provider Airway Sedation Protocol.
- Contact MEDICAL CONTROL for additional pain medication orders.

BURNS with DELAYED RESPONSE AND OR TRANSPORT

Designation of Condition: For patients who have sustained burns more than one hour prior to first contact by EMS.

ILS AND ABOVE PROVIDERS

- Fluid resuscitation with LR at 4 cc/kg/%Total Body Surface Area (TBSA), the first half of that amount in the first eight hours since the burn, the remainder of that amount in the following 16 hours. If the patient is already > one hour from the time of the burn, modify accordingly.
- Example: 4 cc x 70 kg x 30 percent TBSA = 8400 cc with 4200 cc in the first 8 hours, the remaining 4200 cc over the next 16 hours. If the patient is 3 hours post-burn, the first 4200 cc would be administered over 5 hours.
- Ensure the airway is secured appropriately prior to transfer. Contact an MCEP for advice if needed.
- Monitor all vital signs q 15 min or more frequently in severe burns, especially lung sounds & SPO_2
- Ensure that the patient is dry and kept warm.

FRACTURES - ISOLATED

Designation of Condition: Treat significant dislocations, strains and sprains as a fracture until proven otherwise.

All EMS PROVIDERS

- Establish Primary Management
- If a distracting injury exists, consider providing spinal motion restriction (if appropriate) and transport.
- If patient is stable or if isolated injury exists, check distal pulses and sensation before and after splinting, and reassess frequently.
- Splint injuries in position found. If limb must be moved for extrication or transport, gently straighten and splint. Immobilize the joints proximal and distal to the injury.
- If extremity or joint is severely angulated with absent pulses, or loss of sensation or strength distally, gently straighten to anatomically correct positioning. Reassess circulation.
- Most isolated hip, acetabular and high femur fractures are best managed WITHOUT the use of a rigid device such as a backboard and/or vacuum splint. Carefully placing the patient on a soft gurney will dramatically increase comfort and minimize pain during transport.

ILS PROVIDERS

- Enroute, initiate isotonic IV, on unaffected side, to maintain LOC, HR, and end organ perfusion.
- For patients exhibiting significant pain, with only isolated extremity trauma and hemodynamic stability, consider:
    - Under the on-scene direction of a Paramedic, Intermediates may administer Morphine Sulfate as specified below in the ALS Provider section.
    - If there is no EMT-P on scene, **CONTACT MEDICAL CONTROL** for orders to administer Morphine Sulfate 2 – 10 mg SIVP (0.1 mg/kg for pediatric patients, maximum total dose of 10 mg), titrating to pain relief and hemodynamic effect.

ALS PROVIDERS

- Morphine Sulfate 2 - 20 mg SIVP, as needed (0.1 mg/kg for pediatrics, with max total of 10 mg without MCEP orders)
    - Morphine is not appropriate for potential multi-systems trauma patients, or patients who present with unstable vitals.
- **CONTACT MEDICAL CONTROL** for additional medication orders, if necessary.

FROSTBITE

Treatment Indications: Localized cold injury may be superficial or deep.

ALL EMS PROVIDERS

- Establish Primary Management
- Remove victim from cold environment, & protect areas from further injury.
- Remove any wet/cold clothing.
- Cover with dry sterile dressings.
- Superficial frostbite can be warmed with ambient heat.
- Deep frozen areas must be protected from further treatment – do not attempt field re-warming.
- Do not massage, apply ointments, break blisters or engage in aggressive warming of injured area.

ILS AND ABOVE PROVIDERS

- Consider IV initiation, titrating to the patient's condition.
- If the frostbite is localized to fingers and/or toes, and the patient is complaining of severe pain, Morphine Sulfate per the Fracture guidelines may be considered.

EYE INJURIES

Designation of Condition: The patient will present with signs and symptoms of eye pain due to superficial corneal abrasions, mace or pepper spray exposure or welders burns (UV keratitis).

All EMS Providers

- Establish Primary Management

For Chemicals or Foreign Objects

- Assess for obvious trauma to globe or cornea. If found, do not irrigate, cover both eyes with a loose dry dressing.
- Where there is no obvious trauma to the globe, gently flush eyes with NS for at least 15 minutes, or until 1 L of NS has been used. Do not be concerned with removal of contact lenses in the field unless broken. Treat by irrigation, like any foreign body.
- In the case of exposure to law enforcement type chemical agents such as Pepper Spray, transport may not be required following eye flushing if symptoms of eye irritation are resolved.
- Consider covering both eyes to help decrease eye movement.
- Do not patch any penetrating or open eye injury. May cover without any pressure on the globe (e.g., with a cup).

ALS Providers

- Instill two drops of anesthetic solution Proparacaine Hydrochloride before irrigation. Proparacaine is contraindicated in the presence of penetrating eye injuries. When in doubt, **CONTACT MEDICAL CONTROL**.

HEAD INJURY – INCREASING INTRACRANIAL PRESSURE

Designation of Condition: The patient will be suspected of having increased intracranial pressure due to traumatic injury. A history of trauma associated with any or all of the following: slowing pulse rate, increasing blood pressure, increasingly irregular respiratory pattern, altered level of consciousness, unequal pupils, repetitive speech patterns, seizures, or presence of Cerebral Spinous Fluid (CSF) leak.

ALL EMS PROVIDERS:

- Establish Primary Management
- Monitor serial GCS and document q 5 minutes for patients who present with GCS < 8
- Ensure adequate oxygenation - SaO_2 > 90%
- Ensure adequate perfusion - Systolic BP > 90 - 100 mmHg
- If BVM ventilation is needed, most patients will be ventilated at a rate of about 12 ventilations per minute. If the patient exhibits signs of significantly increasing intracranial pressure and impending herniation (e.g. development of unilateral/asymmetrical pupil dilation, unreactive pupils, or extensor posturing), then ventilate at a rate of 16 – 20 ventilations per minute. For pediatric patients, the ventilation rate should be about 20 ventilations per minute, unless there are SxS of herniation, at which time ventilate up to 30 times per minute. Continue to monitor and document serial GCS every 5 minutes and if pupils improve (become symmetric), return to normal ventilation.
- Request ALS intercept for patients with GCS < 8 and prolonged transport if not already enroute.
- BGL, if altered mentation

ILS PROVIDERS:

- If BGL < 60 mg/dl, administer 12.5 gm D50W, recheck blood glucose, if < 60, administer additional 12.5 gm D50W and recheck.
- Titrate IV NS to keep systolic BP > 90 mmHg
- **Do not administer nitroglycerine or otherwise attempt to lower the blood pressure for ANY patient with hypertension**

ALS PROVIDERS:

- Follow airway management protocols as appropriate, including Lidocaine pre-intubation administration and Altered Mental Status – Agitation guideline if necessary.

HYPERTHERMIA

Treatment Indications: A group of disorders brought on by exposures to excessive heat here body temperatures may be normal or elevated. These disorders are usually associated with some degree of dehydration.

Definitions:

- Febrile Seizures – Sudden increase in body temperatures may cause seizures particularly in infants and children.
- Heat Cramps - Large muscle group cramping, usually after prolonged or heavy exertion. There should be no changes in the patient's level of response.
- Heat Exhaustion – Often a progression from Heat Cramps. Symptoms include: moist, pale and clammy skin, dilated pupils, normal temperature, weakness, dizziness, headache, or nausea. There should be no changes in the patient's level of response.
- Heat Stroke – A progression from Heat Exhaustion. This condition is defined by mental status changes, ie: confusion, coma, etc. The patient may have reddened, flushed skin, which may or may not be sweaty. Often, there are constricted pupils, high temperature, a strong and rapid pulse, deep and rapid respirations, decreased blood pressure, dry mouth, and/or possible seizures.

ALL EMS PROVIDERS

- Establish Primary Management
- Remove patient from warm environment
- Rapidly cool patient by whatever reasonable means possible (minimize shivering).
- If patient is alert without nausea, encourage oral hydration, using an electrolyte solution when available.
- If LOC deteriorates further, place cold packs under patient's arms, and at neck, ankles and head. Consider cooling with cold, wet dressings.

ILS PROVIDERS

Heat Cramps:

- IV of NS as necessary to support LOC, HR and end organ perfusion. Bolus in 250 - 500 cc increments, re-evaluate LOC, VS, and lung sounds between boluses.

Heat Exhaustion:

- IV of NS as necessary to support LOC, HR and end organ perfusion. Bolus in 250 - 500 cc increments, re-evaluate LOC, VS, and lung sounds between boluses.

Heat Stroke:

- IV of NS as necessary to support LOC, HR and end organ perfusion. Bolus in 250 - 500 cc increments, re-evaluate LOC, VS, and lung sounds between boluses.
- If there is a question about the source of the patient's diminished level of response, check a BGL and administer D50% & naloxone per the unconsciousness guidelines.

ALS PROVIDERS

- Consider ALS airway protocols if the patient's level of response deteriorates significantly. Should intubation be necessary, treat as a patient with increasing intracranial pressure.

HYPOTENSION AND SHOCK

Treatment Indications: SBP <90mmHG. May be accompanied by elevated HR, sweating and shortness of breath. May be due to blood loss, anaphylaxis, sepsis, central nervous system trauma, or fluid loss.

ALL EMS PROVIDERS

- Establish Primary Management
- Rapid Transport
- Oxygen at 10-15 lpm by non-rebreather mask
- Modified Trendelenburg, keep patient warm and give nothing by mouth (NPO).
- If possible, treat the specific cause of the hypotension, i.e.: anaphylaxis

ILS PROVIDERS

- Initiate 2 large bore IVs of NS, titrate to maintain LOC, HR & end organ perfusion.
- Cardiac Monitor

ALS PROVIDERS

- Advanced airway as needed.
- After appropriate fluid resuscitation, and if the source of the hypotension is non-hemorrhagic in nature, consider:
    - Dopamine 5 – 20mg/kg/min., titrate to heart rate and BP

HYPOTHERMIA EMERGIENCIES

Treatment Indications: Depressed core temperature < 95 degrees Fahrenheit. Handle the hypothermic patient gently. Rough handling may cause Ventricular Fibrillation. Conditions, medications and substances that may predispose a patient to develop hypothermia include: exhaustion, diabetes, hypothyroidism, iron deficiency, anorexia, renal failure, tricyclic antidepressants, anti-psychotics, narcotics, benzodiazepines, steroids, caffeine, alcohol and nicotine.

ALL EMS PROVIDERS

- Establish Primary Management
- Remove victim from cold environment
- Remove any wet/cold clothing
- Monitor vital signs for one full minute at the carotid or by auscultation of heart sounds.
- If any pulse is detected, do not perform CPR
- If no pulse is detected, refer the to the Hypothermia Cardiac Arrest guideline
- Assist respirations with warm humidified Oxygen, if available, at a rate of 8 – 10 per minute.
- Cover torso with warm blankets
- Consider wrapping heat packs and placing them under the patient's arms, groin, and posterior neck.

ILS AND ABOVE PROVIDERS

- Cardiac Monitor
- Enroute, initiate warm IV of NS

SPINAL MOTION RESTRICTION – LONG SPINE BOARD

Designation of Condition: Spinal Motion Restriction (SMR) is indicated for trauma patients when there is a suspicion of spinal injury based on mechanism of injury or patient complaining of pain in the area of the spinal cord.

ALL EMS PROVIDERS

- EMS First Responders should consider SMR based on training.
- When in doubt, limit patient movement and provide in-line stabilization until arrival of higher trained personnel.

BLS AND ABOVE PROVIDERS

The following patients should receive SMR:

- Patients with a significant mechanism of injury, or who have an altered level of consciousness, or who are complaining of mid-line C-spine and/or vertebral column pain.
- Patients who have a significant distracting injury and may not be able to fully perceive and appreciate their pain along the vertebral column.
- Patients displaying symptoms of neurological deficits after a traumatic incident.
- Victims of penetrating trauma if:
  - There is evidence of neurological deficit at or below the level of injury.
  - There is a suspicion of spinal injury based on the location of the wound.

Field Treatment

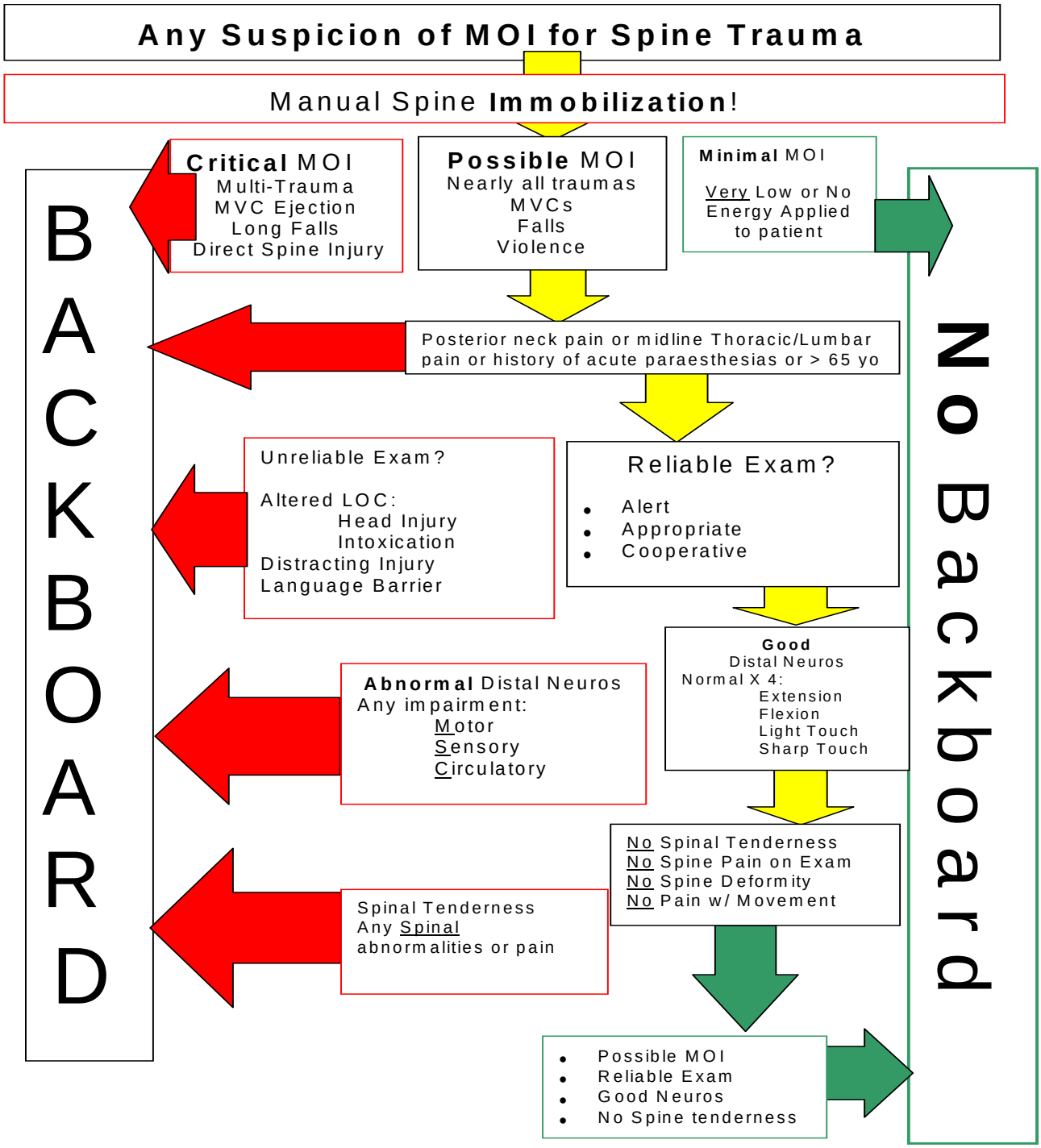
- Rigid Cervical Collars - properly sized collars shall be used in conjunction with SMR whenever practical.
- Critical trauma patients shall be extricated using rapid extrication standards - PHTLS.
- With a fully cooperative and stable patient, extricate the patient onto a long board using manual support in conjunction with a C-Collar. Patients who are unconscious should be extricated rapidly using appropriate, available equipment and personnel for the situation.

SMR may not be required if:

- The patient is conscious, alert, oriented, able to perceive pain, neurologically intact, and in progressive order is determined to:
- Not be suffering from a significant distracting injury
- Not be intoxicated or under the influence of mind altering drugs/medications
- Have no evidence of closed head injury
- Have no vertebral column pain or discomfort by self-evaluation
- Have no tenderness of vertebral column on palpation
- Have no pain or discomfort of vertebral column with active movement (45 degrees rotation left, right and flexion)

Remember that SMR is not a benign procedure. You are assuming total control of a patient's airway if you immobilize a patient. Decubitus ulcers may result within twenty minutes in spinal cord injured patients and unconscious patients.

SPINAL IMMOBILIZATION ALGORITHM



TRAUMA – AMPUTATIONS

Designation of Condition: The patient presents with an extremity (e.g., hand, foot, leg, toe, finger) that has been completely or partially amputated. Extremity parts are potentially salvageable. Optimal results occur when re-implantation occurs within a few hours (less than six hours post injury).

ALL EMS PROVIDERS

- Establish Primary Management
- Enroute, consider rinsing the amputated parts with NS to remove loose debris. DO NOT scrub.
- Wrap loosely in saline moistened gauze.
- Place into plastic bag or emesis basin.
- DO NOT pour water into bag and do not cool directly with ice. Place in sealed bag in ice water bath, when possible.
- Notify Medical Control of possible surgical candidate, and seek direction to appropriate Medical Facility.

ILS PROVIDERS

- Enroute, Initiate 1 - 2 large bore isotonic IVs. Titrate to maintain LOC, HR, and end organ perfusion.

ALS PROVIDERS

- For isolated extremity trauma, consider Morphine Sulfate 2 - 20 mg SIVP, as needed.
- **CONTACT MEDICAL CONTROL** for additional orders, if necessary

TRAUMA – BLUNT

Transport should be initiated AS SOON AS POSSIBLE. Longer scene times should occur only in rare situations, (e.g. the scene is unsafe, the patient is not accessible, the patient has a precarious airway requiring prompt invasive intervention, multiple patients, or a belligerent and combative patient who requires arrival of extra hands).

- Prolongation of scene time is **unacceptable** for the following:
  - To await the arrival of a helicopter - may rendezvous enroute when necessary if ground transport is going to take longer than 30 – 40 minutes.
  - To begin IVs at the scene, when ground transport is available

ALL EMS PROVIDERS

- Establish Primary Management, including rapid placement onto a long spine board with spinal precautions.
- Begin immediate transport to appropriate facility

ILS PROVIDERS

- Initiate large bore isotonic IVs. Titrate to maintain LOC, HR, and end organ perfusion.
- If hypotensive, bolus 20 cc/kg as needed and reassess.
- Critically unstable presentation - see Transport Guidelines

ALS PROVIDERS

- Advanced Airway procedures as necessary

TRAUMA – PENETRATING

Designation of Condition: All penetrating trauma to the chest, abdomen, back or groin, penetrating neck wounds, proximal penetrating extremity injuries, penetrating head trauma with unconsciousness or deteriorating neurological signs.

Transport should be initiated AS SOON AS POSSIBLE. Longer scene times should occur only in rare situations, (e.g. the scene is unsafe, the patient is not accessible, the patient has a precarious airway requiring prompt invasive intervention, multiple patients, or a belligerent and combative patient who requires arrival of extra hands).

- Prolongation of scene time is **unacceptable** for the following:
  - To await the arrival of a helicopter - may rendezvous enroute when necessary if ground transport is going to take longer than 30 – 40 minutes.
  - To begin IVs at the scene when ground transport is available

ALL EMS PROVIDERS

- Establish Primary Management, including the appropriate dressing of wounds if time allows.
- Begin immediate transport to appropriate facility, which in most cases will be the University of New Mexico Hospital
- Occasionally, in the northern portion of our county, St. Vincent Hospital in Santa Fe may be a destination. If so, advise them you have a “Trauma Stat”, which is their in-house code for a serious trauma, if indeed your patient is serious or critical.
- Spinal motion restriction (backboarding) is very seldom necessary for patients with penetrating trauma. Refer to the Spinal Motion Restriction Guideline.

ILS PROVIDERS

- Initiate large bore isotonic IVs. Titrate to maintain LOC, HR, and end organ perfusion.
- Bolus 20 cc/kg as needed and reassess. Generally, if a systolic blood pressure of about 90 mmHg is obtained, the IV can be set at a rate of about 500/hr.
- Critically unstable presentation - see Transport Guidelines

ALS PROVIDERS

- Advanced Airway procedures as necessary

APPENDIX A – SPECIAL SITUATIONS

Notes:

EMERGENCY INCIDENT REHABILITATION

Designation of Condition: Firefighters die of stress and overexertion illnesses more often than burns/injuries from structural events. Key principles of Emergency Incident Rehabilitation (EIR) include the following:

- Adequate hydration and rest should be maintained at all times while on shift
- Provide continuous medical monitoring to allow early identification of stress and heat related illness
- Immediately ID and treat any potentially serious medical condition detected during an emergency incident
- Treat traumatic injuries

Baseline VS should be recorded for all FF prior to their involvement in an incident. Keep resting and post-aerobic VS for each member confidential but accessible to the rehab sector. Pay special attention to members on beta-blockers, calcium channel blockers, or diuretics as those drugs alter one's response to heat and cardiovascular stress.

In Coordination with Individual Department SOPs:

EMS personnel shall

- Gather vital signs, HR, BP. If HR > 120, consider obtaining tympanic temperature and record it.
- Question personnel and evaluate for medical history and current symptoms.
- Based on the assessments and re-assessments of the personnel, there can be several dispositions as follows:

Triaged to Rest and Rehabilitation:

- Reassess VS after 20 minutes, if within normal limits, may **return to duty**
- If cannot take or keep down oral re-hydration, reassign to treatment area.

Triaged to Medical Evaluation and Treatment Area:

- If FF has injuries, HR > 120 at entry, BP > 200 systolic or between 100 - 120 diastolic, or < 90 systolic, re-assess VS after 10 - 20 minutes and log VS. If after 20 minutes with oral re-hydration and rest, VS have not returned to normal, <u>remove from duty.</u>
- If HR > 140 after approximately 20 minutes, or cannot take or keep down oral fluids. Initiate IV, LR 1 L bolus, and re-assess. May repeat twice prior to MCEP consultation. If HR, BP, temp return to normal and FF is able to take oral fluids and keep them down, <u>may return to duty.</u>

Immediate Transport to Hospital Required:

- If temperature is > 101, HR is > 140 after 20 minutes, or any of the following signs or symptoms of heat exhaustion/stroke or other serious illness are present:
  - Headache
  - Vomiting
  - Chest Pain
  - SOB
  - Altered Mental Status
  - Irregular pulse
  - Pulse > 150 at any time, pulse > 140 after cool down
  - Systolic BP > 200 after cool-down, and diastolic > 130 at any time
  - Follow above IV fluid administration guidelines and transport to hospital. Ensure adequate cooling. Follow appropriate guidelines for Chest Pain, SOB, Heat Exhaustion, etc.

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General Guidelines for Rehab:

Unusual symptoms such as excessive salivation, runny nose, diarrhea may indicate organophosphate exposure/poisoning. Burning eyes could indicate exposure to chemicals or metal gases. These and any other unusual symptoms should be reported to IC immediately.

Adequate water, electrolyte containing fluid and energy containing carbohydrates should be available. Do not provide products that contain caffeine. Cool fluids and shade in warm weather should be a goal, as should warm fluids, warm rehab area in cold weather.

Notify IC of disposition of personnel, per Department SOP.

TASER PROBE REMOVAL

Designation of Condition: When the Taser is deployed on a person, EMS personnel may be requested to remove Air Taser probes lodged in a subject's skin. Be aware that secondary injuries may result from falls sustained after the device has been deployed. They may be dazed/confused for several minutes post device deployment. The patient may require additional restraint as defined in protocols.

PROCEDURE

- Confirm that the Air Taser has been shut off and is no longer connected to the Taser.
- Obtain vital signs at the earliest opportunity. Violent and combative behavior may be secondary to hypoxia, hypoglycemia, or CNS abnormalities. Obtain O2 sat and BGL as soon as it is feasible. Treat trauma and seizure if applicable. Run a cardiac rhythm strip and ensure that the patient is in normal sinus rhythm with a normal QRS morphology. Document this and attach strip to chart.
- If patient is not alert, oriented to person, place, time, situation, with normal vital signs, including 02 sat and BGL(if appropriate) and a normal rhythm strip, **transport to hospital will be required.**
- Evaluate the anatomical location of the probe (s) puncture zones. High-risk/sensitive zones will require transport to a medical facility for removal. They include:
    - Head region including eyes and ears (If eyes, stabilize probe to minimize movement/pressure on probe during transport)
    - Neck region
    - Breast
    - Groin region
    - Hands or Feet
    - Joints
- Make sure that the (utilize PPE) stabilizing hand against the body of the subject during probe removal is at least eight inches away from the probe in order to avoid "raking" the barbed tip across the hand.
- Prior to probe removal (utilize PPE) inform all caregivers that you are about to remove the contaminated sharp.
- When removing a probe, it is important to make sure that the probe remains intact and that the barbed tip did not pull out and remain in the body of the subject. The barbed tip of the probe can break off during probe removal, leaving part of the barb in the subject.
- Examine the probe and the patient closely in an effort to make sure the probe tips did not break off during removal. Accordingly, it is important that the person removing the barb visually inspect it to make sure that the tip is fully intact.
- Thoroughly clean the puncture site. If the barb remains in the subject, the patient will transported to a medical facility for removal.
- Be careful to avoid accidental needle sticks when removing probes. There have been several reported cases where a caregiver removing a probe has sustained an accidental puncture with the contaminated probe.
- Promptly release the probe to Law Enforcement personnel for storage as evidence.
- Provide wound care by cleansing the affected area with Normal saline and apply triple antibiotic cream.
- Inform patient of basic wound care and the need to seek additional care in event that signs of infection (redness-fever-drainage-swelling-etc.) occur.
- Clear and thorough documentation is required in the body of the report narrative whether or not EMS transports the patient.
- MCEP may be contacted to discuss any of the above.

TRAUMA STAT ACTIVATION FOR ST. VINCENT HOSPITAL– SANTA FE

Trauma-Stat is the term used to request the activation of the Trauma Team at St. Vincent Hospital (SVH). This activation allows for the highest state of readiness and preparation prior to the trauma patient's arrival at SVH. Trauma-Stat provides a mechanism for EMS to request the activation of the Trauma Team when indicated by the appropriate triage criteria of the trauma patient at the scene.

Trauma-Stat Activation Criteria

- Systolic Blood Pressure < 90 mmHg and clearly indicating hemodynamic instability
- Decreased Level of Consciousness with GCS < 9 secondary to trauma
- Obvious penetrating injury to head, neck, torso or extremity proximal to elbow or knee
- Failed airway
- Obvious flail chest
- Obvious pelvic fracture resulting from a significant mechanism of injury
- Any partial or full thickness burn involving face or airway
- Any partial or full thickness burns > 20% of body surface in an adult
- Any partial or full thickness burns > 10% of body surface in a child
- Two or more obvious proximal long bone fractures
- Also consider activating **Trauma-Stat** for a trauma patient < 5 or > 55 years old or obviously pregnant, and/or significant pre-existing illness with a significant mechanism of injury.

MULTICASUALTY INCIDENT – MCI

This protocol provides organization and structure for managing emergencies that result in multiple patient injuries, illnesses, or deaths, regardless of the cause. Implementation of the procedures detailed here are directed toward the goal of producing the largest number of survivors while providing for responder and community safety, accountability, welfare and environmental concerns.

This document provides specific guidance for an MCI and uses the NIIMS Incident Command System (ICS) as required by the State of New Mexico.

Definitions:

System Level MCI:

An incident that taxes the **immediate area EMS system** (> 7 patients of which 3 or more are Red Tag - critical)

Low Level MCI:

An incident with 12 or less patients of which 5 or less are Red Tag (critical) patients.

High Level MCI:

An incident with more than 12 patients, or more than 5 Red Tag (critical) patients.

Procedures:

Scene Size Up:

- The first unit on scene will commit to the following actions (DO NOT BEGIN TREATMENT):
    - Confirm that an MCI exists
    - Have Regional Dispatch notify and dispatch the SCFD EMS Chief (or other Command Staff if the EMS Chief is unavailable).
    - Rapidly assess the incident
    - Estimate the number of patients
    - Determine the need for additional EMS resources
    - Determine the need for additional outside agencies, resources or specialized equipment (e.g., law enforcement, HazMat, heavy equipment)

Notification of Hospitals:

The appropriate notification to area hospitals concerning the existence of a MCI should occur as soon as possible by the Incident Commander or designated officer. Specific information (e.g., unit, patient numbers, criticality, etc.) should be conveyed directly to these hospitals as the incident progresses.

- Contact Albuquerque Base on Med Channel 2, and advise them of the incident. They can then utilize the EMSystem to notify the hospitals of the situation. If the St. Vincent Hospital will be getting patients, the have Sandoval County Regional Dispatch contact and advise them of the situation.
- Receiving facilities should receive an initial call from the scene with all appropriate information.
- Transporting units should not be making individual radio reports in a large scale MCI unless there is a significant change in patient condition

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Assignment of Officers:

The Incident Commander (IC) may assign the following positions as needed:

- Triage Officer
- Staging Officer
- Public Information Officer (PIO)
- Treatment Officer
- Transportation Officer (if required)
- Extrication Officer (if required)
- Rehabilitation Officer (if required)

Role of EMS Medical Director:

The EMS Medical Director shall be notified of all High Level MCIs at the earliest opportunity. If the EMS Medical Director arrives on scene, s/he shall be briefed upon arrival by the IC, and then sent to the EMS Sector for assignment and further briefing.

- Medical Control when the Medical Director is not present will take place via the written protocols.
- Personnel are NOT required to CONTACT MEDICAL CONTROL, even to perform life threatening procedures if they are deemed appropriate by field personnel in these situations.

START TRIAGE

Each SCFD Medic Unit is equipped with the commercially available START Triage Kit, and each member of the crew should be familiar with the START Triage system.

RED (IMMEDIATE/CRITICAL): These are the patients of the highest priority, which, in most circumstances, are removed and treated first. This category EXCLUDES patients that are in cardiopulmonary arrest, or are near death and have, in the judgment of the Triage Officer, fatal injuries.

YELLOW (DELAYED/SERIOUS): Patients whose injury/illness is serious and needs attention. However, treatment and transport may be delayed until viable RED patients have been treated and transported.

GREEN (MINOR/STABLE): Patients who may have treatment and/or transport delayed.

BLACK (DECEASED): Patients who are already dead or so severely injured that death is certain within a short timeframe, regardless of treatment given.

CONTAMINATED: These patients may be from any triage category but need to be grossly decontaminated prior to transport.

Colors should be used with Triage Tags, tape, ribbons, tarps, flags, etc.

SANDOVAL COUNTY - INTERAGENCY INTERACTION GUIDELINES

Introduction: Emergency Medical Services in Sandoval County is provided primarily by Volunteer EMS Providers from the nine County Fire Districts, EMS Providers from two Pueblo EMS Entities (Jemez Pueblo and Santo Domingo Pueblo), and Volunteer and Paid EMS Providers from the incorporated entities of the Town of Bernalillo Fire Department, Cochiti Lake Fire Department, Jemez Springs Fire Department, the Cuba Fire Department and possibly Corrales Fire Department. The primary Transport Unit will be the Sandoval County Fire Department Med Units. There will be times that PHI Medical Helicopter, CareFlight Medical Helicopter, Rio Rancho Fire, Santa Fe County Fire, and Albuquerque Area Transport Units will be involved in EMS incidents in Sandoval County. In order to achieve the goal of Quality Patient Care, it is critical that interactions between the services be predictable and consistently professional. These guidelines were developed with the intent of facilitating optimal patient care, transfer, and scene flow, and so that all field providers can approach scenes with the same expectations and cooperation,

1. Responders and Caregivers (First Responder, EMT-B, EMT-I, EMT-P) from the County Fire District from where the request for service originated are responsible for initially assuming command of the scene and directing patient care and assessment. This may include:
   - Obtaining patient consent for further treatment and transport if necessary.
   - Requesting a transport unit if not already dispatched, or requesting additional personnel, specific fire and/or rescue equipment, and ground and/or air transport units.
   - Upgrading, downgrading, or canceling incoming personnel. When downgrading incoming transport units, the incoming unit should generally heed the downgrade. However, there may be times and situations where the transport unit may elect to remain in an emergency response mode despite the on scene personnel's request.
   - Obtaining a fully documented and signed liability release on any patient who is refusing treatment and or transport and meets the refusal criteria explained in the Sandoval County EMS Guidelines.
2. The first arriving unit will relay any necessary information regarding the scene and incident (scene safety, scene access, equipment needs, staging, etc) to subsequent arriving units utilizing the county radio system.
3. The first arriving caregiver with the highest level of EMS training will assume charge of and direct patient care while awaiting the transport unit.
4. If the arriving transport unit is a Sandoval County Fire Department Medic Unit, the SCFD Medic Unit personnel shall assume medical command and responsibility for patient care, and should receive at least an oral patient report from the most appropriate on scene caregiver. It is generally considered inappropriate for subsequent arriving providers to go directly to the patient and repeat questions or assessments that have previously been completed. However, some duplication will occur and should be expected.
5. If another transport capable agency will be transporting a patient, they shall receive at least an oral patient report from the most appropriate on scene caregiver, and assume responsibility for the patient at the time the patient is placed onto their gurney.
6. First arriving and primary care providers will continue to assist in patient care under the direction of the transporting caregivers.
7. All agencies will assist each other in every possible way (i.e. moving/gathering of equipment and stretcher); however, due to risk management considerations, any time there is a patient on a stretcher, employees from that agency must perform operation of the stretcher at the head and the foot. Other personnel on scene will be utilized to help lift in the interest of patient safety and comfort.
8. If a patient has been loaded into the transport unit prior to the County district volunteer providers' arrival, it is appropriate for the arriving personnel to inquire if they can be of any assistance. If the transport provider deems assistance unnecessary, the County Volunteer Fire personnel may cancel. Transport will generally not be delayed in order for information gathering and/or report writing if the patient is loaded and ready for transport.
9. If in the judgment of the transport provider that the transport situation will require additional caregivers, Sandoval County Fire District and/or other personnel may be asked to accompany the patient to the hospital in the transporting unit, and should comply for optimal patient care.
10. The Sandoval County EMS system follows the Incident Command System structure. Be familiar with the ICS and be able to execute it when called for. A good example of this would be any scene where hazards

such as fire, fluids, power lines, etc. exist. In these situations, the Incident Commander is in command of all personnel, and will ensure that only properly protected and/or trained responders will be in the “hot” zones. The Incident Commander will direct all incoming personnel to an appropriate staging area for duty assignments.