Prehospital Care Treatment Guidelines

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VVMC Base Hospital   Administrative Medical Director
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INTRODUCTION

The purpose of these treatment guidelines is to provide uniform prehospital care for agencies under the medical direction of Verde Valley Medical Center base hospitals (referred to as VVEMS Agencies). They are directed towards A.L.S. (IEMT99/CEP) levels of Arizona Department of Health Services (A.D.H.S) certified pre-hospital care providers.

GOALS OF PRE-HOSPITAL CARE

The first goal of prehospital care is on-scene recognition and treatment of conditions in which the delay of treatment might increase morbidity and mortality. Once the patient enters the Emergency Medical Services (E.M.S.) system, life-saving interventions should be initiated immediately.

The second goal is rapid transport, with only minimal on-scene delay, for patients whose conditions require immediate hospital stabilization.

The third goal of pre-hospital care is to provide initial stabilization, safe symptom relief and safe transport to a medical facility.

The fourth goal is on-scene triage in multiple casualty incidents.

To achieve the above stated goals of pre-hospital care, the medic must be skilled in patient assessment. He/she must be able to recognize those conditions where on-scene intervention is necessary and those when rapid transport is best.

Assessment must be rapid, succinct and goal directed. Main emphasis is on the primary survey. Secondary survey should not delay either life saving interventions or transport. Interventions identified in the assessment should be acted on immediately.

MEDICAL CONTROL

It is important to recognize that emergency care rendered in the pre-hospital environment, even though performed by an emergency medical technician, remains the responsibility of the On-line Physician. These treatment guidelines are not intended for use as inflexible rules for pre-hospital care, but rather as guidelines for physicians and pre-hospital care personnel alike. Although they represent a minimum standard of care against which actions may be judged, treatment guidelines are not absolute. Common sense and good judgment are equally important. Since individual situations may require variance from these guidelines, the final authority is the independent medical judgment of the medical control physician. Also, it should be understood that skill levels of individuals will vary, and the online medical control may find it necessary to vary from these guidelines. EMS providers are expected to use online medical control as a real time consultant when there are any doubts or concerns as to what is the correct course of action.
STANDING ORDERS

Standing orders are those interventions, approved by the Administrative Medical Director, which may be done immediately, prior to radio contact with online medical control. Generally, they will include those life or limb saving procedures where either the delay caused by radio communication could contribute to death or where there is no disagreement about what should be done in a very specific situation or treatments with a consistently favorable risk/benefit ratio.

MEDICAL CONTROL OPTIONS

Medical control option means that the procedure requires a specific order from the online medical control via radio or telephone prior to performance. Any situation where procedures are performed, which by these treatment guidelines require a medical control option, and such medical control option is not obtained because of inability to establish radio contact or due to the critical nature of the situation, clear cut indications for the procedure(s) must exist (according to the treatment guidelines herein). We do not wish patients to suffer because of inadequacies or failures of the communication system but patient safety is of great importance. Communication with the Base Hospital should be established as soon as possible in such incidents.

Medical control options will be noted as footnotes in the individual treatment guidelines.

DEATH PRONOUNCEMENT IN THE FIELD (DEAD ON ARRIVAL)

Two categories for death pronouncement (dead on arrival) will be utilized for this treatment guideline.
1. Category 1-decapitation/decomposition (Requires no other physical assessment)
2. Category 2-apneic, pulseless, asystole in 2 leads, dependent lividity, and rigor mortis (requires minimal patient assessment).

If one decides not to give C.P.R. to a pulseless, apneic patient, one is essentially presuming that patient to be dead. This decision is to be made with medical direction from your On-line Physician whenever possible. Rhythm Strips should be made and forwarded to the base station. C.P.R. has a low yield in trauma victims in cardio-respiratory arrest. Nevertheless, it may be warranted if it does not divert equipment and personnel from more salvageable victims. Advanced life support procedures instituted at the scene may be inappropriate when one is dealing with multiple victims. Please note that the pulseless, apneic, patient where transport to any kind of Advanced Cardiac Life Support will be measured in hours or days instead of minutes, requires a realistic assessment of likely patient outcome after lengthy C.P.R. As a general rule of thumb in the absence of mitigating factors, patients who have not responded to 30 minutes of ACLS are considered non-viable.

If a valid prehospital care advanced directive is present, no resuscitative measures are needed. An information patch should be done to the base hospital if possible.

If an apparently valid Living Will/Advanced Directive/Do Not Resuscitate consent or orders is present, begin BLS maneuvers and contact medical control.
MEDICAL CONTROL OF Advanced Life Support (A.L.S.) AT THE SCENE

General Principles:

When an A.L.S. squad, under medical direction, is requested and dispatched to the scene of an emergency, a doctor/patient relationship has been established between the patient and the physician providing medical direction. The individual with the highest level of certification is responsible for management of the patient, and acts as the agent of medical direction unless the patient's physician is present.

If the patient's private physician is on the scene or a physician intervener* is present and he/she prefers to assume responsibility for care, the On-line Physician must be contacted and the situation discussed. Only Medical Control can relinquish care of the patient to another physician. Any action performed by the medic at the physician intervener's direction must be in line with local treatment guidelines. If not, Medical Control should be contacted. In any event, the physician intervener is responsible for appropriate documentation and, unless absolute necessity dictates otherwise, should accompany the patient to the hospital.

Intervener physician is a licensed physician who has not established a prior physician/patient relationship and who wishes to take charge of a medical emergency scene, and who is willing to provide evidence of licensure and agrees to continue care for the patient during transport to the hospital if feasible.

If an intervener physician is present and on-line medical direction does exist, the On-line Physician is ultimately responsible. If there is any disagreement between the intervener physician and the on-line physician, medical direction will remain with medical control. The on-line physician has the option of managing the case entirely, working with the intervener physician, or allowing him to assume responsibility. In the event that the intervener physician assumes responsibility, all orders to the A.L.S. provider should be repeated over the radio for purposes of recording. The intervener physician should document his intervention in a manner acceptable to the local E.M.S. system. The decision of the intervener physician to accompany the patient to the hospital should be made in consultation with the on-line physician. If on-line medical direction is not possible, treatment guidelines will be followed.

ALS CALLS

A.L.S. providers shall contact the On-line Physician for medical direction, as defined in the treatment guidelines.

MEDICAL CASES

- Chest Pain
- Shortness of breath
- Hematemesis, melena, or hematochezia
- Altered Level of Consciousness
Loss of consciousness (syncope, seizures)
Possible drug overdose or ingestion of poisonous substances
Recent change in mental status
More than one acutely ill person
Painful, cold, pulseless, extremity
Acute abdominal pain
Terminal malignancy in distress

TRAUMA CASES
Motorcycle, auto vs. pedestrian or bicycle accidents
Suspected fractures of femur, pelvis, spine, or skull
Extremity wounds with distal neurological and/or vascular compromise
Head injuries with history of loss of consciousness or presently impaired mental status
Penetrating wounds of head, neck, chest, abdomen, or thigh
Blunt trauma to abdomen or chest wall
Burn Injuries
Significant acute external blood loss
Water accidents and near drowning
Extrication problems
Multiple casualties

OBSTETRICAL-GYNECOLOGICAL CASES
Vaginal Hemorrhage
Childbirth
Pregnancy with abdominal pain

PSYCHIATRIC CASES
Suicide (attempts or verbalization)
Hallucinations with behavioral problem
Violent or dangerous patients (result of mental disorders)

GENERAL CASES
Signs of shock
Hypotension (systolic blood pressure of 90 or less in an adult) significant tachycardia or other abnormal vitals
Altered mental status
D.O.A. patients
Any patient who, in the opinion of the A.L.S. personnel, would benefit from Base Hospital consultation.
Any patients with suspected medical or traumatic problems of an A.L.S. nature, who refuse treatment or transportation to a hospital.
Abnormal body temperatures
When there is a physician on the scene who wishes to take control of patient care.

A.L.S. RESPONDERS MUST PATCH IN ANY QUESTIONABLE OR UNUSUAL SITUATION
Environmental hazard
Security problem
When disagreements arise between responding E.M.S. providers or with law enforcement

COMMUNICATIONS

GENERAL PROCEDURE:

Participating A.L.S. providers shall initiate ALS care through the use of treatment guidelines, and dependent upon patient response or treatment guideline criteria shall have the following communication options:

1. Stable Situation:
   a. Courtesy Notification (CN) with Receiving Facility
   b. Courtesy Notification (CN) with Base Hospital (to have information relayed to receiving facility)
   c. Patch with Base Hospital

2. Unstable Situation after implementation of standing orders:
   a. Patch with Base Hospital

3. Exception Situations:
   a. Critical Trauma, Medical Code:
      i. Courtesy Notification (CN) with Receiving Facility
      ii. Courtesy Notification (CN) with Base Hospital (to have information relayed to receiving facility)
      iii. Patch with Base Hospital
   b. Unable to contact Base Hospital:
      i. Patch with designated back-up for Base Hospital
      ii. Patch with Receiving Facility

DEFINITIONS:

1. ALS STABLE SITUATION (Requires minimum of Courtesy Notification):
   All patients are assumed to be ALS unless criteria for BLS are present and the providers and online medical direction are comfortable making the patient a BLS transport. This will require a patch by medic requesting permission to down grade pt to BLS.
   SEE APPENDIX J for ALS Release of Patients for BLS Transport.

   A patient with a single system or well-defined chief complaint(s) that after initial ALS intervention is:
   • Without neurological, respiratory and/or cardiovascular compromise; or
   • Has responded favorably to initial treatment modalities (resolving or improving chief
Criteria for ALS Stable Situations may include:

a. Conscious, alert and oriented to person, time, place and event (with consideration of pre-existing conditions) or an altered mental status in a non-traumatic event after treatment with no signs of impending central herniation, GCS maintained at \( \geq 14 \) and stable vital signs.

b. Respirations within normal range for age group and without abnormal breath sounds (with consideration of preexisting conditions).

c. Pulse within normal range for age group and without irregularities (with consideration of preexisting conditions).

d. Blood pressure greater than 90 systolic and less than 180 systolic, or within normal range for age group (with consideration of pre-existing conditions).

e. No uncontrolled bleeding.

f. Relief of chest pain.

2. ALS UNSTABLE SITUATIONS (Requires Patch):

A patient with a single or multiple system or complex chief complaint with/without hemodynamic compromise and that does not respond favorably to initial treatment modalities. Refer to “Exceptions” for Critical Trauma and Medical Codes. Criteria for an unstable patient condition may be indicated by the presence of any of the following:

a. Any situation where management is uncertain or risk benefit ratio of intervention is unclear or provider feels that patient is unstable or may deteriorate en route.

b. ALOC, adult or (with consideration of pre-existing conditions) pediatric all causes other than resolving postictal signs and symptoms (S/S).

c. Abnormal blood pressure (with consideration of pre-existing conditions).

d. Abnormal heart rate or rhythm persisting after treatment that is causing hemodynamic compromise (with consideration of pre-existing conditions).

e. Abnormal respiratory rate not responding to initial treatment (with consideration of pre-existing conditions).

f. Airway problems either before or after interventions.

g. Signs/symptoms of hypoperfusion not improving.

h. Decreased motor or sensory ability (with consideration of pre-existing conditions)

j. Changes (deterioration) in presenting symptoms; stable patient who becomes unstable at any time.

k. Consent problems and ALS Refusals.

l. Uncertain triage decisions.

m. Patients with a pulse in which transcutaneous pacemaker or electrical conversion therapy is used.

3. COURTESY NOTIFICATION (CN):
Required contact with receiving facility after ALS care according to treatment guidelines and reassessment. Vital signs are within normal limits, the patient’s condition is stable or improved. No medical control input is required in addition to that covered under the treatment guidelines. This call is abbreviated and is designed to allow receiving facility to prepare for arrival. The medics are expected to have provided all indicated and appropriate care to the patient without input from medical control and based on standing protocols and good judgment.

- **The following minimum information should be given during a “CN”:**
  a. Identify self and agency
  b. Mechanism of injury
  c. Patient age, sex, chief complaint, vital signs, GCS, pertinent findings.
  d. Interventions, patient response/status
  e. ETA to hospital

4. **PATCH:**

   Required on-line medical direction with Base Hospital (or back-up) (requires nurse or physician input). A patch includes the above information and a request for recommendations or general or specific treatment advice either from physician or his/her representative.

**EXCEPTIONS: (Critical Trauma, Medical Codes)**

In order to concentrate efforts on administering patient care and enhancing early communication to and preparedness of the receiving facilities of critical trauma patients and patients in cardiopulmonary arrest from medical causes, an abbreviated Courtesy Notification may be made with the receiving facility of these patients rather than a Patch under the following circumstances:

1. Appropriate treatment interventions are covered under trauma treatment guidelines and/or cardiopulmonary arrest treatment guidelines.
2. No question exists in the prehospital provider’s judgment as to the application/provision of care outlined in the specific Treatment Guidelines.
3. No additional medical direction is necessary in the prehospital provider’s judgment for the provision of care and/or triage.

**BASIC RADIO PROCEDURES**

All communications must include the following information:

1. EMSCOM Vehicle I.D.
2. Medic name & certification level
4. Number of patients (If more than one patient)
5. Age & sex of patient(s)
6. Chief complaint(s)
7. History and objective finding(s)
8. Treatment rendered & response to treatment
9. State the orders you are requesting
10. E.T.A. and destination

COMMUNICATION GUIDELINES
1. When using a radio, allow for a three-second delay after depressing the transmit key. This allows the electronics to fully engage.
2. Stop frequently and release transmit key to insure that the base hospital has received your transmission.
3. Ask for On-line Physicians to come on the line for any A.L.S. calls regarding patients you think might be unstable; or any time the scope of complexity of information requires direct contact with the physician.
4. Present information so that the listener gets an overview early (e.g. "... a 68 year old male, auto accident victim in acute respiratory distress..."). Report findings in the same order you evaluate a patient, i.e. primary assessment, vital signs, secondary assessment.
5. You need not list all relatively minor findings that do not affect immediate patient care decisions.
6. Communicate with courtesy, brevity, and clarity.
7. Repeat all orders received back to the base hospital—medicine, dose, route, frequency.
8. Remember that many people are listening to your radio communications, do not use patient names and avoid use of unprofessional comments.
10. Patches on B.L.S. patients should consume a minimum amount of time and only the most pertinent information.

COMMUNICATIONS SYSTEMS FAILURES
If unable to contact the Base Station via Hospital Radio or dedicated phone lines, contact should be made with your alternate Base Hospital. Any situation where procedures are performed, which by these treatment guidelines require a medical control option, and such medical control option is not obtained because of failure to establish radio contact, will be reviewed individually as to their appropriateness. Clear cut indications for procedures must exist.

Base Hospitals shall develop plans for medical control in the event of local equipment failure. Such plans should include contingencies for radio failure, power outages, structural failures, etc.

INTERMEDIARY’S RESPONSIBILITY IN RADIO COMMUNICATION
An intermediary is an emergency department nurse designated by the emergency physician to provide on-line medical supervision under verbal direction and control of the physician.
1. An intermediary will participate in daily communications and recording equipment troubleshooting procedure as outlined by A.D.P.S. R.C.C. Center policy.
2. An intermediary in contact with an A.L.S. unit will ask the emergency physician to come on-line at once if requested by the A.L.S. unit.
3. Communications with A.L.S. providers shall be completed in a timely, organized manner.
4. When a patient is to be transported to another receiving facility, immediately communicate all pertinent patient management information to the responsible physician or nurse at the receiving facility. If the receiving facility is also a Certified Base Hospital, direct communications with the A.L.S. unit rendering that care may be transferred to the receiving medical control authority at the discretion of the sending medical control authority, and with the knowledge and consent of the receiving medical control authority.
5. When relaying verbal directions/orders to field units, the intermediary shall identify by name the On-line Physician giving the orders transmitted.

BODY SUBSTANCE ISOLATION

All patients should be considered potentially infectious. Standard precautions should be followed in accordance with Center for Disease Control (C.D.C.), Occupational Safety and Health Administration (O.S.H.A.), and base hospital guidelines.

TRANSPORTATION

The patient should go to the medical facility which best meets his medical needs. If not the closest hospital, this decision requires a medical control option unless previously approved by the Administrative Medical Director. The patient's choice of hospital should be considered when such a request does not adversely affect or delay care or the operation of the transporting agencies.

If immediate hospital (medical/surgical) intervention is required, the quickest form of transport must be considered.

Scoop and Run involves rapid initiation of transport. It should not be undertaken until simple measures of airway control are performed on scene. The implementation of field procedures should not delay the transport of critical patients.

For discussion of air transport, please refer to associated VVEMS Guideline Ground VS. Air Transport Guidelines, VVEMS Trauma Patient Identification and Field Triage Decision Tree, Cardiac Transportation Guidelines, Medical Transportation Guidelines and SEC VS. VVMC Transport Guidelines. See Appendix F.

INTERFACILITY PATIENT TRANSPORTATION

Interhospital patient transfers on an emergency basis are commonly initiated when definitive or therapeutic needs of a patient are beyond the capacity of one hospital. A pre patch needs to be made to the On-line Medical Direction Physician prior to leaving the sending facility with an ALS patient. Any change in patient status requires the personnel to contact their Base Hospital, not the receiving facility for further orders.
1. All patients should be stabilized as much as possible before transfer.
2. E.M.S. personnel must receive an adequate summary of the patient's condition, current treatment, possible complications, other pertinent information, and sending physician's determination of level of service needed during the transport.
3. E.M.S. ALS personnel continue to operate under control of the Base Hospital. Any orders given to such medics on interfacility transfers must be in accordance with their treatment guidelines and must be reviewed and approved by on-line medical control as the treatment guidelines specifies prior to transport.
4. Transfer papers, summary, lab work, X-rays, etc., should be given to the transporting E.M.S. personnel, not the family or friends.
5. The receiving hospital physician must be contacted by the transferring physician and agree to accept the patient prior to the transfer.
6. The level of emergency personnel must be appropriate to the treatment needed or anticipated during transfer.
7. Patients with intravenous infusion must be transported by the appropriate level of personnel. If a patient is receiving medication outside the scope of the transferring A.L.S provider, that patient must be accompanied by an R.N. or Physician as indicated by the patient's condition.

AT SCENE TRANSFER OF CARE

It is common for a variety of certified personnel with different skill levels to be providing care at the scene at one time. The fact that there is a higher skill level provider at the scene does not absolve each team member in patient care responsibilities.

Once on scene patient care is completed, and transportation of the patient is necessary, a few rules exist.

1. The A.L.S. provider with the highest skill level must accompany that patient to the receiving facility.
2. If care of the patient is transferred to another provider (that did not initiate the care), a report concerning patient scene, status, and care must be given to the provider when he or she accepts the patient.
3. Upon transfer of patient care, pertinent field information should be relayed without unnecessarily delaying transport.
4. Refer to the Emergency Interfacility Patient Transportation and Physician Intervener at Scene Treatment guidelines for further information.
5. When multiple teams render care, and do not arrive at the scene simultaneously, each team shall be responsible for reporting the care they rendered in written form. This is a minimum requirement and complex cases may require reporting of contemporaneous care in multiple reports if the report writer was not able to keep adequate records during the call.
TRAPPED OR IMPALED PATIENT

If you arrive at the scene to find a trapped or impaled patient who will take a significant time to extricate, or the impaled object cannot be easily cut, stabilize A.B.C.’s as much as possible and contact your Base Hospital. After explaining the situation, it may be appropriate for a physician from the hospital to come to the scene in case of the need for A.L.S. beyond your skills.

REFUSAL OF TREATMENT AND/OR TRANSPORT

Once patient contact has been made, which may include identifying the need (without actually examining the patient), all health care professionals should follow up and do the utmost they can for the patient.

The following statements are points to consider when a patient is refusing treatment and/or transport.

1. Good medical judgment should always prevail. If an error is made, it should be made in favor of proper treatment for the patient.
2. Your attitude must remain professional, even in the face of the most hostile patient.
3. Your communication skills are the most important tool you have. If the patient is not responding to you in a positive manner, consider changing places with your partner and letting him/her try.
4. If, in your opinion, a patient who is refusing treatment should receive medical attention, never leave the patient without contacting your Base Hospital and discussing the situation with the physician on duty. Use all available resources, e.g. law enforcement, family, etc.
5. The patient has rights. You can only consider transporting the patient against his/her will if you can determine that the patient is unable to make an informed decision, such as a minor whose parent or guardian is not present or a person who cannot understand why treatment is necessary or the risks of not accepting treatment. Factors such as mental illness, serious injury or illness, drugs and alcohol are examples which could impair a person’s ability to understand the nature and consequences of accepting or rejecting medical help.
6. If the patient refuses treatment, against all advice, have the patient sign a refusal of treatment form. The refusal of treatment form must include information concerning your assessment of the patient and possible problems that could occur from refusing treatment. If patient has significant findings or may warrant treatment by ALS provider due to illness or injury refusal documentation must be completed by ALS provider. Make sure all documentation is dated.
7. For the patient who needs medical care, but refuses, good documentation (history, physical, and refusal of service forms) is extremely important and may protect the medical team should legal questions arise. The following information should be documented.
a. Patient name and age  
b. Chief Complaint  
c. Vital signs  
d. History of present illness  
e. Description of mental status and apparent competency to refuse care.  
f. Physical assessment  
g. Recommended Care/Pt’s intentions for care  
h. Reason patient is refusing care  
i. Specific risks of refusal explained to patient  
j. Patient verbalizes understanding of risks  
k. Name of patch physician if patch is possible  
l. Names and signatures of witnesses, patient, other agency personnel, if possible  
m. Time patient left & patient condition  
n. Brief statement as to why any or all of the above information is unobtainable

FIELD TRIAGE GUIDELINES
Due to the rural and isolated nature of much of this region, coupled with the long distances between communities, the emergency patient is usually taken to the nearest Emergency Receiving Facility.

Exceptions may occur when:
1. A rational and oriented patient specifically requests transport to another facility, and the E.M.S. personnel deem it feasible to do so. This requires a medical control option. Specific agency policy may affect the decision.
2. The nature of the patient's illness or injury requires services not available at the nearest facility. The decision to bypass the nearest facility should be substantiated during direct communication with the responsible On-line Physician at the Base Hospital and in compliance with VVEMS Medical Direction Policy on Transport Destination.
3. Multiple victims have been identified by prehospital personnel and possible overloading of the nearest hospital’s resources may prompt directing transport of a victim(s) directly to another facility.

Ordinarily, priority will be given to the most critical patients. However, when the number of patients exceeds the E.M.S. resources immediately available, then priority must be given to more salvageable patients.

MULTIPLE CASUALTY INCIDENTS (M.C.I.)

If an agency has no formalized (written and implemented) M.C.I. Plan the following will briefly outline steps to be taken in the event of an M.C.I.

Definition of an M.C.I.:
1. Five (5) or more critically (Immediate) injured patients and/or
2. An incident that exceeds or potentially exceeds the E.M.S. resources available.
These are based upon common triage treatment guidelines and the use of a nationally recognized Incident Management or Command System (I.M.S./I.C.S.). All agencies are expected to use the I.M.S. to allow agencies to work with a common system to mitigate incidents. This outline is not intended to replace well established local plans; rather, it offers a guideline for those areas in which no organized plan exists.

On arrival at an M.C.I. - in order of priority:
1. Perform scene size up, assure scene safety
2. Request additional resources:
   a. from your agency;
   b. Consider:
      (1) Appropriate Law Enforcement Agencies
      (2) Aircraft assistance
      (3) Mutual aid
      (4) Specialized needs (i.e. HazMat, School buses, etc.).
3. Establish Initial Command
4. Notify the Base Hospital that you have an M.C.I.
   a. Number of patients
   b. Have Base Hospital notify regional hospital
5. When additional resources become available:
   a. Assign per I.C.S. (i.e. Triage, Transportation, Staging, Safety, etc.).
   b. START/Triage patients
      1. Immediate (to be transported first and treated immediately).
      a. Respiration-over 30
      b. Pulse-No Radial Pulse
      c. Mental Status-Unable To Follow Simple Commands
      2. Delayed (transportation and treatment may be deferred).
      a. Other patients unable to walk on their own
      3. Minor (to be transported or treated last)
      a. Patients that can walk on their own.
      4. Dead/Dying
      a. No Respirations after Head Tilt/OPA
   c. Provide for scene security:
      • Safety officer/sector* Law enforcement
   d. Incident Command or Medical Group/Branch notifies receiving hospital
      of the number of patients and their categories. Additional contact should
      be made to the receiving hospital if there is a significant change in the
      number of patients they will be receiving.
6. Set up treatment areas for Immediate, Minor, and Delayed:
   a. Mark areas with flags or tape with color designation for ease of locating proper areas.
   b. Move patients to proper treatment area.
   c. Leave Dead/Dying victims where they are, if they are obviously dead and not in the way; use resources to help those patients who are viable.
   d. Treat patients in designated treatment area.
7. Transportation officer organizes transportation taking into consideration patient priority.
   a. Transportation of patients to appropriate receiving facility(s)
   b. Ensures adequate medical personnel remain on scene to treat remaining patients.
8. Ambulances will provide brief courtesy notifications to the receiving facility to include:
   a. Triage priority of patients
   b. Description of major injuries
   c. Treatments provided
9. Consider Rescuer Assistance/Relief if incidents of long duration ("Rehab sector").
   a. Arrange for food and water.
   b. Rest area away from scene, if possible. (Consider house, store, etc.)
   c. Rotate personnel through "Rehab Sector".
10. At conclusion of incident:
    a. Restock units
    b. Consider post incident debriefing for all Rescuers and Police.
        (1) Within 12 hours post-incident.
        (2) Follow-up within 72 hours.
        (3) Offer individual counseling if needed/available.

Note: The above does not offer a detailed, in-depth study of M.C.I. response or the I.C.S. system. Further education in these areas should be pursued as space here will not allow total coverage of these areas. Practical drills and daily use of the I.C.S. on all multi-casualty incidents will increase proficiency in these areas.

PNEUMATIC ANTI-SHOCK GARMENT (P.A.S.G.)
The P.A.S.G. has a limited role in modern EMS care. We no longer require this device to be present on EMS vehicles and only support its use in stabilizing pelvic fractures when other devices are impractical or unavailable.

TREATMENT GUIDELINES

GENERAL ASSESSMENT AND TREATMENT APPROACH

Although there are many things that may be medically affecting your patient, there are a limited number of supporting treatments you have to offer. Do not let the gathering of information distract you from the management of life-threatening problems.

Remember, however that you may be able to gather information from bystanders at the scene, from the environment, and perhaps even from the patient that may not be available to the physician later on. Your partner can often be engaged in collecting this kind of information during the secondary examination.

HISTORY

1. Chief complaint (questioning to include, when appropriate):
   a. Onset
   b. Provocation
   c. Quality
d. Radiation
e. Severity
f. Time

2. Associated complaints: question as for Chief complaint
3. Relevant past medical history
4. Allergies
5. Medications and drugs: chronic
6. Survey of surroundings for evidence of drug abuse, mental functioning, and family problems
7. Last meal, last menstrual period (if applicable)

**INITIAL ASSESSMENT**

Primary interventions should always be made as soon as a need for them is assessed.

**AIRWAY:**

Assess patency, stridor, foreign body (F.B.), ability to maintain airway.

**TREATMENT**

1. If compromised or absent airway, or patient unresponsive:
   a) Position the airway
   b) Insert OPA/NPA
   c) Suction PRN
   d) Remove dentures
   e) Always consider C-spine injury
2. Consider endotracheal intubation or Combitube
3. Consider needle or surgical cricothyrotomy

**BREATHEING:**

Assess: Rate, apparent tidal volume, effort, ability to speak, symmetrical movement, breath sounds, accessory muscle use, oximetry.

Realize that oxygenation and ventilation are separate but interdependent issues. Oxygenation may be assessed as adequate with a pulse oximeter, but the only way to assess ventilation as adequate is by ETCO2 monitoring and/or clinical means, i.e. rate, tidal volume, air movement.

**TREATMENT**

1. Position of comfort when appropriate
2. Oxygen as appropriate
3. Assist with Bag-Valve mask
4. CPAP may be used when indicated by protocols.

**CIRCULATION:**
Assess pulse presence, location, quality, and capillary refill; assess blood loss from hemorrhage, skin color and temperature, and level of consciousness.

**TREATMENT**

1. Control active external bleeding with direct pressure, splint major fractures
2. IV NS; consider volume support (enroute)
3. Monitor Rhythm
4. Drug therapy as indicated

**VITAL SIGNS**

1. Obtain first quantitative set of vitals within five minutes if practical (pulse, blood pressure, respiratory rate, pulse oximetry, temperature)
2. Repeat according to patient's condition. At least one more set prior to transport or enroute.

**NEUROLOGICAL ASSESSMENT**

Management of patients with head injury or neurological illness depends on careful assessment of neurological function. Changes in neurologic status are particularly important. The first observation of neurological status in the field provides the basis for monitoring sequential changes. It is, therefore, important that the first responder accurately observe and record neurological assessment, using parameters which will be followed throughout the patient's hospital course.

A. The Glasgow Coma Scale is one method of monitoring patients with head injury. Errors and confusion are minimized when precise responses to specific stimuli are recorded. Always record specific responses in addition to the total score of the Glasgow Coma Scale. See Appendix E for Glasgow Coma Scale

B. Another method to objectively describe LOC in the non-head injured patient is **AVPU**
   A: Awake & Alert
   V: Responsive to Verbal Stimulus
   P: Responsive to Painful Stimulus
   U: Unresponsive

C. Eyes:
   1. Direction of gaze
   2. Size and reactivity of pupils
   3. Visual Field Loss

D. Motor Function and Coordination
   1. Observe whether all four extremities move equally well
   2. Facial Droop

E. Speech and Language
   1. Real words, but slurred enunciation
   2. Unable to use correct words and/or unable to comprehend simple question and commands
F. Sensation (if patient awake):
   1. Observe for absent, abnormal or normal sensation at different levels if cord injury is suspected

SPECIAL NOTES:

A. Sensory and motor exam **must** be documented before and after moving patient with suspected spinal injury.
B. Note what stimulus is being used when recording responses.
C. GENERAL: FOCUSED HISTORY/PHYSICAL EXAM OR RAPID ASSESSMENT

DETAILED PHYSICAL EXAM
Definitions:

Focused History/Physical Exam: The part of the assessment process in which the patient’s major complaints or any problems that are immediately evident are further and more specifically evaluated.

Detailed Physical Exam: The part of the assessment process in which a detailed area-by-area exam is performed on patients whose problems cannot be readily identified or when more specific information about problems identified in the focused history and physical exam is necessary.

The four components of physical examination are: inspection, auscultation, palpation, and occasionally, percussion.

See Appendix H for Detailed Head to Toe Assessment

CENTRAL VENOUS ACCESS

Administrative Medical Control has not authorized the initiation of central venous lines by Paramedics. Existing central venous access devices such as, porta-caths and PICCs may be accessed by Paramedics only as trained in the Advanced IV access training.

CPAP

CPAP, an optional respiratory support treatment that has shown to rapidly improve vital signs, gas exchange, and work of breathing shortness of breath, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in patients who suffer from asthma, COPD, pulmonary edema, CHF, and pneumonia. This is approved for use by VVEMS agencies after proper training as delineated in the CPAP Use Guideline. See Appendix G

Intraosseus IV Access/IO

VVEMS agencies may use this technique as part of their vascular access after completing the required training, in accordance with the IO Use Guideline. See Appendix G
Rapid Sequence Intubation/RSI/Medication Assisted Intubation

This is an approved skill for EMS use in the state of AZ. Only agencies currently using RSI are approved use at VVMC. VVEMS medical direction supports the use of RSI as an optional advanced airway management skill as delineated in the VVEMS RSI Guideline. See Appendix G. The continuation of this program depends on continued quality monitoring and consistency with current EMS research on this topic.
DEAD ON ARRIVAL
Divided into two categories:

DOA CATEGORY 1 (2)

DOA CATEGORY 2 (2)

Apneic
Pulseless
Asystole in 2 leads for 12 seconds

Dependent
Lividity
Rigor Mortis

CPR
Proceed to appropriate Cardiac Guideline

Yes

No

PATCH

PATCH

POLICE CASE

1) In situations where hypothermia may be a consideration, hypothermia guidelines should be followed. Seek Medical Control input.
2) These categories are for the purpose of delineating two different assessment levels and actions based on those assessments not for documentation purposes.
DO NOT ATTEMPT RESUSCITATION ORDERS

Confirm patient is unresponsive, apneic, and pulseless (1)

Properly completed PREHOSPITAL MEDICAL CARE DIRECTIVE is available?

Yes

Do not attempt resuscitation (2)

No

Begin BLS CPR

Properly completed ADVANCED DIRECTIVE/ LIVING WILL/ PHYSICIAN’S DNR ORDER is available? OR next of kin request

Yes

Begin Resuscitation

No

Notify appropriate law enforcement agency

Notify appropriate law enforcement agency if patient is not transported

(1) It is not the intent of advanced directives to deny treatment of other medical conditions not related to the terminal illness, pain medication, or other supportive care.

(2) If patients relatives are present and are indicating they want resuscitation attempted, in the presence of advance directives, begin basic CPR and patch for Medical Control input.

(3) If patient is in a healthcare facility or is being transported interfacility with a physician’s DNAR in place it is not necessary to begin CPR.
ADULT BRADYCARDIA, UNSTABLE

(1) HEART RATE < 60 MINUTE WITH ACCOMPANYING SIGNS/SYMPOTMS OF HEMODYNAMIC COMPROMISE, I.E., CHEST PAIN, HYPOTENSION, IF HISTORY/EVIDENCE OF TRAUMA, PROCEED TO TRAUMA TREATMENT GUIDELINE

- Airway
- Ventilation
- Oxygenation

ECG Monitor
12 Lead, if available
Establish an IV at a TKO rate. (2)

SECOND DEGREE TYPE II OR THIRD DEGREE HEART BLOCK WITH WIDE QRS

- Transcutaneous Pacing (TCP)
- Consider volume challenge 300-500 mL NS. (3) If pt is conscious then may administer Versed (Midazolam) 1mg every 3-5 minutes slow IVP up to 4 mg (4) during pacing for sedation

- Atropine 0.5 mg IV, every 3-5 min. to maximum of 3mg. Consider volume challenge 300-500 mL NS (3)

- BRADYCARDIA & S/S CONTINUE?

- Yes
  - Transcutaneous Pacing
  - If pt is conscious then may administer Versed (Midazolam) 1mg every 3-5 minutes slow IVP up to 4 mg (4) during pacing for sedation

- No

(1) Signs/symptoms of an unstable patient may include chest pain, SOB, decreased LOC, hypotension, shock, pulmonary edema, congestive heart failure, and acute myocardial infarction.
(2) This should not delay definitive treatment.
(3) Repeat vital signs and lung auscultation before and after fluid administration
(4) Max dose of 4 mg of Versed (Midazolam), then contact Medical Control
(5) Contact Medical Control to consider administration of Dopamine 5-20 mcg/kg/min and/or Epinephrine 2-10 mcg/min
TRAUMA – MUSCULOSKELETAL INJURY

Fractures, dislocations, and sprains

- Apply sterile dressings to open fractures
- If grossly contaminated attempt gentle decontamination with clean (preferably sterile) solution

If pulses or sensation absent distal to injury, attempt gentle axial traction one time

- Splint areas of tenderness or deformity to include joint above and below fracture site
- Reassess distal neurovascular status

Utilize traction splint for suspected femur fractures unless hip or knee joints are involved

For Suspected pelvic fractures consider pelvic binder, sheet or P.A.S.G.

Elevate simple extremity injuries apply ice/cold packs during transport

Establish IV of NS

In pt is not hypotensive Consider Morphine Sulfate
Less than 55 y/o 0.1mg/kg IV
Greater than 55 y/o 0.05 mg/kg IV
May repeat in 10 minutes

PATIENT STABLE AND PAIN MEDICATION IS RELIEVING PAIN?

PATCH

COURTESY NOTIFICATION

1) Contact Medical Control to administer Midazolam 1-5 mg or Diazepam 5-10 mg for large muscle spasm
2) A Patch must be done to Base Hospital to generate a telemetry form if Morphine is administered.
3) Consider Air Transport for isolated replantable extremities
12 lead EKG indicates ST elevation ≥ 1mm in 2 or more contiguous leads or new or presumed new LBBB (2)

Transmit 12 lead to Emergency Department as soon as possible or describe to MD via patch phone

Administer ASA 81 mg X 4 PO chew and swallow, if not contraindicated (5)

Establish IV of NS at TKO rate. Establish a second IV saline lock enroute. Attempt to utilize veins other than in the AC area if possible and place both IV’s in left arm if possible

Apply Quick Combo pads. Monitor Vital signs. Systolic BP > 100 ? AGE GREATER THAN 30

NTG 0.4 mg SL, may repeat x 2 every 5 min. if pt. not hypotensive. (3) (4)

If pain continues after 3 NTG may administer Morphine Sulfate 0.1mg /kg IV every 5 min. up to 10 mg total, if pt. is not hypotensive

If Emergency Physician agrees that AMI is suspected and patient has allergy to IV contrast administer solumedrol 125 mg IV and Benadryl 50 mg IV

1) Indications of chest pain suggestive of possible myocardial ischemia include: Description of crushing, squeezing, pressure, burning, tightness, diaphoresis, nausea/vomiting, apprehension, radiation, age > 30, associated cardiac risk factors.
2) If twelve lead capability, should be done in pt's initial assessment and transmitted as soon as possible.
3) Repeat vital signs and lung auscultation before and after administration of NTG. Consider prior NTG use. If pain reoccurs and is not refractory to NTG, repeat NTG 0.4mg SL every 5 minutes as needed for pain relief, maintaining B/P > 100.
4) Nitroglycerin is contraindicated in patients that have taken Viagra (sildenafil), Cialis, Levitra, or similar medication in the previous 24 hours.
5) Contraindication to ASA is: 1) Allergy to ASA. 2) True allergy to NSAIDS ASA may be given without an IV in place.
6) Patch should be completed as soon as possible so that Cath lab team can be notified.
ADULT CARDIOPULMONARY ARREST – CCR ALTERNATIVE (1)(2)

- Adequate bystander administered chest compressions or provider witnessed arrest
- EMS arrival at patients side
- Inadequate or no bystander chest compressions administered
- Immediate 200 chest compressions (Assess airway) (4)

VF/Pulseless VT
Administer 1st shock – monophasic 360J
Or biphasic equivalents

- Immediate 200 Chest Compressions
(Assess airway, Secure IV access, and Administer Epinephrine 1:10,000 1 mg IV/IO as soon as possible)
Repeat every 3-5 min. as soon as possible during chest compressions (4)(7)

- Assess rhythm and pulses (3)(6)
- VF/Pulseless VT
Administer 2nd shock – monophasic 360J
Or biphasic equivalents

- Immediate 200 Chest Compressions
Continue Epinephrine 1:10,000 1 mg IV/IO every 3 minutes during chest compressions (7)

- Assess rhythm and pulses (3)(6)
- VF/Pulseless VT
Administer 3rd shock – monophasic 360J
Or biphasic equivalents

- Immediate 200 Chest Compressions
Assess rhythm, ventilate, and intubate (3)(5)(6)

- NO PULSE
- Non – shockable rhythm

- Immediate 200 Chest Compressions
(Assess airway, Secure IV access, and Administer Epinephrine 1:10,000 1 mg IV/IO as soon as possible during chest compressions) (4)(7)

- Assess rhythm and pulses Non-shockable rhythm? (3)(6)

- NO PULSE
- NO PULSE
- NO PULSE

WITH PULSE

- NO PULSE

WITH PULSE

- PATCH

1) Age greater than 8 years old.
2) Should not be used on patients; involved in traumatic event or where evidence of primary respiratory arrest is present.
3) Assess rhythm – quick look or AED
4) Evaluate airway, place OPA and non-re-breather mask with high flow oxygen.
5) Do not attempt intubation until after 3rd set of 200 chest compressions, ventilate by other means if severe cyanosis is present.
6) Pulse checks should be done only if ECG indicates a potentially perfusing rhythm, not interrupt chest compressions, and be very brief.
7) Epinephrine 1:10,000 0.01 mg/kg for pediatric patients
8) Continue to appropriate ACLS Guideline
ADULT PULSELESS ARREST

CCR guideline complete

VF/Pulseless VT
Shock as indicated—
monophasic 360J or biphasic equivalents

Immediate 5 cycles CPR
Lidocaine 1.5 mg/kg IV/IO may repeat 0.75mg/kg every 3-5
min. x 2 to a total of 3mg/kg
Consider Magnesium Sulfate 1-2 Gm IV/IO over 1-2
min for torsades de pointes (5)

Assess rhythm and pulses (4)(8)

VF/Pulseless VT
Shock as indicated—
monophasic 360J or biphasic equivalents

Immediate 5 cycles CPR
Assess rhythm and pulses (4)(8)

Non – shockable rhythm

Immediate 5 cycles of CPR
Administer Atropine 1mg IV/IO every 3-5 minutes to
a total of 3 doses if asystole or slow PEA during
chest compressions (5)

Assess rhythm and pulses (4)

Non-shockable rhythm ?

Immediate 5 cycles of CPR

Assess rhythm and pulses (4)

Stay with rules

Immediate 5 cycles of CPR
Assess rhythm and pulses (4)
Continue to follow treatment guidelines based on
patient assessment and rhythm (?)

PATCH

Assess rhythm – quick look, only check pulses if there is an organized rhythm present.
Evaluate airway, intubate if necessary, limit interruption of CPR as much as possible.
Once patient is successfully intubated perform continuous asynchronous compression (rate 100/min) with ventilations (rate 8-10/min)
Pulse checks should be done only if EKG indicates a potentially perfusing rhythm, do not interrupt chest compressions, and be very brief.
Medications should be administered during CPR as soon as possible after rhythm checks.
Consider possible causes: Hypovolemia, hypoxia (ventilation/re-evaluation), acidosis (ventilation/re-evaluation), tension pneumothorax (needle decompression), hypothermia, hypoglycemia, drug overdose, cardiac tamponade (volume infusion), massive AMI, hyperkalemia (consider NaHCO3, D50W, Calcium Chloride) massive pulmonary embolism.
If patient remains asystolic or other agonal rhythm after successful intubation, initial medications, no reversible causes are identified, and transport has not been initiated; consider termination of resuscitative efforts by order of a physician. Consider interval since arrest.
For successful conversions with HR>60 and no 2nd or 3rd degree heart blocks. Assess vital signs, administer Lidocaine 1-1.5 mg/kg and start infusion at 2-4 mg/min. If patient received bolus doses prior to conversion administer maintenance infusion only.
CARDIAC ARREST POST RESUSCITATION
INDUCED HYPOTHERMIA

1) Criteria for Induced Hypothermia:
   - ROSC after cardiac arrest not related to trauma or hemorrhage
   - Age greater than 18 years old
   - Patient is intubated and remains comatose (no purposeful response to pain)
   - GCS of less than 8 after ROSC
   - ROSC within 60 minutes of arrest
   - Initial temperature >34C- no environmental hypothermia related arrhythmia
   - Female patients not pregnant
   - No uncontrolled hemorrhage
   - No persistent unstable arrhythmia
   - No DNR paperwork identified during resuscitation

2) If unable to intubate DO NOT initiate induced hypothermia

3) Patients develop metabolic alkalosis with cooling. Do not hyperventilate.

4) When exposing pts for cooling purposes undergarments may remain in place. Be mindful of your environemnt and be preserve patients modesty.

5) Do not delay transport for purposes of cooling.

6) Patch early to advise of induction of hypothermia to allow ED to have equipment ready.

7) AT ANY TIME- Loss of Spontaneous Circulation- discontinue cooling and go to appropriate protocol
ADULT TACHYCARDIA WITH PULSES

AIRWAY VENTILATION OXYGENATION

Monitor EKG
Assess Rhythm
Assess vital signs

Treat reversible causes

Perform immediate synchronized cardioversion starting at 100J, then 200J, 300J and 360 J or biphasic equivalent.
If conscious consider sedation with Versed (Midazolam) 1-2 mg slow IVP single dose. (4) (5)

Is patient unstable?
Altered mental status
Hypotension, Shock
Shortness of Breath
Severe Chest Pain

Establish IV of NS at TKO rate
Obtain 12 lead EKG, if available

Is QRS Wide or narrow? (1)

Wide

If ventricular tachycardia or uncertain rhythm:
Lidocaine 1mg/kg IVP, may repeat Lidocaine (Xylocaine) 0.5 mg/kg every 5-10 minutes to a total of 3 mg/kg
If atrial fibrillation with aberrancy / intraventricular conduction delays go to irregular narrow-complex tachycardia
If rhythm appears torsades de pointes consider Magnesium Sulfate 1-2 gm IV over 2 min

If delay in synchronization occurs or rhythm is polymorphic VT go immediately to unsynchronized defibrillation at 360J. For polymorphic VT the provider should be prepared to move immediately to the Pulseless Arrest algorithm if pulseless arrest develops.

Narrow

Is rhythm regular?

Regular

Attempt vagal maneuvers if no response:
Give Adenosine (Adenocard) 6 mg rapid IVP if no conversion in 1-2 minutes give 12 mg rapid IVP, Repeat x 1 pm (2)(3)

Irregular

Rhythm converts?

PATCH

Regular

If atrial fibrillation with aberrancy / intraventricular conduction delays go to irregular narrow-complex tachycardia
If rhythm appears torsades de pointes consider Magnesium Sulfate 1-2 gm IV over 2 min

Conversion Successful?

PATCH

1) If at any time patient becomes unstable, proceed to “Unstable” side
2) Carotid sinus massage should not be performed without Medical Control Contact; other methods of vagal stimulation should be attempted. Carotid sinus massage is contraindicated if patient >50 years of age or has history of hypertension. If ordered by Medical Control, verify absence of carotid bruits.
3) Contact Medical Control to administer Diltiazem (Cardizem) 0.25 mg/kg, if no response may repeat in 15 minutes at 0.35mg/kg, maintenance infusion after conversion is 5 to 15 mg/hr. Consider cardioversion
4) For successful conversions of ventricular arrhythmias with HR > 60 and no 2nd or 3rd degree heart blocks: Assess vital signs, Lidocaine (Xylocaine) 1mg/kg and start infusion at 2-4 mg/min, reduce maintenance infusion of Lidocaine by half in patients with renal or hepatic disease or > 70 years of age. If patient received bolus doses prior to conversion administer maintenance infusion only.
5) If delays in synchronization occur or rhythm is polymorphic VT go immediately to unsynchronized defibrillation at 360J. For polymorphic VT the provider should be prepared to move immediately to the Pulseless Arrest algorithm if pulseless arrest develops.
Physiologic Criteria:
- Respiratory Compromise
- Glasgow Coma Scale < 13
- Systolic Blood Pressure < 90 adult
- Signs of shock in pediatrics

AND / OR

Anatomic Criteria:
- Penetrating injury to the head, neck, chest or abdomen
- Blunt abdominal trauma with hypotension
- Blunt chest trauma, flail chest, pneumothorax
- Amputation above wrist or ankle

Anatomic Criteria:
- Burns to face, airway, >20% BSA
- Blunt chest trauma, rib fractures, pulmonary contusion
- Polytrauma > 60 y.o. or < 6 y.o.
- Two or more long bone Fx's
- Unstable pelvic Fx
- Open or depressed skull Fx
- Spinal cord injury, limb paralysis
- Severe head injury
- Pregnancy > 3 months

Mechanism of Injury Criteria:
- Fall > 20 feet (adult)
- Fall > twice patients height (peds)
- Pedestrian vs. motor vehicle > 5mph
- MCA, ATV > 20 mph
- MVA > 20 mph - unrestrained
- MVA > 40 mph – restrained
- High speed rollover
- Ejection from vehicle
- Death in the same compartment
- Passenger compartment intrusion
  - > 18 "
- Extrication > 20 minutes
- Bicycle > 5 mph with injury

1) This guideline is for the purpose of having consistent criteria for communication between Prehospital Providers and Emergency departments so that appropriate staff is available at the receiving facility.
2) Some receiving hospitals may not use this terminology.
3) See air transport and trauma guidelines.
SUBMERSION INCIDENT

Airway with spinal immobilization as indicated (1)
Ventilation
Oxygenation

Apply Monitor, Lethal or potentially lethal Dysrhythmias?

DO NOT DELAY TRANSPORT FOR THE FOLLOWING PROCEDURES.
Complete procedures enroute (3)

OG/NG tube if ventilated
With BVM for > 2 minutes or obvious gastric distention. (4)

Establish an IV of NS at TKO rate. (5)
Consider Fluid resuscitation if indicated.

TAKE TEMPERATURE.
MAINTAIN TEMPERATURE.
PREVENT HEAT LOSS.
CONSIDER POSSIBLE CAUSES AND TREAT. (6)

PATIENT REMAINS UNSTABLE OR TREATMENT / INTERVENTION PROBLEMS?

PATCH

1) BVM with reservoir with 100% O2 may be adequate to provide ventilation and oxygenation. If ventilation appears clinically inadequate or transport will be greater than 5 minutes, consider intubation.
2) 100% oxygen should be used in all patients.
3) Rapid transport is of the utmost importance. Advanced Life Support procedures should be attempted at the scene, but if unsuccessful within a short period of time, the patient should be transported to nearest appropriate facility without further delay.
4) Gastric decompression allows adequate pulmonary tidal volumes. Insert 16-18 FR. NG/OG catheter.
5) Establishment of an IV should not delay patient transport.
6) Hypoxia (ventilation/re-evaluation), acidosis (ventilation/re-evaluation, consider orders for sodium bicarbonate), tension pneumothorax (needle decompression), hypothermia (see Hypothermia Treatment Guideline), trauma-hypovolemia (volume infusion), hypoglycemia (check blood sugar)
1) If patient or clothing still burning cool hot areas immediately. Flush chemical burns for 20 minutes.
2) Versed (Midazolam) 1mg every 3-5 minutes up to 4mg then contact medical control. Use with caution. Only needed after pain control with morphine. Pain control takes priority.
TRAUMA – MUSCULOSKELETAL INJURY

Fractures, dislocations, and sprains

* Apply sterile dressings to open fractures
* If grossly contaminated attempt gentle decontamination with clean ( preferably sterile ) solution

If pulses or sensation absent distal to injury, attempt gentle axial traction one time

* Splint areas of tenderness or deformity to include joint above and below fracture site
* Reassess distal neurovascular status

Utilize traction splint for suspected femur fractures unless hip or knee joints are involved

For Suspected pelvic fractures consider pelvic binder, sheet or P.A.S.G.

Elevate simple extremity injuries apply ice/cold packs during transport

Establish IV of NS

In pt is not hypotensive
Consider Morphine Sulfate
Less than 55 y/o  0.1mg/kg IV
Greater than 55 y/o 0.05 mg/kg IV
May repeat in 10 minutes

PATIENT STABLE AND PAIN MEDICATION IS RELIEVING PAIN ?

Yes

PATIENT STABLE AND PAIN MEDICATION IS RELIEVING PAIN

No

COURTESY NOTIFICATION

Airway
( C-Spine if indicated )
Ventilation
Oxygenation

Amputations

* Control hemorrhage
* Direct pressure to stump

* Transport amputated part wrapped in slightly moist saline gauze in sterile, water tight container or plastic bag
* Keep cool but do not place directly on ice

If pt. is not hypotensive Administer
Consider Morphine Sulfate
Less than 55 y/o  0.1mg/kg IV
Greater than 55 y/o 0.05 mg/kg IV
May repeat in 10 minutes

PATIENT STABLE AND PAIN MEDICATION IS RELIEVING PAIN ?

No

1) Contact Medical Control to administer Versed (Midazolam) 1-5 mg or Valium ( Diazepam) 5-10 mg for large muscle spasm
2) A Patch must be done to Base Hospital to generate a telemetry form if Morphine is administered.
3) Consider Air Transport for isolated replantable extremities
1) GCS 13 or less, consider Air Transport to Neurological Center. Discuss with patch MD
2) Controlled hyperventilation with 100% O2 at 20 breaths per minute should only be used in patients with signs of impending central herniation; unconscious, unresponsive patient with extensor posturing or no motor response; asymmetric or dilated and unreactive pupils; GCS decreases 2 or more points from patient’s prior best score when patient had initial GCS of 9 or less, after correction of hypoxemia, hypotension, and hypoglycemia. *Normoventilation is 10 bpm in the adult.*
3) The goal for time on scene is to not exceed ten (10) minutes for patient assessment, management and packaging unless extrication is required or unforeseen circumstances develop.
4) On-line Medical Control should be involved in difficult or questionable triage decisions.
5) Consider IO if no IV access and patient is in extremis.
TRAUMA – MULTI – SYSTEM
Applies to patients presenting with S/S of Critical (Immediate) injury or patients in which the mechanism of injury is suspect for occult critical Injury.

Airway with Spinal Immobilization 
Ventilation 
Oxygenation

Pt. in Cardiopulmonary arrest with signs of chest trauma perform bilateral needle thoracostomy

Control Bleeding Apply Monitor

DO NOT DELAY TRANSPORT FOR THE FOLLOWING PROCEDURES:
Complete as many procedures enroute to the appropriate emergency care facility. (1)

Seal open chest wounds and stabilize flail segments as indicated

Physical findings suggestive of a tension pneumothorax:
YES Perform a needle thoracostomy

Establish 2 IV’S of NS with large bore catheters. Maintain tissue perfusion as indicated. (3)(5)

Consider use of pneumatic anti-shock garment (PASG).
May be considered in situations of suspected unstable pelvic fractures and/or severe hypotension. (4)

TRIAGE OR TREATMENT INTERVENTION PROBLEM (2)

1) The goal for time on scene is not to exceed ten (10) minutes for patient assessment, management and packaging unless extrication is required or unforeseen circumstances develop. Patients with penetrating injuries to the thorax or head with unstable vital signs should be transported immediately.
2) On-line Medical Control should be involved in difficult or questionable Triage decisions.
3) Consider IO if no IV access and patient is in extremis.
4) PASG/MAST is contraindicated in penetrating chest trauma and is relatively contraindicated in isolated blunt chest trauma.
5) Careful consideration should be given to the amount of fluids infused in the field.
TRAUMA – SPINAL INJURY

Airway
With Spinal Immobilization
Ventilation
Oxygenation

Apply Monitor

Establish an IV of NS.
If the patient is hypotensive, establish 2 IV’s
with large bore catheters.
Maintain tissue perfusion as indicted, prevent or
treat systolic BP < 90 mmHG

Treat pain, neuro exam, motor,
sensory
GCS

PATIENT UNSTABLE OR
TREATMENT / INTERVENTION
PROBLEMS

YES → PATCH (1)

1) If patient remains hypotensive and appears to have isolated head / spinal injuries contact Medical Control to administer
Dopamine 5-20 mcg/kg/min.
CEREBRAL VASCULAR ACCIDENT - STROKE

Airway Ventilation Oxygenation

Apply Monitor Consider 12 lead

Establish IV of NS. Check Blood Glucose

Utilize Los Angles Prehospital Stroke Screen (LAPSS) Assessment tools to determine Potential for stroke

Monitor Vital Signs

Establish time S/S began. (1)

Rapid Transport

PATIENT UNSTABLE OR TREATMENT / INTERVENTION PROBLEMS ?

COURTESY NOTIFICATION

PATCH

1) Establishing time signs and symptoms began is CRITICAL. If patient awoke from sleep with S/S it is also important to determine how long patient was asleep. Patients with ischemic strokes < 3 hours old may be candidates for TPA therapy.
ALLERGIC REACTION
Applies to patient presenting with systemic allergic reaction e.g. diffuse urticaria, angioedema (edema of deep dermis layers), abdominal cramping, nausea or vomiting without anaphylaxis

1) The use of Epinephrine in patients 45 years or greater with known coronary artery disease requires Medical Control input.
2) Consider acuity of onset of symptoms and history of prior anaphylactic reaction.
3) If IV cannot be established, administer Benadryl (Diphenhydramine) 50 mg IM.
ANAPHYLAXIS
Applies to patient presenting with allergic reaction and with signs and symptoms of airway, respiratory, or circulatory compromise (laryngeal edema, bronchospasm, or hypotension.)

1) If signs and symptoms of severe hypoperfusion and an IV can be rapidly established, consider going directly to IV Epinephrine as per protocol.
2) Establishment of an IV should not delay the administration of IM Epinephrine to a patient in extremis.
3) The use of Epinephrine in patients age > 45 years or with known coronary artery disease requires Medical Control input.
4) If prolonged transport consider repeat use of Epinephrine every 15 minutes. Medical Control input should be obtained, if possible.
5) At any time an IV cannot be established, give Benadryl (Diphenhydramine) 50 mg IM as soon as possible after Epinephrine IM.
6) Consider IO if no IV access and patient is in extremis.
7) Consider the use of SVN therapy via in line BVM system in patients who are tiring or are appearing to have decreased tidal volumes.
8) If patient continues to be hypotensive contact Medical Control to administer Dopamine drip 5-20 mcg/kg/min.
ENVENOMATION - ARACHNIDS

Scene Safety (1)

Airway
Ventilation
Oxygenation

History of envenomation
Determine insect type if possible
Circumstances and time

Assess bite / sting site
Mark extent of
Swelling / redness / wound

Establish an IV of NS

Black Widow Spider
It patient is not hypotensive
Consider Morphine Sulfate
Less than 55 y/o  0.1mg/kg IV
Greater than 55 y/o 0.05 mg/kg IV
May repeat in 10 minutes

PT. UNSTABLE ?
Severe muscle cramping,
restlessness

YES

NO

PATCH

Brown Recluse Spider or
unknown

PT UNSTABLE ?
Shock, profound weakness
Respiratory depression

YES

NO

COURTESY
NOTIFICATION

Scorpion
It patient is not hypotensive
Consider Morphine Sulfate
Less than 55 y/o  0.1mg/kg IV
Greater than 55 y/o 0.05 mg/kg IV
May repeat in 10 minutes

Severe uncoordination,
Hypertension, Tachycardia,
hypersalivation

YES

NO

PATCH

(1) Attempts to kill or capture insect or bring to ED are not recommended.
(2) Contact Medical Control to administer Versed (Midazolam) / Valium (Diazepam) for severe pain / muscle spasm.
(3) Careful observation of respiratory status.
ENVENOMATION – SNAKE BITES

Scene Safety (1)

Airway
Ventilation
Oxygenation

Calm patient
Limit physical activity

History of envenomation
Description of snake (native or exotic )
Determine time and site of bite

Remove potential tourniquets: Jewelry, tight fitting clothes, outdoor gear
Extremities with bites should remain neutral or below level of heart

Mark area of advancing edema every 15 minutes

Establish an IV of NS

If pt is not hypotensive, Consider Morphine Sulfate
Less than 55 y/o  0.1mg/kg IV
Greater than 55 y/o 0.05 mg/kg IV
May repeat in 10 minutes

PATIENT STABLE?

IV fluid bolus if no other contraindications 2nd large bore IV if possible

COURTESY NOTIFICATION

YES

PATIENT STABLE?

NO

PATCH

1) Attempts to kill or capture the snake or bring dead animal to ED are NOT recommended.
2) Many exotic snakes are neurotoxic so respiratory status must be monitored carefully.
3) Contact medical control for Epinephrine if patient is hypotensive. If presenting with allergic reaction follow Allergic Reaction protocol.
1) Medical Control contact is not mandatory, however, the medic is encouraged to discuss with Medical Control if he/she is anticipating a Cricothyroidotomy and the clinical situation is such that there is time for Medical Control contact.

2) Verify proper tube placement by visualization of the cords and the tube passing through, bulb tube check / air aspiration or ETCO2 detector / monitor, chest wall rise, good breath sounds, absence of gastric sounds, clinical improvement in patient, and oximetry if available.

3) Consider NG/OG tube for gastric decompression in situations of prolonged ventilation.

4) Consider Combitube if difficult airway and Endotracheal intubation unsuccessful.

5) Unsuccessful is not determined by only one attempt. Several attempts may be appropriate as long as changes made after each attempt appear to improve chances of a successful intubation rather than going to a more invasive procedure such as Cricothyroidotomy.
If pt. conscious but cannot speak or cough give standing abdominal thrusts until obstruction is relieved or pt. becomes unconscious. (1)

If pt is unconscious and not breathing, begin CPR. Look into mouth when opening the airway during CPR. If object visualized, sweep from side of mouth.

Attempt direct laryngoscopy and removal of foreign body with Magill Forceps.

Check for breathing and pulse and provide rescue breathing or CPR as necessary.

Consider surgical / needle Cricothyroidotomy. (2)

1) Chest thrusts if patient is obese or pregnant.
2) Verify proper tube placement by bulb tube check / air aspiration or ETCO2 detector / monitor, chest wall rise, good breath sounds, absence of gastric sounds, and clinical improvement in patient.
RESPIRATORY ARREST OR INSUFFICIENCY – BRONCHOSPASM

Applies to patients with S/S of acute respiratory distress, secondary to asthma, COPD, and inhalation injury

Airway
Ventilation
Oxygenation (1)

Apply Monitor
IV / IO of NS TKO (4) (5)

Administer Albuterol 2.5 mg in 3 mL NS and Atrovent (Ipratropium Bromide) 0.5mg in 2.5 mL NS via SVN. (2)
May repeat SVN with Albuterol 2.5 mg in 3 mL NS prn continuously

Consider Epinephrine 1:1000 0.3 mg IM (3) (6) (7)

Severe symptoms continue?
YES

Consider CPAP ventilation if available

PATCH

NO

PATCH

1) Administer O2 at high flow rates to all patients in severe respiratory distress. This is especially true if pulse oximetry is not available.
2) Consider the use of SVN therapy via in line BVM system in patients who are tiring or are appearing to have decreased tidal volumes.
3) The use of epinephrine in patients 45 years or greater or with known coronary artery disease requires Medical Control input.
4) Do not delay definitive therapy to establish IV.
5) Consider IO if no IV access and patient is in extremis.
6) Contact medical control for use of Solumedrol.
7) Epinephrine IM is indicated for use in bronchospasm i.e. bronchiolitis and asthma
RESPIRATORY ARREST OR INSUFFICIENCY – PULMONARY EDEMA

1) Airway Ventilation (1)
   Oxygenation (2)

2) Pt in high fowler's position unless hypotensive

3) Apply Monitor
   Consider 12 Lead
   Lethal or potentially lethal dysrhythmias present?

4) Place Pt in high fowler's position

5) Establish an IV of NS at TKO rate or saline lock

6) After contacting Medical Control
   Lasix (Furosemide) 40 mg IV

7) If symptoms resolve and patient without S/S of cardio-pulmonary compromise
   Go to appropriate treatment guideline

8) Contact Medical Control to administer Dopamine drip 5-20mcg/kg/min.

1) Patients who appear to be tiring or have decreased tidal volume may require respiratory assist.
2) High flow O2 should be used in any patient who appears distressed.
3) Repeat vital signs and lung auscultation before and after administration of NTG.
4) Discuss with Medical direction prior to administration. If patient is currently taking Furosemide, double the initial dose.
5) Contact Medical Control to administer Dopamine drip 5-20mcg/kg/min.
OBSTETRICS
COMPLICATIONS OF DELIVERY
ABNORMAL PRESENTATIONS (1)

Airway
Ventilation
Oxygenation

Early Limited Patch

Assess perineum area
Establish IV with 0.9% NS

Breech

If close to hospital immediate transport may be best.

If delivery occurs, support infant body slightly higher than horizontal while being careful not to injure neck

If head does not deliver in 3 minutes (avoid explosive delivery), insert gloved fingers in a "V" shape between the infant’s face and vaginal wall to provide airway

Place O2 at 6 lpm between fingers to increase oxygen delivery to neonate

Keep infant’s body warm and dry

Rapid Transport

Limb / Transverse

Do not touch limb, Place mother in knee – chest position

Have mother pant to avoid pushing

Immediate Transport

PATCH

Nuca Cord

Attempt to slide cord over infant’s head. Look for additional loops around neonate. Successful?

NO

Clamp cord in 2 places and cut.

Continue with delivery

PATCH

Prolapsed Cord

Administer high flow O2 to mother

Have mother pant to avoid pushing

Place mother in deep – trendelenburg or knee-chest position

Do not occlude cord or attempt to replace

With 2 gloved fingers gently push presenting part off of cord. Do not compress cord

Rapid Transport

PATCH

1) See Appendix I for Introduction to Prehospital OB Care
Airway  
Ventilation  
Oxygenation  

Early limited patch  

Assess perineum area  

Assess for bleeding and signs of shock  

Establish 1 or 2 IVs of NS large bore catheter  

Massage fundus by applying kneading pressure to supra-pubic area.  
( after delivery of placenta )  
if delivery was within 3 days  

Allow infant to nurse if patient's status allows  

Bleeding Continues?  

Consider Oxytocin 10-20 units in 1000 mL NS titrate to response.  
After delivery of placenta.  

1) Post partum hemorrhage is defined as blood loss in excess of 500mL and during the first 24 hours after delivery.  
2) See Appendix I Introduction to Prehospital OB Care
OBSTETRICS
COMPLICATIONS OF PREGNANCY (4)

Airway
Ventilation
Oxygenation

Early Limited Patch

Ask pt about vaginal bleeding, fetal movement and leakage of vaginal fluid

Pregnancy Induced Hypertension (1)

Position left lateral recumbent

Monitor Rhythm

Establish an IV of NS TKO

Patient is actively seizing? Versed(Midazolam) per seizure guidelines

Seizing or recent seizure without hx of seizure disorder? Magnesium Sulfate 5gm IV over 15 minutes

Transport calmly (lights and sirens may cause seizures)

PATCH

Premature Labor

Assess perineum area for crowning of neonate head or bulging bag

Position left lateral recumbent

Encourage calm attitude

PATCH

Acute Abdominal Pain

Early pregnancy < 20 weeks

Assess for signs of shock

Establish IV of NS

Late Pregnancy > 20 weeks

Assess for signs of shock

Establish an IV of NS with large bore catheter

Observe for labor or rising fundus

Assess fetal status. Heart tones / movement

PATCH

Pregnancy Induced Hypertension (1)

Position left lateral recumbent

Monitor Rhythm

Establish an IV of NS TKO

Patient is actively seizing? Versed(Midazolam) per seizure guidelines

Seizing or recent seizure without hx of seizure disorder? Magnesium Sulfate 5gm IV over 15 minutes

Transport calmly (lights and sirens may cause seizures)

PATCH

1) Signs of PIH/ pre-eclampsia / eclampsia may include: Diastolic BP . 80 mmHg with cerebral or visual disturbances, epigastric or RUQ pain with nausea and vomiting, ALOC, hyper-reflexia, peripheral edema, pulmonary edema, seizures.
2) Contact Medical Control to administer Magnesium Sulfate IV bolus of 5 gm. over 15 minutes and then continuous infusion of 1-4 gm/hr.
3) Contact Medical Control to administer 1 liter fluid bolus of NS and consideration for very mild sedation (diazepam or Midazolam)
4) See Appendix I Introduction to Prehospital OB Care
1) See Appendix I Introduction to Prehospital OB Care
OBSTETRICS DELIVERY (2)

Airway
Ventilation
Oxygenation

Early Limited Patch
Safe Rapid transport to ED

Mother should be on firm surface with knees bent

Use clean or sterile technique (gloves, sheets, etc.)

Support head as it delivers.
Cord around neck?

Go to Nuchal cord guidelines

Bulb suction mouth, then nose. Be sure to squeeze bulb before insertion.

Protect infant from falling and temperature loss.
Dry infant promptly – (this also provides stimulus for infant to breathe)
Remove wet linen- keep infant dry

Double clamp cord 6” and 8” away from infant and cut.

Monitor and resuscitate infant if necessary.

Assess infant at one minute and five minutes after birth, utilizing APAGAR scale

Place infant on mothers abdomen and cover with a blanket, after infant is dry.

Transport patient – It isn’t necessary to await delivery of placenta

When placenta is visible at vaginal opening, gently assist delivery and bring placenta to hospital in a basin or plastic bag, NEVER PULL ON CORD!

Begin fundal massage gently. Continue during transport. Vaginal bleeding increases?

PATCH

YES

Go to Complications of Delivery – Postpartum bleeding guideline.

PATCH

NO

1) Prepare for immediate delivery if (a) contractions are less than 2 minutes apart and/or (b) perineal bulge obvious and scalp becomes visible (crowning)
2) See Appendix I Introduction to Prehospital OB Care
ALTERED LEVEL ON CONSCIOUSNESS

Airway Ventilation Oxygenation

Apply Monitor. (7) Lethal dysrhythmias present or signs of hypoperfusion.

Go to appropriate treatment guideline.

Establish IV of NS.
Check blood glucose. (3)

Lethal dysrhythmias present or signs of hypoperfusion.

Establish IV of NS.
Check blood glucose. (3)

Go to appropriate treatment guideline.

Dextrose 25 Gm IV or IO if no IV access(4)
Consider Thiamine 100 mg IV/IM. (5)
Reassess. (6)

Continue protocol.
Consider Thiamine 100mg IV/IM (5)

If RR < 12/min. and / or suspicion of opiod ingestion, administer Narcan (Naloxone):
Conscious Pt with abnormal behavior;
Narcan (Naloxone) .4mg IV may repeat every 3 min up to 2mg
USE CAUTION WITH NALOXONE IN PATIENTS ON CHRONIC NARCOTIC MEDICINES
Unresponsive Pt:
2 mg IM if perfusion inadequate or initial dose of 2mg IV
*If no improvement after 5 min. may repeat 2 mg IM or titrate IV to effect UP TO A MAXIMUM OF 4 MG.

If no change in LOC, repeat glucose. Realize the onset of action of Glucagon is 5-15 minutes.

Consider 12 Lead

Use with caution. Pt may become combative after administration of Naloxone.

If patient is highly agitated/combative/dangerous, contact Medical Control to consider administration of Midazolam 2 mg IV or 5 mg IM if no IV access. May repeat as necessary for patient/provider safety.

1) Utilize information obtained from family, bystanders, friends, or other health care workers.
2) If hypoglycemia or opiate OD suspected, BLS airway management may be sufficient until response to Dextrose and/or Narcan (Naloxone) is determined.
3) Obtain blood sample if utilized by receiving facility.
4) If unable to establish IV, administer Glucagon 1mg IM.
5) If no history of alcoholism a suspected and malnutrition or cachexia is not present. Thiamine may be withheld.
6) If no change in LOC, repeat glucose. Realize the onset of action of Glucagon is 5-15 minutes.
7) Consider 12 Lead
8) Use with caution. Pt may become combative after administration of Naloxone.
9) If patient is highly agitated/combative/dangerous, contact Medical Control to consider administration of Midazolam 2 mg IV or 5 mg IM if no IV access. May repeat as necessary for patient/provider safety.
ALTERED LEVEL OF CONSCIOUSNESS
With suspected alcohol intoxication

- Airway (2)(9)
  - Ventilation / Oxygenation
  - Assess Blood Glucose
  - Apply Monitor (7)
  - Lethal dysrhythmia present or signs of hypoperfusion:

- GCS < 13, abnormal vital signs, head trauma, SZ within 24 hr, blood glucose ≤ 60

- BG < 60 or no Glucometer
  - Dextrose 25 Gm IV (4)
  - Consider Thiamine 100 mg IV/IM (5)
  - Reassess (6)

- Altered LOC continues (8)

- If RR < 12/min. and / or suspicion of opioid ingestion, administer Narcan (Naloxone):
  - Conscious Pt with abnormal behavior;
  - Narcan (Naloxone) .4mg IM or IV
  - Unresponsive Pt:
    - 2 mg IM if perfusion inadequate or initial dose of
    - 2mg IV
    *If no improvement after 5 min. may repeat 2 mg IM or titrate IV to effect
    UP TO A MAXIMUM OF 4 MG.

- Symptoms resolve or remain with stable v.s. and no S/S of central herniation, monitor abnormalities

- SUSPECT:
  1. Borderline low BG (especially PMH Diabetes): go to Dextrose and obtain blood sample (3)
  2. Hyperglycemia, acute ETOH toxicity, infection, dehydration, metabolic acidosis: administer 300 – 500 mL NS bolus.
  3. Trauma, non-traumatic hypotension, dysrhythmias, seizure: go to appropriate treatment guideline.

- Transport to ED

- Continue protocol. Consider thiamine 100 mg IV/IM

- BG > 60

- Go to appropriate Treatment guideline

1) Utilize information obtained from family, bystanders, friends, or other health care workers.
2) If hypoglycemia or opiate OD suspected, BLS airway management maybe sufficient until response to Dextrose and/ or Narcan (Naloxone) is determined.
3) Obtain blood sample if utilized by receiving facility.
4) If unable to establish IV, administer Glucagon 1 mg IM.
5) If no history of alcoholism is suspected and malnutrition or cachexia is not present, Thiamine may be withheld.
6) If no change in LOC, repeat glucose. Realize the onset of action of Glucagon is 5-15 minutes.
7) Consider 12 lead
8) Use with caution. Pt may become combative after administration of Naloxone. If patient is highly agitated / combative contact Medical Control to consider administration of Versed (Midazolam) 2 mg IV or 5 mg IM if no IV access, may repeat as necessary for patient / provider safety.
9) Do not intubate sleeping, stable intoxicated patient if oxygenating and ventilating.
SEIZURE
Prolonged, Repetitive, or Status Epilepticus

Airway
Ventilation
Oxygenation

Apply Monitor,
Lethal or potentially lethal
dysrhythmias

Go to appropriate
Treatment guideline

NO

Establish an IV of NS.
Check blood glucose (1)

BG < 60 or no Glucometer

Administer Dextrose and
Thiamine per ALOC
guideline

BG > 60

Continue protocol.
Administer Thiamine per
ALOC guideline

SEIZURE CONTINUES?

NO

YES

COURTESY
NOTIFICATION

Administer Versed (Midazolam) IV 2.5 mg slowly
over 2 min., may repeat every 2 minutes until seizure
resolves or to a maximum of 10 mg or Versed
(Midazolam) 0.2 mg/kg IM to a total of 10 mg if no IV
access. (2)

COURTESY
NOTIFICATION

SEIZURE CONTINUES?

NO

YES

PATCH

NO

YES

BG > 60

1) Obtain blood sample if utilized by receiving facility.
2) If IEMT is highest level of care may give Valium (Diazepam) 0.1 mg/kg IV every 5 minutes pm maximum of three doses.
ABDOMINAL PAIN, NON – TRAUMATIC
Testicular torsion, Pelvic pain, AAA

Airway
Ventilation
Oxygenation

Apply Monitor,
Consider 12 lead EKG

Establish an IV of NS
Consider fluid challenge if signs/symptoms of hypovolemia (1)

If patient is not hypotensive
Consider Morphine Sulfate
Less than 55 y/o  0.1mg/kg IV
Greater than 55 y/o 0.05 mg/kg IV
May repeat in 10 minutes

Patient Stable ?

PATCH  NO  YES  COURTESY NOTIFICATION

1) PASG is a class 1 recommendation for hypovolemia due to ruptured abdominal aortic aneurysm.
NAUSEA AND VOMITING

Airway
Ventilation
Oxygenation

Establish an IV on NS

Administer Zofran (Ondansetron)
4mg slow IVP

Patient stable?

PATCH

NO

YES

COURTESY
NOTIFICATION
ENVIRONMENTAL – HEAT RELATED

Airway Ventilation Oxygenation

Check Temperature

Temp < 104 F

Signs and Symptoms of Heat Exhaustion / Dehydration

Remove to cool environment, sponge with cool fluids. (2)

Position L. lateral recumbent if vomiting

Check Blood Glucose if ALOC.

Consider oral rehydration if patient is not nauseated.

Establish IV NS – Consider fluid challenge if signs/symptoms of hypovolemia

Seizures ?

Yes

Go to Seizure Treatment Guideline

Agitation ?

Patch (3)

No

COURTESY NOTIFICATION

Temp > 104 F

Signs and Symptoms of Heat Stroke

Position L. lateral recumbent

Immediate cooling: Remove clothing, move to cool environment, begin external cooling – sponge / spray pt. with tepid water and concurrent fanning, cold packs to neck and groin. (1)(2)

Monitor rectal temperature

Monitor rhythm


Seizures ?

Yes

Go to Seizure Treatment Guideline.

Agitation ?

Yes

Patch

Patient improves, Stable vital signs, no intervention problems

COURTESY NOTIFICATION

No

PATCH

1) Do not cool below 102 degrees F.
2) Do not over cool and cause shivering and reoccurring heat buildup. If patient is shivering contact Medical Control to administer Versed (Midazolam) or Valium (Diazepam).
3) If patient is agitated contact Medical Control to administer Versed (Midazolam) or Valium (Diazepam).
ENVIRONMENTAL - HYPOTHERMIA

GENTLE HANDLING!

Assess for signs of life for 30-60 seconds.

Prevent further cooling – remove wet clothing, move to warm environment.

Signs of life? Cardiac Monitor, Organized Rhythm? (1)

Prevent further cooling – remove wet clothing, move to warm environment.

Humidified / warmed oxygen, if possible. Consider intubation. DO NOT HYPERVENTILATE

Start external Rewarming. Consider warm PO fluids if pt. condition permits.

IV NS warmed to 104 – 108 degrees F, if possible. Glucose Check.

PATCH

Temp > 90 F

Start central warming only. Heat packs to groin and neck.

Humidified / warmed oxygen, if possible. Consider intubation. DO NOT HYPERVENTILATE

IV NS – warmed to 104-108 degrees F if possible. Glucose Check

Treatment or intervention problem?

PATCH

Temp < 90 F

Check rectal temp with hypothermia thermometer.

COURTESY NOTIFICATION

1) If there is an organized rhythm do not begin CPR unless directed by Medical Control.
2) Utilize only 1 shock.
3) Contact Medical Control for ACLS medication administration regimen. Consider withholding medications if core temperature is ≤ 86 degrees F and an extended time between doses if temperature is > 86 degrees F.
HYPOTENSION, NOT TRAUMATIC (1)
Applies ONLY when other specific ALS protocols do not apply.
Hypotension is defined as BP < 90 systolic and associated signs / symptoms of hypoperfusion.
If history / evidence of Trauma, proceed to Trauma Treatment Guideline.

Airway
Ventilation
Oxygenation

Apply Monitor,
12 Lead, if available
Lethal or potentially lethal
dysrhythmias present?

Yes
Go to
appropriate treatment
guideline

No

PATCH

Establish a large bore IV /IO of
NS, (2)
Elevate legs

SUCCESSFUL

Infuse fluid challenge of 250-500
mL as rapidly as possible. (3)(4)

Repeat vital signs.
SYSTOLIC BP > 90
PATIENT ALERT AND ORIENTED? (5)
CONTINUE FLUID THERAPY
ACCORDING TO PATIENT RESPONSE

Yes
COURTESY
NOTIFICATION

No

PATCH

1) PMH and patient’s medications may be key to index of suspicion for cause of hypotension, e.g. history of ulcers, aneurysm, previous cardiac disease, alcoholism, etc. Consider possible causes of hypotension and treat cause.
2) Consider establishing 2 large bore IV’s dependent upon patient’s presentation
3) Bolus fluid in less than 10 minutes.
4) Repeat vital signs and lung auscultation before and after fluid administration.
5) If pulsatile abdominal mass present or suspected AAA/TAA, PATCH.
6) If patient continues to be hypotensive contact Medical Control to administer Dopamine drip 5-20 mcg/kg/min.
POISONING / OVERDOSE (1)

Airway
Ventilation
Oxygenation
Oxygen via NRB mask
For CO poisoning.

Apply
Monitor

If pt. ingested substance less than 60 minutes ago and GCS is 15 administer Charcoal 50 Gm. PO
(if no contraindications ) (2)(3)

Pt is conscious and maintaining airway

IV of NS at a rate appropriate for pt. condition. Check blood glucose and if < 60 mg/dl administer D50W IV

If respiration < 12 bpm administer Narcan (Naloxone) 0.8 mg to 2 mg SC, IV, Nasal to a total of 4 mg

Patient responds to Glucose or Narcan (Naloxone) ?

Position L. lateral recumbent after Charcoal administration

IV of NS at a rate appropriate for pt. condition. Check blood glucose.

STABLE ?

YES

NO

COURTESY NOTIFICATION

PATCH (4)

1) Patients who are suspected or known to have ingested substances with a suicidal intent may not refuse transport.
2) Contraindications include caustics and hydrocarbons. Although not contraindicated, charcoal is not effective in pure lithium or Iron ingestions. Do not place NG tube or administer Charcoal if patient has change in mental status.
3) Bring bottles / containers if possible. INSPECT SCENE.
4) Consider Medical Control input for Sodium Bicarbonate 1-2 mEq/kg for TCA overdose. Calcium chloride 0.5 -1 Gm. For calcium channel blocker overdose, Atropine 2 mg every 2-4 min. for organophosphate exposure.
PEDIATRIC BRADYCARDIA, UNSTABLE

1) Airway Ventilation Oxygenation
Consider hypoxia a primary cause of bradycardia in pediatrics

2) Signs/symptoms of severe cardio-respiratory compromise (poor perfusion, hypotension, respiratory difficulty)

3) Chest compression if despite oxygenation and ventilation: HR < 60/min in infant or child with poor systemic perfusion.

4) Epinephrine: IV/IO 0.01 mg/kg (1:10,000) ET, 0.1 mg/kg (1:1000)
Repeat same dose every 3-5 min prn

5) Consider Atropine 0.02 mg/kg Minimum dose 0.1 mg all ages Maximum single dose: Child 0.5 mg Adolescent 1 mg May repeat once in 5 minutes

6) Administer fluid challenge of 10-20 mL/kg of NS

7) Determine Blood Glucose, Administer Dextrose per Pediatric ALOC Guideline

8) Consider external pacing.

9) If conscious may administer Versed (Midazolam) 0.05 mg/kg IV up to 2 mg max single dose for sedation

---

1) If airway is managed with BVM for greater than 2 minutes, insert 10-16 Fr. OG/NG tube. Gastric decompression allows adequate pulmonary tidal volumes.
2) Special considerations may apply in the presence of severe hypothermia.
3) Consider IO use if IV access unavailable.
4) Dilute 1:1000 Epinephrine with 3-5 ml of NS flush.
5) Limited pediatric data; 15 kg or less pediatric electrodes recommended. For greater than 15 kg use adult electrodes.
6) Consider Medical Control input to administer Epinephrine IV continuous infusion at a rate of 0.1 to 1 mcg/kg/min.
7) Rapid transport is essential in these situations. The above procedures should be performed as the patient is being moved towards the hospital.
1) Assess rhythm – quick look, only check pulses if there is an organized rhythm present.
2) Evaluate airway, intubate if necessary, limit interruption of CPR as much as possible.
3) Once patient is successfully intubated perform continuous asynchronous compression (rate 100/min) with ventilations (rate 8-10/min)
4) Pulse checks should be done only if EKG indicates a potentially perfusing rhythm, do not interrupt chest compressions, and be very brief.
5) Medications should be administered during CPR as soon as possible after rhythm checks.
6) Consider possible causes: Hypovolemia,(volume infusion), hypoxia (ventilation/re-evaluation), acidosis (ventilation/re-evaluation), tension pneumothorax (needle decompression), hypothermia, hypoglycemia, drug overdose, cardiac tamponade (volume infusion), massive AMI, hyperkalemia (consider NaHCO3, D50W,Calcium Chloride) massive pulmonary embolism.
7) If airway managed with BVM > 2 min. insert 10-16 Fr. OG/NG tube after patient has been intubated.
8) If patient remains asystolic or other agonal rhythm after successful intubation, initial medications, no reversible causes are identified, and transport has not been initiated, consider termination of resuscitative efforts by order of a physician. Consider interval since arrest.
1) Probable SVT in pediatrics: History incompatible with presentation, P waves absent or abnormal, HR not variable with activity, abrupt rate changes. Infant rate usually > 220 bpm and children usually > 180 bpm.

2) Patients often fit in between borderline and critically unstable situations. In these circumstances, a trial of adenosine may be considered but the medic must be prepared for immediate cardioversion.

3) the medic should consult Medical Control and consider reducing the Adenosine dosage in patients who are on Dipyridamole (Persantine) and Carbamazepine (Tegretol).

4. Consider 12 lead EKG

5) Or biphasic equivalent

6) If probable VT contact Medical Control to administer Amiodarone 5mg/kg, max single dose 150 mg over 20 minutes may repeat two more times to a total of 15 mg/kg/day or Lidocaine 1mg/kg every 5-10 minutes to a total of 3 mg/kg.
**PEDIATRIC – NEONATAL RESUSCITATION**

**BIRTH**

- Clear of meconium?
- Breathing or crying?
- Good muscle tone?
- Color pink?
- Term gestation?

**Routine Care:**
- Provide warmth
- Clear airway
- Dry

**NO**

- Provide warmth
- Position, clear airway ( as necessary ) (1)(2)
- Dry, stimulate, reposition
- Give O2 as necessary

**YES**

**Evaluate respiration, heart rate, and color**

**Apnea or HR < 100**

- Provide positive – pressure ventilations (2)

**HR > 100 and Pink**

**Breathing**

**HR < 60**

- Provide positive – pressure ventilation (2)
- Administer chest compressions

**HR > 60**

**Ventilating**

**HR < 60**

- Initiate IV of NS TKO (3)
  - Administer Epinephrine 1:10,000 0.01-0.03 mg/kg IV/IO or
  - Epinephrine 1:10,000 0.1 mg/kg ET every 3-5 minutes (2)

**HR < 60**

- Consider:
  - Fluid challenge – NS 10 mL/kg bolus
  - Naloxone 0.1 mg/kg IV/IO?im
  - Check blood glucose – if < 50 administer D 10 2 mL/kg IV/IO

**PATCH**

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1) If patient is not vigorous and meconium staining is present deep suction mouth and posterior pharynx then nose. Tracheal suctioning may be necessary before stimulating neonate and proceeding with other resuscitative steps. Vigorous- strong respiratory effort, good muscle tone, heart rate > 100 bpm. Depressed- weak or absent respiratory effort, poor muscle tone/limp, heart rate < 100 bpm.

2) Tracheal intubation may be considered at several steps. Tracheal tube should be used for tracheal suctioning.

3) Utilize IO or umbilical vein if peripheral IV sites inaccessible.
PEDIATRIC – SUBMERSION INCIDENT – CATEGORY 1
Applies to a patient with no spontaneous respirations or pulses on arrival of unit; also includes patient with pulses and respirations and with significant alteration of LOC.

1) BVM with reservoir with 100% O2 may be adequate to provide ventilation and oxygenation. If ventilation appears clinically inadequate or transport will be greater than 5 minutes, consider intubation.
2) 100% oxygen should be used in all patients.
3) Rapid transport is of the utmost importance. Advanced Life Support procedures should be attempted at the scene, but if unsuccessful within a short period of time, the patient should be transported to nearest appropriate facility without further delay.
4) Gastric decompression allows adequate pulmonary tidal volumes. Insert 10-16 Fr. NG/OG catheter.
5) Establishment of an IV should not delay patient transport.
6) Hypoxia (ventilation/re-evaluation), acidosis (ventilation/re-evaluation, consider orders for sodium bicarbonate), tension pneumothorax (needle decompression), hypothermia (see Hypothermia Treatment Guideline), trauma-hypovolemia (volume infusion), hypoglycemia (check blood sugar)
PEDIATRIC – SUBMERSION INCIDENT – CATEGORY 2
Applies to a patient presenting alert and oriented (may have a history of altered level of consciousness prior to arrival of the rescue unit) with spontaneous respirations and heart rate. (1)

Airway with spinal immobilization as indicated
Ventilation
Oxygenation

Apply Monitor.
Lethal or potentially lethal dysrhythmias:

YES

Go to appropriate treatment guideline.

NO

Take Temperature, maintain temperature to prevent heat loss

Consider IV of NS at TKO rate.
Check blood glucose

COURTESY NOTIFICATION

NO

TRIAGE OR TREATMENT INTERVENTION PROBLEMS?

YES

PATCH

1) These children require further medical evaluation. Child should be transported via ALS (if available) ambulance to the closest emergency care facility.
1) If patient or clothing still burning cool hot areas immediately. Flush chemical burns for 20 minutes.
**PEDIATRIC TRAUMA – MUSCULOSKELETAL INJURY**

**Fractures, dislocations, and sprains**
- Apply sterile dressings to open fractures
- If grossly contaminated attempt gentle decontamination with clean (preferably sterile) solution

**Airway (C-Spine if indicated) **
- Ventilation
- Oxygenation

**Amputations**
- * Control hemorrhage
- * Direct pressure to stump

**If pulses or sensation absent distal to injury, attempt gentle axial traction one time**
- * Splint areas of tenderness or deformity to include joint above and below fracture site
- * Reassess distal neurovascular status

**Utilize traction splint for suspected femur fractures unless hip or knee joints are involved**

**Consider P.A.S.G. for suspected pelvic fractures**

**Elevate simple extremity injuries apply ice/cold packs during transport**

**Establish IV of NS**

**If patient is not hypotensive, Consider Morphine Sulfate 0.05 mg/kg for pain, may repeat X 1 in 10 minutes**

1) Patients under 15 years of age.
2) Contact Medical Control to administer Midazolam 0.05mg/kg or Diazepam 0.1mg/kg for large muscle spasm.
1) GCS less than or equal to 13, consider Air Transport to Pediatric Neurological Center.
2) Minimize attempts or risks if patient is stable. Controlled hyperventilation with 100% O2 at 20 breaths per minute should only be used in patients with signs of impending central herniation; unconscious, unresponsive patient with extensor posturing or no motor response; asymmetric or dilated and unreactive pupils; GCS decreases 2 or more points from patient’s prior best score when patient had initial GCS of 9 or less, after correction of hypoxemia, hypotension, and hypoglycemia. Normoventilation is 10 bpm in the adult.
3) The goal for time on scene is to not exceed ten (10) minutes for patient assessment, management and packaging unless extrication is required or unforeseen circumstances develop.
4) On-line Medical Control should be involved in difficult or questionable triage decisions.
5) Consider IO if no IV access and patient is in extremis.
PEDIATRIC TRAUMA – MULTI – SYSTEM
Applies to patients presenting with S/S of Critical (Immediate) injury or patients in which the mechanism of injury is suspect for occult Critical injury.

- Airway with Spinal Immobilization
- Ventilation
- Oxygenation

Pt. in Cardiopulmonary arrest with signs of chest trauma perform bilateral needle thoracostomy

If patient’s injuries include head trauma, see Head Trauma Guideline.

Control Bleeding
Apply Monitor

DO NOT DELAY TRANSPORT FOR THE FOLLOWING PROCEDURES:
Complete as many procedures enroute to the appropriate emergency care facility.

Seal open chest wounds and stabilize flail segments as indicated

Physical findings suggestive of a tension pneumothorax:
YES
Perform a needle thoracostomy

Establish an IV/IO of NS at TKO rate, or for fluid resuscitation 20mL/kg, repeat bolus prn. Establish 2nd IV if possible.
Maintain body temperature.
Check blood glucose.

- Courtesy Notification
- TRIAGE OR TREATMENT INTERVENTION PROBLEM
- PATCH

1) OG/NG tube if child ventilated with BVM for > 2 minutes or obvious gastric distention.
2) The goal for time on scene is not to exceed ten (10) minutes for patient assessment, management and packaging unless extrication is required or unforeseen circumstances develop.
3) Careful consideration should be given to the amount of fluids infused in the field.
4) On-line Medical Control should be involved in difficult or questionable Triage decisions.
PEDIATRIC TRAUMA – SPINAL INJURY

Airway
With Spinal Immobilization
Ventilation
Oxygenation

Apply Monitor

Establish an IV of NS.
If the patient is hypotensive, establish 2 IV’s.

Maintain tissue perfusion as indicted, prevent or treat systolic BP < 90 mmHG (2 mL/kg boluses)

Neurological Exam
Treat Pain:
If patient is not hypotensive, Consider Morphine Sulfate 0.05 mg/kg for pain, may repeat X 1 in 10 minutes

PATIENT UNSTABLE OR TREATMENT / INTERVENTION PROBLEMS

COURTESY NOTIFICATION

NO

YES

PATCH (1)

1) If patient remains hypotensive and appears to have isolated head / spinal injuries contact Medical Control to administer Dopamine 5-20 mcg/kg/min.
PEDIATRIC ALLERGIC REACTION

Airway Ventilation Oxygenation

Apply Monitor

Consider Epinephrine IM 1:1000 0.01mg/kg To a maximum of 0.3mg (1)

Establish IV of NS Benadryl (Diphenhydramine) 1 mg/kg Up to 25 mg IV/IM (2)

If bronchospasm, consider SVN Albuterol 2.5mg/3ml NS Via mask/mouth piece / in line BVM may repeat prn

Consider: Solu-Medrol (Methylprednisolone) 2mg/kg IV

Pt remains stable without S/S of anaphylaxis

Proceed to Anaphylaxis Treatment Guidelines

1) Consider acuity of onset of symptoms and history of prior anaphylactic reaction.
2) If IV cannot be established administer Benadryl (Diphenhydramine) 1 mg/kg up to 25 mg IM as soon as possible after Epinephrine IM.

PATCH

COURTESY NOTIFICATION
PEDIATRIC – ANAPHYLAXIS
Applies to patient presenting with allergic reaction and with signs and symptoms of airway, respiratory, or circulatory compromise (laryngeal edema, bronchospasm, or hypotension).

Airway
Ventilation
Oxygenation

Apply Monitor

Epinephrine IM 1:1000 0.01mg/kg up to 0.3 mg (1)

Establish an IV/IO of NS (2)

If signs and symptoms of hypoperfusion fluid bolus of 20mL/kg. May repeat PRN

For refractory hypotension
Consider
Epinephrine 0.1-1 mcg/kg/min. IV
Infusion, titrate to effect

Benadryl (Diphenhydramine) 1 mg/kg IV
Maximum 25 mg. (3)

If bronchospasm, consider
SVN Albuterol 2.5mg/3mL NS
Via mask/mouth piece / in- line BVM
May repeat prn

Solu-Medrol (Methylprednisolone)
2 mg IV

PATIENT IMPROVES AND NO TREATMENT / INTERVENTION PROBLEMS?

1) If prolonged transport, consider repeat Epinephrine every 10-15 minutes. Medical Control input should be obtained, if possible.
2) Establishment of an IV should not delay the administration of Epinephrine IM to a patient in extremis.
3) At any time an IV cannot be established, give Benadryl (Diphenhydramine) 1 mg/kg up to 25 mg IM as soon as possible after Epinephrine IM.
Scene Safety (1)

Airway Ventilation Oxygenation

History of envenomation
Determine insect type if possible
Circumstances and time

Assess bite / sting site
Mark extent of
Swelling / redness / wound

Establish an IV of NS

Black Widow Spider

PT. UNSTABLE ?
Severe muscle cramping, restlessness

YES

PATCH

NO

COURTESY NOTIFICATION

Brown Recluse Spider or unknown

PT UNSTABLE ?
Shock, profound weakness
Respiratory depression

YES

PATCH

NO

COURTESY NOTIFICATION

Scorpion

PT. UNSTABLE ?
Shock, profound weakness
Respiratory depression

YES

PATCH

NO

COURTESY NOTIFICATION

1) Attempts to kill or capture insect or bring to ED are not recommended.
2) Contact Medical Control to administer Versed (Midazolam) and/or Valium (Diazepam) for severe pain/muscle spasm.
3) Careful observation of respiratory status.
Scene Safety (1)

Airway
Ventilation
Oxygenation

Calm patient
Limit physical activity

History of envenomation
Description of snake (native or exotic )
Determine time and site of bite

Remove potential tourniquets: Jewelry, tight fitting clothes, outdoor gear
Extremities with bites should remain neutral or below level of heart

Mark area of advancing edema every 15 minutes

Establish an IV of NS

If pt is not hypotensive,
Consider Morphine Sulfate
0.05mg/kg IV
(do not exceed 6 mg single dose) for pain, may repeat X 1 in 10 minutes

PATIENT STABLE?

IV fluid bolus if no other contraindications 2nd large bore IV if possible

1) Attempts to kill or capture the snake or bring dead animal to ED are NOT recommended.
2) Many exotic snakes are neurotoxic so respiratory status must be monitored carefully.
PEDIATRIC AIRWAY (1)
Airway Compromise

Airway Ventilation Oxygenation

Simple airway adjuncts
And manual maneuvers
Bag Valve Mask, cricoid pressure if possible (3)

Adequate ventilation / oxygenation?

Transport time less than 5 minutes and / or
Anticipated improvement in clinical status and
No present anticipated concern for airway protection

NO

Intubation, Endotracheal
Verify tube placement (2)

YES

CONTINUE TO MONITOR AND REASSESS

COURTESY NOTIFICATION

SUCCESSFUL

Perform full spinal immobilization

COURTESY NOTIFICATION

UNSUCCESSFUL

Needle / surgical
Cricothyroidotomy
Verify tube Placement. (1)(2)

Continue to monitor and reassess

PATCH

1) Medical Control contact is not mandatory, however, the medic is encouraged to discuss the situation with Medical Control if he/she is anticipating a Cricothyroidotomy and the clinical situation is such that there is time for Medical Control contact.
2) Verify proper tube placement by visualization of the cords and the tube passing through, bulb tube check/air aspiration, technique > 5 years old or EtCO2 detector/monitor for all ages, chest wall rise, good breath sounds, absence of gastric sounds, and clinical improvement in patient. Surgical Cricothyroidotomy contraindicated in children < 8 years old.
3) OG/NG tube placement if child ventilated with BVM for greater than 2 minutes or obvious gastric distention. Patients with head injuries should only have OG tube insertion, NG tube insertion contraindicated.
If pt. conscious but cannot speak or cough perform BLS airway, obstruction procedures based upon age/size guidelines until obstruction is relieved or patient becomes unconscious.

If pt is unconscious and not breathing begin CPR. Look into mouth when opening the airway during CPR. If object visualized, sweep from side of mouth.

Attempt direct laryngoscopy and removal of foreign body with Magill Forceps.

SUCCESSFUL

Consider surgical / needle Cricothyroidotomy. (1)

UNSUCCESSFUL

Check for breathing and pulse and provide rescue breathing or CPR as necessary.

SUCCESSFUL

COURTESY NOTIFICATION

PATCH

1) Verify proper tube placement by bulb tube check / air aspiration (if patient > 5 years old) or EtCO2 detector/monitor for all ages, chest wall rise, good breath sounds, absence of gastric sounds, and clinical improvement in patient. Surgical Cricothyroidotomy is contraindicated in patients < 8 years old.
PEDIATRIC RESPIRATORY ARREST OR INSUFFICIENCY – BRONCHOSPASM
Applies to patients presenting with S/S of acute respiratory distress secondary to pre-existing condition or acute illness

1) Administer O2 at high flow rates to all patients in severe respiratory distress. This is especially true if pulse oximetry is not available.
2) Consider use of SVN therapy via in line BVM system in patients who are tiring or are appearing to have decreased tidal volumes.
3) If patient's weight is less than 10 Kg, reduce Atrovent (Ipratropium Bromide) dose to 0.25 mg in 1.25 mL NS (½ unit dose).
4) Consider Epinephrine use in patients with poor tidal volumes or poor response to SVN.
Airway
Ventilation
Oxygenation – blow by if patient stable
Keep child with parent if possible
BVM if in respiratory failure.
PATIENT STABLE WITHOUT SEVERE RESPIRATORY DISTRESS?

If patient has resting stridor with any one or more of the following:
Altered mental status
Hypoxia SpO2 < 88%
Cyanosis
Severe retractions
Administer:
Epinephrine 1:1000 3 mg in 2 mL NS via SVN to a total of 5mL

Consider intubation if patient is severe respiratory failure or arrest.

Consider Cricothyroidotomy (2)(3)

IV/IO of NS if patient in extremis

PATCH (3)

1) BVM with reservoir with 100% O2 is usually adequate to provide ventilation and oxygenation. If ventilation appears clinically inadequate or transport will be greater than 5 minutes, consider intubation.
2) In patients 8 years old and under only needle cricothyrotomy with transtracheal jet insufflation should be utilized.
3) Medical Control contact is not mandatory, however, the medic is encouraged to discuss the situation with Medical control if he/she is anticipating a Cricothyroidotomy and the clinical situation is such that there is time for Medical Control contact.
PEDIATRIC ALTERED LEVEL OF CONSCIOUSNESS

Altered level of consciousness and unconscious patient; includes GCS of 14 or less, psychotic or combative behavior, and the post seizure patient.

- **Airway**
- **Ventilation**
- **Oxygenation**

Apply Monitor.
Lethal dysrhythmia present or signs and symptoms of hypoperfusion present

- **YES**
  - Go to appropriate treatment guideline.

- **NO**

BG < 50 or No Glucometer

- **YES**
  - Establish IV of NS.
  - Check blood glucose. (2)

- **NO**

Administer Dextrose (3)

- **YES**
  - Altered LOC continues

- **NO**

   **COURTESY NOTIFICATION**

   **CONSIDER OTHER POSSIBLE CAUSES AND TREAT**
   (Consider initial airway management, airway reassessment, and volume infusion as possible therapy and treatment.)
   **VOLUME INFUSION**
   20 mL/kg, repeat as indicated. Take temperature (5)

If RR < 20 and / or suspicion of Opioid ingestion, administer Narcan (Naloxone) IV based on weight: (4)

- **< 20 kg or < 5 years 0.1mg/kg**
- **>20 kg or > 5 years up to 2 mg**

Initial dose may be repeated every 2 minutes x 4

- **YES**
  - Symptoms resolve or remain with stable v.s. and no S/S of central herniation, monitor abnormalities and transport times less than 10 minutes.

- **NO**

   **COURTESY NOTIFICATION**

   **PATCH**

1) If opiate OD suspected BLS, management may be sufficient until response to Narcan (Naloxone) is determined.
2) Obtain blood sample if utilized by receiving facility or if glucometry not available.
3) Administer 0.5 – 1 Gm/kg of Dextrose. For neonates administer D10 2 mL/kg. For children less than one year of age administer D10 5-10mL/kg. For children 1-8 years of age, use D25 2-4 mL/kg. If unable to establish IV, give Glucagon 0.5 mg IM.
4) Infants and children < 20 kg or < 5 years receive 0.1mg/kg. Caution must be used in administration after birth to infants of addicted mothers, since it may precipitate abrupt narcotic withdrawal and seizures. Children older than 5 year or > 20 kg may be given up to 2.0 mg. Doses may be repeated at 2 minute intervals until narcotic reversal is achieved.
5) Possible causes/treatment could include: hypoxemia or acidosis (ventilate); hypovolemia (fluid bolus 20 mL/kg, repeat pm); tension pneumothorax (needle decompression); hyperthermia (cool patient); hypothermia (warm patient, monitor temperature); OD (examine scene); hypo/hyperglycemia (check blood glucose); postictal state (HPI/PMH)
PEDIATRIC – SEIZURES OF UNKNOWN ETIOLOGY
Prolonged, Repetitive, or Status Epilepticus

Airway Ventilation Oxygenation

Apply Monitor, Lethal or potentially lethal dysrhythmias present?

YES

Go to appropriate Treatment guideline

NO

Establish an IV of NS.

Check blood glucose (1)

BG < 50 or no Glucometer

Administer Dextrose per Guidelines (2)

BG > 50

Continue guideline.

SEIZURE CONTINUES?

YES

Administer Versed (Midazolam) 0.05 mg/kg IV slowly over > 2 minutes may repeat every 2 minutes until cessation of seizure to a maximum total of 10 mg

NO

IF UNABLE TO EXSTABLISH IV

Versed (Midazolam) 0.2 mg/kg IM maximum total of 10mg or Consider rectal Valium (Diazepam) 0.5mg/kg rectally maximum total of 20 mg. (3)

Take Temperature, if temp > 101F begin cooling measures. Undress and apply cool moist cloth to head and thorax. Do not cause shivering.

PATCH

1) Obtain blood sample if utilized by receiving facility.
2) Administer 0.5 – 1 Gm/kg of Dextrose. For Neonates to one month old administer D10 2mL/kg. For children one month to one year of age administer D10 5-10mL/kg. For children 1-8 years of age, use D25 2-4 mL/kg. If unable to establish IV, give Glucagon 0.5 mg IM.
3) Versed (Midazolam) IM is preferred over rectal Valium (Diazepam). Do not delay decision for administration of Versed (Midazolam) IM or rectal Valium (Diazepam) as it’s onset of action is 5-15 minutes.
PEDIATRIC ABDOMINAL PAIN, NON-TRAUMATIC

Airway Ventilation Oxygenation

Apply Monitor, Consider 12 lead EKG

Establish an IV of NS If pt is unstable
Consider fluid challenge (20 mL/kg) IV if signs/symptoms of hypovolemia

If patient is not hypotensive
Consider Morphine Sulfate 0.05 mg/kg may repeat X 1 in 10 minutes
(1)

PATCH

Patient Stable?

YES

COURTESY NOTIFICATION

NO

1) Patients under the age of 15.
Airway Ventilation Oxygenation

Signs and Symptoms of Heat Exhaustion / Dehydration

Temp < 104 F

Check Temperature

Position L. lateral recumbent if vomiting

Check Blood Glucose if ALOC.

Consider oral rehydration if patient is not nauseated.

Establish IV NS – Consider fluid challenge (20mL/kg) if signs/ symptoms of hypovolemia

Seizures ?

Agitation ?

Temp > 104 F

Signs and Symptoms of Heat Stroke

Immediate cooling: Remove clothing, move to cool environment, begin external cooling – sponge / spray pt. with tepid water and concurrent fanning, cold packs to neck and groin. (1)(2)

Monitor rectal temperature

Monitor rhythm


Go to Seizure Treatment Guideline

Go to Seizure Treatment Guideline

Seizures ?

No

Agitation ?

Yes

PATCH

NO

Patient improves, stable vital signs, no intervention problems

YES

Seizures ?

PATCH

Agitation ?

PATCH

COURTESY NOTIFICATION

1) Do not cool below 102 degrees F.
2) Do not over cool and cause shivering and reoccurring heat buildup. If patient is shivering contact Medical Control to administer Midazolam or Diazepam.
3) If patient is agitated contact Medical Control to administer Midazolam or Diazepam.
1) If there is an organized rhythm do not begin CPR unless directed by Medical Control.
2) Utilize only 1 shock.
3) Contact Medical Control for ACLS medication administration regimen. Consider withholding medications if core temperature is < 86 degrees F and an extended time between doses if temperature is > 86 degrees F.

PEDIATRIC ENVIRONMENTAL - HYPOTHERMIA

GENTLE HANDLING
Assess for signs of life for 30-45 seconds.

Prevent further cooling – remove wet clothing, move to warm environment.

Signs of life? Cardiac Monitor, Organized Rhythm? (1)

Prevent further cooling – remove wet clothing, move to warm environment.

NO

Begin CPR
Treat VF / VT per ACLS Guidelines (2)(3)

Humidified / warmed oxygen, if possible.
Consider intubation.
DO NOT HYPERVENTILATE

Temp > 90 F

Start external Rewarming.
Consider warm PO fluids if pt. condition permits.

Temp < 90 F

Check rectal temp with hypothermia thermometer.

Start central warming only.
Heat packs to groin and neck.

Humidified / warmed oxygen, if possible.
Consider intubation.
DO NOT HYPERVENTILATE

IV NS – warmed to 104-108 degrees F if possible,
Glucose Check

COURTESY NOTIFICATION

NO

PATCH (3)

PATCH

YES

Treatment or intervention problem?
Airway Ventilation Oxygenation

Apply Monitor, Lethal or potentially lethal dysrhythmias present ?

YES

Go to appropriate treatment guideline

NO

DO NOT DELAY TRANSPORT FOR THE FOLLOWING PROCEDURES (3)(6)
Complete as many procedures en route to appropriate facility

Establish an IV/IO of NS and administer 20mL/kg, repeat bolus prn. (4)
Check blood glucose. Administer Dextrose per guidelines.

Take Temperature. Correct if abnormal. Maintain Body Temperature in normothermic

PATCH (5)

1) BVM with reservoir with 100% O2 and cricoid pressure is usually adequate to provide ventilation and oxygenation. If ventilation appears clinically inadequate or transport will be greater than 5 minutes, consider intubation.
2) If airway managed with BVM for > 2 minutes, insert 10-16 Fr OG/NG tube. Gastric decompression allows adequate pulmonary tidal volumes.
3) Rapid transport is of the utmost importance. Advanced life support procedures should be attempted at the scene, but if unsuccessful with a short period of time, the patient should be transported to the nearest appropriate facility without further delay.
4) Repeat assessment and lung auscultation before and after each fluid bolus.
5) If patient continues to be hypotensive, contact Medical Control to administer Dopamine 5-20 mcg/kg/min and/or Epinephrine infusion 0.1-1 mcg/kg/min.
6) Assess patient and patient symptoms to suggest cause and treat cause.
1) Patients who are suspected or known to have ingested substances with a suicidal intent may not refuse transport.
2) Administer 0.5 – 1 Gm.kg of Dextrose. For neonates administer D 10 2 mL/kg. For children less than one year of age administer D 10 5 – 10 mL/kg. For children 1-8 years of age, use D 25 2-4 mL/kg. If unable to establish IV, give Glucagon 0.5 mg IM.
3) Bring bottles / containers if possible. INSPECT SCENE.
4) Consider Medical Control input for Sodium Bicarbonate 1-2 mEq/kg for TCA overdose, Calcium Chloride 0.2 mL/kg very slow for calcium channel blocker overdose, Atropine 0.05 mg/kg every 2-4 min. for organophosphate exposure.
APPENDIX A

PEDIATRIC/NEONATAL STANDARDS/PHARMACOLOGICAL MODALITIES

PEDIATRIC/NEONATAL VITALS

<table>
<thead>
<tr>
<th>AGE</th>
<th>HEART RATE/MIN</th>
<th>RESPIRATORY RATE/MIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborn</td>
<td>120 (70-180)</td>
<td>30 (30-60)</td>
</tr>
<tr>
<td>1 - 2 Years</td>
<td>120 (80-180)</td>
<td>27 (26-34)</td>
</tr>
<tr>
<td>2 - 4 Years</td>
<td>110 (80-140)</td>
<td>24 (20-30)</td>
</tr>
<tr>
<td>4 - 8 Years</td>
<td>100 (80-120)</td>
<td>22 (18-26)</td>
</tr>
<tr>
<td>8 - 12 Years</td>
<td>90 (70-110)</td>
<td>22 (15-24)</td>
</tr>
</tbody>
</table>

BLOOD PRESSURE

(*) Never inflate over 200 mmHg.
(*) A convenient formula is: 2 X age in years + 70 = Systolic

WEIGHT

(*) A convenient formula is: 8 + {2 X age in years} = Weight in kilograms

ENDOTRACHEAL TUBE

(*) A convenient formula is: \(16 + \frac{\text{age in years}}{4}\) = ET tube size

PEDIATRIC LEVELS FOR DEFIBRILLATION

Defibrillation energy level (2 joules/kg, double if unsuccessful)
Cardioversion energy level (0.5-1 joule/kg)

PEDIATRIC PHARMACOLOGICAL MODALITIES

Establishment of a pediatric IV line is frequently difficult or non-feasible in the field situation. Consider IO if situation dictates.

Dosages shown below are only to provide a standard. Actual dosage ordered by the responsible physician may be different.

Pediatric Age Clarification: VVMC Base Hospital will define the age to begin utilizing adult treatment guidelines as 14 years. In the case of the patient in cardiopulmonary arrest when the age is not known the AHA recommendation of using the presence of secondary sex characteristics as the determining factor of when to use guidelines is acceptable.
<table>
<thead>
<tr>
<th>DRUG ADMINISTRATION &amp; PRECAUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACTIVATED</strong></td>
</tr>
<tr>
<td><strong>CHARCOAL</strong></td>
</tr>
<tr>
<td><strong>ADENOSINE</strong></td>
</tr>
<tr>
<td><strong>ATROPINE</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>CALCIUM</strong></td>
</tr>
<tr>
<td><strong>CHLORIDE</strong></td>
</tr>
<tr>
<td><strong>DEXTROSE 50%</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>DIAZEPAM</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>DIPHENHYDRAMINE</strong></td>
</tr>
<tr>
<td><strong>DOPAMINE</strong></td>
</tr>
<tr>
<td><strong>EPINEPHRINE 1:1000</strong></td>
</tr>
<tr>
<td>(anaphylaxis/bronchospasm)</td>
</tr>
<tr>
<td><strong>IV EPINEPHRINE 1:10,000</strong></td>
</tr>
<tr>
<td>(anaphylaxis)</td>
</tr>
<tr>
<td><strong>EPINEPHRINE 1:10000</strong></td>
</tr>
<tr>
<td>(cardiac)</td>
</tr>
<tr>
<td><strong>EPINEPHRINE DRIP</strong></td>
</tr>
<tr>
<td><strong>FUROSEMIDE</strong></td>
</tr>
<tr>
<td><strong>GLUCAGON</strong></td>
</tr>
</tbody>
</table>
LIDOCAINE
1 mg/kg IV/IO

LIDOCAINE DRIP
20-50 mcg/kg/min IV/IO
When using 2 Gm/500 mL premix the concentration is 4000 mcg/mL

METHYLPROPIONATE
1-2 mg/kg IV/IO

MIDAZOLAM
0.05-0.1 mg/kg IV/IO Slowly over > 2 min may repeat every 2 min to a total of 10 mg
0.2 mg/kg IM to a total of 10 mg

MORPHINE
0.05 mg/kg IV/IO/IM

NALOXONE
0.1 mg/kg SC/IV/IO
If >5 yrs old or >20 kg 2 mg

SODIUM
1 mEq/kg IV/IO

BICARBONATE
Always dilute with sterile water or D5W 1:1 for infants up to 3 mos.
Give slowly

SVN:
ALBUTEROL/2.5 mg/3 mL NS
IPRATROPIUM 0.02% 0.5 mg/2.5 mL NS, if < 10 Kg give half dose
May repeat as necessary

IV SOLUTIONS:
RINGERS LACTATE 20 mL/kg IV/IO
Consider in the first 30 min. in the management of hypovolemic.
DO NOT USE on diabetic acidosis or hypothermia.

NORMAL SALINE 20 mL/kg IV/IO
Drug dosages listed on this page are intended as a general guideline for the usual dosages used in most situations. Expect to find variations from these standards.

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Dosage Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADENOSINE</td>
<td>6 mg IV/IO Rapid Push with 20 mL NS flush, may repeat in 1-2 min @ 12 mg x two repeats</td>
</tr>
<tr>
<td>ALBUTEROL SULFATE-SVN</td>
<td>2.5 mg/3 mL NS Unit Dose may repeat as necessary</td>
</tr>
<tr>
<td>ASA, BABY 81 mg</td>
<td>4 chewable</td>
</tr>
<tr>
<td>ATROPINE - bradycardia</td>
<td>0.5 mg IV/IO, repeat every 5 min. to max of 3 mg</td>
</tr>
<tr>
<td></td>
<td>1 mg IV/IO</td>
</tr>
<tr>
<td></td>
<td>organophosphate poisoning</td>
</tr>
<tr>
<td></td>
<td>2 mg IV/IO repeat every 2-3 min prn</td>
</tr>
<tr>
<td></td>
<td>titrate to atropinization</td>
</tr>
<tr>
<td>CALCIUM CHLORIDE</td>
<td>20 mg/kg of 10% Solution IV/IO for hyperkalemia and Ca Channel Blocker OD</td>
</tr>
<tr>
<td>CHARCOAL ACTIVATED</td>
<td>50 Gms</td>
</tr>
<tr>
<td>DEXTROSE 50%</td>
<td>25 Gms IV/IO Slow push</td>
</tr>
<tr>
<td>DIAZEPAM</td>
<td>2-10 mg Slow IV/IO. Titrate to effect.</td>
</tr>
<tr>
<td>DILTIAZEM</td>
<td>0.25 mg/kg IV slowly over 2 minutes, may repeat at 0.35 mg/kg in 15 minutes.</td>
</tr>
<tr>
<td>DIPHENHYDRAMINE</td>
<td>25-50 mg Slow IV/IM</td>
</tr>
<tr>
<td>DOPAMINE</td>
<td>5-20 mcg/kg/min IV/IO Drip</td>
</tr>
<tr>
<td>EPINEPHRINE 1:1000</td>
<td>0.1-0.3 mg IM</td>
</tr>
<tr>
<td>EPINEPHRINE DRIP</td>
<td>4 mg of 1:1000 Sol/250 mL D5W (16 mcg/mL concentration)</td>
</tr>
<tr>
<td></td>
<td><strong>Initial dose 1 mcg/min.</strong> Titrate to effect.</td>
</tr>
<tr>
<td>EPINEPHRINE 1:10,000</td>
<td>1 mg IV/IO</td>
</tr>
<tr>
<td>FUROSEMIDE</td>
<td>20 mg-80 mg IV/IO Slowly</td>
</tr>
<tr>
<td>GLUCAGON</td>
<td>1 mg IM - effect in 15-20 min</td>
</tr>
<tr>
<td>Medication</td>
<td>Dose/Concentration</td>
</tr>
<tr>
<td>----------------------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>IPRATROPIUM-SVN</td>
<td>0.5 mg/2.5 mL NS Unit Dose, use with albuterol in first SVN only</td>
</tr>
<tr>
<td>LIDOCAINE</td>
<td>1 mg/kg IV/IO- Repeat 0.5 mg/kg every 5-10 min up to 3 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Cardiopulmonary arrest- 1.5 mg/kg repeat 0.75 mg/kg every 3-5 min. to 3 mg/kg</td>
</tr>
<tr>
<td>LIDOCAINE DRIP</td>
<td>2-4 mg/min IV/IO Drip</td>
</tr>
<tr>
<td>MAGNESIUM SULFATE</td>
<td>1-2 Gms in 50-100 mL D5W IV/IO over 2 min</td>
</tr>
<tr>
<td></td>
<td>(VF/pulseless VT - Give IV Push)</td>
</tr>
<tr>
<td></td>
<td>PIH- 5 GM bolus in 50-100 ml D5W over 15 minutes then 1-4 Gm/hr continuous infusion, mix 5 Gm/100 mL NS.</td>
</tr>
<tr>
<td>METHYLPredNISOLONE</td>
<td>125 mg IV/IO</td>
</tr>
<tr>
<td>MIDAZOLAM</td>
<td>2.5 mg IV/IO slowly up to 10 mg</td>
</tr>
<tr>
<td></td>
<td>0.2 mg/kg IM to a total of 15 mg</td>
</tr>
<tr>
<td>MORPHINE SULFATE</td>
<td>0.1mg/kg slow IV push may repeat every 10 minutes.</td>
</tr>
<tr>
<td>Patients less than 55 years old</td>
<td></td>
</tr>
<tr>
<td>Patients greater than 55 years old</td>
<td></td>
</tr>
<tr>
<td>NALOXONE</td>
<td>0.8 mg- 2 mg SC/IV every 3 min PRN</td>
</tr>
<tr>
<td>NITROGLYCERIN</td>
<td>0.4 mg (1/150) SL every 5 min X 3 if Systolic B/P &gt; 100</td>
</tr>
<tr>
<td>SODIUM BICARBONATE</td>
<td>1 – 2 mEq/kg IV/IO for wide QRS in tricyclic antidepressants overdose and hyperkalemia.</td>
</tr>
<tr>
<td>THIAMINE</td>
<td>100 mg IV/IM</td>
</tr>
</tbody>
</table>
APPENDIX C

VVMC PREHOSPITAL STANDARD INFUSION MIXTURES

**Dopamine** - 400 mg/ 250 mL D5W premix= 1600 mcg/kg/min

**Epinephrine** - mix 4 mg 1:1,000/ 250 mL NS or D5W= 16 mcg/ mL

**Lidocaine** - 2 Gm in 500 mL D5W premix= 4 mg/ mL, run 1- 4 mg/min 15 to 60 gtts/min for adults. 4000 mcg/ mL to determine pediatric dosing of 20 -50 mcg/kg/min

**Magnesium Sulfate** - Mix 5 Gm/ 100 mL NS or D5W, run at 1-4 Gm/hr (20-80 mL/hr)
# APPENDIX D
**AUTHORIZED SUPPLY OF MEDICATION FOR DRUG BOXES**
**INTERFACILITY TRANSPORT MEDICATION LIST**

<table>
<thead>
<tr>
<th>AGENT</th>
<th>MINIMUM SUPPLY</th>
<th>VVMC DRUG BOX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenosine</td>
<td>30 mg</td>
<td>6 mg / 2ml</td>
</tr>
<tr>
<td>Albuterol Sulfate</td>
<td>10 mg</td>
<td>0.08%</td>
</tr>
<tr>
<td>Amiodorione (optional)</td>
<td>300 mg</td>
<td>NONE</td>
</tr>
<tr>
<td>Antiemetics: (optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promethazine HCL</td>
<td>25 mg</td>
<td>8 mg</td>
</tr>
<tr>
<td>Ondansetron HCL</td>
<td>4 mg</td>
<td></td>
</tr>
<tr>
<td>Prochlorperazine edisylate</td>
<td>10 mg</td>
<td></td>
</tr>
<tr>
<td>Aspirin</td>
<td>324 mg</td>
<td>81 mg</td>
</tr>
<tr>
<td>Atropine Sulfate</td>
<td>4 mg</td>
<td>1 mg/10 cc</td>
</tr>
<tr>
<td></td>
<td>8 mg multi dose</td>
<td>8mg/20 ml</td>
</tr>
<tr>
<td>Calcium Chloride</td>
<td>1 gram</td>
<td>2</td>
</tr>
<tr>
<td>Charcoal, Activated (without sorbital)</td>
<td>50 G</td>
<td>25 gms</td>
</tr>
<tr>
<td>Dexamethasone (optional)</td>
<td>8 mg</td>
<td>NONE</td>
</tr>
<tr>
<td>Dextrose</td>
<td>50 g</td>
<td>25g/50 ml</td>
</tr>
<tr>
<td>Diazepam (required)</td>
<td></td>
<td>10mg/2ml</td>
</tr>
<tr>
<td>Diazepam Rectal Delivery Gel (optional)</td>
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<td></td>
</tr>
<tr>
<td>Diltiazam (optional)</td>
<td>25 mg</td>
<td>1</td>
</tr>
<tr>
<td>Diphenhydramine HCL</td>
<td>50 mg</td>
<td>2</td>
</tr>
<tr>
<td>Dopamine HCL</td>
<td>400 mg</td>
<td>1</td>
</tr>
<tr>
<td>Epinephrine HCL 1: 1,000 solution</td>
<td>2 mg</td>
<td>1 cc amp</td>
</tr>
<tr>
<td></td>
<td>Multi-dose</td>
<td>30 cc</td>
</tr>
<tr>
<td>Epinephrine HCL 1: 10,000 solution</td>
<td>5 mg</td>
<td>6</td>
</tr>
<tr>
<td>Etomidate (optional)</td>
<td>40 mg</td>
<td>2</td>
</tr>
<tr>
<td>Furosemide</td>
<td>100 mg</td>
<td>40mg/ml</td>
</tr>
<tr>
<td>Glucagon</td>
<td>2 mg</td>
<td>2</td>
</tr>
<tr>
<td>Glucose, oral (optional)</td>
<td>30 gm</td>
<td>NONE</td>
</tr>
<tr>
<td>Ipratropium Bromide 0.02 %</td>
<td>5 ml</td>
<td>2.5 ml ud</td>
</tr>
<tr>
<td>Lidocaine HCL IV</td>
<td>300 mg</td>
<td>100mg/5ml</td>
</tr>
<tr>
<td>Lidocaine Premixed Infusion</td>
<td>2 G</td>
<td>4mg/ml (500ml)</td>
</tr>
<tr>
<td>Lorazepam (optional)</td>
<td>8 mg</td>
<td>NONE</td>
</tr>
<tr>
<td>Magnesium Sulfate</td>
<td>5 g</td>
<td>5</td>
</tr>
<tr>
<td>Methylprednisolone Sodium Succinate</td>
<td>250 mg</td>
<td>2</td>
</tr>
<tr>
<td>Midazolam (optional)</td>
<td>10 mg</td>
<td>5mg/5ml</td>
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<tr>
<td>Morphine Sulfate</td>
<td>20 mg</td>
<td>10 mg/ml</td>
</tr>
<tr>
<td>Nalmefene HCL (optional)</td>
<td>4 mg</td>
<td>NONE</td>
</tr>
<tr>
<td>Naloxone HCL</td>
<td>10 mg</td>
<td>2 mg</td>
</tr>
<tr>
<td>Nitroglycerin Tablets or</td>
<td>1 bottle</td>
<td>1</td>
</tr>
<tr>
<td>Drug/Supplement</td>
<td>Quantity/Unit</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>Nitroglycerin Sublingual Spray</td>
<td>1 bottle</td>
<td></td>
</tr>
<tr>
<td>Oxytocin (optional)</td>
<td>10 units</td>
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</tr>
<tr>
<td>Phenylephrine Nasal Spray 0.5 %</td>
<td>1 bottle</td>
<td></td>
</tr>
<tr>
<td>Sodium Bicarbonate 8.4 %</td>
<td>100 mEq</td>
<td></td>
</tr>
<tr>
<td>Succinylcholine</td>
<td>20 mg/ml</td>
<td></td>
</tr>
<tr>
<td>Thiamine HCL</td>
<td>100 mg</td>
<td></td>
</tr>
<tr>
<td>Vasopressin</td>
<td>20 units</td>
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</tr>
<tr>
<td>Verapamil HCL</td>
<td>10 mg</td>
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</tr>
<tr>
<td>Nitrous Oxide (optional)</td>
<td>1 setup</td>
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</tr>
<tr>
<td>Syringes:</td>
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</tr>
<tr>
<td>1 ml TB</td>
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</tr>
<tr>
<td>3 ml</td>
<td>4</td>
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</tr>
<tr>
<td>10 ml</td>
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</tr>
<tr>
<td>20 ml</td>
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</tr>
<tr>
<td>50-60 ml</td>
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<tr>
<td>Filter Needles</td>
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<tr>
<td>Intravenous Solutions</td>
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<tr>
<td>Dextrose 5% 250 ml (Optional)</td>
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<td></td>
</tr>
<tr>
<td>Lactated Ringers 1000 ml</td>
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<td></td>
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<tr>
<td>Normal Saline 1000 ml</td>
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</tr>
<tr>
<td>250 ml</td>
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</tr>
<tr>
<td>50 ml</td>
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<tr>
<td>EMT BASIC DRUG BOX</td>
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<tr>
<td>Aspirin</td>
<td>324 mg</td>
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</tr>
<tr>
<td>Epi- Auto injector</td>
<td>2 Adult</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Pediatric</td>
<td></td>
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### INTERFACILITY TRANSPORT MEDICATION LIST

<table>
<thead>
<tr>
<th>IV INFUSIONS</th>
<th>EMT-P</th>
<th>EMT-I(99) Certified before 1/6/07</th>
<th>EMT-I(99) Certified after 1/6/07</th>
<th>INFUSION PUMP</th>
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<tr>
<td>AMIODARONE</td>
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<td>X</td>
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<tr>
<td>ANTIBIOTICS</td>
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<tr>
<td>BLOOD</td>
<td>X</td>
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<tr>
<td>CALCIUM CHLORIDE</td>
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<tr>
<td>COLLOIDS</td>
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<td>CORTICOSTEROIDS</td>
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<td>DEXAMETHASONE</td>
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<td>DILTIAZEM</td>
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<td>X</td>
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<td>DIURETICS- OTHER THAN FUROSEMIDE OR BUMETANIDE</td>
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<tr>
<td>DOPAMINE HCl</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>ELECTROLYTES/CRYSTALLOIDS-COMMERCIAL PREPARATIONS</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>FOSPHENYTOIN Na or PHENYTOIN Na</td>
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<td>X</td>
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<tr>
<td>GLUCAGON</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>GLYCOPROTEIN IIb/IIIa Inhibitors</td>
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<td>X</td>
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<tr>
<td>HEPARIN Na</td>
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<tr>
<td>H2 BLOCKERS</td>
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<tr>
<td>LIDOCAINE HCL</td>
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<td>X</td>
</tr>
<tr>
<td><strong>MAGNESIUM SULFATE</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td><strong>IV INFUSIONS</strong></td>
<td>EMT-P</td>
<td>EMT-I(99) Certified before 1/6/07 *</td>
<td>EMT-I(99) Certified after 1/6/07</td>
<td>INFUSION PUMP</td>
</tr>
<tr>
<td>MIDAZOLAM</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>MORPHINE SULFATE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>NITROGLYCERIN IV SOLUTION</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>OXYTOCIN</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>PHENOBARBITAL Na</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>POTASSIUM SALTS</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>PROCAINAMIDE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>RACEMIC EPINEPHRINE svn</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>SODIUM BICARDONATE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>THEOPHYLLINE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>TOTAL PARENTERAL NUTRITION</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>VITAMINS</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Notes:
1. Only an EMT-P may monitor an intravenous infusion via a central line.
2. * EMT-I(99)’s certified before 1/6/07 are approved on an individual basis per Administrative Medical Director. This authorization will extend until 1/6/09 at which time all EMT-I(99)’s will utilize the list for EMT-I(99)’s certified after 1/6/07.
APPENDIX E
SCORES AND SCALES

Glasgow Coma Scale- Adult
Level of Consciousness (LOC):

1. Eye opening:
   Spontaneously 4
   To speech 3
   To pain 2
   Never 1

2. Best verbal response
   Oriented 5
   Confused 4
   Inappropriate 3
   Garbled 2
   None 1

3. Best motor response
   Obeys commands 6
   Localizes pain 5
   Withdrawal 4
   Abnormal flexion 3
   Extension 2
   None 1

Total = 3-15 possible
### Modified (Pediatric) Glasgow Coma Scale

<table>
<thead>
<tr>
<th>Infants</th>
<th>Eye Opening</th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous</td>
<td>4</td>
<td>Spontaneous</td>
</tr>
<tr>
<td>To speech or sound</td>
<td>3</td>
<td>To Speech</td>
</tr>
<tr>
<td>To painful stimulus</td>
<td>2</td>
<td>To pain</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>None</td>
</tr>
</tbody>
</table>

**Best Verbal Response**

<table>
<thead>
<tr>
<th>Infants</th>
<th></th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coos, babbles, smiles</td>
<td>5</td>
<td>Cries appropriately, Orientated</td>
</tr>
<tr>
<td>Irritable cry but consolable</td>
<td>4</td>
<td>Confused</td>
</tr>
<tr>
<td>Cries/screams to pain</td>
<td>3</td>
<td>Inappropriate crying/</td>
</tr>
<tr>
<td>Grunts/groans to pain</td>
<td>2</td>
<td>Grunts incomprehensible words</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>None</td>
</tr>
</tbody>
</table>

**Best Motor Response**

<table>
<thead>
<tr>
<th>Infants</th>
<th></th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous movement</td>
<td>6</td>
<td>Obeys commands</td>
</tr>
<tr>
<td>Localizes pain</td>
<td>5</td>
<td>Localizes pain</td>
</tr>
<tr>
<td>Withdrawal from pain</td>
<td>4</td>
<td>Withdrawal from pain</td>
</tr>
<tr>
<td>Flexion to pain (decorticate)</td>
<td>3</td>
<td>Flexion to pain</td>
</tr>
<tr>
<td>Extension to pain (decerebrate)</td>
<td>2</td>
<td>Extension to pain</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>None</td>
</tr>
</tbody>
</table>
Los Angeles Prehospital Stroke Screen (LAPSS)

*For evaluation of acute, non-comatose, non-traumatic neurological complaint.* If items 1 through 6 are all **checked “Yes”** (or “Unknown”), provide pre-arrival notification to hospital of potential stroke patient. If any item is checked “No”, return to appropriate treatment guideline. **Interpretation:** 93% of patients with stroke will have a positive LAPSS score (sensitivity = 93%), and 97% of those with a positive LAPSS score will have a stroke (specificity = 97%). Note that the patient may still be experiencing a stroke if LAPSS criteria are not met.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Yes</th>
<th>Unknown</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age &gt; 45 years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. History of seizures or epilepsy <strong>absent</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Symptom duration &lt; 24 hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. At baseline, patient is <strong>not</strong> wheelchair bound or bedridden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Blood glucose between 60 and 400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. <strong>Obvious asymmetry</strong> (right vs. left) in any of the following 3 exam categories (must be unilateral)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facial smile/grimace</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grip</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arm strength</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equal</th>
<th>R weak</th>
<th>L weak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Droop</td>
<td>Weak grip</td>
<td>Weak grip</td>
</tr>
<tr>
<td>No grip</td>
<td>No grip</td>
<td>No grip</td>
</tr>
<tr>
<td>Drifts down</td>
<td>Drifts down</td>
<td>Drifts down</td>
</tr>
<tr>
<td>Falls rapidly</td>
<td>Falls rapidly</td>
<td>Falls rapidly</td>
</tr>
</tbody>
</table>
THE APGAR SCORE

Appearance (skin color):
- Body and extremities blue, pale: 0
- Body pink, extremities blue: 1
- Completely pink: 2

Pulse rate:
- Absent: 0
- Below 100 bpm: 1
- 100 bpm or more: 2

Grimace:
- No response: 0
- Grimace: 1
- Cough, sneeze, cry: 2

Activity:
- Limp: 0
- Some flexion of extremities: 1
- Active motion: 2

Respiratory effort:
- Absent: 0
- Slow and irregular: 1
- Strong cry: 2

Total score: _______

APGAR Score should be assessed at one minute of birth and then reassessed at five minutes.
APPENDIX F
Transport Guidelines

VVEMS Medical Direction Policy on Transport Destination

When ambulances are requested for a transport to a healthcare facility from the community, a private residence, doctors’ offices and/or nursing homes they are to be transported to the closest, most clinically-appropriate facility.

Specific examples would include: Acute cerebral vascular accident (CVA), psychiatric patients, cardiology patients, and multi-trauma patients have specific destinations that were named under the 2006 revision of the VVEMS transport guidelines. (Lang, 2006)

In cases when transport times are roughly equivalent, then considerations should be made on the destination facility based on the receiving facility’s patient load or capacity, medical direction preference, and/or patient preference. Patient preference alone may not be sufficient reason to justify transport to a facility farther away than the closest most clinically-appropriate facility.

The goals of all EMS transports are to ensure the highest quality and safest patient care is being delivered while using public resources wisely, i.e. to minimize diversion of limited transport resources away from the community for extended periods of time. This philosophy will serve both patient and physicians’ goals with an understanding that patient safety is the most important of these goals.

There may occur that reasonable circumstances in which a patient is best served by transport to a facility other than the closest. State EMS laws allow for these transports, but such transports shall occur subject to both online and administrative medical direction to govern these transport variances.

Under those limited circumstances in which patients may be transported to a facility other than the closest, the following criteria must be met:

1. Patient has been given informed consent to transfer and is aware that they are going to a facility farther away than the closest most appropriate facility.
2. The online medical direction physician (may be via nurse intermediary) has consented to the transport
3. If the transport is from a healthcare facility, both the sending and receiving physicians have consented to the transport and informed the patient of the risk/benefits of the transport to include most appropriate mode, i.e. ground vs. air transport.
4. The EMS crews on scene have determined the patient has been stabilized and is safe for transport to the more distant facility.
5. The EMS agency making the transport has sufficient personnel and resources to initiate the transport without delay or taking community transport resources without the ability to “backfill” the ambulance being sent on the transport.

If any of the above criteria is not met, then the patient should be taken to the closest appropriate facility.
References:

Terry Mullins, Bureau Chief Bureau of Emergency Medical Services and Trauma System
Arizona Department of Health Services

William Anderson, Section Chief, Enforcement of Necessity, Bureau of Emergency
Medical Services and Trauma System, Arizona Department of Health Services

Bently Bobrow, MD, Medical Director, Bureau of Emergency Medical Services and
Trauma System, Arizona Department of Health Services

Care Guidelines. Appendices included: VVEMS Trauma Patient Identification and Field Triage
Decision Tree, EMS Field Treatment/Triage Policy, Cardiac Transport Guidelines, Medical Transport
Guidelines and Ground VS. Air Transport Guidelines

Version 10/2007
SEDONA TRANSPORTATION GUIDELINES

The following guidelines are established for the benefit of all patients transported by Sedona Fire District Emergency Medical Services.

**Sedona Emergency Center**
Sedona Emergency Center (SEC) was established to allow rapid treatment of emergencies for patients of the Sedona area. All patients should be transported to SEC unless the patients a chief complaint that falls into the categories listed below.

**Verde Valley Medical Center**
Patients that meet the following criteria should be transported directly to Verde Valley Medical Center in Cottonwood:

CVA: Patient showing signs of an acute, significant stroke, with onset of signs/symptoms less than three hours. Utilize Los Angeles Prehospital Stroke Screen.

Surgery: Adult and Pediatric patients that need immediate surgery:
- Open fractures
- Suspected AAA
- Unstable or large volume GI Bleeds

Cardiac: Chest pain with ST Elevation on 12 lead EKG (transmit 12 Lead ASAP)
New LBBB

Respiratory: Patients on CPAP mask that have improved and don’t require immediate stabilization

Psychiatric: Suicidal/Homicidal Ideation
Psychiatric Emergencies ex. Schizophrenia, Bipolar
Combative patients

***Intoxication or depression alone is not a reason to avoid SEC. The patient who is combative or requires security or constant nursing attention is not appropriate for SEC.

**Flagstaff Medical Center**
Patients that need the following care should be transported directly to Flagstaff Medical Center or another regional trauma center if feasible.

Trauma: Any multi systems trauma patient requiring a trauma center—see trauma transport guidelines.

Head Injuries: Open skull fractures,
Closed skull fractures with signs/symptoms and GCS of 13 or less.

****Pt request does not warrant transport to another facility. Send patient to closest appropriate facility as determined by guidelines, nurse, EMS, and base station physician.

Dated Revised 1/15/09
GROUND VS. AIR TRANSPORT GUIDELINES

Goals:
Care will be fast and definitive
Maximize cost effective use of EMS resources
Correct identification of initial chief complaint

Appropriate for Air Ambulance

- significant traumatic injuries (consider steps 1 and 2 of trauma patient identification and field triage decision standard) (III-27)
- Obvious head injury/GCS 13 or <

Appropriate for Ground Ambulance

- “mech of injury” trauma w/o significant physical findings
- full codes-med/trauma
- most OB (see comments)
- toxicology problems

Gray areas

- Pre-morbid state, (alzheimers, terminal Ca etc)
- Patient request
- Immediate unstable condition

Comments: Emergent need for C-section should use fastest/closest options for transport and care.
Preterm labor alone should use ground transport to VVAC/FMC (closest/fastest).

*Appropriate ground vs air decisions are at the discretion of the medics at the scene in collaboration with base station medical control.*
### VVEMS Trauma Patient Identification & Field Triage Decision Tree

**Step One**

<table>
<thead>
<tr>
<th>Measure vital signs and level of consciousness</th>
</tr>
</thead>
</table>
| Glasgow Coma Scale \……………<14 or \  
Systolic blood pressure \………………..<90 or \  
Respiratory rate \………………..<10 or >29 | Revised Trauma Score (see Table 2) \…………<11 |
| **YES** | **NO** |

**Assess anatomy of injury**

**YES**

Take to trauma center; alert trauma team. Steps 1 and 2 triage attempts identify the most seriously injured patients in the field. In a trauma system, these patients would preferentially be transported to the highest level of care within the system.

**NO**

Assess anatomy of injury

**Step Two**

| * All penetrating injuries to head, neck, torso, and extremities proximal to elbow and knee  
* Flail chest  
* Combination trauma with burns  
* Two or more proximal long-bone fractures  
* Pelvic fractures  
* Open and depressed skull fracture  
* Paralysis  
* Amputation proximal to wrist and ankle  
* Major burns (see Chapter 14: Guidelines for the Operation of Burn Units) |

**YES**

Take to trauma center; alert trauma team. Steps 1 and 2 triage attempts identify the most seriously injured patients in the field. In a trauma system, these patients would preferentially be transported to the highest level of care within the system.

**NO**

Evaluate for evidence of mechanism of injury and high-energy impact

**Step Three**

| * Ejection from automobile  
* Extrication time >20 minutes  
* Rollover  
* High-speed auto crash | * Falls >20 feet for adult patient >14 yrs of age  
* Falls 2x the height of the pediatric patient <=14 yrs of age  
* Death in same passenger compartment  
* Intrusion into passenger compartment > 12 inches  
* Auto-pedestrian/auto-bicycle injury with significant (>5 mph) impact  
* Pedestrian thrown or run over  
* Motorcycle crash >20 mph or with separation of rider from bike |

**YES**

Contact medical direction and consider transport to a trauma center. Consider trauma team alert.

**NO**

Evaluate for evidence of mechanism of injury and high-energy impact.

**Step Four**

| * Age <5 or >55  
* Cardiac disease, respiratory disease  
* Insulin-dependent diabetes, cirrhosis, or morbid obesity  
* Pregnancy  
* Immunosuppressed patients  
* Patients with bleeding disorder or patient on anticoagulants |

**YES**

Contact medical direction and consider transport to trauma center. Consider trauma team alert.

**NO**

Reevaluate with medical direction.

---

**Immediate unstable patients should be taken to closest facility for immediate care.**

Adopted from the Arizona Trauma Patient Identification & Field Triage Decision Standard. Major trauma patients should be taken to the highest level Trauma Center within a 30-minute transport time.
CARDIAC TRANSPORT GUIDELINES

Goals:
Care will be fast and definitive
Communication will be timely and accurate
Use of SEC to maximize re-transports.
Correct identification of cardiac versus non-cardiac chest pain while in the field.

Chest Pain

Cardiac?
Risk factors: smoker, HTN, diabetic, CAD?MI, family hx, abnormal EKG, age, elevated cholesterol

Aortic Dissection?
YES
NO

< 35 yo,
Normal VS,
Normal ECG

ALS Transport to Closet Facility
Consider Pt load SEC/VVMC

ACLS Transport to VVMC
Repatch 5 minutes out to determine if going directly to cath lab

IV,O2,
ECG/Transmit,
ASA/NTG

STEMI ECG Changes Transmit EKG early to activate Cath lab

Generally cardiac patients from Jerome, Cottonwood, Cornville, Camp Verde, Sedona, VOC, and Montezuma/Rimrock should be transported by ground. Variants include traffic holdups, manpower issues, and backwoods/rescue scenes.

Air Ambulance use: When transport by ground is considerably longer and the patient is unstable. Appropriate ground vs air and VVMC vs SEC decisions are at the discretion of medics at the scene in collaboration with base station medical control.
MEDICAL TRANSPORT GUIDELINES

Goals:
Care will be fast and definitive
Maximize cost effective use of EMS resources
Correct identification of chief complaint
Use of SEC/VVMC to maximize good patient care and minimize re-transports.

Chief Complaint?
Consider Availability of Diagnostic (ultrasound, CT)

- CVA?
  - NO
  -稳定? YES
    - < 3 hour onset? aphasia/flaccid limb(s)? need CT?
      - YES
        - Transport to VVMC ALS care
      - NO
        - CT available at SEC?
          - NO
            - Unstable? (AAA, vascular risk)
          - YES
            - Transport ALS to SEC
    - NO
      - Stable?
        - YES
          - ALS transport to closest facility
        - NO
          - Transport to SEC

OB/L&D?
< 20 wks or problem not related to pregnancy—to ED>20 wks with only OB chief complaint—to OB

COMMENTS:
Generally medical patients from Jerome, Cottonwood, Cornville, Camp Verde, Sedona, VOC, and Montezuma/Rimrock should be transported by ground. Variants include traffic holdups, manpower issues, and backwoods/rescue scenes.

Air Ambulance Use: The decision to fly a patient should be discussed with the base station physician. Conditions include considerably longer ground transport times and a patients who are unstable and seem to have a time sensitive condition.
APPENDIX G
RSI, CPAP, IO ACCESS

RAPID SEQUENCE INTUBATION (RSI) USE BY EMT-P'S

VVEMS medical direction supports the use of RSI as an optional advanced airway management skill by properly trained EMT-Ps in recognition of its potentially lifesaving results.

Purpose:
This airway management skill will be used in situations where placement of a prehospital endotracheal tube using RSI is indicated by patient conditions and where there is clear benefit of performing RSI in the prehospital environment.

Procedure:
1. EMT-P will work full-time for an agency that supports the optional RSI program.

2. EMT-P will complete the VVMC RSI training program before beginning to perform RSI in the field.

3. EMT-P will perform RSI using the Arizona Department of Health Services Recommendations for RSI in the field (ADHS, 2005).

4. EMT-P will complete a minimum of 12 patient or mannequin intubations/year to continue to be included in the RSI program.

5. EMT-P will complete an annual RSI refresher course.

6. EMT-P will participate in mandatory immediate self-assessment and ongoing departmental CQI on all RSI in the field cases.

7. If requested, EMT-P will participate in review of cases through the Prehospital Peer Review Committee.
**CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)**

**PURPOSE:**
Continuous Positive Airway Pressure has been shown to rapidly improve vital signs, gas exchange, and work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in patients who suffer from shortness of breath from asthma, COPD, pulmonary edema, CHF, and pneumonia. In patients with CHF, CPAP improves hemodynamics by reducing cardiac preload and afterload. CPAP decreases mortality when used in COPD exacerbations.

**INDICATIONS:**
Any patient who is in respiratory distress of any cause in a non-DNR patient who has protective airway reflexes AND
1. Is awake, oriented and able to follow commands
2. Is over 12 years old and is able to fit the CPAP mask
3. Has the ability to maintain an open airway
4. A respiratory rate greater than 25 breaths per minute
5. Has pulse oximetry less than 92%
6. Uses accessory muscles during respirations

**CONTRAINDICATIONS:**
1. Patient is in respiratory arrest/apneic.
2. Patient is suspected of having a pneumothorax or has suffered trauma to the chest.
3. Patient has a tracheostomy.
4. Patient is actively vomiting or has upper GI bleeding.

**PRECAUTIONS:**
1. Use care if patient:
   a. Has impaired mental status and is not able to cooperate with the procedure
   b. Has failed at past attempts at noninvasive ventilation
   c. Complains of nausea or vomiting
   d. Has inadequate respiratory effort
   e. Has excessive secretions
   f. Has a facial deformity that prevents the use of CPAP
2. Intubation should be performed by IEMT or Paramedic personnel if the patient:
   a. Goes into respiratory or cardiac arrest
   b. Is unresponsive to verbal stimuli (GCS is <9)
3. CPAP should not be used primarily with portable oxygen tanks because of the large amount of oxygen it takes to operate the device

**ADULT PROCEDURE:**
1. Make sure patient does not have a pneumothorax!
2. Explain the procedure to the patient
3. Ensure adequate oxygen supply to ventilation device (100% when starting therapy and until Sa02 is >92%)
4. Place the patient on continuous pulse oximetry
5. Place the patient on continuous endtidal CO2 monitoring
6. Place patient on cardiac monitor and record rhythm strips with vital signs (interpretation by ALS personnel only)
7. Place the delivery device over the mouth and nose
8. Secure the mask with provided straps or other provided devices
9. Start CPAP at 5 cm H2O of PEEP. Increase gradually, if necessary, as patient adjusts and tolerates the PEEP to a maximum of 10 cm H2O on the pressure gauge. Document changes in patient status.
10. Check for air leaks
11. Monitor and document the patient’s respiratory response to treatment
12. Check and document vital signs (ideally every 5 minutes)—specifically monitor rate, depth and SaO2 and mental status. Some decrease in blood pressure may occur.
13. Continue to coach patient to keep mask in place and readjust as needed
14. Administer appropriate medication if necessary. (Ex. Albuterol/atrovent/methylprednisolone for asthma/COPD and Nitro for CHF)
15. If respiratory status deteriorates, remove device and consider intermittent positive pressure ventilation with or without endotracheal intubation
16. Contact receiving hospital in advance to advise them you have CPAP on the patient so they may prepare since equipment is not based in the ED.

REMOVAL PROCEDURE:
1. CPAP therapy needs to be continuous and should not be removed unless the patient can not tolerate the mask or experiences continued or worsening respiratory failure or begins to vomit.
2. Intermittent positive pressure ventilation and/or intubation should be considered if the patient is removed from CPAP therapy.

PEDIATRIC CONSIDERATIONS:
1. CPAP should not be used in children under 12 years of age.

SPECIAL NOTES:
1. May be performed by Paramedics
2. May use .5 – 3 mg slow IV push of Midazolam if patient has high anxiety associated with CPAP device. Use small, repeated doses every 5 minutes.
2. Advise receiving hospital so they can be prepared for the patient
3. Do not remove CPAP until hospital therapy is ready to be placed on patient or if patient can no longer tolerate CPAP
4. Most patients will improve in 5-30 minutes. If no improvement within this time, consider intermittent positive pressure ventilation
5. Watch patient for gastric distention
6. Be cautious when using nitroglycerine spray with CPAP since it could be dispersed on EMT’s
EMERGENT RESPIRATORY CPAP DEVICE ONLY

SETTING THE CPAP LEVEL

Prior to setting the pressure always observe that the airway pressure gauge needle indicator is at the zero (0) value with the CPAP adjustment knob in the fully counterclockwise position and the breathing circuit connected. The zero point may be adjusted by adjusting the small screw on the face of the gauge. To set continuous positive airway pressure, turn the CPAP adjustment clockwise and observe the needle indicator on the airway pressure gauge.

APPLYING THE BREATHING CIRCUIT AND MASK

Assembly Instructions:

The CPAP Breathing Circuit is pre-assembled at the factory. To attach the breathing circuit to the CPAP unit insert and align the locking bayonet outlet adapter to the unit and turn clockwise until securely engaged.

1. When the mask is ready and the patient is prepared, turn the ON/OFF valve fully to the ON position (counterclockwise ½ turn). Ensure that the gas is flowing, and then hold the mask to the patient’s face. Gently place your other hand on the back of the patient’s head to confirm a good air seal.
2. Within a few minutes (once the patient is comfortable) use the head strap to hold the mask in place. Ensure that the mask is not too tight. Some air leakage is acceptable unless it is in the eye area.
3. Make sure the flow rate is in excess of the patient’s inspiratory flow rate in order to maintain continuous pressure throughout the breathing cycle. Check this frequently during transport as the patient’s needs may change. There are 3 ways to determine whether the flow is set high enough:
   a. The CPAP valve should remain slightly open during the entire respiratory cycle.
   b. The anti-asphyxia valve on the mask should not open during normal operation.
   c. Some gas should escape from the exhalation port.
4. For patient comfort, and to preserve oxygen, turn the flow adjustment knob down to maintain the flow just above the patient’s flow rate.
5. In most cases, the patient should improve in the first 5 minutes with CPAP.
6. If after 5 minutes the patient’s Sp02 is not at the desired level, deliver higher oxygen concentrations (up to 100%) by turning the valve farther counterclockwise. The Fi02 should be increased judiciously to preserve 02. Adjust one to two full turns and then re-evaluate the Sp02.
DOCUMENTATION FOR ADHERENCE TO PROTOCOL:

The following items must be documents for Adherence to Protocol:

1. Prehospital impression as to why CPAP was chosen
2. Vital signs (BP, HR, RR, Sp02) recorded every 5 minutes
3. Description of patient’s response to CPAP
4. Documentation of other airway adjunct if CPAP is unsuccessful
5. Use of sedating medications
IO Protocol for use with Easy IO Gun

**Training:**
EZ-IO® infusion systems require specific training prior to use.

**INDICATIONS:**
EZ-IO® AD (40 kg and over) & EZ-IO® PD (3 – 39 kg)
Note: Certain patients may require a needle set outside their ideal weight range “One size needle set does not fit all”
1. Immediate vascular access in emergencies.
2. Intravenous fluids or medications are urgently needed and a peripheral IV cannot be established in 2 attempts or 90 seconds
   **AND** the patient exhibits risk of immediate death or loss of function or deterioration.

**Relative CONTRAINDICATIONS:**
Fracture of the bone selected for IO infusion (consider alternate sites)
Excessive tissue at insertion site with the absence of anatomical landmarks (consider alternate sites)
Previous significant orthopedic procedures (IO within 24 hours, prosthesis - consider alternate sites)
Infection at the site selected for insertion (consider alternate sites)

**CONSIDERATIONS:**
**Flow rate:** Due to the anatomy of the IO space, flow rates may appear to be slower than those achieved with an IV catheter.
- Ensure the administration of an appropriate rapid **SYRINGE BOLUS (flush)** prior to infusion
  “NO FLUSH = NO FLOW”
  - Rapid syringe bolus (flush) the EZ-IO® AD with 10 ml of normal saline
  - Rapid syringe bolus (flush) the EZ-IO® PD with 5 ml of normal saline
  - Repeat syringe bolus (flush) as needed
- To improve continuous infusion flow rates always use a syringe, pressure bag or infusion pump

**Optional treatment for Pain after stabilization of patient:** IO Infusion for conscious patients has been noted to cause severe discomfort
- SLOWLY administer Lidocaine 2% (Preservative Free) through the EZ-IO hub. *Ensure that the patient has no allergies or sensitivity to Lidocaine.*
  - EZ-IO® AD Slowly administer 20 – 40 mg Lidocaine 2% (Preservative Free)
  - EZ-IO® PD Slowly administer 0.5 mg /kg Lidocaine 2% (Preservative Free)

**EQUIPMENT:**
EZ-IO® Driver
EZ-IO® AD or EZ-IO® PD Needle Set
Alcohol or Betadine Swab
EZ-Connect® or Standard Extension Set
10 ml Syringe
Normal Saline (or suitable sterile fluid)
Pressure Bag or Infusion Pump
2 % Lidocaine (preservative free)
EZ-IO® Yellow wristband

**PROCEDURE:** If the patient is conscious, advise of EMERGENT NEED for this procedure and why
1. Wear approved Body Substance Isolation Equipment (BSI) or Personal Protective Equipment (PPE)
2. Determine EZ-IO® Indications
3. Rule out Contraindications
4. Locate appropriate insertion site (Preferred sites: Proximal / Distal Tibia
   Approved site: Proximal Humerus)
5. Prepare insertion site using aseptic technique
6. Prepare the EZ-IO® driver and appropriate needle set
8. Stabilize site and insert appropriate needle set
9. Remove EZ-IO® driver from needle set while stabilizing catheter hub
10. Remove stylet from catheter, place stylet in shuttle or approved sharps container
11. Confirm placement
12. Connect primed EZ-Connect®
13. Slowly administer appropriate dose of Lidocaine 2% (Preservative Free) IO to conscious patients
14. Syringe bolus (flush) the EZ-IO® catheter with the appropriate amount of normal saline.
15. Begin infusion with pressure (syringe bolus, pressure bag or infusion pump) where applicable
17. Dress site, secure tubing and apply wristband as directed
18. Monitor EZ-IO® site and patient condition – Remove catheter within 24 hours.
APPENDIX H
HEAD TO TOE ASSESSMENT

The Head-to Toe Assessment should include these areas:

1. Complete set of vital signs
2. Head:
   a) Inspect and palpate scalp, face, ears, nose, eyes
   b) Check pupils for size, equality, reaction to light, accommodation
3. Neck:
   a) Inspect and palpate location of trachea
   b) Check jugular veins
   c) Palpate cervical spine
4. Chest/Back:
   a) Inspect, palpate, auscultate chest and back
5. Abdomen/Pelvis/Buttocks:
   a) Inspect, palpate, auscultate abdomen
   b) Perform 3 point pelvis check
6. Lower Extremities
   a) Inspect and palpate both legs and feet
   b) Check circulation, sensation, and motor function in both feet
7. Upper Extremities:
   a) Inspect and palpate both arms and hands
   b) Check circulation, sensation, and motor function in both hands
8. Neurological Assessment
9. EKG Monitoring/12 Lead
10. Pulse Oximetry
11. Glucose Determination
12. History
APPENDIX I
Introduction to Prehospital OB Care Guidelines

This introduction is designed to orient the prehospital team to the unique aspects of OB emergencies. Because of the uncommon nature of OB emergencies, they are easy to be unprepared for. Unfortunately, this may contribute to a poor outcome, especially if the unpreparedness continues at the receiving hospital (which only rarely handles OB emergencies as well).

The following guidelines apply to all OB crises:

1. Let the receiving facility know ASAP, so they can get the needed personnel and equipment. This may include OB doctor or nurses, pediatric resuscitation equipment, or other equipment which requires preparation. An initial patch and a follow up patch are suggested for this purpose.

2. Ask all patients about bleeding, leakage of fluid and normal fetal motion as well as whether there have been any problems with this pregnancy/prenatal course.

3. Examine the patient’s external genitals. Patients are not effective at reporting blood, parts or other problems. Undress the bottom half and take a quick look so you can report accurately. You will occasionally be surprised at what you find and it will change treatment.

4. Travel safely when you can. There are very few OB complications which will be improved by arriving 2 minutes sooner. MVCs in pregnancy are very dangerous.
APPENDIX J
ALS Release of Patients for BLS Transport

Criteria 1: Non-emergency category must have vitals within the following limits:

- **Adult**
  - *Respirations*: 10 to 24
  - *BP*: 90 to 160 systolic, 60 to 110 diastolic
  - *Pulse*: 60 to 100
  - *Pulse Oximetry*: >90% or change from normal

- **Pediatric**
  - Age Appropriate

Criteria 2: The following high-risk indications must be absent:

- Abdominal pain - Adult
- Altered mental status (Compared to pt’s normal status)
- Any acute cardiac arrhythmia
- Chest pain
- Shortness of breath
- Syncope/ Dizziness
- Overdose/poisoning
- Seizures
- Pregnancy-related complaint
- Significant head/neck/chest/abdomen/pelvis trauma

Criteria 3: Absence of disease or process that would benefit from ALS care

A physical exam must be completed and documented. After evaluation the patient must not have any signs or symptoms that would indicate significant findings or emergent condition. Patient care may be upgraded to ALS at anytime if medic feels patient warrants additional care.

Contact must be made to medical control for final approval to transport BLS. BLS provider may complete courtesy notification with the guidance of ALS provider.