Preface

Requests for changes should be in writing using the Patient Care Protocol Request for Change form and directed to:

Medical Program Director
Pierce County
Emergency Medical Services
Department of Emergency Management
2501 South 35th Street, Suite ‘D’
Tacoma WA  98409-7405

253-798-7722

A sincere thank you to all those individuals who attended the monthly meetings to write, revise and review draft after draft of this document. Without the help and dedication of all involved, this monumental task could not have been accomplished.
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ADMINISTRATIVE POLICY

All ALS procedures are in *italics*. All treatments needing an order from a Base Station are asterisked (*), but there may also be verbiage within the protocol that states Base Station contact is required. Pediatric care that is specific to the pediatric population is **Bold**, otherwise all protocols pertain to pediatric patients as well. All references to “AHA Handbook” refer to the current AHA Handbook of Emergency Cardiovascular Care for Healthcare Providers.

I. Scope of Practice.

   A. Emergency Medical Responder (EMR). An EMR in Pierce County may perform the following:

      1. Airway/Breathing management.
         i. Oropharynx or nasopharynx adjuncts.
         ii. O₂ administration by NC, NRB.
         iii. Ventilation by BVM.
         iv. Obstructed airway care (all ages).
         v. Suction upper airway.

      2. Circulation management.
         i. CPR (all ages).
         ii. Automated External Defibrillation (AED).
         iii. Bleeding/Hemorrhage control with wound care.
            i. Dressings/Bandages.
            ii. Hemostatic gauze/dressing.
            iii. Tourniquet.

      3. Medication administration.
         i. Routes: IN, IM.
         ii. May administer:
            i. Oxygen.
            ii. Narcan IN.
            iii. Nerve Agent Antidote Kit (e.g. DuoDote or Mark I) (self/peer) IM.

      4. Splinting.
         i. Traction.
         ii. Rigid.
         iii. Non-rigid.

      5. Spine management.
         i. Long backboard, immobilization, KED, standing board, sports equipment removal, rapid extrication, log roll, securing patient.

      6. Childbirth and newborn care.

      7. Eye irrigation.
B. Emergency Medical Technician (EMT). In addition to Emergency Medical Responder scope of practice, an EMT in Pierce County may perform the following:

1. Airway/Breathing management.
   a. Positive pressure ventilation devices (manually triggered pressure device).
   b. Automatic Transport Ventilators (ATV) - adjust rate and tidal volume.
   c. Continuous Positive Airway Pressure (CPAP).
   d. Pulse oximetry monitoring.
   e. Carbon monoxide monitoring.
   f. End-tidal carbon dioxide (EtCO2) monitoring.
   g. Suction tracheostomy.
   h. Supraglottic airway placement (when endorsed).

2. Circulation management.
   a. ECG acquisition.
   b. ECG monitor lead placement.

3. Medication administration.
   a. Routes: L, SL, PO, Buccal, Inhalation.
   b. May administer:
      i. Acetaminophen.
      ii. Aspirin.
      iii. Epinephrine 1:1000 by syringe or Epi-Auto Injector.
      iv. Ibuprofen.
      v. Oral Glucose.
      vi. Oxygen.
      vii. Narcan IM.
      viii. Nerve Agent Antidote Kit (e.g. DuoDote or Mark I).
   c. May assist with:
      i. Nitroglycerin.
      ii. Metered dose inhaler (MDI).

4. Patient Restraint Device (mechanical, e.g. Posey wrist, ankle, chest).


C. Paramedic. In addition to EMR and EMT scope of practice, a Paramedic in Pierce County may perform the following:

1. Airway/Breathing management.
   a. Supraglottic airway insertion.
   b. Endotracheal intubation.
   c. Needle cricothyrotomy.
   d. Surgical cricothyrotomy.
   e. Small Volume Nebulizer (SVN) treatments.
   f. Tracheobronchial suctioning.
   g. Needle thoracostomy.
   h. Chest tube monitoring.
i. Automatic Transport Ventilators (ATV) - adjust beyond rate and tidal volume.

2. Circulation management.
   a. Defibrillation.
   b. Cardioversion.
   c. Transcutaneous pacing.
   d. ECG monitoring/diagnostic (multi-lead) ECG.
   e. Carotid massage.
   f. Pericardiocentesis.

3. Administer IV/IO fluids.
   a. Peripheral IV insertion (including external jugular).
   b. IO insertion.
   c. Subclavian IV insertion (if trained).
   d. Central line monitoring.
   e. Access existing central lines, indwelling catheters and central IV ports.
   f. Operate/manage controlled delivery device for IV infusion (IV pump).
   g. Maintain an infusion of blood or blood products.

4. Medication administration.
   a. Routes: SQ, transdermal, topical, aerosolized, PR, NG, IV, ET, central venous line.
   b. May administer: See medication list Appendix O (e.g. cardiac, narcotics, thrombolytics).

5. Nasogastric/Orogastric tube insertion.

6. Obtain venous samples.
   a. Fill blood tubes for Emergency Department (ED) use.
   b. Fill blood tubes for Law Enforcement (LE) use (e.g. blood alcohol).
   c. Blood chemistry analysis (e.g. iSTAT).

7. Morgan lens utilization.

II. Physician on Scene.

   A physician on scene with a medical license in hand may:

   1. Participate in patient care management by:
      a. Assisting the EMS personnel in carrying out protocols.
      b. Performing additional interventions at the direction of the Base Station.

   2. Give orders if both:
      a. The Base Station concurs, and
      b. The physician accompanies the patient to the hospital.

III. Withholding/Terminating Resuscitation.

   A. Resuscitation will be withheld if any of the following clinical signs of irreversible death exist:
      1. Rigor mortis.
      2. Incineration.
      3. Decomposition.
      4. Decapitation.
5. Lividity.
6. Evisceration of the heart.
7. External brain matter combined with an absence of vital signs/signs of life.
8. Situations when attempts to do CPR would place the rescuer at risk of serious injury or mortal peril (to include exposure to incurable, highly infectious disease).

B. Trauma cardiac arrest.

1. If PEA is on the monitor (cardiac rhythm on ECG > 40 bpm), consider any/all of the following:
   a. Hemorrhage control.
   b. Aggressive airway management.
   c. Bilateral chest needle insertions.
   d. Fluid resuscitation.
   e. Pericardiocentesis.
   f. Transport if there is an improvement in patient status.

2. In blunt trauma, resuscitation efforts may be withheld if the patient is pulseless, apneic, without witnessed signs of life by EMS responder on arrival.

3. In penetrating trauma, resuscitation efforts may be withheld if there are no signs of life (e.g. no pupillary reflexes, GCS 3, and no organized cardiac rhythm on ECG > 40 bpm).

C. Medical cardiac arrest.

1. Resuscitation efforts may be terminated after providing > 40 minutes of high quality CPR for the patient with witnessed collapse who remains in shockable rhythms or has organized electrical rhythms (PEA).

2. Resuscitation efforts may be terminated after providing > 25 minutes of high quality CPR for the unwitnessed cardiac arrest patient, and those with non-shockable rhythms.

3. Consider transporting the medical patient with CPR in progress if at least one of the following is suspected:
   a. Drug overdose.
   b. Drowning.
   c. Hypothermia.
   d. Refractory shockable rhythm.
   e. Age ≤ 30 years old.
   f. Circumstances require that the patient be transported.

D. Advanced Directives.

1. Full resuscitation should not be initiated if POLST (Physician Orders for Life-Sustaining Treatment) guidelines are present and believed to be valid.
   a. If POLST form indicates “Comfort Measures Only,” Base Station must be contacted to determine the need for transport to the Emergency Department.
   b. Communication with the legal surrogate should be considered if there is concern about the patient’s wishes.
2. Compelling reasons permit EMS personnel to withhold resuscitation from a patient in cardiac arrest when the following two criteria are both present:
   a. The patient is at the end stage of a terminal condition.
   b. There is written or verbal information from family, caregivers or patient stating that the patient did not want resuscitation.
3. Living wills should be honored if present.
4. All documentation must be made on a Patient Care Report (PCR).

E. Providers should contact Base Station for consultation for termination of resuscitation efforts.

F. EMS must notify the Medical Examiner (ME) and/or Law Enforcement (LE).

G. All documentation must be made on a Patient Care Report (PCR) and a copy provided to the ME’s office.

IV. Vulnerable Populations.

A. EMS shall notify Law Enforcement and/or Child Protective Services (CPS) to report any suspicion of child abuse or neglect, child death or near death.
   1. Children’s Administration Intake (CPS) – Tacoma Office, 8:00 a.m.-4:30 p.m. M-F: 888-713-6115.
   2. Children’s Administration Intake (CPS), 24 hours: 800-562-5624.
   3. MEDCON (UW) expert consultation: 800-326-5300.

B. EMS shall notify Law Enforcement and/or Adult Protective Services to report any suspicion of geriatric abuse or neglect.
   1. If the person you suspect of being abused or neglected is living in a licensed facility (e.g. nursing home, boarding home, or adult family home) contact: WA State Complaint Resolution Unit toll-free hotline, 24 hours: 800-562-6078.
   2. If the person you suspect of being abused or neglected is living in their own home or somewhere other than a licensed residential care facility, contact: Pierce County Aging & Disability Resource Center (ADRC) – Tacoma, 8:00 a.m.-5:00 p.m. M-F: 253-798-4600.
      Adult Protective Services Intake (APS) – Pierce County, 8:00 a.m.-5:00 p.m. M-F: 877-734-6277.

C. EMS should report any suspicion of adult domestic violence to Law Enforcement and/or Receiving Facility staff.

D. EMS may also discreetly inform the victim of the following domestic violence resources:
   2. Crystal Judson Family Justice Center, 8:30 a.m.-4:30 p.m. M-F: 253-798-4166.
V. Crime Scene Preservation.

A. EMS personnel will communicate with Law Enforcement (LE) to ensure that the scene is safe.

B. Forensic guidelines emphasizing crime scene preservation are important; however, the most important role of EMS providers is to ensure the preservation of life, therefore access to patient assessment and care must not be delayed.
   1. EMS is in charge of the patient and should be aware of signs of possible abuse and neglect.
   2. LE is in charge of the crime scene.

C. While an emotional cause of death, such as apparent Sudden Unexplained Infant Death (SUID), may cause a scene to be difficult, this is not an acceptable reason to move or transport a deceased person. If the patient is obviously deceased, EMS providers should not disturb or move the body unless there is a clear potential the body will be lost or further damaged. If the body is moved, EMS shall document the reason why and what actions were taken.

D. At the request of the Medical Examiner or LE, EMS will assist with the completion of the Sudden Unexplained Infant Death Investigation (SUIDI) form when an infant has died. EMS will make sure LE has been notified and will provide contact information to LE.

E. EMS limits access and egress to a single path/route. This may be identified by LE; or if EMS arrives first, EMS will notify LE of their route.

F. EMS limits the number of personnel entering a potential crime scene to only those essential to safely and efficiently care for the patient. Upon request from LE or Medical Examiner, EMS will provide a list of responders’ names, when they arrived/departed, and any pertinent documentation.

G. EMS providers should not disturb the scene unless absolutely necessary to perform critical patient care. EMS providers should not move anything; they should leave items alone unless absolutely necessary to perform lifesaving patient care.

H. EMS providers will not cut through bullet/stab holes on patient’s clothing or otherwise disturb binding knots, etc. in an effort to preserve critical evidence.

I. EMS providers shall not use phones, sinks, toilets, garbage containers, or anything at a crime scene. They will only utilize equipment that they brought to the scene and remove the equipment when absolutely necessary.

J. EMS shall not take anything from a crime scene that can be left; they will give clothes, blankets and sheets to LE.

K. When practical, EMS providers will document everything they observed (lighting, weather, temperature, odors, bystanders’ behavior, position of patient), moved, and performed as patient care. Include statements made by the patient, being as specific and exact as possible. EMS should consider the following:
   1. All statements and demeanor (emotional state) of speakers.
2. Explain that their job is to provide medical care; ask for caretaker’s explanation with specific details; record observations of both words and actions.
3. Consider all personal observations of the environment as soon as possible. Focus all their senses on the surroundings. Describe the scene accurately and completely. Determine possibility of mechanism of injury.
4. Record the child’s developmental level. Compare reasonableness of history given regarding mechanism of injury to child’s age and developmental abilities and scene observations.

L. EMS will document any unusual observations in a supplemental report.

If no LE is present, EMS will document all adults and children present including who has left, noting what they did, said, and their appearance.

M. By invitation, EMS may participate in Multidisciplinary Team (MDT) meetings to review child abuse cases and/or attend Child Death Review.

VI. Non-Patients are:

Asymptomatic persons without a significant mechanism of injury, no obvious injury or illness, without a desire for care, and are not medically evaluated.

VII. ALS Cancellation.

An on-scene EMT may cancel an enroute ALS unit if the following conditions are met:

1. There is no patient, as defined in Section VI, or
2. A BLS assessment has been performed and the patient is determined to meet the BLS Transport Guidelines (see Appendix E).

VIII. On-scene Patient Care.

A. On-scene BLS personnel will not prevent any on-scene Pierce County EMS agency paramedic from access to conduct an evaluation of and care for a patient.

B. The medical person with the highest level of EMS certification shall direct patient care. Generally, the first arriving paramedic shall be in charge of the patient’s care. The incident commander may decide if there is any question as to who should direct patient care.

IX. Release of Responsibility/Against Medical Advice.

A. A Release of Responsibility (ROR) may be considered by EMS personnel when, after evaluation of the patient, the patient’s medical needs are considered to be of such a minor nature that 9-1-1 activation was unnecessary and/or signs and symptoms do not meet treatment/transport criteria as outlined in Pierce County Patient Care Protocols. No Base Station contact is necessary by the treating EMS personnel and a patient may be released under ROR if the following conditions are met:

1. No substantial medical intervention has been rendered by EMS.
2. There is no potential risk for loss of life or limb.
3. It is reasonable not to expect a recurrence of the condition within the next 6 hours.
4. There is an individual with adequate decision-making capacity who can observe the patient for a reasonable amount of time.
5. The adult patient or his/her caregiver meet all elements of the Pierce County Decision-Making Capacity Checklist and agrees to sign a ROR Form.
6. Mary Bridge Base Station contact must be made on all trauma patients < 15 years old, and medical and ‘injured’ patients < 18 years old before the EMS person in charge of the patient leaves the scene.
7. If the patient does not meet above criteria, ROR of the patient can only be done at the discretion of the Base Station.

B. An Against Medical Advice (AMA) may be considered only if the following conditions exist:
   1. The patient is believed to be ≥ 18 years old or an emancipated minor.
   2. The patient meets all elements of the Pierce County Decision-Making Capacity Checklist.
   3. The patient has been told of his or her condition, the risks of refusing and the benefits of seeking medical treatment/transport.
   4. The patient has been offered a reasonable alternative.
   5. Base Station shall be consulted and a physician should speak to the patient whenever possible.

C. A patient with diminished decision-making capacity does not meet all the elements of the Pierce County Decision-Making Capacity Checklist. Non-transport of the patient with diminished decision-making capacity can only be done at the direction of the Base Station.

D. Documentation of every ROR and AMA shall be accomplished on a Patient Care Report (PCR). EMS personnel shall document the following:
   1. Reason(s) for the 9-1-1 call (description of events).
   2. Patient’s medical history and current assessment findings.
   3. Quotes made by the patient, to include reasons for ROR or AMA.
   4. Signs of injury/illness (why treatment/transport is recommended).
   5. When applicable, name of the Base Station physician and whether they spoke with the patient or not.
   6. Time of Base Station contact and any orders given.
   7. Disposition of the patient (e.g. left at scene and with whom; taken to another location, by what mode of transportation and by whom).
   8. Name and agency of Law Enforcement officer when appropriate.
E. Pierce County Decision-Making Capacity Checklist.

YES = Patient meets all elements of the listed criteria (all must be marked).
NO = Patient does not meet all elements of the listed criteria (if any are marked
NO, the patient is considered to have diminished decision-making
capacity).

Patient/caregiver is:                  YES   NO
1. 18 years old or believed to be an emancipated minor. ( ) ( )
2. Oriented (GCS 15) and understands the situation and consequences; and is able to weigh risk/benefit options; and rationally/logically processes information before making a decision; and communicates their desires. ( ) ( )
3. Neither physically, nor cognitively impaired by the use of alcohol and/or drug(s). ( ) ( )
4. Neither suspected of brain trauma, nor hypoxia as evidenced by pulse oximetry > 85%. ( ) ( )
5. Absent of dementia, mental illness, or other medical disease that impairs the patient’s decision-making. ( ) ( )
6. Absent of attempted suicide, verbalized suicidal intent, or other factors suggesting suicidal intent. ( ) ( )

F. This statement should be read by the patient who is making AMA choices or have it read to them by the EMS professional caring for them:

“This form has been given to you because you do not want treatment and/or transport by EMS. Your health and safety concerns us, even though you have decided not to accept our advice. In doing so, please remember the following:

1. Your condition may not seem as bad to you as it may actually be. Without treatment your condition or problem could become worse. If you are planning to get medical treatment, a decision to refuse treatment or transport by EMS may result in a delay of care, which could make your condition or problem worse.
2. The evaluation and/or treatment offered to you by EMS cannot replace treatment by a doctor. You should obtain medical evaluation and/or treatment by going to any hospital Emergency Department in this area, or by calling your doctor if you have one.
3. If you change your mind or your condition becomes worse, do not hesitate to call 9-1-1. Don’t wait. When medical treatment is needed, call 9-1-1; it is better to get help immediately.”

X. Patient’s Right to Privacy.

A. Respect for a patient’s right to privacy is paramount.
B. Remove only enough clothing to determine the presence or absence of a condition or injury.
C. When practical, attempt to have another provider present when clothing is removed to conduct a patient assessment.
D. Privacy may be achieved by having additional members shield the patient with blankets or sheets.

XI. Hazardous Materials.

A. If a scene is potentially contaminated with hazardous material, do not enter the scene until it can be done safely and the scene is secured by a hazardous materials team.

B. If a concern remains regarding patient or provider exposure, a hazardous materials team shall be notified immediately.

XII. Documentation.

A. Complete and accurate documentation is essential for continuity of patient care.

B. Strict adherence to the Health Insurance Portability and Accountability Act (HIPAA) and protection of a patient’s confidential Protected Health Information (PHI) shall guide all documentation and communication as it relates to patient care.

C. If a complete patient report cannot be left at the time of patient delivery, then at the time the patient is delivered, the certified EMS provider in charge of patient care must provide information to the Receiving Facility staff in accordance with WAC 246-976-330 requirements. The minimum of a brief written or electronic patient report must include: agency name, EMS personnel names, date/time of the emergency, time of onset, vital signs including serial vital signs where indicated, patient assessment findings, procedures and therapies provided by EMS, any changes in patient condition while in the care of EMS personnel, and mechanism of injury or type of illness. Individual EMS agencies may require additional data points be recorded.

All ALS and BLS prehospital providers that do not accompany the patient to the hospital shall provide a report of their patient care to the transporting agency.

D. Within 24 hours of patient delivery, the certified EMS provider in charge of patient care must provide the final complete written or electronic patient care report to the Receiving Facility staff in accordance with WAC 246-976-330 and WAC 246-976-430 requirements. The minimum information must include: agency name, EMS personnel names and certification levels, date/time of the emergency, applicable components of system response time, age of the patient, vital signs including serial vital signs where indicated, patient assessment findings, procedures and therapies provided by EMS to include times each procedure or therapy was provided, patient response to procedures and therapies while in the care of EMS personnel, mechanism of injury or type of illness, and patient destination. The minimum information for the Trauma Registry must also include: incident information, patient information, times, vital signs, and treatment. Individual EMS agencies may require additional data points be recorded.
COMMUNICATION POLICY

I. General.
   A. Communication will occur as soon as possible with the Receiving Facility/Base Station.
   B. Prehospital personnel will contact the most appropriate Receiving Facility for all medical and trauma patients they are transporting to that facility, unless additional medical direction is needed. Additional medical direction includes, but is not limited to, all asterisked * items in this protocol book. In that case, the prehospital provider will contact their assigned Base Station. If an asterisked item is requested by the Receiving Facility or if the protocols must be exceeded, the prehospital provider can follow this direction, and document accordingly.
   C. Base Station for Adult Medical and Trauma Patients:
      Patients - i.e. Medical- age ≥ 18 years old; Step Trauma- age ≥ 15 years old.
      Madigan AMC: Assigned agencies
      Good Samaritan: Assigned agencies
      St. Anthony: Assigned agencies
   D. Base Station for Pediatric Patients:
      Medical- age < 18 years old;
      ‘Injured’- age < 18 years old;
      Step Trauma- age < 15 years old.
      Mary Bridge Children's Hospital: All agencies

II. Difficult Communication.
   If the prehospital provider has difficulty with a Receiving Facility while attempting to transport a patient to that facility, they should contact their assigned Base Station. The Base Station can resolve the issues or reassign the transporting vehicle to another Receiving Facility.

III. Disrupted Communication.
   In the event of disrupted communications, prehospital providers will act according to protocol, document afterwards, and make Receiving Facility/Base Station contact immediately when it becomes available.

IV. Disaster Medical Control Center (DMCC) Communication.
   A. Once the DMCC has been activated, prehospital providers will not make individual contact with Receiving Facilities to give patient reports regarding MCI patients. Agencies transporting non-MCI related patients may contact the Receiving Facilities as usual.
   B. Primary DMCC is Good Samaritan; Secondary DMCC is Madigan AMC.
TRANSPORT POLICY

I. Transport Criteria.

A. ALS versus BLS transport:

1. If the patient meets ALS criteria, they must be transported by the crew of a licensed, verified ALS ambulance agency; with at least one paramedic in the patient compartment in care of the patient.

2. If the patient meets BLS criteria, they may be transported by the crew of a licensed, verified BLS or ALS ambulance agency; with at least one paramedic or EMT in the patient compartment in care of the patient.

* 3. If the transport of an ALS patient will be delayed longer than the time it would take a BLS unit to transport to the Receiving Facility, the BLS unit may transport the patient with the permission of Base Station.

4. Transporting units will contact the Receiving Facility unless Base Station orders are required (Appendix E).

B. Trauma: see Appendix B.

C. Cardiac: see Appendix C.

D. Neurologic: see Appendix D.

E. Medical: see Appendix E.

F. Pediatric: Consult Mary Bridge if unsure as to where to transport the patient. Include parents in care as much as possible.

II. Capabilities.

A. Pierce County Receiving Facility Capabilities:

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B. Recognized Non-Pierce County Receiving Facility Capabilities:

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1. Hbvw MC is designated for both adult and pediatric trauma.
2. I/II/III/IV indicates Washington State trauma, cardiac and stroke receiving designations.
3. Neonatal Intensive Care Unit (NICU).
   a. 1 = 36 weeks and up.
   b. 2 = 32 weeks and up.
   c. 3 = 20 weeks and up.
   d. < 20 weeks is considered nonviable. Contact Base Station before withholding resuscitative measures.

C. Transportation to a non-recognized, non-Pierce County EMS Receiving Facility could take place only at the direction of the Base Station.

1. Current recognized Pierce County Receiving Facilities:
   Allenmore Hospital / Good Samaritan Hospital / Madigan Army Medical Center / Mary Bridge Children’s Hospital / Recovery Response Center / St. Anthony Hospital / St. Clare Hospital / St. Joseph Medical Center / Tacoma General Hospital
2. Current recognized Non-Pierce County Receiving Facilities:
   Auburn Regional Medical Center / Harborview / Harrison Medical Center / Morton General Hospital / Providence St. Peter Hospital / Seattle Children’s Hospital / St. Elizabeth Hospital / St. Francis Hospital / UW Medical Center

III. Medical.

A. A medical patient with an unstable airway will be transported to the nearest Receiving Facility’s emergency department regardless of the emergency department’s designated capabilities.

B. Medical patients should generally be transported to the nearest appropriate medical Receiving Facility.

1. Cardiac patients will be transported according to the Pierce County Prehospital Cardiac Triage Procedures (Appendix C).
2. Stroke patients will be transported according to the Pierce County Prehospital Stroke Triage Procedures (Appendix D).
C. Transportation to a more distant appropriate Receiving Facility may be considered by the prehospital provider. Patient’s medical provider and/or patient preference should be considered.

IV. Trauma.

A. A trauma patient with an unstable airway will be transported to the nearest Receiving Facility’s emergency department regardless of the emergency department’s designated capabilities.

B. Trauma patients will be transported according to the Pierce County Prehospital Trauma Triage Procedures (Appendix B). Immediately upon initiation of the transport system for Step 1 and Step 2 trauma patients, the nearest available Level II trauma receiving hospital in Pierce County will be contacted for activation of the Trauma System. Step 3 and Step 4 trauma patients can be taken to the nearest available trauma receiving hospital of any level. Transport of the Step 3 and Step 4 trauma patient to a non-trauma receiving hospital can only be done at the direction of the Base Station, but should be classed as ‘injured.’

C. Injured patients are those individuals who are injured but do not meet trauma Step criteria, or are classified as ‘injured’ by the Base Station even if they meet trauma step criteria. These patients should be taken to the nearest most appropriate Receiving Facility for further care.

V. Individual with a Mental Disorder Transport Guideline.

A. General guidelines.

1. Any patient with a weapon will be disarmed by LE prior to EMS evaluation.
2. A patient who has a mental disorder with any decompensation of their psychiatric illness is a medical patient and is the responsibility of EMS.
3. A patient who has a mental disorder with a physical condition or potential to develop a physical condition enroute to a Receiving Facility will be transported by EMS.
4. An individual who appears to be incapacitated or intoxicated by any substance who is unable to care for themselves is a medical patient and the responsibility of EMS.
5. An individual who appears to be under the influence of any substance and does not have a physical condition and who is able to care for themselves, and LE has been made aware of them for any reason, are not necessarily a medical patient and are not necessarily the responsibility of EMS.
6. Any disagreement between EMS and LE as to whom has responsibility for the individual that cannot be resolved at time of the individual’s assessment will be referred to their immediate supervisors. These supervisors will communicate with each other and resolve the issue. The individual’s care and/or transportation will be directed by the supervisors’ decision within the scope of practice and patient care protocols.
7. Patients have the right to refuse care if they have adequate decision-making capacity to do so (see Pierce County EMS Patient Care Protocol Decision-Making Capacity Checklist).
B. Individual who has an Alleged Mental Disorder – Voluntary.

1. No physical considerations.
   a. This individual can be transported by LE (to include Emergency service patrols), EMS, or POV. Transport by POV should be done with an adult who has adequate decision-making capacity to accompany the patient if possible.
   b. If the paramedic is uncomfortable having the patient go alone to a facility and the patient refuses to have an individual with adequate decision-making capacity accompany them, the paramedic must decide if he/she should request that the patient be made involuntary and make that case to LE and/or the mental health professional.

2. Physical injury or considerations (including asymptomatic overdose) present.
   These patients are transported by EMS.

C. Individual who is Allegedly Incapacitated or Gravely Disabled with a Mental Disorder – Involuntary.

   a. This individual may be transported by EMS to a medical facility or MPD-approved behavioral health treatment facility.
      i. LE will place the individual on an involuntary commit hold (filling out all paperwork).
      ii. LE will stay with the individual until he/she is secured in the EMS transport vehicle.
   b. LE may transport the individual if it is felt to be in the individual’s and/or personnel’s best interest to do so.
   c. The transporting agency may request the other agency follow them to the medical facility.

2. Uncooperative.
   a. These patients will be transported by EMS to a medical facility or MPD-approved behavioral health treatment facility.
      i. LE will place the individual on an involuntary commit hold (filling out all paperwork).
      ii. LE will stay with the patient until he/she is secured in the EMS transport vehicle.
   b. LE may transport the patient if it is felt to be in the patient’s and/or personnel’s best interest to do so.
   c. The transporting agency may request the other agency follow them to the medical facility.

3. Individual who is Allegedly Incapacitated or Gravely Disabled and Intoxicated (by drug or alcohol).
   a. This patient will be transported by EMS to a medical facility.
      i. LE will place the individual on an involuntary commit hold (filling out all paperwork) if there is any potential for loss of life, limb, or permanent disability.
ii. LE will stay with the patient until he/she is secured in the EMS transport vehicle.

b. LE may transport the patient if it is felt to be in the patient’s and/or personnel’s best interest to do so.

c. The transporting agency may request the other agency to follow them to the medical facility.

4. Individual who is Allegedly Incapacitated or Gravely Disabled and is Violent.

a. This individual will be transported by either LE (to include Emergency service patrols) or EMS.

b. LE will appropriately restrain the individual to prevent the patient from hurting themselves or others.

i. LE will place the individual on an involuntary commit hold (filling out all paperwork).

ii. LE will stay with the patient until he/she is secured in the EMS transport vehicle.

C. LE may transport the individual if it is felt to be in the individual’s and/or personnel’s best interest to do so.

d. The transporting agency may request the other agency follow them to the medical facility.

D. If questions arise regarding any category of individual or patient not covered by this guideline, consult with Base Station.

E. Field personnel shall not put themselves in danger by attempting to treat or transport a patient that refuses care. Good judgment, appropriate assistance and supporting documentation shall be utilized at all times.

VI. Interfacility Transports.

A. Prehospital providers shall not function beyond their level of certification. Patients that require care beyond this level shall be accompanied by appropriately trained, certified or licensed personnel.

B. Communication with the Receiving Facility before and during interfacility transport is encouraged to facilitate a smooth transfer with the receiving hospital.

C. Communication with the Receiving Facility/Base Station shall be made if a patient deteriorates enroute.
GENERAL PRINCIPLES/ROUTINE CARE

I. Utilize Standard Precautions, conduct a scene survey, triage as needed, determine mechanism of injury/nature of illness, chief complaint, and history to include medications/drugs. Conduct a complete assessment and obtain vital signs initially, then repeat at least every 5 minutes for critical patients or every 15 minutes for non-critical patients. Minimize scene time.

II. Airway/Breathing.
   A. Manual c-spine stabilization as needed.
   B. Maintain or establish a clear airway for the patient. Use head tilt/chin lift or jaw thrust as needed. Follow AHA Handbook for obstruction appropriate for age group. Refer to Respiratory Emergencies protocol.
   C. Consider oral/nasal airway as needed.
   D. Suction patient as needed.
   E. Administer oxygen as appropriate to patient’s condition/chief complaint. Monitor pulse oximetry if available. Maintain the patient’s O₂ saturation between 94% - 99%. Monitor EtCO₂ level as needed if available.
   F. Give nothing by mouth if the patient is unable to swallow or maintain their own airway.
   G. Consider CPAP for the patient with severe respiratory distress or respiratory failure associated with CHF, pulmonary edema, asthma, or COPD and who:
      1. Is awake and able to follow directions.
      2. Is > 12 years old and able to fit in a CPAP mask.
      3. Has the ability to maintain an open airway without assistance.
      4. Exhibits two or more of the following:
         a. Respiratory rate > 25 per minute.
         b. SPO₂ < 90% or an EtCO₂ > 50.
         c. Using accessory muscles during respirations.
         d. Unable to speak in full sentences.
      5. Contraindications include:
a. Apnea or respirations < 8 per minute.
b. Pneumothorax or significant chest trauma (excluding pulmonary contusion).
c. Tracheostomy.
d. Vomiting.
e. Upper GI bleeding.

6. CPAP therapy needs to be continuous and should not be removed unless patient:
a. Cannot tolerate the mask.
b. Is unable to maintain own airway.
c. Experiences respiratory arrest.
d. Begins to vomit.
e. Needs medication administered orally.

7. To ensure continuous treatment, notify Receiving Facility enroute of CPAP use so necessary equipment is available at time of arrival.

I. Intubation as needed.
   1. Use in-line stabilization in trauma.
   2. Utilize oral or nasal routes (xylocaine jelly or Afrin should be used for nasal tubes).
   3. All intubation will include use of waveform capnography and at least one other method such as lung sounds or visual confirmation to confirm placement. Use waveform capnography continuously to confirm correct tube placement. Document methods used and results on the Patient Care Report, and print capnography report if able to do so.
   4. No nasal intubation if significant facial trauma or patient is < 8 years old.
   5. Follow Rapid Sequence Intubation (RSI) protocol when needed (Appendix F).

K. Difficult airway.
   1. If unable to intubate on first attempt, and once patient is adequately oxygenated, a second intubation attempt may be made; consider changing technique.
   2. If ventilation is difficult, or not able to be readily performed, or after a failed airway, then consider using an MPD approved rescue breathing device/supraglottic adjunct.
   3. All intubations will include use of waveform capnography and at least one other method such as lung sounds or visual confirmation to confirm placement. Use waveform capnography to continuously confirm correct tube placement. Document methods used and results on the Patient Care Report, and print capnography report if able to do so.

L. Consider needle or surgical cricothyrotomy if indicated (patients with severe facial or throat trauma or upper airway occlusions).
III. Circulation.

A. Control external bleeding with direct pressure and pressure dressings with or without hemostatic agents. Consider wound packing as needed. A commercial tourniquet should be applied early for exsanguinating extremity hemorrhage.

B. Keep the patient warm.

C. Adult: Establish peripheral IV access or EJ if other peripheral site not available. Pediatric: Establish peripheral IV access.

Adult and Pediatric: Avoid starting an IV in an extremity with a shunt or venous device, or on the same side as a post mastectomy unless life is threatened. You may use the extremity to include the shunt or venous device if life is threatened.

1. Adult and Pediatric: Normal Saline (NS), Lactated Ringer’s (LR), or Dextrose 5% Water (D5W) should be your fluids of choice depending on availability and purpose of IV solution, and your patient’s condition.

2. Adult: When fluid resuscitation is necessary by status of pulse and BP, start 2 large bore IVs (18g or larger) of (warmed) NS or LR while enroute to facility. In patients with suspected hemorrhage, titrate to a state of relative hypotension with systolic BP of 80-90.

Pediatric: Fluid replacement with NS or LR.
   a. For shock, give 20 mL/kg bolus.
   b. May give up to 3 rapid infusions if inadequate perfusion.

3. Adult and Pediatric: Consider use of saline lock when only IV access is desired.

4. Adult and Pediatric: Intraosseous (IO) route.
   a. If an IV is not preferable, an IO site may be utilized.
   b. All medications that can be administered IV can be given IO.
   c. Consider pain management for IO infusions if the patient is having discomfort:
      i. Adult: Lidocaine 20-50 mg IO.
      * ii. Pediatric: morphine sulfate 0.1 mg/kg up to 10 mg IO or Fentanyl 1-2 mcg/kg IN/O."n
   d. IO contraindications include:
      i. Suspected fracture of bone site being accessed.
      ii. Previous orthopedic procedures, such as joint replacement at or near insertion site.
      iii. Infection at the insertion site.
      iv. Inability to locate landmarks.

5. Adult and Pediatric: If patient has existing external central vascular catheter (CVC), such as a Hickman, Groshong or PICC line, trained paramedics may utilize this line to gain IV access. Dialysis access sites cannot be used unless there is a life-threatening situation, cardiac arrest and no other suitable means of vascular access is available.

D. Place medical/cardiac patients on ECG monitor. Obtain 12-lead ECG as soon as possible. Cardiac monitoring of trauma patients should be done enroute, if time permits.
E. Use AED/manual defibrillation as indicated.

IV. Neurologic Exam.
A. Assess mental status using the Glasgow Coma Scale (Appendix G).
B. Use of ammonia inhalants to determine level of consciousness is non-diagnostic and therefore is not appropriate, nor authorized.
C. Check blood glucose level and treat accordingly when indicated per Medical Emergencies protocol.

V. Expose/Environment.
A. Remove the patient’s clothing appropriate to illness/injury to adequately assess the patient’s condition.
B. Cover the patient again to conserve body heat and keep the patient warm.

VI. Pain Management: Refer to Pain Management protocol for considerations.

A. Appropriate patients to be immobilized with a backboard may include those with:
   1. Blunt trauma and altered level of consciousness.
   2. Spinal pain or tenderness.
   3. Neurologic complaint such as numbness or motor weakness.
   4. Anatomic deformity of the spine.
   5. Concerning/high energy mechanism of injury and any of the following:
      a. Drug or alcohol intoxication.
      b. Inability to communicate.
      c. Distracting injury.
B. Patients with penetrating trauma to the head, neck, or torso and no evidence of spinal injury should not be immobilized on a backboard, but receive rapid transport.
C. Spinal precautions can be maintained by application of a rigid cervical collar and securing the patient firmly to the gurney, and may be most appropriate for:
   1. Patients who are found to be ambulatory at the scene.
   2. Patients who must be transported for a protracted time (> 30 minutes), particularly prior to interfacility transfer, unless using a pressure relieving device.
   3. Patients for whom a backboard is not otherwise indicated.
D. Patients for whom immobilization on a backboard is not necessary include those with all of the following:
   1. Normal level of consciousness (GCS 15).
   2. No spine tenderness or anatomic abnormality.
   3. No neurologic findings or complaints.
4. No distracting injury.
5. No intoxication.

E. Whether or not a backboard is used, pay attention to spinal precautions for at-risk patients which includes:

1. Application of a cervical collar,
2. Adequate security to a stretcher,
3. Minimal movement/transfers, and

F. Guidelines for immobilization when a backboard is used:

2. Utilize rigid cervical collar unless contraindicated by pain, mandible fracture/osteoporosis. If unable to use a rigid collar, use towels or other materials to secure the head/neck.
3. Secure torso and pelvis to long backboard with straps and adequate padding to prevent movement. Medical tape may be used if unable to use straps and board movement involves no moves varying from horizontal.
4. Adult: Pad under occiput to achieve neutral alignment. Place side supports next to both sides of the head.

5. Pediatric: Pad under torso, shoulders to waist, to achieve neutral alignment. Place side supports next to both sides of the head.
6. Secure forehead with a strap or medical tape across the supraorbital ridge including the side supports. Secure a lower strap or medical tape across the anterior rigid portion of the cervical collar to include both side supports. Ensure the patient can open mouth to vomit if necessary. Do not immobilize head mechanically until torso is secured.
7. Pad under knees to lessen stress on lumbar spine. Pad to ensure no movement will occur and immobilize legs.
8. Consider securing the patient’s arms before moving the patient.

G. Sports equipment removal.

1. Patients with helmets but no shoulder pads: remove helmet.
2. Patients with sports helmets and shoulder pads:
   a. Players should be stabilized for transport with helmet and shoulder pads in place.
   b. Following stabilization, the facemask should be removed before transport.
   c. Helmet and pads should be removed if they interfere with proper immobilization (loose fit) or airway control cannot be achieved with facemask removal.
3. Spinal immobilization as indicated.

VIII. Consider blood draw when indicated.

A. Fill lab tube(s) slowly.
1. Label each tube with patient name, date, time and paramedic’s initials.
2. Tape to IV bag when possible.

B. Complete blood chemistry analysis tests as necessary if able.
C. See Appendix J for guidance on blood alcohol draw policy.

IX. Domestic Violence and Human Trafficking.
A. Attempt to identify victims of domestic violence or human trafficking.
B. All patient questioning should take place in a confidential place and not in front of children or a partner.
C. Communicate this information to the Receiving Facility.
D. Transport the patient whenever possible.
E. Discreetly inform patient that the situation is potentially lethal, and remind them battering is a crime and they can be protected by law.
F. Do not use the patient’s phone.
G. Privately furnish patient with the domestic violence resources phone number even if he/she doesn’t ask for it:
   2. Crystal Judson Family Justice Center, 8:30 a.m.-4:30 p.m. M-F: 253-798-4166.
H. Assess the patient’s safety. If patient refuses care and there is risk of continued harm, notify law enforcement.

X. Patients with Access and Functional Needs.
A. EMS providers must meet and maintain the additional support required for patients with functional needs during the delivery of prehospital care. This includes, but is not limited to:
   1. Identifying individuals with physical, sensory, mental health, and cognitive and/or intellectual disabilities affecting their ability to function independently without assistance.
   2. Identifying the functional need by means of information from the patient, the patient’s family, caregiver, bystanders, medic alert bracelets or documents, or the patient’s assistive devices.
B. Medical care should not intentionally be reduced or abbreviated, however the manner in which the care is provided may need to be modified to accommodate the specific needs of the patient.
C. Assistive devices that facilitate the activities of life/functions of daily living for the patient should accompany the patient, to include service animals. Patients may have specific requirements on how assistance adjuncts are transported. When
possible, EMS providers should discuss methods for transporting assistive devices with the patient.

XI. Mass Casualty Incidents (MCI).

A. START triage should be used with all MCIs. **JumpSTART triage should be used on patients ≤ 8 years old (See Appendix M).**

B. An MCI may be declared anytime you have recognized the need. Refer to the Pierce County Fire Chiefs Association MCI Plan as approved by the Pierce County EMS Office.

C. Contact the Disaster Medical Control Center (DMCC) as soon as possible for coordination of patient transports.

D. Contact the Disaster Medical Control Center (DMCC) to request ‘open protocols’ which means the agencies involved in the event may follow the protocols without requiring Base Station contact. Remember to call the DMCC when the incident is cleared so they can ‘close the protocols’.

E. All patients evaluated by EMS and transported from an MCI will be identified using the ‘StatBand’ bar code triage tag. The ‘StatBand’ should be attached to the patient prior to transport, and the tracking number and patient destination recorded on a transportation log.

F. The transportation log must be provided to the Pierce County EMS Office as soon as possible during the event or immediately after the event. It can be scanned or a legible picture taken of it and emailed to PCEOC@co.pierce.wa.us, or faxed to 253-798-2200, with a cover sheet stating the agency, date and location of the event.
TRAUMATIC EMERGENCIES

I. General.
   A. Follow General Principles/Routine Care protocol unless otherwise indicated.
   B. Limit scene time for trauma patients, with goal of ≤ 15 minutes.
   C. See Appendix B for Trauma Triage destination procedures.

II. Traumatic Hypovolemic Shock. Adult and Pediatric.
   A. Control hemorrhage.
      For external hemorrhage, use direct pressure, wound packing, pressure dressings, and tourniquets as necessary:
      1. Consider using hemostatic gauze to control bleeding if the pressure dressing does not work.
      2. For exsanguinating extremity hemorrhage, consider early use of tourniquets. Mark time applied on the tourniquet(s) and consider Pain Management protocol as necessary, unless patient is in decompensated shock. Contact the Receiving Facility to inform them a tourniquet has been applied.
   B. Transport patient in the supine position as soon as possible.
   C. Immobilize as needed (See General Principles, Section VII).
   D. Keep patient warm by controlling the ambulance temperature and use adjuncts (e.g. heat packs and reflective blankets) when necessary.
   E. Initiate fluid resuscitation.
      1. Adult:
         a. Large bore IV(s) or IO(s) with warm NS or LR.
         b. If suspected uncontrolled internal hemorrhage, titrate to a state of relative hypotension with systolic BP of 80-90.
         c. If suspected Traumatic Brain Injury (TBI) titrate fluids to maintain systolic BP > 90.
         d. If hemorrhage is controlled, but signs and symptoms of shock are present, greater amounts of fluids may be infused.
      2. Pediatric:
         a. Large bore IV(s) or IO(s) with warm NS or LR.
         b. Push 20 mL/kg initially, then
d. Titr ate infusion rate to restore adequate perfusion (i.e. capillary refill, central and peripheral pulses, appropriate mentation for age).

III. CNS and facial trauma.
   A. Administer O₂ at 15 l/NRB mask if patient is breathing adequately on own. If patient is not breathing adequately and has a Traumatic Brain Injury (TBI), ventilate with high flow O₂ at 10 breaths/min. for adults, 20 breaths/min. for
**children and 25 breaths/min. for infants.** If Increased Intracranial Pressure (IICP) (widening pulse pressure, decreased HR and increased BP, posturing, blown pupil, change in respiratory pattern) is associated with the TBI, ventilate at 20 breaths/min. for adults, **25 breaths/min. for children and 30 breaths/min. for infants.**

B. Keep pulse oximetry ≥ 95%. **Intubate PRN. No nasal intubation with significant facial trauma. Follow RSI protocol if needed (Appendix F).** Keep EtCO₂ level between 35-40 mmHg for TBI, and between 30-35 mmHg for TBI with IICP if able to monitor.

C. Immobilize as needed (See General Principles, Section VII).

D. For partially avulsed teeth, replace if possible if patient is awake. For completely avulsed teeth, rinse with saline, and wrap in gauze soaked with saline.

Be alert for potential tooth aspiration.

E. **Initiate fluid resuscitation.**
   1. **Adult:** See Section II.E.1. 
   2. **Pediatric:** See Section II.E.2.

F. **For seizures.**
   1. **Adult:**
      a. **1st choice**- May use midazolam, 10 mg for > 40 kg, single dose IM, or  
      b. **2nd choice**- May use midazolam, 0.2 mg/kg of a 5 mg/mL concentration IN, or  
      c. **3rd choice**- May use midazolam, 2 mg increments IV to a maximum dose of 0.1mg/kg or 10 mg (whichever is less), or  
      d. **4th choice**- May use diazepam, 0.2 mg/kg/dose not to exceed 10 mg IV push; may repeat dose once.  
      e. Wait 1-2 minutes between IN/IV doses to evaluate response.  
   2. **Pediatric:**
      a. **1st choice**- May use midazolam, 5 mg for 13-40 kg, single dose IM, or  
      b. **2nd choice**- May use midazolam, 0.2 mg/kg of a 5 mg/mL concentration IN, to a maximum dose of 10 mg, or  
      c. **3rd choice**- May use midazolam, 0.1 mg/kg IV slowly over 2 minutes in no greater than 2 mg increments not to exceed 5 mg, or  
      d. **4th choice**- May use diazepam, 0.2 mg/kg/dose not to exceed 10 mg IV push; may repeat dose once.  
      e. Wait 1-2 minutes between IN/IV doses to evaluate response.

IV. **Spinal Trauma.**
   A. Assess for neuro deficits in extremities.
   B. Be prepared to assist ventilations if a high spinal cord injury occurred.
   C. Keep patient warm by controlling the ambulance temperature and use adjuncts (e.g. heat packs and reflective blankets) when necessary.
D. *Initiate fluid resuscitation.*
   1. **Adult:** See Section II.E.1.
   2. **Pediatric:** See Section II.E.2.

V. Injuries to the Neck.
   A. Seal open wounds with an occlusive dressing.
   B. **Consider early intubation when signs of expanding hematoma are present.**
   C. **Initiate fluid resuscitation.**
      1. **Adult:** See Section II.E.1.
      2. **Pediatric:** See Section II.E.2.
   D. **Airway obstruction.**
      1. *Keep traumatic tracheostomy open with any appropriate adjunct.*
      2. *Perform a needle/surgical cricothyrotomy if trachea and/or larynx is collapsed or laryngeal edema is obstructing the airway.*

VI. Injuries to the Eye.
   A. Protect injured eye; consider use of a rigid shield.
   B. Cover/bandage unaffected eye.
   C. Stabilize impaled objects.
   D. Do not use a pressure dressing to stop fluid leakage or apply pressure to the eye.
   E. Elevate head if the patient is not hypotensive.
   F. Chemical burns to the eye:
      1. Continuously flush with copious amounts of water or saline solution from inside to outside.
      2. Attempt to identify agent if possible, and/or take a picture of the container.
   G. Consider antiemetic prophylactically.

VII. Chest/Abdominal Trauma.
   A. Assess/monitor quality of breathing.
   B. Monitor for development of tension pneumothorax.
   C. **Initiate fluid resuscitation.**
      1. **Adult:** See Section II.E.1.
      2. **Pediatric:** See Section II.E.2.
   D. **ECG monitor enroute.**
   E. Specific injuries.
      1. Open chest wounds/tension pneumothorax.
         a. Monitor and assist ventilations PRN.
b. Seal with occlusive dressing. ‘Burp’ dressing if tension pneumothorax develops.
   c. Perform needle thoracostomy if the patient is hypotensive and has suspected tension pneumothorax.

2. Flail chest.
   a. Monitor and assist ventilations PRN.
   b. Monitor for tension pneumothorax.
   c. Stabilize with tape and bulky dressing.
   d. Consider intubation PRN.

3. Pulmonary contusion.
   a. Monitor and assist ventilations PRN.
   b. Consider use of CPAP if the patient is unable to maintain adequate ventilation.

4. Cardiac tamponade.
   Consider pericardiocentesis.

5. Abdominal injuries.
   a. Evisceration: Cover with sterile, moist, occlusive dressing.
   b. Consider transport with knees flexed/position of comfort.

VIII. Musculoskeletal Trauma.

A. Dress wounds, monitor perfusion (pulse and/or capillary refill), motor, sensory status before and after splinting.
   1. Fractures/Dislocations.
      a. Splint in the position found.
      b. If there is severe deformity or the distal extremity is cyanotic or lacks pulses, align with gentle manipulation to achieve return of circulation before splinting.
   2. Control hemorrhage.
   3. Refer to Pain Management protocol for other considerations.

B. Femur, hip or pelvic fracture/dislocation suspected.
   1. Stabilize on long backboard. Consider use of scoop stretcher to move the patient.
   2. Consider traction device for isolated mid-shaft femur fractures (open or closed).
   3. Consider use of pelvic wrap (sheet or commercial device) for stabilization of pelvic fractures.
   4. Initiate fluid resuscitation.
      a. Adult: See Section II.E.1.
      b. Pediatric: See Section II.E.2.
   5. Refer to Pain Management protocol for other considerations.

C. Acute low back discomfort without spinal trauma.
   1. Consider use of ice/warm packs over area to relieve discomfort.
   2. Refer to Pain Management protocol for other considerations.
IX. Amputated Parts.
   A. Collect parts and debride gross contaminants with saline flush.
   B. Wrap in sterile saline moistened gauze, place in plastic bag, protect with towel, place on ice.
   C. Label bag with patient name, date, and time. Send amputated part with patient if available. Note disposition of amputated part on PCR.
   D. Refer to Pain Management protocol for other considerations.

X. Impaled Objects.
   A. Do not remove unless the airway is compromised.
   B. Secure the object in place.
   C. Taser® darts will be removed by EMS personnel only if EMS was already dispatched to the scene for a medical/trauma event.

XI. Burns.
   A. Thermal.
      1. Consider early intubation PRN, insert an NG/OG tube if patient is intubated.
      2. Stop the burning process, irrigate with room-temperature water if necessary.
      3. Remove constricting jewelry, and annotate on PCR to whom the jewelry was given.
      4. Elevate burned extremities on pillows above level of the heart and monitor distal pulses.
      5. Apply dry, sterile non-adherent dressings and/or clean sheets.
      6. Keep patient warm.
      7. Initiate fluid resuscitation with large bore IV(s) and warmed NS or LR.
         a. Use the Parkland Formula to calculate IV drip rate as fluid resuscitation in the burn patient is paramount. 4 mL x kg x % of 2nd and 3rd degree body surface area burned.
         b. Half of this calculated total mLs will be given in the first 8 hours from the time the patient was burned, so the drip rate per hour must be calculated on that.
      8. Refer to Pain Management protocol for other considerations.
      9. Consider anxiety relief.
         a. Diazepam 2-10 mg IV/IO, or
         b. Midazolam
            i. Adult:
               a) 0.2 mg/kg of a 5 mg/mL concentration IN, or
               b) 2 mg increments IV/IO to a maximum dose of 0.1 mg/kg or 10 mg (whichever is less) or
               c) 5 mg IM; may repeat once in 10-15 minutes.
            ii. Pediatric:
               a) 0.2 mg/kg of a 5 mg/mL concentration IN, to a maximum dose of 5 mg, or
b) 0.2 mg/kg IM, to a maximum of 5 mg, or
c) 0.1 mg/kg IV slowly over 2 minutes in no greater than 2 mg increments not to exceed 5 mg.
d) Contact Mary Bridge Base Station for direction if unsure.

10. Consider transport from the scene to Harborview if burn is:
   a. > 20% 2nd or 3rd degree burns TBSA in any patient, or
   b. >10% 2nd or 3rd degree burns TBSA in patients ≤ 8 or > 65 years old, or
   c. Involving face, hands, feet, genitalia, perineum, or major joints.

B. Electrical.
   1. Ensure source is deactivated.
   2. Apply dry, sterile non-adherent dressings and/or clean sheets.
   3. Elevate burned extremities on pillows above level of the heart and monitor distal pulses.
   4. Initiate fluid resuscitation with large bore IV(s) and warmed NS or LR.
      a. Use the Parkland Formula to calculate IV drip rate as fluid resuscitation in the burn patient is paramount. 4 mL x kg x % of 2nd and 3rd degree body surface area burned. Electrical injuries use 4 mL for Adults and Pediatrics.
      b. Half of this calculated total mLs will be given in the first 8 hours from the time the patient was burned, so the drip rate per hour must be calculated on that.
   5. Intubate PRN, insert an NG/OG tube if patient is intubated.
   6. Acquire 12-lead ECG. Monitor ECG/treat dysrhythmias according to AHA Handbook when appropriate.
   7. Consider transport from the scene to Harborview if burn is:
      a. >20% 2nd or 3rd degree burns TBSA in any patient, or
      b. >10% 2nd or 3rd degree burns TBSA in patients ≤ 8 or > 65 years old, or
      c. Involving face, hands, feet, genitalia, perineum, or major joints.

C. Chemical (Consult Dept. of Transportation Emergency Response Guidebook).
   1. Avoid self-contamination.
   2. Remove all clothing.
   3. Remove constricting jewelry, and annotate on PCR to whom the jewelry was given.
   4. Dry powder; brush off if needed.
   5. Flush copiously with water.
   6. Elevate burned extremities on pillows above level of the heart and monitor distal pulses. Avoid spreading contamination on adjacent tissue.
   7. Attempt to identify chemical if possible, and/or take a picture of the container.
   8. Intubate PRN, insert an NG/OG tube if patient is intubated.
   9. Consider transport from the scene to Harborview if burn is:
      a. > 20% 2nd or 3rd degree burns TBSA in any patient, or
      b. >10% 2nd or 3rd degree burns TBSA in patients ≤ 8 or > 65 years old, or
      c. Involving face, hands, feet, genitalia, perineum, or major joints.
XII. Crush Injury Syndrome (CIS)/Traumatic Rhabdomyolysis (TR).

It is imperative that patients be pretreated before extrication or movement, therefore assessment of extremities (in the position found) for symptoms of CIS/TR must be accomplished initially. A patient pinned or entrapped with at least one major limb having arterial circulatory compromise for at least 4 hours should be considered for CIS/TR. Patients with CIS/TR may not survive if treatment is not initiated before removal from the situation.

A. Manage airway as indicated. If RSI is necessary, do not use succinylcholine; consider vecuronium 0.1 mg/kg IV/IO or rocuronium 1 mg/kg IV/IO.

B. Administer O₂ with NRB mask at 10-15 LPM.

C. Give albuterol 2.5 mg in 3 mL NS SVN continuously.

D. Administer IV: 1000 mL NS with sodium bicarbonate 100 mEq (label bag) mixed in. Volume replacement and pre-alkalization should take place immediately after CIS identified. Set drip rate to infuse at 1500 mL/hour.

E. Monitor ECG/treat dysrhythmias according to AHA Handbook when appropriate.

F. Stabilize excitable cardiac tissue with calcium gluconate 10%, 3 g IV/IO or calcium chloride 10%, 1000 mg (1g) IV/IO push over 5 minutes. Consider 2nd dose after 20 minutes. Don’t mix in the same IV line as the bicarb drip.

G. Consider midazolam 2 mg increments IV/IO to a maximum dose of 0.1 mg/kg or 10 mg for sedation.

H. Refer to Pain Management protocol for other considerations.

I. If prolonged extrication (longer than 4 hours), consult Base Station for other medication considerations.

J. For pediatric patients contact MBCH for treatment regimen.
CARDIAC EMERGENCIES

I. General.
   A. Follow General Principles/Routine Care protocol unless otherwise indicated.
   B. Limit scene time for non-cardiac arrest patients, with goal of ≤ 15 minutes.
   C. Acquire 12-lead ECG as quickly as possible (i.e. goal 5-10 minutes from arrival at scene).
      1. If suspected STEMI patient, notify Receiving Facility immediately of ‘Code STEMI’.
      2. Obtain sequential 12-leads during transport.
   D. Administer supplemental oxygen for chest discomfort and possible acute coronary syndrome (ACS) patients if oxygen saturation is < 94% or evidence of respiratory distress: 4L/minutes per nasal cannula; titrate to maintain SaO₂ ≥ 94% and ≤ 99%.
   E. Initiate CPR and defibrillate when indicated, referring to current AHA Emergency Cardiovascular Care (ECC) handbook.
   F. Allow patient to assume a position of comfort.
   G. Repeat vital signs every 5 minutes.
   H. If automatic implantable cardioverter defibrillator (AICD) is in place, follow appropriate arrhythmia protocol.
      I. Initiate IV(s) NS, titrate to BP > 90/S, or saline lock.
      J. Consider NG/OG tube in cardiac arrest; preferred in pediatric cardiac arrest.

II. Chest Discomfort and Possible Acute Coronary Syndrome (ACS).
   A. Give non-enteric coated aspirin for chewing and swallowing; 162 mg total if patient is already taking aspirin (or took aspirin prior to EMS arrival), 324 mg total if not.
   B. Give nitroglycerin 0.4 mg SL tablet or L/SL spray (EMT must use the patient’s own nitroglycerin).
      1. May be given every 5 minutes until chest pain free as long as systolic BP remains > 100.
      2. Use with caution if HR < 50 or > 100.
      3. Limit systolic BP drop of 10% of baseline or 25% if hypertensive.
      4. Avoid use of NTG if erectile dysfunction drugs or pulmonary hypertension drugs, such as sildenafil or tadalafil, were used within 48 hours.
   C. Refer to Pain Management protocol for other considerations.
   D. Follow Prehospital Cardiac Triage Destination Procedures in Appendix C.
   E. Any pharmacologic treatment for pediatrics (< 18 years old) requires contact with Mary Bridge Base Station.
III. Cardiac Arrest Management.
   A. Follow AHA guidelines.
   B. Post-resuscitation management:
      1. If a patient regains sustained ROSC, acquire a 12-lead ECG as soon as possible and immediately notify the Receiving Facility of a ‘Code STEMI’ if appropriate.
      2. Post-cardiac arrest patients with ROSC should be transported to a cardiac center.
PAIN MANAGEMENT

I. General.
   A. Assess pain level in all patients with discomfort and treat accordingly.
      1. Obtain numeric pain level (0-10 scale) if able.
      2. See Appendix H for Wong-Baker FACES Pain Rating Scale if language barriers exist.
   B. Cautions for pain management.
      1. GCS < 15.
      2. Symptomatic hypotension < 90/S.
      3. Allergy to pain medication selected.
      4. Hypoxia (SpO2 < 90%) after supplemental oxygen.
      5. Signs of hypoventilation, consider EtCO2 monitor.
   C. Reassess all patients during pain management medication administration.

II. Medication Administration.
   A. Adult.
      1. Pain management options for Non-ACS patients:
         a. Morphine sulfate up to 0.1 mg/kg every 5-10 minutes titrating to effect, to a maximum dose of 20 mg, IM/slow IV push /IO, or
         b. Fentanyl 25 mcg to 100 mcg increments IN/IM/IV/IO every 5-10 minutes titrating to effect, to a maximum dose of 300 mcg.
         c. Ketamine 0.2 mg/kg IN/IM/IV/IO every 10 minutes as needed for refractory pain.
         d. Nitrous oxide.
         *EMT e. Acetaminophen 500-1000 mg PO.
         *EMT f. Ibuprofen 400-800 mg PO with 8 ounces of water.
      2. Pain management for ACS patients:
         a. STEMI:
            i. Morphine sulfate 2-4 mg IV; may give additional doses of 2-8 mg IV at 5-15 minute interval up to 10 mg if systolic BP >100; or
            ii. Fentanyl 25-50 mcg IV; may repeat every 5-10 minutes, or 50 mcg IN every 5 minutes up to 100 mcg if systolic BP >100.
         b. NSTEMI-ACS:
            i. Morphine sulfate 1-5 mg IV only if symptoms not relieved by nitrates or if symptoms recur up to 10 mg if systolic BP >100; or
            ii. Fentanyl 25-50 mcg IV; may repeat every 5-10 minutes, or 50 mcg IN every 5 minutes up to 100 mcg if systolic BP >100.
      3. Contact Base Station for additional doses.
   B. Pediatric.
      1. Pain management options:
         a. Morphine sulfate up to 0.1 mg/kg IM/IV/IO every 5-10 minutes, titrating to effect, not to exceed 10 mg, or
         b. Fentanyl 1-2 mcg/kg IN/IM/IV/IO every 5-10 minutes, titrating to effect, to a maximum dose of 100 mcg.
c. **Ketamine 0.2 mg/kg IN/IM/IV/IO every 10 minutes as needed for refractory pain.**

d. **Nitrous oxide.**

*eMT* e. **Acetaminophen 15 mg/kg PO or by rectal suppository.**

*eMT* f. **Ibuprofen (6 months-12 years old) 10 mg/kg PO.**

**2. Contact Base Station for additional doses.**
RESPIRATORY EMERGENCIES

I. General.
   A. Follow General Principles/Routine Care protocol unless otherwise indicated.
   B. Assist patient to position of comfort. Consider early transport.
   C. EMT may assist with patient’s own metered dose inhaler, as indicated to a total of 5 doses, then call Base Station for medical direction.
   D. Initiate IV(s) NS/saline lock. Titrate to BP > 90/S.
   E. Monitor ECG/pulse oximetry, EtCO₂, temperature, if available.

II. Adult Respiratory Distress Acuity Reference:
   A. Mild distress: mild dyspnea at rest, able to speak full sentences.
   B. Moderate distress: moderate dyspnea, speaks in broken sentences, normal mentation, orthopnea or tripoding.
   C. Severe distress: one word sentences, diaphoretic, altered mental status (AMS).

III. Difficulty Breathing.
   A. If congestive heart failure suspected:
      1. If patient is in mild distress and BP > 100/S:
         *EMT Give nitroglycerin 0.4 mg SL tablet or L/SL spray; may repeat every 3-5 minutes, if patient remains symptomatic, to a maximum of 2 mg. EMT must use the patient’s own nitroglycerin.
      2. If patient is in moderate distress, or severe distress without AMS and BP > 100/S:
         *EMT a. Give nitroglycerin 0.4 mg SL tablet or L/SL spray; may repeat with 0.4 mg SL tablet or 1-2 L/SL sprays every 3-5 minutes, if patient remains symptomatic, to a maximum of 2 mg. EMT must use the patient’s own nitroglycerin.
            b. Apply CPAP as quickly as possible.
            c. If CPAP is not tolerated then consider anti-anxiety medication, midazolam 2 mg increments to a maximum dose of 0.1 mg/kg or 10mg (whichever is less) IV or diazepam 5-10 mg IV.
      3. If patient is in severe distress, with altered mental status: immediately ventilate with BVM and consider RSI.
      4. Consider albuterol for wheezing, 2.5 mg in 3 mL NS via SVN; may repeat once.
      5. Consider dopamine 10 mcg/kg/minute IV/IO. Titrate to maintain BP > 90/S.
      6. Consider possibility of acute coronary syndrome/acute myocardial infarction.
         a. Obtain 12-lead ECG as quickly as possible.
         b. Give aspirin if history suggests possible acute coronary syndrome or acute MI (see Cardiac Emergencies protocol).
B. If asthma or COPD suspected in adults:

1. If patient is in mild and moderate distress:
   a. Give albuterol 2.5 mg with Atrovent 0.5 mg in 3 mL NS via SVN; may repeat combination of albuterol and Atrovent once.
   b. Additional doses of albuterol 2.5 mg in 3 mL NS can be given continuously.
   c. Initiate IV NS titrate to BP > 90/S.
   d. Give methylprednisolone 125 mg IV or dexamethasone 0.6 mg/kg PO/IV up to 10 mg.
   e. Consider CPAP.

2. If patient is in severe distress, without altered mental status, and BP > 100/S:
   a. Apply CPAP as quickly as possible.
   b. If CPAP is not tolerated then consider anti-anxiety medication, midazolam 2mg increments to a maximum dose of 0.1 mg/kg or 10mg (whichever is less) IV, or diazepam 5-10 mg IV.
   c. Initiate IV NS titrate to BP > 90/S.
   d. Give methylprednisolone 125 mg IV or dexamethasone 0.6 mg/kg PO/IV up to 10 mg.
   e. In asthmatics:
      i. Give epinephrine 1:1000 0.3 mg IM; may repeat in 20 minutes.
      ii. Give magnesium sulfate 2 gm in 10 mL NS, IV/IO. Infuse over 15 minutes.

3. If patient in severe distress develops altered mental status or cardiovascular compromise (bradycardia, hypotension, etc.), then BVM and consider RSI.

4. Additional consideration for suspected COPD patients:
   a. Maintain pulse oximetry saturation at 90-94%.
   b. If EtCO₂ increases, and/or patient becomes drowsy, consider reducing oxygen administration level, and begin BVM ventilation as necessary.

C. If asthma suspected or wheezing present in pediatrics:

1. If the pediatric patient is in mild or moderate distress:
   a. Give albuterol 2.5 mg with Atrovent 0.25 mg in 3.0 mL NS SVN; may repeat once. Use blow-by if < 5 years old.
   b. Give methylprednisolone 1-2 mg/kg IV up to 125 mg per dose or dexamethasone 0.6 mg/kg PO/IV up to 10 mg.

2. If the pediatric patient is in severe distress:
   a. Give epinephrine 0.01 mg/kg of 1:1000 IM, not to exceed 0.3 mg total.
   b. Initiate IV NS, give 20 mL/kg bolus; repeat as needed.
   c. Give magnesium sulfate 50 mg/kg in 10 mL NS, IV/IO. (Max dose: 2 gm). Infuse over 15 minutes.
   d. Give methylprednisolone 2 mg/kg IV/IO up to 125 mg per dose or dexamethasone 0.6 mg/kg PO/IV/IO up to 10 mg.
e. If the patient develops altered mental status or cardiovascular compromise (bradycardia, fatigue, hypotension, etc.), then BVM and consider RSI.

D. If pediatric croup suspected and patient has stridor at rest:

1. Assist patient to position of comfort as upright as possible.
2. Administer blow-by oxygen.
   a. 2 mL (undiluted) for patients < 6 years old.
   b. 3 mL (undiluted) for patients ≥ 6 years old.
4. Give dexamethasone 0.6 mg/kg PO up to 10 mg.
   a. Give Zofran 4 mg ODT prior to dexamethasone.

E. Upper airway obstruction suspected.

1. If foreign object, attempt relieving obstruction according to AHA Handbook.
2. If unable to relieve obstruction, visualize airway with laryngoscope.
   a. If obstruction visible superior to vocal cords use Magill forceps to remove object.
   b. If obstruction visible beyond vocal cords, perform a surgical or needle cricothyrotomy.
   c. If obstruction is not visible beyond vocal cords, intubate to push obstruction until you can ventilate.

F. Upper airway edema (i.e. epiglottitis, angioedema).

1. Decrease anxiety.
2. Provide O₂ if tolerated, use blow-by if necessary.
3. Assist patient to position of comfort as upright as possible.
4. If in impending respiratory failure, lay patient down and ventilate with BVM and supplemental O₂.
5. Consider early intubation.
6. If patient is breathing, consider epinephrine:
   a. Adult: 1:1000 0.3 mg IM or 1:10,000 0.3 mg IV.
   b. Pediatric: 1:1000 0.01 mg/kg IM or 1:10,000 0.01 mg/kg IV/IO, up to 0.3 mg.
7. If unable to ventilate, perform needle or surgical cricothyrotomy.
8. Rapidly transport.
MEDICAL EMERGENCIES

I. General.
   A. Follow General Principles/Routine Care protocol unless otherwise indicated.
   B. Check blood glucose level.
   C. Initiate IV NS/saline lock. Titrate to BP > 90/S.
   D. Monitor ECG. Acquire 12-lead ECG and treat dysrhythmias according to AHA Handbook when appropriate.
   E. Consider blood draw when indicated.
   F. Verify medications taken by the patient.

II. Altered Level of Consciousness/Unconsciousness.
   A. If increased intracranial pressure suspected (widening pulse pressure, decreased HR and increased BP, posturing, blown pupil, change in respiratory pattern):
      1. Ventilate at 20/minute for adults. Keep pulse oximeter ≥ 95%. Keep EtCO₂ level between 30-35 mmHg if able to monitor.
      2. Position patient with head of bed elevated approximately 30 degrees. When spinal precautions must be taken, elevate head end of backboard to approximately 30 degrees.
      3. Transport ASAP.
   B. If diabetic history with medications and able to maintain airway:
      1. Adult and Pediatric: Administer oral glucose or simple sugar (e.g. honey, cake frosting, orange juice with 2-3 teaspoons of sugar) if glucose level is low or unknown.
   C. If diabetic history, signs and symptoms of hypoglycemia, but unable to maintain airway:
      1. Adult: Titrate and/or repeat until patient at baseline and blood glucose remains > 80.
         a. Give 50 mL D₅₀W (25 gm) IV push, or
         b. Give 250 mL D₁₀W (25 gm) IV, or
         c. If unable to secure an IV, give glucagon 1 mg IM, or
         d. If unable to secure an IV and glucagon is unavailable or contraindicated, give D₅₀W 50 mL (25 gm) IO or D₁₀W 250 mL (25 gm/250 mL) IO.
      2. Pediatric: Titrate and/or repeat until patient at baseline and blood glucose remains > 60.
         a. Give 50% dextrose (0.5 gm/mL) (patient ≥ 8 years old); give 1 mL/kg IV, or
         b. Give 25% dextrose (0.25 gm/mL); give 2 mL/kg IV, or
         c. Give 10% dextrose (0.1 gm/mL); give 5 mL/kg IV, or
         d. Give 5% dextrose (0.05 gm/mL); give 10 mL/kg IV if volume tolerated.
         e. Maximum concentration for newborn: 12.5% (0.125 gm/mL).
f. If unable to secure an IV: give glucagon; children ≤ 20 kg give 0.5 mg IM, children > 20 kg give 1 mg IM.

D. If actively seizing with a perfusing rhythm and normal glucose level:

1. Protect patient from injury.
2. Adult:
   a. 1st choice - May use midazolam, 10 mg for > 40 kg, single dose IM, or
   b. 2nd choice - May use midazolam, 0.2 mg/kg of a 5 mg/mL concentration IN, or
   c. 3rd choice - May use midazolam, 2 mg increments IV to a maximum dose of 0.1 mg/kg or 10 mg (whichever is less), or
   d. 4th choice - May use diazepam, 0.2 mg/kg/dose not to exceed 10 mg IV push; may repeat dose once.
   e. Wait 1-2 minutes between IN/IV doses to evaluate response.
   f. If patient is pregnant or postpartum, give magnesium sulfate 4 gm slow IV push over 5 minutes.

3. Pediatric:
   a. 1st choice - May use midazolam, 5 mg for 13-40 kg, single dose IM, or
   b. 2nd choice - May use midazolam, 0.2 mg/kg of a 5 mg/mL concentration IN, to a maximum dose of 10 mg, or
   c. 3rd choice - May use midazolam, 0.1 mg/kg IV slowly over 2 minutes in no greater than 2 mg increments not to exceed 5 mg, or
   d. 4th choice - May use diazepam, 0.2 mg/kg/dose not to exceed 10 mg IV push; may repeat dose once.
   e. Wait 1-2 minutes between IN/IV doses to evaluate response.
   f. 5th choice - May use diazepam rectally: 0.5 mg/kg not to exceed 20 mg. Wait at least 5 minutes before giving a second dose.

   Contact Mary Bridge for more repeated doses.
   i. Administer rectal dose with 3 mL syringe (without needle) inserted as far as possible.
   ii. May administer patient’s own Diastat when available.

*EMT g. For temperature > 101.0 give acetaminophen 15 mg/kg PO if child is able to maintain airway and swallow without difficulty. May give acetaminophen 15 mg/kg per rectal suppository if child is unable to swallow or maintain airway, or

*EMT h. If child > 6 months and has had maximum dose of acetaminophen less than 4 hours ago and still has temperature > 101.0 consider ibuprofen 10 mg/kg PO if child is able to maintain airway and swallow without difficulty.

E. If inadequate breathing and suspicious of narcotic overdose:

1. Adult: Consider naloxone 0.4-2 mg IN/IM/IV/OET; dose may be repeated every 2-3 minutes, up to 10 mg or until patient begins to maintain airway and breathe adequately.
2. **Pediatric:** Consider **naloxone 0.1 mg/kg IN/IM/IV/IO/ET up to 2 mg/dose; dose may be repeated every 2-3 minutes, up to 10 mg or until patient begins to maintain airway and breathe adequately.**

3. **Adult/Pediatric:**
   a. If no response is observed after 10 mg, consider different etiology of inadequate breathing.
   * b. Higher doses may be ordered if no initial response.

F. Overdose.

1. All overdoses that are unstable/ALOC/AMS shall be dispatched as ALS.
2. Consider consulting with Poison Control for advice, 800-709-0911.
3. If overdose/ingestion suspected, bring in all containers, pill bottles, emesis.
4. *For suspected tricyclic overdose with wide QRS, give sodium bicarbonate 1.0 mEq/kg IV/IO. **Pediatric:** 1.0 mEq/kg IV/IO.*
5. For suspected beta blocker OD, give glucagon 3-10 mg IV slowly over 3-5 minutes for symptomatic bradycardia. *For pediatric patients contact Mary Bridge Base Station for direction.*

G. Dystonic reaction/extrapyramidal effects.
   *Consider diphenhydramine 25-50 mg IM/IV.*

III. Abdominal Pain/Vomiting.

A. Position of comfort.

B. Consider *ondansetron* (Zofran).

1. **Adult:** 8 mg oral disintegrating tablet (ODT) or 4 mg IM/or slow IV push.
2. **Pediatric:**
   a. > 11 years old: 8 mg ODT or 4 mg slow IV push. *Contact Mary Bridge for additional doses.*
   b. 4-11 years old: 4 mg ODT or 0.15 mg/kg up to 4 mg slow IV push. *Contact Mary Bridge for additional doses.*

C. Refer to Pain Management protocol for other considerations.

IV. Renal Dialysis Patients with Suspected Hyperkalemia.

If tall, peaked T waves, prolongation of QRS, or low P waves with bradycardia:

A. *Give calcium chloride 10%, 1000 mg (1 g) IV/IO over 5 minutes; may be repeated as needed in 20 minutes, or*

B. *Give calcium gluconate 10%, 3 g IV/IO over 5 minutes; may be repeated as needed in 20 minutes.*

C. *Give sodium bicarbonate 1 mEq/kg IV/IO.*

D. *Give albuterol 2.5 mg in 3 mL NS SVN continuously.*

V. Stroke Emergencies (See Appendix D).

A. Check temperature and pulse oximetry (if possible).

B. Give nothing by mouth unless hypoglycemic.
C. Perform B.E.F.A.S.T. Assessment (Balance/Eyes/Face/Arm/Speech/Time last known well). If one component is positive, suspect a stroke.

D. Perform Stroke Severity Score assessment per Appendix D to determine destination.

E. Refer to Stroke Triage Procedures in Appendix D.

F. If stroke is suspected notify Receiving Facility of “Code Neuro” ASAP.

G. Limit scene time, with a goal of < 15 minutes.

H. Transport.
   1. Notify the Receiving Facility of “Code Neuro” ASAP while in transit, if not already done.
   2. Position patient with head of bed elevated approximately 30 degrees.
   3. Transport according to Stroke Triage Procedures in Appendix D.
   4. Consider air transport when appropriate.

VI. Sepsis Emergencies (See Appendix D).

VII. Vasogenic/Neurogenic Shock, or Hypotension of Unknown Etiology.
   A. Immobilize based on mechanism /nature of illness.
   B. Transport patient in the supine position as soon as possible.
   C. Keep patient warm by controlling the ambulance temperature (use heat packs and reflective blankets PRN).
   D. Initiate large bore IV(s) or IO(s) with warm NS or LR.
      1. Adult: Give 250-500 mL fluid challenge if BP < 90/S; consider additional fluid boluses depending upon clinical impression.
      2. Pediatric: Push 20 mL/kg; may repeat x 2.
   E. Profound Bradycardia or Hypotension:
      1. Give epinephrine-push-dose IV-Mix 1 mL of 1:10,000 epi with 9 mL NS in a 10mL syringe (10 mcg/mL) and administer 0.5-2 mL of push-dose epi every 2-5 minutes; or
      2. Give epinephrine infusion IV-Mix 1 mg in 250 mL NS; administer at 2-10 mcg/minute (0.5 mL-2.5 mL), titrating to effect.
   F. Consider dopamine 10 mcg/kg/minute IV/IO. Titrate to maintain BP > 90/S.

VII. Suspected Intoxication.

If the patient does not meet the Administrative Policy Decision-Making Capacity Checklist or Transport Policy criteria, then contact Base Station or consider transport to the nearest Receiving Facility.
ENVIRONMENTAL EMERGENCIES

I. General.
   A. Call for specialized assistance if indicated. Remove patient from hazardous environment if not jeopardizing EMS personnel. Notify hospital if contamination suspected.
   B. Follow General Principles/Routine Care protocol unless otherwise indicated.
   C. Initiate IV NS/saline lock. Titrate to BP >90/S.
   D. Monitor ECG/treat dysrhythmias according to AHA Handbook when appropriate.

II. Toxic Inhalations.
   A. If wheezing:
      1. Adult: give albuterol 2.5 mg with Atrovent 0.5 mg in 3 mL NS SVN; may repeat combination of albuterol and Atrovent once.
         a. Additional doses of albuterol 2.5 mg in 3 mL can be given continuously.
      2. Pediatric: Use blow-by if < 5 years old.
         a. Give albuterol 2.5 mg with Atrovent 0.25 mg in 3 mL NS SVN; may repeat once.
         b. Additional doses of albuterol 2.5 mg in 3 mL can be given continuously.
   B. Carbon Monoxide (CO).
      1. Remove patient from CO environment.
      2. Monitor CO readings when able.
      3. If readings are elevated (> 5% in a non-smoker and > 10% in a smoker), or CO poisoning is suspected, ensure O₂ delivery is high flow at 100%.
      4. Transport patient to the nearest Receiving Facility for assessment, stabilization, then possible referral to a hyperbaric chamber.
   C. Treat for cyanide poisoning any person removed from or having high potential for unprotected exposure to fire gasses and smoke.
      1. Remove the patient from the smoke filled environment.
      2. Ensure O₂ delivery is high flow at 100%.
      3. If possible, draw blood tubes to be used for analysis prior to administration of Cyanokit-hydroxocobalamin.
      4. Administer an MPD approved cyanide poisoning antidote agent (Cyanokit-hydroxocobalamin) if available.

III. Cold injuries.
   A. Handle gently.
   B. Remove wet clothing, dry as soon as possible, warm patient by using warm blankets, heating pads and/or reflective covers.
C. Administer warm IV solution if indicated.

IV. Heat injuries.
   A. Move to a cool environment, remove clothing.
   B. Institute cooling measures (fan, mist with water, ice packs) while rapidly transporting.
   C. Administer cool IV solution if indicated.

V. Drowning.
   A. Remove wet clothing, dry as soon as possible, warm patient by using warm blankets.
   B. Watch for vomiting, prevent aspiration.

VI. Underwater diving accidents.
   A. Transport in horizontal supine position.
   B. Consider horizontal lateral recumbent if vomiting.
   C. Transport patient to the nearest Trauma Receiving Facility for assessment, stabilization, and then possible referral to a hyperbaric chamber.

VII. Envenomations (Animal/Insect Bites, Stings).
   A. Identify and retain the source specimen if possible.
   B. For snake bite: Keep site at heart level or below. Apply a pressure immobilization bandage (i.e. ace bandage) around the entire length of the involved extremity.
   C. Give epinephrine for anaphylaxis (see Section X).
   D. Consider diazepam 2-10 mg IV for muscle spasms.

VIII. Organophosphate/Nerve Agent Poisoning (Symptomatic).
   A. Decontaminate. Remove clothing. Protect against secondary contamination.
   B. Adult:
      1. If not using a NAAK (e.g. DuoDote/Mark I) and patient is unresponsive, give atropine 1 mg IV every 1 minute, not to exceed 10 mg until symptoms clear.
      2. If using a NAAK (e.g. DuoDote/Mark I):
         a. For mild to moderate symptoms, give one dose of atropine and pralidoxime chloride (2-PAM) IM.
         b. If signs or symptoms are still present after 5-10 minutes (depending on severity), repeat a second dose of atropine and 2-PAM IM.
         c. If signs or symptoms are still present after 5-10 minutes (depending on severity), repeat a third dose of atropine and 2-PAM IM.
         d. For severe symptoms, give three doses (sets) of atropine and 2-PAM IM in rapid succession.
      3. Consider intubation.
C. Pediatric: Start with giving atropine, 0.5 mg IV and repeat as above, not to exceed 10 mg.

D. Notify the Receiving Facility of contamination as soon as possible.

IX. Allergic Reaction (not anaphylactic shock; Anaphylactic shock – see Section X).
   Localized or systemic reaction involving a single organ system and hemodynamically stable.

A. Adult:
   1. Consider epinephrine 1:1000 0.3-0.5 mg IM if airway involvement is suspected.
   2. Give albuterol 2.5 mg with Atrovent 0.5 mg in 3 mL NS via SVN; may repeat combination of albuterol and Atrovent once.
   3. Additional doses of albuterol 2.5 mg in 3 mL NS can be given continuously.
   4. Give diphenhydramine 25-50 mg deep IM or slow IV; may repeat. Maximum dose 100 mg.
   5. Consider repeating epinephrine 1:1000 0.3 mg IM after 5-10 minutes if airway is involved and there is no improvement, or after 15-20 minutes if other signs such as urticaria persist.
   6. Consider methylprednisolone 125 mg IV.

B. Pediatric:
   1. Give epinephrine 1:1000 0.01 mg/kg IM. Maximum 0.3 mg.
   2. Give albuterol 2.5 mg with Atrovent 0.25 mg in 3 mL NS SVN; may repeat once.
   3. Additional doses of albuterol 2.5 mg in 3 mL can be given continuously.
   4. Give diphenhydramine 1-2 mg/kg deep IM or slow IV/IO, to a maximum dose of 50 mg.
   5. Consider repeating epinephrine after 5-10 minutes if airway is involved and there is no improvement, or after 15-20 minutes if other signs such as urticaria persist.
   * 6. Consider methylprednisolone 2 mg/kg IV.

X. Anaphylactic Shock.
   Multiple organ system reaction or hemodynamically unstable.

A. Consider early intubation if patient has signs of airway compromise.

B. Initiate large bore IV(s) or IO(s) with NS or LR.
   1. Adult: Give 250-500 mL fluid challenge if BP < 90/S; may repeat until BP > 90/S.
   2. Pediatric: Push 20 mL/kg; may repeat x 2.

C. Give epinephrine.
   1. Intramuscular:
      a. 1:1000 0.3-0.5 mg IM for adults and pediatric patients ≥ 66 pounds.
      b. 1:1000 0.15 mg IM pediatric patients < 66 pounds.
2. Intravenous/Intraosseous:
   a. Adult: 1:10,000 0.5 mg IV/IO.
   b. Pediatric: 1:10,000 0.3 mg IV/IO.

3. Endotracheal:
   a. Adult: 2-2.5 mg of 1:1000 mixed with 10 mL NS.

4. Consider repeated doses as necessary.

D. Consider diphenhydramine.
   1. Adult: 25-50 mg deep IM or slow IV/IO; may repeat. Maximum dose 100 mg.
   2. Pediatric: 1-2 mg/kg deep IM or slow IV/IO, to a maximum dose of 50 mg.

E. Consider methylprednisolone.
   1. Adult: 125 mg IV/IO.
   2. Pediatric: 2 mg/kg IV/IO.

F. Consider dopamine 10 mcg/kg/minute IV/IO. Titrate to maintain BP > 90/S.

G. Consider albuterol.
   1. EMT may assist with patient’s own metered dose inhaler, as indicated to a total of 5 doses, then call Base Station for medical direction.
   2. Adult: 2.5 mg in 3 mL NS SVN can be given continuously.
   3. Pediatric: Use blow-by if < 5 years old. 2.5 mg in 3 mL NS SVN can be given continuously.

H. Consider glucagon for anaphylactic patient on beta blockers who is unresponsive to epinephrine.
   1. Adult: 1-3 mg IV.
   2. Pediatric: contact Mary Bridge Base Station for direction.
BEHAVIORAL EMERGENCIES

I. General.
   A. Follow General Principles/Routine Care protocol unless otherwise indicated.
   B. Assure scene safety, if not safe then retreat and stage until scene is secured by Law Enforcement.
   C. If a show of force is necessary to render care, contact Law Enforcement.
   D. Scan for signs of items contributing to crisis or that could potentially be used as a weapon.
   E. One EMT or Paramedic should assume control of situation.
      1. Speak slowly in a calm, quiet voice; maintain eye contact; move slowly.
      2. Answer questions honestly and briefly.
      3. Be alert as patient behavior can change very quickly.
   F. Assess patient and treat life threats.
   G. Provide routine care.
      1. Airway, O₂ (assess if behavior is due to hypoxia).
      2. Vital signs (assess if behavior is due to hypovolemia).
      3. Check blood glucose level (assess if behavior is due to hypoglycemia).
      4. Assess for stroke.
   H. Stay with the patient at all times and maintain a constant visual observation.
I. Violent patients judged as unsafe for transport (because of possible injury to patient or EMS personnel) may be sedated by the paramedic. If sedated, the patient must be closely monitored during transport. Do serial vital signs assessment, and place the patient on EtCO₂ monitor if available. Suggested regimens for sedation:
   1. Diazepam 5-10 mg IM/IV. Call Mary Bridge for pediatric dosing.
   2. Or Midazolam:
      a. Adult:
         i. Give 0.2 mg/kg of a 5 mg/mL concentration IN, or 2 mg increments to a maximum dose of 0.1 mg/kg or 10mg (whichever is less) IM/IV.
         ii. Wait 1-2 minutes between IN/IV doses to evaluate response.
         iii. Give half doses if patient is > 60 years old.
      b. Pediatric:
         i. Give 0.2 mg/kg of a 5 mg/mL concentration IN, or 0.2 mg/kg IM, or 0.1 mg/kg IV slowly over 2 minutes in no greater than 2 mg increments not to exceed 5 mg.
         ii. Wait 1-2 minutes between IN/IV doses to evaluate response.
   3. Or Ketamine 4 mg/kg IM; or 2 mg/kg IV/IO. Call Mary Bridge for pediatric dosing.
J. Restrain only if necessary for your protection or that of the patient, not for staff convenience.

1. Use the minimum physical restraint required to accomplish necessary patient care and still ensure safe transport.

2. Use appropriate device to perform the restraint: soft restraints, gauze roll, triangular bandages, commercial type restraint.

3. If locking devices (handcuffs, flex cuffs, zip ties) were applied by Law Enforcement to ensure patient safety, Law Enforcement personnel must accompany EMS personnel on transport.

4. The patient will only be immobilized on the ambulance gurney or appropriate equipment in the supine, fowlers or lateral recumbent position.

5. At no time will the patient be restrained in the prone position.

6. At no time will any piece of equipment (backboard, scoop stretcher, etc.) be placed over the patient for any reason.

7. A protective facemask may be placed over the patient’s mouth/nose if the patient is attempting to bite or spit at EMS personnel.

8. The patient will be continuously monitored for any type of medical compromise.

9. ABCs, vital signs, level of consciousness and circulation in extremities shall be assessed and documented at least every five minutes.

10. At no time will the restrained patient be left alone or unattended.

11. Documentation should include:
    a. Mental status of the patient.
    b. Lack of response to verbal control.
    c. The need for restraint.
    d. The method and process of restraint used.
    e. The type of restraint used.
    f. The patient’s response to restraint and condition while restrained.
    g. Any injuries to the patient or EMS personnel resulting from restraint efforts.
    h. Patient position during treatment and transport.
    i. Methods of monitoring the restrained patient during transport.
    j. Vital signs.
    k. Distal extremity neurovascular checks.
    l. Patient status at the time of transfer of care at the hospital.

II. Types of behavioral emergency conditions.

A. Psychological/psychiatric crisis:

   Panic, anxiety, agitation, bizarre behavior, hallucinations, delusions, danger to self or others.

B. Suicide risk:

   Depression, suicidal gestures or thoughts, substance abuse, multiple losses, giving away possessions.
C. Excited Delirium syndrome (ExDs) in an agitated patient.

1. Consider ExDs with any or all of the following patient presentations:
   a. Extremely violent/aggressive behavior.
   b. Constant or near constant physical activity.
   c. Does not respond to police presence.
   d. Attracted to reflective objects.
   e. Attracted to bright lights and/or loud sounds.
   f. Naked or inadequately clothed.
   g. Is hot to touch.
   h. Rapid breathing.
   i. Profuse sweating.
   j. Keening (unintelligible animal noises).
   k. Extreme tolerance to pain.
   l. Excessive strength (out of proportion).
   m. Does not tire despite heavy exertion.

2. If the call is dispatched as ExDs or symptoms suggest ExDs, coordinate with Law Enforcement to develop a sedation and/or patient control plan.

3. If the call is upgraded to ExDs once on scene, ensure crew and bystander safety while awaiting Law Enforcement arrival, then coordinate with Law Enforcement to develop a sedation and/or patient control plan.

4. Prepare sedative prior to making contact with the patient:
   a. Midazolam 10 mg IN/IM/IV, or
   b. Ketamine 4 mg/kg IM; or 2mg/kg IV/IO, or
   c. Diazepam 5-10 mg IM/IV.
   d. Call Mary Bridge for pediatric dosing.

5. All ExDs patients will be restrained (See Section I. above).
   a. Patient will not be removed from restraints until medically cleared or for resuscitative measures.
   b. Law Enforcement will accompany the patient to the hospital.

6. Take and document the patient’s behavior and temperature, then apply ice packs to facilitate cooling if hyperthermic, monitor for overcooling.

7. Establish an IV of NS as soon as feasible and check blood glucose. If unable to establish an IV and if the patient has an elevated body temperature and was extremely agitated prior to sedation, establish an IO.
   a. Administer NS IV fluids up to 2 liters. Cooled fluids, if possible, for the patient with an elevated body temperature.
   b. If extreme agitation is present prior to sedation and the patient has an elevated body temperature, administer Sodium Bicarbonate 50 mEq IV push for each liter of saline given, to a maximum of 100 mEq.
   c. If you have the ability to draw blood tubes- 20 mL red top, 10 mL gray top (x2), and 10 mL purple.

8. Manage the airway of a patient who has an elevated body temperature and was extremely agitated prior to sedation:
   a. Succinylcholine contraindicated in ExDs, use vecuronium or rocuronium.
   b. Monitor EtCO₂ if available.
9. Place patient on ECG monitor.

III. Transport.

A. Refer to the Transport Policy, Section V – Individual with a Mental Disorder Transport Guideline.

B. If the patient does not fall into the above guideline, consult with Base Station.

C. May transport to the Recovery Response Center.
   1. Call RRC (Appendix L).
      a. Identify yourself and explain that you have a patient who has been medically cleared in the field and is ready for transport to the RRC.
      b. Give clinical information.
   2. Inclusion criteria- consider the following for transport to RRC:
      a. Any patient with a psychiatric or behavioral health presentation who is ≥ 18 years old or emancipated.
      b. Patient with psychosis of unknown etiology (drugs vs. mental health) with a history of mental health problems.
      c. Patient with a mental health chief complaint who is cooperative and voluntarily/willing to go to the RRC.
      d. Patient with a mental health chief complaint referred by LE or Designated Mental Health Professional (DMHP).
      e. The patient’s current condition cannot be explained by another medical issue and traumatic injury is not suspected.
      f. Patient has a normal level of consciousness, no medical physical conditions suspected.
      g. Suicidal patients who accept voluntary care or are detained by LE or DMHP.
      h. Vital signs parameters: HR 50-110, BP systolic 100-190 with diastolic less than 110, RR 12-24, Temperature 97-100.3°F, SPO2 > 92%, blood sugar 70-300.
      i. Patient has the ability to care for self, such as activities of daily living, as well as indwelling tubes, lines or catheters.
   3. Exclusion criteria- do not consider the following for transport to RRC:
      a. Suspected drug overdose or ingestion of unknown substance.
      b. Medically unstable patients.
      c. Patients who appear intoxicated/under the influence as their primary complaint.
      d. Patients in moderate/acute alcohol or drug withdrawal (abnormal vitals, tachycardia, dehydration, hallucinations, nausea & vomiting).
      e. Patients who were violent and required sedation.
      f. Pregnant patients.
      g. Patient with a loss of consciousness or seizure within the past 24 hours by patient history.
      h. Patients on anticoagulation medications who have any trauma, even minor.
4. Documentation of all findings, patient care and inclusion criteria must be made on a patient care report, and a copy of that report and all supporting LE/DMHP documents must be left at the RRC at the time of delivery.
I. Obstetrics (OB).

A. Childbirth – Woman in Labor.
   1. Follow General Principles/Routine Care guidelines, assessing vaginal area for crowning and signs of meconium.
   2. *Initiate IV with NS/LR for possible fluid replacement.*
   3. If not crowning, transport the mother on her left side to the most appropriate facility based on her history and gestational development of the fetus. (See Transport Policy, Section II tables).

B. Childbirth – Imminent Delivery.
   1. If crowning is present at time of examination, prepare for immediate delivery and assess for possible meconium.
   2. While coaching the mother, perform delivery making sure to prevent explosive delivery.
   3. Check for cord wrapped around the baby’s neck. If present, unwrap or clamp and cut the cord before proceeding with the delivery.
   4. Dry the baby and stimulate to a cry.

C. Childbirth – Breech Delivery.
   1. All efforts should be made to rapidly transport the mother to the closest, most appropriate facility. Place the mother in a gravity dependent, knee chest position and coach her not to push.
   2. If delivery cannot be delayed, assess for type of breech delivery: Frank (bottom first) or Footling (feet first).
      a. If Frank: perform delivery, coaching the mother to prevent an explosive delivery. Dry the baby and stimulate to a cry.
      b. If Footling: place a gloved hand into the vagina along the newborn baby’s chest and face, keeping the cervix open while maintaining an air passage through the birth canal. Deliver the baby if possible, dry the baby and stimulate to a cry.

D. Childbirth – Prolapsed cord.
   1. Place mother on back and elevate the hips, or consider knee-chest position.
   2. Place sterile gloved index and middle fingers into the vagina, pushing the infant up to relieve pressure on the cord.
   3. Check cord for pulse and assure pulse is maintained.
   4. Transport immediately.

E. Childbirth – Meconium Present.
   1. Assess the mother’s garments and the surrounding area while getting a good history of when her membrane ruptured and assess for the presence of meconium. Continue to deliver as above.
   2. Once delivered, assess the baby for vigorous activity.
      a. For the vigorous baby, continue the care per Section F.2. below.
b. For the non-vigorous baby:
   i. Once delivered and prior to drying and stimulation, use a bulb syringe to suction the baby's mouth and nose, clearing as much meconium from the oral and posterior pharynx as possible.
   ii. Continuously monitor the baby's heart rate.
   iii. If the baby does not become vigorous or if the heart rate is < 100, place an ETT into the trachea and secure it for continued ventilation assistance and transport.
   iv. Provide resuscitative efforts following the guidelines listed below.

F. Neonatal Resuscitation.

1. HR < 100, apneic, or weak respiratory effort (non-vigorous).
   a. Ventilate with 100% oxygen using a BVM at a rate of 40-60 breaths per minute. Hold the pop-off valve closed for the first 2 or 3 ventilations, assuring good expansion of the alveoli. Release the pop-off valve and continue ventilation as needed.
   b. Clamp and cut umbilical cord approximately 6-8" from baby.
   c. Dry and stimulate.
   d. If HR remains < 60 perform CPR at the rate of 120 per minute at a ratio of 3 compressions to 1 ventilation.
   e. Initiate IV/IO access.
   f. Check blood glucose levels and if < 60, give $D_{10}$ 5 mL/kg, or $D_{25}$ at 2 mL/kg IV/IO push. Maximum concentration for newborn: 12.5% (0.125 gm/mL), therefore $D_{25}$ must be prepared by mixing 25% dextrose 1:1 with NS.
   g. Administer epinephrine 1:10,000 0.01 mg/kg IV/IO push or 0.1 mg/kg 1:1000 ETT.
   h. Transport the newborn and the mother to the closest, most appropriate facility.

2. HR > 100, (vigorous).
   a. After one minute, clamp and cut umbilical cord approximately 6-8" from baby.
   b. Wrap the baby in a dry, warm blanket and place a hat on the head if available.
   c. Assess APGAR at 1 and 5 minutes (Appendix I).

G. Post-Delivery Care.

1. Encourage the mother to nurse the newborn baby.
2. Allow the placenta to deliver naturally. Do not pull on the umbilical cord. Transport all passed tissue to the hospital for further evaluation.
3. Massage the fundus (uterus) to help control any postpartum bleeding.
4. For postpartum hemorrhage:
   a. Transport immediately.
   b. Place a sanitary napkin or trauma dressing over the vaginal opening. Do not pack anything into the vagina.
   c. Initiate IV NS/LR, titrate to BP > 90/S.
d. Re-assess the mother for signs of shock and hypoglycemia. Treat according to protocol.
e. Transport the mother and the baby to the closest, most appropriate facility.

H. Pre-Eclampsia/Eclampsia/Seizures/Hypertension.
   1. Follow General Principles/Routine Care guidelines.
   2. *Initiate IV with NS.*
   3. Check blood glucose level and treat as needed.
   4. Place the mother on her left side and transport to the closest most appropriate facility. Transport should be as smooth and quiet as possible to prevent/reduce seizure activity.
   5. If the mother is seizing, follow the seizure protocol listed in Medical Emergencies.
   6. *In addition to above, give the mother magnesium sulfate 4 gm slow IV push over 5 minutes.*

I. Gestational Diabetic Problems.
   1. Hypoglycemia: Follow General Principles/Routine Care guidelines and the Altered level of consciousness/unconsciousness protocol listed in Medical Emergencies.
   2. Hyperglycemia: Follow General Principles/Routine Care guidelines and transport to the closest, most appropriate facility.

J. Vaginal Bleeding (unrelated to post-delivery).
   1. Assess perineum and vaginal area for signs of trauma or other problems.
   2. Estimate amount of blood loss. Follow General Principles/Routine Care guidelines.
   3. Place a sanitary napkin or trauma dressing over the vaginal opening. Do not pack anything into the vagina.
   4. *Initiate IV with NS/LR for possible fluid replacement.*
   5. Treat for hemorrhagic shock and keep patient warm.

II. Gynecological Emergencies.

Vaginal bleeding.
   1. Follow General Principles/Routine Care guidelines, assessing perineum and vaginal area for signs of trauma or other problems. Estimate amount of blood loss.
   2. Place a sanitary napkin or trauma dressing over the vaginal opening. Do not pack anything into the vagina.
   3. *Initiate IV with NS/LR for possible fluid replacement.*
   4. Treat for hemorrhagic shock and keep patient warm.
   5. Inquire as to the possibility of pregnancy.
A. STANDARD REPORTING FORMAT

†This is __________________________ †with __________________________

Name Service

Destination __________________________ †ETA __________________________

†We have a _____ year old male/female, approximately ____lbs. who is an urgent/non-urgent medical (identify a ‘Code Neuro’ or ‘Code STEMI’ patient) or a Step 1 / 2 / 3 / 4 trauma or an injured patient.

†C/C __________________________________________________________________

†If stroke patient, give FAST results with time last known well: _____, and Stroke Severity Score: _____.

LOC __________________________________________________________________

BP is _____________ HR _____________ ECG _____________

Lungs are _____________ RR _____________ Effort _____________

Eye Opening _________ Verbal Response _______ Motor Response ____

Pupils are ___________________ Skin is__________________________

Pertinent past history ________________________________

Meds ________________________________

Pertinent PE ________________________________

†Treatment done __________________________________________________________________

Treatment requested __________________________________________________________________

†Items for a short report for critical patients with short ETA.

Definitions:

**URGENT** Cardiac/respiratory arrest. Unstable vital signs.

**NON-URGENT** Stable vital signs.

**SIGNAL I** Death by fire.

**SIGNAL II** Death by natural causes.

**SIGNAL III** Suspicious death.
B. PIERCE COUNTY
PREHOSPITAL TRAUMA TRIAGE (DESTINATION) PROCEDURES

STEP 1  Measure Vital Signs & Level of Consciousness
• Glasgow Coma Scale ≤13 or
• Systolic blood pressure <90 mmHg or
• Respiratory rate <10 or >29 breaths/minute (<20 or ≥29 breaths/minutes in infant aged <1 year), or need for ventilatory support

YES

NO

††If prehospital personnel are unable to effectively manage airway, consider rendezvous with ALS, or intermediate stop at nearest facility capable of immediate definitive airway management.

STEP 2  Assess Anatomy of Injury
• All penetrating injuries to head, or neck, or torso, or extremities proximal to elbow or knee
• Chest wall instability or deformity (e.g. flail chest)
• Two or more proximal long-bone fractures
• Crushed, or degloved, or mangled, or pulseless extremity
• Amputation proximal to wrist or ankle
• Pelvic fractures
• Open or depressed skull fracture
• Paralysis

YES

NO

STEP 3  Assess Mechanism of Injury & Evidence of High-Energy Impact
Falls
• Adults and Children ≥15 years: >20 feet (one story is equal to 10 feet)
• Children <15 years: >10 feet or 2-3 times the height of the child

High-Risk Vehicle Crash
• Intrusion, including roof: >12 inches occupant site or >18 inches any site
• Ejection (partial or complete) from vehicle
• Death in same passenger compartment
• Vehicle telemetry data consistent with high risk of injury

Motorcycle crash >20 mph

YES

NO

Vehicle v. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact

STEP 4  Assess Special Patient or System Considerations
Older Adults
• Risk of injury death increases after age 55 years
• Systolic BP < 110 may represent shock after age 65
• Low impact mechanisms (e.g. ground level fall) may result in severe injury

Children
• Should be triaged preferentially to pediatric-capable trauma centers

Anticoagulation and Bleeding Disorders
• Patients with head injury are at high risk for rapid deterioration

Burns
• Without other trauma mechanism: Triage to burn facility
• With trauma mechanism: Triage to trauma center

Pregnancy >20 Weeks
EMS Provider Judgment

YES

NO

When in Doubt, Transport to a Trauma Center!

Take patient to the nearest Level I or Level II trauma center within 30 minutes transport time via ground or air transport according to DOH approved regional patient care procedures.

‡‡Burns & amputations transported to Harborview Medical Center

Take patient to the nearest appropriate trauma center within 30 minutes transport time (Air or Ground), which, depending upon the defined trauma system, need not be the highest level trauma center.

Contact medical control or receiving facility, and consider transport to a trauma center or a specific resource hospital.

Transfer according to local protocol.

Appendix B-1
Rev. April 2019
STATE OF WASHINGTON (Pierce County)
PREHOSPITAL TRAUMA TRIAGE (DESTINATION) PROCEDURE

Purpose

The Trauma Triage Procedure was developed by the Centers for Disease Control in partnership with The American College of Surgeons, Committee on Trauma. The guidelines have been adopted by the Department of Health (DOH) based on the recommendation of the State EMS and Trauma Steering Committee.

The procedure is described in the attached algorithm. The guidelines represent the current best practice for the triage of trauma patients. The algorithm allows EMS and trauma responders to quickly and accurately determine if the patient is a major trauma patient. Major trauma patients must be taken to the highest appropriate level trauma facility in the defined system within 30 minutes transport time (Air or Ground).

The "defined system" is the trauma system that exists within an EMS and Trauma Care Region.

Explanation of Procedure

Any certified EMS and trauma responder can identify a major trauma patient and activate the trauma system. This may include asking for Advanced Life Support response or air medical evacuation.

Step (1) Assess the patient's vital signs and level of consciousness using the Glasgow Coma Scale. Step 1 findings require activation of the trauma system. They also require rapid transport to the nearest, most appropriate trauma center within 30 minutes transport time (ground or air). If unable to manage the patient's airway, consider meeting up with an ALS unit or transporting to the nearest facility capable of definitive airway management.

Step (2) Assess the anatomy of injury. Step 2 findings require activation of the trauma system. They also require rapid transport to the nearest, most appropriate trauma center within 30 minutes transport time (ground or air). The presence of the specific anatomical injuries even with normal vital signs, lack of pain or normal levels of consciousness still require activating the trauma system.

Step (3) Assess biomechanics of the injury and address other risk factors. The conditions identified are reasons for the provider to transport to a trauma center. Transport to the nearest appropriate trauma center within 30 minutes transport time (air or ground), which, depending upon the defined trauma system, need not be the highest level trauma center.

Step (4) has been added to assess special patients or system considerations. Risk factors coupled with "Provider Judgment" are reasons for the provider to contact Medical Control and discuss appropriate transport for these patients. In some cases, the decision may be to transport to the nearest trauma center.

Regional Patient Care Procedures (PCPs) and Local County Operating Procedures (COPs) provide additional detail about the appropriate hospital destination. PCPs and COPs are intended to further define how the system operates. The Prehospital Trauma Triage procedure and the Regional Patient Care Procedures work in a "hand in glove" fashion to address trauma patient care needs.
C. PIERCE COUNTY
PREHOSPITAL CARDIAC TRIAGE (DESTINATION) PROCEDURES

Assess Applicability for Triage

☐ Post cardiac arrest with ROSC
-OR-
☐ ≥ 21 years of age with symptoms lasting more than 10 minutes but less than 12 hours suspected to be caused by coronary artery disease:
  ▪ Chest discomfort (pressure, crushing pain, tightness, heaviness, cramping, burning, aching sensation), usually in the center of the chest lasting more than a few minutes, or that goes away and comes back.
  ▪ Pain or discomfort in 1 or both arms, neck, jaws, shoulders, or back.
  ▪ Shortness of breath with or without chest discomfort.
  ▪ Epigastric (stomach) discomfort, such as unexplained indigestion, belching, or pain.
  ▪ Other symptoms may include sweating, nausea/vomiting, lightheadedness.

NOTE: Women, diabetics, and geriatric patients might not have chest discomfort or pain. Instead they might have nausea/vomiting, back or jaw pain, fatigue/weakness, or generalized complaints.

YES
If ALS has not been dispatched, upgrade if available.

Assess Immediate Criteria

☐ Post cardiac arrest with return of spontaneous circulation
☐ Hypotension or pulmonary edema
☐ EKG positive for STEMI (if available)

NO

YES

Transport per regional patient care procedures

Assess High Risk Criteria

In addition to symptoms in Box 1, pt. has 4 or more of the following:

☐ Age ≥ 55
☐ 3 or more CAD risk factors:
  ○ family history
  ○ high blood pressure
  ○ high cholesterol
  ○ diabetes
  ○ current smoker
☐ Aspirin use in last 7 days
☐ ≥ 2 anginal events in last 24 hours, including current episode
☐ Known coronary disease
☐ ST deviation ≥ 0.5 (if available)
☐ Elevated cardiac markers (if available)

NO

If EMS personnel still suspect an acute coronary event, contact medical control for destination. If not, transport per regional patient care procedures.

YES
Unstable patients (life-threatening arrhythmias, severe respiratory distress, shock) unresponsive to EMS treatment should be taken to the closest hospital.

Assess Transport Time and Determine Destination by Level of Prehospital Care

<table>
<thead>
<tr>
<th>BLS/ILS</th>
<th>ALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level I Cardiac Hospital w/in 30 minutes</td>
<td>Level I Cardiac Hospital w/in 60 minutes</td>
</tr>
</tbody>
</table>

Level I Cardiac Hospital w/in 30 minutes

YES
Go to Level I Cardiac Hospital and alert destination hospital enroute ASAP

NO
Level II Cardiac Hospital 30 minutes closer than Level I?

YES
Level II Cardiac Hospital 60 minutes closer than Level I?

NO
NO

Go to closest Level II Cardiac Hospital and alert destination hospital enroute ASAP

Slight modifications to the transport times may be made in county operating procedures. See page 2. Consider ALS and air transport for all transports greater than 30 minutes.

If there are two or more Level I facilities to choose from within the transport timeframe, patient preference, insurance coverage, physician practice patterns, and local rotation agreements may be considered in determining destination. This also applies if there are two or more Level II facilities to choose from.

April 2011
PIERCE COUNTY
PREHOSPITAL CARDIAC TRIAGE (DESTINATION) PROCEDURES cont.

Why triage cardiac patients?
The faster a patient having a heart attack or who’s been resuscitated gets treatment, the less likely he or she will die or be permanently disabled. Patients with unstable angina and non-ST elevation acute coronary syndromes (UA/NSTEMI) are included in the triage procedure because they often need immediate specialized cardiac care. This triage procedure is intended to be part of a coordinated regional system of care that includes dispatch, EMS, and both Level I and Level II Cardiac hospitals.

How do I use the Cardiac Triage Destination Procedure?

A. Assess applicability for triage – If a patient is post cardiac arrest with ROSC, or is over 21 and has any of the symptoms listed, the triage tool is applicable to the patient. Go to the “Assess Immediate Criteria” box. NOTE: Women, diabetics, and geriatric patients often have symptoms other than chest pain/discomfort so review all symptoms with the patient.

B. Assess immediate criteria – If the patient meets any one of these criteria, he or she is very likely experiencing a heart attack or other heart emergency needing immediate specialized cardiac care. Go to “Assess Transport Time and Determine Destination” box. If the patient does not meet immediate criteria, or you can’t do an ECG, go to the “Assess High Risk Criteria” box.

C. Assess high risk criteria – If, in addition to meeting criteria in box 1, the patient meets four or more of these high risk criteria, he or she is considered high risk for a heart attack or other heart emergency needing immediate specialized cardiac care. These criteria are based on the TIMI risk assessment for unstable angina/non-STEMI. If the patient does not meet the high risk criteria in this box, but you believe the patient is having an acute coronary event based on presentation and history, consult with medical control to determine appropriate destination. High risk criteria definitions:

- Age ≥ 55: epidemiological data for WA show that incidence of heart attack increases at this age.
- 3 or more CAD (coronary artery disease) risk factors:
  - Family history: father or brother with heart disease before 55, or mother or sister before 65
  - High blood pressure: ≥140/90, or patient/family report, or patient on blood pressure medication
  - High cholesterol: patient/family report or patient on cholesterol medication
  - Diabetes: patient/family report
  - Current smoker: patient/family report
- Aspirin use in last 7 days.
- ≥ 2 anginal events in last 24 hours: 2 or more episodes of symptoms described in box 1 of the triage tool, including the current event.
- Known coronary disease: history of angina, heart attack, cardiac arrest, congestive heart failure, balloon angioplasty, stent, or bypass surgery.
- ST deviation ≥0.5 mm (if available): ST depression ≥0.5 mm is significant; transient ST elevation ≥0.5 mm for <20 minutes is treated as ST-segment depression and is high risk; ST elevation >1 mm for more than 20 minutes places these patients in the STEMI treatment category.
- Elevated cardiac markers (if available): CK-MB or Troponin I in the “high probability” range of the device used. Only definitely positive results should be used in triage decisions.

D. Determine destination – The general guideline is to take a patient meeting the triage criteria directly to a Level I Cardiac Hospital within reasonable transport times. For BLS, this is generally within 30 minutes transport time, and for ALS, generally 60 minutes transport time. See below for further guidance. Regional patient care procedures and county operating procedures may provide additional guidance.

E. Inform the hospital enroute so staff can activate the cath lab and call in staff if necessary.

What if a Level I Cardiac Hospital is just a little farther down the road than a Level II?
You can make slight changes to the 30/60 minute timeframe. The benefits of opening an artery faster at a Level I can outweigh the extra transport time. To determine whether to transport beyond the 30 or 60 minutes, figure the difference in transport time between the Level I Cardiac Hospital and the Level II Cardiac Hospital. For BLS, if the difference is more than 30 minutes, go to the Level II Cardiac Hospital. For ALS, if the difference is more than 60 minutes, go to the level II Cardiac Hospital.

BLS examples:
- A) minutes to Level I minus minutes to Level II = 29: go to Level I
- B) Minutes to Level I minus minutes to Level II = 35: go to Level II

ALS examples:
- A) minutes to Level I minus minutes to Level II = 45: go to Level I
- B) Minutes to Level I minus minutes to Level II = 68: go to Level II

NOTE: We recommend ALS use a fibrinolytic checklist to determine if a patient is ineligible for fibrinolysis. If ineligible, transport to closest Level I hospital even if it’s greater than 60 minutes or rendezvous with air transport.

What if there are two or more Level I or II facilities to choose from?
If there are two or more of the same level facilities to choose from within the transport times, patient preference, insurance coverage, physician practice patterns, and local rotation agreements may be considered in destination decision.
D. PIERCE COUNTY
PREHOSPITAL STROKE TRIAGE (DESTINATION) PROCEDURES

STEP 1: Assess Likelihood of Stroke
- Numbness or weakness of the face, arm, or leg, especially on one side of the body
- Confusion, trouble speaking, or understanding
- Trouble seeing in one or both eyes
- Trouble walking, dizziness, loss of balance, or coordination
- Severe headache with no known cause
If any of above, proceed to STEP 2, otherwise, transport per regional/county operating procedures

STEP 2: Perform F.A.S.T. Assessment (positive if any of Face/Arms/Speech abnormal)
- Face: Unilateral facial droop
- Arms: Unilateral arm drift or weakness
- Speech: Abnormal or slurred
- Time: Best estimate of Time Last Known Well = ______
If FAST negative transport per regional/county operating procedures

STEP 3: If F.A.S.T Positive - Calculate Stroke Severity Score

<table>
<thead>
<tr>
<th>Facial Droop:</th>
<th>Absent 0</th>
<th>Present 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm Drift:</td>
<td>Absent 0</td>
<td>Drifts 1</td>
</tr>
<tr>
<td>Grip Strength:</td>
<td>Normal 0</td>
<td>Weak 1</td>
</tr>
</tbody>
</table>

Total Stroke Severity Score = ____ (max. 5 points)

STEP 4: Determine Destination: Time Last Known Well & Stroke Severity Score

Time Last Known Well is < 6 Hours
(Provide stroke alert to destination hospital ASAP)

OR

Time Last Known Well is > 6 Hours
(regardless of Stroke Severity Score, alert destination hospital)

Stroke Severity Score 4 or more?

NO

YES

Transport to nearest Level I or II Stroke Center with endovascular capability provided transport time is no more than 15 minutes greater than to a nearer Level III Stroke Center.

Additional Destination Considerations:
- Any additional transport time should not take the patient outside of the IV tPA time window.
- Assess availability of critical care air transport if it can help get the patient to a Stroke Center within the window of time for intervention.
- If unable to manage airway, consider rendezvous with ALS or intermediate stop at nearest facility capable of definitive airway management.
- If there are two or more Stroke Centers of the same level to choose from within the transport timeframe, patient preference, physician practice patterns, and local rotation agreements may be considered.
PIERCE COUNTY
PREHOSPITAL STROKE TRIAGE (DESTINATION) PROCEDURES

The purpose of the Prehospital Stroke Triage and Destination Procedure is to identify stroke patients in the field and take them to the most appropriate hospital, which might not be the nearest hospital. Stroke treatment is time-critical – the sooner patients are treated, the better their chances of survival and recovering function.

For strokes caused by a blocked blood vessel in the brain (ischemic, the majority of strokes), clot-busting medication (tPA) must be administered within 4.5 hours from the time the patient was last known well, a treatment that can be given at WA DOH Level 1, 2 or 3 stroke centers (for a list of categorized hospitals, please click here).

If a patient presents to EMS with a severe stroke, they are more likely to have blockage of a large vessel and can benefit from mechanical clot retrieval (thrombectomy). Thrombectomy must begin by 6 hours since last known well, and is a more complex intervention, only available in Level I and a small number of Level II stroke centers.

There are 3 key elements to determine the appropriate destination hospital:

- **FAST stroke screen** to identify a patient with a high probability of stroke.
- **Stroke Severity Score** to determine if a patient meets criteria for “severe” stroke.
- **Time since Last Known Well (LKW)** which helps determine eligibility for tPA and thrombectomy.

**STEPS to determine destination:**

1) **Do a FAST Stroke Screen Assessment:** (Facial droop, Arm drift, Speech changes, Time since LKW) is a simple way to tell if someone might be having a stroke. If FAST is negative, stroke is less likely, and standard destination procedures apply. If FAST is positive (face or arms or speech is abnormal), it’s likely the patient is having a stroke and the EMS provider moves on to assessing stroke severity.

2) **Assess severity:** The stroke severity assessment scores the FAST stroke screen. Patients get points for deficits:
   - **Facial droop** gets 1 point if present, 0 points if absent;
   - **Arm drift** (have patient hold arms up in air) gets 2 points if an arm falls rapidly, 1 point if slowly drifts down and 0 points if the arms stay steady;
   - **Grip strength** gets 2 points if no real effort can be made, 1 point if grip is clearly there but weak, and 0 points if grips seem of full strength.

3) **Add up the points:** A score \( \geq 4 \) is interpreted as “severe.”

4) **Determine time since LKW:** It is important to use the LKW time as opposed to when symptoms were first noticed. If a patient woke up in the morning with symptoms and was well when they went to bed, time LKW is the time they went to bed. If stroke symptoms occur when the patient is awake, LKW could be the same time the symptoms started if the patient or a bystander noticed the onset. LKW time could also be prior to symptoms starting if a patient delays reporting symptoms or, for example, someone discovers a patient with symptoms but saw them well 2 hours prior.

5) **Determine Destination:**
   
   - **Time since LKW \( \leq 6 \) hours and “Severe” (score \( \geq 4 \)):** this group benefits from preferential transport to a thrombectomy stroke center. The patient should be taken directly to the nearest thrombectomy stroke center provided it is no more than 15 extra minutes travel compared to the nearest stroke center.
   
   - **Time since LKW \( \leq 6 \) hours but NOT “Severe” or Time since LKW \( > 6 \) hours (regardless of severity):** these patients should be taken directly to the nearest Level 1 or Level 2 stroke center provided it is no more than 15 extra minutes travel compared to a nearer Level 3 stroke center.

6) **Notification:** Immediately notify the destination hospital of incoming stroke. If the patient is within 6 hours LKW, call a stroke alert according to county operating procedures or locally determined protocol.

7) **Document:** key medical history, medication list and next of kin phone contacts; time on scene; FAST assessment completed and results (or reason why not); blood glucose level; LKW time (including unknown); and whether the hospital was notified from the field and if it was a stroke alert.
**DD. EMS SEPSIS SCORE CARD**

Use tool with any suspected or confirmed infection or illness in adults ≥ 18 years old.

<table>
<thead>
<tr>
<th>EMS TRIAGE</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory Rate</td>
<td>&lt; 8</td>
<td>9-20</td>
<td>21 - 29</td>
<td>≥30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart Rate</td>
<td>≤ 40</td>
<td>41-59</td>
<td>60 - 89</td>
<td>90 - 119</td>
<td>≥120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature (F)</td>
<td>&lt;96.8</td>
<td>96.8-100.4</td>
<td>&gt;100.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>≤ 54</td>
<td>55-64</td>
<td>65-74</td>
<td>≥ 75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-existing Factors</td>
<td>none</td>
<td>2</td>
<td>3</td>
<td>≥ 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCS</td>
<td>≤ 6</td>
<td>7 - 11</td>
<td>12 - 14</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SBP</td>
<td>≤ 90</td>
<td>≥ 91</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EtCO2</td>
<td>&lt;25</td>
<td>25-32</td>
<td>32-37</td>
<td>&gt;37</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sub-TOTAL**

Score ≥ 9 = CODE SEPSIS

**Score 7-8: Advise Hospital of Sepsis Score Card total**
- ALS transport
- Add EtCO2 monitoring; adjust score as needed
- Place on monitor
- Establish large bore IV; consider 2nd line if able
- Titrate O2 to maintain sats of 94-99%
- Consider normal saline 20ml/kg bolus if strong suspicion for sepsis (hypotension ≤ 90 SBP & tachycardia ≥ 120/min) regardless of co-morbidities such as CHF/ESRD.

**Score ≥9: Notify Hospital of Sepsis Score Card total; RN will initiate Code Sepsis**
- Priority transport
- Place on monitor
- Establish large bore IV; strongly consider 2nd line
- Titrate O2 to maintain sats of 94-99%
- Normal Saline wide open or 20ml/kg – regardless of co-morbidities such as CHF/ESRD - up to 2L.

**Pre-Existing Factors**

- Cancer with recent treatment (chemo, etc)
- Diabetes Mellitus
- Renal Failure
- Liver Failure
- Hypertension (HTN)
- Cardiac Disease (CHF and vascular disease)
- Known Infection
- Implanted Ports
- Feeding Tube
- Urinary Tube (Foley or urostomy)
- Colostomy
- Surgical Sites
- Implanted devices
- Pressure ulcers
- Antibiotic therapy within 30 days
- Surgery within 30 days
- HIV
Consider extremes of age when evaluating for BLS versus ALS transport.

**BLS**  If the patient meets BLS criteria, they may be transported by the crew of a licensed, verified BLS or ALS ambulance agency. The ambulance crew will contact the Receiving Facility unless Base Station orders are required.

- Warm, dry, pink skin at rest.
- HR 60 to 130 regular when at rest, peripheral pulses present.
- RR 10 to 30 at rest.
- BP > 100 systolic unless symptomatic due to BP.
- BP < 180 systolic unless symptomatic due to BP.
- BP < 120 diastolic unless symptomatic due to BP.
- Awake, alert, or at baseline mental status.
- No chest pain/no shortness of breath/no signs of a stroke/TIA.
- No drug overdose.
- No suicide attempt requiring ALS interventions.
- No significant mechanism of injury resulting in ALS symptoms.
- No impending or current childbirth associated with complications.
- Patients with Ventricular Assist Device (VAD) not requiring ALS interventions.
- Patients with medical devices/equipment managed by the patient/caregiver requiring no medical intervention or monitoring (e.g. peg tubes, CSF shunts, colostomy/ileostomy bags, insulin pumps, feeding tubes that are not running during transport).

**ALS**  If the patient meets ALS criteria, they must be transported by the crew of a licensed, verified ALS ambulance agency. The ambulance crew will contact the Receiving Facility unless Base Station orders are required.

- Cool, clammy skin.
- HR < 60 or > 130 at rest, in adults.
- RR < 10 to > 30 shallow or labored at rest.
- BP < 100 systolic if symptomatic due to BP.
- BP > 180 systolic if symptomatic due to BP.
- BP > 120 diastolic if symptomatic due to BP.
- Altered LOC or confirmed loss of consciousness now or prior to arrival.
- Chest pain/shortness of breath/signs of a stroke/TIA.
- Impending/recent childbirth/neonate care.
- Medication reaction/drug overdose/suicide attempt resulting in ALS symptoms, requiring ALS intervention or if decompensation may occur.
- Severe bleeding, amputation; including fingers/toes resulting in shock.
- Significant mechanism of injury resulting in ALS symptoms.
- Supra-umbilicus abdominal and/or back pain when atypical cardiac origin is suspected.

* If the transport of an ALS patient will be delayed longer than the time it would take a BLS unit to transport to the Receiving Facility, the BLS unit may transport the patient with the permission of Base Station.
## F. RAPID SEQUENCE INTUBATION

Use Adult dosing for Adult patients and Pediatric patients ≥ 10 years old; use Pediatric dosing for those < 10 years old.

<table>
<thead>
<tr>
<th>CHECK</th>
<th>ACTION</th>
<th>DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare equipment and supplies.</td>
<td>Remember back-up airway.</td>
<td></td>
</tr>
<tr>
<td><strong>Preoxygenation</strong> to an $O_2$ saturation as close to 100% as possible-</td>
<td></td>
<td>Nonrebreather mask OR CPAP OR Bag valve mask ventilation.</td>
</tr>
<tr>
<td>▶ Preoxygenate with the patient’s head up 25° to 30° when clinically feasible.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Apneic Oxygenation</strong>-</td>
<td></td>
<td>Nasal cannula at 15 L/minute.</td>
</tr>
<tr>
<td>▶ Initiate anytime if oxygen source available, preferably before paralysis with induction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▶ Continue until intubation is complete.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Paralysis with induction**- | | Adult: 0.3 mg/kg IV/IO push over 30 - 60 seconds

### Infant (1-10 years)

**Etomidate**

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

**Ketamine**

- Adult: 2 mg/kg IV/IO
- Pediatric: 2 mg/kg IV/IO

### Adolescents (≥ 10 years)

**Succinylcholine † **

- Adult: 1 mg/kg IV/IO q10 minutes as needed
- Pediatric: same as adult

**Rocuronium**

- Adult: 0.5 mg/kg IV/IO q10 minutes as needed
- Pediatric: 0.1 mg/kg IV/IO q10 minutes as needed

**Paralysis- only if needed after sedation & pain management**

- Adult: 1 mg/kg IV/IO
- Pediatric: 1 mg/kg IV/IO

### Pain Management and Sedation-

- Fentanyl AND Versed

### Nasopharyngeal Intubation

- Nasal cannula at 15 L/minute

- Adult: 1 mg/kg IV/IO
- Pediatric: 0.5 mg/kg IV/IO

### Paralysis- only if needed after sedation & pain management

- Adult: 0.1 mg/kg IV/IO
- Pediatric: 0.1 mg/kg IV/IO
† CONTRAINDICATIONS:
1) Suspected hyperkalemia—renal failure and missed dialysis
2) From 5 days post significant burn or crush injury until healed
3) From 5 days post severe intra-abdominal infection until treated
4) From 5 days – 6 months post spinal cord injury or severe stroke
5) Neuromuscular diseases such as Multiple Sclerosis and Muscular Dystrophy
6) Personal or family history of malignant hyperthermia

$ Note: May use ketamine and succinylcholine IM if IV/IO unattainable, double the IV/IO dose
Note: Vecuronium may be used as initial paralytic if succinylcholine is contraindicated and rocuronium is not available.
### G. GLASGOW COMA SCALE

<table>
<thead>
<tr>
<th>INFANT</th>
<th>CHILD/ADULT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye Opening</strong></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Spontaneous</td>
</tr>
<tr>
<td>3</td>
<td>To voice</td>
</tr>
<tr>
<td>2</td>
<td>To pain</td>
</tr>
<tr>
<td>1</td>
<td>No response</td>
</tr>
<tr>
<td><strong>Best Verbal Response</strong></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Coos, babbles</td>
</tr>
<tr>
<td>4</td>
<td>Irritable, cries</td>
</tr>
<tr>
<td>3</td>
<td>Cries to pain</td>
</tr>
<tr>
<td>2</td>
<td>Moans, grunts</td>
</tr>
<tr>
<td>1</td>
<td>No response</td>
</tr>
<tr>
<td><strong>Best Motor Response</strong></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Spontaneous</td>
</tr>
<tr>
<td>5</td>
<td>Localizes pain</td>
</tr>
<tr>
<td>4</td>
<td>Withdraws from pain</td>
</tr>
<tr>
<td>3</td>
<td>Flexion (decorticate)</td>
</tr>
<tr>
<td>2</td>
<td>Extension (decerebrate)</td>
</tr>
<tr>
<td>1</td>
<td>No response</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>
H. Wong-Baker FACES® Pain Rating Scale

Wong-Baker FACES® Pain Rating Scale

0
No Hurt

2
Hurts Little Bit

4
Hurts Little More

6
Hurts Even More

8
Hurts Whole Lot

10
Hurts Worst

Used with permission.

No Pain
Sin dolor
Không Đau
Tsis Mob
Отсутствие боли

Mild Pain
Dolor leve
Hóí Đau
Mob Me Ntsis
Слабая боль

Moderate Pain
Dolor moderado
Đau Viêa Phái
Mob Nauj Sim
Умеренная боль

Severe Pain
Dolor agudo
Rát Đau
Mob Heev
Сильная боль

English
Spanish
Vietnamese
Hmong
Russian
I. APGAR SCORE

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>1 minute</th>
<th>5 minutes</th>
</tr>
</thead>
</table>
| A | Appearance (skin color) | All pink = 2  
Some pink = 1  
No pink = 0 |  |  |
| P | Pulse (heart rate) | > 100 = 2  
< 100 = 1  
No pulse = 0 |  |  |
| G | Grimace (irritability) | Strong = 2  
Weak = 1  
Absent = 0 |  |  |
| A | Activity (muscle tone) | Active motion = 2  
Some flexing = 1  
Absent = 0 |  |  |
| R | Respiration (rate) | Rapid, crying = 2  
Slow, irregular = 1  
Absent = 0 |  |  |
J. BLOOD ALCOHOL DRAW

Blood alcohol levels may be drawn on EMS patients and non-EMS individuals to assist Law Enforcement under the following circumstances:

1. If the Paramedic is establishing an IV and drawing blood on the patient for medical indications as permitted elsewhere in the Patient Care Protocols; or

2. If already at the scene of an incident and there are non-EMS individuals for whom Law Enforcement requests a blood alcohol level to be drawn, and this will not delay in patient care or patient transport.

Other than the above mentioned circumstances, it is anticipated that Law Enforcement will obtain blood alcohols through other resources available to them.

Contact Base Station if there is any question as to whether or not you should do the blood draw.

Note: Use betadine to clean site.
**K. PEDIATRIC CARDIAC ARREST GUIDE**

### Approximate Dose:
- **Epinephrine**: .01 mg/kg
- **Lidocaine**: 1.0 mg/kg
- **Atropine**: .02 mg/kg
- **Adenosine**: 0.1-0.2 mg/kg
- **Amiodarone**: 5 mg/kg
- **Defib**: 2 Ws/kg

### Solution:
- **Epinephrine**: 1:10,000
- **Lidocaine**: 20 mg/mL
- **Atropine**: .05 mL/kg
- **Adenosine**: 0.2 mL/kg

### Amount:
- **Epinephrine**: .01 mg/kg
- **Lidocaine**: 1.0 mL
- **Atropine**: .02 mg/kg
- **Adenosine**: 0.1-0.2 mg/kg

### ETT Size:
- **IV**: 20 mL/kg

<table>
<thead>
<tr>
<th>AGE</th>
<th>LB</th>
<th>KG</th>
<th>Epinephrine</th>
<th>Lidocaine</th>
<th>Atropine</th>
<th>Adenosine</th>
<th>Amiodarone</th>
<th>Defib</th>
<th>ETT</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>NB</td>
<td>6</td>
<td>3</td>
<td>0.3 mL</td>
<td>0.15 mL</td>
<td>1.0 mL</td>
<td>0.3 - 0.6 mg</td>
<td>15 mg</td>
<td>10 Ws</td>
<td>3</td>
<td>60 mL</td>
</tr>
<tr>
<td>3 mo</td>
<td>12</td>
<td>6</td>
<td>0.6 mL</td>
<td>0.3 mL</td>
<td>1.2 mL</td>
<td>0.6 - 1.2 mg</td>
<td>30 mg</td>
<td>10,20 Ws</td>
<td>3.5</td>
<td>120 mL</td>
</tr>
<tr>
<td>6 mo</td>
<td>17</td>
<td>8</td>
<td>0.8 mL</td>
<td>0.4 mL</td>
<td>1.6 mL</td>
<td>0.8 - 1.6 mg</td>
<td>40 mg</td>
<td>&quot;</td>
<td>3.5</td>
<td>160 mL</td>
</tr>
<tr>
<td>9 mo</td>
<td>20</td>
<td>9</td>
<td>0.9 mL</td>
<td>0.45 mL</td>
<td>1.8 mL</td>
<td>0.9 - 1.8 mg</td>
<td>45 mg</td>
<td>&quot;</td>
<td>3.5</td>
<td>180 mL</td>
</tr>
<tr>
<td>12 mo</td>
<td>22</td>
<td>10</td>
<td>1.0 mL</td>
<td>0.5 mL</td>
<td>2.0 mL</td>
<td>1.0 - 2.0 mg</td>
<td>50 mg</td>
<td>20,40 Ws</td>
<td>3.5</td>
<td>200 mL</td>
</tr>
<tr>
<td>18 mo</td>
<td>25</td>
<td>11</td>
<td>1.1 mL</td>
<td>0.55 mL</td>
<td>2.2 mL</td>
<td>1.1 - 2.2 mg</td>
<td>55 mg</td>
<td>&quot;</td>
<td>4</td>
<td>220 mL</td>
</tr>
<tr>
<td>2 yrs</td>
<td>27</td>
<td>12</td>
<td>1.2 mL</td>
<td>0.6 mL</td>
<td>2.4 mL</td>
<td>1.2 - 2.4 mg</td>
<td>60 mg</td>
<td>&quot;</td>
<td>4-4.5</td>
<td>240 mL</td>
</tr>
<tr>
<td>3 yrs</td>
<td>32</td>
<td>15</td>
<td>1.5 mL</td>
<td>0.75 mL</td>
<td>3.0 mL</td>
<td>1.5 - 3.0 mg</td>
<td>75 mg</td>
<td>30,60 Ws</td>
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<td>4 yrs</td>
<td>36</td>
<td>16</td>
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<td>41</td>
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<td>1.1 mL</td>
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<td>660 mL</td>
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<td>180 mg</td>
<td>70,140 Ws</td>
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<td>3.8 - 7.6 mg</td>
<td>190 mg</td>
<td>&quot;</td>
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<td>760 mL</td>
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<td>2.2 mL</td>
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<td>4.4 - 8.8 mg</td>
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<td>2.5 mL</td>
<td>5.0 mL</td>
<td>4.9 - 9.8 mg</td>
<td>245 mg</td>
<td>100,200 Ws</td>
<td>7</td>
<td>980 mL</td>
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† If child is on digitalis preparation, set at lowest possible setting.
### L. HOSPITAL/FACILITY/AGENCY PHONE NUMBERS

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<th>Facility</th>
<th>Telephone Numbers</th>
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<tbody>
<tr>
<td>Airlift Northwest</td>
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<tr>
<td>EMS</td>
<td>800-426-2430</td>
</tr>
<tr>
<td>Fax (Office)</td>
<td>206-521-1865</td>
</tr>
<tr>
<td>Fax (Comm Center)</td>
<td>206-767-4639</td>
</tr>
<tr>
<td>Allenmore Hospital</td>
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<tr>
<td>ER EMS (no phone in room)</td>
<td>253-459-6410</td>
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<td>ER General</td>
<td>253-459-6352</td>
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<td>ER Fax</td>
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<td>253-459-6633</td>
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<td>American Lake Veterans Hospital Information</td>
<td>253-582-8440</td>
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<td>206-744-4074</td>
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<td>ER General</td>
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<td>ER Fax</td>
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<td>206-744-3000</td>
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<td>Harrison Medical Center</td>
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<td>ER General</td>
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<td>360-744-6889</td>
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<td>360-744-3911</td>
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<td>Madigan Army Medical Center</td>
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<td>ER EMS</td>
<td>253-968-1396</td>
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<td>253-968-3190</td>
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<td>253-968-1385</td>
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Mary Bridge Children’s Hospital
ER EMS  253-403-1476
ER Ambulance Line  253-403-4444
ER General  253-403-1418
ER Fax  253-403-1406
Hospital Information  253-403-1000

Mental Health Professional
~see listing at the end of this section

Morton General Hospital
ER EMS  360-496-6866
ER General  360-496-5112 (then dial “0”)
ER Fax  360-496-2315
Hospital Information  360-496-5112

NUWC, Commander
610 Dowell St.; Keyport, WA 98345

Hyperbaric chambers:
Diving Locker
0700-1600 hrs.  360-396-2522
1600-0700 hrs. (Regional Dispatch Center)  360-396-2111

Pierce County Medical Examiner
General  253-798-6494
Fax  253-798-2893

Seattle Children’s Hospital
ER EMS  206-987-8899
ER General  206-987-8899
ER Fax  206-987-3945
Hospital Information (Toll free)  866-987-2000

St. Anthony Hospital
ER EMS  253-530-2100
ER General  253-530-2100
ER Fax  253-530-2129
Hospital Information  253-530-2000

St. Clare Hospital
ER EMS  253-588-2255
ER General  253-985-8700
ER Fax  253-985-6588
Hospital Information  253-985-1711

St. Elizabeth Hospital
ER EMS  360-802-8383
ER General  360-802-8360
ER Fax  360-802-8359
Hospital Information  360-802-8800
St. Francis Hospital
ER EMS 253-874-0456
ER General 253-944-7971
ER Fax 253-944-7922
Hospital Information (from Pierce County) 253-944-8100

St. Joseph Hospital
ER EMS 253-426-6769
ER Trauma 253-426-6388
ER General 253-426-6963
ER Fax 253-426-6250
Hospital Information 253-426-4101

St. Peter Hospital
ER EMS 360-438-6666 or 360-491-8888
ER General 360-493-7389
ER Fax 360-493-7663
Hospital Information 360-491-9480 or Toll free: 888-492-9480

Tacoma General Hospital
ER EMS 253-403-2222
ER General 253-403-1050
ER Fax 253-403-1517
Hospital Information 253-403-1000

UW Medical
ER EMS (Clinic or charge nurse) 206-598-2240
ER EMS (Attending physician) 206-598-0105
ER General 206-598-2000
ER Fax 206-598-0150
Hospital Information 206-598-3300 or Toll free:877-780-1121

Virginia Mason
1100 Ninth Ave; Seattle, WA  98111
Hyperbaric chambers:
Chamber 206-583-6543
Hospital Information 206-624-1144 or Toll free: 888-862-2737

Washington Poison Center
EMS Provider number 800-709-0911
General number 800-222-1222

Western State Hospital
Hospital Information 253-582-8900

Dispatch Centers
AMR 206-444-4444
Fire Comm 253-588-5217
Madigan Army Medical Center 253-968-1396
TFD Routine: 253-591-5733
Priority: 253-627-0151
Mental Health Telephone Numbers

National Suicide Prevention Lifeline 800-273-8255

Crisis Line for Tacoma/Pierce County 800-576-7764
(24-hour emotional support and referral)
Includes access to Pierce County Mobile Outreach Crisis Team (MOCT) for voluntary/involuntary commitment

Domestic Violence Resources
Crystal Judson Family Justice Center 253-798-4166
8:30 a.m. - 4:30 p.m. M – F

Pierce County YWCA 24 hour: 253-383-2593
or www.ywca.piercecounty.org

Greater Lakes Mental Health 253-581-7020
Serves southwest county, east to Waller Road, between 8 a.m. to midnight.
Serves entire county between midnight and 8 a.m.

Recovery Response Center 253-942-5644
Recovery Support Line 877-780-5222
FAX 253-922-4722
M. SIMPLE TRIAGE and RAPID TREATMENT (START) GUIDELINE
Patients > 8 Years Old

All victims initially able to walk to treatment area

GREEN: Minor

ASSESS: RESPIRATIONS

NO

YES

Position Airway

NO Respirations

YES Respirations

BLACK: Deceased

RED: Immediate

RED: Immediate

PERFUSION

Radial Pulse Absent

Radial Pulse Present

Control Bleeding

Over 2 sec.

Under 2 sec.

OR

Capillary Refill

GREEN: Minor

YELLOW: Delayed

RED: Immediate

CAN’T Follow Simple Commands

CAN Follow Simple Commands

RED: Immediate

Appendix M-1
JumpSTART Pediatric Guideline
Patients ≤ 8 Years Old

Victim initially able to walk to treatment area? → YES → GREEN: Minor → BLUE: Secondary Triage*

*Evaluate infants in secondary triage using the entire JumpSTART algorithm

Assess Breathing → NO → Position Upper Airway → Breathing → RED: Immediate

NO → Apneic → Palpable pulse? → NO → BLACK: Deceased

YES → 5 Rescue breaths → Apneic → BLACK: Deceased

YES → Respiratory Rate → ≤ 15 or > 40 or irregular → RED: Immediate

15 – 40, regular → Peripheral Pulse → NO → RED: Immediate

YES → Mental Status → “P” (inappropriate) or “U” → RED: Immediate

“P”, “V” or “P” (appropriate) → YELLOW: Delayed

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Appendix M-2
N. SPINAL IMMOBILIZATION GUIDELINES ALGORITHM

**BLUNT TRAUMA**

Altered level of consciousness (GCS<15)

- Yes
  - IMMOBILIZE
  - Rapid Transport

- No
  - Spinal pain or tenderness?
    - Yes
      - IMMOBILIZE
      - Transport
    - No
      - Spinal pain or tenderness?
        - Yes
          - IMMOBILIZE
          - Transport
        - No
          - Spinal pain or tenderness?
            - Yes
              - Concerning mechanism of injury¹
            - No
              - Spinal pain or tenderness?
                - Yes
                  - IMMOBILIZE
                  - Transport
                - No
                  - Concerning mechanism of injury¹

---

**Notes:**

¹Concerning mechanisms of injury

- Any mechanism that produced a violent impact to the head, neck, torso, or pelvis (e.g., assault, entrapment in structural collapse, etc.)
- Incidents producing sudden acceleration, deceleration, or lateral bending forces to the neck or torso (e.g., moderate- to high–speed MVC, pedestrian struck, involvement in an explosion, etc.)
- Any fall, especially in elderly persons
- Ejection or fall from any motorized or otherwise-powered transportation device (e.g., scooters, skateboards, bicycles, motor vehicles, motorcycles, or recreational vehicles)
- Victim of shallow-water diving incident
Concerning mechanism of injury¹

Yes

Presence of:
Evidence of alcohol/drugs or
Distracting Injury² or
Inability to communicate³

No

IMMOBILIZATION NOT INDICATED

IMMOBILIZE

Transport

Transport

Notes:
¹Concerning mechanisms of injury
Any mechanism that produced a violent impact to the head, neck, torso, or pelvis (e.g., assault, entrapment in structural collapse, etc.)
Incidents producing sudden acceleration, deceleration, or lateral bending forces to the neck or torso (e.g., moderate- to high-speed MVC, pedestrian struck, involvement in an explosion, etc.)
Any fall, especially in elderly persons
Ejection or fall from any motorized or otherwise-powered transportation device (e.g., scooters, skateboards, bicycles, motor vehicles, motorcycles, or recreational vehicles)
Victim of shallow-water diving incident
²Distracting injury
Any injury that may have the potential to impair the patient’s ability to appreciate other injuries. Examples of distracting injuries include: a) long bone fracture; b) a visceral injury requiring surgical consultation; c) a large laceration, degloving injury, or crush injury; d) large burns; or e) any other injury producing acute functional impairment.
³Inability to communicate
Any patient who, for reasons not specified above, cannot clearly communicate so as to actively participate in their assessment. Examples: speech or hearing impaired, those who only speak a foreign language, and small children.
PENETRATING TRAUMA TO HEAD, NECK, OR TORSO?

Neurologic deficit/complaint?

Yes

IMMOBILIZE

Rapid Transport

No

IMMOBILIZATION NOT INDICATED

Rapid Transport

** USE CLINICAL JUDGMENT. IF IN DOUBT, IMMOBILIZE**

Reference: EMS Spinal Precautions & Use of the Long Backboard NAEMSP and ACS COT October 2012
MEDICATION
IV GUIDE
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<td>Adenosine (Adenocard)</td>
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<td>Afrin</td>
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<td>Albuterol</td>
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<td>Aspirin (Chewable)</td>
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ACETAMINOPHEN (TYLENOL)

CLASSIFICATION
1. Antipyretic.
2. Analgesic.

ACTION
1. Inhibits prostaglandin in CNS to reduce fever.
2. Blocks pain impulses.

ONSET OF ACTION
1. PO and PR: 10-30 minutes.

DURATION OF ACTION
1. PO and PR: 3-4 hours.

INDICATION
1. Fever.
2. Pain management.

CONTRAINDICATION
1. Hypersensitivity.
2. Severe liver disease.

USE WITH CAUTION
1. Anemia.
2. Liver disease.
3. Renal disease.

DOSAGE AND ADMINISTRATION
1. Adult: 500-1000 mg orally.
2. Pediatric: 15 mg/kg orally or by rectal suppository.

ADVERSE REACTION
1. Nausea, Vomiting, Rash.

REFERENCE IN PROTOCOL
1. Medical Emergencies (Febrile pediatric patient).
ADENOSINE (ADENOCARD)

CLASSIFICATION
1. Antiarrhythmic.

ACTION
1. Acts on AV node to slow conduction. May inhibit reentry pathways.

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. Less than one minute.

INDICATION
1. Conversion of stable narrow complex SVT to sinus rhythm.
2. Conversion of unstable narrow complex reentry tachycardia to sinus rhythm.
3. Regular and monomorphic wide complex tachycardia, thought to be or previously defined to be reentry SVT.

CONTRAINDICATION
1. Second and third degree heart blocks, sick sinus syndrome, unless patient has a pacemaker.
2. Hypersensitivity to adenosine.

USE WITH CAUTION
1. May produce TRANSIENT first, second, and third degree blocks or asystole for 10-15 seconds.
2. Asystolic pause may be longer in patients taking Tegretol (carbamazepine) or Persantine (dipyridamole).
3. Patients taking theophylline or caffeine may require higher doses.
4. Patients with asthma may experience bronchoconstriction.
5. May be used with wide QRS complex SVT at direction of Base Station. Its use may cause acceleration of the rate.
6. It is ineffective in atrial fibrillation or flutter, and ventricular tachycardia.

DOSAGE AND ADMINISTRATION
1. Adult: 6 mg by rapid IV push over 1-3 seconds followed by a rapid NS flush of 20 mL, then elevate extremity. If no response within 1-2 minutes, give 12 mg by same method as before.
2. Pediatric: 0.1 mg/kg up to 6 mg rapid IV push over 1-3 seconds followed by a rapid NS flush of 5-10 mL. If no response within 1-2 minutes, give 0.2 mg/kg up to 12 mg by the same method as before.
3. Place IV in antecubital for best absorption using at least an 18 gauge catheter.

ADVERSE REACTION

REFERENCE IN PROTOCOL
1. Cardiac Emergencies (see AHA handbook).
2. Pediatric Cardiac Arrest Guide (Appendix K).
**AFRIN**

**CLASSIFICATION**
1. Adrenergic sympathomimetic.

**ACTION**
1. Unknown. Causes vasoconstriction of the smaller arterioles in the nasal passages which lasts up to 12 hours.

**ONSET OF ACTION**
1. Less than 5 minutes.

**DURATION OF ACTION**
1. Less than 12 hours.

**INDICATION**
1. Preparation for nasotracheal intubation.
2. Control of epistaxis.

**CONTRAINDICATION**
1. Known hypersensitivity to medication.

**USE WITH CAUTION**
1. Not recommended for children < 6 years old.

**DOSAGE AND ADMINISTRATION**
1. Adult and **Pediatric > 6 years old**: 2-3 sprays in each nostril.
   2. **Pediatric < 6 years old**: none.

**ADVERSE REACTION**
1. Headache, Drowsiness, Insomnia, Palpitations, Hypertension, Rebound nasal congestion or irritation.
2. Burning, Stinging or Sneezing may occur if recommended dosage is exceeded.
3. Use of the dispenser by more than one patient may spread infection.

**REFERENCE IN PROTOCOL**
ALBUTEROL

CLASSIFICATION

ACTION
1. Relaxes bronchial and uterine smooth muscle by acting on beta adrenergic receptors.
2. Causes potassium influx into the cell.

ONSET OF ACTION
1. 5-15 minutes.

DURATION OF ACTION
1. 3-6 hours.

INDICATION
1. Wheezing, allergic reactions, asthma, COPD.
2. Suspected hyperkalemia.
3. Crush Injury Syndrome.

CONTRAINDICATION
1. Known hypersensitivity.

USE WITH CAUTION
1. Patients with cardiovascular disease.
2. Patients taking tricyclics.
3. Elderly patients generally require a lower dose.
4. Beta blockers may blunt effect.

DOSAGE AND ADMINISTRATION
1. Adult:
   a. SVN:
      i. CHF: 2.5 mg in 3 mL NS SVN; may repeat once.
      ii. Asthma/COPD/allergic reaction:
         a) Albuterol 2.5 mg with Atrovent 0.5 mg in 3 mL NS via SVN; may repeat combination of albuterol and Atrovent once.
         b) Additional doses of albuterol 2.5 mg in 3 mL NS can be given continuously.
      iii. Anaphylaxis/Renal Dialysis with hyperkalemia/Crush Injury: 2.5 mg in 3 mL NS SVN can be given continuously.
   b. MDI: EMT may assist with patient’s own metered dose inhaler, as indicated to a total of 5 doses then call Base Station for medical direction.

2. Pediatric: Use blow-by if < 5 years old.
   a. Albuterol 2.5 mg with Atrovent 0.25 mg in 3 mL NS SVN; may repeat once.
   b. Additional doses of albuterol 2.5 mg in 3 mL can be given continuously.
ADVERSE REACTION

REFERENCE IN PROTOCOL
1. Respiratory Emergencies (Difficulty breathing).
2. Medical Emergencies (Renal dialysis-hyperkalemia).
3. Environmental Emergencies (Toxic inhalations; Allergic reaction).
4. Traumatic Emergencies (Crush Injury Syndrome).
AMIODARONE (CORDARONE)

CLASSIFICATION
1. Antiarrhythmic.

ACTION
1. Rate control in a variety of atrial and ventricular tachyarrhythmia.

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. Up to 40 days.

INDICATION
1. Shock refractory VF/pulseless VT.
2. Polymorphic VT/wide complex tachycardia of uncertain origin.
3. Control of hemodynamically unstable VT when cardioversion is unsuccessful.
4. Acceptable for termination of ectopic or multifocal atrial tachycardia with preserved LV function.
5. Used for rate control in treatment of atrial fibrillation or flutter when other therapies are ineffective.

CONTRAINDICATION
1. Patients with a hypersensitivity to amiodarone (Cordarone).
2. Patients with cardiogenic shock, marked sinus bradycardia, second- or third-degree AV block unless a pacemaker is available.

USE WITH CAUTION
1. May produce vasodilation and hypotension.
2. May have negative inotrope effects and prolong QT interval.
3. Renal failure, terminal elimination is long (half-life lasts up to 40 days).

DOSAGE AND ADMINISTRATION
1. Cardiac Arrest.
   a. First dose: 300 mg IV/IO push. Second dose if needed after 3-5 minutes: 150 mg IV/IO push.
   b. Pediatric: 5 mg/kg IV/IO push, up to a maximum of 300 mg; may repeat to total daily dose of 15 mg/kg.
2. Wide complex tachycardia.
   a. Mix 150 mg in 100 mL DsW and infuse IV/IO over 10 minutes (15 mg per minute).
   b. May repeat every 10 minutes as needed.
   c. Consult Base Station if arrhythmia persists beyond second dose.

ADVERSE REACTION
1. Vasodilation, Hypotension, Bradycardia.

REFERENCE IN PROTOCOL
1. Cardiac Emergencies (see AHA handbook).
ASPIRIN (CHEWABLE)

CLASSIFICATION
1. Platelet inhibitor.

ACTION
1. Inhibits platelet aggregation in patients with suspected acute MI.

ONSET OF ACTION
1. 5-30 minutes.

DURATION OF ACTION
1. Decreasing by 1/7th over 7 days.

INDICATION
1. Suspected ischemic chest pain.
2. Suspected acute coronary syndrome.

CONTRAINDICATION
1. Patients with known allergy to salicylates.
2. Possible hemorrhagic stroke.

USE WITH CAUTION
1. Patients taking anti-coagulants.
2. Patients with active ulcer disease.
3. Patients with asthma.

DOSAGE AND ADMINISTRATION
1. Adult: 162 mg, or if not already taking ASA then give 324 or 325 mg (chewing is preferable). Ensure aspirin is non-enteric coated.
2. Pediatric: Contact Mary Bridge.

ADVERSE REACTION
1. None in the non-allergic patient with prescribed field dosage.

REFERENCE IN PROTOCOL
1. Cardiac Emergencies (Chest discomfort and possible ACS; AHA handbook).
ATROPINE

CLASSIFICATION
1. Parasympathetic blocker, anticholinergic.

ACTION
1. Cardiac.
   a. Increases firing rate of sinoatrial (SA) node by blocking action of vagus nerve, which results in an increased pulse rate.
   b. Increases conduction velocity through the atrioventricular (AV) node.
2. Non-Cardiac.
   a. Decrease of all body secretions.
   b. Dilation of pupils and paralysis of the ciliary muscle.
   c. Decrease in bladder tone resulting in urinary retention.
   d. Central nervous system stimulation.

ONSET OF ACTION
1. IV: immediate.
2. IM: 1 minute.

DURATION OF ACTION
1. 4 hours.

INDICATION
1. Symptomatic bradycardic rhythms associated with hypotension, decreased mentation, ventricular irritability (PVC’s), chest pain.
2. May be beneficial in AV nodal block, but not likely to be effective for type 2 second-degree or third-degree AV block, PEA or asystole.
3. Organophosphate anticholinesterase poisoning.

CONTRAINDICATION
1. Atrial fibrillation or flutter.
2. Tachycardia.
3. Bradycardia secondary to increased ICP (i.e. stroke, head trauma).
4. Unstable cardiovascular status in acute hemorrhage.

USE WITH CAUTION
1. Do not mix with sodium bicarbonate.
2. Be certain patient with bradycardia is not hypoxic or head injured in origin.
3. Ineffective for bradycardia treatment in a transplanted heart.
DOSAGE AND ADMINISTRATION

1. Bradycardia:
   a. Adult:
      i. IV: 0.5 mg every 3-5 minutes as needed,
         a) Minimum single dose: 0.5 mg
         b) Maximum total dose 0.04 mg/kg (total 3 mg).
         c) Use shorter dosing interval (3 minutes) and higher doses in severe clinical conditions.
      ii. ET: 1 mg diluted in 10 mL NS.
   c. Pediatric:
      i. IV: 0.02 mg/kg.
         a) Minimum single dose: 0.1 mg.
         b) Maximum child single dose: 0.5 mg, maximum child total dose 1 mg.
         c) Maximum adolescent single dose: 1 mg, max adolescent total dose 2 mg.
         d) May double for second IV dose.
      ii. ET: 0.05 mg/kg diluted in 5 mL NS.

   a. Adult: 1 mg IV every 1 minute until symptoms (bradycardia, bronchial secretions, etc.) clear, up to 10 mg.
   b. If using the DuoDote/Mark 1 antidote kit, give one atropine injector (2 mg) into the thigh followed with 2-PAM chloride injection. May give up to three sets.
   c. Pediatric: Age < 12 years old start with 0.5 mg IV/IO and repeat every 1 minute until symptoms clear, up to 10 mg. Age ≥ 12 years old follow adult dosing.

ADVERSE REACTION

2. Non-Cardiac: Dryness of mouth (common), Pain in eyes or blurred vision (precipitates glaucoma), Restlessness, Irritability, Change in mental state, Injection site pain.

REFERENCE IN PROTOCOL

1. Cardiac Emergencies (see AHA handbook).
2. Environmental Emergencies (Organophosphate/Nerve Agent poisoning).
CALCIUM CHLORIDE (10%)

CLASSIFICATION
1. Electrolyte.

ACTION
1. Involved in regulation of cell membrane permeability to sodium and potassium.
2. Plays a role in excitation contraction coupling (increases force of myocardial contraction and muscle contraction).

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. 30 minutes-2 hours.

INDICATION
1. Bradycardic renal dialysis patients secondary to hyperkalemia exhibiting tall, peaked T waves, prolongation of QRS, low P waves.
2. Calcium channel blocker or beta blocker overdose.
3. Antidote for magnesium sulfate toxicity.

CONTRAINDICATION
1. Ventricular fibrillation.
2. Digitalis intoxication (may result in asystole).
3. Hypercalcemia.

USE WITH CAUTION
1. Extravasation causes tissue sloughing.
2. Do not mix with sodium bicarbonate (flush line first).

DOSAGE AND ADMINISTRATION
1. 10% = 100 mg/mL.
2. Adult: 1000 mg (1 g) IV/IO over 5 minutes; may be repeated as needed in 20 minutes.
3. Pediatric: 20 mg/kg IV/IO SLOWLY.

ADVERSE REACTION

REFERENCE IN PROTOCOL
1. Cardiac Emergencies (see AHA handbook).
2. Medical Emergencies (Renal dialysis patients).
3. Traumatic Emergencies (Crush Injury Syndrome).
CALCIUM GLUCONATE (10%)

CLASSIFICATION
1. Electrolyte – calcium salt.

ACTION
1. Involved in regulation of cell membrane permeability to sodium and potassium.
2. Plays a role in excitation contraction coupling (increases force of myocardial contraction and muscle contraction).

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. 30 minutes-2 hours.

INDICATION
1. Suspected hyperkalemia – ECG exhibiting tall, peaked T waves, prolongation of QRS, low P waves.
2. Calcium channel blocker or beta blocker overdose.
3. Antidote for magnesium sulfate toxicity.

CONTRAINDICATION
1. Ventricular fibrillation.
2. Digitalis intoxication (may result in asystole).
3. Hypercalcemia.

USE WITH CAUTION
1. Extravasation causes tissue sloughing.
2. Dehydration.
3. Do not mix with sodium bicarbonate (flush line first).

DOSAGE AND ADMINISTRATION
1. 10% = 100 mg/mL
2. Adult: 3 g IV/IO over 5 minutes; may be repeated as needed in 20 minutes.
3. Pediatric: 60 mg/kg IV/IO SLOWLY.

ADVERSE REACTION
2. Mild to severe IV site irritation.

REFERENCE IN PROTOCOL
1. Cardiac Emergencies (see AHA handbook).
2. Medical Emergencies (Renal dialysis patients).
3. Traumatic Emergencies (Crush Injury Syndrome).
CLASSIFICATION
1. Hydroxocobalamin – a form of B-12.

ACTION
1. Hydroxocobalamin binds to the cyanide ion forming cyanocobalamin which is excreted in the urine.

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. Up to 24 hours.

INDICATION
1. Treatment for known or suspected cyanide poisoning. Signs and symptoms of high concentrations of cyanide exposure with an appropriate clinical history are indications for treatment.
2. High concentrations of cyanide signs and symptoms:
   a. Markedly altered level of consciousness.
   b. Seizure.
   c. Respiratory depression or arrest.
   d. Cardiac dysrhythmia (other than sinus tachycardia).

CONTRAINDICATION
1. Patients with known anaphylactic reactions to hydroxocobalamin or cyanocobalamin.

USE WITH CAUTION
1. Caution should be exercised when administering other cyanide antidotes simultaneously with Cyanokit, as safety has not been established. If a decision is made to administer another cyanide antidote with Cyanokit, these drugs should not be administered concurrently in the same IV line.

DOSAGE AND ADMINISTRATION
1. If able, collect a pre-treatment blood sample in the appropriate tube to assess cyanide level.
2. Adult: Initial dose is 5 gm administered over 15 minutes slow IV. (Each 5 gm vial of hydroxocobalamin for injection is to be reconstituted with 200 mL of 0.9% NS. Invert repeatedly, but do not shake to reconstitute). An additional 5 gm dose may be administered.
3. Pediatric: Dose is 70 mg/kg (reconstitute concentration is 25 mg/mL) over 15 minutes slow IV. (Each 5 gm vial of hydroxocobalamin for injection is to be reconstituted with 200 mL of 0.9% NS.) Maximum single dose is 5 gm.
ADVERSE REACTION
1. Reddish discoloration of the skin and urine (not to be confused with the rare sign of carbon monoxide poisoning). The devices that rely on colorimetry (pulse oximetry and CO level) will be interfered with by the color change and are not reliable for patient assessment.
2. Rash, Increased blood pressure, Nausea, Headache, Injection site reactions, Allergic reactions.

REFERENCE IN PROTOCOL
1. Environmental Emergencies (Toxic inhalations).
DEXAMETHASONE (DECADRON)

CLASSIFICATION
1. Glucocorticoid.

ACTION
1. Synthetic steroid that is related chemically to the natural hormones secreted by the adrenal cortex.
2. Suppresses acute and chronic inflammation.
3. Potentiates the relaxation of vascular and bronchial smooth muscle by beta adrenergic agonists.
4. Possibly alters airway hyperactivity.

ONSET OF ACTION
1. IV: 1 hour.
2. PO: 2 hours.

DURATION OF ACTION
1. 24-72 hours.

INDICATION
1. Moderate to severe asthma, croup or COPD.
2. Moderate to severe allergic reactions.
3. Moderate to severe angioedema.
4. Anaphylaxis.

CONTRAINDICATION
1. Known hypersensitivity.

USE WITH CAUTION
1. Active untreated infections.

DOSAGE AND ADMINISTRATION
1. Adult: 0.6 mg/kg PO/IV up to 10 mg.
2. **Pediatric: 0.6 mg/kg PO/IV up to 10 mg.**
3. Incompatible with Diphenhydramine (Benadryl); flush between medications.
4. Medication should be protected from heat.

ADVERSE REACTION
1. Hypertension, GI bleeding, Hyperglycemia.

REFERENCE IN PROTOCOL
1. Respiratory Emergencies (Difficulty breathing).
DEXTROSE
5% (D₅W), 10% (D₁₀W), 25% (D₂₅W), 50% (D₅₀W)

CLASSIFICATION
1. Simple carbohydrate.

ACTION
1. Provides glucose required for metabolic needs.
2. Spares body proteins.

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. Varies.

INDICATION
1. Suspected hypoglycemia.
2. Coma of unknown origin.
3. Crush Injury Syndrome.
4. Routine IV administration.

CONTRAINDICATION
1. Hyperglycemia.

USE WITH CAUTION
1. Increased intracranial pressure in constant infusion.

DOSAGE AND ADMINISTRATION
1. Hypoglycemia:
   a. Adult: Titrate and/or repeat until patient at baseline and blood glucose remains > 80.
      i. 50 mL of D₅₀W (25 gm) IV/IO push, or
      ii. 250 mL of D₁₀W (25 gm) IV/IO.
   b. Pediatric: Titrate and/or repeat until patient at baseline and blood glucose remains > 60.
      i. 50% dextrose (0.5 gm/mL) (≥ 8 years old); give 1 mL/kg, or
      ii. 25% dextrose (0.25 gm/mL); give 2 mL/kg, or
      iii. 10% dextrose (0.1 gm/mL); give 5 mL/kg, or
      iv. 5% dextrose (0.05 gm/mL); give 10 mL/kg if volume tolerated.
      v. Maximum concentration for newborn: 12.5% (0.125 gm/mL).
2. IV maintenance:
   a. D₅W-Adult and Pediatric: Route and indication dependent.

ADVERSE REACTION
1. Extravasation causes tissue sloughing with D₂₅W and D₅₀W.

REFERENCE IN PROTOCOL
1. Medical Emergencies (Altered level of consciousness).
2. OB/GYN Emergencies (Neonatal Resuscitation).
3. Traumatic Emergencies (Crush Injury Syndrome).
DIAZEPAM (VALIUM)

CLASSIFICATION
1. Anticonvulsant, anti-anxiety, sedative.

ACTION
1. Depresses central nervous system.

ONSET OF ACTION
1. IV/IO: 1-5 minutes, peak actions at 5-10 minutes.
2. IM: 15-30 minutes, peak actions at 30-60 minutes. Absorption is slow, erratic and incomplete.
3. PR: 1-5 minutes, peak actions at 10-45 minutes.

DURATION OF ACTION
1. 15-60 minutes.

INDICATION
1. Seizures secondary to head trauma/alcohol withdrawal.
2. Status epilepticus.
3. For pacing, cardioversion, and post Rapid Sequence Intubation for relief of anxiety, tension, and diminish recall of procedures.
4. Severe muscle spasm.
5. Severe anxiety.

CONTRAINDICATION
1. Known hypersensitivity.

USE WITH CAUTION
1. Elderly.
2. Patients with inadequate pulmonary function.
3. Patients with liver and/or kidney disease.
4. Patients with a history of drug addiction.
5. Patients that have used other CNS depressants.

DOSAGE AND ADMINISTRATION
1. Adult: Range is 2-10 mg IM/IV/IO, refer to dosage regimen referenced in appropriate protocol section. General dose, 0.2 mg/kg/dose not to exceed 10 mg IV push.

2. Pediatric: 0.2 mg/kg IV/IO in increments no greater than 2 mg to a maximum dose of 10 mg. Wait 1-2 minutes between doses to observe effect. Rectally, 0.5 mg/kg not to exceed 20 mg. Wait at least 5 minutes before giving a second dose. Contact Mary Bridge for more repeated doses. Administer rectal dose with 3 mL syringe (without needle) inserted as far as possible.
ADVERSE REACTION
1. Central nervous system depression, Ataxia, Drowsiness, Fatigue, Dizziness, Urticaria, Skin rash, Transient hypotension, Respiratory depression.
2. Venous thrombosis and phlebitis at the injection site.

REFERENCE IN PROTOCOL
1. Traumatic Emergencies.
2. Cardiac Emergencies (see AHA handbook).
3. Medical Emergencies (Altered level of consciousness – if actively seizing).
5. Behavioral Emergencies (Violent patients).
6. Rapid Sequence Intubation (Appendix F).
DILTIAZEM (CARDIZEM)

CLASSIFICATION
1. Calcium-channel blocker.

ACTION
1. Slows conduction through AV node.

ONSET OF ACTION
1. 3 minutes.

DURATION OF ACTION
1. 1-3 hours.

INDICATION
1. To control ventricular rate in symptomatic atrial fibrillation or flutter.
2. Use after adenosine to treat refractory reentry SVT in patients with narrow complex QRS.

CONTRAININDICATION
1. Sick Sinus Syndrome.
2. Second or third degree heart block.
3. A-fib associated with WPW or short PR syndrome.
5. Cardiogenic shock.
6. Hypersensitivity.
7. Wide complex tachycardia.

USE WITH CAUTION
1. Can cause hypotension.
2. Impaired renal or hepatic function.
3. Patients on oral beta blockers.

DOSAGE AND ADMINISTRATION
1. Adult: Initial dose 15-20 mg IV over 2 minutes. Second dose after 15 minutes, if needed is 20-25 mg IV over 2 minutes.
2. Pediatric: Contact Mary Bridge.

ADVERSE REACTION

REFERENCE IN PROTOCOL
1. Cardiac Emergencies (see AHA handbook).
DIPHENHYDRAMINE (BENADRYL)

CLASSIFICATION
1. Antihistamine, sedative.

ACTION
1. Potent antihistamine agent, which possesses anticholinergic (antispasmodic), antiemetic, and sedative effects.

ONSET OF ACTION
1. IV/IO: Immediate.
2. IM: 15-30 minutes.

DURATION OF ACTION
1. IV/IO and IM: 6-8 hours.

INDICATION
1. Antihistamine.
   a. Anaphylaxis, use as an adjunct to epinephrine.
   b. Uncomplicated allergic conditions.
2. Dystonic or extrapyramidal reactions.

CONTRAINDITION
1. Hypersensitivity.

USE WITH CAUTION
1. Hypotensive patients.
2. Glaucoma.
3. Chronic asthmatic.

DOSAGE AND ADMINISTRATION
1. Adult: 25-50 mg deep IM or slow IV/IO; maximum dose 100 mg.
2. Pediatric: 1-2 mg/kg IM, slowly IV/IO; maximum dose 50 mg.

ADVERSE REACTION
1. Sedation, Sleepiness, Dizziness, Disturbed coordination, Epigastric distress, Dry mouth, Thickening of bronchial secretions, Hypotension, Palpitations, Tachycardia, Bradycardia, Blurred vision.

REFERENCE IN PROTOCOL
1. Medical Emergencies (Overdose).
DOPAMINE

CLASSIFICATION

ACTION
1. Increases blood pressure.
2. At low dose of 1-5 mcg/kg/minute, dopaminergic effects occur resulting in vasodilation of renal, mesenteric, and cerebral arteries increasing renal blood flow and urine output, but may not increase pulse or BP.
3. At dose of 2-20 mcg/kg/minute, beta adrenergic effects (increased contractility and chronotropic effect) occur resulting in increased cardiac output with minimal changes in systemic vascular resistance or preload.
4. At dose of 10-20 mcg/kg/minute, alpha-adrenergic effects occur resulting in vasoconstriction in the renal, mesenteric and peripheral arteries and veins.

ONSET OF ACTION
1. 5 minutes.

DURATION OF ACTION
1. 10 minutes after infusion ends.

INDICATION
1. Symptomatic hypotension secondary to non-hypovolemic states.
2. Low cardiac output states such as cardiogenic, anaphylactic, septic or neurogenic shock.
3. Symptomatic bradycardia after atropine/pacing.

CONTRAINDICATION
1. Uncorrected tachyarrhythmia due to hypovolemia.
2. Ventricular fibrillation.
3. Hypovolemic shock.

USE WITH CAUTION
1. Avoid extravasation of dopamine into surrounding tissue. If intravenous infusion infiltrates, it must be immediately removed. Notify the physician.
2. Do not mix sodium bicarbonate or similar alkaline solutions, because inactivation of dopamine will result.

DOSAGE AND ADMINISTRATION
1. Dopamine must be diluted prior to administration; mix 400 mg in 250 mL NS with a micro-drip (1600 mcg/mL).
   a. Usual infusion rate ranges from 2-20 mcg/kg/minute, titrating to individual patient response.
2. May use: DUGGAN FORMULA.
   a. Estimate the patient’s weight in pounds.
   b. Cross off the 3rd digit of the weight in pounds to get gtts/minute, e.g. 183 pounds = 18.
   c. At 18 gtts/minute, you will be administering 5-6 mcg/kg/minute.
3. May use: Patient weight in kg.

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Microdrops per minute (or mL/hr). 400 mg in 250 mL NS (1600 mcg/mL).

ADVERSE REACTION
1. Hypertension, Supraventricular tachycardia, Ventricular arrhythmias (premature ventricular contractions, ventricular tachycardia/fibrillation).

REFERENCE IN PROTOCOL
1. Respiratory Emergencies (Difficulty breathing).
2. Cardiac Emergencies (see AHA handbook).
EPINEPHRINE (ADRENALIN)

CLASSIFICATION
1. Beta adrenergic and alpha stimulator.

ACTION
1. Alpha and beta adrenergic effects.
   a. Increases force of myocardial contraction.
   b. Increases pulse rate and systolic blood pressure.
   c. Increases conduction velocity through the A-V node.
   d. Increases irritability of ventricles.
   e. Dilates bronchi and coronary arteries.
   f. Increases cerebral blood flow (alpha effects).

ONSET OF ACTION
1. IV/ET/IO: Immediate.
2. Push-dose IV: 1 minute.
3. IM: Variable.
4. Inhalation: 3-5 minutes.
5. SQ: 6-15 minutes.

DURATION OF ACTION
1. IV/ET/IO: 1-4 hours.
2. Push-dose IV: 2-5 minutes.
3. IM: varies.
4. Inhalation: 1-3 hours.
5. SQ: varies.

INDICATION
1. Cardiac arrest: VF, pulseless VT, asystole, PEA.
2. Anaphylactic shock.
3. Allergic reactions.
4. Status asthmaticus.
5. Bradycardia unresponsive to atropine, TCP, dopamine.
7. Upper airway obstruction edema.
8. Hypotension.

CONTRAINDICATION
1. Chest pain accompanied by ectopic beats or tachycardia.
2. Do not mix with sodium bicarbonate.
3. Do not use to treat VT secondary to cocaine, or hydrocarbon overdose.

USE WITH CAUTION
1. Bronchial asthma and significant emphysema, when patients may also have congestive heart disease.
2. Raising BP and P may cause myocardial ischemia, angina and increase O₂ demand.
DOSAGE AND ADMINISTRATION (1:10,000 = 0.1 mg/mL; 1:1000 = 1 mg/mL)

1. Adult:
   a. Cardiac Arrest:
      i. IV/IO: 1 mg (10 mL of 1:10,000) every 3-5 minutes; follow with 20 mL NS flush and elevate arm for 10-20 seconds after dose.
      ii. ET: 2-2.5 mg of 1:1000 mixed with 10 mL NS.
   b. Profound Bradycardia or Hypotension:
      i. Push-dose IV: Mix 1 mL of 1:10,000 epi with 9 mL NS in a 10 mL syringe (10 mcg/mL) and administer 0.5-2 mL of push-dose epi every 2-5 minutes; or
      ii. Infusion IV: Mix 1 mg in 250 mL NS; administer at 2-10 mcg/minute (0.5 mL-2.5 mL), titrating to effect.
   c. Allergic reaction: 0.3-0.5 mg 1:1000 IM.
   d. Anaphylactic shock:
      i. IM: 0.3-0.5 mg of 1:1000.
      ii. IV/IO: 0.5 mg (5 mL of 1:10,000).
      iii. ET: 2-2.5 mg of 1:1000 mixed with 10 mL NS.
   e. Asthma: 0.3 mg of 1:1000 IM; may repeat in 20 minutes if necessary.
   f. Upper airway edema due to obstruction:
      i. IM: 0.3 mg of 1:1000.
      ii. IV: 0.3 mg of 1:10,000.

2. Pediatric:
      i. 2 mL (undiluted) given blow-by < 6 years old.
      ii. 3 mL (undiluted) given blow-by ≥ 6 years old.
   b. Cardiac arrest/Bradycardia/Anaphylaxis: 0.01 mg/kg of 1:10,000 solution (0.1 mL = 0.01 mg of 1:10,000 solution, maximum dose 1 mg) IV/IO. ET- use 0.1 mg/kg (1:1000 0.1 mL/kg).
   c. Anaphylactic shock:
      i. IM:
         a) 1:1000 0.3-0.5 mg for pediatric patients ≥ 66 pounds.
         b) 1:1000 0.15 mg for pediatric patients < 66 pounds.
      ii. IV/IO: 1:10,000 0.3 mg.
   d. Allergic Reaction/Asthma: 0.01 mg/kg to maximum of 0.3 mg IM (0.01 mg = 0.01 mL of 1:1000).
   e. Upper airway edema due to obstruction:
      i. IM: 1:1000 0.01 mg/kg up to 0.3 mg.
      ii. IV/IO: 1:10,000 0.01 mg/kg up to 0.3 mg.

ADVERSE REACTION


REFERENCE IN PROTOCOL

1. Cardiac arrest (see AHA handbook)
2. Respiratory Emergencies (If asthma suspected; If croup suspected; Upper airway obstruction; Allergic reaction).
5. Pediatric Cardiac Arrest Guide (Appendix K).
6. Medical Emergencies (Shock).
ETOMIDATE (AMIDATE)

CLASSIFICATION
1. Non-narcotic, non-barbiturate, sedative hypnotic.

ACTION
1. Depresses the activity of the brain stem reticular system. It may lower intraocular and intracranial pressure, and lower the rate of cerebral oxygen utilization, all with minimal cardiovascular and respiratory depressant effects.

ONSET OF ACTION
1. Within 10-60 seconds.

DURATION OF ACTION
1. Dose dependent but can be 3-5 minutes with full recovery in 15 minutes.

INDICATION
1. Induction agent for RSI in adults and pediatric patients ≥ 10 years old.
2. Sedation prior to cardioversion.

CONTRAINDICATION
1. Known hypersensitivity to the agent.
2. Not recommended for pregnant or nursing mothers.

USE WITH CAUTION
1. Elderly patients.

DOSAGE AND ADMINISTRATION
1. Adult: Induction agent – 0.3 mg/kg IV/IO push over 30-60 seconds. Sedation agent – 0.1 mg/kg IV/IO.

2. Pediatric: 0.3 mg/kg IV/IO push over 30-60 seconds. Max dose: 20 mg.

<table>
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<tr>
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<td>13</td>
<td>14.3</td>
<td>15.7</td>
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</tbody>
</table>

ADVERSE REACTION
1. Painful myoclonus (diffuse muscle contraction) which may be painful after patient awakens. This can be reduced by giving muscle relaxant immediately after Etomidate is given.
2. Pain at the injection site, moderated by using a large vessel and giving with IV fluid.
3. Apnea, Hypotension, Tachycardia, Nausea, Vomiting.

REFERENCE IN PROTOCOL
1. Rapid Sequence Intubation (Appendix F).
2. Cardiac Emergencies (see AHA handbook).
FENTANYL (SUBLIMAZE)

CLASSIFICATION
1. Narcotic analgesic.

ACTION
1. Potent analgesic, sedative, euphoric.

ONSET OF ACTION
1. IV/IO/IN: 1 minute.
2. IM: 7-8 minutes.

DURATION OF ACTION
1. IV/IO/IN: 30-60 minutes.
2. IM: 1-2 hours.

INDICATION
1. Severe pain.
2. Rapid Sequence Intubation.

CONTRAINDICATIONS
1. Known hypersensitivity.
2. Myasthenia gravis.
3. Monoamine oxidase inhibitor (MAOI) antidepressant use.

USE WITH CAUTION
1. Bradycardia.
2. Respiratory depression.
3. Head trauma with increased ICP.
4. Severe liver or renal insufficiencies.

DOSAGE AND ADMINISTRATION
1. Adults:
   a. Pain management: 25 mcg-100 mcg increments IN/IM/IV/IO every 5-10 minutes titrating to effect, to a maximum dose of 300 mcg if BP > 90. Refer to specific sections of the protocol for dosages specific to your patient’s presentation.
   b. Post-RSI: 1 mcg/kg IV/IO every 10 minutes as needed.

2. Pediatrics:
   a. Pain management: 1-2 mcg/kg IN/IM/IV/IO.
   b. Post-RSI: 1 mcg/kg IV/IO every 10 minutes as needed.

ADVERSE REACTION
1. Hypotension, Bradycardia, CNS depression, Nausea, Vomiting, Respiratory depression, Chest wall rigidity.

REFERENCE IN PROTOCOL
1. Traumatic Emergencies (Musculoskeletal Trauma, Amputated parts, Burns and Crush Injury Syndrome).
2. Cardiac Emergencies (Chest discomfort and possible ACS).
4. Rapid Sequence Intubation (Appendix F).
GLUCAGON

CLASSIFICATION
1. Hyperglycemic agent.
2. Hormone.

ACTION
1. Increases blood glucose concentration by converting liver glycogen to glucose.
2. Relaxes smooth muscle of stomach, duodenum, small bowel and colon.

ONSET OF ACTION
1. IV: 1 minute.
2. IM: 10 minutes.

DURATION OF ACTION
1. IV: 25 minutes.
2. IM: 30 minutes.

INDICATION
1. Blood glucose < 80 when unable to establish an IV.
2. Beta blocker or calcium channel blocker overdose.
3. Anaphylaxis refractory to epi in the patient on beta blockers.

CONTRAINDICATION
1. Known hypersensitivity.

USE WITH CAUTION
1. Liver, renal or cardiovascular disease.
2. Starvation.

DOSAGE AND ADMINISTRATION
1. Adult:
   a. For hypoglycemia: 1 mg IM.
   b. For beta blocker OD: 3-10 mg IV slowly over 3-5 minutes.
   c. For anaphylactic patient on beta blockers who is unresponsive to epi: 1-3 mg IV.

2. Pediatric:
   a. For hypoglycemia (and IV not available): children ≤ 20 kg give 0.5 mg IM; children > 20 kg give 1 mg IM.
   b. For beta blocker OD: Contact Mary Bridge Base Station for direction.
   c. For anaphylactic patient on beta blockers who is unresponsive to epi: contact Mary Bridge Base Station for direction.

ADVERSE REACTION

REFERENCE IN PROTOCOL
1. Medical Emergencies (Altered level of consciousness; Overdose on beta blocker).

NOTE: Blood glucose levels fall to normal or to hypoglycemia level if patient does not receive IV dextrose or food by mouth after glucagon administration.
GLUCOSE, ORAL

CLASSIFICATION
1. Monosaccharide.

ACTION
1. When given orally, it is readily absorbed in the intestine.
2. After absorption from the gastrointestinal tract, glucose is readily distributed in the tissues and provides a prompt increase in circulating blood glucose.

ONSET OF ACTION
1. 30-60 minutes.

DURATION OF ACTION
1. Hours.

INDICATION
1. Patients with altered mental status.
2. Symptomatic hypoglycemia.

CONTRAINDICATION
1. Unconsciousness.
2. Unable to swallow.

USE WITH CAUTION
1. Because changes in levels of consciousness can change rapidly in patients with hypoglycemia, it is important to ascertain the patient’s ability to swallow an oral preparation of glucose without airway compromise.

DOSAGE AND ADMINISTRATION
1. Adult: Squeeze glucose from tube onto tongue depressor and insert tongue depressor into patient’s mouth between cheek and gum. Alternatively, let patient squeeze the oral glucose into his/her own mouth to swallow.
2. Pediatric: Titrate to effect.

ADVERSE REACTION
1. Possible aspiration by patient without a gag reflex.
2. Nausea.

REFERENCE IN PROTOCOL
1. Medical Emergencies (Altered level of consciousness).
**IBUPROFEN**

CLASSIFICATION
1. Non-Steroidal Anti-inflamatory Drug (NSAID).

ACTION
1. The exact mechanism of action of ibuprofen is unknown.
2. Its pharmacological effects are believed to be due to inhibition of cyclooxygenase-2 (COX-2) which decreases the synthesis of prostaglandins involved in mediating inflammation, pain, fever, and swelling.
3. Antipyretic effects may be due to action on the hypothalamus, resulting in an increased peripheral blood flow, vasodilation, and subsequent heat dissipation.

ONSET OF ACTION
1. PO: 30 minutes.

DURATION OF ACTION
1. PO: 3-4 hours.

INDICATION
1. Pain management (e.g. back pain, ankle sprain).
2. Fever.

CONTRAINDICATION
1. Hypersensitivity.
2. Severe liver disease.

USE WITH CAUTION
1. Anemia.
2. Renal disease.
3. Hypertension.

DOSAGE AND ADMINISTRATION
1. Adult: 400-800 mg PO with 8 ounces of water.
2. Pediatric (6 months-12 years old): 10 mg/kg PO.

ADVERSE REACTION
1. Nausea, Vomiting, Rash.

REFERENCE IN PROTOCOL
1. Pain Management.
IPRATROPIUM BROMIDE (ATROVENT)

CLASSIFICATION
1. Anticholinergic bronchodilator.

ACTION
1. Inhibits vagally mediated reflexes by antagonizing the action of acetylcholine.

ONSET OF ACTION
1. 5-15 minutes.

DURATION OF ACTION
1. 4-5 hours.

INDICATION
1. Bronchospasms secondary to COPD, asthma and reactive airway disease.

CONTRAINDICATION
1. Allergy to soy products or peanuts.

USE WITH CAUTION
1. Glaucoma.

DOSAGE AND ADMINISTRATION
1. Adult: 0.5 mg to be added to albuterol/NS SVN; may repeat once.
2. Pediatric: 0.25 mg to be added to albuterol/NS SVN; may repeat once.

ADVERSE REACTION
1. Dry mouth, Headache, Cough, Dizziness, Nervousness, Palpitations.

REFERENCE IN PROTOCOL
1. Respiratory Emergencies (Difficulty breathing).
KETAMINE (KETALAR)

CLASSIFICATION
1. Dissociative agent.
2. Sedative.

ACTION
1. Short term anesthetic state.

ONSET OF ACTION
1. IV/IO/IN: 30 seconds.
2. IM: 3–4 minutes.

DURATION OF ACTION
1. IV/IO/IN: 5–10 minutes.
2. IM: 12–25 minutes.

INDICATION
1. Excited Delirium.
3. Rapid Sequence Intubation.

CONTRAINDICATION
1. Known hypersensitivity.
2. Severe liver or renal insufficiencies.

USE WITH CAUTION
1. Hypertension.

DOSAGE AND ADMINISTRATION
1. Excited Delirium: 4 mg/kg IM or 2 mg/kg IV.
2. Refractory Pain Management: Adult: 0.2 mg/kg IN/IM/IV/IO every 10 minutes as needed. Pediatric: 0.2 mg/kg IN/IM/IV/IO every 10 minutes as needed.
3. Pre-RSI Adult: 2 mg/kg IV/IO. Pediatric: 2 mg/kg IV/IO. Adult and Pediatric: May use ketamine IM if IV/IO unattainable, double the IV/IO dose.
4. Post-RSI Adult: 0.5 mg/kg IV/IO q 10 minutes as needed. Pediatric: 0.5 mg/kg IV/IO q 10 minutes as needed.

ADVERSE REACTION
1. Laryngospasm, Respiratory depression, Hypotension or Hypertension, Nausea, Vomiting, Hypersalivation.
2. Transient apnea with rapid IV/IO push.

REFERENCE IN PROTOCOL
3. Rapid Sequence Intubation (Appendix F).
LACTATED RINGER’S (LR)

CLASSIFICATION
1. Isotonic crystalloid solution.

ACTION
1. Replaces extracellular fluid by remaining in vascular space.

INDICATION
1. Primarily indicated for use in trauma patients.
2. Hypovolemia.
3. Heat exhaustion.
4. Shock.

CONTRAINDICATION
1. Do not use in patients with a known hypersensitivity to sodium lactate.
2. Do not use in patients for the treatment of lactic acidosis or severe metabolic acidosis.
3. Do not use in patients for the treatment of alkalosis or patients at risk for alkalosis.
4. Do not use in patients with severe renal impairment, hypervolemia, overhydration, or conditions that may cause sodium and/or potassium retention, fluid overload, or edema.

USE WITH CAUTION
1. Hypertensive patients.
2. Fluid overloaded patients.
3. Use volume control device with pediatric patients.
4. Use with particular caution to neonates and infants less than 6 months of age.

DOSAGE AND ADMINISTRATION
1. Adult: Route and indication dependent.
2. Pediatric: 20 mL/kg, repeat PRN; may give up to 3 rapid infusions if inadequate perfusion.

ADVERSE REACTION
1. Fluid overload, Hypersensitivity, Hyperkalemia.

REFERENCE IN PROTOCOL
1. Throughout.
LIDOCAINE 2%

CLASSIFICATION
1. Antiarrhythmic.

ACTION
1. Suppresses ventricular arrhythmias.
2. Local anesthetic.

ONSET OF ACTION
1. IV/IO: Immediate.
2. ET: Immediate.

DURATION OF ACTION
1. IV/IO: 10-20 minutes.
2. ET: 10-20 minutes.

INDICATION
1. Cardiac arrest from VF/VT.
3. As anesthetic flush prior to IO infusion for adult patients that are awake.

CONTRAINDICATION
1. Known hypersensitivity.
2. Heart blocks.
3. WPW.

USE WITH CAUTION
1. Liver disease.
2. Congestive heart failure.
3. Severe respiratory depression.
5. Shock.

DOSAGE AND ADMINISTRATION
1. Cardiac Arrest from VF/VT, use as follows:
   a. Initial dose: 1-1.5 mg/kg IV/IO bolus.
   b. For refractory VF: may give additional 0.5-0.75 mg/kg IV/IO, repeat in 5-10 minutes; maximum is 3 doses or maximum total of 3 mg/kg.
   c. ET dose: 2-3 mg/kg in 10 mL NS.
2. Perfusing arrhythmia of stable VT, wide complex tachycardia of uncertain type, use as follows:
   a. Initial dose: 1 mg/kg IV/IO.
   b. Repeat 0.5 mg/kg IV/IO every 5-10 minutes, maximum total dose is 3 mg/kg.
3. Maintenance infusion: Mix 1 gm in 250 mL of NS = 4 mg/mL or use premixed solution at 1-4 mg/minute.
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<thead>
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<th>MICRODROPS/MINUTE</th>
<th>mg/minute</th>
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</tr>
<tr>
<td>15</td>
<td>1</td>
</tr>
</tbody>
</table>

NOTE: In patients with liver disease or severe congestive heart failure, administer half of the above recommended doses for maintenance dose (not initial).

4. **Pediatric**: 1 mg/kg IV/IO, **OR** 2-3 mg/kg in 5 mL NS ET.
5. IO anesthesia: Adult: 20-50 mg IO prior to infusion. **Contraindicated in Pediatric patient.**

ADVERSE REACTION
1. CNS: Dizziness, Somnolence, Confusion, Paresthesias, Muscle twitching, Seizures, Slurred speech.
2. CV: Hypotension, Bradycardia.
3. EENT: Tinnitus, Blurred vision.

REFERENCE IN PROTOCOL
1. Cardiac Emergencies (see AHA handbook).
2. Pediatric Cardiac Arrest Guide (Appendix K).
MAGNESIUM SULFATE

CLASSIFICATION
1. Antiarrhythmic, anticonvulsant, CNS depressant, electrolyte.

ACTION
1. Replaces and maintains magnesium levels.
2. Reduces muscle contractions by interfering with release of acetylcholine at the myoneural junction.

ONSET OF ACTION
1. 1-2 minutes.

DURATION OF ACTION
1. 30 minutes.

INDICATION
1. Seizures due to pre-eclampsia, eclampsia.
2. Life threatening ventricular arrhythmias due to digitalis toxicity, tricyclic overdose.
3. Torsades de pointes.
4. Respiratory distress (Asthma).

CONTRAINDICATION
1. Heart block.
2. Hypocalcemia.

USE WITH CAUTION
1. Dialysis patients.
2. Excessive dose may cause respiratory depression, cardiac arrest.

DOSAGE AND ADMINISTRATION
1. Adult dose:
   a. Seizures due to eclampsia: 4 gm slow IV push over 5 minutes. Must be given slowly to avoid cardiac or respiratory distress.
   b. Cardiac arrest-pulseless Torsades: 1-2 gm in 10 mL NS, IV/IO. (Max dose: 2 gm) bolus.
   c. Torsades with a pulse: 1-2 gm in 50-100 mL NS, IV/IO. (Max dose: 2 gm). Infuse over 15 minutes.
   d. Asthma: 2 gm in 10 mL NS, IV/IO. Infuse over 15 minutes.

2. Pediatric dose:
   a. Pulseless VT with Torsades: 50 mg/kg in 10 mL NS, IV/IO. (Max dose: 2 gm) bolus.
   b. Torsades with a pulse: 50 mg/kg in 10 mL NS, IV/IO. (Max dose: 2 gm). Infuse over 15 minutes.
   c. Asthma: 50 mg/kg in 10 mL NS, IV/IO. (Max dose: 2 gm). Infuse over 15 minutes.

ADVERSE REACTION
1. CNS: Weak or absent reflexes, Flaccid paralysis, Hypothermia, Drowsiness.
2. CV: Slow-weak pulse, Hypotension, Flushing. Monitor ECG continuously while administering.
3. Respiratory depression.

REFERENCE IN PROTOCOL
1. Cardiac Emergencies (see AHA handbook).
2. Respiratory Emergencies (Difficulty breathing).
3. Medical Emergencies (If actively seizing).
4. OB/GYN Emergencies (Hypertensive disorders of pregnancy).

NOTE: Antidote is Calcium Chloride.
MARK I / DuoDote NERVE AGENT ANTIDOTE KIT (NAAK)

CLASSIFICATION
1. Antidote for organophosphate poisoning (nerve agent/insecticide).

ACTION
1. Reactivates organophosphate-inhibited cholinesterase.

ONSET/DURATION OF ACTION
1. See ATROPINE section for atropine specifics.
2. See PRALIDOXIME CHLORIDE section for pralidoxime chloride specifics.

INDICATION
1. Organophosphate/nerve agent poisoning.

CONTRAINDICATION
1. Hypersensitivity to atropine or 2-Pam.

USE WITH CAUTION
1. See ATROPINE section for atropine specifics.
2. See PRALIDOXIME CHLORIDE section for pralidoxime chloride specifics.

DOSAGE AND ADMINISTRATION
1. Administer atropine auto injector.
2. Administer pralidoxime (2-Pam) auto injector.
3. Give up to three times if symptoms persist.

ADVERSE REACTION
1. See ATROPINE section for atropine specifics.
2. See PRALIDOXIME CHLORIDE section for pralidoxime chloride specifics.

REFERENCE IN PROTOCOL
1. Environmental Emergencies.
2. See ATROPINE section for atropine specifics.
3. See PRALIDOXIME CHLORIDE section for pralidoxime chloride specifics.
METHYLPREDNISOLONE (SOLU-MEDROL)

CLASSIFICATION
1. Anti-inflammatory/corticosteroid.

ACTION
1. An adrenocortical steroid with potent anti-inflammatory effects.

ONSET OF ACTION
1. 1-4 hours.

DURATION OF ACTION
1. 7 days.

INDICATION
1. Moderate to severe asthma / COPD exacerbations.
2. Moderate to severe allergic reactions.
3. Moderate to severe angioedema.
4. Anaphylaxis.

CONTRAINDICATION
1. Known hypersensitivity.

USE WITH CAUTION
1. Seizures may occur if patient is taking cyclosporin.

DOSAGE AND ADMINISTRATION
1. Adult: 125 mg IV/IO, single dose only.
2. **Pediatric**: 2 mg/kg IV/IO up to 125 mg per dose.
3. Incompatible with diphenhydramine (Benadryl); flush between medications.

ADVERSE REACTION
1. None acutely.
2. Some adverse metabolic effects if taken long term, greater than a few weeks.

REFERENCE IN PROTOCOL
1. Respiratory Emergencies (Difficulty breathing).
MIDAZOLAM (VERSED)

CLASSIFICATION
1. Tranquilizer (Benzodiazepine).

ACTION
1. Hypnotic, amnesiac, sedative, anticonvulsant.
2. Potent but short-acting, 3-4 times more potent than diazepam.
3. Has NO effect on pain.

ONSET OF ACTION
1. IV/IO: 1.5-5 minutes.
2. IN: 2-6 minutes.
3. IM: 15 minutes.

DURATION OF ACTION
1. IV/IO/IN/IM: 2-6 hours.

INDICATION
1. Premedication sedation prior to cardioversion.
4. Post-intubation sedation.

CONTRAINDICATION
1. History of hypersensitivity.
2. Narrow angle glaucoma.

USE WITH CAUTION
1. Shock.
2. May be accentuated by narcotics and/or alcohol.

DOSAGE AND ADMINISTRATION
1. Give half doses if patient is > 60 years old.
2. Wait 1-2 minutes between IN/IV doses to evaluate response.
3. Seizures:
   a. Adult:
      i. 1\(^{st}\) choice- 10 mg for > 40 kg, single dose IM, or
      ii. 2\(^{nd}\) choice- 0.2 mg/kg of a 5 mg/mL concentration IN, or
      iii. 3\(^{rd}\) choice- 2 mg increments IV to a maximum dose of 0.1mg/kg or 10 mg (whichever is less).
   b. Pediatric:
      i. 1\(^{st}\) choice- 5 mg for 13-40 kg, single dose IM, or
      ii. 2\(^{nd}\) choice- 0.2 mg/kg of a 5 mg/mL concentration IN, to a maximum dose of 10 mg, or
      iii. 3\(^{rd}\) choice- 0.1 mg/kg IV slowly over 2 minutes in no greater than 2 mg increments not to exceed 5 mg.
4. Anxiety Relief/Sedation: e.g. CPAP, pre-cardioversion, behavioral-not ExDs (specific doses/routes in protocol sections):
   a. Adult:
      i. 0.2 mg/kg of a 5 mg/mL concentration IN, or
ii. 2 mg increments IV/IO to a maximum dose of 0.1 mg/kg or 10 mg (whichever is less) or
iii. 5 mg IM; may repeat once in 10-15 minutes.

b. Pediatric:
   i. 0.2 mg/kg of a 5 mg/mL concentration IN, to a maximum dose of 5 mg, or
   ii. 0.2 mg/kg IM, to a maximum of 5 mg, or
   iii. 0.1 mg/kg IV slowly over 2 minutes in no greater than 2 mg increments not to exceed 5 mg.
   iv. Contact Mary Bridge Base Station for direction if unsure.

5. Excited Delirium Sedation:
   a. Adult: 10 mg IN/IM/IV.
   b. Pediatric: Contact Mary Bridge Base Station for direction.

6. Post-RSI:
   a. Adult: 2 mg IV/IO q 10 minutes as needed.
   b. Pediatric: 0.1 mg/kg IV/IO slowly over 2 minutes in no greater than 2 mg increments, q 10 minutes as needed.

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<th>Dose (mg)</th>
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<td>10.0 mg</td>
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</table>

ADVERSE REACTION
1. Drowsiness, Hypotension, Amnesia, Respiratory depression, Apnea, Laryngospasm, Bronchospasm, Dyspnea, Bradycardia, Tachycardia, PVCs, Retching.
2. May decrease ICP in head injured patients.
3. Causes nasal burning for 30-45 seconds post IN administration.

REFERENCE IN PROTOCOL
1. Traumatic Emergencies (For seizures, Crush Injury Syndrome).
2. Cardiac Emergencies (see AHA handbook).
3. Medical Emergencies (If actively seizing).
4. Rapid Sequence Intubation (Appendix F).
5. Behavioral Emergencies (Violent patients).
MORPHINE SULFATE

CLASSIFICATION
1. Narcotic analgesic.

ACTION
1. Potent analgesic, sedative and euphoric.
2. Decreases rate of A-V conduction (vagotonic).
3. Peripheral vasodilation and venous pooling of blood.

ONSET OF ACTION
1. IV/IO: 5 minutes.
2. IM: 10-30 minutes.

DURATION OF ACTION
1. IV/IO/IM: 4-5 hours.

INDICATION
1. Severe pain, i.e. myocardial infarction, burns, isolated extremity injuries, abdominal pain.

CONTRAINDICATION
1. Known hypersensitivity.
2. Head trauma.
3. Altered states of consciousness.
4. Shock.

USE WITH CAUTION
1. Respiratory depression, i.e. associated with asthma, COPD.
2. Elderly patients.
3. Hypotension.
5. Right-ventricular infarction.

DOSAGE AND ADMINISTRATION
1. Adult:
   a. Non-ACS pain management: 0.1 mg/kg every 5-10 minutes titrating to effect, to a maximum dose of 20 mg, IM or slow IV/IO push.
   b. ACS pain management:
      i. STEMI: 2-4 mg IV. May give additional doses of 2-8 mg IV at 5-15 minute intervals up to 10 mg if systolic BP >100.
      ii. NSTEMI/ACS: 1-5 mg IV only if symptoms not relieved by nitrates or if symptoms recur up to 10 mg if systolic BP >100.
2. Pediatric: 0.1 mg/kg IM or slow IV/IO push, not to exceed 10 mg. Contact Mary Bridge for additional doses.

ADVERSE REACTION
1. Respiratory depression, Respiratory arrest, Hypotension, Nausea, Vomiting, Bradycardia, Heart block, Drowsiness.
REFERENCE IN PROTOCOL

1. Trauma Emergencies (Skeletal Trauma, Amputated Parts, Burns, Crush Injury Syndrome).
2. Cardiac Emergencies (Chest discomfort and possible ACS; see AHA handbook).
4. Medical Emergencies (Abdominal Pain).
5. Respiratory Emergencies (Difficulty breathing).
NALOXONE (NARCAN)

CLASSIFICATION
1. Narcotic antagonist.

ACTION
1. Binds up opiate receptor sites, displaces narcotic molecules from opiate receptors.
3. Reverses respiratory depression secondary to narcotic overdose.

ONSET OF ACTION
1. IV/ET/IO: 1-2 minutes.
2. IN: 3-4 minutes.
3. IM: 2-5 minutes.

DURATION OF ACTION
1. Approximately 45 minutes.
2. Effects are variable with route and agent.

INDICATION
1. Respiratory depression secondary to narcotics, synthetic narcotic agents and related drugs.
2. Opiate overdoses such as Codeine, Darvon, Demerol, Dilaudid, Fentanyl, Heroin, Hydrocodone, Methadone, Morphine, Nubain, Oxycodone, Percodan, Stadol, Talwin, etc.
3. Treatment of coma of unknown origin with apnea/hypoventilation or in neonatal resuscitation.

CONTRAINDICATION
1. Known hypersensitivity.

USE WITH CAUTION
1. In patients known to be physically dependent on narcotics; may precipitate withdrawal symptoms.
2. Be prepared to restrain potentially violent patients if necessary after naloxone has been administered.

DOSAGE AND ADMINISTRATION
1. 0.4-2 mg IN/IM/IV/IO/ET; dose may be repeated every 2-3 minutes, up to 10 mg or until patient begins to maintain airway and breathe adequately.
   a. It is not necessary to wake the patient; just give enough to make them breathe on their own.
2. If no response is observed after 10 mg, consider different etiology of respiratory depression or unconsciousness.
3. Higher doses may be ordered if no initial response.
4. Pediatric: 0.1 mg/kg IN/IM/IV/IO/ET up to 2 mg/dose; dose may be repeated every 2-3 minutes, up to 10 mg or until patient begins to maintain airway and breathe adequately.
ADVERSE REACTION

1. Withdrawal symptoms: Sweating, Gooseflesh, Tremor, Nausea and vomiting, Dilation of pupils, Tearing of eyes, Agitation, Belligerence, Convulsions, Hyper or Hypoventilation.

REFERENCE IN PROTOCOL

1. Respiratory Emergencies (Difficulty breathing).
2. Medical Emergencies (Altered Level of Consciousness).
3. OB/GYN Emergencies (Neonatal Resuscitation).
NITROGLYCERIN

CLASSIFICATION
1. Vasodilator.

ACTION
1. Dilates veins and arteries in peripheral circulation resulting in:
   a. Reduced resistance to blood flow.
   b. Decreased blood pressure.
   c. Decreased workload on heart.
2. Dilates coronary arteries.
3. Dilates blood vessels in smooth muscle; i.e. GI tract, gallbladder, bile ducts, uterus.
4. Improves cardiac output in patient with congestive heart failure.

ONSET OF ACTION
1. 1-3 minutes.

DURATION OF ACTION
1. 30-60 minutes.

INDICATION
2. Congestive heart failure with pulmonary edema and adequate BP.

CONTRAINDICATION
1. Known hypersensitivity.
2. Systolic BP < 100.
3. Use of erectile dysfunction drugs or pulmonary hypertension drugs, such as sildenafil or tadalafil, within 48 hours.

USE WITH CAUTION
1. When HR < 50 or > 100.
2. With evidence of AMI, limit systolic BP drop to 10% of baseline or 25% if hypertensive.

DOSAGE AND ADMINISTRATION
1. Do not shake metered dose spray.
2. Patient should sit or lie down while administered.
3. Tablet and Metered dose spray L/SL delivers 0.4 mg.
4. ACS dose: 0.4 mg SL tablet or L/SL spray; may be given every 5 minutes until chest pain free as long as BP remains > 100/S.
5. CHF dose:
   a. If patient is in mild distress and BP > 100/S: Give nitroglycerin 0.4 mg SL tablet or L/SL spray; may repeat every 3-5 minutes, if patient remains symptomatic, to a maximum of 2 mg.
   b. If patient in moderate distress, or severe distress without AMS and BP > 100/S: Give nitroglycerin 0.4 mg SL tablet or L/SL spray; may repeat with 0.4 mg SL tablet or 1-2 L/SL sprays every 3-5 minutes, if patient remains symptomatic, to a maximum of 2 mg.
6. IV infusion for interfacility transfer set per releasing physician’s orders using IV pump.
ADVERSE REACTION
   1. Hypotension, Throbbing headache, Skin flushing.

REFERENCE IN PROTOCOL
   1. Cardiac Emergencies (Chest discomfort and possible ACS; see AHA handbook).
   2. Respiratory Emergencies (Difficulty breathing).
NITROUS OXIDE (NITRONOX)

CLASSIFICATION
1. Anesthetic, potent analgesic.

ACTION
1. Nitronox is a blended mixture of 50% nitrous oxide and 50% oxygen.
2. Effect quickly dissipates (within 2-5 minutes) after cessation of administration.

ONSET OF ACTION
1. 2-5 minutes.

DURATION OF ACTION
1. 2-5 minutes.

INDICATION
1. Musculoskeletal pain due to fractures.
2. Burns.
3. Severe pain with physician approval.

CONTRAINDICATION
1. Severe head injury with evidence of increased intracranial pressure, decreased LOC.
2. COPD, pneumothorax.

USE WITH CAUTION
1. O₂ saturation < 90%.
2. Self-administered only.

DOSAGE AND ADMINISTRATION
1. Adult: self-administered by inhalation (50% oxygen/50% nitrous oxide mix).

2. Pediatric: Contact Mary Bridge.

CAUTION: Must be used in well-ventilated area. If used in ambulance keep exhaust fan running, window open.

ADVERSE REACTION
1. Nausea, Vomiting, Bizarre behavior.

REFERENCE IN PROTOCOL
1. Pain Management.
ONDANSETRON (ZOFRAN)

CLASSIFICATION
1. Antiemetic.

ACTION
1. Blocks the actions of chemicals in the body that cause nausea and vomiting.

ONSET OF ACTION
1. IV: Immediate.
2. IM: 5-10 minutes.
3. ODT: 15-30 minutes.

DURATION OF ACTION
1. 4-6 hours.

INDICATION
1. Nausea and/or vomiting.

CONTRAINDICATION
1. Hypersensitivity to medication/class/compound.

USE WITH CAUTION
1. Patients with impaired liver function.
2. Pregnancy.
3. Prolonged QT syndrome/QT > 500 ms on ECG.

DOSAGE
1. Adult: 8 mg oral disintegrating tablet (ODT) or 4 mg IM/slow IV push.
2. Pediatric: > 11 years old 8 mg ODT or 4 mg slow IV push. Contact Mary Bridge.
3. Pediatric: 4-11 years old 4 mg ODT or 0.15 mg/kg up to 4 mg slow IV push.
   Contact Mary Bridge.

ADMINISTRATION
1. ODT: Place on tongue immediately after opening blister pack. Handle with dry hands only. Do not cut or chew. Administration with water is not necessary. Tablet is fragile and will dissolve in seconds on tongue.
2. IM: Administer undiluted intramuscularly as a single injection for adults.
3. IV: Administer undiluted in not less than 30 seconds, preferably over 2-5 minutes.

ADVERSE REACTION

REFERENCE IN PROTOCOL
1. Medical Emergencies (Abdominal pain/vomiting).
OXYGEN

CLASSIFICATION
1. Naturally occurring atmospheric gas.

ACTION
1. Odorless, tasteless, colorless gas present in room air at approximately 21%.
2. Used to reverse hypoxemia.

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. As long as is on.

INDICATION
1. Hypoxia-confirmed or suspected.
2. Ischemic chest pain and/or stroke if pulse oximetry < 94%.
3. Respiratory insufficiency.
4. Apneic oxygenation during RSI procedure.
5. Suspected carbon monoxide poisoning.

CONTRAINDICATION
1. None.

USE WITH CAUTION
1. Patients with COPD and chronic carbon dioxide retention.

DOSAGE AND ADMINISTRATION
1. Via nasal cannula, non-rebreather mask, ET tube, BVM, or by whatever means to maintain O₂ saturation > 94%.
2. COPD and chronic carbon dioxide retention patients: target O₂ saturation of 92-94%.
3. Post-cardiac arrest with ROSC: target O₂ saturation of 94%, acceptable range 94-99%.
4. Carbon Monoxide Poisoning: high flow at 100%.

ADVERSE REACTION
1. High-concentration oxygen may cause decreased LOC and respiratory depression over time in patients with chronic carbon dioxide retention.

REFERENCE IN PROTOCOL
1. Throughout.
PRALIDOXIME CHLORIDE (2-PAM Chloride)

CLASSIFICATION
1. Cholinesterase reactivator.

ACTION
1. Reactivates cholinesterase so destruction of accumulated acetylcholine can occur.

ONSET OF ACTION
1. 15 minutes.

DURATION OF ACTION
1. 3 hours.

INDICATION
1. Organophosphate poisoning.
2. Nerve Agent (GB or VX) poisoning.

CONTRAINDICATION
1. Hypersensitivity to medication.
2. Do not use morphine, theophylline, aminophylline, or succinylcholine with this medication.
3. Avoid reserpine or phenothiazine-type tranquilizer use with this medication.
4. This medication is not indicated as an antidote for intoxication by pesticides of the carbamate class.
5. This medication is not effective in the treatment of poisoning due to phosphorus, inorganic phosphates, or organophosphates not having anticholinesterase activity.

USE WITH CAUTION
1. Use great caution in treating organophosphate/nerve agent poisoning in cases of myasthenia gravis.
2. Monitor the dosage in the presence of renal insufficiency.

DOSAGE AND ADMINISTRATION
1. Adult: 1 auto-injector (600 mg) IM into thigh; may be repeated depending on symptoms.

ADVERSE REACTION
1. 40-60 minutes after the IM injection, mild to moderate pain may be experienced at the site of the injection.
2. Blurred vision, Diplopia, Impaired accommodation, Dizziness, Headache, Drowsiness, Nausea, Tachycardia, Increased BP, Hyperventilation, Muscular weakness.

REFERENCE IN PROTOCOL
1. Environmental Emergencies (Organophosphate/Nerve Agent poisoning).
ROCURONIUM (ZEMURON)

CLASSIFICATION
1. Paralytic.
2. Non-depolarizing neuromuscular blocker.

ACTION
1. Provides skeletal muscle relaxation to facilitate endotracheal intubation.

ONSET OF ACTION
1. 60 seconds.

DURATION OF ACTION
1. 40-60 minutes.

INDICATION
1. To facilitate endotracheal intubation in patients with an intact gag reflex.
2. Maintenance of paralysis after intubation to assist ventilation during prolonged transport.

CONTRAINDICATION
1. Known sensitivity to rocuronium.

USE WITH CAUTION
1. Patients with neuromuscular diseases such as myasthenia gravis or myasthenic syndrome may have prolonged periods of paralysis.

DOSAGE AND ADMINISTRATION
1. Adult: 1 mg/kg IV/IO push.
2. Pediatric: 1 mg/kg IV/IO push.

ADVERSE REACTION
1. May cause tachycardia in up to 30% of patients.
2. May cause temporary hypotension or hypertension.

REFERENCE IN PROTOCOL
1. Rapid Sequence Intubation (Appendix F).
2. Traumatic Emergencies (Crush Injury Syndrome).

NOTE: Must be stored according to manufacturer’s instructions.
SODIUM BICARBONATE

CLASSIFICATION
1. Class IIb alkalizing agent.

ACTION
1. Alkalizing agent, binds up hydrogen ions.
2. Increases potassium influx into cells.
3. Increases pH of urine.

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. Unknown.

INDICATION
1. Correct known hyperkalemia.
2. Correct known bicarbonate responsive acidosis; e.g. diabetic ketoacidosis or overdose of tricyclic antidepressant, aspirin, cocaine or diphenhydramine.
3. Prolonged resuscitation with effective ventilation; on return of spontaneous circulation after long arrest interval.

CONTRAINDICATION
1. Metabolic alkalosis.

USE WITH CAUTION
1. Do not mix with atropine, calcium chloride, epinephrine, dopamine, isoproterenol, Vecuronium.

DOSAGE AND ADMINISTRATION
1. Adult: 1 mEq/kg of 8.4% solution IV/IO.
2. For CIS: IV – 1000 mL NS with sodium bicarbonate 100 mEq (label bag) mixed in. Volume replacement and pre-alkalization should take place immediately after CIS identified. Set drip rate to infuse at 1500 mL/hour.
3. **Pediatrics: Neonates or children ≤ 5 kg: give 1 mEq/kg of 4.2% solution. Children > 5 kg: give 1 mEq/kg of 8.4% solution up to 50 mEq.**

ADVERSE REACTION
1. Congestive heart failure with shortness of breath and/or rales.

REFERENCE IN PROTOCOL
1. Medical Emergencies (Overdose-Tricyclic; Renal dialysis-hyperkalemia).
2. Cardiac Emergencies (see AHA handbook).
3. Traumatic Emergencies (Crush Injury Syndrome).
SODIUM CHLORIDE 0.9% SOLUTION (NORMAL SALINE) (NS)

CLASSIFICATION
1. Isotonic crystalloid solution.

ACTION
1. Replace extracellular fluid by remaining in vascular space.

INDICATION
1. Use for mixing/dilution of medications.
2. Fluid resuscitation.
3. To keep vein open.

CONTRAINDICATION
1. None.

USE WITH CAUTION
1. Hypertensive patients.
2. Fluid overloaded patients.
3. Use volume control device with pediatric patients.

DOSAGE AND ADMINISTRATION
1. Adult: Route and indication dependent.
2. Pediatric: 20 mL/kg, repeat PRN; may give up to 3 rapid infusions if inadequate perfusion.

ADVERSE REACTION
1. Fluid overload.

REFERENCE IN PROTOCOL
1. Throughout.
SUCCINYLCHOLINE (ANECTINE)

CLASSIFICATION
1. Paralytic.
2. Depolarizing neuromuscular blocker.

ACTION
1. Prolongs depolarization of the muscle end plate.
2. Induces skeletal muscle relaxation causing onset of flaccid paralysis in less than 1 minute.
3. Has no effect on consciousness, pain threshold or cerebration.

ONSET OF ACTION
1. IV/IO: 30-60 seconds.
2. IM: 2-3 minutes.

DURATION OF ACTION
1. 4-10 minutes.

INDICATION
1. To facilitate endotracheal intubation in patients with an intact gag reflex.

CONTRAINDICATION
1. Known hypersensitivity.
2. Acute glaucoma, penetrating eye injuries.
3. Suspected hyperkalemia.
4. 24 hours or more post burn.
5. 7 days or more post Crush Injury Syndrome.

USE WITH CAUTION
1. Changes in cardiac rhythm may result from vagal stimulation.
2. In patients with possible increased ICP.

DOSAGE AND ADMINISTRATION
1. Adult: 1.5 mg/kg IV/IO. May use IM if IV/IO is unattainable; double the IV/IO dose.
2. Pediatric: 2 mg/kg IV/IO.

ADVERSE REACTION
1. Prolonged muscle relaxation, Prolonged respiratory depression or apnea, Bradycardia, Tachycardia, Hypertension, Hypotension, Arrhythmias, Excessive salivation.
2. Potential increase in ICP with second and third doses.

REFERENCE IN PROTOCOL
1. Rapid Sequence Intubation (Appendix F).
2. Traumatic Emergencies (Crush Injury Syndrome).

NOTE: Must be stored according to manufacturer’s instructions.
VECURONIUM (NORCURON)

CLASSIFICATION
1. Paralytic.
2. Non-depolarizing neuromuscular blocker.

ACTION
1. Provides skeletal muscle relaxation to facilitate endotracheal intubation.

ONSET OF ACTION
1. 1 minute.

DURATION OF ACTION
1. 25-30 minutes.

INDICATION
1. Maintenance of paralysis after intubation to assist ventilation during prolonged transport.
2. May be used as initial paralytic if Succinylcholine is contraindicated and Rocuronium is not available.

CONTRAINDICATION
1. Hypersensitivity.

USE WITH CAUTION
1. Elderly.
2. Patients with cardiovascular disease, hepatic disease, obesity, neuromuscular disease.
3. Do not mix with alkaline solutions.
4. Prior administration of succinylcholine may enhance the neuromuscular blocking effect.
5. Monitor heart rate continuously.

DOSAGE AND ADMINISTRATION
1. Adult and Pediatric: 0.1 mg/kg IV/IO.

ADVERSE REACTION
1. Prolonged dose related to respiratory insufficiency or apnea, Wheezing, Aspiration, Bradycardia, Sinus arrest, Hyper or Hypotension, Increased intraocular pressure.

REFERENCE IN PROTOCOL
1. Rapid Sequence Intubation (Appendix F).
2. Traumatic Emergencies (Crush Injury Syndrome).
XYLOCAINE 2% JELLY

CLASSIFICATION
1. Topical anesthetic.

ACTION
1. Aqueous producing local anesthetic effect when applied topically.

ONSET OF ACTION
1. 3-5 minutes after contact with topical region or mucosa.

DURATION OF ACTION
1. 1.5-2 hours; can vary with dosage and site of application.

INDICATION
1. Nasal/oral endotracheal intubation.
2. Nasogastric tube placement.

CONTRAINDICATION
1. Known hypersensitivity to local anesthetics.

USE WITH CAUTION
1. Reduce dose with elderly/young.
2. Wear protective gloves when handling to prevent numbing sensation.
3. Do not apply to stylet or inner lumens of endotracheal/nasogastric tubes.

DOSAGE AND ADMINISTRATION
1. Apply moderate amount to external surfaces of endotracheal/nasogastric tubes prior to placement.

ADVERSE REACTION
1. Impaired swallowing may lead to aspiration.
2. Numbness of tongue or buccal mucosa may enhance possibility of unintentional biting trauma.
3. Allergic reaction, Bradycardia, Hypotension, Drowsiness, Blurred/double vision, Lightheadedness.

REFERENCE IN PROTOCOL
1. General Principles (Airway/breathing).