The following document — the January 2012 Pierce County Patient Care Protocols — is being made available for general viewing and is not to be considered the MPD approved Patient Care Protocols for Pierce County. It may be printed out but is not intended to be altered in any way. If a copy is found with text other than what is found in the version on file in the Pierce County Emergency Medical Services office, it will not be recognized as valid.

Record of changes after 1 January 2012
25 April 2012- pg 11 lg/pg 21 sm- St. Anthony Cardiac Designation now Level I
1 May 2013 – pg 11 lg/pg 21 sm- Good Samaritan Stroke Designation now Level II
1 May 2013 – pg L-3 lg/pg L-5 sm-RCC telephone number changes
11 February 2015 – pg 41 lg/pg 87-92sm- Behavioral Emergencies ExDs added
11 February 2015– pg N-23a lg/pg N48 a,b,e sm and pg N-1 lg/pg N-1 sm-add Ketamine

Latest Revision: 9 December 2011
PATIENT CARE PROTOCOLS

Pierce County EMERGENCY MEDICAL SERVICES

and the Emergency Medical Program Director
January 2012
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 35\textsuperscript{th} 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 (*). Pediatric patient care is **Bold**. 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).

1. Airway management.
   a. O₂ administration, BVM, NC, NRB, adjuncts, suction.
   b. CPR/obstructed airway (all ages).

2. Splinting.
   a. Traction.
   b. Rigid.
   c. Non-rigid.

   a. Long backboard, immobilization, KED, standing board, sports equipment removal, rapid extrication, log roll, strapping.

4. Semi-Automated (SAED) and Automated External Defibrillation (AED).


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

1. Medication administration.
   a. May administer:
      * i. Acetaminophen.
      * ii. Oxygen.
      * iii. Oral glucose.
      * iv. Activated Charcoal.
      * v. Epinephrine 1:1000 or Epi-Auto injectors.
      * vi. Aspirin.
      * vii. Nerve Agent Antidote Kit (DuoDote or MARK 1).
   b. May assist with:
      * i. Nitroglycerine.
      * ii. Metered dose inhalers.


3. Hemostatic blood clotting gauze to control wound hemorrhage.

4. Tourniquet.

5. Blood glucose check.


7. Acquire 12-lead ECG.
C. Paramedic. In addition to EMR and EMT scope of practice, a Paramedic in Pierce County may perform the following:

1. Administer IV/IO fluids.
2. Airway management.
   a. Intubation.
   b. Needle/surgical cricothyrotomy.
3. Defibrillation/cardioversion.
4. Medication administration.
5. ECG monitoring/diagnostic (multi-lead) ECG.
7. Nasogastric tube insertion.
8. Needle thoracostomy.
9. Obtain venous samples.
11. Peripheral IV to include external jugulars.
12. I/O.
13. Small volume nebulizer (SVN) treatments.

II. Physician on Scene.

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

1. Participate in patient care management by:
   a. Assisting the paramedic in carrying out protocols.
   b. Performing additional interventions at the direction of the Base Station.
2. Give orders IF:
   a. The Base Station concurs, and
   b. The physician accompanies the patient to the hospital.

III. Transport with “CPR in progress” cases.

A. A medical patient will be transported with CPR in progress only if one of the following exists:

1. Drug overdose.
2. Hypothermia.
3. Shockable rhythm.
4. Age ≤ 30 years.
5. Situational circumstances requiring the patient to be transported.

IV. Do Not Resuscitate (DNR).

A. Base Station contact must be made on all patients in cardiac arrest where CPR is not initiated.

B. Full resuscitation should not be initiated if EMS – POLST (Physician Orders for Life-Sustaining Treatment) or EMS – No CPR guidelines are in effect (see Washington State EMS – POLST Guidelines).
C. Living wills must be present and will be honored.
D. If resuscitation efforts were begun by EMS personnel, they can be terminated only with the agreement of the Base Station.
E. All documentation is to be made on an emergency medical incident report (EMIR)/patient care report (PCR).

V. Withholding Resuscitation.
   A. Resuscitation may be withheld if there are any of the following obvious signs of death:
      1. Rigor mortis.
      2. Decomposition.
      3. Decapitation.
      4. Incineration.
      5. Lividity.
      6. Evisceration of the heart or brain without vital signs.
   B. Notify the Medical Examiner/police; obtain history regarding down time; notify the Base Station for all patients where resuscitation was withheld; if near-drowning, hypothermia and/or drug overdose is suspected, always begin resuscitation and contact the Base Station.
   C. All documentation is to be made on an emergency medical incident report (EMIR)/patient care report (PCR).

VI. Vulnerable Populations.
   A. EMS shall notify Law Enforcement and/or CPS to report any suspicion of child abuse or neglect, child death or near death.
      1. Children’s Administration Intake (CPS) – Tacoma, 8:00 a.m. - 4:30 p.m. M – F: 253-983-6100.
      2. Children’s Administration Intake (CPS) – Seattle, 24 hour/after hours: 800-562-5624 or 866-END HARM.
   B. EMS shall notify Law Enforcement and/or Adult Protective Services to report any suspicion of geriatric abuse or neglect.
      1. If the person that you suspect is being abused or neglected is living in a nursing home, boarding home, or adult family home, contact: WA State Complaint Resolution Unit toll-free hotline, 24 hour/after hours: 800-562-6078.
      2. If the person you suspect is being abused is living in their own home or somewhere other than a 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 center 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.

VII. Crime Scene Preservation.

A. EMS personnel will communicate with LE and assure that the scene is safe.

B. Forensic guidelines emphasizing crime scene preservation are important; however the most important role of EMS providers is to insure the preservation of life.

1. EMS is in charge of the patient and should be aware of signs of possible abuse and neglect.
2. Law Enforcement (LE) is in charge of the crime scene.

C. While an emotional cause of death, such as apparent SIDS, 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. EMS shall document why and what actions were taken.

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

E. EMS shall limit 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 shall limit 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, and when they arrived/departed.

G. EMS providers should not move anything; they should leave items alone unless absolutely necessary to perform life saving patient care.

H. EMS providers will not cut through bullet/stab holes on patient’s clothing or binding knots, etc. as this may destroy critical evidence.

I. EMS providers will not use phones, sinks, toilets, garbage containers, or anything at a crime scene. They will only utilize equipment that was brought to the scene by them and only remove equipment brought in if absolutely necessary.

J. EMS will 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 observe (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; and 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.

VIII. No Patients.

A. Asymptomatic victims with no significant mechanism of injury, no obvious injury or illness and no desire for care require no Base Station contact.

IX. ALS Cancellation.

A. An on-scene EMT may cancel an en route ALS unit if the following conditions are met:

1. There is no patient, as defined in section VIII. – OR –
2. A BLS assessment has been performed and the patient is determined to meet the BLS Transport Guidelines (see Appendix E-1).

X. On-scene Patient Care.

A. The most field-qualified medical personnel with the highest level of medical training shall direct patient care. The first arriving paramedic should be in charge of the patient’s care. The incident commander will decide if there is any question as to who should direct patient care. On-scene BLS personnel will not preclude any on-scene ALS agency paramedic from access to evaluation and care of a patient.

XI. 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, in retrospect, erroneously made and/or signs and symptoms do not meet treatment/transport criteria outlined in Pierce County Patient Care Protocols. No Base Station contact is necessary by EMS personnel if the following conditions are met. The following conditions must exist in order to release the patient under ROR:

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 a competent individual 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 Competency Checklist and agrees to sign a ROR Form.
6. Mary Bridge Base contact must be made on all patients age ≤ 15 years old before the EMS person in charge of the patient leaves the scene.
7. If the patient does not meet above criteria, non-transport of the patient can only be done at the discretion of Base Station.

B. An Against Medical Advice (AMA) may be considered only if the following conditions exist:

1. Patient is ≥ 18 years of age or is an emancipated minor.
2. The patient meets all elements of the Pierce County Competency 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 should have been offered some reasonable alternative.
5. Base Station shall be contacted – a physician should speak to the patient if possible.

C. The Incompetent Patient includes the patient who does not meet Pierce County Competency Checklist elements. The patient who does not meet competency, by definition, is incompetent. Non-transport of the incompetent patient can be done only at the direction of the Base Station.

D. Documentation of every ROR and AMA must be accomplished on an emergency medical incident report (EMIR)/patient care report (PCR). EMS personnel should include the following in the narrative of the EMIR/PCR:

1. The reason(s) of the 9-1-1 call – events that lead up to the call.
2. Patient history and their patient assessment.
3. Quotes made by the patient, include their reasons for ROR/AMA.
5. Name of the Base Station physician, if they did/did not talk with the patient. Include time of contact and any orders they gave.
6. Disposition of the patient: i.e. – left at scene and with whom; taken to another location, by what mode of transport and by whom.
7. If law enforcement was summoned, obtain name of officer.
E. Pierce County Competency Checklist:

Yes – Patient meets competency criteria elements (all must be marked).
No -- Patient does not meet competency criteria elements (if any are marked NO, the patient is considered incompetent).

Patient/caregiver is: YES NO

1. 18 years old or emancipated minor. (   ) (   )
2. Conscious and alert, communicates their choices. (   ) (   )
3. Oriented (GCS 15) – understands situation and consequences; and able to weigh risk/benefit options; and rationally processes information before making a decision. (   ) (   )
4. Not physically or cognitively impaired by the use of alcohol/drug(s). (   ) (   )
5. Not suspected of brain trauma or hypoxia (pulse oximetry >85%). (   ) (   )
6. No dementia, mental illness, or other medical disease that affects the patient’s ability to make a decision. (   ) (   )

F. This Medical Miranda 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 actually is. 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.”

XII. Guideline – Compulsory Transportation.

A. Implied Consent – If the patient is not a danger to him/herself or others, yet not competent to refuse evaluation or transport, the patient should be transported to the appropriate facility under implied consent. In this case, a Psychological hold is not necessary. However, if the providers believe the patient will resist (and that it is medically necessary to transport the patient against his/her will), the providers should request police assistance in transporting the patient. The police may consider the placement of a Psychological hold on the patient, but this is not required for transport.
B. Psychological – When a patient exhibits signs of being a danger to him/herself or others, or is gravely disabled and cannot simply be treated and/or transported, the provider should notify the proper authorities to obtain a Psychological hold, and remain with the patient until authorities have made such a determination. Patients on a Psychological hold cannot be released at the scene.

C. At no time are field personnel to put themselves in danger by attempting to transport or treat a patient who refuses. At all times, good judgment should be used, appropriate assistance obtained, and supporting documentation completed.

XIII. Patient’s Right to Privacy.

A. Respect the patient’s right to privacy and remove only enough clothing to determine the presence or absence of a condition or injury. Protect the patient’s privacy to the greatest extent possible by having auxiliary members shield the patient with blankets or sheets. Whenever possible, make sure your partner is present (same sex as the patient whenever possible) when clothing is removed to conduct a patient assessment.

XIV. Inter-facility Transports.

A. Pre-hospital providers will not function beyond their level of certification. Patients requiring care beyond this level must be accompanied by personnel capable of providing this care.

B. Information contact may be made with the Receiving Facility for any inter-facility transport. This is to assist in coordinating a smooth transfer to the receiving hospital unit.

C. If a patient deteriorates en route, contact Receiving Facility/Base Station to obtain further orders.

XV. 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 the hazardous materials team. If there is any question as to whether a patient or pre-hospital provider has been exposed to a hazardous scene, call a hazardous materials team immediately.

XVI. Documentation.

A. When completing all documentation or communicating information relating to patient care, all Health Insurance Portability and Accountability Act (HIPAA)/patient confidentiality/protected health information (PHI) guidelines will be followed.

B. Transporting agencies must provide a brief written or electronic report of patient care to the Receiving Facility at the time the patient is delivered in accordance with WAC 246-976-330 requirements.
All ALS prehospital providers who do not accompany the patient to the hospital will provide a report of their patient care to the transporting agency.

C. Within 24 hours of patient delivery, the final EMIR/PCR must be provided to the Receiving Facility and will indicate all prehospital resuscitation, stabilization and treatment per WAC 246-976-330. These documents will indicate all interventions and medications; including times for each. Pertinent times regarding the EMS providers’ activation, scene arrivals and departures will also be included on the documentation.
COMMUNICATION POLICY

I. General.
   A. 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 starred items in this protocol book. In that case, the prehospital provider will contact their assigned Base Station. If a starred item is requested by the Receiving Facility or if the protocols must be exceeded, the pre-hospital provider can follow this direction, and document accordingly.
   
   B. Base Station for Adult Medical & Trauma Patients:
      
      - **Pediatric Patients (i.e. age ≥ 16 years old)**
        - Madigan AMC: Assigned agencies
        - Good Samaritan: Assigned agencies
        - St. Anthony: Assigned agencies
   
   C. Base Station for Pediatric Medical & Trauma Patients:
      
      - **Pediatric Patients (i.e. age ≤ 15 years old)**
        - Mary Bridge Children's Hospital: All agencies

II. Difficult Communication.
   A. 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.
   A. In the event of disrupted communications, pre-hospital providers will act according to protocol, document afterwards, and make Receiving Facility/ Base Station contact immediately when it becomes available.

IV. DMCC Communications.
   A. Once the DMCC has been activated, pre-hospital 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 medical facilities as usual.
TRANSPORT POLICY

I. Capabilities.

A. Pierce County Receiving Facility Capabilities:

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HbvwMC is designated for both adult and pediatric.

II. Medical.

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

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

C. Transportation to a more distant appropriate Receiving Facility will be at the discretion of the pre-hospital provider. Patient’s medical provider and/or patient preference should be considered.

1. HbvwMC is designated for both adult and pediatric.

2. I/II/III/IV indicates Washington State trauma, cardiac and stroke receiving designations.

3. † ≤ 15 years of age.

4. Neonatal Intensive Care Unit (NICU).
   a. 1 = 36 weeks and up.
   b. 2 = 32 weeks and up.
   c. 3 = 23 weeks and up.
   d. < 23 weeks is considered nonviable. Contact Base Station before withholding resuscitative measures.
D. Transportation prior to Receiving Facility/Base Station contact can occur only if the patient is being transported to the nearest receiving hospital. Communication will occur prior to arrival at the receiving hospital.

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

F. Current recognized Pierce County Receiving Facility Hospitals:
   Allenmore Hospital / Good Samaritan Hospital / Madigan Army Medical Center / Mary Bridge Children’s Hospital / St. Anthony Hospital / St. Clare Hospital / St. Joseph Medical Center / Tacoma General Hospital

G. Current recognized Non-Pierce County Receiving Facility Hospitals:
   Auburn Regional Medical Center / Harborview / Harrison Memorial Hospital / Providence St. Peter / St. Elizabeth Hospital / St. Francis Hospital

III. Trauma.

A. A trauma patient with an unstable airway will be transported to the nearest Receiving Facility’s emergency room 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.
GENERAL PRINCIPLES/ROUTINE CARE

I. Body substance isolation, scene survey, triage, mechanism of injury, chief complaint, history, vitals initially and repeated every 5 minutes for critical patients & every 15 minutes for non-critical patients. Minimize scene time.

II. Transport criteria.
   A. All ALS patients will be transported by a licensed ALS agency. BLS patients may be transported by an ALS or BLS agency. Transporting units will contact the Receiving Facility unless Base Station orders are required. (Appendix E)
   B. Trauma: see Appendix B. If in cardiac arrest, call Base Station to consider organ donation or stopping resuscitation.
   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 patient. Include parents in care as much as possible.

III. Airway, breathing.
   A. Manual C-Spine stabilization as needed.
   B. Establish a clear airway using head tilt/chin lift or jaw thrust. 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. Oxygen as appropriate to patient’s condition/chief complaint.
      1. Administer low flow O₂ with nasal cannula at 2 – 6 LPM.
      2. Administer high flow O₂ with NRB mask at 10 – 15 LPM.
      3. Monitor pulse oximetry if available.
   F. Give nothing by mouth if the patient is unable to swallow or maintain their own airway.
   G. Adult: ventilate or assist ventilations with BVM and high flow O₂ if respiratory rate is <10 or >30 and/or shallow/labored; or patient appears cyanotic; or as needed at a rate of 12 times/minute/1 every 5 seconds; or allow patient to self-administer O₂ with demand valve.
      **Pediatric:** manage airway and ventilate with BVM and high flow O₂ at a rate 20 times/minute/1 every 3 seconds if respirations are labored or shallow, or patient is cyanotic or unconscious. If <2 years old, utilize BVM as needed if respiratory rate <15 or >60.
   H. Position of comfort or recovery position if no trauma suspected.
I. Consider CPAP for patients with severe respiratory distress or respiratory failure associated with CHF, pulmonary edema, asthma, or COPD and who are:

1. Awake and able to follow directions.
2. Over 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. SPO$_2$ < 90% or an EtCO$_2$ > 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.
7. To ensure continuous treatment, notify Receiving Facility en route of CPAP use so necessary equipment is available at time of arrival.

J. 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. Use waveform capnography to confirm tube placement.
4. No nasal if facial trauma or <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, ventilate the patient and consider insertion of an airway adjunct (OPA/NPA).
2. Once patient is adequately ventilated a second intubation attempt should be made, changing technique to include head elevated position and external laryngeal manipulation to improve view of vocal cords.
3. If ventilation is difficult, or not able to be readily performed, or after second failed intubation attempt, then consider using an MPD approved rescue breathing device.
4. All intubation and rescue breathing device placement will be confirmed with at least two methods (one clinical and one adjunctive). Use waveform capnography to confirm tube placement.

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

IV. Circulation.
   A. Keep the patient warm.
   B. Control bleeding.
   C. Consider PASG (see Appendix H).
   D. Adult: Establish peripheral IV access — EJ if peripheral not available. DO NOT START 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. When fluid resuscitation is necessary by status of pulse and BP, start 2 large bore IVs (12, 14 or 16 ga) of (warmed) NS. This should be done during transport in critically injured patients. Titrate to keep BP >90/S (Systolic). In trauma patients with suspected uncontrolled internal hemorrhage, titrate to a state of relative hypotension with systolic BP of 80 to 90. If hemorrhage is controlled, but signs and symptoms of shock are present, larger amounts of fluids can be infused.

2. Start IV NS; run at TKO or saline lock when only IV access desired.

3. If unsuccessful after 2 attempts in any patient, begin transport.

4. Intraosseous (IO) route.
   a. An IO may be used if unable to access IV in 2 attempts or 90 seconds with the following indications:
      i. Patients with cardiopulmonary arrest.
      ii. Patients in profound shock with altered mental status (i.e. GCS <8).
      iii. Consult with Base Station for other indications.
   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 20-50mg IO.

   * ii. Pediatric: morphine sulfate 0.1mg/kg up to 10mg IO or Fentanyl 1-2mcg/kg IN/IO.

   d. IO contraindications include:
      i. Suspected fracture of femur or tibia.
      ii. Previous orthopedic procedures, such as knee replacement at or near insertion site.
      iii. Extremity compromised by pre-existing medical conditions such as tumor or peripheral vascular disease.
      iv. Infection at the insertion site.
      v. Inability to locate the three essential landmarks.

   e. If contraindications present, evaluate the opposite leg.
5. 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.
   a. Integrity of the CVC must be established prior to administration of fluids or medications.
   b. Dialysis catheters cannot be used unless in the case of cardiac arrest and no other means of vascular access is available.
   c. In case of a life-threatening emergency, a subcutaneous device, such as a Port-a-Cath, may be accessed. If accessing a subcutaneous device a non-coring needle, such as a Huber needle, must be used. Do not use standard hypodermic needles.
   d. If CVC is accessed, the patient must be transported to the Emergency Department to ensure maintenance of the device after fluid or medication administration.

**Pediatric: Establish IV access — DO NOT START AN IV IN AN EXTREMITY WITH A SHUNT OR VENOUS DEVICE.** You may use the extremity, to include the shunt or venous device, if life is threatened.

1. Establish IV and run TKO, or saline lock when only IV access desired.
2. I/O indicated for life threat if peripheral IV not available.
3. Fluid replacement with NS.
   a. For shock, give 20ml/kg bolus.
   b. May give up to 3 rapid infusions if inadequate perfusion.

E. Place medical/cardiac patients on ECG monitor. Obtain 12-lead ECG as soon as possible. Do not prolong scene time. Cardiac monitoring of trauma patients should be done en route with trauma, if time permits.

F. If cardiac arrest is secondary to trauma, check rhythm:
   1. If asystole or PEA with no pulses generated from chest compressions, consider termination of efforts with Base Station contact.
   2. If PEA and pulses with CPR, consider transport immediately, performing skills en route; or consult Base Station regarding termination of efforts.

G. SAED/AED/manual defibrillation as indicated.

V. Neurologic Exam: Assess mental status using the Glasgow Coma Scale (Appendix G).

VI. Expose patient appropriate to illness/injury, but remember to keep the patient warm.

VII. Immobilization.
   A. If trauma, spinal immobilization is indicated in all patients with:
      1. Violent mechanism of injury: high speed deceleration/acceleration injuries, entrapped in structural collapse, fall from a significant height,
involved in an explosion, ejection or fall from any motorized device, shallow water diving.
2. Significant blunt trauma at shoulders or above.
3. Penetrating trauma to head, neck or torso with neurologic deficit/complaint.
4. Altered level of consciousness.
5. Inability to communicate: foreign language, deafness, very young patients, or anyone who cannot communicate effectively.
6. Intoxication (drugs or alcohol).
7. Complaints of cervical, thoracic or lumbar pain.
9. Findings of any spinal tenderness or deformity on exam.
10. Presence of distracting injuries, those that would normally require pain medication or that cause great emotional upset.
11. Consider in patients >65 with ground level falls.

B. If none of the above are present, test the patient for pain with cervical motion by asking the patient to flex and extend the neck and rotate the head to both right and left. If these voluntary movements by the patient are pain-free, consider no spinal immobilization.

C. Guidelines for immobilization:

2. 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 to long backboard with straps and adequate padding to prevent movement. Tape may be used if unable to use straps and board movement involves no moves varying from horizontal.
4. Pad under knees to lessen stress on lumbar spine.
5. Adult: Pad under occiput to achieve neutral alignment. Secure head.
6. Pediatric: Pad under torso, shoulders to waist, to achieve neutral alignment. Secure head.

D. Tape adequately across eyebrows when immobilizing on long backboard. Do not immobilize head mechanically until body is secured.

E. 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. Complete assessment and history appropriate to the patient’s condition.

IX. Consider blood draw when indicated.
   A. Fill lab tube slowly.
   B. Label each tube with patient name, date, time and paramedic’s initials.
   C. Tape to IV bag when possible.
   D. See Appendix J for guidance on blood alcohol draw policy.

X. Domestic Violence.
   A. Attempt to identify victims of domestic violence. Use a non-judgmental tone and routinely ask all patients if their condition (traumatic or not) could be related to domestic violence.
   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. Inform patient the situation is potentially lethal and remind them battering is a crime and they can be protected by law.
   E. Do not call from the patient’s phone.
   F. 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.
   G. Assess the patient’s safety. If patient refuses care and there is risk of continued harm, notify law enforcement.
TRAUMATIC EMERGENCIES

See Appendix B for Trauma Triage destination procedures.

I. Traumatic hypovolemic shock.
   A. Control hemorrhage.
      1. For external hemorrhage, use direct pressure and pressure dressings;
         a. Consider using a hemostatic agent bandage to control bleeding if
            pressure dressing does not work.
         b. For exsanguinating extremity hemorrhage consider use of a
            tourniquet. Mark time applied on the tourniquet and consider pain
            management as necessary unless patient is in decompensated shock.
            Contact Base Station and/or Receiving Facility to inform them a
            tourniquet has been applied.
      2. Use PASG to help control internal hemorrhage (Appendix-H)
   B. Immobilize as needed, transport patient in a supine position as soon as possible.
   C. Keep patient warm (use heat packs and reflective blankets PRN).
   D. Large bore IV(s) or IO(s) with warm NS.
      1. If suspected uncontrolled internal hemorrhage, titrate to state of relative
         hypotension with systolic BP of 80/S to 90/S.
      2. If suspected Traumatic Brain Injury (TBI) titrate fluids to maintain BP
         ≥ 90/S.
      3. If hemorrhage is controlled, but signs and symptoms of shock are present,
         larger amounts of fluids can be infused.
   E. Pediatric:
      1. Control hemorrhage: same care as adult above.
      2. Immobilize as needed, and transport patient in a supine position as soon as possible.
      3. Keep patient warm (use heat packs and reflective blankets PRN).
      4. Large bore IV(s) or IO(s) with warm NS:
         a. Push 20ml/kg, may repeat x 2.
         b. Maintain patient in a state of relative hypotension
            (Consult MBCH for specific BP or refer to length-based
            measuring device).

II. CNS and facial trauma.
   A. Airway, O₂ @ 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 @ 10 breaths/min. for adults, 20 breaths/min. for children and 25 breaths/min. for infants. If increased intracranial
      pressure (ICP) (widening pulse pressure, decreased HR and increased BP,
      posturing, blown pupil, change in respiratory pattern) is associated with the

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TBI, ventilate @ 20 breaths/min. for adults, **25 breaths/min. for children and 30 breaths/min. for infants.**

B. Keep pulse oximeter > 92 – 95%. **Intubate PRN. No nasal intubation with facial trauma. Follow RSI protocol (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 and transport supine.

D. For partially avulsed teeth, replace if possible if patient awake. If complete avulsion, rinse with saline, and wrap in gauze soaked in saline. Be alert for potential tooth aspiration.

E. **Large bore IV(s) or IO(s) with warm NS.** See Section I. D. & E. for details on titration of fluids. **For pediatric patients, titrate infusion rate to restore adequate perfusion (i.e. capillary refill, central and peripheral pulses, appropriate mentation for age).**

F. For seizures.

1. **Adult:** May use midazolam, give in 2mg increments to a maximum dose of 0.1mg/kg or 10mg (whichever is less) IV, or IM if unable to start an IV, or 0.2mg/kg of a 5mg/ml concentration IN; **OR** diazepam, 2mg increments not to exceed 10mg IV push. Wait 1−2 minutes between IV/IN doses to evaluate response.

2. **Pediatric:** May use midazolam 0.2mg/kg IM **OR** 0.1mg/kg IV slowly over 2 minutes in no greater than 2mg increments not to exceed 5mg, **OR** 0.2mg/kg of a 5mg/ml concentration IN; **OR** diazepam 0.2mg/kg IV not to exceed 10mg IV. Wait at least 1 − 2 minutes between IV/IN doses to observe effect.

III. Spinal Trauma.

A. Airway, O₂, ventilate, **intubate PRN,** immobilize (see General Principles, Section VII).

B. **Large bore IV(s) NS, titrate to BP > 90/S.**

IV. Injuries to the neck.

A. Airway, O₂, ventilate, **intubate PRN,** immobilize.

B. Seal open wounds with occlusive dressing.

C. **Consider early intubation if signs of expanding hematoma.**

D. **Large bore IV(s) NS, titrate to BP > 90/S.**

E. **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.**
V. Injuries to the eye.
   A. Protect injured eye.
   B. Reassure.
   C. Stabilize impaled objects.
   D. Do not use a pressure dressing to stop fluid leakage.
   E. Elevate head if not hypotensive.

VI. Chemical burns to the eye.
   A. Continuous flushing with copious amounts of water or saline solution from inside to outside.
   B. Attempt to bring the container and/or the caustic agent/specimen.

VII. Chest/Abdominal trauma.
   A. Monitor breath sounds.
   B. Airway, O₂, ventilate, intubate PRN, immobilize.
   C. Large bore IV(s) or IO(s) with warm NS. See Section I. D. & E. for details on titration of fluids.
   D. ECG monitor ENROUTE.
   E. Specific Injuries.
      1. Open chest wounds/tension pneumothorax.
         a. Monitor and assist ventilations.
         b. Seal with occlusive dressing, if time. Remove if tension pneumothorax develops.
         c. Perform needle thoracostomy for tension pneumothorax (hypotension, tachypnea, tachycardia, absent breath sounds on affected side, PEA-late sign).
      2. Flail chest.
         a. Monitor and assist ventilation with BVM and high flow O₂. Watch for tension pneumothorax.
         b. Stabilize with tape and bulky dressing if time allows.
         c. Consider intubation PRN.
      3. Pulmonary Contusion.
         a. Consider use of CPAP if the patient is unable to maintain adequate ventilation.
      4. Cardiac tamponade.
         a. Consider pericardiocentesis.
      5. Abdominal injuries.
         a. Evisceration: Cover with sterile, moist dressing.
VIII. Musculoskeletal trauma.

A. Dress wounds, monitor perfusion (pulse &/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, keeping in mind there is a potential fracture.
   a. For external hemorrhage, use direct pressure and pressure dressings.
   b. Consider using a hemostatic agent bandage to control bleeding if pressure dressing does not work.
   c. For exsanguinating extremity hemorrhage consider use of a tourniquet. Mark time applied on the tourniquet and consider pain management as necessary unless patient is in decompensated shock. Contact Base Station and/or Receiving Facility to inform them a tourniquet has been applied.

B. Femur, hip or pelvic fracture/dislocation suspected.

1. Stabilize on long backboard. Consider use of scoop stretcher to move the patient.
2. For isolated mid-shaft femur fractures (open or closed), consider traction device.
3. Consider the PASG with all sections inflated if sign of hypotension are present; or use of pelvic wrap (sheet or commercial device) for stabilization of pelvic fractures.
4. Large bore IV(s) or IO(s) with warm NS. See Section I. D. & E. for details on titration of fluids.

C. Acute low back pain without spinal trauma.

1. Consider use of ice/warm packs over area to relieve discomfort.
2. Consider use of pain management as listed below.

D. Pain management:

1. Adult: Consider morphine sulfate in 2mg increments every 2 minutes up to 10mg slow IV/IO push if systolic BP >100, or Fentanyl 50mcg IV/IO or 50-100mcg IN, every 5 – 10 minutes to a maximum dose of 200mcg if BP>100/S for severe pain due to ISOLATED extremity injury or low back muscle spasm. Consider nitrous oxide if available.

* 2. Pediatric: Consider morphine sulfate 0.1mg/kg IV/IO, not to exceed 10mg, or Fentanyl 1-2mcg/kg IV/IN/IO for ISOLATED extremity injury. Consider nitrous oxide if available.
IX. Amputated parts.
   A. Airway, O₂, ventilate, **intubate PRN**, immobilize.
   B. Collect parts and debride gross contaminants with saline flush.
   C. Wrap in sterile saline moistened gauze, place in plastic bag, protect with towel, place on ice.
   D. Label with patient name, date, and time. Send amputated part with patient if available. Note disposition of amputated part on EMIR/PCR.
   E. Large bore IV(s) or IO(s) with warm NS. See Section I. D. & E. for details on titration of fluids.
   F. Adult: Consider morphine sulfate in 2mg increments every 2 minutes up to 10mg slow IV/IO push if systolic BP >100, or Fentanyl 50mcg IV/IO or 50-100mcg IN, every 5 – 10 minutes to a maximum dose of 200mcg if BP>100/S for severe pain due to **ISOLATED** extremity injury. Consider nitrous oxide if available.

* G. Pediatric: Consider morphine sulfate 0.1mg/kg IV/IO, not to exceed 10mg, or Fentanyl 1-2mcg/kg IV/IN/IO for **ISOLATED** extremity injury. Consider nitrous oxide if available.

   H. Consider transport to Harborview Medical Center for reimplantation.

X. Impaled objects.
   A. Do not remove unless the object is impaled in the cheek.
   B. Secure the object in place or remove if cheek involved.
   C. Taser® darts will be removed by EMS personnel only if EMS was already dispatched to the scene for a medical/trauma event.
      1. Unlike other forms of penetrating foreign objects, Taser® barbed darts, because of their short length (¼ in.), may be safely removed by EMS personnel.
      2. The darts should only be removed in the field if they do not involve the eye, face, neck, breast, or groin. Patients with retained darts in these areas should be transported to a hospital.
      3. The individual must be in police custody and EMS personnel must be convinced that the patient is adequately restrained.
      4. Use BSI precautions. Gloves must be worn.
      5. Ensure the wires are disconnected from the gun or the wires have been cut.
      6. Push on the body part in which the barbed dart (straight #8 fish hook) is imbedded and simultaneously pull the dart straight out.
      7. Apply alcohol or iodine to the puncture area and dress as needed.
      8. The darts should be placed in a biohazard sharps container and turned over to Law Enforcement.
9. All patients must be thoroughly assessed to determine if other medical
problems or injuries are present. Consider ECG/12 lead evaluation if
appropriate.
10. If the individual does not have any other presenting injuries/illness, they
may be left in the custody/care of Law Enforcement, obtain the name of
the officer.
11. If the patient is aggressive and must be transported to a hospital, follow
the restraint procedure outlined in the Behavioral Emergencies section.

XI. Burns.

A. Thermal.

1. Assess airway, O2, and intubate PRN.
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. Apply dry, sterile non-adherent dressings and/or clean sheets.
5. Keep patient warm.
6. Large bore IV(s) warmed NS.
   a. Use the Parkland Formula to calculate IV drip rate as fluid
resuscitation in the burn patient is paramount. 4ml x kg x % of 2nd
   and 3rd degree body surface area burned.
   b. ½ 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.
7. Diazepam 2 – 10mg IV/IO, or midazolam 2mg increments IV/IO to a
maximum dose of 0.1mg/kg or 10mg for anxiety relief.
8. For severe pain, and if no blunt trauma is suspected, morphine sulfate in
2mg increments every 2 minutes up to 10mg slow IV/IO push if systolic BP
>100, or Fentanyl 50mcg IV/IO or 50-100mcg IN, every 5 – 10 minutes to
a maximum dose of 200mcg if BP>100/S. Consider nitrous oxide if
available.

* 9. Pediatric: For severe pain, consider morphine sulfate
0.1mg/kg IV/IO, not to exceed 10mg or Fentanyl 1-2mcg/kg
IV/IN/IO. Consider nitrous oxide if available.
10. Consider transport to Harborview if burn is > 20% 2nd/3rd degree.

B. Electrical.

1. Assure source is deactivated.
2. Wound care.
3. IV NS wide open to flush kidneys.
4. Intubate PRN.
5. Monitor ECG/treat dysrhythmias according to AHA Handbook when
appropriate.
6. For severe pain, and if no blunt trauma is suspected, morphine sulfate in
2mg increments every 2 minutes up to 10mg slow IV/IO push if systolic BP

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>100, or Fentanyl 50mcg IV/IO or 50-100mcg IN, every 5 – 10 minutes to a maximum dose of 200mcg if BP>100/S. Consider nitrous oxide if available.

* 7. **Pediatric:** For severe pain, consider morphine sulfate 0.1mg/kg IV/IO, not to exceed 10mg or Fentanyl 1-2mcg/kg IV/IN/IO. Consider nitrous oxide if available.

8. Consider transport to Harborview if burn is > 20% 2nd/3rd degree.

C. Chemical. (Consult Dept. of Transportation Emergency Response Guidebook)

1. Avoid self-contamination.
2. Remove all clothing and jewelry.
3. Dry powder; brush off if needed.
4. Flush copiously.
5. Attempt to identify chemical if possible.

XII. Crush Injury Syndrome (CIS).

Patients with CIS may not survive if treatment is not initiated before removal from the situation. It is imperative that patients be pretreated before extrication or movement.

A. Manage airway as indicated — if intubation necessary, DO NOT use Succinylcholine, consider Vecuronium 0.1mg/kg IV or Rocuronium 1mg/kg IV/IO.

B. O₂ with NRB mask at 10 – 15 LPM.

C. **Albuterol 2.5mg in 3ml NS SVN continuously.**

D. **IV – 1000cc NS with Sodium Bicarbonate 100mEq (label bag) mixed in. Volume replacement and pre-alkalization should take place immediately after CIS identified. Set drip rate to infuse at 1500cc/hour.**

E. ECG monitor.

F. If dysrhythmias, stabilize excitable tissue with calcium chloride 500mg IV push over 2 – 5 minutes.

G. If prolonged extrication, consider D₅₀W 25gm IV push. Monitor blood glucose levels and consider giving an additional D₅₀W 25 gm.

H. Consider morphine sulfate in 2mg increments every 2 minutes up to 10mg slow IV/IO push if systolic BP >100, or Fentanyl 50mcg IV or 50-100mcg IN, every 5 – 10 minutes to a maximum dose of 200mcg if BP>100/S for pain control.

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

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

K. DO NOT use PASG.

L. **For pediatric patients contact MBCH for treatment regime.**
CARDIAC EMERGENCIES

I. General.

A. Limit scene time with goal of \( \leq 15 \) minutes.

B. Administer oxygen if oxygen saturation is \(<94\%\) or evidence of respiratory distress: \(4\)L/min per nasal cannula; titrate to maintain \(\text{SaO}_2 \geq 94\) and \(\leq 99\%\).

C. CPR and SAED/AED when indicated, refer to AHA handbook.

D. ECG monitor. Perform multilead ECG if available, do not prolong scene time to obtain it.

E. Allow patient to assume a position of comfort.

F. Vital signs every 5 minutes.

G. If automatic implantable cardioverter defibrillator (AICD) is in place, follow appropriate arrhythmia protocol as you normally would.

H. IV(s) NS, titrate to \(BP > 90/S\), or saline lock.

I. Consider NG tube in cardiac arrest, preferred in pediatric cardiac arrest.

II. Chest discomfort and possible Acute Coronary Syndrome (ACS).

* A. EMT may assist patient in taking patient’s own nitroglycerin, if available, and systolic BP >100.

1. Use with caution or seek expert consultation if HR >100. Limit systolic BP drop of \(10\%\) of baseline or \(30\%\) if hypertensive. Avoid use of NTG if erectile dysfunction drugs used within 24 – 48 hours, as per AHA.

2. May repeat every 5 minutes \(x 2\) if systolic BP remains >100.

B. Nitroglycerin \(0.4\)mg SL tablet, may be given every 5 minutes \(x 3\) as long as systolic BP remains >100. 1-2 SL sprays may be given every 5 minutes to maximum of 3 sprays within 15 minutes.

1. Use with caution or seek expert consultation if HR >100. Limit systolic BP drop of \(10\%\) of baseline or \(30\%\) if hypertensive. Avoid use of NTG if erectile dysfunction drugs used within 24 – 48 hours, as per AHA.

2. Additional doses may be given as needed with caution.

C. Give non-enteric coated aspirin for chewing and swallowing; \(162\)mg total if already taking aspirin, \(325\)mg total if not.

D. STEMI patients: Morphine sulfate in \(2\)mg increments every \(2\) minutes up to \(10\)mg slow IV push if systolic BP >100 or Fentanyl \(25\)mcg IV/IO or \(50\)mcg IN every \(2 – 3\) minutes up to \(100\)mcg if BP >100/S.

E. Notify E.D. early, and follow Prehospital Cardiac Triage Destination Procedures in Appendix C.

* F. Any treatment for pediatrics (\(\leq 15\) years old) requires contact with Mary Bridge Children's Hospital.
III. All other cardiac care.
   A. Utilize the MPD approved AHA Handbook giving medications and performing tasks ONLY with medications and actions listed in this protocol.

IV. Therapeutic Hypothermia Post Cardiac Arrest.
   A. Goal: To induce mild hypothermia (32° – 34° C/89° – 93° F) as soon as possible following the return of spontaneous circulation.
   B. Indications:
      1. Return of spontaneous pulse following non-traumatic cardiac arrest.
      2. Age ≥ 18 years (best estimate if unknown).
      3. Patient unconscious (not following commands or speaking clearly).
      4. Patient’s airway is controlled with an advanced airway device.
      5. Patient with IV access.
   C. Contraindications:
      1. CPR in progress.
      2. Traumatic arrest.
      3. Age < 18 years.
      4. Patient responding to commands and/or speaking clearly.
      5. Patient is pregnant.
      6. Major surgery within 14 days.
      7. Patients with known bleeding disorder.
      8. Stroke.
   D. Procedure:
      1. Confirm the IV/IO is patent, and consider starting a second IV/IO line.
      2. Confirm the advanced airway is properly located.
      3. Start rapid infusion of cold Normal Saline (4° C/39° F), 30ml/kg up to 2 liters maximum.
      4. Sedate patient with diazepam 2mg – 10mg IV/IO, or midazolam 2mg increments IV/IO to a maximum dose of 0.1mg/kg or 10mg.
      5. Paralyze patient with Vecuronium (0.1mg/kg) or Rocuronium (1mg/kg).
      6. Apply cooling device or ice packs to groin, axilla and neck – protecting patient’s skin.
      7. Notify Level I Cardiac receiving facility ASAP.
      8. If possible, monitor core temperature and maintain between 32° and 34° C/ 89° and 93° F.
Semi-Automated/Automated External Defibrillation (SAED/AED) Treatment Algorithm
(Emergency cardiac care pending arrival of ACLS personnel)

Memory aid:
- If signs of circulation and pulse present: check breathing
- If breathing is inadequate: start rescue breathing:
  – Victims 1 to 8 years: 1 breath every 3 seconds
  – Victims ≥ 8 years: 1 breath every 5-6 seconds
- If adequate breathing: place in a recovery position
  And check pulse every 2 minutes
- For hypothermic patients limit shocks and transport immediately

Check if unresponsive - if not breathing or no normal breathing >
- Get SAED/AED or send 2nd rescuer to get this

Check pulse - no pulse > continue below

Perform CPR (until SAED/AED arrives and is ready to attach):
- Combine compressions and ventilations
- Start chest compressions (push hard and fast, at least 100/min, allow for recoil)
- Compression-to-breath ratio:
  – Victims 1 to 8 years:
    1 Rescuer: 30 compressions to 2 breaths
    2 Rescuers: 15 compressions to 2 breaths
  – Victims ≥ 8 years: 30 compressions to 2 breaths
- Minimize interruptions in chest compressions and avoid excessive ventilation

Attempt Defibrillation (SAED/AED on scene):
- POWER ON the SAED/AED first!
- ATTACH SAED/AED electrode pads
- ANALYZE (“Clear!”)
- SHOCK -if indicated (“Clear!”)

Resume CPR immediately for 2 minutes

Press ANALYZE – Check rhythm
Shock if indicated

Resume CPR immediately for 2 minutes
SHOCK EMERGENCIES

I. Traumatic hypovolemic shock.
   A. Control hemorrhage.
      1. For external hemorrhage, use direct pressure and pressure dressings;
         a. Consider using a hemostatic agent bandage to control bleeding if
            pressure dressing does not work.
         b. For exsanguinating extremity hemorrhage consider use of a
            tourniquet. Mark time applied on the tourniquet and consider pain
            management as necessary unless patient is in decompensated shock.
            Contact Base Station and/or Receiving Facility to inform them a
            tourniquet has been applied.
      2. Use PASG to help control internal hemorrhage (Appendix-H)
   B. Immobilize as needed, transport patient in a supine position as soon as possible.
   C. Keep patient warm (use heat packs and reflective blankets PRN).
   D. Large bore IV(s) or IO(s) with warm NS.
      1. If suspected uncontrolled internal hemorrhage, titrate to state of relative
         hypotension with systolic BP of 80/S to 90/S.
      2. If suspected Traumatic Brain Injury (TBI) titrate fluids to maintain BP
         ≥ 90/S.
      3. If hemorrhage is controlled, but signs and symptoms of shock are present,
         larger amounts of fluids can be infused.
   E. Pediatric:
      1. Control hemorrhage: same care as adult above.
      2. Immobilize as needed, and transport patient in a supine position
         as soon as possible.
      3. Keep patient warm (use heat packs and reflective blankets PRN).
      4. Large bore IV(s) or IO(s) with warm NS:
         a. Push 20ml/kg, may repeat x 2.
         b. Maintain patient in a state of relative hypotension
            (Consult MBCH for specific BP or refer to length-based
            measuring device).

II. Anaphylactic shock.
   A. Airway, O₂, ventilate as needed.
   B. Consider early intubation if patient has signs of airway compromise.
   C. Large bore IV(s) or IO(s) with warm NS.
      1. Adult: Give 250 – 500ml fluid challenge if BP < 90/S. May repeat until BP
         >90/S.
      2. Pediatric: Push 20ml/kg, may repeat x 2.
D. Administer Epinephrine.

* 1. The EMT may administer epinephrine – 0.3mg IM for adults and **pediatric patients >66 pounds; and 0.15mg IM for pediatric patients <66 pounds.**

  2. **Adult:** 1:10,000, 0.5mg IV/IO. If no IV or IO, mix 2mg of 1:1000 with 5ml NS, give down ET tube. Note: Multiple doses may be needed for patients on beta blockers.

* 3. **Pediatric:** 1:10,000 0.3mg IV/IO.

E. Administer diphenhydramine.

  1. **Adult:** 25-50mg IV/IO or deep IM, to a maximum dose of 100mg.

  2. **Pediatric:** 1-2mg/kg IV/IO slowly, or deep IM to a maximum dose of 50mg.

F. Administer methylprednisolone 125mg IV/IO.

G. Consider dopamine 10mcg/kg/min IV/IO. Titrate to maintain BP ≥ 90/S.

H. Albuterol.

* 1. EMT may assist with patient’s own metered dose inhaler.

  2. **Adult:** 2.5mg in 3ml NS SVN continuously.

  3. **Pediatric:** *Use blow-by if <5 years old.*

     a. **>6 months:** 2.5mg in 3ml NS SVN continuously.

     b. **<6 months:** 1.25mg in 3ml NS SVN continuously.

III. Vasogenic/Neurogenic Shock /or Hypotension of Unknown Etiology.

A. Airway, O₂, ventilate, intubate as needed.

B. Immobilize based on mechanism/nature of illness.

C. Transport patient in a supine position as soon as possible.

D. Keep patient warm (use heat packs and reflective blankets PRN).

E. Large bore IV(s) or IO(s) with warm NS.

  1. **Adult:** Give 250 – 500ml fluid challenge if BP < 90/S.

  2. **Pediatric:** Push 20ml/kg, may repeat x 2.

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

G. Consider vasopressin 40units IV/IO push x 1.
RESPIRATORY EMERGENCIES

I. 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).

II. General.
   B. Airway, O₂, ventilate, intubate PRN.
   * 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. IV(s) NS/saline lock. Titrate to BP >90/S.
   E. Monitor ECG/pulse oximetry, ETCO₂, temperature, if available.

III. Difficulty breathing.
   A. If congestive heart failure suspected:
      1. If patient is in mild distress and BP>100/S:
         *EMT Give nitroglycerin 0.4mg SL tablet or spray, may repeat every 3 to 5 minutes, if patient remains symptomatic to a maximum of 2mg.
      2. If patient in moderate distress, or severe distress without AMS and BP>100/S:
         *EMT a. Give nitroglycerin 0.4mg SL tablet or spray, may repeat with 0.4 SL tablet or 0.8mg SL spray every 3 to 5 minutes, if patient remains symptomatic, to a maximum of 2mg.
         *EMT b. Apply CPAP as quickly as possible.
         c. If CPAP is not tolerated then consider anti-anxiety medication, midazolam 1-2mg IV or diazepam 5-10mg IV.
      3. Nitroglycerin can be given before IV is established if patient has nitroglycerin prescription or prior history of nitroglycerin use.
      4. If patient in severe distress, with altered mental status: immediately ventilate with BVM and consider RSI.
      5. Consider albuterol for wheezing, 2.5mg via SVN, may repeat once.
      6. Consider dopamine 10mcg/kg/min IV/IO. Titrate to maintain BP >90/S.
      7. 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 Protocol Section).
   B. If asthma or COPD suspected in adults:
      1. If patient is in mild and moderate distress:
a. Give albuterol 2.5mg with Atrovent 0.5mg in 3ml NS via SVN. May repeat combination of albuterol and Atrovent once.
b. Additional doses of albuterol 2.5mg can be given continuously.
c. IV NS titrate to BP>90/S.
d. Methylprednisolone 125mg IV.
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 1-2mg IV or diazepam 5-10mg IV.
   c. IV NS titrate to BP>90/S.
   d. Methylprednisolone 125mg IV.
   e. In asthmatics:
      i. Give Epinephrine 1:1000 0.3mg IM, may repeat in 20 minutes.
      ii. Give magnesium sulfate 1-2gm IV slowly over 10 minutes.

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

C. If asthma suspected or wheezing present in pediatrics:

1. Give albuterol with Atrovent, use blow-by if <5 years old.
   a. >6 months: albuterol 2.5mg with Atrovent 0.25mg in 3.0ml NS SVN. May repeat once.
   b. <6 months: albuterol 1.25mg with Atrovent 0.25mg in 3.0ml NS SVN. May repeat once.

2. If the pediatric patient is in severe distress:
   a. Epinephrine 0.01mg/kg of 1:1000 IM, not to exceed 0.3mg total.
   b. IV NS, control rate.
   c. Methylprednisolone 1-2mg/kg IV up to 125mg per dose.
   d. 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. Position of comfort.
2. Blow-by oxygen.
3. Epinephrine 1:1000 SVN blow-by.
   a. 2ml (undiluted) for patients under 6 years of age.
   b. 3ml (undiluted) for patients 6 years of age or older.

E. If upper airway obstruction suspected:

1. If foreign object, attempt relieving obstruction according to AHA Handbook.
2. If unable to relieve obstruction via AHA handbook, visualize 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. Sit up in position of comfort.
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, epinephrine 1:1000 0.3mg IM or 1:10,000 0.3mg IV. **Pediatric dose: 0.01mg/kg IM/IV/IO up to 0.3mg.**
7. If unable to ventilate, needle or surgical cricothyrotomy
8. Rapidly transport.
MEDICAL EMERGENCIES

I. General.
   A. Airway, O₂, ventilate, intubate PRN.
   B. Blood glucose check.
   C. IV NS/saline lock. Titrate to BP >90/S.
   D. Monitor ECG/treat dysrhythmias according to AHA Handbook when appropriate.
   E. Blood Draw.

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 @ 20/min. for adults. Keep pulse oximeter ≥ 95%. Keep ETCO₂ level between 30 – 35 mmHg if able to monitor.
      2. Lay patient flat unless signs of airway compromise, in which case elevate head of bed no higher than 20 degrees.
      3. Transport ASAP.
   B. If diabetic history with medications and able to maintain airway:
      1. Blood glucose check.
      2. Adult & Pediatric: Administer oral glucose or simple sugar, i.e. honey, orange juice with 2-3 teaspoons of sugar.
   C. If diabetic history signs and symptoms of hypoglycemia but unable to maintain airway:
      1. Adult:
         a. Give D₅₀W 50ml (25gm) IV/IO push if blood glucose <80, repeat if blood glucose remains <80.
         b. If unable to secure IV or IO access, give glucagon 1mg IM.
      2. Pediatric:
         a. Under 2 years of age: Give D₂₅W 2ml – 4ml/kg IV/IO if blood glucose < 60.
         b. 2 years of age or over: Give D₅₀W 1ml – 2ml/kg IV/IO if blood glucose < 60.
   D. If actively seizing:
      1. Protect patient from injury.
      2. Consider febrile source in pediatric patient.
         a. Once seizure has stopped, remove excess clothing.
         * b. For temperature >101.0 acetaminophen 15mg/kg orally if child is able to maintain airway and swallow without difficulty. May give acetaminophen 15mg/kg per rectal suppository if child unable to swallow or maintain airway.
3. Adult:
   a. Diazepam 2mg increments not to exceed 10mg IV push or IM if unable to start IV. Wait 1–2 minutes between IV doses to evaluate response OR
   b. Midazolam 2mg increments to a maximum dose of 0.1mg/kg or 10mg (whichever is less) IV, or IM if unable to start an IV, or 0.2mg/kg of a 5mg/ml concentration IN.
   c. If patient is pregnant or postpartum, give magnesium sulfate 2–4gm slow IV push over 5 minutes.

4. Pediatric:
   a. Midazolam 0.2mg/kg IM OR 0.1mg/kg IV slowly over 2 minutes in no greater than 2mg increments not to exceed 5mg, OR 0.2mg/kg of a 5mg/ml concentration IN. Wait at least 1–2 minutes between IV/IN doses to observe effect, OR
   b. Diazepam 0.2mg/kg IV/IO not to exceed 10mg, give 2mg increments, waiting 1–2 minutes between doses to observe effect OR
   c. Diazepam rectally: 0.5mg/kg, wait at least 5 minutes before giving a second dose, not to exceed 20mg.
      i. Administer rectal dose with 3ml syringe (without needle) inserted as far as possible.
      ii. May administer patient's own Diastat when available.
   * d. Call for additional doses.

E. If inadequate breathing and suspicious of narcotic overdose:
   1. Adult: Consider naloxone 0.4 – 2mg IN/IV/IM/ET, titrate until patient begins to breathe effectively. May repeat as needed not to exceed 10mg.
   2. Pediatric: Consider naloxone 0.1mg/kg IV/IM/ET/IO, titrate until patient begins to breathe effectively. May repeat as needed not to exceed 10mg.

F. Overdose.
   1. All overdoses that are unstable/ALOC/AMS shall be dispatched and transported by ALS to closest Receiving Facility.
   2. May consult Poison Control for advice, 800-709-0911.
   3. If overdose/ingestion suspected, bring in all containers, pill bottles, emesis.
   * 4. Consider activated charcoal (if available), if awake with a gag reflex intact.
      a. Adult: 1gm/kg orally.
      b. Pediatric: 1gm/kg orally.
   5. For suspected tricyclic overdose with wide QRS, give sodium bicarbonate 1.0mEq/kg IV.
   6. For suspected beta blocker OD, give glucagon 1–5mg IV over 2–5 minutes for symptomatic bradycardia.
   7. For suspected phenothiazine overdose with extrapyramidal effects, consider diphenhydramine 25 – 50mg IV/IM.

III. Abdominal pain/vomiting.
A. Position of comfort.

B. Consider ondansetron (Zofran).
   1. Adult: 8mg oral disintegrating tablet (ODT) or 4mg IM or IV slowly over 30 seconds – 5 minutes.
   * 2. Pediatric:
      a. >11 y.o.: 8mg ODT or 4mg IV slowly over 30 seconds – 5 minutes.
      b. 4 – 11 y.o.: 4mg ODT or 0.15mg/kg IV slowly over 30 seconds – 5 minutes up to 4mg.

C. Consider Pain Management.
   1. Adult: Consider morphine sulfate in 2mg increments every 2 minutes up to 10mg slow IV push if systolic BP >100, or Fentanyl 50mcg IV/IO or 50-100mcg IN, every 5 – 10 minutes to a maximum dose of 200mcg if BP>100/S for severe pain.
   * 2. Pediatric: Consider morphine sulfate 0.1mg/kg up to 10mg IV or Fentanyl 1-2mcg/kg IV/IN/IO.

IV. Renal dialysis patients with suspected hyperkalemia.
   A. If tall, peaked T waves, prolongation of QRS, and low P waves with bradycardia.
      1. Give calcium chloride 500 – 1000mg IV/IO (not if patient is on digoxin).
      2. Sodium bicarbonate 1mEq/kg IV.
      3. Albuterol 2.5mg in 3ml NS SVN continuously.

V. Stroke Emergencies. (See Appendix D)
   A. Scene Size-up/Initial Patient Assessment
      1. Support ABCs.
      2. Check glucose level. Treat hypoglycemia (if necessary).
      3. Check temperature and pulse oximetry (if possible)
      4. Give nothing by mouth unless hypoglycemic.
   B. Secondary Assessment
      1. Perform F.A.S.T. Assessment (Face/Arm/Speech/Time last normal). If one component is abnormal, suspect a stroke.
      2. Time from when the patient was last normal will determine destination. Refer to Stroke Triage Procedures in Appendix D.
      3. Limit scene time, with a goal of < 15 minutes.
   C. Transport
      1. Lay patient flat unless signs of airway compromise, in which case elevate the head of the bed no higher than 20 degrees.
      2. Early hospital notification - specify FAST findings (issue stroke alert & share abnormal physical findings and time last normal).
      3. Transport according to Stroke Triage Procedures in Appendix D.
      4. Consider air transport when appropriate.
VI. Alcohol Intoxication Emergencies.

A. Consider transport to the Sobering Center if the patient has been either screened and cleared by EMS or by hospital Emergency Department staff.

1. Contact Base Station for permission for transport to Sobering Center.

2. Call Sobering Center (Appendix L).
   a. Identify yourself as ________ from _________ and explain you have a patient who has been medically cleared and is ready for transport to the Sobering Center.
   b. Give clinical information.

3. All of the following must be present to clear a patient for the center.
   a. Patient is ≥ 18 years of age or is an emancipated minor.
   b. There is an indication of alcohol intoxication (odor of alcoholic beverages on breath, bottle). Breathalizer if possible.
   c. Glasgow Coma Scale score of 14 or 15.
   d. Systolic blood pressure between 100 and 180.
   e. Pulse rate between 60 and 100.
   f. Respiratory rate between 12 and 24.
   g. Blood glucose between 80 and 200.
   h. No active bleeding.
   i. No recent trauma above the clavicles.
   j. No recent or first time seizure.
   k. No untreated lacerations.
   l. Patient must be ambulatory with minimal assistance, and able to provide basic information.
   m. Patient must be willing to go to the Sobering Center.

B. Any patient who does not meet these criteria must be triaged and transported according to the appropriate protocol.
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. Airway, O₂, ventilate, intubate PRN.
    C. IV NS, titrate to BP > 90/S.
    D. Monitor ECG/treat dysrhythmias according to AHA Handbook when appropriate.

II. Toxic inhalations.
    A. If wheezing:
       1. Adult: albuterol 2.5mg with Atrovent 0.5mg in 3ml NS SVN continuously.
       2. Pediatric: Use blow-by if < 5 years old.
          a. >6 months: albuterol 2.5mg with Atrovent 0.25mg in 3ml
             NS SVN continuously.
          b. <6 months: albuterol 1.25mg with Atrovent 0.25mg in 3ml
             NS SVN continuously.
    B. Monitor Carbon Monoxide (CO) if able and when appropriate. If readings
       elevated:
       1. Remove patient from CO environment.
       2. Assure O₂ delivery is high flow at 100% for CO readings >5% in a non-
          smoker and >10% in a smoker.
       *EMT 3. Consider CPAP for CO readings in adults >12%.
       4. Contact Base Station for possible transport for hyperbaric therapy with CO
          readings >25% in adults and >15% in children and pregnant women.
    C. Treat for cyanide poisoning, any person removed from or having high potential
       unprotected exposure to fire gasses and smoke:
       1. Remove the patient from the smoke filled environment.
       2. Assure O₂ delivery is high flow at 100%.
       3. Establish an IV, monitor the cardiac rhythm and 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.
    C. Monitor ECG/treat dysrhythmias according to AHA Handbook when appropriate.
    D. Administer warm IV solution.
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.

V. Drowning.
   A. Remove wet clothing, dry as soon as possible, warm patient by using warm blankets.
   B. Watch for vomiting, prevent aspiration.
   C. Monitor ECG/treat dysrhythmias according to AHA Handbook when appropriate.

VI. Underwater diving accidents.
   A. Transport in horizontal supine position.
   B. Consider horizontal lateral recumbent if vomiting.
   C. Consider decompression via 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. Administer epinephrine for anaphylaxis, (see Shock Emergencies section).
   D. Diazepam 2 – 10mg IV for muscle spasms.

VIII. Organophosphate/Nerve Agent poisoning (symptomatic).
   A. Decontaminate. Remove clothing. Protect against secondary contamination.
   B. Adult:
      1. If not using the DuoDote/Mark I/NAAK and patient is unresponsive, give atropine 1mg IV every 1 minute, not to exceed 10mg until symptoms clear.
      2. If using the DuoDote/Mark I/NAAK:
         a. For mild to moderate symptoms, administer 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, administer three doses (sets) of atropine and 2-PAM IM in rapid succession.
C. Pediatric: Start with atropine, 0.5mg IV and repeat as above, not to exceed 10mg.

IX. Allergic reaction (not anaphylaxis).
   Urticaria, wheezing, stridor in the absence of foreign objects.
   
   A. Adult:
      1. Epinephrine 1:1000 0.3 – 0.5mg IM.
      2. Adult: albuterol 2.5mg with Atrovent 0.5mg in 3ml NS SVN continuously.
      3. Diphenhydramine 25 – 50mg slow IV or deep IM. May repeat. Maximum dose 100mg (not for asthma attack).
      4. Repeat epinephrine 1:1000 0.3mg IM.
      5. Consider methylprednisolone 125mg IV.
   
   B. Pediatric:
      1. Epinephrine 1:1000 0.01mg/kg IM. Maximum 0.3mg.
      2. >6 months: albuterol 2.5mg with Atrovent 0.25mg in 3ml NS SVN continuously.
      3. <6 months: albuterol 1.25mg with Atrovent 0.25mg in 3ml NS SVN continuously.
      4. Diphenhydramine 1–2mg/kg IM/slow IV. Maximum dose 50mg.
      * 5. May repeat epinephrine.
      * 6. Consider methylprednisolone 1–2mg/kg IV.
BEHAVIORAL EMERGENCIES

I. General.

A. Assure scene safety, if not safe then retreat and stage until scene is secured by Law Enforcement.

B. If a show of force necessary to render care, contact Law Enforcement.

C. Scan for signs of items contributing to crisis or that could potentially be used as a weapon.

D. One EMT or Paramedic 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.

E. Assess patient and treat life threats.

F. Provide routine care.
   1. Airway, O₂ (assess if behavior is due to hypoxia).
   2. Vital signs (assess if behavior is due to hypovolemia).
   3. Blood glucose check (assess if behavior is due to hypoglycemia).

G. Stay with the patient at all times and maintain a constant visual observation.

H. 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 - 10mg IV/IM OR
   2. Midazolam:
      a. Adult: Give in 2mg increments to a maximum dose of 0.1mg/kg or 10mg (whichever is less) IV/IM, or 0.2mg/kg of a 5mg/ml concentration IN.
      b. Give half doses if patient is > 60 years old.
      c. Pediatric: May use midazolam 0.2mg/kg IM OR 0.1mg/kg IV slowly over 2 minutes in no greater than 2mg increments not to exceed 5mg, OR 0.2mg/kg of a 5mg/ml concentration IN. Wait at least 1 – 2 minutes between IV/IN doses to observe effect.

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

   B. Suicide risk.
      1. Depression, suicidal gestures or thoughts, substance abuse, multiple losses, giving away possessions.

   C. Excited Delirium syndrome (ExDs).
      1. General:
         a. Consider ExDs with any or all of the following patient presentations:
            i. Extremely violent/aggressive behavior.
            ii. Constant or near constant physical activity.
            iii. Does not respond to police presence.
            iv. Attracted to reflective objects.
            v. Attracted to bright lights and/or loud sounds.
vi. Naked or inadequately clothed.
vii. Is hot to touch.
viii. Rapid breathing.
ox. Keening (unintelligible animal noises).
x. Extreme tolerance to pain.
xii. Excessive strength (out of proportion).
xiii. Does not tire despite heavy exertion.
b. If the call is dispatched as ExDs or symptoms suggest ExDs, coordinate with Law Enforcement to develop a sedation and/or patient control plan.
c. 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.
d. Prepare sedative prior to making contact with the patient:
i. Midazolam 10 mg IN/IM/IV, OR
ii. Ketamine 4 mg/kg IM; or 2mg/kg IV/IO, OR
iii. Diazepam 5 – 10 mg IV/IM.
iv. Call Mary Bridge for pediatric dosing.
e. All ExDs patients will be restrained,(See Section I.I. above)
i. Patient will not be removed from restraints until medically cleared or for resuscitative measures.
ii. Law Enforcement will accompany the patient to the hospital.
f. Take the patient’s temperature, apply ice packs to facilitate cooling if hyperthermic, monitor for overcooling, and document temperature.
g. 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 I/O.
i. Administer NS IV fluids up to 2 liters. Cooled fluids, if possible, for the patient with an elevated body temperature.
ii. If extreme agitation is present prior to sedation and the patient has an elevated body temperature, administer Sodium Bicarbonate 50mEq IV push for each liter of saline given, to a maximum of 100mEq.
iii. If you have the ability to draw blood tubes- 20ml red top, 10ml gray top (x2), and 10ml purple.
h. Manage the airway of a patient who has an elevated body temperature and was extremely agitated prior to sedation:
i. Succinylcholine contraindicated in ExDs.
ii. Monitor ETCO₂ if available.
i. Documentation of patient behavior and body temperature prior to any cooling is extremely important.
III. Transport.

A. If the patient consents, follow general medical assessment/treatment.

B. If the patient refuses, consult with Base Station.

C. May transport to the Recovery Response Center.
   1. Contact Base Station for permission for transport to RRC.
   2. Call RRC (Appendix L).
      a. Identify yourself as ________ from _________ and explain you have a patient who has been medically cleared in the field and are ready for transport to the RRC.
      b. Give clinical information.
   3. Consider the following for transport to RRC:
      a. Any psychiatric or behavioral health presentation who are 18 years old or emancipated.
      b. Patient with psychosis of unknown etiology (drugs vs. mental health).
   4. 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 you sedate.
OB/GYN EMERGENCIES

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. Start an IV with normal saline 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 I 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. After the head is delivered, suction the mouth then nose at the perineum.
4. Check for cord wrapped around the baby’s neck. If present, unwrap or clamp and cut the cord before proceeding with the delivery.
5. Dry the baby and stimulate to a cry.

C. Childbirth – Breech Deliveries.

1. All efforts should be made to rapidly transport the mother to the closest, most appropriate facility. Place the mother in a gravity dependant, 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.
   b. If Footling: place a gloved hand into the vagina along the newborn baby’s chest and face, keeping the cervix open while maintain an air passage through the birth canal. Deliver the baby.

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.
b. For the nonvigorous baby, see steps below:
   i. Once the baby is delivered and PRIOR to drying and stimulation, use a bulb syringe to suction the newborn 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. Visualize the vocal cords and glottic opening using a laryngoscope. Suction the trachea and bronchi using ETTs and a meconium aspirator until the baby becomes vigorous.
   iv. If the baby does not become vigorous or if the heart rate is <100 place a clean ETT into the trachea and secure it for continued ventilation assistance and transport.
   v. 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. If ventilation was done with a bag valve mask, a gastric tube should be placed.
   f. IV/IO access.
   g. Check blood glucose levels and if <60, give D25 at 2-4ml/kg IV/IO push.
   h. Administer Epinephrine 1:10,000 0.01mg/kg IV/IO push.
   i. 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. 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. DO NOT pack the vagina, place sanitary napkin over vaginal opening.
   c. *IV NS, titrate to BP >90/S.*
   d. Consider PASG (Appendix H).
   e. Re-assess the mother for signs of shock and hypoglycemia. Treat according to protocol.
   f. 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. *Start an 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 4gm 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.
   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. *Start an IV with NS for possible fluid replacement.*
   4. Treat for hemorrhagic shock according to ‘Shock Emergencies’ section.

II. Gynecological Emergencies
   A. 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. *Start an IV with NS for possible fluid replacement.*
      4. Treat for hemorrhagic shock according to ‘Shock Emergencies’ section.
APPENDICES
A. STANDARD REPORTING FORMAT

†This is ___________________ †with ___________________

Name ___________________ †ETA ___________________

Destination ___________________ †ETA ___________________

†We have a ______ year old male/female, approximately ____lbs. who is an urgent/non-urgent medical or a Step 1 / 2 / 3/ 4 trauma or an injured patient.

†C/C ____________________________________________

†If CVA patient, give s/s: ________ with time of s/s onset: __________

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
Prehospital triage is based on the following 4 steps: Steps 1 and 2 require prehospital EMS personnel to notify medical control and activate the Trauma System. Activation of the Trauma System in Step 3 & 4 is determined by medical control.‡‡

**STEP 1  MEASURE VITAL SIGNS & LEVEL OF CONSCIOUSNESS**
- Glasgow Coma Scale < 14 or
- Systolic blood pressure < 90 mmHg or
- Respiratory rate < 10 or > 29 breaths/minute (< 20 in infant < one year)

‡‡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, neck, torso, and extremities proximal to elbow and knee
- Flail chest
- Two or more proximal long-bone fractures
- Crushed, degloved or mangled extremity
- Amputation proximal to wrist and ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis

**STEP 3  ASSESS MECHANISM OF INJURY & EVIDENCE OF HIGH-ENERGY IMPACT**
- **Falls**
  - Adults: > 20 ft. (one story is equal to 10 ft.)
  - Children: > 10 ft. or 2-3 times the height of the child
- **High-Risk Vehicle Crash**
  - Intrusion: > 12 in. occupant site; >18 in. any site
  - Ejection (partial or complete) from vehicle
  - Death in same passenger compartment
  - Vehicle telemetry data consistent with high risk of injury
- **Vehicle v. Pedestrian/Bicyclist Thrown, Run Over, or with Significant (> 20 mph) Impact**
- **Motorcycle Crash > 20 mph**

**STEP 4  ASSESS SPECIAL PATIENT OR SYSTEM CONSIDERATIONS**
- **Age**
  - Older Adults: Risk of injury death increases after age 55 years
  - Children: Should be triaged preferentially to pediatric-capable trauma centers
- **Anticoagulation and Bleeding Disorders**
- **Burns**
  - Without other trauma mechanism: Triage to burn facility
  - With trauma mechanism: Triage to trauma center
- **Time Sensitive Extremity Injury**
- **End-Stage Renal Disease Requiring Dialysis**
- **Pregnancy > 20 Weeks**
- **EMS Provider Judgment**

**CONTACT MEDICAL CONTROL FOR DESTINATION DECISION**

- **YES**
  - Transport 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

- **NO**
  - Consider transport to a trauma center or a specific resource hospital.

**TRANSPORT PATIENT PER REGIONAL PATIENT CARE PROCEDURES**
Purpose

The purpose of the Triage Procedure is to ensure that major trauma patients are transported to the most appropriate hospital facility. This procedure has been developed by the American College of Surgeons/Committee on Trauma (ACS/COT), modified by the Department of Health and Human Services/Center for Disease Control (DHHS/CDC), recommended by the Prehospital Technical Advisory Committee (PHTAC), endorsed by the Governor’s EMS and Trauma Care Steering Committee, and in accordance with RCW 70.168 & WAC 246-976 adopted by the Department of Health (DOH).

The procedure is described in the schematic with narrative. Its purpose is to provide the prehospital provider with quick identification of a major trauma victim. If the patient is a major trauma patient, that patient or patients must be taken to the nearest trauma facility within 30 minutes transport time, by either ground or air. To determine whether an injury is major trauma, the prehospital provider shall conduct the patient assessment process according to the trauma triage procedures.

Explanation of Process

A. Any certified EMS and Trauma person can identify a major trauma patient and activate the trauma system. This may include requesting more advanced prehospital services or aero-medical evacuation.

B. The first step (1) is to measure the vital signs and assess level of consciousness.

The “or” conditions in Step 1 mean that any one of the entities listed in Step 1 can activate the trauma system.

Also, the double cross (‡‡) means that if the airway is in jeopardy and the on-scene person cannot effectively manage the airway, the patient should be taken to the nearest medical facility or consider meeting up with an ALS unit. These factors are true regardless of the assessment of other vital signs and level of consciousness.

C. The second step (2) is to assess the anatomy of injury. The specific injuries noted require activation of the trauma system. Even in the assessment of normal vital signs or normal levels of consciousness, the presence of any of the specific anatomical injuries does require activation of the trauma system.

Please note that steps 1 & 2 also require notifying Medical Control.

D. The third step (3) is to assess the mechanism of injury and evidence of high-energy impact. Combining physiologic and anatomic criteria with mechanism of injury criteria will help better identify patients that will benefit from transport to a trauma center. The conditions identified are reasons for the provider to contact and consult with Medical Control regarding the need to activate the system. They do not automatically require system activation by the prehospital provider.

E. The fourth step (4) is to assess special patient or system considerations that place the patient at higher risk for severe injury. The conditions identified are reasons for the provider to contact and consult with Medical Control regarding the need to activate the system. They do not automatically require system activation by the prehospital provider.

Please note that certain burn patients (in addition to those listed in Step 2) should be considered for immediate transport or referral to a burn center/unit.

Patient Care Procedures

To the right of the preceding schematic you will find the words “according to DOH approved regional patient care procedures.” These procedures are developed by the regional EMS and Trauma council in conjunction with local councils. They are intended to further define how the system is to operate. They identify the level of medical care personnel who participate in the system, their roles in the system, and participation of hospital facilities in the system. They also address the issue of inter-hospital transfer, by transfer agreements for identification and transfer of critical care patients.

In summary, the Prehospital Trauma Triage Procedure and the Regional Patient Care Procedures are intended to work in a “hand in glove” fashion to effectively address EMS and Trauma patient care needs. By functioning in this manner, these two instruments can effectively reduce morbidity and mortality.

If you have any questions on the use of either instrument, you should bring them to the attention of your local or regional EMS and Trauma council or contact 1-800-458-5281.
C. PIERCE COUNTY
PREHOSPITAL CARDIAC TRIAGE (DESTINATION) PROCEDURES

Assess Applicability for Triage

☐ Post cardiac arrest with ROSC
☐ ≥ 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.

NO

If ALS has not been dispatched, upgrade if available.

YES

Assess Immediate Criteria

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

NO

YES

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>

YES

Level II Cardiac Hospital 60 minutes closer than Level I?

NO

Level II Cardiac Hospital 30 minutes closer than Level I?

YES

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

NO

Go to Level I Cardiac Hospital and alert destination hospital en route ASAP

NO

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

YES

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.

* 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
Appendix C-1
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/NSTE) 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 en route 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

**Assess Applicability for Triage**
Report from patient or bystander of one or more **sudden**:
- 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

**Perform F.A.S.T. Assessment**
- **Face**: unilateral facial droop?
- **Arms**: unilateral drift or weakness?
- **Speech**: abnormal or slurred?
- **Time last normal** (determine time patient last known normal)
  - Yes to any one sign (Face, Arms, Speech) = YES
  - No to all three signs = NO

**Determine Destination**
- Transport the patient to the nearest Level I, II, or III Stroke Center.
- If the nearest center is a Level III, and there’s a Level I or II available with no more that 15 minutes increase in transport time, go to the nearest Level I or II Stroke Center.

See side box for additional destination considerations.

Limit scene time and alert destination hospital ASAP

**Additional Destination Considerations:**
- Any additional transport time should not take the patient outside of the IV thrombolysis window of 3.5 hours from the time last seen normal.
- For patients last seen normal plus transport time ≥ 3.5 hours to ≤ 6 hours, consider transport to a Level I Stroke Center of a Level II Stroke Center with intra-arterial interventional capability.
- 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 to choose from within the transport timeframe, patient preference, insurance, physician practice patterns, and local rotation agreements may be considered.
PIERCe COUNTY
PREHOSPITAL STROKE TRIAGE (DESTINATION) PROCEDURES

Purpose
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. Like trauma, stroke treatment is time-critical – the sooner patients are treated, the better their chances of survival and recovering function. For strokes caused by a blood clot in the brain (ischemic), clot-busting medication must be administered within 4.5 hours from the time they first have symptoms. For bleeding strokes (hemorrhagic), time is also critical. Currently, there are no accurate tools to distinguish between an ischemic and hemorrhagic stroke in the field so there is no difference in prehospital triage.

Stroke Assessment – F.A.S.T.
The F.A.S.T. assessment tool (also known as the Cincinnati Prehospital Stroke Scale + Time) is a simple but pretty accurate way to tell if someone might be having a stroke. It’s easy to remember: Facial droop, Arm drift, Speech, + Time. If face, arms, or speech is abnormal, it’s likely the patient is having a stroke. Immediately transport the patient to a stroke center. Regional patient care procedures and county operating procedures may provide additional guidance. Alert the hospital on the way. Transport should not be delayed for IV and EKG monitoring.

<table>
<thead>
<tr>
<th>TEST</th>
<th>NORMAL</th>
<th>ABNORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial droop: Ask the patient to show his or her teeth or smile.</td>
<td>Both sides of the face move equally.</td>
<td>One side of the face does not move as well as the other</td>
</tr>
<tr>
<td>Arm drift: Ask the patient to close his or her eyes and extend both arms straight out for 10 seconds. The palms should be up, thumbs pointing out.</td>
<td>Both arms move the same or both arms do not move at all</td>
<td>One arm drifts down or one arm does not move at all.</td>
</tr>
<tr>
<td>Speech: Ask the patient to repeat a simple phrase such as “Firefighters are my friends.”</td>
<td>The patient says it correctly, with no slurring</td>
<td>The patient slurs, says the wrong words, or is unable to speak.</td>
</tr>
</tbody>
</table>

Time: Ask the patient, family or bystanders the last time the patient was seen normal.

Stroke warning signs:
- Sudden numbness or weakness of the face, arm or leg, especially on one side of the body
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden, severe headache with no known cause
Encourage family to go to the hospital to provide medical history, or obtain contact information for a person who can provide medical history.

Report to ED:
Possible IV t-PA contraindications: Last known well more than 180 minutes • head trauma or seizure at on-set • recent surgery, hemorrhage, or heart attack • any history of intracranial hemorrhage • minor or resolving stroke • sustained BP> 185/110, but EMS do not treat!
E. ALS/BLS TRANSPORT GUIDELINES

BLS If the patient meets BLS criteria, they may be transported by the crew of a licensed, verified BLS ambulance agency. The BLS ambulance crew will contact the Receiving Facility unless Base Station orders are required.
Warm, dry, pink skin.
HR 60 – 120 regular, good peripheral pulses.
RR 10 – 30 deep and easy.
BP >100 systolic.
BP <180 systolic.
BP <120 diastolic.
Awake, alert, talking, making sense.
No loss of consciousness now or prior to arrival.
No chest pain/no shortness of breath/no signs of a stroke/TIA.
No drug overdose/suicide attempt.
No significant mechanism of injury.
No impending or current childbirth.

ALS If the patient meets ALS criteria, they must be transported by the crew of a licensed, verified ALS ambulance agency.
Cool, clammy skin.
HR < 60 or > 120.
RR <10 − > 30 shallow, labored.
BP <100 systolic, non-palpable radial pulse.
BP >180 systolic.
BP >120 diastolic.
Altered LOC or 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.
Severe bleeding, amputation; including fingers/toes.
Significant mechanism of injury.
Abdominal and/or back pain with fatigue, weakness, nausea and belching in a woman over 55.

<table>
<thead>
<tr>
<th>ALS Ambulance Transport</th>
<th>BLS Ambulance Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMR</td>
<td>OVFR</td>
</tr>
<tr>
<td>CPF&amp;R</td>
<td>PCFD #5 (Gig Harbor)</td>
</tr>
<tr>
<td>Eatonville FD</td>
<td>PCFD #16 (Key Pen)</td>
</tr>
<tr>
<td>EPF&amp;R</td>
<td>Rural Metro</td>
</tr>
<tr>
<td>Gf&amp;R</td>
<td>SPF&amp;R</td>
</tr>
<tr>
<td>MAMC</td>
<td>Tacoma FD</td>
</tr>
<tr>
<td></td>
<td>WPF&amp;R</td>
</tr>
<tr>
<td></td>
<td>VA PSHCS</td>
</tr>
<tr>
<td></td>
<td>PCFD #14 (Riverside)</td>
</tr>
<tr>
<td></td>
<td>McNeil Is FD</td>
</tr>
<tr>
<td></td>
<td>PCFD #23 (Ashford/Elbe)</td>
</tr>
<tr>
<td></td>
<td>PCFD #27 (Anderson Is)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ALS Aid Service</th>
<th>Part-time ALS Aid Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>JBLM FD</td>
<td>PCFD #13 (Browns Pt)</td>
</tr>
<tr>
<td></td>
<td>DuPont FD</td>
</tr>
</tbody>
</table>

Appendix E
## F. RAPID SEQUENCE INTUBATION

No nasal attempts with facial trauma or children under 8 years old.

<table>
<thead>
<tr>
<th>TIME</th>
<th>ACTION</th>
<th>DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 10 minutes</td>
<td>Preparation</td>
<td></td>
</tr>
<tr>
<td>0 – 5 minutes</td>
<td>Preoxygenation to $O_2$ sat $\geq$ 90%</td>
<td></td>
</tr>
<tr>
<td>0 – 3 minutes</td>
<td>Pretreatment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>➢ Consider Lidocaine for reactive airways or increased ICP</td>
<td>Adult: 1.5mg/kg IV</td>
</tr>
<tr>
<td></td>
<td>➢ <em>Atropine for pediatric &lt; 8 years old</em></td>
<td><strong>Pediatric: 1mg/kg IV</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Pediatric: 0.02mg/kg IV</strong></td>
</tr>
<tr>
<td>Zero minutes</td>
<td>Paralysis with induction</td>
<td>Adult: 2mg increments to a maximum</td>
</tr>
<tr>
<td></td>
<td>➢ Midazolam OR</td>
<td>dose of 0.1mg/kg or 10mg (whichever is</td>
</tr>
<tr>
<td></td>
<td>➢ Etomidate OR</td>
<td>less) IV</td>
</tr>
<tr>
<td></td>
<td>➢ Valium</td>
<td><strong>Pediatric: 0.1mg/kg up to 5mg</strong></td>
</tr>
<tr>
<td></td>
<td>➢ Succinylcholine †— only if contraindicated use Vecuronium/Rocuronium</td>
<td>Adult: 0.2mg/kg IV (0.1mg/kg IV if</td>
</tr>
<tr>
<td></td>
<td><em>(dose below)</em></td>
<td>hypotensive)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Pediatric: 0.2mg/kg IV</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Pediatric: 1.5mg/kg IV</strong></td>
</tr>
<tr>
<td>Zero plus 25s</td>
<td>Protection — Sellick’s maneuver</td>
<td>Adult: 0.1mg/kg IV</td>
</tr>
<tr>
<td>Zero plus 45s</td>
<td>Placement — intubate, check tube placement</td>
<td><strong>Pediatric: 0.1mg/kg IV</strong></td>
</tr>
<tr>
<td>Zero plus intubation</td>
<td>Vecuronium (Norcuron) (for prolonged transport)</td>
<td><strong>Pediatric: 1mg/kg IV/IO</strong></td>
</tr>
<tr>
<td></td>
<td>Rocuronium (Zemuron)</td>
<td></td>
</tr>
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</table>

† **CONTRAINDICATION /USE WITH CAUTION:**

1) Suspected hyperkalemia — renal failure and missed dialysis.
2) 24 hours or more post-burn.
3) 7 days or more post crush injury.
4) Penetrating eye injury.
5) Increased ICP.
# 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>____ TOTAL</td>
<td>TOTAL</td>
</tr>
</tbody>
</table>

Appendix G
H. PNEUMATIC ANTI-SHOCK GARMENT

I. Indications:
   A. Hypovolemic Shock:
      1. Hypotension associated with suspected intraabdominal hemorrhage.
      2. Hypotension associated with suspected retroperitoneal hemorrhage.
      3. Burns—use clean sheets under PASG.
   B. Vasogenic Shock:
      1. Neurogenic.
      2. Septic.
      3. Anaphylactic.
   C. Splint:
      1. Use as a splint for pelvic fractures associated with hypotension.

II. Procedure:
   A. Inflate all compartments if all the following are present:
      2. HR > 100.
      5. Altered level of consciousness.
   B. DO NOT deflate without Base Station orders.

III. Contraindications:
   A. Do not use in children under 8 years old except in pelvic fracture.
   B. In children (except for pelvic fractures), do not inflate the abdominal section without specific orders.
# I. APGAR SCORE

<table>
<thead>
<tr>
<th>A</th>
<th>Appearance (skin color)</th>
<th>1 min.</th>
<th>5 min.</th>
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<tbody>
<tr>
<td></td>
<td>All pink = 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Some pink = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No pink = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>Pulse (heart rate)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;100 = 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;100 = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No pulse = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Grimace (irritability)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strong = 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weak = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Absent = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Activity (muscle tone)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Active motion = 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Some flexing = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Absent = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>Respiration (rate)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rapid, crying = 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slow, irregular = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Absent = 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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**: 0.01 mg/kg
- **Lido**: 1.0 mg/kg
- **Atropine**: 0.02 mg/kg
- **Adenosine**: 0.1-0.2 mg/kg
- **Defib**: 2 ws/kg

### Solution:
- **Epinephrine**: 1:10,000
- **Lido**: 20 mg/ml
- **Atropine**: 0.1 mg/ml
- **Adenosine**: 0.2 mg/ml

### Amount:
- **Epinephrine**: 0.1 ml/kg
- **Lido**: 0.5 ml/kg
- **Atropine**: 0.2 ml/kg
- **Adenosine**: Repeat @ 4 ws/kg

### Table

<table>
<thead>
<tr>
<th>AGE</th>
<th>LB</th>
<th>KG</th>
<th>EPINEPHRINE</th>
<th>LIDO</th>
<th>ATROPINE</th>
<th>ADENOSINE</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>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>10,20 WS</td>
<td>3 - 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>&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>&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>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>&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>&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>30,60 WS</td>
<td>4.5</td>
<td>300 ml</td>
</tr>
<tr>
<td>4 yrs</td>
<td>36</td>
<td>16</td>
<td>1.6 ml</td>
<td>0.8 ml</td>
<td>3.2 ml</td>
<td>1.6 - 3.2 mg</td>
<td>&quot;</td>
<td>5</td>
<td>320 ml</td>
</tr>
<tr>
<td>5 yrs</td>
<td>41</td>
<td>19</td>
<td>1.9 ml</td>
<td>0.95 ml</td>
<td>3.8 ml</td>
<td>1.9 - 3.8 mg</td>
<td>40,80 WS</td>
<td>5</td>
<td>380 ml</td>
</tr>
<tr>
<td>6 yrs</td>
<td>48</td>
<td>22</td>
<td>2.2 ml</td>
<td>1.1 ml</td>
<td>4.4 ml</td>
<td>2.2 - 4.4 mg</td>
<td>&quot;</td>
<td>5.5</td>
<td>440 ml</td>
</tr>
<tr>
<td>7 yrs</td>
<td>54</td>
<td>25</td>
<td>2.5 ml</td>
<td>1.25 ml</td>
<td>5.0 ml</td>
<td>2.5 - 5.0 mg</td>
<td>50,100 WS</td>
<td>5.5</td>
<td>500 ml</td>
</tr>
<tr>
<td>8 yrs</td>
<td>60</td>
<td>27</td>
<td>2.7 ml</td>
<td>1.35 ml</td>
<td>5.0 ml</td>
<td>2.7 - 5.4 mg</td>
<td>&quot;</td>
<td>6</td>
<td>540 ml</td>
</tr>
<tr>
<td>9 yrs</td>
<td>66</td>
<td>30</td>
<td>3.0 ml</td>
<td>1.5 ml</td>
<td>5.0 ml</td>
<td>3.0 - 6.0 mg</td>
<td>60,120 WS</td>
<td>6</td>
<td>600 ml</td>
</tr>
<tr>
<td>10 yrs</td>
<td>72</td>
<td>33</td>
<td>3.3 ml</td>
<td>1.65 ml</td>
<td>5.0 ml</td>
<td>3.3 - 6.6 mg</td>
<td>&quot;</td>
<td>6</td>
<td>660 ml</td>
</tr>
<tr>
<td>11 yrs</td>
<td>78</td>
<td>36</td>
<td>3.6 ml</td>
<td>1.8 ml</td>
<td>5.0 ml</td>
<td>3.6 - 7.2 mg</td>
<td>70,140 WS</td>
<td>6</td>
<td>720 ml</td>
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<tr>
<td>12 yrs</td>
<td>84</td>
<td>38</td>
<td>3.8 ml</td>
<td>1.9 ml</td>
<td>5.0 ml</td>
<td>3.8 - 7.6 mg</td>
<td>&quot;</td>
<td>6.5</td>
<td>760 ml</td>
</tr>
<tr>
<td>13 yrs</td>
<td>97</td>
<td>44</td>
<td>4.4 ml</td>
<td>2.2 ml</td>
<td>5.0 ml</td>
<td>4.4 - 8.8 mg</td>
<td>90,180 WS</td>
<td>7</td>
<td>880 ml</td>
</tr>
<tr>
<td>14 yrs</td>
<td>108</td>
<td>49</td>
<td>5.0 ml</td>
<td>2.5 ml</td>
<td>5.0 ml</td>
<td>4.9 - 9.8 mg</td>
<td>100,200 WS</td>
<td>7</td>
<td>980 ml</td>
</tr>
</tbody>
</table>

† If child is on digitalis preparation, set at lowest possible setting
## L. Hospital/Facility/Agency Telephone Numbers

<table>
<thead>
<tr>
<th>Facility</th>
<th>Telephone Numbers</th>
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<tbody>
<tr>
<td><strong>Airlift Northwest</strong></td>
<td></td>
</tr>
<tr>
<td>EMS</td>
<td>800-426-2430</td>
</tr>
<tr>
<td>Fax</td>
<td>206-521-1865</td>
</tr>
<tr>
<td><strong>Allenmore Hospital</strong></td>
<td></td>
</tr>
<tr>
<td>EMS</td>
<td>253-459-6410</td>
</tr>
<tr>
<td>ER General</td>
<td>253-459-6352</td>
</tr>
<tr>
<td>ER Fax</td>
<td>253-459-6588</td>
</tr>
<tr>
<td>Hospital Information:</td>
<td>253-459-6633</td>
</tr>
<tr>
<td><strong>American Lake Veterans</strong></td>
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</tr>
<tr>
<td>ER EMS</td>
<td>253-589-4057</td>
</tr>
<tr>
<td>ER General</td>
<td>253-582-8440 x76136</td>
</tr>
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<td>Hospital Information</td>
<td>253-582-8440</td>
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<tr>
<td><strong>Auburn Regional Medical Center</strong></td>
<td></td>
</tr>
<tr>
<td>ER EMS</td>
<td>253-333-2564</td>
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<tr>
<td>ER General</td>
<td>253-333-2561</td>
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<tr>
<td>Fax</td>
<td>253-333-2547</td>
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<td>Hospital Information</td>
<td>253-833-7711</td>
</tr>
<tr>
<td><strong>Good Samaritan Hospital</strong></td>
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<tr>
<td>ER EMS</td>
<td>253-848-0465</td>
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<tr>
<td>ER General</td>
<td>253-697-1848</td>
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<td>ER Fax</td>
<td>253-697-5990</td>
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<td>ER ECG Fax</td>
<td>253-697-5980</td>
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<td>253-697-4000</td>
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<td><strong>Harborview Medical Center</strong></td>
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<td>206-744-4074</td>
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<tr>
<td>ER General</td>
<td>206-744-3074</td>
</tr>
<tr>
<td>ER Fax</td>
<td>206-744-2650</td>
</tr>
<tr>
<td>Hospital Information</td>
<td>206-744-3000</td>
</tr>
<tr>
<td><strong>Harrison Medical Center</strong></td>
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<tr>
<td>ER EMS</td>
<td>360-377-9111</td>
</tr>
<tr>
<td>ER General</td>
<td>360-744-4949</td>
</tr>
<tr>
<td>ER Fax</td>
<td>360-744-6889</td>
</tr>
<tr>
<td>Hospital Information</td>
<td>360-744-3911</td>
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<tr>
<td><strong>Madigan Army Medical Center</strong></td>
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<tr>
<td>ER EMS</td>
<td>253-968-1396</td>
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<td>ER General</td>
<td>253-968-1390</td>
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<tr>
<td>ER Fax</td>
<td>253-968-3190</td>
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<td>Hospital Information</td>
<td>253-968-1385</td>
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</tbody>
</table>
Mary Bridge Children’s Hospital
ER EMS 253-403-1476
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

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

St. Anthony Hospital
ER EMS 253-530-2111
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 253-588-1711

St. Elizabeth Hospital
ER EMS 360-802-8383
ER General 360-802-3230
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 360-493-7289
ER Fax 360-493-7663
Hospital Information 360-491-9480 or Toll free: 888-492-9480
Tacoma General Hospital
ER EMS 253-627-8500
ER General 253-403-1050
ER Fax 253-403-1517
Hospital Information 253-403-1000

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
Buckley 253-862-9059
FIRECOMM 253-588-5217
Madigan Army Medical Center 253-968-1396
Rural/Metro (Crew Line) 888-991-1555
TFD Routine: 253-591-5733
Priority: 253-627-0151

Mental Health Telephone Numbers

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

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

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

Greater Lakes Mental Health 253-581-7020
Serves Southwest county, east to Waller Road
(Between 12 a.m. and 8 a.m. serves entire county)

Recovery Response Center 253-942-5644
FAX 253-922-4722

Sobering Center of Tacoma (enter in back off Court ‘D’) 253-284-9066
721 S. Fawcett Ave., Suite 103
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

RED: Immediate

BLACK: Deceased

NO Respirations YES Respirations

PERFUSSION

Radial Pulse Absent Over 3 sec. Radial Pulse Present Under 2 sec.

Control Bleeding

CAN’T Follow Simple Commands CAN Follow Simple Commands

RED: Immediate YELLOW: Delayed
JumpSTART Pediatric Guideline
Patients ≤ 8 Years Old

- **GREEN:** Minor
- **RED:** Immediate
- **BLUE:** Secondary Triage*
- **BLACK:** Deceased
- **YELLOW:** Delayed

**Assess Breathing**

- **YES:**
  - Position Upper Airway
    - **NO:** Apneic
      - **BLACK:** Deceased
    - **YES:** Palpable pulse?
      - **NO:** Apneic
        - **BLACK:** Deceased
      - **YES:** 5 Rescue breaths
        - **Breathing**
          - **YES:** Apneic
            - **BLACK:** Deceased
          - **NO:** Respiratory Rate
            - **< 15 or > 40 or irregular:** Apneic
              - **BLACK:** Deceased
            - **15 – 40, regular:** Peripheral Pulse
              - **NO:** Apneic
                - **BLACK:** Deceased
              - **YES:** Mental Status
                - **“P”** (inappropriate) or **“U”**: Apneic
                  - **BLACK:** Deceased
                - **“A”, “V” or “P”** (appropriate): **YELLOW:** Delayed

*Evaluate infants in secondary triage using the entire JumpSTART algorithm

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MEDICATION/ IV GUIDE
Acetaminophen (Tylenol) (Optional) ................................................................. N-2
Activated Charcoal (Optional) ........................................................................... N-3
Adenosine (Adenocard) ....................................................................................... N-4
Afrin ..................................................................................................................... N-5
Albuterol .............................................................................................................. N-6
Amiodarone (Cordarone) (Optional) ................................................................. N-7
Aspirin (Chewable) ............................................................................................ N-8
Atropine .............................................................................................................. N-9
Calcium Chloride 10% ....................................................................................... N-10
Cyanokit (Hydroxocobalamin) (Optional) ......................................................... N-11
Dextrose 25% (D25W) and 50% (D50W) ............................................................ N-12
Diazepam (Valium) .......................................................................................... N-13
Diltiazem (Cardizem) (Optional) ..................................................................... N-14
Diphenhydramine (Benadryl) ......................................................................... N-15
Dopamine .......................................................................................................... N-16
Epinephrine (Adrenalin) .................................................................................. N-17
Etomidate (Optional) ....................................................................................... N-19
Fentanyl (Optional) .......................................................................................... N-20
Glucagon .......................................................................................................... N-21
Glucose, Oral ..................................................................................................... N-22
Ipratropium Bromide (Atrovent) (Optional) .................................................... N-23
Ketamine .......................................................................................................... N-23a
Lidocaine 2% (Drips Optional) ...................................................................... N-24
Magnesium Sulfate ......................................................................................... N-25
Mark I/DuoDote NAAK Kit (Optional) ............................................................. N-26
Methylprednisolone (SoluMedrol) (Optional) .................................................. N-27
Midazolam (Versed) (Optional) ..................................................................... N-28
Morphine Sulfate ............................................................................................ N-30
Naloxone (Narcan) ........................................................................................ N-31
Nitroglycerine .................................................................................................. N-32
Nitrous Oxide (Nitronox) (Optional) ............................................................... N-33
Ondansetron (Zofran) .................................................................................... N-34
Oxygen ............................................................................................................. N-35
Pralidoxime Chloride (2-PAM Chloride) (Optional) ........................................ N-36
Rocuronium (Zemuron) (Optional) ................................................................. N-37
Sodium Bicarbonate ....................................................................................... N-38
Sodium Chloride 0.9% (Normal Saline) ......................................................... N-39
Succinylcholine (Anectine) ............................................................................ N-40
Vasopressin (Optional) .................................................................................. N-41
Vecuronium (Norcuron) (Optional) ............................................................... N-42
Xylocaine 2%, Jelly ........................................................................................ N-43
ACETAMINOPHEN (TYLENOL)
(Optional)

CLASSIFICATION
1. Anti-pyretic.
2. Analgesic.

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

ONSET OF ACTION
1. 10 – 30 minutes.

DURATION OF ACTION
1. 3 – 4 hours.

INDICATION
1. Fever.

CONTRAINDICATION
1. Hypersensitivity.

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

DOSAGE AND ADMINISTRATION
1. Pediatric: 15mg/kg orally or by rectal suppository.

ADVERSE REACTION
1. Nausea and vomiting, Rash.

REFERENCE IN PROTOCOL
1. Medical Emergencies (Febrile pediatric patient).
CLASSIFICATION
1. Gastric decontaminant.
2. Absorbent.

ACTION
2. Adheres to many medications and chemicals, inhibiting absorption from the GI tract.

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. Unknown.

INDICATION
1. Poisoning.
2. Overdosage of almost all poisonings.
3. Consider consulting Poison Control/Receiving Center prior to administration.

CONTRAINDICATION
1. Decreased level of consciousness or unconsciousness.
2. Ingestion of drugs which may lead to abrupt decrease in level of consciousness.

USE WITH CAUTION
1. Renders Ipecac inactive — may still vomit.
2. May give Ipecac first to induce vomiting, do not give Ipecac after giving charcoal until all charcoal removed.
3. Ingestion of corrosive agents.
4. Fluid and electrolyte abnormalities.
5. Fecal impaction.
6. If gastric lavage is considered.

DOSAGE AND ADMINISTRATION
1. Adult: 1gm/kg orally.
2. Pediatric: 1gm/kg orally.

ADVERSE REACTION
1. Nausea and vomiting, Black stools, Excessive diarrhea, Cramping, Bloating, Constipation.

REFERENCE IN PROTOCOL
1. Medical Emergencies (Overdose).
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 Paroxysmal SVT to sinus rhythm.

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 on Tegretol or Persantine.
3. Patients on theophyllines 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.

DOSAGE AND ADMINISTRATION
1. Adult: 6.0mg by RAPID IV push. If no response within 1 – 2 minutes, give 12.0mg. Push Adenosine as fast as possible followed by normal saline bolus of 20ml; then elevate the extremity.

2. Pediatric: 0.1mg/kg up to 6mg. If no response within 1 – 2 minutes, 0.2mg/kg up to 12mg. All are given rapid IV bolus.

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 I).

NOTE: It is ineffective in A-Fib, A-Flutter, ventricular tachycardia.
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 under 6 years old.

DOSAGE AND ADMINISTRATION
1. Adult & Pediatric over 6 years old: 2 to 3 sprays in each nostril.
2. Pediatric under 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. Cause 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. Watch heart rate.
5. Listen to lungs before and after treatment.
6. Beta blockers may blunt effect.

DOSAGE AND ADMINISTRATION
1. Adult: 2.5mg in 3ml NS SVN continuously.
2. Pediatric: Use blow-by if < 5 years old.
   a. > 6 months: 2.5mg in 3ml NS SVN continuously.
   b. < 6 months: 1.25mg 3ml NS SVN continuously.

ADMINISTRATION
1. When assisting patient with a continuous neb inhaler, instruct patient to:
   a. Clear nasal passages and throat.
   b. Breathe and expel as much air as possible.
   c. Place mouthpiece well into mouth, inhale deeply.

ADVERSE REACTION

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

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

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 stable 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 cordarone.
2. Patients with cardiogenic shock, marked sinus bradycardia, 2nd or 3rd degree AV block unless a pacemaker is available.

USE WITH CAUTION
1. May produce vasodilation and hypotension.
2. May have negative inotropic 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. 300mg IV/IO push, consider repeating 150mg in 3–5 minutes.
   b. Max dose: 2.2gm IV/IO in 24 hours.
   c. Pediatric: 5mg/kg IV/IO push, up to a maximum of 300mg. May repeat to total daily dose of 15mg/kg.
2. Wide complex tachycardia.
   a. Rapid infusion 150mg IV/IO over 10 minutes.
   b. May repeat every 10 minutes as needed.

ADVERSE REACTION
1. Vasodilation, Hypotension, Bradycardia.

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

CLASSIFICATION

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.

CONTRAINDICATION
1. Patients with known allergy to salicylates.
2. Patients with active ulcer disease.
3. Patients with asthma.
4. Possible hemorrhagic stroke.

USE WITH CAUTION
1. Patients taking anti-coagulants.

DOSAGE AND ADMINISTRATION
1. Adult: 162mg, or if not already taking ASA then give 325mg (chewing is preferable). Assure 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.

DURATION OF ACTION
1. 4 hours.

INDICATION
1. Cardiac rhythms < 60/min, associated with hypotension, decreased mentation, ventricular irritability (PVC’s), chest pain, symptomatic bradycardia.
2. Second or third degree heart block, asystole, however, often does not work.
3. Organophosphate anticholinesterase poisoning.
5. Preintubation in pediatrics for rapid sequence intubation.

CONTRAINDICATION
1. Atrial fibrillation, flutter.
2. Heart rate > 60.
3. Brady cardia secondary to increased ICP (i.e. stroke, head trauma).

USE WITH CAUTION
1. Do not mix with sodium bicarbonate.
2. Be certain patient with bradycardia is not hypoxic or head injured in origin.

DOSAGE AND ADMINISTRATION
1. Bradycardia:
   a. 0.5 IV, every 3 – 5 minutes as needed; not to exceed a total dosage of 0.04mg/kg.
   b. Use shorter dosing interval (3 minutes) & higher doses in severe clinical conditions.
   c. ET: 1mg diluted in 10ml NS.
   d. Pediatric: 0.02mg/kg.
      i. Minimum single dose: 0.1mg.
      ii. Maximum child single dose: 0.5mg, maximum child total dose 1mg.
      iii. Maximum adolescent single dose: 1mg, max adolescent total dose 2mg.
      iv. May double for 2nd IV dose.
      v. ET: 0.05mg/kg diluted in 5ml NS.
   a. Adult: 1mg IV every 1 minute until symptoms (bradycardia, bronchial secretions, etc.) clear, up to 10mg.
   b. If using the DuoDote/MARK I antidote kit, give one atropine injector (2mg) into the thigh followed with 2-PAM chloride injection. May give up to three sets.
   c. Pediatric: <12 years old start with 0.5mg IV/IO and repeat every 1 minute until symptoms clear, up to 10mg. > 12 years old follow adult dosing.
3. RSI – Pediatric: 0.02mg/kg (minimum dose 0.1mg, maximum dose 0.5mg).

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).
3. Rapid Sequence Intubation (Appendix F).
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.

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. Adult: 500 – 1000mg (5 – 10ml) IV/IO.
2. Pediatric: 20mg/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).
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 5g administered over 15 minutes slow IV. (Each 2.5g vial of hydroxocobalamin for injection is to be reconstituted with 100ml of 0.9% NS). An additional 5g dose may be administered with Base Station contact.
3. Pediatric: Dose is 70mg/kg (reconstitute concentration is 25mg/ml) over 15 minutes slow IV. (Each 2.5g vial of hydroxocobalamin for injection is to be reconstituted with 100ml of 0.9% NS.) Maximum single dose is 5g.

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).
DEXTROSE
25% (D$_{25}$W) and 50% (D$_{50}$W)

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. Unknown.

INDICATION
1. Suspected hypoglycemia.
2. Coma of unknown origin.
3. Crush Injury Syndrome.

CONTRAINDICATION
1. Increased intracranial pressure.
2. Hyperglycemia.

USE WITH CAUTION
1. None.

DOSAGE AND ADMINISTRATION
1. Adult: 50ml of D50W (25gm) IV/IO push, may repeat x1.
2. Pediatric: Under 2 years of age, give 2 – 4ml/kg of D25W IV/IO if blood glucose < 60. 2 years of age or older, give 1 – 2ml/kg of D50W IV/IO if blood glucose < 60.
   a. Check blood glucose after 5 minutes, if still < 60, repeat as needed.

ADVERSE REACTION
1. Extravasation causes tissue sloughing.

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. 1 – 5 minute, peak actions at 5 – 10 minutes.

DURATION OF ACTION
1. 15 – 60 minutes.

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

CONTRAINDICATION
1. Known hypersensitivity.
2. Patients that have used other CNS depressants.

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.

DOSAGE AND ADMINISTRATION
1. Adult: 2 – 10mg IV/IO/IM, refer to dosage regimen referenced in appropriate protocol section.
2. Pediatric: 0.2mg/kg IV/IO in increments no greater than 2mg to a maximum dose of 10mg. Wait 1 – 2 minutes between doses to observe effect. Rectally, 0.5mg/kg to a maximum dose of 20mg. Wait at least 5 minutes between doses. Contact Mary Bridge for repeat dose.

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 (seizures; burns – thermal).
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)  
(Optional)

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
2. PSVT (narrow complex).

CONTRAINDICATION
1. Sick Sinus Syndrome.
2. 2nd or 3rd degree heart block.
3. A-fib associated with WPW or short PR syndrome.
5. Cardiogenic shock.
6. Hypersensitivity.
7. Wide complex tachycardia.
8. Avoid use in patients on oral beta-blockers.

USE WITH CAUTION
1. Can cause hypotension.
2. Impaired renal or hepatic function.

DOSAGE AND ADMINISTRATION
1. Adult: Initial dose – 15-20mg IV over 2 minutes. Second dose after 15 minutes, if needed is 20-25mg 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. Immediate with IV administration.
2. Unknown for IM administration.

DURATION OF ACTION
1. 6 – 8 hours for IV and IM administration.

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

CONTRAINDICATION
1. Hypersensitivity.
2. Asthmatic attack.

USE WITH CAUTION
1. Has Atropine-like action.
2. Use with caution in patients with a history of asthma, hypotensive patients, in pregnancy, glaucoma.

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

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
2. Medical Emergencies (Overdose).
DOPAMINE

CLASSIFICATION

ACTION
1. Increases blood pressure.
2. At low dose of 1 – 2mcg/kg/min, 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 – 10mcg/kg/min, beta-adrenergic effects (increased contractibility and chronotropic effect) occur resulting in increased cardiac output with minimal changes in systemic vascular resistance or preload.
4. At dose of 10 – 20mcg/kg/min, 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. 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, or inactivation of dopamine will result.

DOSAGE AND ADMINISTRATION
1. Dopamine must be diluted prior to administration; mix 400mg in 250ml NS with a mini-chip (1600mcg/ml).
   a. Begin at 2.5 – 5mcg/kg/min up to 20mcg/kg/min, titrate to maintain BP >90/S (100/S for rales).
   b. Usual infusion rate ranges from 2 to 20mcg/kg/min. 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/min, i.e. 183 pounds = 18.
   c. At 18 gtts/min, you will be administering 5 – 6mcg/kg/min.
3. May use: Patient weight in kg.

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

REFERENCE IN PROTOCOL
1. Shock Emergencies (Hypotension in the absence of trauma; Anaphylactic shock; Vasogenic/Neurogenic shock).
2. Respiratory Emergencies (Difficulty breathing).
3. 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 & coronary arteries.
   f. Increases cerebral blood flow (alpha effects).

ONSET OF ACTION
1. IV, ET, IO — Immediate.
2. IM — Variable.
3. SQ — 6 – 15 minutes.
4. Inhalation — 3 – 5 minutes.

DURATION OF ACTION
1. IV, ET, IO — 1 – 4 hours.
2. IM — unknown.
3. SQ — unknown.
4. Inhalation — 1 – 3 hours.

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

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.

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. Adult:
   a. Cardiac Arrest: 1mg IV/IO (10ml of 1:10,000) every 3-5 minutes; follow with 20ml NS flush and elevate arm for 10-20 seconds after dose. If no IV/IO, mix 2 – 2.5mg of 1:1000 with 10ml NS, give down ET tube.
   b. Bradycardia: mix 1mg in 250ml NS; administer @ 2 – 10mcg/minute, titrating to effect.
   c. Acute allergic reaction: 0.3 – 0.5mg 1:1000 IM.
   d. Anaphylaxis: 0.3 – 0.5mg IV/IO (3 – 5ml of 1:10,000). If no IV/IO, mix 2 – 2.5mg of 1:1000 with 5ml NS, give down ET tube.
e. Asthma: 0.3mg of a 1:1000 IM. May repeat in 20 minutes if necessary.
f. Upper airway edema due to obstruction: 0.3mg of 1:1000 IM or 0.3mg of 1:10,000 IV.

2. Pediatric:
      i. 2ml (undiluted) given blow-by under 6 years of age.
      ii. 3ml (undiluted) given blow-by 6 years of age or older.
   b. Cardiac arrest/Bradycardia/Anaphylaxis: 0.01mg/kg of 1:10,000 solution
      (0.1ml = 0.01mg of 1:10,000 solution – maximum dose 1mg) IV/IO. ET- use
      0.1mg/kg (1:1000 0.1ml/kg).
   c. Allergic Reaction/Asthma: 0.01mg/kg to maximum of 0.3mg IM (0.01mg =
      0.01ml of 1:1000).
   d. Upper airway edema due to obstruction: 0.01mg/kg IV/IO.

3. Epi-Pen Auto-Injector or EMT drawn up epi from vial/ampule 1:1000.
   a. Adult (> 65 lbs): one adult auto-injector (0.3mg) Epi-Pen.
   b. Pediatric: one pediatric auto-injector (0.15mg) Epi-Pen Jr.
   c. Injection site: lateral portion of thigh mid way between waist and knee given IM.

ADVERSE REACTION
1. Hypertension, Supraventricular tachycardia, Ventricular arrhythmias (Premature ventricular
   contraction, Ventricular tachycardia, Ventricular fibrillation).

REFERENCE IN PROTOCOL
1. Cardiac arrest (see AHA handbook).
2. Shock Emergencies (Anaphylactic shock).
3. Respiratory Emergencies (If asthma suspected; If croup suspected; Upper airway obstruction;
   Allergic reaction).
5. OB/GYN Emergencies (Neonatal Resuscitation).
ETOMIDATE (AMIDATE)  
(Optional)

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. While adrenal suppression has not been reported after a single dose, solumedrol 125mg should be considered for administration in patients on prednisone.

DOSAGE AND ADMINISTRATION
1. Adult: 0.3mg/kg IV/IO push over 30-60 seconds.
2. Pediatric: Contact Mary Bridge. 0.3mg/kg IV/IO push over 30 – 60 seconds.

<table>
<thead>
<tr>
<th>Weight lb.</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>110</th>
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<th>190</th>
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<tbody>
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<td>Weight kg.</td>
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<td>77</td>
<td>86</td>
<td>95</td>
<td>105</td>
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</tr>
<tr>
<td>Dose mg</td>
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<td>10</td>
<td>11</td>
<td>12</td>
<td>14</td>
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</tr>
<tr>
<td>Dose ml</td>
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<td>4.8</td>
<td>5.5</td>
<td>6.1</td>
<td>6.8</td>
<td>7.5</td>
<td>8.2</td>
<td>8.9</td>
<td>9.5</td>
<td>10.2</td>
<td>11.6</td>
<td>13</td>
<td>14.3</td>
<td>15.7</td>
<td>17</td>
</tr>
</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 and vomiting.

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

CLASSIFICATION
1. Narcotic analgesic.

ACTION
1. Potent analgesic, sedative, euphoric.

ONSET OF ACTION
1. 1 minute IV.
2. 7 – 8 minutes IM.

DURATION OF ACTION
1. 30 – 60 minutes IV.
2. 1 – 2 hours IM.

INDICATION
1. Severe pain.
2. Acute low back pain with muscle spasm.

CONTRAINDICATIONS
1. Known hypersensitivity.
2. Head trauma with increased ICP.
3. Altered state of consciousness.
4. Severe liver or renal insufficiencies.

USE WITH CAUTION
1. Bradycardia.
2. Respiratory depression.

DOSAGE AND ADMINISTRATION
1. Adults:
   a. Traumatic Emergencies: 50mcg IV/IO or 50-100mcg IN, every 5 – 10 minutes to a maximum dose of 200mcg if BP>100/S.
   b. Cardiac Emergencies: 25mcg IV/IO or 50mcg IN every 2 – 3 minutes up to 100mcg if BP >100/S.
2. Pediatrics: 1 – 2mcg/kg IV/IO/IN/IM.

ADVERSE REACTION
1. Hypotension.
2. Bradycardia.
3. CNS depression.
4. Nausea and vomiting.
5. Respiratory depression.

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

CLASSIFICATION
1. Anti-hypoglycemic agent/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. 1 minute IV.
2. 10 minutes IM.

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

INDICATION
1. Blood glucose < 80, especially if IV insertion is difficult or impossible.
2. Beta blocker or calcium channel blocker overdose.
3. Foreign body in esophagus.

CONTRAINDICATION
1. Known hypersensitivity.

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

DOSAGE AND ADMINISTRATION
1. Draw blood glucose sample.
2. Adult:
   a. For hypoglycemia: 1mg IM.
   b. For beta blocker OD: 3–10mg IV slowly over 3–5 minutes.
3. Pediatric: children ≤ 20kg give 0.5mg; children >20kg give 1mg IM.

ADVERSE REACTION
1. Nausea and vomiting, Allergic reactions, Headache, Hypertension, Dizziness.

   NOTE: Blood glucose levels fall to normal or to hypoglycemia level if patient does not receive IV D50W or food by mouth after glucagon administered.

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

CONTRAINDICATION
1. Unconsciousness.
2. Known diabetic who has not taken his insulin for days.
3. 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. May be aspirated by patient without a gag reflex.
2. Nausea, bad taste.

REFERENCE IN PROTOCOL
1. Medical Emergencies (Altered level of consciousness).
IPRATROPIUM BROMIDE (ATROVENT)
(Optional)

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: 0.5mg to be added to Albuterol/NS SVN, may repeat once.
   2. Pediatric: 0.25mg 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)  
(OPTIONAL)

CLASSIFICATION
1. Dissociative agent
2. Sedative

ACTION
1. Short term anesthetic state

ONSET OF ACTION
1. 30 seconds IV
2. 3 - 4 minutes IM

DURATION OF ACTION
1. 5 - 10 minutes IV/IO
2. 12 - 25 minutes IM

INDICATION
1. Excited delirium

CONTRAINDICATION
1. Hypertension
2. Altered states of consciousness
3. Severe liver or renal insufficiencies

DOSAGE AND ADMINISTRATION
1. 4 mg/kg IM or 2 mg/kg IV/IO

ADVERSE REACTION
1. Laryngospasm
2. Respiratory depression
3. Hypotension
4. Nausea & vomiting
5. Hypersalivation

REFERENCE IN PROTOCOL
1. Behavioral Emergencies (Excited Delirium)
LIDOCAINE 2%
(Drips are Optional)

CLASSIFICATION
1. Antiarrhythmic.

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

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. 10 – 20 minutes.

INDICATION
1. Cardiac arrest from VF/VT.
3. Block development of increasing ICP secondary to intubation.
4. As anesthetic flush prior to IO infusion for patients that are awake.

CONTRAINDICATION
1. Known hypersensitivity.
2. Heart blocks.

USE WITH CAUTION
1. Liver disease.
2. Congestive heart failure.
3. Severe respiratory depression.
5. Shock.
6. Any form of heart block.

DOSAGE AND ADMINISTRATION
1. Cardiac Arrest from VF/VT, use as follows:
   a. 1 – 1.5mg/kg IV/IO bolus.
   b. For refractory VF, may give additional 0.5 – 0.75mg/kg IV/IO, repeat in 5 – 10 minutes; maximum total dose is 3mg/kg.
   c. ET dose: 2 – 3mg/kg in 10ml NS.
2. Perfusing arrhythmia of stable VT, wide complex tachycardia of uncertain type, significant ectopy, use as follows:
   a. 0.5 – 0.75mg/kg up to 1 – 1.5mg/kg IV/IO.
   b. Repeat 0.5 – 0.75mg/kg IV every 5 – 10 minutes, maximum total dose is 3mg/kg.
3. Maintenance infusion: Mix 1gm in 250ml = 4mg/ml or use premixed solution at 2 – 4mg/min.

**MICRODROPS/MINUTE**

<table>
<thead>
<tr>
<th>MICRODROPS/MINUTE</th>
<th>mg/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>4</td>
</tr>
<tr>
<td>45</td>
<td>3</td>
</tr>
<tr>
<td>30</td>
<td>2</td>
</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. Rapid Sequence Intubation for reactive airway or increased ICP prophylaxis: 1.5mg/kg IV.

**5. Pediatric: 1mg/kg IV/IO, OR 2-3mg/kg in 5ml NS ET.**

6. IO anesthesia-Adult: 20-50mg 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. Rapid Sequence Intubation (Appendix F).
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.
3. Stabilizes membranes in hyperkalemia.

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. Impaired renal function.
2. Myocardial damage or heart block.
3. Dialysis patients.
4. Hypocalcemia.

USE WITH CAUTION
1. Patients receiving digitalis preparation.
2. Excessive dose may cause respiratory depression, cardiac arrest.

DOSAGE AND ADMINISTRATION
1. Seizures due to eclampsia: (4 – 8ml of 50% solution) 2 – 4 gm slow IV push over 5 minutes. Must be given slowly to avoid cardiac or respiratory distress.
2. Cardiac arrest: 1 – 2 gm (2 – 4ml of 50%) in 10ml NS, IV/IO.
3. Torsades with a pulse: 1-2 gm (2 – 4ml of 50%) in 50-100ml NS, infused over 5-60 minutes IV/IO.
3. Asthma: 1– 2gm IV slowly.
4. Pediatric dose-contact Mary Bridge.

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.
4. Antidote is Calcium Chloride.

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).
MARK I /DUO DOTE NERVE AGENT ANTIDOTE KIT (NAAK)

(Optional)

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

ACTION
1. Reactivates organophosphate-inhibited cholinesterase.

ONSET/DURATION OF ACTION
1. See L-9 for atropine specifics.
2. See L-36 for pralidoxime chloride specifics.

INDICATION
1. Organophosphate/nerve agent poisoning.

CONTRAINDICATION
1. Hypersensitivity to atropine or 2-Pam.

USE WITH CAUTION
1. See L-9 for atropine specifics.
2. See L-36 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 L-9 for atropine specifics.
2. See L-36 for pralidoxime chloride specifics.

REFERENCE IN PROTOCOL
1. Environmental Emergencies.
2. See L-9 for atropine specifics.
3. See L-36 for pralidoxime chloride specifics.
METHYLPREDNISOLONE (SOLUMEDROL)  
(Optional)

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: 125mg IV, single dose only.  
   2. Pediatric: 1 – 2mg/kg IV.  
      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  
2. Respiratory Emergencies (Difficulty breathing).  
MIDAZOLAM (VERSED)
(Optional)

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. 1.5 – 5 minutes IV.
2. 2 – 6 minutes intranasal (IN).
3. 15 minutes IM.

DURATION OF ACTION
1. 2 – 6 hours for IV/IN/IM.

INDICATION
1. Premedication prior to cardioversion (IV/IM).
2. Acute anxiety states (IV/IM).
3. Premedication prior to use of paralytics (IV/IM).
4. Post-intubation sedation (IV/IM).
5. Seizures (IV/IN/IM).

CONTRAINDICATION
1. History of hypersensitivity.
2. Narrow angle glaucoma.
3. Shock, alcoholic coma.

USE WITH CAUTION
1. Resuscitative equipment should be available.
2. Must constantly monitor vitals, great potential to cause respiratory depression and arrest.
3. May be accentuated by narcotics, alcohol.

DOSAGE AND ADMINISTRATION
1. Adult: Give in 2mg increments to a maximum dose of 0.1mg/kg or 10mg (whichever is less) IV/IO/IM if unable to start an IV/IO.
2. Give half doses if > 60 years old.
3.  **Pediatric: May use midazolam 0.2mg/kg IM OR 0.1mg/kg IV slowly over 2 minutes in no greater than 2mg increments not to exceed 5mg.**
4. Adult and Pediatric IN route for seizures: 0.2mg/kg of a 5mg/ml concentration.

NOTE: IV first – line route for adults, IN first-line route for pediatrics.

<table>
<thead>
<tr>
<th>Patient age (years)</th>
<th>Weight (kg)</th>
<th>INTRANASAL Midazolam volume in ml of 5mg/ml concentration</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Dose (mg)</td>
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<tr>
<td>Neonate</td>
<td>3kg</td>
<td>0.3ml</td>
</tr>
<tr>
<td>&lt; 1 yr</td>
<td>6kg</td>
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<td>1 yr</td>
<td>10kg</td>
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</tr>
<tr>
<td>3 yr</td>
<td>16kg</td>
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</tr>
<tr>
<td>4 yr</td>
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</tr>
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<tr>
<td>Small teenager</td>
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</tr>
<tr>
<td>Adult or full-grown teenager</td>
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<td>2.0ml</td>
</tr>
</tbody>
</table>

ADVERSE REACTION
1. Drowsiness, Hypotension, Amnesia, Respiratory depression, Apnea, Laryngospasm, Bronchospasm, Dyspnea, Bradycardias, Tachycardias, 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. 5 minutes IV.
2. 10 – 30 minutes IM.

DURATION OF ACTION
1. IV/IM 4 – 5 hours.

INDICATION
1. Severe pain, i.e.; myocardial infarction, burns, isolated extremity injuries, abdominal pain.
2. Adjunct in treating pulmonary edema.

CONTRAINDICATION
1. Known hypersensitivity.
2. Head trauma.
3. Altered states of consciousness.
4. Systolic BP < 100.

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: Give in 2mg increments every 2 minutes up to 10mg slow IV push if systolic BP >100, titrating to pain relief. Can give IM/IV for severe pain. Can give IO only if the IO is established for a reason listed in the General Principles.

2. Pediatric: 0.1mg/kg IV up to 10mg. Contact Mary Bridge.

ADVERSE REACTION
1. Respiratory depression, Respiratory arrest, Hypotension, Nausea and 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).
3. Medical Emergencies (Abdominal Pain).
4. 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. 1 – 2 minutes IV, ET, IO.
2. 3 – 4 minutes IN.
3. 2 – 5 minutes IM.

DURATION OF ACTION
1. Variable with route and agent.

INDICATION
1. Respiratory depression secondary to narcotics and synthetic narcotic agents and related drugs.
2. Effective against MS, Demerol, Heroin, Codeine, Methadone, Percodan, Dilaudid, Fentanyl, Nubain, Talwin, Stadol, Darvon.
3. Suspected acute opiate overdosage with respiratory depression.
4. 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 – 2mg IN/IV/ET/IM/IO; dose may be repeated every 2 – 3 minutes, up to 10mg just until patient begins to breathe.
2. It is not necessary to wake the patient; just give enough to make them breathe on their own.
3. If no response is observed after 10mg, consider different etiology of respiratory depression or unconsciousness.
4. Higher doses may be ordered if no initial response.
5. Pediatric: 0.1mg/kg IN/IV/ET/IM/IO up to 2mg/dose and titrate until patient begins to breathe. May repeat as needed not to exceed 10mg.

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).
NITROGLYCYERINE

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., gastrointestinal 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. Severe bradycardia (<50/minute) or tachycardia (>100/minute).

USE WITH CAUTION
1. With evidence of AMI, limit systolic BP drop to 10% of baseline or 30% if hypertensive.
2. With erectile dysfunction drugs.
3. Patient should sit or lie down while administered.
4. Do not shake metered dose spray.

DOSAGE AND ADMINISTRATION
1. Tablet and Metered dose spray SL (sublingually – under the tongue) delivers 0.4mg.
2. ACS dose: 0.4mg SL tablet, may be given every 5 minutes x 3 as long as systolic BP remains >100. 1-2 SL sprays may be given every 5 minutes to maximum of 3 sprays within 15 minutes.
3. CHF dose:
   a. If patient is in mild distress and BP>100/S:
      Give nitroglycerin 0.4mg SL tablet or spray, may repeat every 3 to 5 minutes, if patient remains symptomatic to a maximum of 2mg.
   b. If patient in moderate distress, or severe distress without AMS and BP>100/S:
      Give nitroglycerin 0.4mg SL tablet or spray, may repeat with 0.4 SL tablet or 0.8mg SL spray every 3 to 5 minutes, if patient remains symptomatic, to a maximum of 2mg.

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)  
(Optional)

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. Acute myocardial infarction, angina.
2. Musculoskeletal pain due to fractures.
4. 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 and vomiting, Bizarre behavior.

REFERENCE IN PROTOCOL
1. Traumatic Emergencies (Skeletal trauma; Amputated parts; Burns).
2. Cardiac Emergencies (Chest discomfort and possible ACS).
ONDANSETRON (ZOFRAN)

CLASSIFICATION
1. Antiemetic, antinauseant.

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

ONSET OF ACTION
1. 15 to 30 minutes.

DURATION OF ACTION
1. 4 to 6 hours.

INDICATION
1. Nausea and or vomiting.

CONTRAINDICATION
1. Hypersensitivity to medication/class/compound.

USE WITH CAUTION
1. Use with caution with patients with impaired liver function.

DOSAGE
1. Adult: 8mg oral disintegrating tablet (ODT) or 4mg IV slowly over 30 seconds – 5 minutes/IM.
2. Pediatric: > 11 years old 8mg ODT or 4mg IV slowly over 30 seconds – 5 minutes. Contact Mary Bridge.
3. Pediatric: 4 – 11 years old 4mg ODT or 0.15mg/kg IV up to 4mg slowly over 30 seconds – 5 minutes. 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. IV – Administer undiluted in not less than 30 seconds, preferably over 2 – 5 minutes.
3. IM – Administer undiluted intramuscularly as a single injection for adults.

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. It is used to reverse hypoxemia.

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. As long as is on.

INDICATION
1. Confirmed or suspected hypoxia.
   2. Ischemic chest pain.
   3. Respiratory insufficiency.

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 highest O2 saturation possible.

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)
(Optional)

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 (600mg) 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)
(Optional)

CLASSIFICATION
1. 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. Maintenance of paralysis AFTER intubation to assist ventilation during prolonged transport.
2. Initial means of paralysis for adult and pediatric patients with contraindications for succinylcholine (i.e. crush injury patients, personal or family history of malignant hyperthermia, inherited myopathies such as muscular dystrophy and pre-existing hyperkalemia).

CONTRAINDICATION
1. Known sensitivity to rocuronium.

USE WITH CAUTION
1. Ensure that drug is kept refrigerated or replaced every 60 days.
2. Patients with neuromuscular diseases such as myasthenia gravis or myasthenic syndrome may have prolonged periods of paralysis.

DOSAGE AND ADMINISTRATION
1. Adult: 1mg/kg IV/IO push.
2. Pediatric: 1mg/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).
3. Cardiac Emergencies (Therapeutic Hypothermia).
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. Correction of 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 (adrenalin), dopamine (Intropin), isoproterenol (Isuprel), Vecuronium.

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

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)

CLASSIFICATION
1. Isotonic crystalloid solution.

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

INDICATION
1. Use for mixing/dilution of medications.
2. To keep vein open.
3. Hypovolemia.
5. Shock.

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: 20ml/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. Ultra short acting skeletal muscle relaxant, 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. 30 – 60 seconds.

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. Should be used ONLY by persons skilled in airway management.
2. Changes in cardiac rhythm may result from vagal stimulation.
3. In patients with possible increased ICP.

DOSAGE AND ADMINISTRATION
1. Adult: 1.5mg/kg IV.
2. Pediatric: 1.5mg/kg IV. Make sure you pre-treat patient with atropine.

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 replaced quarterly whether used or not!!
CLASSIFICATION
1. Antidiuretic Hormone (ADH).

ACTION
1. Potent peripheral vasoconstrictor.

ONSET OF ACTION
1. Immediate.

DURATION OF ACTION
1. 10 – 20 minutes.

INDICATION
1. Alternative pressor to epinephrine in the treatment of adult shock-refractory VF.
2. May be useful alternative to epinephrine in asystole, PEA.
3. May be useful for hemodynamic support in vasodilatory shock (e.g. septic shock).

CONTRAINDICATION
1. Responsive patients with coronary artery disease.

USE WITH CAUTION
1. Increased vascular resistance may provoke cardiac ischemia.

DOSAGE AND ADMINISTRATION
1. 40 Units IV/ IO push x1.

ADVERSE REACTION
1. Cardiac Ischemia.

REFERENCE IN PROTOCOL
1. Cardiac Emergencies (see AHA handbook).
2. Shock Emergencies (Vasogenic shock).
VECURONIUM (NORCURON)
(Optional)

CLASSIFICATION
1. Skeletal muscle relaxant.
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. Initial means of paralysis with Crush Injury Syndrome.

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.
6. Should be used ONLY by persons skilled at intubation.

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

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 JELLY, 2%

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 hrs; 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).