

# HENNEPIN COUNTY EMS SYSTEM

## Advanced Life Support Protocols



Approved by the Hennepin County EMS Advisory Council  
April 8, 2021





Approved by the Hennepin County EMS Advisory Council  
April 8, 2021

Protocols approved at the April EMS Council will become effective by July 1st at the latest or unless otherwise specified, and protocols approved at the October EMS Council will become effective by January 1st at the latest or unless otherwise specified.



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## **1000 INTRODUCTION AND OVERVIEW**



## **INTRODUCTION AND OVERVIEW**

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The Hennepin County Emergency Medical Services (EMS) system refers to a dedicated group of professionals working together to provide emergency medical services to patients and communities within Hennepin County. The EMS system is a dynamic mix of private and public providers including: ambulance services, first responders (public safety and fire services), dispatchers, medical control hospital physicians, acute and tertiary care emergency medical facilities, and county public health staff.

The Hennepin County Board of Commissioners makes general policy decisions affecting the EMS system in response to recommendations from the Emergency Medical Services Advisory Council. The Hennepin County EMS Planning and Regulatory Unit (EMS Unit) is a division of the Human Services and Public Health Department and provides planning support and regulatory oversight for the county's EMS system and assures coordinated emergency response to 911 calls.

The Emergency Medical Services Council was established in 1976 to recommend to the Hennepin County Board of Commissioners and other appropriate authorities activities and processes necessary for the coordination and improvement of prehospital emergency services within Hennepin County. Committees of the council include:

- Executive Committee
- Operations Committee
- Quality Committee
- Medical Standards Committee
- Ambulance Medical Directors Subcommittee
- Ambulance Service Personnel Subcommittee

Five Advanced Life Support (ALS) ambulance services provide emergency medical care to Hennepin County residents. The Minnesota Emergency Medical Services Regulatory Board (EMS RB) designates Primary Service Areas (PSAs) for ambulance services operation within the state of Minnesota. The five services which are authorized by the EMS RB to operate within Hennepin County are:

- Allina Health EMS
- Edina Fire Department
- Hennepin EMS
- North Memorial Ambulance Service
- Ridgeview Ambulance Service

ALS protocols and guidelines for Hennepin County's EMS system are reviewed and re-issued on an on-going basis. New protocol proposals and/or protocol revision proposals are reviewed by the Ambulance Service Personnel Subcommittee, the Ambulance Medical Directors Subcommittee and the Medical Standards Committee. The Emergency Medical Services Advisory Council is the final reviewing authority for protocol changes.

Individuals interested in developing new ALS protocols and/or guidelines or interested in revising current ALS protocols and/or guidelines may request a Protocol Revision Form from the public health EMS Unit at [chd.ems@hennepin.us](mailto:chd.ems@hennepin.us), by calling 612-348-6001, or by visiting our website at <http://www.hennepin.us/ems>.

## AUTHORITY

Each of the ambulance services operating a Primary Service Area (PSA) within Hennepin County has an ambulance service medical director. Per MN Statute 144E.265, Subd. 2, "Responsibilities of the medical director shall include, but are not limited to:

- "(1) approving standards for education and orientation of personnel that impact patient care;
- "(2) approving standards for purchasing equipment and supplies that impact patient care;
- "(3) establishing standing orders for prehospital care;
- "(4) approving written triage, treatment, and transportation guidelines for adult and pediatric patients;
- "(5) participating in the development and operation of continuous quality improvement programs including, but not limited to, case review and resolution of patient complaints;
- "(6) establishing procedures for the administration of drugs; and
- "(7) maintaining the quality of care according to the standards and procedures established under clauses (1) to (6)."

The policies and protocols in this document represent the collective medical expertise and authority of the medical directors for the five ALS ambulance services operating PSAs within Hennepin County. If any conflict exists between a service specific policy or protocol and a system policy or protocol, paramedics shall follow their service policy.

## **2000 GUIDELINES**



## **GUIDELINES**

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- A. These medical protocols are intended for use while working under the license of an Ambulance Medical Director for an ambulance service with a Primary Service Area (PSA) in Hennepin County.
- B. Remember: courtesy to the patient, the patient's family and other emergency care personnel is of utmost importance.
- C. A Patient Care Report (PCR) form must be completed on all patients and a copy left with the patient at the hospital. See [www.hennepin.us/ems](http://www.hennepin.us/ems) for the Required Documentation Policy. Specific prehospital care information must also be recorded on all patient contacts as part of the MNStar requirements and Hennepin County System Data Collection Program.
- D. All equipment appropriate to the nature of the call for assessment, treatment and transport should be taken to the site of the patient at the time of initial patient contact.
- E. In all circumstances, physicians have latitude in the care they give and may deviate from these Medical Protocols if it is felt such deviation is in the best interest of the patient. Nothing in these protocols shall be interpreted as to limit the range of treatment modalities available to medical control physicians to utilize, other than the modalities and the medications used must be consistent with the paramedic's training.
- F. The specific conditions listed for treatment in this document, although frequently stated as medical diagnoses, are operational diagnoses to guide the paramedic in initiating appropriate treatment. This document is to be used as consultative material in striving for optimal patient care. It is recognized that specific procedures and/or treatments may be modified depending on the circumstances of a particular case. Also, a medical control physician when consulted will either concur or further evaluate the paramedic's clinical findings and suggest an alternate diagnosis and treatment.



## **CRITICAL INCIDENT STRESS DEBRIEFING (CISD)**

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- A. Paramedics and other EMS personnel are encouraged to familiarize themselves with the causes and contributing factors of critical incident and cumulative stress, and learn to recognize the normal stress reactions that can develop from providing emergency medical services.
- B. A “Metro CISM Team” is available to paramedics and other EMS personnel. The program consists of mental health professionals, chaplains and trained peer support personnel who develop stress reduction activities, provide training, conduct debriefings, and assist EMS personnel in locating available resources. The team will provide voluntary and confidential assistance to those wanting to discuss conflicts or feelings concerning their work or how their work affects their personal lives.
- C. Call 612-207-1130 to contact a Metro CISM Team.
- D. See [www.metrocism.org](http://www.metrocism.org) for further information

## **DEACTIVATING IMPLANTABLE CARDIAC DEFIBRILLATOR**

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- A. If the patient is in cardiac arrest, follow the appropriate cardiac arrest protocol
- B. Deactivate an ICD only after consultation with a medical control physician
- C. Establish on ECG that the ICD is inappropriately discharging in the presence of a non-VT/VF rhythm
- D. To deactivate the ICD, locate the pulse generator and place a donut magnet over the generator. You may or may not hear a high-pitched tone from the generator, depending on the brand of the ICD
- E. Secure the magnet in place with adhesive tape. The magnet will inhibit further arrhythmia detection and treatment by the ICD

## **LIMITING RESUSCITATION MEASURES AND DNR**

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- A. Cardiopulmonary Resuscitation (CPR) will be promptly instituted for all patients found in cardiac arrest unless reliable criteria for the determination of death are present, or if a valid DNR or No CPR order exists.
- B. Reliable criteria for the determination of death include:
  - 1. Lividity
  - 2. Rigor
  - 3. Obviously fatal trauma
  - 4. Absence of vital signs in a trauma victim upon arrival of EMS personnel despite a patent airway
- C. Do Not Resuscitate (DNR, No CPR) orders are issued by a patient's physician to prevent rescuers from initiating resuscitative measures in the event of a cardiopulmonary arrest. Patients with DNR orders may receive vigorous medical support, including all interventions specified in the ALS Medical Protocols, up to the point of cardiopulmonary arrest.
- D. In the healthcare facility, a DNR order is valid if it is written in the order section of the patient chart (or on a transfer form) and is signed by a physician, registered nurse practitioner or physician assistant acting under physician authority. Copies of the order are valid. See [Do Not Resuscitate \(DNR\) Guidelines, section D](#) for examples of healthcare facilities.
- E. In a private home, a DNR form (See [Do Not Resuscitate \(DNR\) Guidelines](#), section D for examples for DNR forms you may encounter.) must be signed by the patient or proxy, the physician, and a witness in order to be valid. No validation stamp or notarization is necessary, and a legible copy is acceptable.
- F. If possible, the DNR order or copy should accompany the patient to the hospital. Pertinent documentation should be included on the ambulance report form for the run. In the event of confusion or questions regarding the DNR order, resuscitation should be initiated and a medical control physician should be consulted.
- G. Living wills should not be interpreted at the scene, but conveyed to the physicians in the receiving Emergency Department.
- H. Complete DNR guidelines for ambulance services operating within Hennepin County are found in [Do Not Resuscitate \(DNR\) Guidelines](#).

## **MEDICAL CONTROL AND COMMUNICATIONS FAILURE**

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- A. A medical control physician should be contacted as specified in these protocols.
- B. Whenever possible, medical control should be obtained from the destination hospital requested by the patient.
- C. If the destination hospital is unable to provide medical control, paramedics may contact their service's default medical control hospital. Default medical control hospitals for each service are:
  - Allina Health EMS – Abbott Northwestern Hospital
  - Edina Fire Department – Fairview Southdale Hospital
  - Hennepin EMS – Hennepin County Medical Center
  - North Memorial Ambulance – North Memorial Medical Center
  - Ridgeview Ambulance – Ridgeview Medical Center
- D. Except for load-and-go situations with short transport times, any such delay in establishing medical control will be explained in a System Incident Report submitted by paramedics to their medical director and to the Hennepin County Human Services and Public Health Department. This policy in no way precludes establishment of medical control at any time during the run to obtain physician advice or assistance.
- E. In the occurrence of communication failure, paramedics may perform those orders outlined in the ALS Medical Protocols under "After Obtaining Verbal Orders" for patients with life-threatening or potentially life-threatening conditions.
- F. Initiation and performance of these orders must be in accordance with the paramedic's training and must be carried out as written in these Medical Protocols.
- G. Any instance of communications failure where procedures are carried out without a physician's verbal order must be reported in a System Incident Report within 48 hours to the paramedic's medical director and to the Hennepin County Human Services and Public Health Department

## **MULTIPLE CASUALTY INCIDENTS (MCI)**

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- A. In special incidents with potential for multiple casualties, resources of the EMS system may be temporarily overwhelmed or extended to their limits.
- B. A system plan for EMS response to Multiple Casualty Incidents (MCIs) establishes a framework for coordinating resources during incidents requiring various ambulance providers, hospitals and public safety agencies to work together to optimize patient care and transportation with the given resources of the community. The goals of the system plan are to:
- Recognize and maintain operations of ambulance providers, hospitals, and other agencies as close to normal as possible.
  - Utilize the incident command structure to allow flexibility for effective response to a variety of hazards most likely to occur within the County, including natural disaster, hazardous material exposure, urban fire, air crash, civil unrest or any incident with actual or potential multiple casualties.
  - Set system standards to aid individual agencies when developing policies and procedures.
  - As rapidly as possible transport patients to appropriate hospital(s).
- C. Ambulance services operating a Primary Service Area (PSA) in Hennepin County shall follow the regional Incident Response Plan (IRP) during a Major Incident or Multiple Casualty Incident (MCI). Please see the latest version of the IRP for the definition of a Major Incident or Multiple Casualty Incident (MCI). Contact the Metro Region EMS System office for copies.

## **OXYGEN THERAPY – GENERAL GUIDELINE**

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- A. Oxygen therapy should be administered when indicated by specific protocol.
- B. When an EMS provider believes the patient will improve with oxygen therapy, the following guidelines are applicable:
  - 1. For suspected smoke / CO inhalation, pneumothorax, or sickle cell crisis, initiate high flow oxygen ( $\geq 10$  lpm) via non-rebreather mask or BVM with appropriate airway management.
    - a. Titrate to maintain goal **SpO<sub>2</sub> of 100%**
  - 2. For critically ill or unconscious patients with suspected hypoxia, initiate high flow oxygen ( $\geq 10$  lpm) via non-rebreather mask or BVM with appropriate airway management.
    - a. Titrate down to **MAXIMUM SpO<sub>2</sub> of 96%** (Discontinue for SpO<sub>2</sub>  $\geq 97\%$ )
  - 3. For patients with STEMI or CVA **DO NOT** initiate oxygen therapy if **SpO<sub>2</sub> > 92%**
  - 4. For patients at risk for hypercapnic respiratory failure (COPD with chronic O<sub>2</sub> use), use minimum flow necessary to achieve **target SpO<sub>2</sub> of 90%**.
  - 5. For all other patients, use minimum flow necessary to achieve **MAXIMUM SpO<sub>2</sub> of 96%** (Discontinue for SpO<sub>2</sub>  $\geq 97\%$ )
- C. For pediatrics, if the patient is agitated, use high flow blow-by O<sub>2</sub>

## **PATIENT CONSENT AND REFUSAL**

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- A. Emergency care for life-threatening conditions should never be delayed or withheld to carry out legal consent procedures.
- B. Whenever an ambulance is requested for a patient, it is the responsibility of the EMS system to treat and transport that patient with his/her consent.
- C. Transport by ambulance should always be offered to a patient.
- D. Any time contact with the patient occurs and the patient is not transported, the run is a "left," not a "cancel," and requires full documentation on the Patient Care Report form including what the patient (or parent) was told at the scene regarding non-transport and any other follow-up advice or information given at the scene.
- E. In general, a person has decision making capacity if he/she meets the following three criteria:
  - 1. Is capable of understanding the nature and consequences of the proposed treatment
  - 2. Has sufficient emotional control, judgment, and ability to communicate the health care decision
  - 3. Is not impaired by drugs or alcohol
- F. ADULT – An adult with decision making capacity has the right to refuse treatment and/or transport; however, the paramedic and/or medical control physician (by phone or radio) should explain thoroughly the alternatives and potential consequences of this action. A medical control physician should always be consulted if in doubt as to the decision making capacity of a patient, or if the paramedic feels it is detrimental to leave the patient.
- G. MINORS – Consent or refusal of treatment/transport of minors (less than 18 years of age) must be given by the child's parent or legal guardian. Although less desirable, consent or refusal may be given by a responsible adult (over 18) caretaker if the parent has deliberately left the minor in the care of this adult, and the adult has decision making capacity. If unsure whether it is appropriate to allow someone to give consent or refuse treatment of a minor, a medical control physician should be consulted.
- H. If a patient, or parent/guardian/caretaker of a minor, has decision making capacity and refuses treatment or transportation they should sign the refusal statement on the PCR form. If they refuse to sign, this should be documented, including witnesses' names if possible.

## **PATIENT DISPOSITION – GENERAL GUIDELINES**

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Determination of patient disposition should be based on the following criteria:

- A. Patient Preference – Patients should be transported to the hospital of their choice (or family's or physician's choice). Patient preference may be overridden by:
1. the medical expertise of the Ambulance Medical Director
  2. restriction to specific hospitals
- B. Medical Expertise – This authority may be represented by service specific policy, system policy, the On-Call System Medical Director, a medical control physician, a physician on-scene who has assumed total responsibility for the patient, or the paramedic providing patient care. See [Physician Presence at the Emergency Scene](#). Medical expertise shall override patient preference in three types of situations:
1. Patient's preference is unavailable (e.g. closed or unreachable due to weather). See [www.hennepin.us/ems](http://www.hennepin.us/ems) for the Hennepin County EMS System Ambulance Diversion Policy.
  2. Patient's preference is inappropriate (e.g. critical trauma patient transported to a facility not capable or equipped for the severity of the patient's injuries).
  3. Patient's preference is suboptimal for presenting condition/complaint (the following examples are not inclusive):
    - If unable to maintain an airway and ventilate, transport to the closest emergency
    - Carbon Monoxide patients should be transported per the Carbon Monoxide disposition guideline
    - Major burn patients should be transported per the Major Burn disposition guideline
    - Major trauma patients should be transported per the Major Trauma disposition guideline
    - STEMI patients should be transported per the STEMI disposition guideline



## **PATIENT DISPOSITION – CARBON MONOXIDE POISONING**

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- A. For patients with symptoms of severe Carbon Monoxide (CO) poisoning, consider transport to a hospital that has a hyperbaric center.
- B. For pregnant patients who are transported with symptoms of CO poisoning, consider transport to a hospital that has a hyperbaric center for possible hyperbaric therapy.
- C. Hospitals in the Twin Cities Metro area with a hyperbaric center include:
  - Hennepin County Medical Center (HCMC)
- D. Signs and symptoms of severe CO exposure include:
  1. History of loss of consciousness
  2. Lethargy
  3. Confusion
  4. Disorientation
  5. Seizures
  6. Focal neurological deficits
  7. Ischemic chest pain
  8. New dysrhythmias
  9. 12 Lead ECG changes
  10. Hypotension

## **PATIENT DISPOSITION – MAJOR BURNS**

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- A. For patients with major burn injuries, consider transport to a hospital that has a burn unit.
- B. Hospitals in the Twin Cities Metro area with a burn unit include:
  - Hennepin County Medical Center (HCMC)
  - Regions Medical Center
- C. See the [Burns - Adult](#) protocol or the [Burns - Pediatric](#) protocol

## **PATIENT DISPOSITION – MAJOR TRAUMA**

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- A. Ground ambulances must immediately transport patients with compromised airways (unable to maintain an airway and ventilate) to the nearest designated trauma hospital.
- If no designated trauma hospital exists within 30 minutes transport time, the patient must be transported to the closest hospital.
- B. In cases where a patient does not have a compromised airway, the ground ambulance must transport major trauma patients to a level I or level II trauma hospital within thirty minutes transport time.
- If no level I or level II trauma hospital exists within 30 minutes transport time, the patient must be transported to the closest designated trauma hospital within 30 minutes transport time. If no designated trauma hospital exists within 30 minutes transport time, the patient must be transported to the closest hospital.
- C. Major trauma defined as:
1. Amputations (proximal to mid-hand or mid-foot or with other severe trauma).
  2. Crush injuries or prolonged entrapment/entanglement.
  3. Blunt trauma, multisystem, with Shock
  4. Pelvic Fractures.
  5. Penetrating trauma to the eye(s), head, neck, chest, or abdomen, or extremity with shock.
  6. Maxillofacial trauma, Complex: including significant tissue avulsion, unstable/displaced facial or mandible fracture(s).
  7. Paralysis of a limb or limbs.
  8. Traumatic Brain Injury, Severe (GCS less than 9)
- D. Consider transport to a level I or level II trauma center for any patient with significant trauma and any of the following:
1. Severe multiple injuries (two or more systems) or severe single system injury
  2. Cardiac or major vessel injuries resulting from blunt or penetrating trauma
  3. Injuries with complications (e.g. shock, sepsis, respiratory failure, cardiac failure)
  4. Severe facial injuries
  5. Severe orthopedic injuries
  6. Co-morbid factors (e.g. Age < 5 or > 55 years, cardiac or respiratory disease, insulin-dependent diabetes, morbid obesity)
  7. Evidence of traumatic brain injury and/or spinal cord injury (e.g. new paralysis)
  8. Anticoagulation and bleeding disorders.
  9. Age
    - Older Adults (risk of injury death increases after 55 years).
    - Children (should be triaged preferentially to pediatric-capable trauma centers).
  10. Time sensitive extremity injury
  11. End-stage renal disease requiring dialysis
  12. Pregnancy > 20 weeks
  13. Paramedic provider impression is consistent with major trauma.

## **PATIENT DISPOSITION – STEMI**

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Patients identified with acute myocardial infarctions, as evidenced by ST elevation (STEMIs), should receive timely transportation to a Level I Cardiac Care Facility per the EMS provider STEMI/Code AMI criteria. EMS Provider/STEMI Code AMI inclusion criteria includes:

- A. Patient presents with cardiac symptoms.
- B. 12-lead findings which are consistent with ST elevation greater than 1 mm in two or more contiguous leads.
- C. QRS complex is narrower than 0.12 (3 small boxes) seconds.
  - If wider than 0.12, you are unable to diagnose as STEMI.
- D. See [www.hennepin.us/ems](http://www.hennepin.us/ems) for the Transport Policy for STEMI Patients.

## **PATIENT DISPOSITION – STROKE (CVA)**

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### **Standing Orders**

Patients identified with acute cerebral vascular accident (CVA) per the Adult Stroke (CVA) protocol should receive timely transportation to the most appropriate designated acute stroke ready hospital, primary stroke center, or comprehensive stroke center.

## **PATIENT DISPOSITION – TRANSPORT HOLDS**

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### **Standing Orders**

- A. Paramedics may find themselves in a situation where a Transport Hold might be necessary to transport a patient to the emergency department.
- B. Elements of a Transport Hold (defined Minnesota Statute 253B.05 Emergency Admission Subd. 2)
  - A peace or health officer may take a person into custody and transport the person to a licensed physician or treatment facility if the officer has reason to believe, either through direct observation of the person's behavior, or upon reliable information of the person's recent behavior and knowledge of the person's past behavior or psychiatric treatment, that the person is mentally ill or developmentally disabled and in danger of injuring self or others if not immediately detained.
  - A peace or health officer or a person working under such officer's supervision, may take a person who is believed to be chemically dependent or is intoxicated in public into custody and transport the person to a treatment facility. 253B.05 Emergency Admission Subd. 2
- C. If Elements of a Transport Hold are present:
  1. Request a Transport Hold from a Peace/Health Officer
  2. If the Peace/Health Officer does not provide a Transport Hold:
    - a. Contact your service's designated home medical control hospital and ask the Medical Control Physician to speak with the Peace/Health Officer
    - b. If the Peace/Health Officer does not provide a Transport Hold after speaking with the Medical Control Physician:
      - Do not transport, and
      - Leave the patient in the care of the Peace/Health Officer
- D. All patients transported on a Transport Hold should be restrained during transport
- E. For minors, follow statute regarding Health and Welfare Holds 260C.175 subdivision 1

## **PATIENTS WITH WEAPONS**

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### **Standing Orders**

If the patient has a weapon:

1. If the crew has a safety concern, call law enforcement to assist
2. If transporting the patient with a weapon, notify the emergency department during your pre-arrival patient care report

## **PHYSICIAN PRESENCE AT THE EMERGENCY SCENE**

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### **A. Personal Physician**

- If the patient's personal physician is present and wishes to assume responsibility for the patient's care:
  - a. The paramedic should defer to the orders of the personal physician as long as those orders are appropriate and not in conflict with ALS Medical Protocols. Paramedics should establish medical control any time they are uncomfortable carrying out orders from a patient's physician.
  - b. Orders given by the personal physician should be written on the EMS report form, the physician's name documented legibly, and signed by the physician, if possible.

### **B. System Medical Director**

- If a system medical director or associate system medical director is present and wishes to assume responsibility for the patient's care, the paramedic should defer to the orders of the system medical director or associate system medical director.

### **C. Medical Control Physician**

- If a medical control physician is present and wishes to assume responsibility for the patient's care, the paramedic should defer to the orders of the medical control physician as long as those orders are appropriate and not in conflict with ALS Medical Protocols.

### **D. Other Intervening Physician**

1. If any other intervening physician wishes to assume responsibility for the patient:
  - a. If medical control exists:
    - The intervening physician should be allowed to communicate with the medical control physician prior to the paramedics accepting orders. If there is any disagreement between the two physicians, the paramedics will follow the orders of the medical control physician and allow the physicians to continue their communication.
  - b. If medical control does not exist:
    - The paramedics should relinquish responsibility for patient management if the physician meets the following two criteria:
      - i. can show appropriate identification (or is known to the paramedics);
      - ii. agrees in advance to accompany the patient to the hospital (exception: major multiple casualty incident);
    - The physician's name should be documented legibly on the PCR and, if possible, have the physician sign the EMS report form assuming responsibility and verifying orders.
2. In the case of multiple intervening physicians at the scene, the paramedics should request the physicians designate one physician to direct patient care.

### **E. Any intervening physician not wishing to assume responsibility for care and not accompanying the patient to the hospital may be asked to assist the paramedics and/or act as a medical consultant to them and to the medical control physician.**





## **3000 GENERAL PROTOCOLS – ADULT**



## **AIRWAY MANAGEMENT – ADULT**

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### **Standing Orders**

- A. Bag Valve Mask (BVM) – Consider an oropharyngeal or nasopharyngeal airway of appropriate size on all unconscious patients for initial airway maintenance
- B. Endotracheal intubation – After endotracheal intubation, tube position must be confirmed using at least two methods, including continuous end-tidal carbon dioxide (CO<sub>2</sub>) detection and a second device or method to confirm tube
- C. Alternate Advanced Airway Device – Services may use alternative advanced airway control devices (such as supraglottic airways) as specified by the ambulance service’s medical director. After placement of an alternate advanced airway device, place continuous end-tidal carbon dioxide (CO<sub>2</sub>) detection device on the tube
- D. Other advanced airway interventions – Not required, but sanctioned by the EMS system, are rapid sequence endotracheal intubation (medically assisted airway management) and the establishment of surgical airways (i.e., transtracheal needle ventilation and cricothyrotomy) for patients that cannot be ventilated by any other means.
- E. Pulse Oximetry – A pulse oximeter should be used for any patient with suspected hypoxemia, in respiratory distress, or whenever sedating medications are administered.

## **DIABETIC HYPOGLYCEMIC PATIENT REFUSAL OF TRANSPORT – ADULT**

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### **Standing Orders**

Standing orders for all diabetic hypoglycemic patients refusing transport:

- A. The following criteria must be documented on your Patient Care Report (PCR) in order to leave a patient (without contacting medical control) experiencing a diabetic hypoglycemic emergency who refuses transport:
  1. Identifiable reason to explain the hypoglycemia
  2. Blood sugar greater than 100 post treatment
  3. Awake, alert, & oriented, GCS 15 post treatment
  4. Food available and/or eaten
  5. Friend or family present to stay with the patient
  6. Discussion with the patient to contact their primary care provider
  7. Vital signs within normal limits
  8. Not on oral agents besides metformin (Glucophage)
  9. No suspected overdose of any diabetes medications
  10. No recent fever, acute illness, other concerning symptoms such as chest pain, shortness of breath, etc.
- B. If ALL of these conditions are met, it is not necessary to contact a medical control physician. If however, any one of them is not met, contact medical control physician.
- C. Paramedic also has discretion to contact medical control physician for any questions.

## **FIREGROUND FIRE FIGHTER REHABILITATION – ADULT**

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- A. Establish communication with Incident Command or rehab division officer.
- B. Stage ambulance near rehab:
  - Consider egress and potential for additional incoming fire apparatus
- C. Perform focused assessment including complete set of vital signs and temperature (if applicable):
  1. Consider 12-lead ECG
  2. Consider Blood Glucose check
  3. Consider transcutaneous CO measurement if available
    - Administer high flow O<sub>2</sub> immediately if concern for CO toxicity regardless of level or ability to measure.
- D. Immediate transport for:
  1. Symptoms of chest pain, severe SOB, altered mental status and syncope
  2. Heart rate greater than 220 (minus patient's age), systolic blood pressure less than 100, respiratory rate greater than 30, SpO<sub>2</sub> less than 85%
  3. Treatment for immediate transport:
    - a. IV, O<sub>2</sub>, monitor, 12-lead ECG
    - b. Consider hydroxocobalamin (Cyanokit) administration if available
- E. Begin active cooling/warming based on weather conditions.
- F. Provide oral rehydration 8-12 oz/10 minutes.
- G. Reassess the following after 10 minutes:
  1. Vital signs
  2. Symptoms to assess for include:
    - Chest pain, dizziness, shortness of breath, weakness, nausea/vomiting, headache, cramps, change in behavior/speech, unsteady gait.
  3. If improving and asymptomatic, monitor until exit criteria met (see H):
    - Minimum 20 minute rest/rehydration time.
    - a. Offer transportation, if refused, document per service specific guidelines.
  4. If worsening or symptomatic, transport:
    - a. IV, O<sub>2</sub> Monitor, 12-lead, blood glucose check.
    - b. Consider hydroxocobalamin (Cyanokit) administration (per service specific guidelines).
- H. "May return to work" criteria (must meet/document all below):
  1. Offer of transport declined.
  2. Presence of normal speech/mental status and a steady gait.
  3. Normal vital signs:
    - Heart rate less than or equal to 110, respiratory rate less than or equal to 20, systolic blood pressure greater than 100, diastolic blood pressure less than 100, SpO<sub>2</sub> greater than 95%, skin temp normal or measured less than 101.5°F, CO less than 10 (if applicable).
  4. Asymptomatic
  5. EMS provider discretion may override and recommend "no return to work" despite meeting criteria.

## **INTRAVENOUS (IV) THERAPY – ADULT**

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### **Standing Orders**

Not every patient requires an IV. When indicated, intravenous fluid therapy should be administered in accordance with the following guidelines:

- A. For most patients requiring IV access, the paramedic has the option of either running fluids through the IV or capping the catheter with a saline lock. However, as specified in these Medical Protocols, IV fluids must always be hung in either situations:
  - When the administration of multiple IV medications is anticipated.
  - Whenever it is likely the patient will require fluid volume replacement.
- B. There should be no delay at the scene for IV attempts on major trauma patients or patients in shock; these IVs should be started during transport.
- C. Intraosseous infusion (IO) is a procedure for use in patients who are in critical condition when IV access is unobtainable.
- D. Paramedics may access a Peripherally Inserted Central catheter (or PIC line) if the patient has one in place as an alternate IV access point.
- E. Paramedics may access a central line if the patient is in cardiac arrest. The cap on the central line must be cleansed with alcohol and then 15-20 ml of fluid and blood must be aspirated from the central line before initiating IV fluids. If unable to aspirate, the central line should not be used.

## **PAIN MANAGEMENT – ADULT**

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To provide relief of pain when indicated.

Exclusion criteria:

- BP less than or equal to 90
- Pain determined to be cardiac in origin (See the protocol [Ischemic Chest Pain – Adult](#))
- Active labor
- Headache
- Non-traumatic Neck or Back Pain
- Any chronic pain (head, neck, back, fibromyalgia, abdominal or pelvic pain)
- Dental pain

Inclusion criteria:

- Acute Severe Traumatic pain
  - Neck or Back pain from acute trauma with inability to ambulate from the incident
  - Significant orthopedic injury (severe tenderness to palpation, with swelling, bruising and/or deformity)
  - Severe traumatic chest or abdominal pain with tenderness to palpation
  - Major burns
- Active cancer or palliative care
- Acute (< 2 hrs duration) non-traumatic pain with 2 or more of the following:
  - Increased heart rate and/or blood pressure
  - Nausea and/or vomiting
  - Writhing
  - Described as severe or > 7/10 in severity
- Intubated patients with injury, painful condition or evidence of increasing discomfort (vital sign changes)
- Paramedic discretion

### **Standing Orders**

- A. Assess the patient's pain on a 0-10 scale or other acceptable method for patients with difficulty communicating
- B. Inform the patient that pain is an important diagnostic parameter and the goal of this protocol is to relieve suffering and not to totally eliminate pain
- C. If pain is mild/moderate, consider ketorolac as first-line medication.
  1. Ketorolac 15mg IV or 30mg IM, this should be a single dose and is not to be repeated. Ketorolac specific contraindications include: pregnancy, kidney disease, history of GI bleed, allergy to NSAIDs, recent NSAID use (w/i the last 6 hours), and age over 65 years old.
- D. If the patient meets inclusion criteria, administer one of the following service dependent medications (consider lower doses for elderly patients):
  1. Morphine Sulfate 2-10 mg (usual effective initial dose 0.1 mg/kg), up to 10 mg single dose IV/IO/IM/SQ. If using IV/IO route titrate in increments to patient response. No maximum total dose of Morphine Sulfate for adults
    - Reassess the patient's pain scale and if necessary administer a second dose up to 5 mg IV/IO/IM/SQ every 5 to 10 minutes. If using IV/IO route titrate in increments to patient response
  2. Hydromorphone 0.5-2 mg IV/IO/IM. If using IV/IO route titrate in increments to patient response.



- Reassess the patient's pain scale and if necessary administer a second dose up to 0.5-2 mg IV/IO/IM. No maximum total dose of hydromophone for adults
3. If pain is of a traumatic origin (non-cardiac), consider ketamine (slow IV push):
    - IV/IO route 0.2 mg/kg (maximum dose 25 mg); may repeat every 15 minutes. Reassess the patient's pain scale and if necessary administer a second dose 0.2 mg/kg IV/IO
    - IM route 0.4 mg/kg (maximum dose 50 mg); may repeat every 30 minutes. Reassess the patient's pain scale and if necessary administer a second dose 0.4 mg/kg IM
  4. Fentanyl
    - a. 1mcg/kg (up to 100 mcg per single dose) IV/IO/IM/IN
      - Intranasal administration should not exceed 0.5ml per nostril
    - b. May repeat 0.5mcg/Kg IV/IO/IM/IN (up to 50 mcg/repeat dose) every 10 min, not to exceed cumulative dose of 200mcg
  5. Inhaled nitronox may be used as an alternative if available
- E. Monitor the patient's vital signs (including O<sub>2</sub> saturation). If respiratory depression or hypotension occurs after administration of morphine sulfate or hydromophone ventilate the patient as necessary and administer naloxone (Narcan) 0.4-2 mg IV/IO
  - F. Contact medical control physician for orders if:
    - The patient has a systolic BP less than or equal to 90
  - G. For patients experiencing pain outside the above listed inclusion criteria consider:
    - Symptomatic relief of nausea/vomiting if needed
    - Advising them of the general concerns in the medical community about opioid use and that doctors are being very careful about which patients receive these addictive medications
    - Inform them that "we carry this type of medication for severe trauma such as broken bones and for certain medical situations that require immediate pain control such as heart attacks"
    - Acknowledge their pain and try to improve comfort
    - Advise them that a doctor will need to evaluate them prior to administering pain medication
    - Reassure the patient that the receiving facility will be notified of the need for prompt pain management assessment
    - Consult medical control if questions

<b>After Obtaining Verbal Orders</b>
<ol style="list-style-type: none"> <li>G. Consider initial or additional pain medication including benzodiazepines as appropriate:               <ul style="list-style-type: none"> <li>• Midazolam HCL (Versed) 2-5 mg IV/IO/IM (if using IV/IO route, titrate to patient response), or</li> <li>• Lorazepam (Ativan) 1 mg IV/IO/IM</li> </ul> </li> <li>H. Monitor for respiratory depression when administering narcotics and benzodiazepines together</li> </ol>

## **SEDATION OF INTUBATED PATIENTS – ADULT**

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### **Standing Orders**

- A. If the patient is ET intubated and becomes agitated from increased consciousness, consider initial Midazolam HCL (Versed) titrated 2-5 mg IV/IO/IM or lorazepam (Ativan) 2 mg IV/IO/IM while maintaining a systolic BP of 100 or greater.
- Consider treatment of pain per [Pain Management - Adult](#) protocol.
  - Consider additional Midazolam HCL (Versed) titrated 2-5 mg IV/IO/IM or lorazepam (Ativan) 1-2 mg IV/IO/IM.
- B. If the systolic BP is less than 100, consider Ketamine 1-2 mg/kg IV/IO or Ketamine 4-5 mg/kg IM. Ketamine is preferred in patients with low blood pressure.
- Should not be used for patients with penetrating eye injury.



## **3100 TRAUMATIC EMERGENCIES – ADULT**



## **AMPUTATIONS – ADULT**

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### **Standing Orders**

#### **A. Patient:**

1. Control hemorrhage and cover stump with sterile dressing saturated with saline.
2. Treat per protocol for [General Trauma/Traumatic Shock - Adult](#).
3. Do not spend excessive time looking for the amputated part if the patient is unstable.

#### **B. Amputated Part:**

1. Wrap the amputated part in sterile gauze.
2. Moisten with saline.
3. Place in plastic bag.
4. Place on top of ice, if available, or cold packs (do not freeze)

## **BURNS – ADULT**

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### **Standing Orders**

- A. Consider direct transport to a burn center for major burns. See the [Patient Disposition – Major Burns](#) guidelines. Hospitals in the Twin Cities Metro area with a burn unit include:
- Hennepin County Medical Center
  - Regions Medical Center
- B. Major burn criteria includes:
- Partial-thickness burns greater than 10% of total body surface area.
  - Partial-thickness or third degree burns that involve the face, hands, feet, genitalia, perineum, or major joint.
  - Third degree burns in any age group.
  - Lightning injury and other electrical burns.
  - Chemical burns.
  - Inhalation injury.
  - Burn in any patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality.
- C. For any significant burn:
1. Begin oxygen therapy. Use positive pressure ventilatory assist as needed.
  2. Obtain IV access.
- D. If less than 20% of the body surface is burned:
1. Apply sterile dressings and saturate with cool water (leave Gel-pack(s) in place if applied by first responders).
  2. Do not allow any burn patient to become chilled and begin shivering.
- E. If more than 20% of the body surface is burned:
1. Remove any non-adherent burned clothing and cover the patient with a sterile sheet.
  2. Give 500 ml NS bolus age 18-65 (250 ml NS bolus age greater than 65 or history of CHF).
  3. Do not cool down with water (exception: presence of smoldering clothes, articles or material adhering to skin that would continue the burning process, e.g., hot tar, etc.).
  4. Begin rapid transport.
  5. Consider direct transport to a burn center for major burns.
  6. Consider pain management per protocol. See the [Pain Management - Adult](#) protocol.
    - Nitronox should not be used for pain relief if the burn involves the face, respiratory tract or if other contraindications for Nitronox administration are present.
- F. Monitor the patient's ECG after any electrical burn including a lightning strike





## **CRUSH INJURIES – ADULT**

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### **Standing Orders**

- A. Confirm prolonged entrapment (greater than one hour) of one or more full extremities by a crushing object (e.g. vehicle, building rubble, hanging in harness, self).
- B. If a distal extremity is accessible, assess sensation, motor function, skin color and distal pulses.
- C. For entrapments with potential extended scene times (>30min), contact your service for notification/activation of your service's medical director(s).
- D. Pre-Extrication, if possible:
  1. Administer oxygen via mask if the situation allows.
  2. Obtain venous access with two large bore IV/IOs when possible and hang two 1000 ml Normal Saline bags. Administer up to two liters of NS bolus followed by 500 ml/hr.
  3. Control pain per protocol.
  4. Monitor the patient's cardiac rhythm when situation allows.
  5. Immediately prior to extrication, consider Sodium Bicarbonate 2 mEq/Kg IV/IO up to 100 mEq.
  6. Extricate.
- E. Post-Extrication:
  1. Suspect hyperkalemia if T waves become peaked, QRS becomes prolonged (greater than 0.12 sec) or hypotension develops.
  2. Consider Calcium Chloride 1 Gm IV/IO over 5 minutes for ventricular dysrhythmias.
  3. Consider additional Sodium Bicarbonate.
  4. Contact a medical control physician for persistent hyperkalemia or dysrhythmias.
  5. Post-extrication cardiac arrest – administer Calcium Chloride 2 Gm IV/IO push and 100mEq (2 amps) Sodium Bicarb IV push in addition to usual protocols. Contact medical control for additional orders.

### **Notes:**

- Risk of crush syndrome is directly proportional to the amount of muscle tissue trapped. Thus, a single arm low risk, both legs high risk.
- Crush is different than trapped – if patient can feel / move the distal extremity easily the risk for crush syndrome is very low.

## **GENERAL TRAUMA/TRAUMATIC SHOCK – ADULT**

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### **Standing Orders**

- A. Begin oxygen therapy.
- B. Spinal immobilization as appropriate.
- C. If the patient is intubated and begins to develop strong evidence of tension pneumothorax (i.e. increased airway resistance, hypotension and/or jugular vein distention) consider needle thoracostomy. Perform needle thoracostomy at the second intercostal space, midclavicular line or fourth intercostal space, mid-axillary line of the affected side. of affected side.
  - May be done without verbal orders if the patient is already intubated. If the patient is not intubated, consult a medical control physician immediately if a tension pneumothorax is suspected. Consider needle thoracostomy if strong evidence of tension pneumothorax is present.
- D. Transport.
- E. Start an IV Normal Saline while en route on any patient with severe trauma. If systolic BP is less than 90, run the IV wide open until systolic BP reaches 90, then TKO.

<b>After Obtaining Verbal Orders</b>
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| F. Consider needle thoracostomy if strong evidence of tension pneumothorax is present. |
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## **MAJOR TRAUMA – ADULT**

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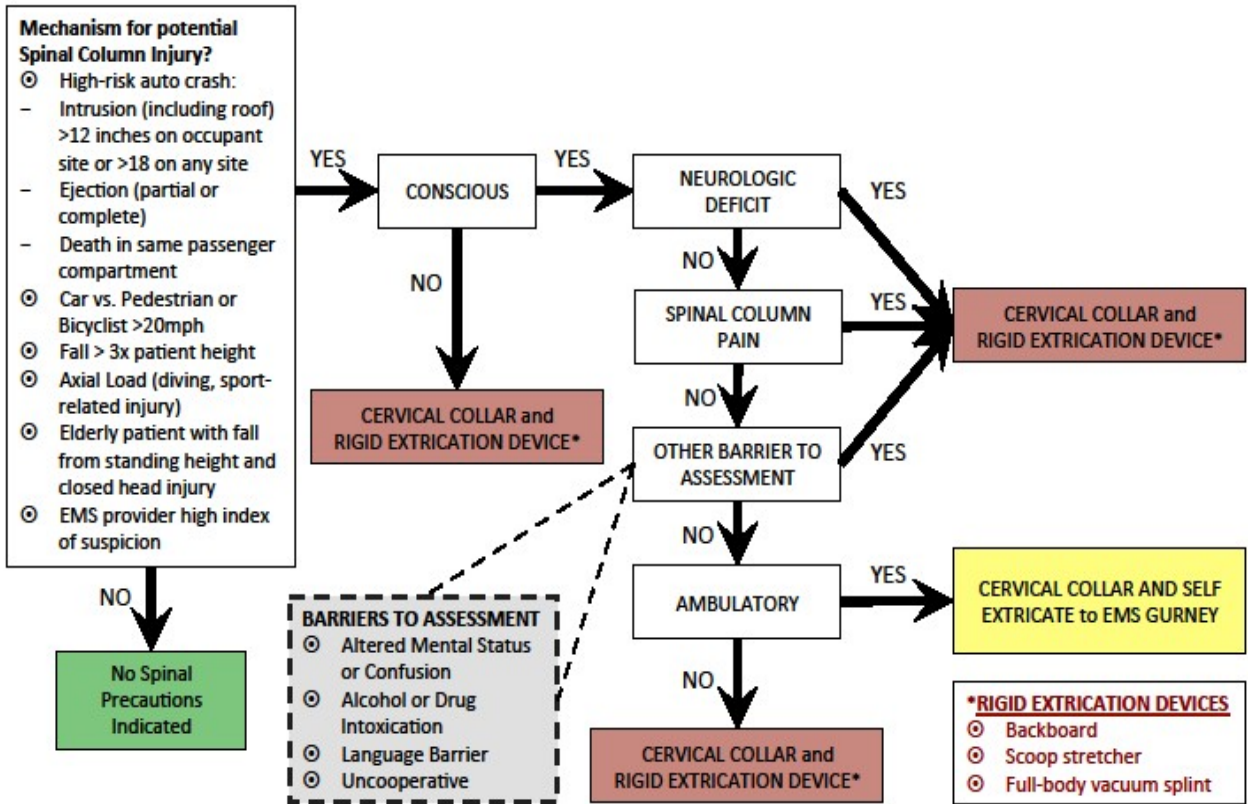
### **Standing Orders**

- A. Control major hemorrhaging
  - Consider application of a tourniquet. For tourniquet indications and application process see Appendix 9030
- B. Manage the airway, ventilate as necessary (do not hyperventilate), and begin oxygen therapy as early as possible in all major traumatic emergencies
- C. Consider Spinal Immobilization/Precautions – see the [Spinal Precautions Algorithms – Adult](#) protocol
- D. Consider pain management per protocol. See the [Pain Management - Adult](#) protocol
- E. Expedite transport
  - IV/IO access should be started in route to the hospital. The only exception is when there is an unavoidable delay moving the patient from the scene (e.g., trapped in auto, etc.) in which case IV/IO access should be started on scene.
- F. For disposition considerations, see the [Patient Disposition – Major Trauma](#) guideline

**SPINAL PRECAUTIONS ALGORITHM – ADULT**

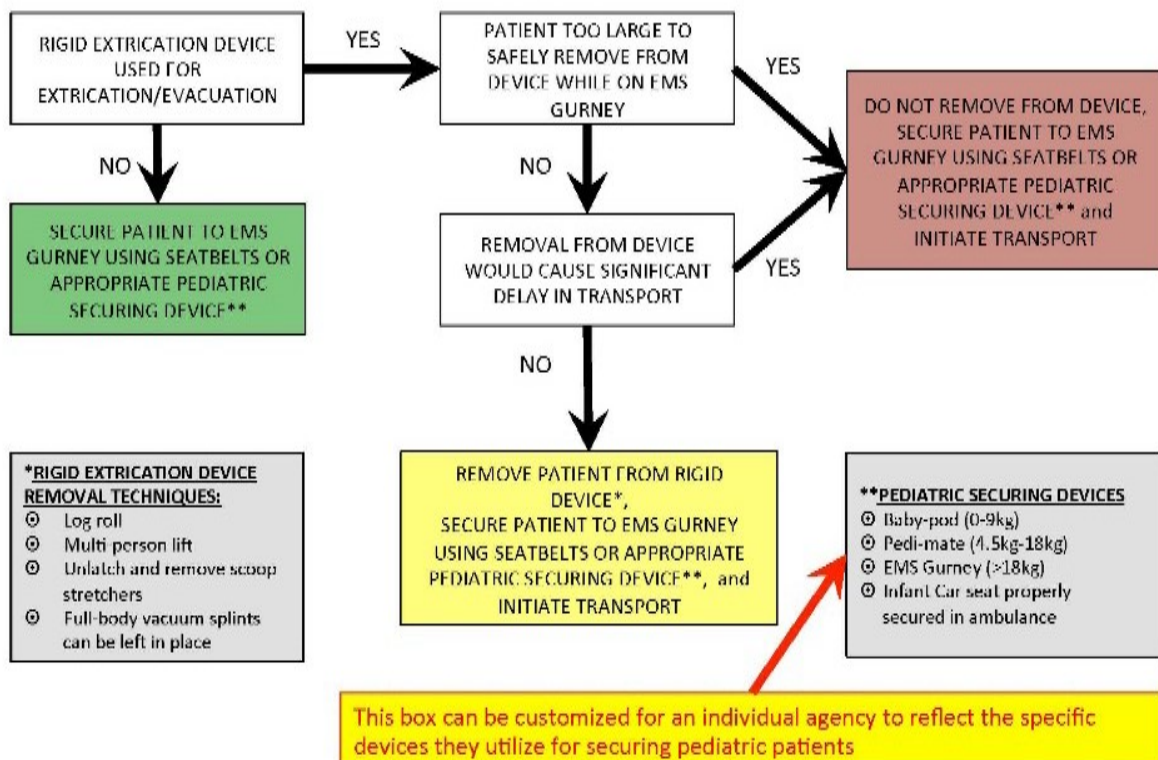
**Selective Spinal Precautions:**  
*Stage 1: Extrication and Evacuation*

PROVIDERS MAY OPT TO USE TOOLS AND TECHNIQUES THAT EXCEED THIS PROTOCOL BASED ON THEIR DISCRETION ONLY IF JUSTIFICATION IS DOCUMENTED IN THE PCR



## Selective Spinal Precautions: Stage 2: Transport

PROVIDERS MAY OPT TO USE TOOLS AND TECHNIQUES THAT EXCEED THIS PROTOCOL BASED ON THEIR DISCRETION ONLY IF JUSTIFICATION IS DOCUMENTED IN THE PCR



## **3200 CARDIAC EMERGENCIES - ADULT**



## **CARDIAC ARREST (ASYSTOLE/PEA) – ADULT**

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### **Standing Orders**

- A. Complete a rapid scene survey observing for any indications or evidence that resuscitation should not be attempted (e.g., DNR orders or conditions incompatible with life).
- B. If cardiac arrest occurs in presence of the ambulance crew, assess the patient's cardiac rhythm and continue with the appropriate protocol.
- C. If the patient is in cardiac arrest upon arrival of the ambulance crew, institute or continue Basic Life Support:
  1. CPR: compressions 100/min, breaths 8-10/min. Do not over ventilate.
  2. Impedance Threshold Device (ITD): Attach ITD to BVM and apply to patient within 30 seconds. You must maintain a tight, continuous, 2-handed face mask seal for the ITD to function properly. Use of ITD is service dependent.
  3. Reassess the patient's rhythm after every 5 cycles (2 minutes) of CPR. Limit interruptions in CPR during pulse/rhythm checks to less than 10 seconds for airway insertion and/or administration of medications.
- D. Assess and confirm the patient's cardiac rhythm (check second lead to verify asystole), immediately resume CPR.
- E. Review the most frequent causes for PEA, treat according to protocols if present:
  1. Hypovolemia - Give 500 ml NS bolus age 18-65 (250 ml NS bolus age greater than 65 or history of CHF).
  2. Hypoxia - Ventilation and oxygenation.
  3. Hypothermia- Re-warming. See the [Hypothermia - Adult](#) protocol.

### **Consider Obtaining Verbal Orders For:**

4. Acidosis - NaHCO.
5. Hyperkalemia - CaCl & NaHCO.
6. Tension pneumothorax - Needle chest decompression.
7. Drug overdose - Intubation and specific antidote.
8. Coronary thrombosis - 12-lead ECG.

### **No Specific Prehospital Treatment For:**

9. Hypokalemia
10. Cardiac tamponade
11. Pulmonary embolism

- F. Secure the patient's airway during the pulse check. Continue CPR immediately then confirm tube placement by exam and confirmation device.
  - Once intubated with an advanced airway (ETT, Combitube, King, etc.) switch to continuous compressions with 10 breaths per minute.
- G. Obtain IV access while providing two minutes of continuous CPR.



- H. During CPR, administer the following medication:
  - 1. Epinephrine 1 mg IV/IO every 3-5 min; or
  - 2. May give one dose of vasopressin, 40 Units IV/IO, to replace first or second dose of epinephrine.
- I. Provide continuous CPR and reassess pulse and rhythm every two minutes.
- J. Continue CPR and contact medical control physician for further orders.

<b>After Obtaining Verbal Orders</b>
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| <ul style="list-style-type: none"><li>K. If the cause of PEA is hypovolemia, consider requesting additional fluid orders.</li><li>L. If there is no response, consider termination of resuscitative efforts.</li></ul> |
|--|

## **CARDIAC ARREST (V-FIB AND PULSELESS V-TACH) – ADULT**

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### **Standing Orders**

- A. If cardiac arrest occurs in the presence of the ambulance crew, assess the patient's cardiac rhythm and defibrillate x 1 if necessary.
- B. If the patient is in cardiac arrest on arrival of the ambulance crew, institute or continue Basic Life Support (BLS):
  1. CPR: compressions 100/min, breaths 8-10/min. Do not over ventilate.
  2. Impedance Threshold Device (ITD): Attach ITD to BVM and apply to patient within 30 seconds. You must maintain a tight, continuous, 2-handed face mask seal for the ITD to function properly. Use of ITD is service dependent.
  3. Reassess the patient's rhythm after every 5 cycles (2 minutes) of CPR. Limit interruptions in CPR during pulse/rhythm checks to less than 10 seconds for airway insertion and/or administration of medications.
- C. Assess and confirm Pulseless Ventricular Tachycardia/Ventricular Fibrillation then defibrillate x1 if necessary using the following guidelines:
  1. Monophasic defibrillator:
    - Shock at 360 joules.
  2. Biphasic defibrillator:
    - a. Device specific, but typically between 120-200 joules.
    - b. If device specific wattage is unknown, shock at 200 joules.
  3. Immediately resume CPR.
- D. Reassess the patient's cardiac rhythm after 5 cycles (2 minutes) of CPR. If a shockable rhythm is present continue CPR while the defibrillator charges, then defibrillate x1 if necessary using the following guidelines:
  1. Monophasic defibrillator:
    - Shock at 360 joules.
  2. Biphasic defibrillator:
    - a. Device specific, but typically between 120-200 joules.
    - b. If device specific wattage is unknown, shock at 200 joules.
- E. Secure the patient's airway during the pulse check. Continue CPR immediately then confirm tube placement by exam and confirmation device.
  - Once intubated with an advanced airway (ETT, Combitube, King, etc.) switch to continuous compressions with 10 breaths per minute.
- F. Obtain IV access while providing two minutes of continuous CPR.
- G. During CPR:
  1. Administer epinephrine 1 mg IV/IO every 3-5 min up to three doses; or
  2. May administer one dose of vasopressin, 40 Units IV/IO, to replace first or second dose of epinephrine.
- H. Reassess and confirm Pulseless Ventricular Tachycardia/Ventricular Fibrillation then defibrillate x 1 if necessary using the following guidelines:

1. Monophasic defibrillator:
    - Shock at 360 joules.
  2. Biphasic defibrillator:
    - a. Device specific, but typically between 120-200 joules.
    - b. If device specific wattage is unknown, shock at 200 joules.
  3. Immediately resume CPR for two minutes.
- I. Consider the following antiarrhythmics to be given during CPR:
1. Amiodarone 300 mg IV/IO once, then re-dose an additional 150 mg IV/IO once after four minutes of continuous CPR; or
  2. Lidocaine 1.0-1.5 mg/kg IV/IO first dose, then 0.5-0.75 mg/kg IV/IO (maximum of 3 doses or 3 mg/kg).
- J. Reassess rhythm after 2 minutes of CPR; if shockable rhythm, continue CPR while defibrillator charges then defibrillate x 1 if necessary using the following guidelines:
1. Monophasic defibrillator:
    - Shock at 360 joules.
  2. Biphasic defibrillator:
    - a. Device specific, but typically between 120-200 joules.
    - b. If device specific wattage is unknown, shock at 200 joules.
  3. Immediately resume CPR for two minutes.
- K. Consider Magnesium, loading dose 1-2 Gm IV/IO for Torsades de Pointes.
- L. Continue CPR and contact medical control physician for further orders.

<b>After Obtaining Verbal Orders</b>
<p>M. Consider additional doses of initial antiarrhythmic.</p> <p>N. Consider Sodium Bicarbonate for metabolic acidosis, tricyclic anti-depressant overdose or hyperkalemia.</p> <p>O. If there is no response to treatment consider termination of resuscitative efforts.</p>

## ISCHEMIC CHEST PAIN – ADULT

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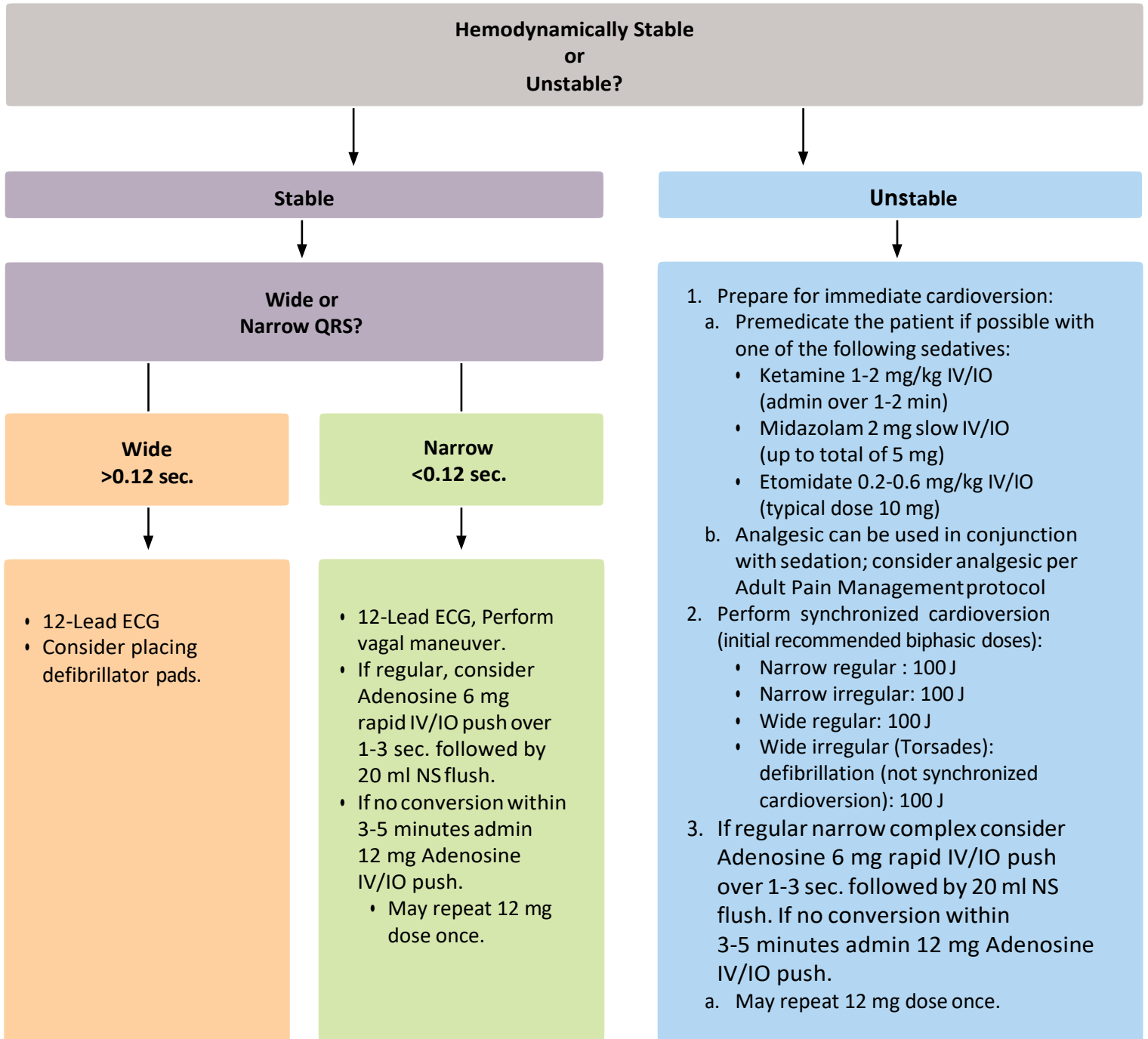
### Standing Orders

- A. Obtain 12-Lead ECG
- B. Administer:
  1. 325 mg Aspirin PO if the patient has no history of allergy to Aspirin (even in absence of chest pain)
  2. Nitroglycerin 0.4 mg SL tablet or one metered dose spray if the patient's systolic BP is greater than or equal to 100 (consult with medical control physician if systolic BP is less than 100). Check the BP immediately prior to and after administration of nitro.
- C. Establish IV access. If the patient has been loaded in the ambulance without IV access, begin transport promptly, with IV and all other interventions performed en route.
- D. Consider repeat/serial ECGs
- E. If there is no pain relief and the patient's systolic BP remains 100 or greater consider repeating nitro every five minutes. Recheck the patient's BP before and after administration.
- F. If pain persists after 3 nitro, systolic BP remains 110 or greater, AND there are ischemic changes on the ECG may administer morphine sulfate 2-10 mg IV/IO titrated to obtain pain relief while continuing to administer nitro every 5 minutes.
  - If the patient is allergic to morphine, may administer Fentanyl 1 mcg/kg (up to 100 mcg per single dose) IV/IO, or another service specific opioid.
- G. After administration of at least 3 nitro, if authorized and transport time is greater than 10 minutes, consider administration of nitro drip
  - Dependent on patient response and effective dose. Initial dose 10 mcg/min delivered by infusion pump. May be increased by 5-10 mcg/min every 5-10 minutes until desired hemodynamic or clinical response is achieved. If no response is seen, may increase by 20 mcg/min until response achieved. Monitor titration continuously until the patient reaches desired level of response. Monitor blood pressure and pulse closely maintaining systolic pressure greater than 100.
- H. If the patient meets the inclusion criteria as an ST Elevation Myocardial Infarction (STEMI) patient, as defined in the Metro Region STEMI Protocol, the patient should be transported to a designated Level I Cardiac Center except as allowed in the protocol. The receiving facility should be notified as soon as possible that the patient is a STEMI patient by stating in your radio/phone report "STEMI ALERT."
- I. Consider requesting diversion if the difference in transport times to requested hospital versus closest hospital is greater than 30 minutes.

**After Obtaining Verbal Orders**

- J. If the patient is a potential candidate for reperfusion therapy, consider diversion if the difference in transport times to requested hospital versus closest hospital is greater than 30 minutes.

# PERSISTENT TACHYARRHYTHMIA (≥ 150 bpm) WITH PULSES – ADULT



## **PULMONARY EDEMA – ADULT**

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### **Standing Orders**

- A. Do not delay nitro to establish IV access.
- B. Keep the patient's head elevated at all times. Begin oxygen therapy. If the patient's respiratory distress is severe, consider positive pressure ventilatory assistance if the patient is able to tolerate. Consider ET intubation, if authorized, if the patient's breathing is ineffective or if the Glasgow Coma Score is less than 8.
- C. Monitor the ECG closely for dysrhythmias secondary to hypoxia.
- D. Give nitroglycerin 0.4 mg SL tablet x 2 or metered dose spray SL x 2 if the patient's systolic BP is 140 or greater.
  1. Two minutes after the initial nitro dose, repeat nitroglycerin 0.4 mg SL or 1 metered dose spray if the patient still has signs of pulmonary edema and the systolic BP remains 140 or greater.
  2. Five minutes after the second dose, repeat nitroglycerin 0.4 mg SL or 1 metered dose spray if the patient still has signs of pulmonary edema and the systolic BP is 140 or greater.
- E. Give Aspirin 160-325 mg by mouth if the patient has no history of allergy.
- F. If the patient has no relief and their systolic BP remains 140 or greater:
  1. May repeat nitro every three to five minutes. Recheck the patient's BP before and after administration; or
  2. After administration of at least 3 nitro, if authorized and transport time is greater than 10 minutes, consider administration of nitro drip.
    - Dependent on patient response and effective dose. Initial dose 10 mcg/min delivered by infusion pump. May be increased by 5-10 mcg/min every 5-10 minutes until desired hemodynamic or clinical response is achieved. If no response is seen, may increase by 20 mcg/min until response achieved. Monitor titration continuously until the patient reaches desired level of response. Monitor blood pressure and pulse closely maintaining systolic pressure greater than 100.
- G. If available; consider CPAP if two or more of the following are present:
  - Retractions or accessory muscle use.
  - Pulmonary edema.
  - Respiratory rate greater than 25/min.
  - SpO<sub>2</sub> less than 92%.
  1. Administer CPAP per service medical director (device dependent).
  2. Assess the patient's response. If the patient's condition worsens, (e.g. the patient becomes hypotensive, decreased SpO<sub>2</sub>) discontinue CPAP.
  3. If CPAP is initiated, continue to treat with medications as normal

## **ROSC & CARDIAC COOLING – ADULT**

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### **Standing Orders**

For post-cardiac arrest Return of Spontaneous Circulation (ROSC):

- A. Initiate cardiac cooling measures if possible and if time allows and if patient meets the following criteria:
  - Patient must be 18 years of age or older.
  - Initial arrest appears to be a primary cardiac arrest (non-traumatic in origin).
  - Patient had ROSC in the field.
  - Patient is unconscious.
  - Patient has a BP greater than or equal to 90 systolic.
- B. Procedure - place standard chemical ice packs in the following locations:
  - One on the neck covering both carotid arteries.
  - One in each of the axillae.
  - One over each of the femoral vasculature in the groin.
  - Consider other cooling measures (e.g. removal of the patient's clothes, turn on the ambulance AC in the patient compartment and direct air flow over the patient).
- C. Advise the emergency department personnel upon arrival that you have initiated the cooling process.
- D. Glucose check if possible and if time allows.
- E. Obtain a 12-lead ECG if possible and time allows.
- F. If an Impedance Threshold Device has been applied, remove with ROSC.



## **SYMPTOMATIC BRADYCARDIA – ADULT**

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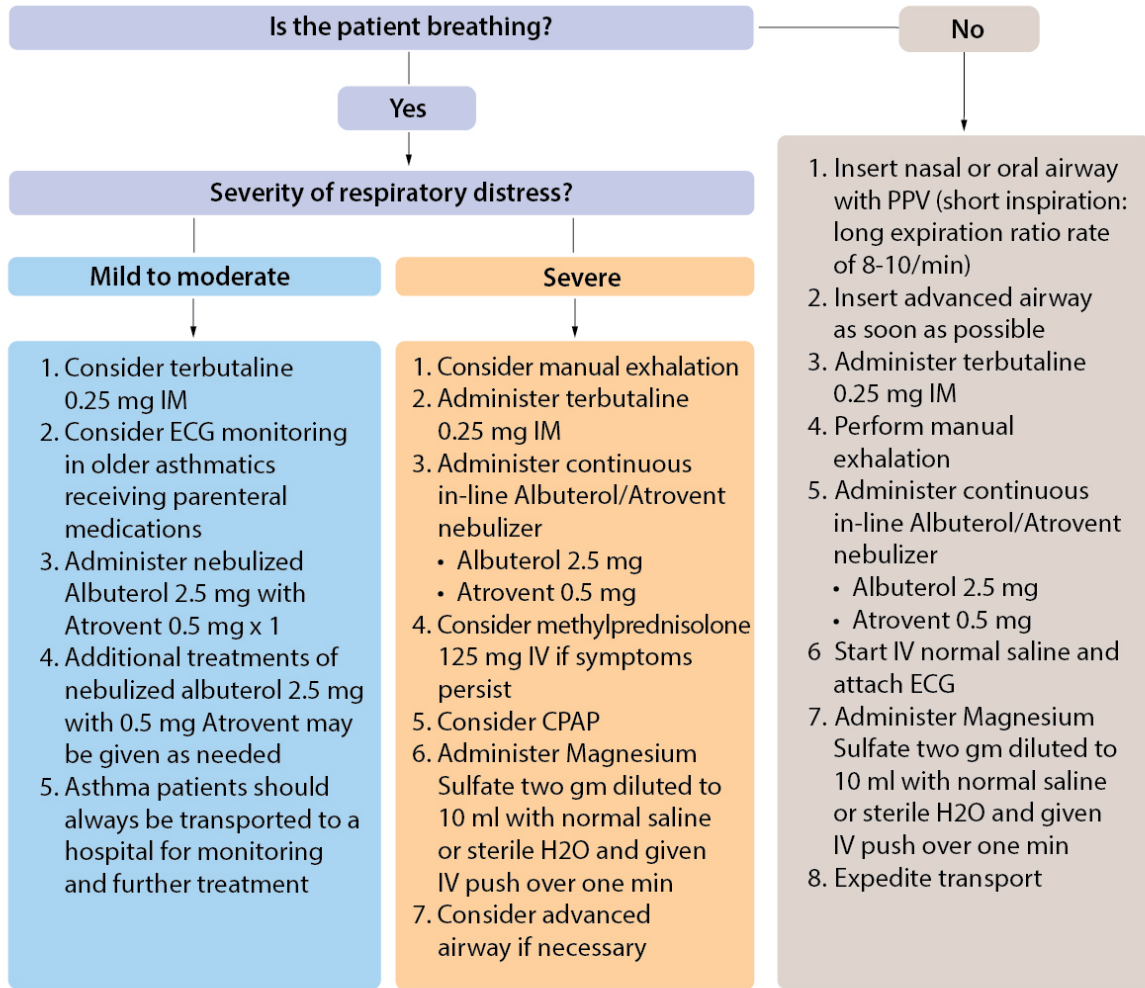
### **Standing Orders**

- A. Prepare for Transcutaneous Pacing. Consider sedation; use without delay for high degree block (type II second-degree block or third-degree AV block).
- B. Consider atropine 1.0 mg IV/IO while waiting for pacer. May repeat to a total dose of 3 mg. If atropine is ineffective, begin pacing.
- C. Treat contributing causes.

## **3300 RESPIRATORY EMERGENCIES – ADULT**



**Asthma attack – adult**



## **COPD (ACUTE EXACERBATION) – ADULT**

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### **Standing Orders**

If the patient has a history of COPD and is symptomatic (presence of wheezing alone does not indicate COPD), en route to hospital, the following may be administered:

- A. Use a nasal cannula at 2 – 3 liters per minute initially. Oxygen may need to be increased if the patient's oxygenation status worsens.
  - When a patient is already on oxygen, EMS oxygen therapy flow rate should not start at a lower rate than the patient's current rate.
- B. Oxygen flow should be titrated to a target SpO<sub>2</sub> (if pulse oximetry is available) of 93%.
  - Does not apply to patients on CPAP.
- C. May give nebulized albuterol 2.5 mg with ipratropium bromide (Atrovent) 0.5 mg added.
- D. May repeat nebulized albuterol 2.5 mg with ipratropium bromide (Atrovent) 0.5 mg x 1.
- E. Consider methylprednisolone 125 mg IV if severe symptoms persist.
- F. If available; consider CPAP if two or more of the following are present:
  - Retractions or accessory muscle use.
  - Pulmonary edema.
  - Respiratory rate greater than 25 per minute.
  - 1. SpO<sub>2</sub> less than 92%.
  - 2. Administer CPAP per service medical director (device dependent).  
Assess the patient's response. If the patient's condition worsens, (e.g. the patient becomes
  - 3. hypotensive, decreased SpO<sub>2</sub>) discontinue CPAP.  
If CPAP is initiated, continue to treat with medications as normal.

<b>After Obtaining Verbal Orders</b>
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- |   |
|---|
| F. Treatment based on patient history and physical exam findings. |
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**KNOWN OUTBREAK OF TRANSMITTABLE RESPIRATORY ILLNESS (PATIENT IS BREATHING)  
– ADULT**

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To be used for patients with known or suspected transmittable respiratory illnesses (e.g. Severe Acute Respiratory Syndrome (SARS), tuberculosis, epidemic influenza, etc.), in the presence of a known outbreak. This would include patients who have a febrile illness with cough.

**Standing Orders**

- A. Protect yourself and crew with gowns, gloves and N95 mask/Powered Air Purifying Respirators (PAPR) and eye protection.
- B. Begin oxygen therapy by mask. If oxygen is not needed then place a surgical mask on the patient
- C. For wheezing give albuterol metered dose inhaler (MDI) 2 puffs or via breath actuated nebulizer (i.e. AeroEclipse), may repeat x 1. Additional treatment may be given every 15 minutes thereafter as needed
- D. If available, consider Continuous Positive Airway Pressure (CPAP) when two or more of the following are present:
  - Retractions or accessory muscle use
  - Pulmonary edema
  - Respiratory rate greater than 25/minute
  - SpO<sub>2</sub> less than 92%
  1. Administer CPAP (device dependent, per service medical director)
  2. Assess patient response
  3. If the patient's condition worsens, (e.g. patient becomes hypotensive, decreased SpO<sub>2</sub>) discontinue CPAP
  4. Contact receiving hospital for isolation room preparations
- E. For patients in moderate to severe respiratory distress, may administer on-site terbutaline 0.25 mg IM or epinephrine 0.5 (1:1,000) mL IM.

<b>After Obtaining Verbal Orders</b>
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- |  |
|--|
| <ul style="list-style-type: none"><li>F. If not already given, consider terbutaline 0.25 mg IM.</li><li>G. May repeat albuterol immediately for moderate to severe distress.</li></ul> |
|--|

## **KNOWN OUTBREAK OF TRANSMITTABLE RESPIRATORY ILLNESS (PATIENT IS NOT BREATHING) – ADULT**

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To be used for patients with known or suspected transmittable respiratory illnesses (e.g. Severe Acute Respiratory Syndrome (SARS), tuberculosis, epidemic influenza, etc.), in the presence of a known outbreak. This would include patients who have a febrile illness with cough.

### **Standing Orders**

- A. Protect yourself and crew with gowns, gloves and N95 masks/Powered Air Purifying Respirators (PAPR) and eye protection.
- B. Insert oral airway and begin positive pressure ventilation.
- C. Insert ET tube or other airway control device as authorized, as soon as possible. Use face shield (or Powered Air Purifying Respirator if wearing one) for your eye protection during intubation.
  - May administer terbutaline 0.25 mg IM or epinephrine 0.5 (1:1,000) mL IM.
- D. See the [EMSRB website](http://www.emsrb.state.mn.us) (<http://www.emsrb.state.mn.us>) for the “EMS Exposure/Special Pathogen Situation Response Guide” for further information.

## **TENSION PNEUMOTHORAX – ADULT**

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### **Standing Orders**

- A. Begin appropriate oxygen therapy. ET intubate, if authorized, for severe distress and/or ineffective breathing.
- B. Consult with a medical control physician immediately if a tension pneumothorax is suspected.

<b>After Obtaining Verbal Orders</b>
<ol style="list-style-type: none"><li>C. Consider needle thoracostomy if there is strong evidence of a tension pneumothorax (i.e. increased respiratory distress, weak rapid pulse, cyanosis, hypotension, uneven chest wall movement and decreased lung sounds on affected side).<ul style="list-style-type: none"><li>• Perform a needle thoracostomy at the second intercostal space, midclavicular line of affected side.</li></ul></li><li>D. Treatment based on patient history and physical exam findings.</li></ol>





## **3400 MEDICAL EMERGENCIES – ADULT**



## **ANAPHYLAXIS/ALLERGIC REACTION – ADULT**

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### **Standing Orders**

- A. For signs and symptoms consistent with anaphylaxis:
  - 1. Administer 1:1000 epinephrine 0.3-0.5 mg IM or one adult EpiPen IM; may repeat as needed every five to ten minutes
  - 2. Manage airway as appropriate
  - 3. Obtain vascular access
  - 4. Administer diphenhydramine HCL (Benadryl) 50 mg IV/IO/IM
  - 5. Consider 500 ml NS bolus age 18-65 (250 ml NS bolus age greater than 65 or history of CHF)
  - 6. If bronchospasm/wheezing exists after administration of epinephrine consider administering albuterol 2.5 mg mixed with ipratropium bromide (Atrovent) 0.5 mg via nebulizer. If there is no improvement, may nebulize continuously with albuterol 2.5 mg
- B. For signs and symptoms consistent with a mild allergic reaction consider diphenhydramine (Benadryl) 50 mg IV/IO/IM

## **BEHAVIORAL EMERGENCIES – ADULT**

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### **Standing Orders**

- A. Assess the severity of the patient's agitation.
- B. Consider available resources and situational factors when determining action plan and need for sedation.
- C. Consider de-escalation techniques when appropriate.
  - If sedation is needed, an IV route of administration may be used if one already exists. However, DO NOT attempt to place an IV in an agitated patient.
- D. If sedation is needed, the following sedatives may be considered:

#### **PO SEDATION MEDICATIONS:**

- Olanzapine ODT (Zyprexa/Zydis) 5-10 mg  
**OR**
- Risperidone M-Tab (Risperdal) 2-4mg

#### **IV/IM SEDATION MEDICATIONS:**

- Midazolam HCL (Versed) 5 mg IV/IO/IM  
**AND/OR**
  - Haloperidol (Haldol) 5-10 mg, IV/IO/IM (dosage based on the patient's age and/or weight)  
**OR**
  - Lorazepam (Ativan) 2 mg IV/IO/IM  
**AND/OR**
  - Haloperidol (Haldol) 5-10 mg, IV/IO/IM (dosage based on the patient's age and/or weight)  
**OR**
  - Droperidol 5-10 mg IV/IO/IM  
**OR**
  - Olanzapine (Zyprexa) 5-10 mg IV/IO/IM  
**OR**
  - Ketamine 5 mg/kg IM (if IV already established, may give 2 mg/kg IV/IO)
- E. Once sedation has been administered, place the patient in a position where monitoring of condition and application of monitoring equipment can be accomplished. Restraints may be used if necessary to ensure the continued safety of the patient and providers.
  - F. Monitor the airway and be prepared to provide respiratory support including suctioning, oxygen, and intubation.
  - G. If ketamine has been administered be alert for laryngospasm (presents as stridor, abrupt cyanosis/hypoxia early in sedation period). If laryngospasm occurs, perform the following in sequence until the patient is ventilating, then support as needed:
    - 1. Provide jaw thrust and oxygen
    - 2. Attempt Bag Valve Mask (BVM) ventilation
    - 3. Attempt intubation (per individual service protocol). Vocal cords are likely to be closed if not paralyzed and there may be a need for intubation over the gum bougie/tracheal tube introducer.
    - 4. If hypersecretion is present, consider Atropine 0.1-0.3 mg IV/IO or 0.5 mg IM
  - H. Consider IV access once sedation is sufficient to allow it. If IV is already present then administer Normal Saline wide open up to 1 liter
  - I. Consider Sodium Bicarbonate 1 amp IV/IO push
  - J. Rapid transport at earliest opportunity

## **BEHAVIORAL EMERGENCIES – ADULT**

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### **Standing Orders**

<b>After Obtaining Verbal Orders</b>
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For continued agitation, consider contacting a medical control physician for further orders.
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## **CARBON MONOXIDE (CO) POISONING – ADULT**

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### **Standing Orders**

- A. Begin high-flow oxygen therapy
- B. Monitor the ECG
- C. See patient disposition guideline for CO Poisoning transport decisions

<b>After Obtaining Verbal Orders</b>
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|--|
| D. Consider transport directly to Hennepin County Medical Center for hyperbaric oxygen therapy |
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## **CEREBRAL VASCULAR ACCIDENT (CVA) – ADULT**

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### **Standing Orders**

- A. Assess ABCs and vital signs
- B. Provide oxygen via nasal cannula and establish IV access
- C. Check blood glucose level and treat if indicated
- D. If Cincinnati Prehospital Stroke Scale (includes: difficulty speaking, arm weakness and facial droop) is positive (abnormal findings on the Scale), and:
  1. If time of symptom onset is known to be within 24 hours, then:
    - expedite transport,
    - use “Stroke Alert” in radio report, and
    - give time of symptom onset in clock time (e.g. 2:30 pm)
  2. If time of symptom onset is known to be greater than 24 hours, then:
    - don’t use “Stroke Alert” in radio report, but do
    - state time of symptom onset (e.g. 2:30 pm) in your radio report
  3. If time of symptom onset is unknown (e.g. “wake up” stroke or patient is unable to communicate), then:
    - expedite transport,
    - use “Stroke Alert” in radio report,
    - state “unknown symptom onset time,” and
    - document last known well time on your PCR
  4. Consider diversion if the difference in transport times to the requested hospital versus the closest hospital is greater than 30 minutes
- E. Obtain ECG (12-lead ECG if practical)



## **CHEMICAL EYE INJURIES – ADULT**

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### **Standing Orders**

- A. Attempt to remove the patient's contact lenses, if present.
- B. Instill ophthalmic anesthetic (for example, proparacaine HCL, 0.5% solution), 1-2 drops, into the affected eye(s). May be repeated only once
- C. Immediately and continuously flush the affected eye(s)
- D. Paramedics may insert Morgan lenses for irrigation if authorized

## **CHOLINERGIC EXPOSURE – ADULT**

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Hennepin County EMS Units are equipped with Duodote (Atropine 2.1mg/Pralidoxime 600mg) kits primarily for treatment of responders. Chempack assets for mass casualty events can be activated via MRCC. Each Chempack treats up to 1000 patients using Mark 1 kits (same as Duodote but separate injectors for atropine and pralidoxime), Atropens (atropine for pediatric dosing), and diazepam auto-injectors for seizures.

- Note – Chempack may contain Duodotes in the future and pediatric atro-pens may be eliminated.

Common cholinergic agents include: Carbamates (carbofuran (Fursban), etc.), Nerve gas agents (sarin, tabun, VX, etc.), and Organophosphates (parathion, diazinon, malathion, chlorpyrifos (Dursban), etc.).

### **Standing Orders**

- A. Recognize a toxidrome: Miosis (small pupils) present in ALL significant exposures in association with at least two of the following:
  - Fasciculations
  - Respiratory distress
  - Increased secretions
  - Vomiting/diarrheas/incontinence
  - Seizure
  - Cardiovascular collapse
- B. Request CHEMPACK activation from MRCC if mass casualty incident.
- C. Wear appropriate personal protective equipment; do NOT enter the hot zone.
- D. Assure appropriate patient decontamination measures if liquid or vapor exposures have occurred (in concert with fire department/HazMat).
- E. Assess the patient's ABCs and begin oxygen therapy if possible; intubate if needed (may have high airway resistance).
- F. Treat seizures per protocol with midazolam (or CHEMPACK – 10 mg diazepam auto-injectors).
- G. In cases of known organophosphate overdose/exposure or in a setting of a multiple casualty incident (MCI) with patients exhibiting this toxidrome:
  1. Administer Atropine 2-5 mg IV/IO/IM; repeat as necessary to control bronchial secretions or (CHEMPACK - Atropine IM 2 mg auto-injectors).
  2. For patients with seizures, severe shortness of breath, and cardiovascular collapse administer:
    - 2 Duodote auto-injector kits (600 mg Pralidoxime, 2.1 mg Atropine) or 2 Mark 1 kits (CHEMPACK).
  3. Paramedics may administer one additional Duodote or Mark 1 kit after ten minutes if the patient continues to exhibit severe symptoms and no IV access has been established.
  4. Consider aggressive management of cardiac arrest if resources allow.

## DIABETIC EMERGENCIES – ADULT

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### Standing Orders

- A. Determine blood glucose level.
- B. HYPERGLYCEMIA - If the patient's blood glucose level is greater than 400 mg/dL and the patient is symptomatic:
  - 1. Obtain IV access.
  - 2. Give 500 ml NS bolus age 18-65 (250 ml NS bolus age greater than 65 or history of CHF) transport.
- C. HYPOGLYCEMIA - If blood glucose level is less than 60 mg/dL and the patient is symptomatic:
  - 1. If the patient is conscious, give sugar: 50 ml of D50W or 80 Gm of oral glucose.
  - 2. If the patient is unable to take oral fluids due to an altered level of consciousness:
    - a. Obtain IV access.
    - b. Administer 50 ml D50W IV/IO.
    - c. May administer glucagon 1 mg IM if IV access is difficult or impossible to establish.
  - 3. For adult patients who have experienced a hypoglycemic event and refuse medical transportation, see the [Diabetic Patient Refusal of Transport - Adult](#) protocol.

<b>After Obtaining Verbal Orders</b>
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| <ul style="list-style-type: none"><li>4. Consider transport of all patients on oral hypoglycemic agents or long-acting insulin.</li></ul> |
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## **DRUG OVERDOSE – ADULT**

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### **Standing Orders**

- A. Begin oxygen therapy.
- B. Tricyclic overdoses requiring respiratory support should be ventilated with high flow O<sub>2</sub> via bag-valve-mask device.
- C. For any patient with a respiratory rate less than eight, or a patient history of or physical findings consistent with opioid overdose, assist the patient's ventilation and consider administration of up to 2 mg naloxone (Narcan) IV/IO/IM.
  - Due to the relatively short half-life of naloxone (Narcan), patients that respond favorably to naloxone (Narcan) administration should still be considered under the influence and transported on a peace/health officer (aka transport) hold regardless of their mental status and/or refusal of care.
- D. For all suspected tricyclic overdoses, monitor ECG.

<b>After Obtaining Verbal Orders</b>
<ul style="list-style-type: none"><li>E. Consider additional naloxone (Narcan) up to 10 mg.</li><li>F. Consider sodium bicarbonate 50 mEq IV/IO for tricyclic ingestion.</li><li>G. Consider glucagon 1 mg IV/IO for known beta blocker overdose.</li><li>H. Consider calcium chloride 1 Gm for known calcium channel blocker overdose with hypotension or bradycardia.</li></ul>

## **ENVIRONMENTAL HYPERTHERMIA – ADULT**

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### **Standing Orders**

- A. Begin cooling measures:
- B. If the patient is confused or unconscious, start an IV normal saline (NS)
- C. Give 500 ml NS bolus age 18-65 (250 ml NS bolus age greater than 65 or history of CHF)
- D. Transport lights and siren, monitoring ECG en route

## **HYPERKALEMIA – ADULT**

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### **Standing Orders**

- A. For patients with:
  - 1. Signs of hyperkalemia based on known EKG findings;
  - 2. Hemodynamic instability due to known or suspected hyperkalemia;
  - 3. Cardiac arrhythmia or instability due to known or suspected hyperkalemia;
  - 4. Patients at risk for hyperkalemia (renal failure, dialysis, or diabetic ketoacidosis); or
  - 5. Laboratory confirmed hyperkalemia.
- B. Begin oxygen therapy
- C. Monitor the patient's ECG rhythm for wide QRS complex
- D. Administer continuous nebulized albuterol
- E. Obtain IV/IO access
- F. Contact a medical control physician

<b>After Obtaining Verbal Orders</b>
<ul style="list-style-type: none"><li>G. Consider calcium chloride 10 ml (1 Gm) IV/IO or more if indicated, over 5 minutes</li><li>H. Consider sodium bicarbonate 50 mEq IV/IO.</li><li>I. Other treatments based on the patient history and physical exam findings.</li></ul>

## HYPOTHERMIA – ADULT

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### Standing Orders

- A. Standing orders for all hypothermic patients:
1. Remove wet garments.
  2. Protect against further heat loss and wind chill (use blankets and insulating equipment).
  3. Maintain the patient in a horizontal position.
  4. Avoid rough movement and excess activity.
  5. Monitor the patient's cardiac rhythm.
  6. Assess responsiveness, breathing and pulse.
  7. Do a pulse check for 30-45 seconds (clinical signs of death may be misleading).
- B. Pulse and breathing present:
1. Begin oxygen therapy.
  2. Begin transport immediately.
  3. Obtain IV access in route.
  4. Monitor ECG.
  5. Rewarming:
    - Mild hypothermia (temperature greater than or equal to 92° F or if the patient is shivering) - Passive rewarming, active external rewarming.
    - Moderate hypothermia (temperature greater than or equal to 86° F to less than 92° F, or if patient is shivering) - Passive rewarming, active external rewarming to truncal areas only (neck, armpits, groin).
    - Severe hypothermia (temperature less than 86° F) - Transport for active internal rewarming.
- C. Pulse and breathing not present - Generally, CPR should not be initiated if the patient:
1. Is known to have been submerged (head under water) in cold water for more than 90 minutes.
  2. Has obvious signs of death (e.g. decapitation, slippage of skin, animal predation).
  3. Is frozen (e.g. ice formation in the airway).
  4. Has a chest wall that is so stiff that compressions are impossible.
- D. For pulseless patients with or without an organized ECG rhythm who do not meet criteria in part C and resuscitation efforts are initiated:
1. Begin CPR.
  2. For VF/Pulseless VT, defibrillate once as prescribed by current AHA ACLS guidelines. See the [Cardiac Arrest \(V-FIB and Pulseless V-Tach\) - Adult](#) protocol.
    - Withhold medication treatments and further shocks and transport immediately.
  3. Obtain IV access.
  4. Warm packs should not be used.

**After Obtaining Verbal Orders**

E. Paramedics may consider cardiac arrest drugs and defibrillation but they are usually not effective until hypothermia is corrected.



## LABOR AND DELIVERY – ADULT

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### Standing Orders

- A. If imminent delivery is not present, transport the patient in a position of comfort, usually on the patient's left side
- B. If authorized, may consider patient self-administration of nitrous oxide for pain relief if no contraindications are present
- C. If in question of imminent delivery, observe briefly, then transport unless delivery is in progress
  - Be prepared to stop the ambulance if delivery occurs en route
- D. If delivery is in progress:
  1. Assist delivery using clean technique
  2. Suction the infant only if needed to clear obvious obstructions
  3. Protect from heat loss
  4. If no need for immediate resuscitation, wait 30-60 seconds then double clamp and cut the umbilical cord approximately 8-10 inches from the infant
  5. Term infants (> 37weeks) who are crying (good respiratory effort) and have good muscle tone can be given to the mother to nurse with continued warming efforts and re-assessment.
    - For all others see [Newborn Emergencies – Pediatric](#) protocol
  6. Transport; do not wait for nor attempt delivery of the placenta
  7. Closely observe the infant for signs and symptoms of distress and monitor the mother for excessive postpartum bleeding
  8. If complication arise, see the [Newborn Emergencies – Pediatric](#) protocol

## **OBSTETRIC COMPLICATIONS – ADULT**

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### **Standing Orders**

- A. Begin oxygen therapy and administer high flow O<sub>2</sub> by mask for any complications
- B. Immediate transport for:
  - Prepartum or postpartum hemorrhage (moderate to heavy)
  - Limb presentation
  - Prolapsed umbilical cord
  - Known multiple fetuses
  - Previous cesarean section
- C. Start an IV Normal Saline in route
- D. If the patient is hypotensive, position on the left side and/or push the uterus to the patient's left side
- E. For postpartum hemorrhage:
  - Massage the uterus gently
- F. For prolapsed umbilical cord:
  1. Place the mother in a position to minimize pressure on the cord (e.g. the knee-chest position or Trendelenburg)
  2. Insert a gloved finger into the vagina and hold the presenting part off of the umbilical cord
  3. Do not touch or attempt to replace the umbilical cord
- G. Suspected eclampsia (20 weeks gestation with hypertension, or up to 7 days postpartum) – If patient is seizing with no known history of epilepsy/seizure disorder, administer 4 Gm mag sulfate IV/IO over 10 minutes.
- H. For infant distress, see the [Newborn Emergencies - Pediatric](#) protocol
- I. Contact a medical control physician for further orders for any complication

## **SEPSIS – ADULT**

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### **Standing Orders**

- A. Consider sepsis if you suspect the patient has an infection plus two of the following:
  - 1. Systolic blood pressure less or equal to 100; or
  - 2. Respiratory rate greater than or equal to 22; or
  - 3. Altered mental status (e.g. GCS less than or equal to 14).
- B. If the patient meets sepsis criteria in A:
  - 1. Administer 500 ml NS bolus age 18-65 (250 ml NS bolus age greater than 65 or history of CHF). May repeat up to 30 ml/kg to treat hypotension.
  - 2. If positive for suspected sepsis, the receiving facility should be notified as soon as possible by stating in your radio/phone report "SEPSIS ALERT."

## **SEVERE NAUSEA AND/OR VOMITING – ADULT**

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### **Standing Orders**

If the patient has severe nausea and/or vomiting:

- A. Obtain IV access.
- B. Administer ondansetron (Zofran) 4 mg IV/IO (age greater than 12) slowly over 1-2 minutes or IM may be used if available.
  - May repeat ondansetron (Zofran) dose once
  - Alternate antiemetics, selected by the service medical director, may be used at recommended dosages as an alternative for severe nausea or vomiting
- C. Consider administration of:
  - 500 ml NS bolus age 18-65 (250 ml NS bolus age greater than 65 or history of CHF)
  - Droperidol 1.25 - 2.5 mg IV/IO/IM

## **SHOCK (NON-TRAUMATIC) – ADULT**

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### **Standing Orders**

- A. Begin oxygen therapy
- B. Begin transport immediately
- C. Start a normal saline (NS) IV en route
- D. Give 500 ml NS bolus age 18-65 (250 ml NS bolus age greater than 65 or history of CHF)
  - Goal should be BP of 90-100 systolic or improvement of clinical indicators

<b>After Obtaining Verbal Orders</b>
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| E. Consider requesting additional fluid orders for volume loading for hypotension |
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## **STATUS SEIZURES – ADULT**

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### **Standing Orders**

- A. Position the patient to maintain an open airway
- B. Begin oxygen therapy
- C. If the seizure is ongoing greater than 5 minutes:
  1. Administer Midazolam (Versed);
    - IV/IO/Intra Nasal = 5 mg,
    - IM (if unable to start an IV) = 10 mg,
    - May repeat Midazolam (Versed) dose x 1 after 3 minutes for persistent seizure; or
  2. Consider lorazepam (Ativan);
    - IV/IO = 2 mg,
    - May repeat lorazepam (Ativan) dose x 1 after 3 minutes for persistent seizure
- D. Be prepared to support respirations
- E. Determine the patient's blood glucose level and treat hypoglycemia per protocol

## **4000 GENERAL PROTOCOLS – PEDIATRIC**





## **GENERAL PROTOCOLS – PEDIATRIC**

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Age limits for pediatric patients must be flexible. For patients less than 13 years of age, pediatric orders should always apply. Between the ages of 13 and 18 judgment should be used, although the pediatric orders will usually apply. It is recognized that the exact age of a patient is not always known.

- A. Parents should be allowed to stay with children during the evaluation and transport, if appropriate. The parent's lap is usually the best place for the examination of a stable patient
- B. Paramedics may follow dosage and equipment recommendations listed on the Broselow Tape

## **AIRWAY MANAGEMENT – PEDIATRIC**

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### **Standing Orders**

- A. Bag Valve Mask (BVM) – Consider an oropharyngeal or nasopharyngeal airway of appropriate size on all unconscious patients for initial airway maintenance
- B. Endotracheal intubation – After endotracheal intubation, tube position must be confirmed using at least two methods, including continuous end-tidal carbon dioxide (CO<sub>2</sub>) detection and a second device or method to confirm tube placement
- C. Alternate Advanced Airway Device – Services may use alternative advanced airway control devices (such as supraglottic airways) as specified by the ambulance service’s medical director. After placement of an alternate advanced airway device, place continuous end-tidal carbon dioxide (CO<sub>2</sub>) detection device on the tube.
- D. Other advanced airway interventions – Not required, but sanctioned by the EMS system, are rapid sequence endotracheal intubation and the establishment of surgical airways (i.e., transtracheal needle ventilation and cricothyrotomy) for patients that cannot be ventilated by any other means.
- E. Pulse Oximetry – A pulse oximeter should be used for any patient with suspected hypoxemia, in respiratory distress, or whenever sedating medications are administered.

## **INTRAVENOUS (IV) THERAPY – PEDIATRIC**

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### **Standing Orders**

Not every patient requires an IV. When indicated, intravenous fluid therapy should be administered in accordance with the following guidelines:

- A. For most patients requiring IV access, the paramedic has the option of either running fluids through the IV or capping the catheter with a saline lock. However, as specified in these Medical Protocols, IV fluids must always be hung in either situations:
  - When the administration of multiple IV medications is anticipated.
  - Whenever it is likely the patient will require fluid volume replacement.
- B. There should be no delay at the scene for IV attempts on major trauma patients or patients in shock; these IVs should be started during transport.
- C. Intraosseous infusion (IO) is a procedure for use in patients who are in critical condition when IV access is unobtainable.
- D. Paramedics may access a Peripherally Inserted Central catheter (or PIC line) if the patient has one in place as an alternate IV access point.
- E. Paramedics may access a central line if the patient is in cardiac arrest. The cap on the central line must be cleansed with alcohol and then 15-20 ml of fluid and blood must be aspirated from the central line before initiating IV fluids. If unable to aspirate, the central line should not be used.

## **PAIN MANAGEMENT – PEDIATRIC**

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This protocol is to be used to provide relief of pain when indicated for pediatric patients. This protocol is NOT to be used in cases where the patient meets any of the following:

- Is hypotensive (i.e. clinical signs of poor perfusion, capillary refill greater than two seconds)
- Complains of abdominal pain
- Has sustained a head injury
- Has pain determined to be cardiac in origin
- Is in active labor

### **Standing Orders**

- A. Assess the patient's pain on 0-10 scale if possible or use other scale if necessary.
- B. Inform the patient and/or guardians that pain is an important diagnostic parameter and the goal of this protocol is to relieve suffering, not totally eliminate pain
- C. Administer one of the following service dependent medications:
  1. Morphine Sulfate x 1 at 0.1 mg/kg IV/IM/SQ (up to maximum dose of 5 mg) If pain is of a traumatic origin (non-cardiac), consider Ketamine:
    - IV/IO route 0.2 mg/kg (maximum dose 50 mg); may repeat every 15 minutes. Reassess the patient's pain scale and if necessary administer a second dose 0.2 mg/kg IV/IO
    - IM route 0.4 mg/kg (maximum dose 50 mg); may repeat every 30 minutes. Reassess the patient's pain scale and if necessary administer a second dose 0.4 mg/kg IM
  2. Nasal Fentanyl
    - a. 1mcg/kg (up to 100mcg per single dose) IV/IO/IM/IN
      - Intranasal administration should not exceed 0.5ml per nostril
    - b. May repeat 0.5mcg/Kg IV/IO/IM/IN (up to 50 mcg/repeat dose) every 10 min, not to exceed cumulative dose of 200mcg
  3. Inhaled Nitronox may be used as an alternative if available
    - NOTE: Refer to pediatric reference (e.g., Broselow Tape) if assistance is needed with pediatric vital signs or drug dosage calculations.
- D. Monitor the patient's vital signs. If respiratory depression or hypotension occurs after administration of Morphine Sulfate, ventilate the patient as necessary and administer naloxone (Narcan) 0.01 mg/kg IV (up to a maximum dose of 0.4 mg)

<b>After Obtaining Verbal Orders</b>
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| E. Consider initial or additional pain medication as appropriate. |
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## **4100 TRAUMATIC EMERGENCIES – PEDIATRIC**



## **AMPUTATIONS – PEDIATRIC**

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### **Standing Orders**

#### **A. Patient:**

1. Control hemorrhage and cover stump with sterile dressing saturated with saline.
2. Treat as per protocol for Pediatric Shock.
3. Do not spend excessive time looking for the amputated part if the patient is unstable.

#### **B. Amputated Part:**

1. Wrap the amputated part in sterile gauze.
2. Moisten with saline.
3. Place in plastic bag.
4. Place on top of ice, if available, or cold packs (do not freeze).

## **BURNS – PEDIATRIC**

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### **Standing Orders**

- A. Consider direct transport to a burn center for major burns. See the [Patient Disposition - Major Burns](#) protocol. Hospitals in the Twin Cities Metro area with a burn unit include:
- Hennepin County Medical Center
  - Regions Medical Center
- B. Major burn criteria includes:
- Partial-thickness burns greater than 10% of total body surface area.
  - Partial-thickness or third degree burns that involve the face, hands, feet, genitalia, perineum, or major joint.
  - Third degree burns in any age group.
  - Lightning injury and other electrical burns.
  - Chemical burns.
  - Inhalation injury.
  - Burn in any patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality.
- C. For any significant burn:
1. Begin oxygen therapy. Use positive pressure ventilatory assistance as needed.
  2. Obtain IV access.
- D. If less than 20% of the body surface is burned:
1. Apply sterile dressings and saturate with cool water (leave Gel-pack(s) in place if applied by first responders).
  2. Do not allow any burn patient to become chilled and begin shivering.
- E. If more than 20% of the body surface is burned:
1. Remove any non-adherent burned clothing and cover the patient with a sterile sheet.
  2. Give 20 mL/kg NS bolus.
  3. Do not cool down with water (exception: presence of smoldering clothes, articles or material adhering to skin that would continue the burning process, e.g., hot tar, etc.).
  4. Begin rapid transport and contact a medical control physician for further orders and destination decision.
  5. Consider direct transport to a burn center for major burns.
  6. Consider pain management per protocol. See the [Pain Management - Pediatric](#) protocol.
  7. Nitronox should not be used for pain relief if the burn involves the face, respiratory tract or if other contraindications for Nitronox administration are present.
  8. Monitor the patient's ECG after any electrical burn including a lightning strike.



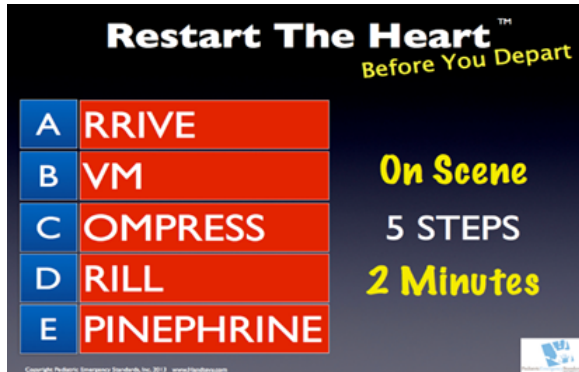
## **4200 CARDIAC EMERGENCIES – PEDIATRIC**



## CARDIAC ARREST (ASYSTOLE/PEA) – PEDIATRIC

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### Standing Orders



- A. Complete a rapid scene survey observing for any indications or any evidence that resuscitation should not be attempted (e.g., DNR orders or conditions incompatible with life).
- B. If cardiac arrest occurs in the presence of the ambulance crew, assess the patient's cardiac rhythm and continue with the appropriate protocol.
- C. If the patient is in cardiac arrest on arrival of the ambulance crew:
  1. Institute or continue BLS
  2. CPR: compressions 100/min, breaths 20-30/min. Do not over ventilate
  3. Reassess the patient's rhythm after every 5 cycles (2 minutes) of CPR. Limit interruptions in CPR during pulse/rhythm checks to less than 10 seconds for airway insertion and/or administration of medications
  4. During CPR, administer epinephrine IV/IO, 0.01 mg/kg every 3-5 min. (1:10,000, 0.1 mL/kg)
- D. Assess and confirm the patient's cardiac rhythm, immediately resume CPR.
- E. Review the most frequent causes for PEA, treat according to protocols if present:
  1. Hypovolemia – fluids
  2. Hypoxia – ventilation and oxygenation
  3. Hypothermia – re-warming. See the [Hypothermia – Pediatric](#) protocol
  4. Hypoglycemia – check blood sugar and if <60 mg/dL treat per Hypoglycemia protocol

### Consider Obtaining Verbal Orders for:

5. Acidosis – NaHCO
6. Hyperkalemia – CaCl & NaHCO
7. Tension pneumothorax – needle chest decompression
8. Drug overdose – intubation & specific antidote
9. Coronary thrombosis – 12-lead ECG

### No Specific Prehospital Treatment for:

10. Hypokalemia
11. Cardiac tamponade
12. Pulmonary embolism

- F. Secure the patient's airway during the pulse check. Continue CPR immediately then confirm tube placement by exam and confirmation device
- G. Obtain IV access while providing two minutes of continuous CPR
- H. Provide continuous CPR and reassess, checking the patient's pulse/rhythm every two minutes.
- I. Contact medical control physician for further orders.

<b>After Obtaining Verbal Orders</b>
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| K. If no response consider termination of resuscitative efforts. |
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## **CARDIAC ARREST (V-FIB AND PULSELESS V-TACH) – PEDIATRIC**

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### **Standing Orders**

- A. If cardiac arrest occurs in the presence of the ambulance crew, assess the patient's rhythm and defibrillate x 1 if necessary (energy rates as prescribed by current AHA ACLS guidelines; e.g., 2 J/kg.).
- B. If the patient is in cardiac arrest on arrival of the ambulance crew, institute or continue BLS:
  1. CPR: compressions 100/min, breaths 20-30/min. Do not over ventilate.
  2. Reassess the patient's rhythm after every 5 cycles (2 minutes) of CPR. Limit interruptions in CPR during pulse/rhythm checks to less than 10 seconds for airway insertion and/or administration of medications.
- C. Reassess the patient's cardiac rhythm after 5 cycles (2 minutes) of CPR; if a shockable rhythm is present, continue CPR while the defibrillator charges then defibrillate x 1 (energy rates as prescribed by current AHA ACLS guidelines; e.g., 2 J/kg.).
- D. Continue CPR immediately and secure the patient's airway during the pulse check, then confirm tube placement by exam and confirmation device.
- E. Obtain IV access while providing two minutes of continuous CPR. Transport early if no readily accessible IV/IO access.
- F. During CPR, administer epinephrine IV/IO 0.01 mg/kg (1:10,000, 0.1 mL/kg) every 3-5 min.
  - NOTE: Refer to pediatric reference (e.g., Broselow Tape) if assistance is needed with drug dosage calculations for pediatric patients.
- G. Reassess the patient's cardiac rhythm after 5 cycles (2 minutes) of CPR; if a shockable rhythm is present, continue CPR while the defibrillator charges then defibrillate x 1 (energy rates as prescribed by current AHA ACLS guidelines; e.g., 2 J/kg.).
- H. Continue CPR immediately.
- I. Consider:
  - Amiodarone 5 mg/kg bolus IV/IO; or
  - Lidocaine 1 mg/kg bolus IV/IO; or
  - Magnesium Sulfate 25-50 mg/kg IV (for Torsades de Pointes or hypomagnesemia), maximum 2 grams; or
- J. If no response to treatment, consider termination of resuscitative efforts.

## **SYMPTOMATIC BRADYCARDIA– PEDIATRIC**

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### **Standing Orders**

- A. Oxygenate and ventilate.
- B. Consider chest compressions if cardiopulmonary compromise is present and heart rate is less than 60 beats per minute.
  - 1. If despite oxygenation and ventilation symptomatic bradycardia persists:
    - a. Administer epinephrine 0.01 mg/kg 1:10,000 IV/IO (0.1 mL/kg). May repeat every 3 to 5 minutes at same dose.
    - b. For heart block or vagal etiologies, consider Atropine 0.02 mg/kg IV/IO. May repeat once; maximum total combined dose for the patient not to exceed 1 mg.
    - c. Consider cardiac pacing.
  - 2. If pulseless arrest develops see appropriate protocol.
- C. Review the most frequent causes and treat according to protocols if present:
  - 1. Hypovolemia – fluids.
  - 2. Hypoxia – ventilation and oxygenation.
  - 3. Hypothermia – re-warming. See the Table of Contents for the [Hypothermia –Pediatric](#) protocol.
  - 4. Hypoglycemia – check blood sugar and if <60 treat per Hypoglycemia protocol.

## **TACHYCARDIAS (WITH PULSES) – PEDIATRIC**

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Includes:

- Probable sinus tachycardia
- Probable ventricular tachycardia
- Probable supraventricular tachycardia

Assess and support the patient's ABCs, provide oxygen and ventilation, and attach the cardiac monitor/defibrillator.

### **Standing Orders**

#### **A. PROBABLE SINUS TACHYCARDIA**

Probable sinus tachycardia is defined as a QRS duration normal for the patient's age (approximately less than or equal to 0.08 sec). An infant's heart rate is usually less than 220 bpm; a child's heart rate is usually less than 180 bpm. If hemodynamically unstable:

1. Continue to assess and support ABCs, monitor, and provide oxygen and ventilation as necessary.
2. Search for and treat underlying cause.
  - Consider Normal Saline bolus 20 mL/kg IV/IO.

#### **B. PROBABLE VENTRICULAR TACHYCARDIA**

Probable ventricular tachycardia is defined as a QRS duration wide for the patient's age (approximately greater than 0.08 sec). If hemodynamically unstable:

1. Perform synchronized cardioversion:
  - a. Energy rates as prescribed by current AHA ACLS guidelines:
    - 0.5-1.0 J/kg; if not effective, increase to 2 J/kg
  - b. Use sedation if possible but do not delay cardioversion.
    - Midazolam 0.1 mg/kg IV/IM; maximum 4 mg
2. May attempt adenosine (0.1 mg/kg IV; maximum first dose 6 mg) if it does not delay electrical cardioversion.
  - a. May double first dose and repeat once (maximum second dose 12 mg).
  - b. Use rapid bolus technique.

<b>After Obtaining Verbal Orders</b>
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- |   |
|---|
| <ol style="list-style-type: none"><li>3. Consider amiodarone 5 mg/kg IV over 20-60 minutes.</li></ol> |
|---|

#### **C. PROBABLE SUPRAVENTRICULAR TACHYCARDIA**

Probable supraventricular tachycardia is defined as a QRS duration normal for the patient's age (approximately less than or equal to 0.08 sec). An infant's heart rate is usually greater than or equal to 220 bpm; a child's heart rate is usually greater than or equal to 180 bpm. If hemodynamically unstable:

1. Consider vagal maneuvers (no delays).
2. If IV access is readily available give adenosine 0.1 mg/kg IV (maximum first dose 6 mg).
  - a. May double first dose and repeat once (maximum second dose 12 mg).
  - b. Use rapid bolus technique.
3. If IV access is not readily available perform synchronized cardioversion:
  - a. Energy rates as prescribed by current AHA ACLS guidelines:

- 0.5-1.0 J/kg; if not effective, increase to 2 J/kg
- b. Use sedation if possible but do not delay cardioversion.
  - Midazolam 0.1 mg/kg IV/IM; maximum 4 mg

<b>After Obtaining Verbal Orders</b>
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- |   |
|---|
| 4. Consider amiodarone 5 mg/kg IV over 20-60 minutes. |
|---|



## **4300 RESPIRATORY EMERGENCIES – PEDIATRIC**



## **ASTHMA ATTACK (PATIENT IS BREATHING) – PEDIATRIC**

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### **Standing Orders**

- A. Begin oxygen therapy.
- B. Move the patient to the ambulance and begin transport. **Asthma patients should always be transported to a hospital for monitoring and further treatment.**
- C. Give nebulized albuterol 2.5 mg with ipratropium bromide (Atrovent) 0.5 mg added.
  - May repeat as needed.
- D. Contact a medical control physician for patients with continued moderate-to-severe respiratory distress after two nebs.
- E. If no improvement after 2 nebs consider:
  - Terbutaline or epinephrine 0.01mg/kg 1:1000 (0.01 mL/kg) IM. Maximum dose 0.25 mg terbutaline or 0.5 mg epinephrine (to be used in the field only if the patient's condition is severe)
  - Magnesium Sulfate 25 mg/kg IV/IO.
- F. If the patient is unresponsive to other treatments and impending respiratory failure is evident consider advanced airway.

## **ASTHMA ATTACK (PATIENT IS NOT BREATHING) – PEDIATRIC**

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### **Standing Orders**

- A. Insert an oral or nasal airway and begin positive pressure ventilation. Ventilate with a short inspiration:long expiration ratio at a rate of 8-10/min.
- B. Insert advanced airway.
- C. Administer:
  1. Epinephrine (1:1000) 0.01 mg/kg (1 mg/mL) IM. Maximum dose 0.5 mg.
  2. Continuous in-line nebulizer (2.5 mg albuterol + 0.5 mg atrovent).
- D. Perform manual exhalation.
- E. Start an IV/IO and administer magnesium sulfate 25 mg/kg IV/IO over 3-5 minutes (max dose 2 Gm).
  - If hypotensive response to magnesium sulfate, administer 20 mL/kg normal saline bolus.

## **CROUP – PEDIATRIC**

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### **Standing Orders**

- A. Keep the patient upright at all times when conscious
- B. Begin oxygen therapy. Remove the O<sub>2</sub> mask if it is not well tolerated by the patient
- C. If the child is unconscious, position supine and begin ventilation.
- D. Place ECG leads
- E. Transport early
- F. Consider nebulized 1:1000 epinephrine for suspected croup.
  - Recommend dosage of 5 mg (5 ml) or as specified by service medical director.
- G. If unable to administer epinephrine via neb, may administer epinephrine 0.01 mg/kg 1:1000 IM. Maximum dose 0.5 mg.

## **FOREIGN BODY AIRWAY OBSTRUCTION (FBAO) – PEDIATRIC**

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### **Standing Orders**

- A. If the patient is making efforts to clear their airway without success, you may assist with careful back blows (slaps) and chest thrusts for infants (less than one year old), and abdominal thrusts for children (greater than or equal to one year old) per BCLS guidelines.
  - Synchronize with the patient's cough.
  - Avoid abdominal compressions in infants less than one year old.
- B. If the patient has lost consciousness, attempt to open the airway (use moderate extension and jaw-lift) and ventilate the patient with a bag-valve-mask (BVM). Reposition and attempt ventilation again if the initial attempt was unsuccessful. If ventilations are unsuccessful, perform standard obstructed airway maneuvers for an infant, child or adult, as appropriate.
  - Position an infant with the head dependent during back blows and chest compressions.
- C. Consider direct laryngoscopy and foreign body removal with Magill forceps.
- D. Attempt endotracheal intubation if authorized.
- E. Transport early.

## **4400 MEDICAL EMERGENCIES – PEDIATRIC**





## **ANAPHYLAXIS/ALLERGIC REACTION – PEDIATRIC**

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### **Standing Orders**

- A. For signs and symptoms consistent with anaphylaxis:
  - 1. Administer 1:1000 epinephrine 0.01 mg/kg (0.01 mL/kg) IM up to 0.5 mg. May repeat as needed every five to ten minutes
  - 2. Manage airway as appropriate
  - 3. Obtain vascular access
  - 4. Administer diphenhydramine HCL (Benadryl) 1 mg/kg IV/IM (maximum dose 50 mg)
  - 5. Transport early
  - 6. If the patient remains hypotensive, consider a fluid bolus 20 mL/kg (up to 500 mL)
  - 7. If bronchospasm/wheezing exists after administration of epinephrine consider administering albuterol 2.5 mg mixed with ipratropium bromide (Atrovent) 0.5 mg via nebulizer. If there is no improvement, may nebulize continuously with albuterol 2.5 mg
- B. For signs and symptoms consistent with a mild allergic reaction consider diphenhydramine (Benadryl) 1 mg/kg IV/IO/IM (up to a total of 50 mg)

## **BEHAVIORAL EMERGENCIES – PEDIATRIC**

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### **Standing Orders**

- A. Assess the severity of the patient's agitation
- B. Consider additional personnel to adequately and safely restrain the patient
- C. If the patient is agitated and not amenable to reassurance, verbal de-escalation, or physical restraints, and poses an immediate threat to himself/herself or others, consider giving Ketamine 3-5 mg/kg IM
  - Consider IV access once sedation occurs (if no IV access previously established and Ketamine given IM) then administer Normal Saline 20 ml/kg
- D. For continued agitation, consider contacting a medical control physician for further orders

## **CHOLINERGIC EXPOSURE – PEDIATRIC**

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Hennepin County EMS Units are equipped with Duodote (Atropine 2.1mg/Pralidoxime 600mg) kits primarily for treatment of responders. Chempack assets for mass casualty events can be activated via MRCC. Each Chempack treats up to 1000 patients using Mark 1 kits (same as Duodote but separate injectors for atropine and pralidoxime), Atropens (atropine for pediatric dosing), and diazepam auto-injectors for seizures.

- Note – Chempack may contain Duodotes in the future and pediatric atro-pens may be eliminated.

Common cholinergic agents include: Carbamates (carbofuran (Fursban), etc.), Nerve gas agents (sarin, tabun, VX, etc.), and Organophosphates (parathion, diazinon, malathion, chlorpyrifos (Dursban), etc.).

### **Standing Orders**

- A. Recognize a toxidrome: Miosis (small pupils) present in ALL significant exposures, in association with at least two of the following:
  - Fasciculations
  - Respiratory distress
  - Increased secretions
  - Vomiting/diarrheas/incontinence
  - Seizure
  - Cardiovascular collapse
- B. Request CHEMPACK activation from MRCC if mass casualty incident.
- C. Wear appropriate personal protective equipment; do NOT enter the hot zone.
- D. Assure appropriate patient decontamination measures if liquid or vapor exposures have occurred (in concert with fire department/HazMat).
- E. Assess the patient's ABCs and begin oxygen therapy if possible; intubate if needed (may have high airway resistance).
- F. Treat seizure per protocol with midazolam (or CHEMPACK – Diazepam 10 mg auto injector IM only if >25 kg)
- G. In cases of known organophosphate overdose/exposure or in a setting of multiple casualty incident (MCI) with patients exhibiting this toxidrome:
  1. Administer Atropine 0.1 mg/kg IV/IO/IM (up to 2-5 mg/dose); repeat as necessary to control bronchial secretions
    - CHEMPACK – may contain auto injectors appropriate for:
      - Infant < 6 months = 0.5 mg infant (blue)
      - Toddler < 2 years = 1 mg (red)
      - > 2 years old = 2 mg (standard Duodote or Mark 1 kit)
  2. For patients with seizures, severe shortness of breath, and cardiovascular collapse administer Duodote auto-injector if available (or Mark 1 kit from CHEMPACK):
    - 2-10 years of age – 1 Duodote/Mark 1
    - > 10 years of age – 2 Duodote/Mark 1 kits per adult protocol
  3. Paramedics may administer one additional Duodote (or Mark 1) kit after ten minutes if the patient continues to exhibit severe symptoms and no IV access has been established. **IV atropine is preferred in pediatric patients.**

H. Consider aggressive management of cardiac arrest if resources allow

## **DRUG OVERDOSE – PEDIATRIC**

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### **Standing Orders**

- A. For any patient with a respiratory rate less than eight, or a patient history of or physical findings consistent with opioid overdose, assist the patient's ventilation and consider administration of naloxone (Narcan) 0.1 mg/kg IV/IO/IM up to 2 mg.
- Due to the relatively short half-life of naloxone (Narcan), patients that respond favorably to naloxone (Narcan) administration should still be considered under the influence and transported regardless of their mental status and/or refusal of care.
- B. For all suspected tricyclic overdoses, monitor ECG.

<b>After Obtaining Verbal Orders</b>
<p>C. Consider additional naloxone (Narcan) 0.1 mg/kg IM or IV up to 2 mg.</p> <p>D. Consider Sodium Bicarbonate 1 mEq/kg IV/IO for tricyclic ingestions.</p> <p>E. Consider glucagon 0.1 mg/kg IV/IO for known beta blocker overdose.</p> <p>F. Consider Calcium Chloride 20 mg/kg (0.2 mL/kg) for known calcium channel blocker overdose with hypotension or bradycardia.</p>

## **ENVIRONMENTAL HYPERTHERMIA – PEDIATRIC**

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### **Standing Orders**

- A. Begin cooling measures:
  - 1. Apply cool packs, if available, to head and truncal areas
  - 2. Suspend cooling measures if shivering occurs
- B. If the patient is confused or unconscious, start an IV Normal Saline
- C. Give 20 mL/kg NS bolus
- D. Transport lights and siren, monitoring ECG en route

## **HYPOGLYCEMIA – PEDIATRIC**

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### **Standing Orders**

- A. Determine blood glucose level.
- B. If blood glucose level is less than 60 mg/dL and the patient is symptomatic:
  - 1. If the patient is conscious, cooperative, and able to swallow effectively, give oral glucose therapy.
  - 2. If the patient is unable to take oral fluids due to an altered level of consciousness:
    - a. Obtain IV access.
    - b. Give D50W, 1 mL/kg up to 50 ml to patients four years or older. For patients three years or younger, use D25W, 2 mL/kg IV.
    - c. May give glucagon 1 mg IM if IV access is difficult or impossible to obtain.
- C. A medical control physician must be contacted in any case where the patient experienced a hypoglycemic event and the parent or guardian refused medical transportation.

## HYPOTHERMIA – PEDIATRIC

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### Standing Orders

- A. Standing orders for all hypothermic patients:
1. Remove wet garments.
  2. Protect against further heat loss and wind chill (use blankets and insulating equipment).
  3. Maintain the patient in a horizontal position.
  4. Avoid rough movement and excess activity.
  5. Monitor the patient's cardiac rhythm.
  6. Assess responsiveness, breathing and pulse.
  7. Do a pulse check for 30-45 seconds (clinical signs of death may be misleading).
- B. Pulse and breathing present:
1. Begin oxygen therapy.
  2. Begin transport immediately.
  3. Obtain IV access en route.
  4. Monitor ECG.
  5. Rewarming:
    - Mild hypothermia (temperature greater than or equal to 92° F or if the patient is shivering) - Passive rewarming, active external rewarming.
    - Moderate hypothermia (temperature greater than or equal to 86° F to less than 92° F, or if patient is shivering) - Passive rewarming, active external rewarming to truncal areas only (neck, armpits, groin).
    - Severe hypothermia (temperature less than 86° F) - Transport for active internal rewarming.
- C. Pulse and breathing not present - Generally, CPR should not be initiated if the patient:
1. is known to have been submerged (head under water) in cold water for more than 90 minutes;
  2. has obvious signs of death (e.g. decapitation, slippage of skin, animal predation);
  3. is frozen (e.g. ice formation in the airway);or,
  4. has a chest wall that is so stiff that compressions are impossible.
- D. For pulseless patients with or without an organized ECG rhythm who do not meet criteria in part C and resuscitation efforts are initiated:
1. Begin CPR.
  2. For VF/Pulseless VT, defibrillate once as prescribed by current AHA ACLS guidelines. See [Cardiac Arrest \(V-Fib And Pulseless V-Tach\) – Pediatric](#) protocol. Withhold medication treatments and further shocks and transport immediately.
  3. Obtain IV access and contact medical control physician en route.
  4. Warm packs should not be used.



**After Obtaining Verbal Orders**

- E. Paramedics may consider cardiac arrest drugs and defibrillation but they are usually not effective until hypothermia is corrected.

## NEWBORN EMERGENCIES – PEDIATRIC

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### Standing Orders

- A. In all situations, minimize the newborn's heat loss:
  - 1. Dry the newborn well
  - 2. Increase environmental temperature
- B. Suction the newborn only if needed to clear secretions or an obstruction:
  - 1. During or after delivery, suction the mouth and oropharynx first, then the nose
  - 2. If meconium is present at birth, and the infant has poor muscle tone and inadequate respiratory effort, keep warm and provide ventilatory assistance and oxygenation as needed, including intubation and suction if the airway is obstructed
- C. During the first minute warm the infant, position airway, clear secretions if needed, and dry and stimulate.
- D. Assess for apnea, gasping, or heart rate less than 100:
  - 1. If apneic, gasping, or heart rate less than 100, initiate positive pressure ventilation, monitor SpO<sub>2</sub>, and consider ECH monitoring.
  - 2. If labored breathing or persistent cyanosis, reposition airway and administer oxygen (less than 30% FiO<sub>2</sub>).
- E. Reassess heart rate:
  - 1. If less than 100 correct ventilation or increase oxygen
  - 2. If less than 60 start chest compressions, increase oxygen to 100%, and intubate
  - 3. Continue to reassess heart rate
- F. If heart rate remains less than 60 administer epinephrine (0.01 mg/kg) 1:10,000 IV/IO.
- G. **Transport early.** Attempt to maintain body temperature and assure optimal ventilation and oxygenation.

## **SEVERE NAUSEA AND/OR VOMITING – PEDIATRIC**

---

### **Standing Orders**

- A. If the patient has severe nausea and/or vomiting:
1. Obtain IV access.
  2. Administer ondansetron (Zofran) 0.1 mg/kg up to a maximum of 4 mg IV/IO/IM; if given IV administered slowly over 1-2 minutes. May be repeated once after 10 minutes.
    - Alternate antiemetics, selected by the service medical director, may be used at recommended dosages as an alternative for severe nausea or vomiting.
- B. Contact a medical control physician for further orders if needed.

## **SHOCK – PEDIATRIC**

---

Signs/symptoms of shock include: cool skin, poor capillary refill, tachycardia, weak peripheral pulses, low BP and an altered mental status.

### **Standing Orders**

- A. Perform a primary survey.
- B. Perform a secondary survey while obtaining history.
- C. If trauma, immobilize the patient's head and spine.
- D. Begin oxygen therapy.
- E. Non-Trauma Related Shock
  - 1. Begin transport.
  - 2. Begin transport prior to any other ALS intervention. Position the patient in the Trendelenburg position if the patient is hypotensive.
  - 3. Apply ECG leads after a quick-look to establish cardiac rhythm.
  - 4. Start an IV Normal Saline using a macrodrip infusion set. If IV access is not possible, paramedics may attempt IO access (if authorized); recommended initial bolus 20 mL/kg.

## **STATUS SEIZURES – PEDIATRIC**

---

### **Standing Orders**

- A. Position the patient to maintain an open airway
- B. Begin oxygen therapy
- C. If the seizure is ongoing greater than five minutes administer: midazolam:
  - IM/Intra Nasal = 0.2 mg/kg up to 10 mg per dose
  - If IV/IO established prior to seizure = 0.1 mg/kg up to 5 mg per dose
  - May repeat midazolam dose x 1 after 5 minutes for persistent seizure
- D. Be prepared to support respirations
- E. Determine the patient's blood glucose level and treat hypoglycemia per protocol
- F. If patient is still seizing after two doses contact medical control



## **9000 APPENDICES – TO THE ALS PROTOCOLS**





## **TOURNIQUET FOR SEVERE HEMORRHAGE**

---

### **A. Indications:**

1. Failure to stop bleeding with direct pressure or pressure dressing.
2. Injury does not allow for hemorrhage control with pressure.
3. Significant extremity hemorrhage in the face of any or all:
  - Need for airway management
  - Need for ventilator support
  - Circulatory shock
  - Need for other emergent interventions or assessment
  - Bleeding from multiple locations
4. Impaled foreign body with ongoing extremity bleeding.
5. Under fire or other dangerous situation for responding caregivers requiring immediate evacuation.
6. Total darkness or other adverse environmental factors.
7. Mass casualty, number of casualties exceeds ability to provide optimal care.

### **B. Tourniquet Application:**

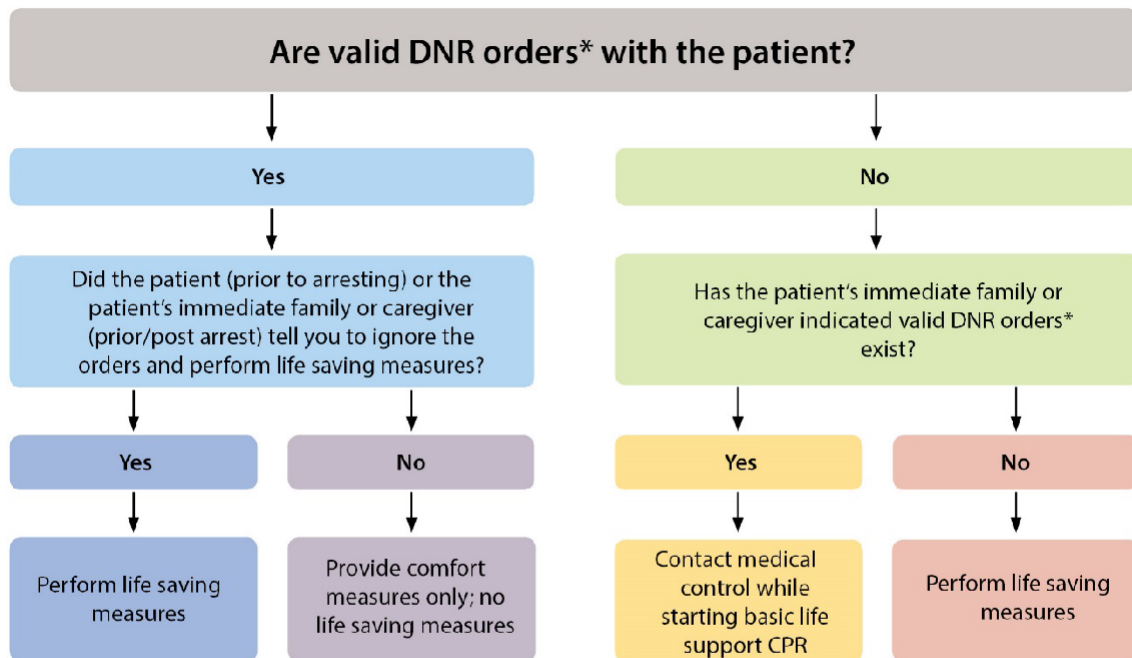
1. For severe bleeding associated with limb amputation or signs of shock with other exsanguinating hemorrhage, skip to 4 (apply tourniquet).
2. Attempt to control bleeding with direct pressure or application of pressure dressing.
3. If profuse bleeding persists after 5 min or unable to maintain pressure due to other patient care needs, apply a tourniquet (a commercial is preferred over an improvised tourniquet, but an improvised tourniquet is allowable if a commercial tourniquet is not available).
4. Apply to appropriate extremity proximal to bleeding site over the humerus or femur only:
  - a. Tighten the self-adhering strap.
  - b. Tighten the windlass to loss of distal pulse.
  - c. Secure windlass in place.
5. Record time of application, preferably on extremity skin, or on tourniquet (if appropriate)

### **C. Specify site and patient ID if multiple patients or sites**

1. Do not cover tourniquet unless risk of cold or environmental injury
2. At 30 min of tourniquet time, reassess for removal: • If shock, clinically unstable, limited personnel/resources or amputated extremity, DO NOT remove, otherwise, apply pressure dressing and loosen tourniquet (leave in place). If re-bleeding occurs tighten to stop bleeding.
3. Notify receiving healthcare personnel of tourniquet application time and location.

## DO NOT RESUSCITATE (DNR) GUIDELINES

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\* Valid DNR orders - The DNR or POLST form must be signed by the patient/proxy, witness, and physician or advance practice provider (APP). In the nursing home, DNR orders written in the order section of the medical record are valid if signed by the physician (A DNR form may be used, but is not required in the nursing home).

**EMSRB DNR FORM**

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2829 University Ave. S.E., Suite 310  
Minneapolis, MN 55414-3222

(651) 201-2800 (800) 747-2011 FAX (651) 201-2812 TTY (800) 627-3529

[www.emsrb.state.mn.us](http://www.emsrb.state.mn.us)

## No Cardiopulmonary Resuscitation (CPR)

It is my/our wish that no Cardiopulmonary Resuscitation (CPR) be performed on:

\_\_\_\_\_  
Print Name of Patient

\_\_\_\_\_  
Signature of Patient or Responsible Party

\_\_\_\_\_  
Relationship

\_\_\_\_\_  
Address of Patient or Responsible Party

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
Date

Do not perform CPR on the above-named patient/resident at the request of the family or other responsible party.

\_\_\_\_\_  
Print Name of Attending Physician

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Attending Physician

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*"To provide leadership which optimizes the quality of emergency medical care for the people of Minnesota -- in collaboration with our communities -- through policy development, regulation, system design, education, and medical direction"*

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An Equal Opportunity Employer

**POLST MINNESOTA FORM**

**HIPAA PERMITS DISCLOSURE TO HEALTH CARE PROVIDERS AS NECESSARY FOR TREATMENT**

MINNESOTA

**Provider Orders for Life-Sustaining Treatment (POLST)**

Follow these orders until orders change. These medical orders are based on the patient's current medical condition and preferences. Any section not completed does not invalidate the form and implies full treatment for that section. With significant change of condition new orders may need to be written. Patients should always be treated with dignity and respect.

LAST NAME FIRST NAME MIDDLE INITIAL  
DATE OF BIRTH  
PRIMARY MEDICAL CARE PROVIDER NAME PRIMARY MEDICAL CARE PROVIDER PHONE (WITH AREA CODE)

**A** **CARDIOPULMONARY RESUSCITATION (CPR)** *Patient has no pulse and is not breathing.*  
CHECK ONE  
 **Attempt** Resuscitation / CPR (Note: selecting this requires selecting "Full Treatment" in Section B).  
 **Do Not Attempt** Resuscitation / DNR (**Allow Natural Death**).  
*When not in cardiopulmonary arrest, follow orders in B.*

**B** **MEDICAL TREATMENTS** *Patient has pulse and/or is breathing.*  
CHECK ONE (NOTE REQUIREMENTS)  
 **Full Treatment.** Use intubation, advanced airway interventions, and mechanical ventilation as indicated. Transfer to hospital and/or intensive care unit if indicated. All patients will receive comfort-focused treatments.  
**TREATMENT PLAN:** Full treatment including life support measures in the intensive care unit.  
 **Selective Treatment.** Use medical treatment, antibiotics, IV fluids and cardiac monitor as indicated. No intubation, advanced airway interventions, or mechanical ventilation. May consider less invasive airway support (e.g. CPAP, BiPAP). Transfer to hospital if indicated. Generally avoid the intensive care unit. All patients will receive comfort-focused treatments.  
**TREATMENT PLAN:** Provide basic medical treatments aimed at treating new or reversible illness.  
 **Comfort-Focused Treatment (Allow Natural Death).** Relieve pain and suffering through the use of any medication by any route, positioning, wound care and other measures. Use oxygen, suction and manual treatment of airway obstruction as needed for comfort. Patient prefers no transfer to hospital for life-sustaining treatments. Transfer if comfort needs cannot be met in current location.  
**TREATMENT PLAN:** Maximize comfort through symptom management.

**C** **DOCUMENTATION OF DISCUSSION**  
CHECK ALL THAT APPLY  
 **Patient** (*Patient has capacity*)     **Court-Appointed Guardian**     **Other Surrogate**  
 **Parent of Minor**     **Health Care Agent**     **Health Care Directive**  
**SIGNATURE OF PATIENT OR SURROGATE**  
SIGNATURE (**STRONGLY RECOMMENDED**) NAME (*PRINT*)  
RELATIONSHIP (*IF YOU ARE THE PATIENT, WRITE "SELF"*) PHONE (*WITH AREA CODE*)  
*Signature acknowledges that these orders reflect the patient's treatment wishes. Absence of signature does not negate the above orders.*

**D** **SIGNATURE OF PHYSICIAN / APRN / PA**  
*My signature below indicates to the best of my knowledge that these orders are consistent with the patient's current medical condition and preferences.*  
NAME (*PRINT*) (**REQUIRED**) LICENSE TYPE (**REQUIRED**) PHONE (*WITH AREA CODE*)  
SIGNATURE (**REQUIRED**) DATE (**REQUIRED**)

**SEND FORM WITH PATIENT WHENEVER TRANSFERRED OR DISCHARGED. FAXED, PHOTOCOPIED OR ELECTRONIC VERSIONS OF THIS FORM ARE VALID.**  
Minnesota Provider Orders for Life-Sustaining Treatment (POLST). [www.polstmn.org](http://www.polstmn.org) PAGE 1 OF 2

## INFORMATION FOR

PATIENT NAMED ON THIS FORM

**HIPAA PERMITS DISCLOSURE TO HEALTH CARE PROVIDERS AS NECESSARY FOR TREATMENT**

### E

CHECK  
ONE  
FROM  
EACH  
SECTION

#### ADDITIONAL PATIENT PREFERENCES (OPTIONAL)

##### ARTIFICIALLY ADMINISTERED NUTRITION *Offer food by mouth if feasible.*

- Long-term artificial nutrition by tube.
- Defined trial period of artificial nutrition by tube.
- No artificial nutrition by tube.

##### ANTIBIOTICS

- Use IV/IM antibiotic treatment.
- Oral antibiotics only (no IV/IM).
- No antibiotics. Use other methods to relieve symptoms when possible.

##### ADDITIONAL PATIENT PREFERENCES *(e.g. dialysis, duration of intubation).*

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## HEALTH CARE PROVIDER WHO PREPARED DOCUMENT

PREPARER NAME (REQUIRED)

PREPARER TITLE (REQUIRED)

PREPARER PHONE (WITH AREA CODE) (REQUIRED)

DATE PREPARED (REQUIRED)

### NOTE TO PATIENTS AND SURROGATES

The POLST form is always voluntary and is for persons with advanced illness or frailty. POLST records your wishes for medical treatment in your current state of health. Once initial medical treatment is begun and the risks and benefits of further therapy are clear, your treatment wishes may change. Your medical care and this form can be changed to reflect your new wishes at any time. However, no form

can address all the medical treatment decisions that may need to be made. A Health Care Directive is recommended for all capable adults, regardless of their health status. A Health Care Directive allows you to document in detail your future health care instructions and/or name a Health Care Agent to speak for you if you are unable to speak for yourself.

### DIRECTIONS FOR HEALTH CARE PROVIDERS

#### Completing POLST

- Completing a POLST is always voluntary and cannot be mandated for a patient.
- POLST should reflect current preferences of persons with advanced illness or frailty. Also, encourage completion of a Health Care Directive.
- Verbal / phone orders are acceptable with follow-up signature by physician/APRN/PA in accordance with facility/community policy.
- A surrogate may include a court appointed guardian, Health Care Agent designated in a Health Care Directive, or a person whom the patient's health care provider believes best knows what is in the patient's best interest and will make decisions in accordance with the patient's expressed wishes and values to the extent known, such as a verbally designated surrogate, spouse, registered domestic partner, parent of a minor, or closest available relative.

#### Reviewing POLST

This POLST should be reviewed periodically, and if:

- The patient is transferred from one care setting or care level to another, or
- There is a substantial change in the patient's health status, or
- The patient's treatment preferences change, or
- The patient's Primary Medical Care Provider changes.

#### Voiding POLST

- A person with capacity, or the valid surrogate of a person without capacity, can void the form and request alternative treatment.
- Draw line through sections A through E and write "VOID" in large letters if POLST is replaced or becomes invalid.
- If included in an electronic medical record, follow voiding procedures of facility/community.

**SEND FORM WITH PATIENT WHENEVER TRANSFERRED OR DISCHARGED. FAXED, PHOTOCOPIED OR ELECTRONIC VERSIONS OF THIS FORM ARE VALID.**

Minnesota Provider Orders for Life-Sustaining Treatment (POLST). [www.polstmn.org](http://www.polstmn.org) PAGE 2 OF 2 REVISED: FEBRUARY 2017

## HENNEPIN COUNTY PANFLU PROTOCOL

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Approved 4/9/2009






Policy context

These standing orders will be used to provide the best pre-hospital care to the greatest number of people during an extreme situation. They will only be put into place when resources are defined by the system as “Level Red,” which means EMS services are pending or not answering calls for which there is a significant risk of death for the patient. They do not supersede other protocols. You will be notified when this status is in effect.

Our ethical commitments are:

- A. **Limitation of Individual Autonomy:** The fair and just rationing of scarce resources requires public health decisions based on objective factors, rather than on the choice of individual leaders, providers, or patients. All individuals should receive the highest level of care given the resources available at the time.
- B. **Transparency:** Governments and institutions have an ethical obligation to plan allocation through a process that is transparent, open, and publicly debated. Governmental honesty about the need to ration medical care justifies institutional and professional actions of withholding and withdrawing support from individual patients. These restrictive policies must be understood and supported by medical providers and the public, ideally with reassurances that institutions and providers will be acting in good faith and legally protected in their efforts.
- C. **Justice/Fairness:** The proposed triage process relies on the principle of maximization of benefit to the population served. The triage process treats patients equally based on objective, physiologic criteria, and when these criteria do not clearly favor a particular patient, “first come, first serve” rules will apply...
- D. **Assurance:** In order to ensure “procedural justice,” EMS triage processes will be regularly evaluated to assure that the process has been followed fairly and consistently.
- E. **Documentation:** MNTrac records will include policy notations including the times the “Level Red” was in effect.


When an ambulance arrives on scene during “Level Red” status, instead of automatically offering transport to an emergency department, as under normal practice, you will assess the patient’s objective condition and triage him/her into the following categories:







	provide homecare information
	refer to a clinic or other medical destination
	refer to use of alternate transportation to a hospital, clinic or other medical destination
	transport by (and at the discretion of) law enforcement
	transport by ambulance to a hospital or other medical destination

### Standing Orders








A. If the patient’s complaint or symptoms are not listed in this Appendix, Paramedic’s discretion is advised as long as the decision is not in conflict with SOP.

B. When resources during a Pandemic are “Level Red,” **automatically offer to transport**  patients with the following presentations:





	1. Paramedic discretion – suspicion of critical illness/injury
	2. Altered vital signs (or age-specific abnormal vital signs), including any one of these: <ul style="list-style-type: none"> <li>○ SBP &lt; 90</li> <li>○ SpO<sub>2</sub> &lt; 92%</li> <li>○ RR &gt; 30 (or respiratory distress)</li> <li>○ HR &gt; 120, or delayed capillary refill</li> </ul>
	3. Breathing: <ul style="list-style-type: none"> <li>○ Respiratory distress</li> <li>○ Cyanosis, or pallor/ashen skin</li> </ul>
	4. Circulation/Shock: <ul style="list-style-type: none"> <li>○ Signs or symptoms of shock</li> <li>○ Severe/uncontrollable bleeding</li> <li>○ Large amounts of blood (or suspected blood) in emesis or stool</li> </ul>
	5. Neurologic: <ul style="list-style-type: none"> <li>○ Unconscious or altered level of consciousness</li> <li>○ New focal neurologic signs (CVA, etc.)</li> <li>○ Status, multiple or new-onset seizure</li> <li>○ Severe headaches – especially sudden onset or accompanied with neck pain/stiffness</li> <li>○ Head injuries with more than brief loss of consciousness or continued neck pain, dizziness, vision disturbances, ongoing amnesia or headache, and/or nausea and vomiting</li> </ul>
	6. Trauma: <ul style="list-style-type: none"> <li>○ Significant trauma with chest/spinal/abdominal/neurologic injury deemed unstable or potentially unstable</li> <li>○ Suspected fractures or dislocations that cannot be safely transported by private vehicle</li> </ul>







When resources during a Pandemic are “Level Red,” consider patients with the following presentations for:

- **transportation by ambulance**  - Note that many ‘transport by ambulance’ patients will not require emergency transport to the hospital – in which case, the crew may answer additional calls until the ambulance is full, or a critical patient is picked up, depending on system call volumes.
- **transportation by alternate means:**
  - private vehicle**  or **police**  **to clinic**  or **hospital**. Except in very limited cases, the patient should NOT self-transport to the hospital/clinic, but could be driven by someone else.
- **homecare**  Give patient the Homecare form for their complaint and advise to contact PMD if symptoms persist or worsen. The form will have information pertaining to their complaint and list ways of caring for themselves, as well as what to look for that would prompt self-transport to a clinic or hospital, or transport via ambulance to the hospital. Advise the patient that this does not restrict them from seeking care at a clinic or hospital on their own, should they desire.




1. ABDOMINAL PAIN:

	<ul style="list-style-type: none"> <li>○ Pulsating mass</li> <li>○ Marked tenderness/guarding</li> <li>○ Pain radiating into back and/or groin/inner thighs</li> <li>○ Recurrent severe vomiting not associated with diarrhea</li> </ul>
 	<ul style="list-style-type: none"> <li>○ Recurrent severe vomiting associated with diarrhea – to emergency if associated with signs/symptoms of dehydration, to urgent care or clinic if no dizziness nor vital sign changes and normal exam</li> </ul>
	<ul style="list-style-type: none"> <li>○ Intermittent vomiting and diarrhea without blood or evidence of dehydration</li> </ul>








2. ANAPHYLAXIS/STINGS:

	<ul style="list-style-type: none"> <li>○ Patients who have had epinephrine administered for symptoms</li> <li>○ Patients experiencing airway, hypotension or respiratory symptoms, after an allergy exposure</li> </ul>
  	<ul style="list-style-type: none"> <li>○ Patients with itching after exposure – if rapid onset of symptoms, may require EMS transport; if delayed &gt; 1hour, safe for private transport. All patients with history of anaphylaxis should be seen in emergency room if possible. Others may be seen in clinic or urgent care. EMS may administer diphenhydramine prior to clearing scene, up to 1mg/kg.</li> </ul>





3. BACK PAIN:

	<ul style="list-style-type: none"> <li>○ Acute trauma with midline bony spinal tenderness</li> <li>○ New onset of extremity weakness, sensory deficits, other neurological changes, incontinence of urine or bowel, urinary retention, or bloody urine</li> <li>○ Concern for abdominal aortic aneurysm</li> <li>○ Pain radiating into abdomen, or groin/inner thighs</li> </ul>
 	<ul style="list-style-type: none"> <li>○ Inability to ambulate/care for self</li> </ul>
	<ul style="list-style-type: none"> <li>○ Concern for kidney stone, bloody urine</li> </ul>




4. BEHAVIORAL:

	<ul style="list-style-type: none"> <li>○ Uncontrolled agitation requiring sedation by EMS</li> </ul>
 OR   OR 	<ul style="list-style-type: none"> <li>○ Suicidal ideation – must be left with a responsible party</li> </ul>
 OR 	<ul style="list-style-type: none"> <li>○ Other emotionally disturbed patients may be transported at law enforcement’s discretion or by other means</li> </ul>



5. BLEEDING (LACERATIONS, ABRASIONS OR AVULSIONS):

	<ul style="list-style-type: none"> <li>○ Patient is on coumadin or other blood thinner with significant ongoing bleeding or large hematoma</li> </ul>
 	<ul style="list-style-type: none"> <li>○ Significant lacerations after bandaging – heavily contaminated, bite-related, likely to involve foreign body, deep structure injury, sensory/motor deficit – to emergency room</li> <li>○ Lacerations requiring simple repair – consider self-transport to physician’s office or urgent care center (however, some offices do not do procedures; patient will need to call ahead)</li> </ul>
	<ul style="list-style-type: none"> <li>○ Abrasions or avulsions not requiring suturing or repair, no significant contamination.</li> <li>○ Minor lacerations that do not require sutures</li> </ul>





6. BURNS:

	<ul style="list-style-type: none"> <li>○ All chemical or electrical burns</li> <li>○ Suspected inhalant burn</li> <li>○ Significant third degree burns</li> <li>○ Second degree burns to ≥5% of body area</li> <li>○ Second degree burns to face, mouth</li> <li>○ Severe pain</li> </ul>
	<ul style="list-style-type: none"> <li>○ Second degree burns to hands or feet, or to other location 1%-5% body surface area (size of patient's palmar surface)</li> </ul>
	<ul style="list-style-type: none"> <li>○ Second degree burns &lt; 1% body surface area, non-critical location</li> <li>○ First degree burns</li> </ul>




7. CARDIAC ARREST:

	<ul style="list-style-type: none"> <li>○ Witnessed down time ≤ 10 minutes – follow usual resuscitation protocols</li> </ul>
	<ul style="list-style-type: none"> <li>○ All others – report death to dispatch and return to service; do not wait for law enforcement or medical examiner arrival</li> </ul>





8. CHEST PAIN:

	<ul style="list-style-type: none"> <li>○ Chest pain or other signs or symptoms suspicious for cardiac ischemia, pulmonary embolus, or other life threat</li> </ul>
  	<ul style="list-style-type: none"> <li>○ Chest pain ongoing for &gt;12 hours and a normal ECG</li> <li>○ Pleuritic chest pain without hypoxia</li> <li>○ Chest pain reproducible on physical exam to palpation is generally NOT concerning; unless ECG changes or known cardiac disease, unlikely to require treatment for acute coronary syndrome</li> </ul>




9. DIABETIC:

 OR 	<ul style="list-style-type: none"> <li>○ Any patient on oral diabetes medications with low blood glucose – if transported by private vehicle must NOT drive self</li> <li>○ Critical high glucose or signs of Diabetic Ketoacidosis/dehydration</li> </ul>
	<ul style="list-style-type: none"> <li>○ Patients with typical hypoglycemia and explanation for low sugar (did not eat, etc.) can be left without medical control contact as long as family/friend is present and patient is eating</li> </ul>






10. ENVIRONMENTAL:

	<ul style="list-style-type: none"> <li>○ Heat-related illness with any alteration in mental status (confusion, decreased LOC)</li> <li>○ Frozen extremity</li> <li>○ Hypothermia with AMS</li> </ul>
 OR 	<ul style="list-style-type: none"> <li>○ Frostbite to face, hands, feet, other location suspected deeper injury, blisters, or frozen to touch</li> </ul>
	<ul style="list-style-type: none"> <li>○ Heat-related illness without alteration in mental status – initiate external cooling at home under supervision of friends/family</li> <li>○ Minor frostbite with tissues now soft, pink, no blisters, and NOT involving digits</li> </ul>





11. ETOH/SUBSTANCE ABUSE:

	<ul style="list-style-type: none"> <li>○ Very decreased LOC or other confounding issues (head injury, suspicion of aspiration)</li> </ul>
	<ul style="list-style-type: none"> <li>○ Otherwise may be transported at law enforcement’s discretion</li> </ul>
	<ul style="list-style-type: none"> <li>○ Patient may be left with a responsible individual who can assist the patient</li> <li>○ Able to ambulate safely without assistance</li> </ul>



12. EYE PAIN:

	<ul style="list-style-type: none"> <li>○ Impaled objects or possible penetrating injury to eye, or globe rupture</li> <li>○ Chemical exposures (alkaline) – after decontamination and initial rinsing</li> </ul>
 OR  	<ul style="list-style-type: none"> <li>○ Eye pain and/or acute changes to vision should receive transport for urgent evaluation to emergency department or other qualified clinic (e.g. eye clinic)</li> <li>○ Chemical exposures (non-alkaline) – consult poison control for instructions; transport if symptoms / dangerous exposure</li> </ul>
	<ul style="list-style-type: none"> <li>○ Chemical exposures (non-alkaline) – consult poison control for instructions; if no symptoms and limited toxicity likely, give instruction sheet</li> </ul>





13. FEVER:

	<ul style="list-style-type: none"> <li>○ Fever plus altered mental status including confusion</li> <li>○ Fever plus severe symptoms by paramedic assessment</li> <li>○ Fever plus seizures, lethargy, stiff neck, rash, or blistering</li> </ul>
 OR  	<ul style="list-style-type: none"> <li>○ ≤ 3 months with fever estimated at 100.5 degrees – to emergency room or clinic urgently</li> <li>○ &gt; 3 months with fever that does not reduce with anti-pyretics, or fever lasting more than 5 days – emergency room, urgent care, or clinic</li> </ul>



14. HEADACHE:

	<ul style="list-style-type: none"> <li>o With vision deficit, lethargy, or page 1 qualifiers (fever, etc.)</li> </ul>
	<ul style="list-style-type: none"> <li>o New headaches for patient require assessment</li> <li>o Usual headaches for patient may require treatment</li> </ul>



15. MUSCULOSKELETAL INJURIES (ISOLATED):

	<ul style="list-style-type: none"> <li>o Loss of distal pulses</li> <li>o Unable to effectively splint the affected part</li> <li>o Neurological changes or deficits</li> <li>o Open fractures</li> <li>o Displaced fractures or pain requiring injectable narcotics</li> </ul>
	<ul style="list-style-type: none"> <li>o Suspected fractures that are stable and do not require injected analgesia may be splinted appropriately and transported by private vehicle</li> </ul>
 OR 	<ul style="list-style-type: none"> <li>o Neck pain and back pain after MVC, that is delayed in onset and not associated with midline tenderness or neurologic symptoms</li> </ul>


16. NOSEBLEED:

	<ul style="list-style-type: none"> <li>o Signs of hypovolemia or dizziness upon standing</li> <li>o Patient is on blood thinners (Coumadin, lovenox, clopidogrel, etc.)</li> <li>o Continued high blood pressure (SBP &gt;200) in setting of nosebleed</li> <li>o Continued severe bleeding despite EMS efforts to control</li> </ul>
	<ul style="list-style-type: none"> <li>o All other</li> </ul>





17. OB/PREGNANCY:

	<ul style="list-style-type: none"> <li>o Imminent delivery</li> <li>o Pain in abdomen or back</li> <li>o Profuse vaginal bleeding</li> <li>o Third trimester (&gt;24 weeks) bleeding</li> <li>o Pre/eclampsia – syncope, seizure, altered mental status, SBP≥140</li> </ul>
	<ul style="list-style-type: none"> <li>o All other</li> </ul>





18. SWALLOWING PROBLEM:

	<ul style="list-style-type: none"> <li>o Patient unable to manage own secretions due to pain or obstruction</li> </ul>
	<ul style="list-style-type: none"> <li>o All other</li> </ul>




19. SYNCOPE:

	<ul style="list-style-type: none"> <li>○ History of coronary disease or heart failure</li> <li>○ Age =&gt;55</li> <li>○ Pregnant</li> <li>○ Chest pain, headache, or shortness of breath (or other symptoms concerning to paramedics)</li> </ul>
  	<ul style="list-style-type: none"> <li>○ Likely dehydration, with dizziness preceding the syncope</li> <li>○ Other underlying medical conditions</li> </ul>

20. TOXICOLOGIC:

   	<ul style="list-style-type: none"> <li>○ Overdose or other toxic exposure – contact Poison Control and/or on-line medical control</li> <li>○ If intentional, see Behavioral Health in this Appendix</li> </ul>
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21. VULNERABLE PERSON IN POTENTIAL DANGER:

  	<ul style="list-style-type: none"> <li>○ EMS should assure that person will not be left in dangerous environment</li> <li>○ If safe disposition and transport can be arranged and the injuries do not otherwise require medical evaluation, other transport may be appropriate</li> </ul>
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## SUMMARY OF PROTOCOL CHANGES



## DIABETIC HYPOGLYCEMIC PATIENT REFUSAL OF TRANSPORT

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### Summary of Changes

Protocol was completely rewritten

### Standing Orders

Standing orders for all diabetic hypoglycemic patients refusing transport:

- A. The following criteria must be documented on your Patient Care Report (PCR) in order to leave a patient (without contacting medical control) experiencing a diabetic hypoglycemic emergency who refuses transport:
1. Identifiable reason why the diabetic emergency happened.
  2. Blood sugar over 100 post treatment.
  3. Level of consciousness – awake, alert and oriented with a GCS = 15.
  4. Food intake – food available and able to eat or has eaten recently.
  5. Friend and/or family present to stay with the patient.
  6. Discussion with the patient to contact physician for follow-up.
  7. Vital signs within normal limits:
    - a. If systolic blood pressure is less than 90, or greater than 180, medical control contact is required; or
    - b. If heart rate is less than 50, or greater than 110, medical control contact is required.
  8. Offer of transport made.
- B. Medical control is required if the patient meets one or more of the following:
- Is on an oral agent
  - Has a fever
  - Had a recent acute illness
  - Has a sign of a possible MI (atypical symptoms, dyspnea, shortness of breath, etc.)
- C. If unable to identify or document suspected reason for the diabetic emergency, a medical control physician must be contacted

## **PAIN MANAGEMENT – ADULT**

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### **Summary of Changes**

Added ketorolac for mild/moderate pain management

Decreased IV/IO ketamine dose for pain of traumatic origin from 50mg to 25 mg

To provide relief of pain when indicated.

### Exclusion criteria:

- BP less than or equal to 90
- Pain determined to be cardiac in origin (See the protocol [Ischemic Chest Pain – Adult](#))
- Active labor
- Headache
- Non-traumatic Neck or Back Pain
- Any chronic pain (head, neck, back, fibromyalgia, abdominal or pelvic pain)
- Dental pain

### Inclusion criteria:

- Acute Severe Traumatic pain
  - Neck or Back pain from acute trauma with inability to ambulate from the incident
  - Significant orthopedic injury (severe tenderness to palpation, with swelling, bruising and/or deformity)
  - Severe traumatic chest or abdominal pain with tenderness to palpation
  - Major burns
- Active cancer or palliative care
- Acute (< 2 hrs duration) non-traumatic pain with 2 or more of the following:
  - Increased heart rate and/or blood pressure
  - Nausea and/or vomiting
  - Writhing
  - Described as severe or > 7/10 in severity
- Intubated patients with injury, painful condition or evidence of increasing discomfort (vital sign changes)
- Paramedic discretion

### **Standing Orders**

- A. Assess the patient's pain on a 0-10 scale or other acceptable method for patients with difficulty communicating
- B. Inform the patient that pain is an important diagnostic parameter and the goal of this protocol is to relieve suffering and not to totally eliminate pain
- C. If the patient meets inclusion criteria, administer one of the following service dependent medications (consider lower doses for elderly patients):
  1. Morphine Sulfate 2-10 mg (usual effective initial dose 0.1 mg/kg), up to 10 mg single dose IV/IO/IM/SQ. If using IV/IO route titrate in increments to patient response. No maximum total dose of Morphine Sulfate for adults
    - Reassess the patient's pain scale and if necessary administer a second dose up to 5 mg IV/IO/IM/SQ every 5 to 10 minutes. If using IV/IO route titrate in increments to patient response
  2. Hydromorphone 0.5-2 mg IV/IO/IM. If using IV/IO route titrate in increments to patient response.

- Reassess the patient's pain scale and if necessary administer a second dose up to 0.5-2 mg IV/IO/IM. No maximum total dose of hydromorphone for adults
3. If pain is of a traumatic origin (non-cardiac), consider Ketamine (slow IV push):
    - IV/IO route 0.2 mg/kg (maximum dose 50 mg); may repeat every 15 minutes. Reassess the patient's pain scale and if necessary administer a second dose 0.2 mg/kg IV/IO
    - IM route 0.4 mg/kg (maximum dose 50 mg); may repeat every 30 minutes. Reassess the patient's pain scale and if necessary administer a second dose 0.4 mg/kg IM
  4. Fentanyl
    - a. 1mcg/kg (up to 100mcg per single dose) IV/IO/IM/IN
      - Intranasal administration should not exceed 0.5ml per nostril
    - b. May repeat 0.5mcg/Kg IV/IO/IM/IN (up to 50 mcg/repeat dose) every 10 min, not to exceed cumulative dose of 200mcg
  5. Inhaled nitronox may be used as an alternative if available
- D. Monitor the patient's vital signs (including O<sub>2</sub> saturation). If respiratory depression or hypotension occurs after administration of morphine sulfate or hydromorphone ventilate the patient as necessary and administer naloxone (Narcan) 0.4-2 mg IV/IO
  - E. Contact medical control physician for orders if:
    - The patient has a systolic BP less than or equal to 90
  - F. For patients experiencing pain outside the above listed inclusion criteria consider:
    - Symptomatic relief of nausea/vomiting if needed
    - Advising them of the general concerns in the medical community about opioid use and that doctors are being very careful about which patients receive these addictive medications
    - Inform them that "we carry this type of medication for severe trauma such as broken bones and for certain medical situations that require immediate pain control such as heart attacks"
    - Acknowledge their pain and try to improve comfort
    - Advise them that a doctor will need to evaluate them prior to administering pain medication
    - Reassure the patient that the receiving facility will be notified of the need for prompt pain management assessment
    - Consult medical control if questions

<p><b>After Obtaining Verbal Orders</b></p>
<p>G. Consider initial or additional pain medication including benzodiazepines as appropriate:</p> <ul style="list-style-type: none"> <li>• Midazolam HCL (Versed) 2-5 mg IV/IO/IM (if using IV/IO route, titrate to patient response), or</li> <li>• Lorazepam (Ativan) 1 mg IV/IO/IM</li> </ul>
<p>H. Monitor for respiratory depression when administering narcotics and benzodiazepines together</p>

## Summary of Changes

Increased epinephrine given during CPR to maximum of up to three doses

### **CARDIAC ARREST (V-FIB AND PULSELESS V-TACH) – ADULT**

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#### **Standing Orders**

- A. If cardiac arrest occurs in the presence of the ambulance crew, assess the patient's cardiac rhythm and defibrillate x 1 if necessary.
- B. If the patient is in cardiac arrest on arrival of the ambulance crew, institute or continue Basic Life Support (BLS):
  1. CPR: compressions 100/min, breaths 8-10/min. Do not over ventilate.
  2. Impedance Threshold Device (ITD): Attach ITD to BVM and apply to patient within 30 seconds. You must maintain a tight, continuous, 2-handed face mask seal for the ITD to function properly. Use of ITD is service dependent.
  3. Reassess the patient's rhythm after every 5 cycles (2 minutes) of CPR. Limit interruptions in CPR during pulse/rhythm checks to less than 10 seconds for airway insertion and/or administration of medications.
- C. Assess and confirm Pulseless Ventricular Tachycardia/Ventricular Fibrillation then defibrillate x1 if necessary using the following guidelines:
  1. Monophasic defibrillator:
    - Shock at 360 joules.
  2. Biphasic defibrillator:
    - a. Device specific, but typically between 120-200 joules.
    - b. If device specific wattage is unknown, shock at 200 joules.
  3. Immediately resume CPR.
- D. Reassess the patient's cardiac rhythm after 5 cycles (2 minutes) of CPR. If a shockable rhythm is present continue CPR while the defibrillator charges, then defibrillate x1 if necessary using the following guidelines:
  1. Monophasic defibrillator:
    - Shock at 360 joules.
  2. Biphasic defibrillator:
    - a. Device specific, but typically between 120-200 joules.
    - b. If device specific wattage is unknown, shock at 200 joules.
- E. Secure the patient's airway during the pulse check. Continue CPR immediately then confirm tube placement by exam and confirmation device.
  - Once intubated with an advanced airway (ETT, Combitube, King, etc.) switch to continuous compressions with 10 breaths per minute.
- F. Obtain IV access while providing two minutes of continuous CPR.
- G. During CPR:
  1. Administer epinephrine 1 mg IV/IO every 3-5 min; or
  2. May administer one dose of vasopressin, 40 Units IV/IO, to replace first or second dose of epinephrine.
- H. Reassess and confirm Pulseless Ventricular Tachycardia/Ventricular Fibrillation then defibrillate x 1 if necessary using the following guidelines:

1. Monophasic defibrillator:
    - Shock at 360 joules.
  2. Biphasic defibrillator:
    - a. Device specific, but typically between 120-200 joules.
    - b. If device specific wattage is unknown, shock at 200 joules.
  3. Immediately resume CPR for two minutes.
- I. Consider the following antiarrhythmics to be given during CPR:
1. Amiodarone 300 mg IV/IO once, then re-dose an additional 150 mg IV/IO once after four minutes of continuous CPR; or
  2. Lidocaine 1.0-1.5 mg/kg IV/IO first dose, then 0.5-0.75 mg/kg IV/IO (maximum of 3 doses or 3 mg/kg).
- J. Reassess rhythm after 2 minutes of CPR; if shockable rhythm, continue CPR while defibrillator charges then defibrillate x 1 if necessary using the following guidelines:
1. Monophasic defibrillator:
    - Shock at 360 joules.
  2. Biphasic defibrillator:
    - a. Device specific, but typically between 120-200 joules.
    - b. If device specific wattage is unknown, shock at 200 joules.
  3. Immediately resume CPR for two minutes.
- K. Consider Magnesium, loading dose 1-2 Gm IV/IO for Torsades de Pointes.
- L. Continue CPR and contact medical control physician for further orders.

<b>After Obtaining Verbal Orders</b>
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|--|
| <p>M. Consider additional doses of initial antiarrhythmic.</p> <p>N. Consider Sodium Bicarbonate for metabolic acidosis, tricyclic anti-depressant overdose or hyperkalemia.</p> <p>O. If there is no response to treatment consider termination of resuscitative efforts.</p> |
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### **Summary of Changes**

Increased atropine to 1.0 mg IV/IO

### **SYMPTOMATIC BRADYCARDIA – ADULT**

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#### **Standing Orders**

- A. Prepare for Transcutaneous Pacing. Consider sedation; use without delay for high degree block (type II second-degree block or third-degree AV block).
- B. Consider Atropine 0.5 mg IV/IO while waiting for pacer. May repeat to a total dose of 3 mg. If Atropine is ineffective, begin pacing.
- C. Treat contributing causes.



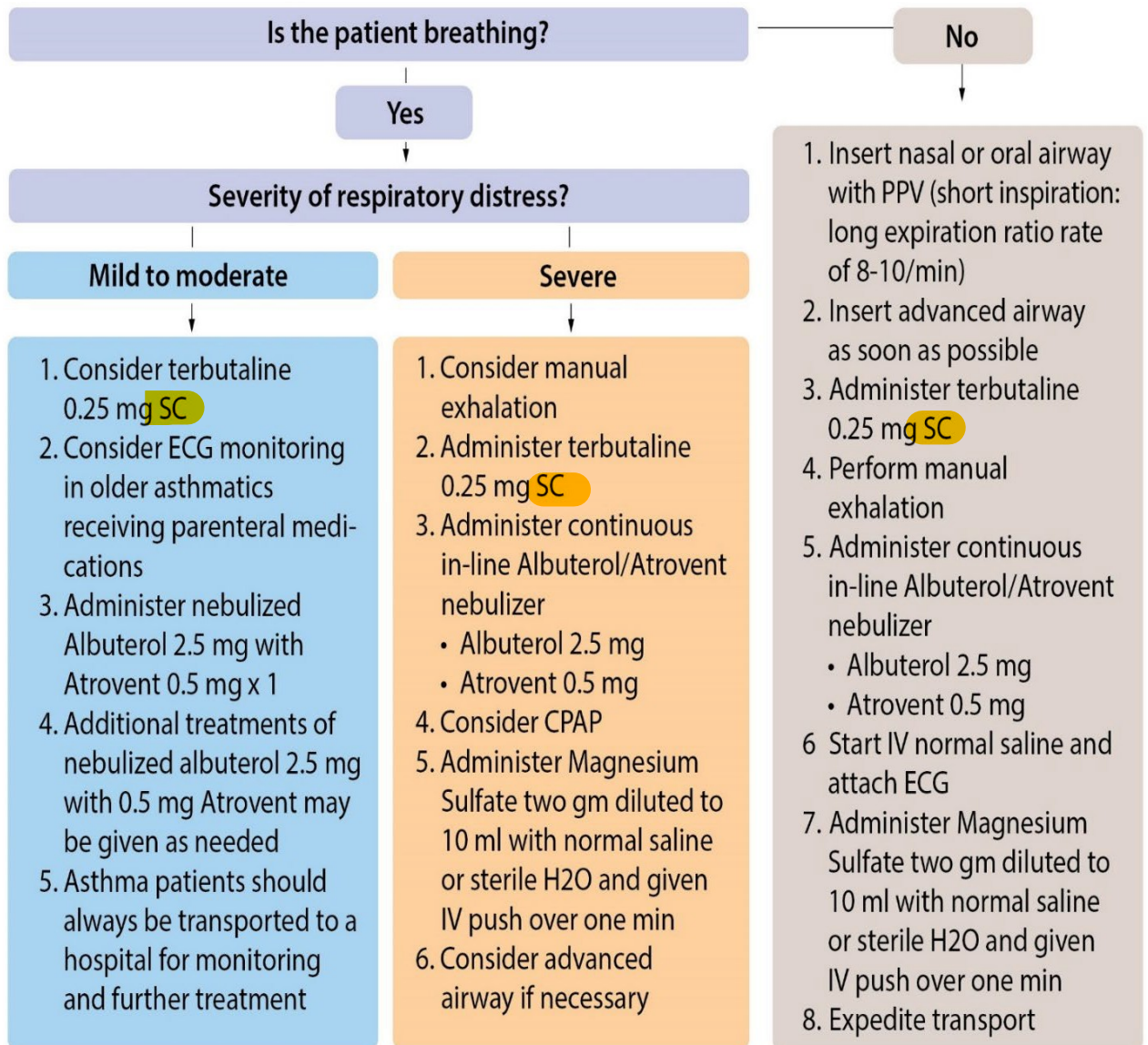


## Summary of Changes

- Changed to IM administration of terbutaline
- Added " Consider methylprednisolone 125 mg IV if symptoms persist" as #4 in the Severe column, before "Consider CPAP"

## ASTHMA ATTACK – ADULT

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## Summary of Changes

Added "Consider methylprednisolone 125 mg IV if severe symptoms persist." before considering CPAP.

## **COPD (ACUTE EXACERBATION) – ADULT**

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### **Standing Orders**

If the patient has a history of COPD and is symptomatic (presence of wheezing alone does not indicate COPD), en route to hospital, the following may be administered:

- A. Use a nasal cannula at 2 – 3 liters per minute initially. Oxygen may need to be increased if the patient's oxygenation status worsens.
  - When a patient is already on oxygen, EMS oxygen therapy flow rate should not start at a lower rate than the patient's current rate.
- B. Oxygen flow should be titrated to a target SpO<sub>2</sub> (if pulse oximetry is available) of 93%.
  - Does not apply to patients on CPAP.
- C. May give nebulized albuterol 2.5 mg with ipratropium bromide (Atrovent) 0.5 mg added.
- D. May repeat nebulized albuterol 2.5 mg with ipratropium bromide (Atrovent) 0.5 mg x1.
- E. If available; consider CPAP if two or more of the following are present:
  - Retractions or accessory muscle use.
  - Pulmonary edema.
  - Respiratory rate greater than 25 per minute.
  - SpO<sub>2</sub> less than 92%.
    1. Administer CPAP per service medical director (device dependent).
    2. Assess the patient's response. If the patient's condition worsens, (e.g. the patient becomes hypotensive, decreased SpO<sub>2</sub>) discontinue CPAP.
    3. If CPAP is initiated, continue to treat with medications as normal.

<b>After Obtaining Verbal Orders</b>
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- |   |
|---|
| F. Treatment based on patient history and physical exam findings. |
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## Summary of Changes

Changed administration of terbutaline to IM

### **KNOWN OUTBREAK OF TRANSMITTABLE RESPIRATORY ILLNESS (PATIENT IS BREATHING) – ADULT**

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To be used for patients with known or suspected transmittable respiratory illnesses (e.g. Severe Acute Respiratory Syndrome (SARS), tuberculosis, epidemic influenza, etc.), in the presence of a known outbreak. This would include patients who have a febrile illness with cough.

#### **Standing Orders**

- A. Protect yourself and crew with gowns, gloves and N95 mask/Powered Air Purifying Respirators (PAPR) and eye protection.
- B. Begin oxygen therapy by mask. If oxygen is not needed then place a surgical mask on the patient
- C. For wheezing give albuterol metered dose inhaler (MDI) 2 puffs or via breath actuated nebulizer (i.e. AeroEclipse), may repeat x 1. Additional treatment may be given every 15 minutes thereafter as needed
- D. If available, consider Continuous Positive Airway Pressure (CPAP) when two or more of the following are present:
  - Retractions or accessory muscle use
  - Pulmonary edema
  - Respiratory rate greater than 25/minute
  - SpO<sub>2</sub> less than 92%
  1. Administer CPAP (device dependent, per service medical director)
  2. Assess patient response
  3. If the patient's condition worsens, (e.g. patient becomes hypotensive, decreased SpO<sub>2</sub>) discontinue CPAP
  4. Contact receiving hospital for isolation room preparations
- E. For patients in moderate to severe respiratory distress, may administer on-site terbutaline 0.25 mg SC or epinephrine 0.5 (1:1,000) mL IM.

<b>After Obtaining Verbal Orders</b>
F. If not already given, consider terbutaline 0.25 mg SC.
G. May repeat albuterol immediately for moderate to severe distress.



## Summary of Changes

Changed administration of terbutaline to IM

### **KNOWN OUTBREAK OF TRANSMITTABLE RESPIRATORY ILLNESS (PATIENT IS NOT BREATHING) – ADULT**

---

To be used for patients with known or suspected transmittable respiratory illnesses (e.g. Severe Acute Respiratory Syndrome (SARS), tuberculosis, epidemic influenza, etc.), in the presence of a known outbreak. This would include patients who have a febrile illness with cough.

#### **Standing Orders**

- A. Protect yourself and crew with gowns, gloves and N95 masks/Powered Air Purifying Respirators (PAPR) and eye protection.
- B. Insert oral airway and begin positive pressure ventilation.
- C. Insert ET tube or other airway control device as authorized, as soon as possible. Use face shield (or Powered Air Purifying Respirator if wearing one) for your eye protection during intubation.
  - May administer terbutaline 0.25 mg SC or epinephrine 0.5 (1:1,000) mL IM.
- D. See the [EMSRB website](http://www.emsrb.state.mn.us) (<http://www.emsrb.state.mn.us>) for the “EMS Exposure/Special Pathogen Situation Response Guide” for further information.





## BEHAVIORAL EMERGENCIES – ADULT

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### Summary of Changes

Added PO Olanzapine ODT (Zyprexa/Zydis) 5-10 mg or Risperidone M-Tab (Risperdal) 2-4mg

### Standing Orders

- A. Assess the severity of the patient's agitation.
- B. Consider available resources and situational factors when determining action plan and need for sedation.
- C. Consider de-escalation techniques when appropriate.
  - If sedation is needed, an IV route of administration may be used if one already exists. However, DO NOT attempt to place an IV in an agitated patient.
- D. **If sedation is needed, the following sedatives may be considered:**
  - Midazolam HCL (Versed) 5 mg IV/IO/IM  
**AND/OR**
  - Haloperidol (Haldol) 5-10 mg, IV/IO/IM (dosage based on the patient's age and/or weight)  
**OR**
  - Lorazepam (Ativan) 2 mg IV/IO/IM  
**AND/OR**
  - Haloperidol (Haldol) 5-10 mg, IV/IO/IM (dosage based on the patient's age and/or weight)  
**OR**
  - Droperidol 5-10 mg IV/IO/IM  
**OR**
  - Olanzapine (Zyprexa) 5-10 mg IV/IO/IM  
**OR**
  - Ketamine 5 mg/kg IM (if IV already established, may give 2 mg/kg IV/IO)
- E. Once sedation has been administered, place the patient in a position where monitoring of condition and application of monitoring equipment can be accomplished. Restraints may be used if necessary to ensure the continued safety of the patient and providers.
- F. Monitor the airway and be prepared to provide respiratory support including suctioning, oxygen, and intubation.
- G. If ketamine has been administered be alert for laryngospasm (presents as stridor, abrupt cyanosis/hypoxia early in sedation period). If laryngospasm occurs, perform the following in sequence until the patient is ventilating, then support as needed:
  1. Provide jaw thrust and oxygen
  2. Attempt Bag Valve Mask (BVM) ventilation
  3. Attempt intubation (per individual service protocol). Vocal cords are likely to be closed if not paralyzed and there may be a need for intubation over the gum bougie/tracheal tube introducer.
  4. If hypersecretion is present, consider Atropine 0.1-0.3 mg IV/IO or 0.5 mg IM
- H. Consider IV access once sedation is sufficient to allow it. If IV is already present then administer Normal Saline wide open up to 1 liter
- I. Consider Sodium Bicarbonate 1 amp IV/IO push
- J. Rapid transport at earliest opportunity

<b>After Obtaining Verbal Orders</b>
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For continued agitation, consider contacting a medical control physician for further orders.
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## Summary of Changes

Added graphic (copyright Pediatric Emergency Standards, Inc., 2013). Increased CPR breaths to 20-30/min. Moved administration of epinephrine to be done after first 5 cycles (2 minutes) of CPR.

## CARDIAC ARREST (ASYSTOLE/PEA) – PEDIATRIC

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### Standing Orders

- A. Complete a rapid scene survey observing for any indications or any evidence that resuscitation should not be attempted (e.g., DNR orders or conditions incompatible with life).
- B. If cardiac arrest occurs in the presence of the ambulance crew, assess the patient's cardiac rhythm and continue with the appropriate protocol.
- C. If the patient is in cardiac arrest on arrival of the ambulance crew:
  1. Institute or continue BLS
  2. CPR: compressions 100/min, breaths 8-10/min. Do not over ventilate
  3. Reassess the patient's rhythm after every 5 cycles (2 minutes) of CPR. Limit interruptions in CPR during pulse/rhythm checks to less than 10 seconds for airway insertion and/or administration of medications
  - 4.
- D. Assess and confirm the patient's cardiac rhythm, immediately resume CPR.
- E. Review the most frequent causes for PEA, treat according to protocols if present:
  1. Hypovolemia – fluids
  2. Hypoxia – ventilation and oxygenation
  3. Hypothermia – re-warming. See the [Hypothermia – Pediatric](#) protocol
  4. Hypoglycemia – check blood sugar and if <60 mg/dL treat per Hypoglycemia protocol

### Consider Obtaining Verbal Orders for:

5. Acidosis – NaHCO
6. Hyperkalemia – CaCl & NaHCO
7. Tension pneumothorax – needle chest decompression
8. Drug overdose – intubation & specific antidote
9. Coronary thrombosis – 12-lead ECG

### No Specific Prehospital Treatment for:

10. Hypokalemia
  11. Cardiac tamponade
  12. Pulmonary embolism
- F. Secure the patient's airway during the pulse check. Continue CPR immediately then confirm tube placement by exam and confirmation device
  - G. Obtain IV access while providing two minutes of continuous CPR
  - H. During CPR, administer epinephrine IV/IO, 0.01 mg/kg every 3-5 min. (1:10,000, 0.1 mL/kg)
  - I. Provide continuous CPR and reassess, checking the patient's pulse/rhythm every two minutes.
  - J. Contact medical control physician for further orders.

**After Obtaining Verbal Orders**

K. If no response consider termination of resuscitative efforts.



## Summary of Changes

Increased CPR breaths to 20-30/min.

### **CARDIAC ARREST (V-FIB AND PULSELESS V-TACH) – PEDIATRIC**

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#### **Standing Orders**

- A. If cardiac arrest occurs in the presence of the ambulance crew, assess the patient's rhythm and defibrillate x 1 if necessary (energy rates as prescribed by current AHA ACLS guidelines; e.g., 2 J/kg.).
- B. If the patient is in cardiac arrest on arrival of the ambulance crew, institute or continue BLS:
  1. CPR: compressions 100/min, breaths 8-10/min. Do not over ventilate.
  2. Reassess the patient's rhythm after every 5 cycles (2 minutes) of CPR. Limit interruptions in CPR during pulse/rhythm checks to less than 10 seconds for airway insertion and/or administration of medications.
- C. Reassess the patient's cardiac rhythm after 5 cycles (2 minutes) of CPR; if a shockable rhythm is present, continue CPR while the defibrillator charges then defibrillate x 1 (energy rates as prescribed by current AHA ACLS guidelines; e.g., 2 J/kg.).
- D. Continue CPR immediately and secure the patient's airway during the pulse check, then confirm tube placement by exam and confirmation device.
- E. Obtain IV access while providing two minutes of continuous CPR. Transport early if no readily accessible IV/IO access.
- F. During CPR, administer epinephrine IV/IO 0.01 mg/kg (1:10,000, 0.1 mL/kg) every 3-5 min.
  - NOTE: Refer to pediatric reference (e.g., Broselow Tape) if assistance is needed with drug dosage calculations for pediatric patients.
- G. Reassess the patient's cardiac rhythm after 5 cycles (2 minutes) of CPR; if a shockable rhythm is present, continue CPR while the defibrillator charges then defibrillate x 1 (energy rates as prescribed by current AHA ACLS guidelines; e.g., 2 J/kg.).
- H. Continue CPR immediately.
- I. Consider:
  - Amiodarone 5 mg/kg bolus IV/IO; or
  - Lidocaine 1 mg/kg bolus IV/IO; or
  - Magnesium Sulfate 25-50 mg/kg IV (for Torsades de Pointes or hypomagnesemia), maximum 2 grams; or
- J. If no response to treatment, consider termination of resuscitative efforts.

