



Emergency Medical Services

***TRI-COUNTY EMS
EMERGENCY
MEDICAL
RESPONDER
GUIDELINES***

For Wisconsin Ambulance Services

2009 Edition

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REGIONS HOSPITAL EMERGENCY MEDICAL SERVICES

INTRODUCTION:

The Emergency Medical Services (EMS) Program at Regions Hospital has developed these policies and guidelines. All statements contained in this manual are informative only and represent that which is believed to be the highest standard of care relating to any particular set of circumstances.

It is the intention of the Regions Hospital EMS medical director(s) that this manual be used as consultative material in striving for optimal patient care. It is recognized that any specific procedure or service is always subject to modification depending upon the circumstances of a particular case. Further, the medical control physician may deviate from these guidelines based on medical judgment.

This edition replaces all previous editions and becomes effective on April 1, 2009.

REGIONS HOSPITAL EMERGENCY MEDICAL SERVICES:

Regions Hospital Emergency Medical Services is a program of Regions Hospital. Our services encompass the full spectrum of out-of-hospital emergency care oversight including:

- Medical direction and consultation
- Quality management
- Education
- Research
- Legislative advocacy

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These guidelines and policies have been approved by:


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April 1, 2009
Date


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April 1, 2009
Date

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TABLE OF CONTENTS

Medical Direction Policies

- 5 EMS On-Call Clinical Supervisor
- 6 Physician at Scene
- 7 Exposure Control and Reporting
- 9 Do Not Resuscitate

Patient Care Guidelines

- 13 BLS Patient Assessment
- 14 Airway Obstruction
- 15 Anaphylaxis
- 16 Cardiac Arrest: Adult
- 18 Cardiac Arrest: Pediatric
- 20 Hypoglycemia

Medications

- 74 Dextrose, Oral/Glucose/Glutose
- 76 Epinephrine, Premeasured Injection Device/EpiPen
- 82 Oxygen

Procedures & Equipment

- 87 Carbon Monoxide Oximetry Device
- 90 Combitube
- 100 Oximetry
- 102 Tourniquet

Reference Section

- 33 Pediatric Vital Signs
- 34 Helicopter Landing Zone
- 35 Important Phone numbers
- 36 Regions Hospital EMS Contact Information

Medical Direction Policies

Tri- County EMS	
POLICY/PROCEDURE: EMS On-Call Clinical Supervisor	Page 1 of 1
ISSUED BY: Medical Director	No. 09-100
DATE: January 1, 2009	Supersedes: No. 05-100

Purpose:

Tri-County EMS recognizes that providing EMS is a 24-hour/day, 7 day/week operation. An EMS On-Call Clinical Supervisor (OCCS) is available to respond to the medical direction needs of customers at all hours. The OCCS should also be contacted so that Medical Direction is kept informed of unusual circumstances or events that occur in services under their medical oversight.

Policy:

Contact/Notify the OCCS of the Following Events:

1. Mass casualty incident/disaster (natural or manmade)
2. Any question of an emergent nature that requires immediate advice from Medical Direction
3. Any event that has high media profile

Procedure:

1. Contact MRCC at (651) 254-2990 and ask them to contact the OCCS.
2. Provide MRCC with your name, service, and a callback number.
3. The OCCS will contact the service for further details.

TRI-COUNTY EMS	
POLICY/PROCEDURE: Physician at Scene	Page 1 of 1
ISSUED BY: Medical Director	No. 09-117
DATE: January 1, 2009	Supersedes: No. 05-116

PURPOSE:

To assure adequate prehospital patient care, and maintenance of professional courtesy among physicians and prehospital personnel when a physician is present at the scene of an emergency.

POLICY:

Medical control should be notified as early as possible in the communication that there is a physician at the scene.

1. Ambulance Personnel Responsibilities:
 - A. Identify self to the physician.
 - B. Inquire if physician is licensed to practice medicine in Wisconsin and area of specialty.
 1. Obtain physician's state identification number and document it on run sheet.
 - C. Inquire if physician wishes to be responsible for patient. If so, explain that physician at scene must:
 1. Instruct/supervise prehospital personnel at scene.
 2. Accompany patient in ambulance to hospital.
 - D. Document the identification of any on-scene physician that participates in patient care.
2. Physician at Scene Responsibilities:
 - A. If physician declines responsibility, prehospital personnel should follow established guidelines.
 - B. If physician accepts responsibility:
 1. Medical control is notified of physician at scene.
 2. No monitoring medical control physician is necessary.
 3. Telemetry or radio communications are maintained.
 4. Physician at scene accompanies patient to hospital.
 - C. If physician wishes to assist only:
 1. Communicates with medical control physician, however, physician at scene has no medical control.
 2. Physician at scene is not required to accompany patient to hospital.

SPECIAL NOTES:

1. If a physician makes requests of EMS personnel in a clinical (e.g. hospital, clinic or nursing home) setting that are contrary to these guidelines or appear, in the EMS personnel's judgment, to be contrary to the patient's best interests, EMS personnel should request that the physician carry out those orders or consult with a medical control physician. Once the on-scene physician is no longer physically present, EMS personnel should follow established care guidelines.

TRI-COUNTY EMS	
POLICY/PROCEDURE: Exposure Control and Reporting	Page 1 of 2
ISSUED BY: Medical Director	No. 09-118
DATE: January 1, 2005	Supersedes: No. 05-117

PURPOSE:

All prehospital care providers are at risk for exposure to communicable/infectious blood borne and airborne diseases such as HIV, hepatitis, meningitis, tuberculosis, etc. The following policy is an attempt to define those risks.

DEFINITIONS:

1. The following types of exposure can increase the risk of contracting a communicable/infectious disease:
 - A. Blood borne exposure: human blood or any body fluid visibly contaminated with blood
 - B. Other body fluid exposure:
 1. Human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva, emesis, stool, urine, draining wounds or lesions
 2. Other suspicious circumstances and/or generally unclean surroundings
 - C. Airborne exposure: Direct indoor contact with a patient with known or suspected active tuberculosis or any other pathogen transmitted by airborne routes. Inside a vehicle is considered indoors.
2. A significant exposure is defined as:
 - A. Blood borne:
 1. Contact of broken skin or mucous membrane of EMS personnel with a patient's blood, amniotic fluid, pericardial fluid, peritoneal fluid, pleural fluid, synovial fluid, cerebrospinal fluid, semen, vaginal secretions, or other body fluids grossly contaminated with blood.
 2. A needle stick, scalpel or instrument wound, or other wound infected by an object that is contaminated with blood, and that is capable of cutting or puncturing the skin of EMS personnel.
 - B. Airborne: Direct indoor contact with a patient with known or suspected active TB.
 - C. Other: An exposure that occurs by any other method of transmission recognized by contemporary epidemiological standards as a significant exposure.

POLICY:

1. Each service is responsible for compiling an exposure control plan and updating it annually.
2. Each service is responsible for providing annual continuing education of exposure control plan for all employees at risk.
3. Immunizations and screenings should be updated as recommended.
4. If a bystander at the scene reports a possible exposure, they should be given the written Good Samaritan Information on Blood or Body Fluid Exposures.

SPECIAL NOTES:

1. It is extremely important for EMS personnel to report potential or known exposures immediately following the exposure so that prophylactic treatment (if indicated) may begin immediately. Personnel who choose to have their exposure evaluated at Regions Hospital Emergency Department should report immediately to the charge nurse on duty.
2. This policy is intended to supplement and not substitute for the standards set for General Industry in the Code of Federal Regulations.

TRI-COUNTY EMS	
POLICY/PROCEDURE: Do Not Resuscitate	Page 1 of 3
ISSUED BY: Medical Director	No. 09-119
DATE: January 1, 2009	Supersedes: No. 05-118

PURPOSE:

Regions Hospital EMS recommends that the decision to withhold cardiopulmonary resuscitation (CPR) rest with the patient and his/her physician. These recommendations are intended to improve communication of the existence of a Do-Not-Resuscitate (DNR) order between the physician and the emergency medical personnel who may be summoned in the event of an emergency. Do-Not-Resuscitate (DNR) orders are orders issued by a patient’s physician to refrain from initiating cardiopulmonary resuscitative measures in the event of an acute cardiopulmonary arrest.

Regions Hospital EMS recommends that prehospital personnel honor directives limiting CPR in individuals who have refused this treatment. Regions Hospital EMS recognizes a patient’s right to refuse treatment as stated in the Patient’s Bill of Rights (WI Stat. 154) and the responsibility of medical personnel to withhold treatments that have no medical benefit. It is customary medical practice that CPR is performed on all persons found to be in cardiac arrest, in the absence of directives from a primary physician to withhold such action. There are individuals who would decline these therapies or for whom the treatments are without benefit. Such persons may legally and ethically decline these treatments. Since in many cases there is prior knowledge that these services are not wanted or not indicated, the Do-Not-Resuscitate (DNR) or “No CPR” order has been used to implement the decision that CPR is not to be performed. This guideline is intended for patients receiving fully supervised medical care who might be expected to suffer cardiac or respiratory failure in the near future.

Physicians and ambulance services will make every effort to permit patients accessing emergency medical care and transportation to decline unwanted CPR in a manner consistent with the standard of medical care. Ambulance services will continue under the presumption that patients are eligible for and desire emergency medical services. This system is established to permit patients the right to refuse unwanted CPR with the realization that this presumption and the urgency of resuscitation may mean that questionable orders may not be honored.

AUTHORIZED DEFINITIONS:

1. Do-Not-Resuscitate (DNR, No code, No CPR): This category does involve active and aggressive medical treatment intended to sustain life up to the point of beginning CPR. DNR does not mean that the medical care of any other medical condition will be changed or limited. In the event of an acute cardiopulmonary arrest, no CPR will be initiated. This order means that prehospital personnel will not initiate or continue CPR on a patient in cardiac arrest once a valid DNR order is identified. If the first person finding the patient has a question about whether or not a pulse or spontaneous breathing exists, 9-1-1 should be called and the paramedics summoned to determine the patient’s status.
2. CPR (Cardiopulmonary Resuscitation) - This is the process of chest compression and artificial breathing as defined by the American Heart Association. Advanced levels of CPR mandate airway management, ventilatory assistance, chest compressions, defibrillation and giving appropriate drugs. The category of CPR implies full resuscitation, using any or all of the above techniques as appropriate.

3. Hospice or Comfort Care - This category is appropriate for patients who request death-allowing care, knowing that death is expected and prolongation of life is not a goal. Care is intended to provide comfort and attention to basic human needs, allowing life to continue “as is” without medical intervention to sustain or prolong life beyond the natural course of events. In general, calling 9-1-1 is not appropriate for patients in this category. In situations where there are immediate needs for choking, pain relief, or comfort, 9-1-1 may be called.

RIGHTS AND RESPONSIBILITIES:

1. Physician responsibilities:
 - A. The physician is responsible for obtaining DNR forms, discussing them with the family and ensuring that the form is properly completed with the necessary signatures
 - B. The physician should keep one copy in the permanent medical record and give the original to the patient.
 - C. The order should be written in the order section of the medical chart (if one is available), and signed by the physician.
2. Ambulance service responsibilities:
 - A. Each ambulance service in the Tri-County EMS system will operate in accordance with this guideline to allow prehospital personnel to honor the DNR orders.
 - B. Each ambulance service has the obligation to inform appropriate personnel of the procedural guidelines when presented with a DNR form or order written in the medical record.
 - C. Prehospital personnel will not assume any responsibility for evaluating the decision-making process or administrative procedures used to develop the DNR order. This responsibility rests with the attending physician and the licensed health care provider supervising care.
3. Patient Responsibilities and Rights:
 - A. A patient has the right to refuse cardiopulmonary resuscitation and should be involved to the greatest degree possible in the decision-making process. Patients are encouraged to discuss these decisions with family members, if appropriate.
 - B. The form should be in a readily accessible location and caregivers should make its presence known during the provision of emergency medical services in the home.
 - C. The patient may revoke the order at any time by destroying the form or informing prehospital providers or family members of their wish for CPR in the event of cardiac arrest.

POLICY:

1. DNR orders are compatible with maximum therapeutic care and the patient should receive vigorous support (e.g. IV and drugs) up until the point of cardiac or respiratory arrest. Patients with DNR orders remain appropriate candidates for emergency evaluation, assistance, treatment and transport. 9-1-1 may still be used to summon emergency assistance for such patients who are suffering medical emergencies.
2. DNR orders become valid on the day when the DNR form is properly completed, dated and signed by the patient or acceptable proxy, the physician and the witness. Prehospital personnel will not honor DNR orders if they are not legible or properly signed and dated. The DNR order remains in effect indefinitely, but should be reviewed periodically.
3. A DNR form is encouraged, but not required in the long-term care facility. In the nursing home, DNR orders written in the order section of the medical record are valid if signed by the physician.
4. When prehospital personnel arrive, the family, patient or staff should immediately present the resuscitation guidelines form. Until properly completed orders are presented, prehospital personnel will assume that no valid DNR orders exist and proceed with standing orders for resuscitation as medically indicated under medical control.
5. The DNR order may be rejected and overridden if prehospital personnel have substantive reason to believe the order is invalid or in cases of unusual, suspicious or unnatural causes of cardiac arrest.
6. In the event a patient changes his/her mind regarding the DNR order prior to cardiac arrest, or family members request resuscitation, or disagreement occurs at the time of cardiac arrest, resuscitative

measures should be initiated by prehospital personnel and treatment decisions should be made by the physician responsible for care. In the event of uncertainty, resuscitative measures should be initiated and the Medical Control Physician contacted.

7. Telephone DNR orders will not be accepted by EMS personnel.
8. Documents with alternative wording used to limit medical care, e.g., Living Wills and Supportive Care Plans, will not be interpreted by EMS personnel or honored during the provision of emergency medical care.
9. Physicians present at the scene, who are willing to take responsibility for the emergency medical care, may verbally give orders to prehospital personnel to withhold or discontinue resuscitation. This should be documented on the ambulance report form with the physician's signature, name, State Physician #, address, and office telephone number.
10. DNR orders may be revoked at any time by the patient who, by destroying the request form, will prevent implementation of the DNR order. The patient is responsible for informing his/her physician and the agency supervising care, if any, of this decision.
11. It is recommended that the DNR form be reviewed periodically; however, it remains valid indefinitely unless revoked by the individual.
12. A DNI order is generally initiated if it is felt that long-term care ventilatory support is not in the patient's interest or desire. It is often not applicable to the short-term situations in which EMS will use an advanced airway. Prehospital personnel will not be expected to determine whether the apnea is due to a reversible condition so they may place an advanced airway if they believe the patient's condition warrants.
13. The Minnesota Medical Association DNR form, if used, requires three signatures with dates for the document to be valid and its intent carried out. This form does not expire with time, but must be revoked.
 - A. Patient/Client or authorized signature:
 1. The patient, when of sound mind, may knowingly limit his/her own care.
 2. A court-appointed guardian or conservator (with specific powers to make health care decisions) may sign on behalf of a legally incompetent person.
 3. Next-of-kin or knowledgeable loved one(s) may sign in consultation with physician using the concept of "substituted judgment" whereby the above individuals decide what the patient would want, were he/she able to express himself/herself.
 - B. Witness signature: This signature is to be obtained at the time a third party witnesses the signature of the patient, court-appointed guardian, or loved one. If a physician designate is involved in the actual discussion and form completion, that person should sign as witness.
 - C. Physician signature: This signature is required, but may be completed at a later date if a physician designate is involved in the actual discussion and form completion.

Patient Care Guidelines

BLS AND ALS PATIENT ASSESSMENT

1. Initial Assessment
 - A. Scene size up: How many patients are there? What additional resources are necessary? Is the scene safe? Should spinal precautions be taken?
 - B. Rescuer safety: What personal protective equipment should be worn?
 - C. Level of conscious: alert, responds to voice, responds to pain, unresponsive (AVPU)
 - D. Airway: assess for patency, and partial or complete obstruction
 - E. Breathing: assess rate, depth, chest rise, equality
 - F. Circulation: assess pulses (rate, regularity, quality), skin color, capillary refill, obvious bleeding
 - G. Disability: pupils, posturing, seizures, Glasgow Coma Scale
 - H. Expose: as indicated to look for life threatening injuries/conditions
 - I. Vitals: blood pressure, pulse, respirations, skin/body temp, oximetry
2. Focused Assessment: assess areas for pain, tenderness, swelling, bruising, deformity, wounds, and
 - A. Head: blood/fluid from ears, nose, mouth or eyes, pupils
 - B. Neck: jugular vein distention, step-offs, tracheal position, subcutaneous air
 - C. Chest: crepitus, lung sounds, subcutaneous air, paradoxical movement
 - D. Abdomen: rigidity, guarding, rebound tenderness, distention
 - E. Pelvis/Genitals: stability, crepitus, priapism, bleeding
 - F. Extremities: CMS, grip and foot strength, range of motion, pulse equality, edema
 - G. Back: edema, pain, and bruising
3. Mechanism of injury:
 - A. For MVAs: speed, vehicle damage/intrusion, type of accident, use of seatbelts, airbag deployment
 - B. GSWs/stabbings/assaults: type and/or caliber of weapon, length of knife
 - C. Falls: height, surface landed on
 - D. Sports: helmet or safety equipment worn
 - E. All: potential for head or spinal trauma, determine whether there was loss of consciousness, use of mind altering substances
4. Mechanism of illness:
 - A. When did symptoms begin? Has it changed?
 - B. Does anything make the symptoms better or worse?
 - C. Any previous similar episodes?
 - D. Has there been any loss of consciousness?
 - E. What do the symptoms feel like? (quality, radiation, severity)
 - F. Potential for associated trauma and need to take spinal precautions
 - G. Use of mind altering substances
 - H. Last meal
5. Past Medical History
 - A. Medical conditions/surgeries:
 - B. Medications: dosages, when last taken (if possible, bring medications to hospital)
 - C. Allergies: medications (foods, animals, other as appropriate)
6. Reassessment
 - A. Repeat vital assessment
 1. Minimally every 10 – 15 minutes
 2. Every five minutes if unstable or abnormal
 3. After each procedure or medication administration
 - B. Repeat initial assessment any time patient condition deteriorates

AIRWAY OBSTRUCTION

SIGNS & SYMPTOMS:

1. Choking
2. Cough
3. Voice changes/inability to speak
4. Skin: cyanosis
5. Neuro: ↓ LOC , seizures, or unconscious
6. Respirations: labored, paradoxical, tachypneic, inspiratory stridor, ≠ breath sounds, ↓ O₂ sats

OBTAIN HISTORY OF:

1. Foreign body aspiration
2. Food ingestion
3. Inadequate dentition
4. Drug or alcohol use
5. Trauma
6. PMH/Meds/Allergies

PRECAUTIONS:

1. Suction applied for > 10 seconds may cause hypoxia and dysrhythmias.
2. Be prepared for vomiting following removal of obstruction.

BASIC LIFE SUPPORT CARE:

1. Use suction if necessary to clear airway.
2. Do not intervene in patients with a partial airway obstruction with good air exchange.
3. If airway remains obstructed, follow AHA guidelines for the removal of obstruction:
 - A. Adult: administer abdominal thrusts until dislodged or patient becomes unconscious. Once unconscious, continue sequence of visualizing airway for object (no blind finger sweep), attempt to ventilate, reposition and attempt to ventilate, 30 chest compressions, until obstruction is dislodged.
 - B. Child: administer abdominal thrusts until dislodged or patient becomes unconscious. Once unconscious, continue sequence of look in mouth, attempt to ventilate, reposition and attempt to ventilate, 30 chest compressions, until obstruction is dislodged.
 - C. Infant: administer five back slaps and five chest thrusts until dislodged or patient becomes unconscious. Once unconscious, continue sequence of: look in mouth, attempt to ventilate, reposition and attempt to ventilate, 30 chest compressions, until obstruction is dislodged.
4. If airway remains obstructed, continue obstructed airway procedures until ambulance arrives.
5. Administer oxygen and assist ABCs as necessary once airway is cleared.

ANAPHYLAXIS

SIGNS & SYMPTOMS:

1. Dyspnea, tachypnea, or hyperventilation
2. Cyanosis, ↓ O₂ sats, agitation or anxiety
3. Hoarseness, stridor, or bronchospasm
4. Pulmonary, laryngeal, tongue or facial edema
5. Rapid, weak pulse, ↓ BP, syncope
6. Hives, rash, itching, flushing
7. Difficulty speaking & use of accessory muscles

OBTAIN HISTORY OF:

1. PMH/Meds (esp. Epi autoinjector)/Allergies
2. Cardiorespiratory disease
3. Onset, severity, & duration
4. Relieving factors (Epi autoinjector)
5. Environmental or allergen exposure

BASIC LIFE SUPPORT CARE:

1. Administer oxygen.
2. Assist patient with administration of prescribed Epi autoinjector as directed by private physician.
3. Consider ALS response.
4. If possible, immediately remove insect stinger.
5. Apply cold packs to site of sting.
6. Assist respirations in any patient with decreased LOC and respiratory rates of < 10 or > 30/min.
7. Notify responding units of patient condition

CARDIAC ARREST: ADULT

SIGNS & SYMPTOMS:

1. Absent pulse (carotid and one other location)
2. Absent or agonal breathing
3. Skin: pale, cool, cyanotic, mottled
4. Neuro: unconscious, seizure activity (initially)

OBTAIN HISTORY OF:

1. Witnessed or unwitnessed collapse
2. PMH/Meds/Allergies
3. DNR status
4. Bystander CPR
5. Down time
6. Potential causes: MI, CVA, OD, electrocution, diabetes, airway obstruction, trauma

CONTRAINDICATIONS:

1. Combitubes are contraindicated in patients < 5 feet.

PRECAUTIONS:

1. Pulse oximetry in low perfusion states may be unreliable.
2. This guideline follows AHA recommendations and is intended for adults and those showing signs of puberty.
3. Take appropriate infection control precautions.
4. Do not analyze with an automatic external defibrillator (AED) while moving the patient.
5. Remove any medication patches prior to defibrillation.
6. Defibrillators may be used on patients with pacemakers or automatic implanted defibrillators, but do not place patches or paddles over these devices.
7. Do not analyze or shock conscious patients, even if AED is prompting an analysis.

DETERMINATION OF OBVIOUSLY DEAD PATIENTS:

1. Consider not resuscitating patients in the following circumstances;
 - A. Presence of valid DNR order
 - B. Rigor mortis
 - C. Dependent pooling of blood
 - D. Injuries incompatible with life
 - E. Once resuscitation has begun, it may be terminated only AFTER physician consultation either in person or via Medical Control unless there is a valid DNR order present.

NONTRAUMATIC BLS CARDIAC ARREST CARE:

1. Alert responding units that you have an arrest as soon as possible.
2. Assess LOC and ABCs.
3. Suction as necessary to clear the airway.
4. If arrest is witnessed, begin CPR 30:2 immediately, and go to step 7.

NOTE: Do not interrupt compressions unless absolutely necessary, allow chest to recoil, and ventilate ONLY to chest rise.

5. Ventilate twice initially with 100% O₂ using oral airway, bag-valve system or demand valve, then decrease to two ventilations every 30 compressions.
6. Perform CPR (compression rate 100/min) until AED is available or perfusion is restored.
7. Apply defibrillation patches:
 - A. One patch and negative (sternum) cable to upper right chest, below collarbone.
 - B. One patch and positive (apex) cable to midaxillary area below left breast.
8. Turn on AED.
9. Stop CPR. Assure that patient is motionless and all personnel are clear. Analyze.
10. If a shockable rhythm is detected, the AED will begin charging, assure that all personnel are still clear. Deliver shock.
11. Resume CPR 30:2 for two minutes.
12. Reanalyze and deliver a shock if indicated.
13. After the second shock or analyzing interval (no shock advised), insert Combitube.

14. Resume CPR 30:2 for two minutes.
15. Reanalyze and deliver a shock if indicated.
16. If there is no shock indicated after ANY analysis, it means the AED is detecting a non-shockable rhythm and a pulse should be checked.
 - A. If no pulse is present, continue CPR 30:2 for two minutes before reanalyzing. If a shock is not indicated after 2 analyses, then prepare patient for transport and reanalyze every three to five minutes. If patient is not in a shockable rhythm, repeated analysis only delays needed CPR.
 - B. If pulse is present, manage and support ABCs as necessary. Prepare for transport.
17. Contact Medical Control for further orders.
18. Patients that are transported should be secured on a longboard.

TRAUMATIC CARDIAC ARREST CARE:

Traumatic cardiac arrest differs in the following ways:

1. While manually stabilizing the neck, open the airway using the modified jaw thrust or chin lift technique. Provide manual stabilization during all advanced airway procedures and until the patient is secured on a board.
2. If unable to ventilate due to traumatic airway obstruction, transport immediately.
3. Defibrillators are not used on patients whose arrest is due to probable blood loss.
4. Control major external bleeding.
5. Apply C-collar while logrolling onto backboard. Check back for injuries.

HYPOTHERMIC BLS CARDIAC ARREST CARE:

1. Take 30 - 45 seconds to confirm pulselessness or profound bradycardia. Perform CPR if no pulse is felt after 30 - 45 seconds.
2. Perform all treatments and transportation as gently as possible to avoid precipitating V-fib.
3. Remove wet garments and protect against further heat loss and wind chill through the use of blankets and heated patient compartment.
4. Maintain horizontal position, avoiding rough and excessive movement.
5. If patient fails to respond after one shock, continue CPR until ambulance arrival.
6. Severe hypothermia is frequently preceded by other disorders (e.g. drug overdose or trauma). Assess for and treat these underlying conditions while simultaneously managing the hypothermia.

SPECIAL NOTES:

1. After each 2 minute chest compression cycle, rescuers should switch places to insure adequate depth and rate.
2. If, despite above treatment, the patient still does not have a pulse or is not perfusing, in conjunction with the monitoring physician, it may be appropriate to terminate the resuscitation effort. Once resuscitative efforts have begun, they may be discontinued only after consulting a physician.
3. Defibrillation should be accomplished as soon as possible. Bring the defibrillator to the patient; do not bring the patient to the defibrillator. Immediate CPR and defibrillation take priority over advanced airway management (Combitube).
4. If patient converts with a return of pulse, then re-arrests, begin the guideline over again. Six shocks may be delivered before contacting Medical Control.
5. The monitoring physician may supersede these orders at any time.
6. Do not attempt rhythm interpretation unless specifically trained. Document and report AED action instead.
7. AED should be checked at least monthly for proper operation. Follow manufacturer's recommendation for testing and maintenance.
8. Each cassette and memory module should contain data from only one patient.
9. It may be necessary to shave or dry the chest to ensure good patch contact.
10. Cardiac Arrest Data Collection forms must be completed for each patient. This form should include Medical First Responder CPR and AED use, and made available to the EMS agency Medical Director for review.
 - A. The Cardiac Arrest Data Collection form may be completed by the responding Ambulance Service, but must include Medical First Responder use of the AED. This also includes Law Enforcement personnel who respond with AEDs.
11. Medical First Responder agency personnel must participate in an annual review of their AED device.

CARDIAC ARREST: PEDIATRIC

SIGNS & SYMPTOMS:

1. Absent pulse (brachial in infant)
2. Absent or agonal breathing
3. Pupils: dilated, sluggish or unreactive
4. Skin: pale, cool, cyanotic, mottled
5. Neuro: unconscious, seizure activity (initially)

OBTAIN HISTORY OF:

1. PMH/Meds/Allergies
2. Witnessed or unwitnessed collapse
3. DNR status
4. Bystander CPR
5. Down time
6. Potential causes: accident, abuse, drowning, electrocution, FBAO, respiratory distress

CONTRAINDICATIONS:

1. Combitubes are contraindicated in patients < 5 feet.
2. AEDs should use specific AED pediatric patches in patients < 8 years or < 90 pounds. If ALS is delayed and an adult AED is available, the adult AED may be used on a child over 1 year of age (place adult patches anterior/posterior if needed).

PRECAUTIONS:

1. Pulse oximetry monitoring in low perfusion states may be unreliable.
2. Remember that most arrests in children are respiratory related and adequate ventilation is the key for successful resuscitation and correction of acidosis.
3. Because the head of a child is proportionally larger, padding under the shoulders or torso will assist in airway management and may be required to keep the head in neutral alignment.

NONTRAUMATIC BLS CARDIAC ARREST CARE:

1. Ventilate:
 - A. Initially, high flow 100% O₂ using an oral airway, bag-valve system, and proper size mask.
 - B. Ventilate patient (**only to chest rise**) with two ventilations for each 15 compressions.
2. Perform CPR (15:2 two rescuer, 30:2 single rescuer, compression rates 100/minute for two minutes).
 - A. In children <8 years old, if a pulse is not palpable or heart rate is < 60/min and signs of poor systemic perfusion are present.
3. Position on short or longboard.

NONTRAUMATIC CARDIAC ARREST CARE: (continued) In addition to above and as appropriate:

1. Apply monitoring electrodes and/or pediatric defibrillation patches.
2. Identify rhythm; treat as follows:
 - A. Analyze, if shock indicated;**
 1. Defibrillate @ biphasic setting
 2. CPR for two minutes (15:2 single rescuer, 30:2 two rescuer)
 3. Analyze, shock if indicated
 4. CPR for two minutes (15:2 single rescuer, 30:2 two rescuer)
 5. May establish more definitive airway with Combitube if appropriate.
 6. Continue cycles of CPR until ambulance arrival
 - B. Asystole or PEA: ("No shock advised")**
 1. Continue CPR (15:2 two rescuer, 30:2 single rescuer)
 2. Continue to ventilate with 100% O₂

TRAUMATIC CARDIAC ARREST CARE: Care for traumatic cardiac arrest differs in the following ways:

1. While manually stabilizing the neck, open the airway using the modified jaw thrust or chin lift technique. Provide manual stabilization during all airway procedures until the patient is secured on a board with C-collar.
2. Control major external bleeding.
3. Assess chest for life-threatening injuries, e.g. sucking chest wound, flail chest and treat as appropriate.

HYPOTHERMIC CARDIAC ARREST CARE: Hypothermic cardiac arrest differs in the following ways:

1. Take 30 - 45 seconds to confirm pulselessness or profound bradycardia. Perform CPR if no pulse is felt after 30 - 45 seconds.
2. Perform all treatments as gently as possible to avoid precipitating V-fib.
3. Remove wet garments and protect against further heat loss and wind chill through the use of blankets and heated patient compartment.
4. Maintain horizontal position, avoiding rough and excessive movement.
5. Severe hypothermia is frequently preceded by other disorders (e.g. drowning, overdose or trauma). Assess for and treat these underlying conditions while simultaneously managing the hypothermia.

HYPOGLYCEMIA

SIGNS & SYMPTOMS:

1. Rapid onset
2. Dizziness or fainting
3. Slurred speech and drooling
4. Full, rapid pulse
5. Skin: pale, cool, clammy or very diaphoretic
6. Neuro: ↓ LOC, seizures, unconscious, abnormal behavior, confusion

OBTAIN HISTORY OF:

1. Last meal
2. PMH/Meds (insulin use or oral meds)/Allergies
3. Recent activity level
4. Last blood sugar reading
5. Recent vomiting
6. Consider other potential causes of symptoms: CVA, alcohol, seizures, overdose, head injury

PRECAUTIONS:

1. An altered or decreased LOC masks the signs of injury and illness. Any patient that is unconscious or has an altered mental status has the potential for a spinal injury.
2. Call medical control before giving oral/IV/IO sugar and glucagon if BS is known to be > 80 mg/dL.

BASIC LIFE SUPPORT CARE:

1. Consider oral or nasal airway initially if GCS < 9.
2. Administer oxygen.
3. Perform blood glucose testing. Normal blood sugar (BS) range is 80 - 120 mg/dL for adults, 60 - 100 mg/dL for children, and 30 - 80 mg/dL for newborns.
 - A. If BS is < 80 mg/dL and patient is conscious and cooperative, administer one of the following:
 1. One tube oral glucose (Glucose = 25 gm/tube, Insta-Glucose = 31 gm/tube). This is preferred over simple carbohydrate foods.
 2. Fast-acting, simple carbohydrates such as orange juice, given orally
 - B. If BS is < 80 mg/dL and patient has an altered level of consciousness:
 1. Administer 1 tube oral glucose (Glucose = 25 gm/tube, Insta-Glucose = 31 gm/tube) in downside cheek of log-rolled patient. Administer slowly, monitoring absorption and airway.
 2. EMT with IV training - establish IV of NS TKO with large bore needle.
4. Repeat BS testing as necessary (i.e. patient does not improve).
5. BLS with medication training:
 - A. If patient is uncooperative or has decreased LOC, administer 1 unit dose glucagon SQ or IM, prior to medical control contact, instead of administering oral glucose.

SPECIAL NOTES:

1. After clearance with Medical Control Physician (BGL above 80 mg/dL), written Non-Transportation Information sheets on Low Blood Sugar must be given to all patients not transported after a hypoglycemic episode.
2. All patients on oral hypoglycemic agents should be transported (M.D. consult required before non-transport).
3. Patients who require treatment with medications (D50 or glucagon) should have someone to stay with them if they are not transported to the hospital.

Medications

DEXTROSE, ORAL (generic), GLUCOSE (generic), GLUTOSE (brand)

ACTION: Hyperglycemic; increases circulating blood sugar levels

INDICATIONS:

1. Suspected or known hypoglycemia (BS < 80 mg/dL)

CONTRAINDICATIONS:

1. Intracranial hemorrhage

PRECAUTIONS:

1. Airway must be carefully maintained.
2. Should not be used as a diagnostic agent in the patient with altered LOC unless the BS is known to be < 80 mg/dL or, if the BS cannot be determined, patient is known to be diabetic.

ADMINISTRATION

1. Logroll patient to prevent aspiration and place in the recovery position.
2. Check blood sugar.
3. Administer 1 tube (Approximately 25 - 31 gm per tube) in downside cheek of log-rolled patient.
4. Administer slowly, monitoring absorption. Maintain adequate airway.
5. Repeat BS measurement.
6. Further orders must come from monitoring physician.

PEDIATRIC CONSIDERATIONS:

1. Do not give to patients < 12 years without physician order.
2. The initial dosage is usually one half of the adult dose.

SPECIAL NOTES:

1. All patients whose hypoglycemia is due to oral hypoglycemic agents should be transported.

EPINEPHRINE: PREMEASURED INJECTION DEVICE, EPIPEN® (brand)

ACTION: Stimulates both α and β receptors; bronchodilator, cardiac stimulator, and peripheral vasoconstrictor

INDICATIONS:

1. Patients experiencing a severe allergic reaction from stings or other allergens (anaphylactic shock or impending respiratory or cardiac arrest)

PRECAUTIONS:

1. Patients who have known allergic reactions to insect bites or other allergens will often have epinephrine prescribed in the form of an EpiPen® (or other similar device) that delivers an injection of pre-measured epinephrine.
2. **Use with caution in patients > 40 years.**
3. At the time when a request to deliver or assist a patient with their epinephrine is made, any suspected complicating conditions, such as the following, should be reported:
 - Heart disease
 - Psychosis
 - Hypertension history
 - Age > 40 years
 - COPD
 - Glaucoma
 - Pulmonary edema
 - Hyperthyroidism
 - Pregnancy

CONTRAINDICATIONS:

1. There are no absolute contraindications to the use of epinephrine in a life-threatening situation.

ADMINISTRATION:

1. In severe anaphylaxis, Emergency Medical Responders may assist a patient in administering their own prescribed EpiPen.
2. If possible, immediately remove insect stinger, but do not squeeze, pinch, or push it deeper into the skin.
3. Obtain order from medical control physician.
4. Assist in administration. Refer to specific manufacturer instructions, but generally:
5. EpiPen administration:
 - A. Pull off safety cap.
 - B. Wipe injection site with alcohol.
 - C. Place tip of EpiPen on exposed thigh (anterior/lateral) at right angle to the leg. Apply in this area regardless of what area of the body has been stung.
 - D. Press hard into thigh until autoinjector mechanism triggers, and hold in place for several seconds. Remove the EpiPen and discard into sharps container.
 - E. Massage injection site for 10 seconds to enhance absorption.
 - F. With persistent severe anaphylaxis, additional injections may be necessary. Consult with Medical Control Physician if a second dose is indicated.
6. Document any changes in patient condition.

PEDIATRIC CONSIDERATIONS:

1. Do not give to patients < 12 years without physician order.
2. The EpiPen comes in two available dosing options: EpiPen delivers 0.3 mg (in 0.3 cc) of 1:1,000 epinephrine IM. EpiPen Jr. delivers 0.15 mg (in 0.3 cc) of 1:2,000 epinephrine IM and is intended for use in patients < 60 lbs.

OXYGEN (GENERIC)

ACTION: Increases arterial oxygen tension (SaO₂) and hemoglobin saturation

INDICATIONS: LOW CONCENTRATION (24 - 44%):

1. History of chronic obstructive pulmonary disease (emphysema, chronic bronchitis, asthma in adult, heavy smoker [40 pack years or more])
2. Patients with SaO₂ readings \geq 95%

INDICATIONS: HIGH CONCENTRATION (60 - \approx 100%):

1. Smoke, carbon monoxide, or toxic gas inhalation
2. Trauma or suspected blood loss
3. Hypoxia (SaO₂ < 95%) from any cause
4. Respiratory distress, poor capillary refill or other indications of poor oxygenation
5. Unresponsive patient
6. Obstetric patients with known or suspected complications

CONTRAINDICATIONS:

1. None in the prehospital setting

PRECAUTIONS:

1. This guideline refers to spontaneously breathing and adequately ventilating patients only.
2. High concentration O₂ in some cases (emphysema and asthma) may depress respiratory drive; be prepared to assist ventilation, but don't allow patients to become severely hypoxic for fear of respiratory arrest.
3. Agitation or restlessness can be a sign of hypoxia.
4. Do not use in the presence of open flames.
5. Treatment for anxiety hyperventilation should be treated with reassurance and coaching to slow breathing. If the possibility of another underlying cause exists (i.e. pulmonary embolus, asthma, MI) then the patient should be treated with oxygen. DO NOT treat any patient by having them breathe into a paper bag or O₂ mask that is not supplied with O₂.

ADVERSE REACTIONS/SIDE EFFECTS:

1. Nonhumidified oxygen can dry mucous membranes, but humidified O₂ is not indicated in the prehospital setting.

ADMINISTRATION:

1. Deliver low concentrations via nasal cannula @ 1 - 6 lpm.
2. Deliver high concentrations via non-rebreather mask @ 6 - 15 lpm.
3. Attempt to obtain and document pulse oximetry readings before and during oxygen therapy.

PEDIATRIC CONSIDERATIONS:

1. Use pediatric mask or blow-by if mask is not tolerated.

SPECIAL NOTES:

1. If oximetry is unavailable, patients should receive high concentration oxygen unless low concentration is indicated.

Procedures & Equipment

CARBON MONOXIDE OXIMETRY DEVICE

INTRODUCTION:

Carbon monoxide oximetry devices, such as the Rad57, can be use to evaluate potential carbon monoxide poisoning in patients or firefighters.

INDICATIONS:

1. Patients exhibiting the following signs and symptoms:
 - A. Flu-like symptoms
 - B. Dyspnea
 - C. Headache
 - D. Chest pain
 - E. Lethargy
 - F. Nausea/vomiting
 - G. Hallucinations or giddiness

PROCEDURE:

1. Obtain a history of potential carbon monoxide exposure and history of smoking.
2. Secure or maintain the airway
3. Provide oxygenation and ventilation as needed
4. Consider ALS response.
5. Apply finger probe to patient using the correct technique.
 - A. If patient SpCO = 0-3%, no further evaluation is necessary.
 - B. If patient SpCO = 3-12% with no altered mental status and no symptoms, no further evaluation necessary.
 - C. If patient SpCO = 3-12% with symptoms listed above (regardless of the presence of altered mental status), treat with 100% O₂ and transport for further evaluation.
 - D. If patient SpCO > 12%, treat with 100% O₂ and transport for further evaluation.

SPECIAL NOTE:

1. Patients requiring further evaluation should be transported according to the hyperbaric transportation policy.

INTRODUCTION:

The Combitube airway is designed to provide a patent airway for arrested patients when visualization of the airway and endotracheal intubation are not possible. It is designed to be inserted blindly. The double lumen design allows effective ventilations to be provided regardless of whether esophageal or tracheal placement is accomplished. The pharyngeal balloon fills the space between the tongue and soft palate, eliminating the need for a mask and the associated face mask seal problems. If the Combitube is placed in the esophagus, the distal cuff will occlude the esophagus. Ventilations are then provided through perforations at the pharyngeal site. If the device is placed in the trachea, it functions as an endotracheal tube, with the distal cuff preventing aspiration.

INDICATIONS:

1. Adult patients in respiratory arrest
2. Adult patients in cardiac arrest
3. Combitube® is intended for patients ≥ 5 ft
4. Medication assisted airway management when ETI is not used

CONTRAINDICATIONS:

1. Intact gag reflex
2. Patients < 5 feet in height
3. Known esophageal disease
4. Caustic substance (acid or lye) ingestion
5. Allergy or sensitivity to latex (The pharyngeal balloon contains latex).

PRECAUTIONS:

1. Take appropriate universal precautions, including facial protection, as expulsion of stomach contents can occur through the #2 tube if the initial placement is in the esophagus.
2. May be used in trauma, but take care to prevent neck movement.
3. In the arrested patient needing defibrillation, initial defibrillation (up to 3) should not be delayed for Combitube insertion.
4. Pulse oximetry, in states of low perfusion such as cardiac arrest, may be unreliable.

INSERTION PROCEDURE:

1. Open the airway and suction mouth and oropharynx.
2. Begin positive pressure ventilation with 100% oxygen and oral airway. Ventilate initially, attempting to maximize oxygen saturation, and giving ventilations slowly, over 1 second.
3. While the patient is being ventilated, assemble the Combitube as follows (syringes are pre-drawn to appropriate volumes): large syringe to the blue cuff, labeled #1 (100 cc); small syringe to the white cuff, labeled #2 (15 cc).
4. Test the device by inflating both cuffs and removing syringes from check valves.
5. Withdraw the air from both cuffs and leave assembled to speed insertion.
6. Attach mask elbow (fluid deflector) to the shorter (#2) white tube.
7. Lubricate tube tip and pharyngeal balloon well with water-soluble jelly. Move to patient's head.
8. Place the head in a neutral position. Grasp the lower jaw and tongue between the thumb and fingers. Place the tip of the Combitube into the mouth, aligning it along the midline of the mouth.
9. Slide the tip GENTLY along the palate and posterior surface of the oropharynx. Use a curving motion to guide the tube inward and downward. Advance the tube until the upper teeth or gums are aligned between the two black rings.
10. Do not force the tube. If resistance is met, withdraw the tube, reposition the head and reattempt.
11. If unable to place the tube within 30 seconds, continue ventilations and compressions for 1 - 2 minutes and reattempt.
12. Limit insertion attempts to two unless directed by medical control to make further attempts.
13. Inflate large pharyngeal balloon (blue #1 cuff) with 100 cc air.
14. Inflate distal balloon (white #2 cuff) with 15 cc of air.
15. Begin ventilating through the longer blue tube (#1).
16. Assess placement by:
 - a. Listening over epigastrium for air gurgling in stomach.

- b. Observing the chest rise and fall.
 - c. Listening for bilateral lung sounds (midaxillary).
17. If there are bilateral lung sounds, absent stomach sounds and good chest rise, this indicates esophageal placement. Continue ventilating with 100% oxygen through the #1 tube.
 18. If chest rise and lung sounds are absent, and/or if air is heard gurgling in the stomach, remove mask elbow and move ventilation device to the shorter tube (#2), and reassess placement as above.
 19. If there are bilateral lung sounds, absent stomach sounds, and good chest rise while ventilating through the #2 tube, this indicates tracheal placement.
 20. Additional assessment adjuncts, if available, may be helpful in determining tube placement:
 - a. Pulse oximeter: low readings may indicate ineffective ventilations. Falling readings may indicate incorrect ventilation port.
 - b. End-tidal CO₂ detector: lack of color change may indicate incorrect ventilation port.
 - c. Direct visualization with laryngoscope
 24. If tube placement cannot be determined, remove the Combitube and ventilate patient using oral or nasal airway.
 25. Once tube placement is confirmed, secure tube with tape or tube restraint.
 26. Subsequently, ventilate once every eight seconds. Each ventilation should be given over 1 second. Switch to automatic transport ventilator as soon as convenient.
 27. If the device is placed in the esophagus, the #2 tube should be used to relieve gastric distention:
 28. Remove mask elbow and insert the stomach catheter (provided) into the #2 tube, advancing it to the first black line. If relief is not obtained, continue inserting to the second black line. The goal is to remove air from the stomach. Removal of stomach contents is not necessary.
 29. The stomach catheter may be connected to the mayon suction tubing and placed on LOW suction (portable or installed units) for several minutes. Continuous suction should not be used.

REMOVAL PROCEDURE:

1. The Combitube should not be removed unless:
 - A. Tube placement cannot be determined.
 - B. BLS only: The patient no longer tolerates the tube (begins to gag).
 - C. The patient vomits past either the distal or pharyngeal balloon.
 - D. There is a palpable pulse and the patient begins breathing on his or her own.
 - E. An ALS provider is present to place an ET tube.
2. Have suction equipment ready.
3. Log roll the patient to the side.
4. Deflate pharyngeal cuff using #1 pilot balloon. Pilot balloon should completely collapse.
5. Deflate distal cuff using #2 pilot balloon. Pilot balloon should completely collapse.
6. Gently remove the Combitube while suctioning the airway.

SPECIAL NOTES:

1. There may be occasions following the insertion of the Combitube where auscultation of breath sounds is negative AND gastric insufflation is negative. This may result from advancing the Combitube too deep into the airway, causing the pharyngeal balloon too push the epiglottis over the tracheal opening. This essentially creates a partial airway obstruction making ventilation difficult. If this occurs, deflate the No. 1 pilot (pharyngeal) balloon, pull the Combitube approximately 2 - 3 cm out of the patient's mouth and reinflate the pharyngeal balloon. This will reseal the pharyngeal balloon higher in the airway. If auscultation of breath sounds is now positive, and auscultation of gastric sounds is negative, continue ventilating. It is normal for the Combitube to rise slightly out of the mouth as the pharyngeal balloon is being inflated. Do not attempt to prevent the Combitube from rising while that balloon is being inflated. Remove any Combitube if you cannot determine which port is appropriate or if ventilation becomes more difficult after insertion.
2. The Combitube should be stored in its original container. This assures that all necessary components are present, protects the distal and pharyngeal cuffs, and provides proper pre-filled syringe volumes.
3. The Combitube may be used with an oxygen-powered resuscitator, a bag-valve-mask, or an automatic transport ventilator.
4. If air leaks around the pharyngeal balloon, up to 20 cc of air may be added to it (#1 pilot balloon). Do not add additional air to the distal cuff (#2 pilot balloon).
5. The Combitube must be left in place when a patient is pronounced in the field.

6. The Combitube is a single use device and should be discarded after use.
7. Upon arrival at the medical facility, the large syringe should be brought into the ER to facilitate the decompression of the pharyngeal balloon for ET intubation.
8. ALS:
 - A. In the unintubated patient, paramedics should use the airway they feel is most appropriate for the situation. A Combitube should not be placed if the patient has been successfully endotracheally intubated.
 - B. If the Combitube has been placed in the esophagus, paramedics should make one attempt at ET intubation when they arrive at the scene. With suction ready, deflate the pharyngeal balloon, move the device to the left, and visualize vocal cords with laryngoscope. Intubate in usual manner. If successful, leave the Combitube in place as removal may dislodge ET tube.
 - C. If the Combitube is in the trachea, and a paramedic or physician wishes to replace it with an endotracheal tube, a tube exchanger may be passed down the shorter, white (#2) tube.
 - D. If sedation is necessary following intubation, 1 – 2 mg Versed may be given slow IV/IO prior to Medical Control Physician contact. Sedation is generally preferred to extubation for improved level of consciousness.

OXIMETRY

INTRODUCTION:

The use of pulse oximetry aids in the assessment of respiratory function in the field. The pulse oximeter allows for non-invasive monitoring of oxygen saturation (the percent of hemoglobin saturated with oxygen; referred to as SaO₂ or O₂ sat. A normal SaO₂ for healthy individuals is 95-100%. A low ($\leq 93\%$) or falling SaO₂ indicates that the airway or ventilatory status may be compromised.

INDICATIONS:

1. Respiratory distress/complaints
2. Cardiac problems
3. Multiple system trauma
4. Poor color
5. Patients requiring use of airway adjuncts and/or assisted ventilations
6. Suspected shock
7. Altered level of consciousness

PRECAUTIONS:

1. Patients with hemoglobin disorders such as CO poisoning, anemia, and methemoglobinemia may give artificially high SaO₂ readings. Readings in such patients should be interpreted with extreme caution.
2. Pulse oximetry readings may be difficult to obtain in states of low perfusion.

PROCEDURE FOR PATIENTS WITH SaO₂ < 90% OR FALLING SaO₂:

1. Check airway and manage as indicated.
2. Increase oxygen delivery (increase liter flow) and/or assist ventilation.
3. Check pulse oximetry device placement. Possible causes of inaccurate readings include:
 - A. Excessive probe movement
 - B. Optical interference by bright light (direct sunlight, fluorescent and xenon arc lighting). Cover the sensor.
 - C. Poor waveforms/signals (hypovolemia, hypothermia, profound hypotension, or vasoconstriction)
 - D. Artificial fingernails and certain dark colored nail polishes may interfere with use.

PEDIATRIC CONSIDERATIONS:

1. Special probes may be required to obtain readings in pediatric patients.

SPECIAL NOTES:

1. Best probe site in adults is usually the middle fingertip with nail polish removed.
2. Attempt to obtain and document pulse oximetry readings before and during oxygen therapy.
3. The use of pulse oximetry as a vital sign is encouraged, as the oximeter may be helpful in detecting hypoxia not evidenced by signs or symptoms.

TOURNIQUETS

INTRODUCTION:

Tourniquets have long been a source of controversy because of the problems associated with their use (ischemia, nerve injury, etc). Recent advances in military medicine have improved the design and allowed for increased use for civilian EMS.

INDICATIONS:

1. Penetrating trauma from firearms and stabbings involving severe hemorrhage
2. Incidents involving blast injuries to extremities
3. Incidents resulting from industrial or farm accidents involving severe hemorrhage
4. Multiple causality injuries and lack of resources to handle hemorrhage control

CONTRAINDICATIONS:

1. Any bleeding that can be managed by direct pressure, elevation, or cold pack administration.
2. Major bleeding to a non-extremity

PROCEDURE:

1. Recognition that bleeding is uncontrollable with direct pressure
2. Apply tourniquet to the proximal segment of the bleeding limb
3. Tighten device until bleeding is stopped and secure device
4. Transport patient to trauma center and report time of placement

SPECIAL NOTE:

If transport to trauma center will be greater than 30 minutes, reassess tourniquet for possible removal

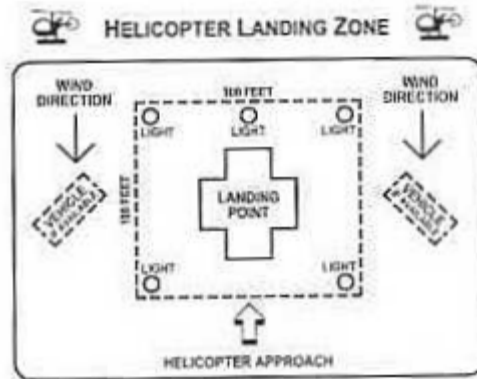
Reference Section

NORMAL PEDIATRIC VITAL SIGNS

AGE	Premie	Term	6 mos	1 yr	2-3 yrs
HEART RATE	140	125	130	120	115
RESPIRATION	<40	40 - 60	24 - 36	20-30	20 - 26
SYSTOLIC BP	42-60	60 +/- 10	89 +/- 29	96 ± 30	99 ± 25

AGE	4-5 yrs	6-9 yrs	10-12 yrs	>14 yrs
HEART RATE	100	100	75	70
RESPIRATION	20 - 24	12-25	18 - 22	12-18
SYSTOLIC BP	99 ± 20	100 ± 20	112 ± 20	120 ± 20

HELICOPTER LANDING ZONE



WARNING
**PILOTS MUST BE NOTIFIED OF
POWER LINES AS THEY ARE
INVISIBLE FROM THE AIR!**

Illuminate night landing areas. Headlights should be directed into the wind and on to the landing area. Approach and departure path should be clear of trees, power lines and loose debris.

IMPORTANT PHONE NUMBERS:

Amery Ambulance		(715) 268-8698
Amery Hospital		(715) 268-7151
Baldwin Hospital		(715) 684-3311
Baldwin Ambulance		(715) 684-3188
CISD (Metro Region Team)		(612) 347-5710
Children's Home Crisis Nursery:		(651) 646-4033
Clear Lake Ambulance		(715) 263-2804
East Metro MRCC:		(651) 254-2990
DHFS EMS		(608) 267-9777
Ellsworth Ambulance		(715) 273-4879
Elmwood Ambulance		(715) 639-2339
Glenwood City Ambulance		(715) 265-4157
EMSRB:		(612) 627-6000
Fairview Lakes Region ER:		(651) 982-7300
HCMC ER:		(612) 347-3132
Holy Family Hospital (New Richmond)		(715) 246-2101
Hudson Hospital		(715) 386-9321
Lakeview EMS (Stillwater)		(651) 430-4620
Lakeview ER:		(651) 430-4554
Life Link III:	(651) 778-0416,	(800) 328-1377
New Richmond Amb & Rescue		(715) 246-7700
North Land Ambulance (Frederic/Luck)		(715) 472-2388
NREMT:		(614) 888-4484
Osceola Ambulance		(715) 294-3911
Osceola Hospital		(715) 294-2116
Peirce County Dispatch		(715) 273-5051
Polk County Dispatch		(715) 485-8300
Poison Control:		(800) 222-1222
Prescott Ambulance		(715) 262-3775
Ramsey County Coroner:		(651) 224-7627
Regions Hospital ER:		(651) 254-3307
River Falls Ambulance		(715) 425-0370
River Falls Hospital		(715) 425-6155
Regina ER:		(651) 480-4310
Spring Valley Ambulance		(715) 778-4452
St. Croix County Dispatch		(715) 386-4701
St. Croix EMS Ambulance (Hudson)		(715) 386-4778
St. Croix Falls Hospital		(715) 483-3261
St. Croix Valley EMS (St. Croix Falls Ambulance)		(715) 483-3261
St. Joe's ER:		(651) 232-3348
St. John's ER:		(651) 232-7348
St. Paul Children's ER:		(651) 220-6911
St. Paul Domestic Abuse Hotline:		(651) 645-2824
State Duty Officer:	(651) 649-5451,	(800) 422-0798
Unity Area Ambulance (Milltown)		(715) 825-4444

Regions EMS Contact Information

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