



Northwest Texas Healthcare Systems

PANHANDLE EMERGENCY MEDICAL SERVICES SYSTEM (PEMSS)

"A System To Save Lives"

Trauma Protocols

June 2005

A handwritten signature in black ink, appearing to read "Carl Paetzold", written over a horizontal line.

Approved by
Carl Paetzold, M.D.
Medical Director PEMSS

Approved by
Local Medical Director
(If Applicable)

Effective Through January 1, 2009



PEMSS Protocols

Adult Trauma Management

Table of Contents	Page
Trauma Scene Triage (supplemental notes).....	T-3
Trauma Scene Triage Protocol.....	T-4
General Trauma Concepts and Philosophy.....	T-5
Revised Trauma Score.....	T-6
Airway Management (supplemental notes).....	T-7
Airway Management Protocol.....	T-8
Relaxation for Intubation (supplemental notes).....	T-9
Relaxation for Intubation Protocol.....	T-10
Drug Assisted Intubation notes.....	T-11
Drug Assisted Intubation Protocol.....	T-12
Major Trauma (supplemental notes).....	T-13
Major Trauma Management – cont.'.....	T-14
Major Trauma Management Protocol.....	T-15
Amputated Parts (supplemental notes).....	T-16
Amputated Parts Protocol.....	T-17
Burns (supplemental notes).....	T-18
Burns (Rule of Nines).....	T-19
Burns Protocol.....	T-20
Cardiac Arrest-Traumatic (supplemental notes).....	T-21
Cardiac Arrest- Traumatic Protocol.....	T-22
Closed Head Injuries (supplemental notes).....	T-23
Closed Head Injury Protocol.....	T-24
Orthopedic Injuries (supplemental notes).....	T-25
Orthopedic Injuries Protocol.....	T-26
Ophthalmic Trauma (Eye injuries supplemental notes).....	T-27
Ophthalmic Trauma Protocol.....	T-28
Sexual Assault Protocol.....	T-29
Snake Bite (supplemental notes).....	T-30
Snake Bite Protocol.....	T-31
Spinal Immobilization (supplemental notes).....	T-32
Spinal Immobilization Protocol.....	T-33
Spinal Cord Injury Acute Trauma (supplemental notes).....	T-34
Spinal Cord Injury Acute Trauma Protocol.....	T-35
Sports Injuries (supplemental notes).....	T-36
Sports Injuries (supplemental notes).....	T-37
Sports Injuries Protocol.....	T-38
Pain Management.....	Supplemental
Lifestar Flight Critetria.....	Supplemental
Potential MCI.....	Supplemental
Invasive Procedures.....	Supplemental

A. The "SCENE":

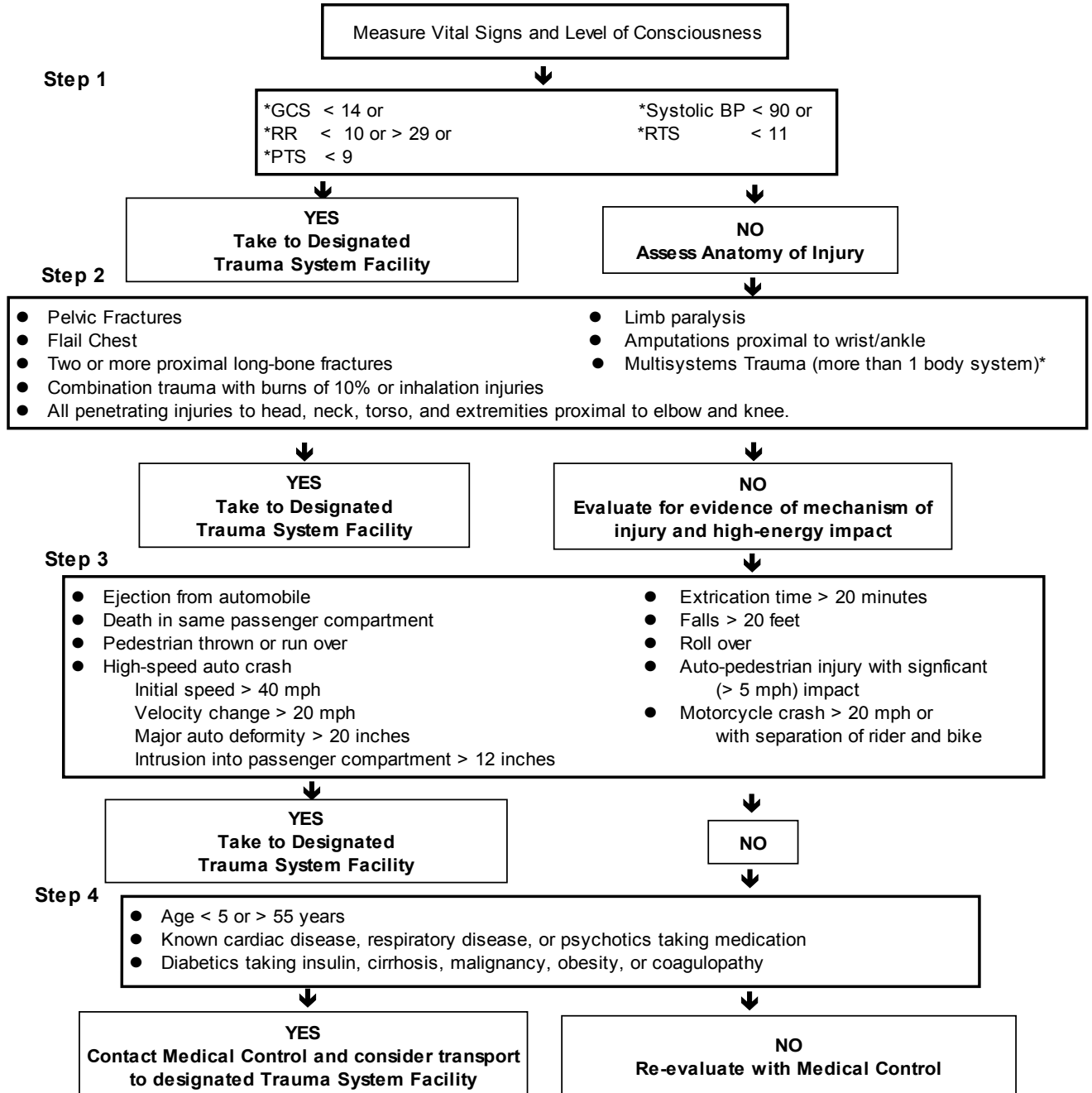
1. Survey and secure the scene to protect the rescuer, patient and bystanders. Protect yourself first, then victims - DO NOT BECOME A VICTIM. High visibility vest/protective gear is desirable.
2. Look for hazards, re-surveying intermittently. Work in the "safe zone".
3. Law enforcement and fire department / HAZ MAT as necessary.
4. Notify appropriate agency for electrical / gas line hazards.
5. Count casualties and estimate the resource needs - notify dispatch with information.
6. Identify mechanisms of injuries and severity of mechanism - note on patient report. Rapid transport is the goal in every patient encounter.
7. Note dead on scene to hospital personnel (Physician/Nurse) and on run report.
8. Prioritize victims. If multiple severely injured patients with inadequate resources, you may need to leave cardiac arrest victims until last. Lightning strikes may be an exception to this. The highest priority for treatment and transport should be assigned to patients who have severe, life-threatening, but potentially reversible injuries.

- B. EMS trauma care GOAL: Make every effort to minimize scene time. Rapid patient transport does not mean "code 3" transport. Rapid transport means minimizing scene times by performing the needed procedures enroute, if possible. All scene times over 20 minutes will be reviewed in the QI/QA process, but the goal should be a scene time of NO MORE THAN 10 MINUTES with an "unstable" patient. Exceptions may include prolonged extrication, mass casualty incidents, or dangerous situations. Any factors that contribute to an extended scene time should be documented on the PEMSS PCR.

1. All trauma scene patients as defined on the "Triage Decision Scheme for Trauma" (see next page) will be advised by responding EMS personnel that the State of Texas recommends they be transported to the Lead Trauma Facility for the Panhandle of Texas, which is Northwest Texas Healthcare System. Certain patients may need to be transported to the closest facility for stabilization prior to being transported to the designated trauma facility. Example- the need to obtain an airway. Any variance from the trauma plan will be documented, i.e. patient was advised and refused.
2. All patients in the categories below will be taken to Northwest Texas Healthcare System:
 - a. High risk obstetrics and unassigned obstetrics (no prenatal care or assigned physician)
 - b. All psychiatric patients
 - c. Sexual Assault victims
 - d. Head Trauma (follow the Brain Trauma Foundation GCS chart) i.e. if GCS is 14-15 transport to ER of choice, a GCS of less than 14, transport to trauma center. (NWTHS) Mechanism must be Trauma.
3. All other non-trauma patients will be taken to the emergency room of their choice or to the emergency room to which their physician has directed them.
4. Neuro/Stroke – all other non-traumatic neurological conditions may be transported to the facility of the patient's choice.

In the event the patient requests one facility and their physician requests another, patient preference will be honored; however, the patient will be informed that their physician may NOT be available to care for them if they choose to go to the facility not requested by their physician.

(This does not apply to trauma patients)



**WHEN IN DOUBT, TAKE TO
DESIGNATED TRAUMA SYSTEM FACILITY**

*** If the mechanism is consistent with multi-systems trauma, transport to trauma center.**

To facilitate collection of data for the Texas Department of State Health Services and for our own local purposes, the following procedure will be utilized to calculate the Revised Trauma Score (RTS) on all patients who have sustained any type of injury. The score should be recorded on the patient run record.

First, calculate the Glasgow coma score (GCS):

<u>Best Motor Response</u>	+	<u>Best Verbal Response</u>	+	<u>Eye Response</u>
1=no response		1=no response		1=no response
2=extension		2=incomprehensible		2=to pain
3=flexion, abnormal		3=inappropriate words		3=to verbal
4=flexion, withdraw		4=disoriented		4=spontaneous
5=localizes pain		5=oriented		
6=obeys				

Glasgow Coma Score = _____

This is the number used when recording the GCS on the run report.

Next, obtain the patient's:

Initial **Respiratory** Rate = _____

Initial **Systolic Blood Pressure** = _____

Next, apply the following values to the Glasgow coma score, patient's initial respiratory rate and initial systolic blood pressure, adding these values for the RTS:

<u>Glasgow Coma</u>	+	<u>Respiratory</u>	+	<u>Systolic BP</u>
0 - 3 = 0		0 = 0		0 = 0
4 - 5 = 1		1 - 5 = 1		1 - 49 = 1
6 - 8 = 2		6 - 9 = 2		50 - 75 = 2
9 - 12 = 3		>29 = 3		76 - 89 = 3
13-15 = 4		10-29 = 4		> 89 = 4

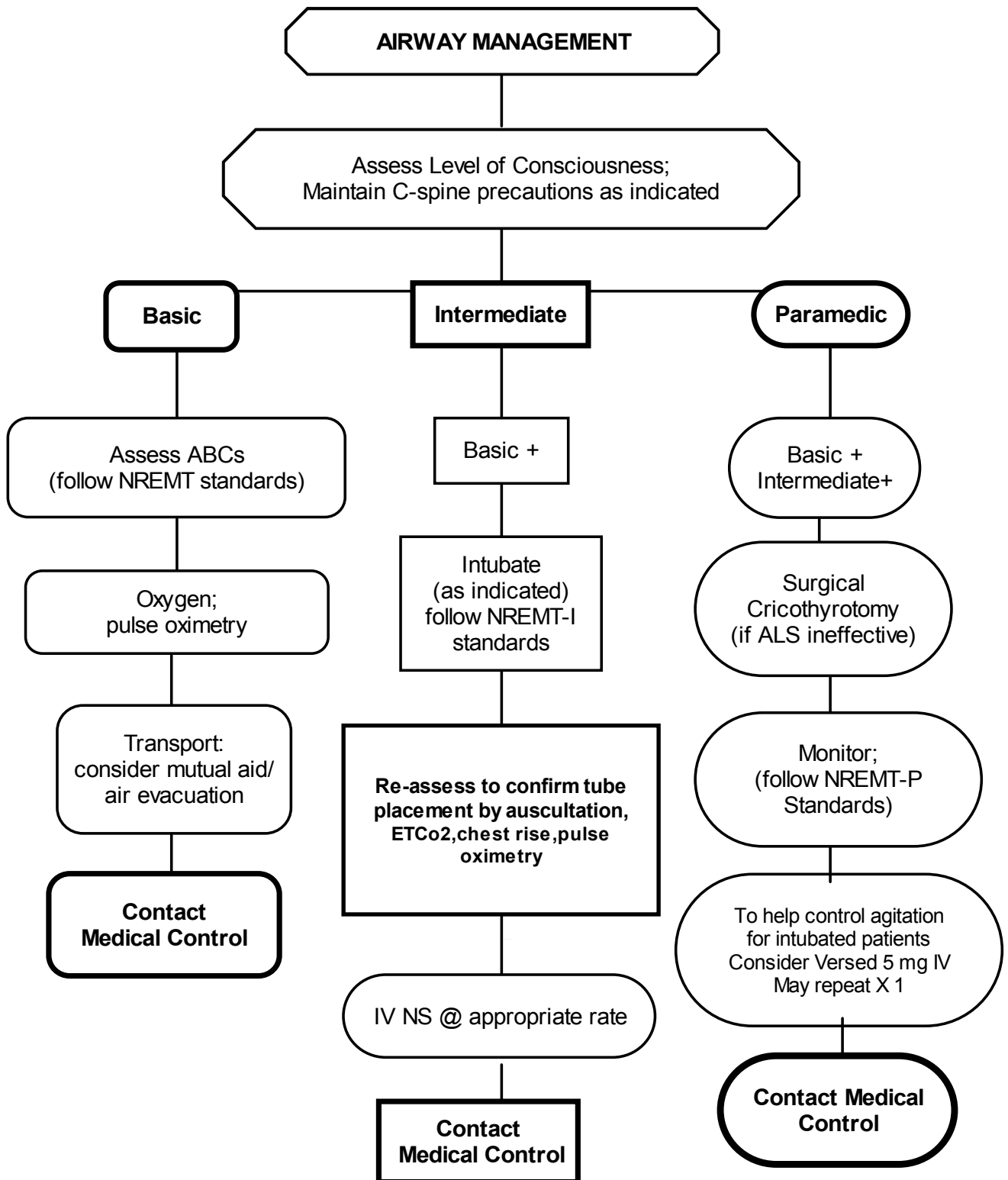
The Revised Trauma Score = $\frac{\text{GC value}}{\text{GC value}} + \frac{\text{Resp. value}}{\text{Resp. value}} + \frac{\text{BP value}}{\text{BP value}} = \text{RTS}$

A. **SUPPLEMENTAL NOTES:**

1. During ventilation with a BVM device, use gentle cricoid pressure, thereby occluding the esophagus but not the trachea. Requires additional personnel.
2. Extubation may be performed at the scene or en route if a patient has regained sufficient level of consciousness to maintain his own airway. Suction must be available prior to extubation - anticipate vomiting. This should be done only if a patient is in danger of pulling out his/her own tube. Trauma patients must be managed carefully to protect the cervical spine during extubation. Consider sedation to help prevent extubation.
3. Avoid nasotracheal intubation and/or NG tubes in the presence of severe facial fractures/trauma.
4. In moribund patients, time to emergency thoracotomy or laparotomy is the key factor in survival. The potential benefits of prehospital endotracheal intubation (ETI) must be weighed against its "costs" (delayed transport, leading to delayed surgery). The possible benefit of early ETI is that it serves as a temporizing measure that may "buy time" for the moribund trauma victim. Although this additional time is relatively brief (5 minutes), it may have a life saving effect in a setting of short transport times. ETI may preempt the adverse effects of respiratory compromise resulting from inadequate respiratory efforts, external chest compressions, and severely decreased cardiac outputs.

However, if additional time is spent on-scene attempting ETI instead of providing rapid transport to a trauma center, patients may have worse outcomes than if they were rapidly evacuated and respirations assisted with bag-valve-mask and ETI attempted enroute to the hospital.

Well-trained paramedics are capable of performing ETI without significantly prolonging on-scene time, but this requires maintaining skill level. Confirm placement of ET Tube by visualization of tube pass through the cords, chest rise, EtCo₂, pulse oximetry, or fogging of the ET tube. Intubated patients require constant monitoring and frequent re-assessments of vital signs and breath sounds. Another serious and under-recognized complication of ETI is circulatory compromise. Although adequate lung inflation (10-15 ml/kg) and FiO₂ of 1.0 may be of value of reversing the intrapulmonary shunting that occurs in inadequately inflated lungs, care must be taken not to ventilate over-zealously. Ventilatory requirements may be lower in the critically injured trauma patient because of diminished O₂ transport to the tissues and thus diminishing O₂ consumption and CO₂ production. In addition, little CO₂ is returned to the lungs for clearance. In turn, very few breaths (e.g., 6-8 breaths/ minute) may suffice. Overly aggressive ventilation (rates > 10) may result in markedly increased airway pressures throughout enough of the respiratory cycle to impair cardiac output severely in such patients with preexisting circulatory compromise. Thus, not just the expeditious accomplishment of ETI in the field, but the rate of assisted ventilations is important to consider. In this stage of injury, less may be more. This is where clinical skill in rapid and accurate assessment comes in.

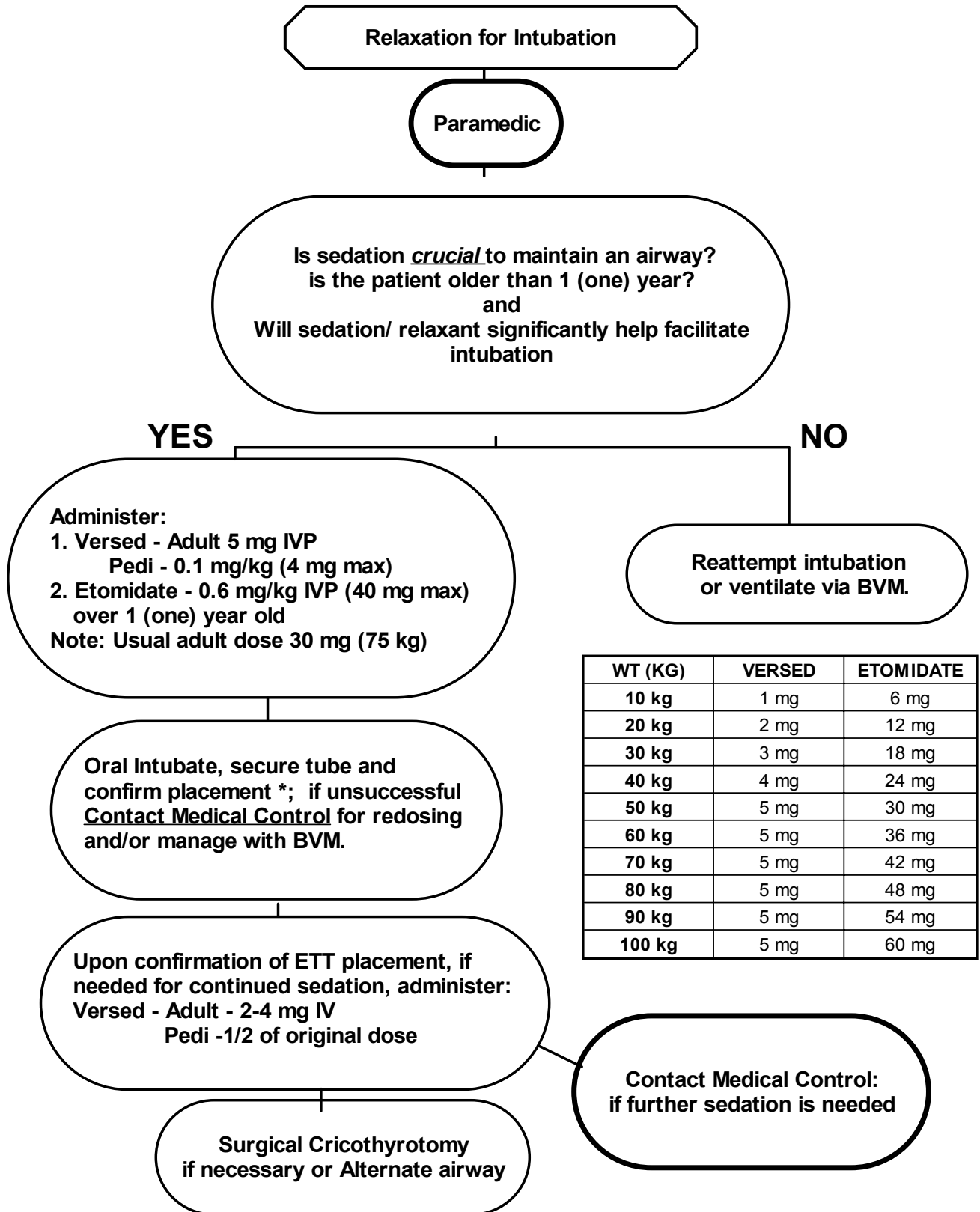


Protocol

The primary use of this protocol is for patients who are unconscious and unresponsive and who have a clenched jaw, making intubation impossible. This will allow the patient to be intubated instead of requiring cricothyrotomy. At this time, this drug will be used as a standing order for any patient who needs an airway. (age over one year)

- I. Etomidate is an ultra short acting non-barbiturate/opioid hypnotic with no analgesic properties.
 - a. It has a high incidence of phlebitis; therefore should be given over 30 to 60 seconds through a well-functioning IV.
 - b. Causes myoclonic movements that resemble seizures in 10% to 20% of patients. The addition of Versed should help minimize this side effect.
 - c. Onset of action is less than one minute and duration is 3 to 5 minutes.
 - d. Respiratory and cardiovascular effects are minimal, and it decreases intracranial pressure making it an excellent choice for head injury in addition to other critically injured patients requiring intubation.
 - e. Give the versed 1-2 minutes prior to the Etomidate will make the drug combination more effective.
- II. Will sedation or relaxation significantly help facilitate intubation?
 - a. Patients who would benefit from this drug are those with a clenched jaw or strong gag reflex, making intubation difficult.
 - b. If the airway is distorted secondary to trauma, this drug will probably not be very useful and surgical cricothyrotomy should be considered.
- III. Confirmation of endotracheal tube placement.
 - a. Visualization of the tube going through the vocal cords is the best way to be sure of correct placement. Waveform capnography should be utilized as available.
 - b. Color change CO₂ monitors should be used to document appropriate placement of endotracheal tubes.
 - c. In cardiac arrest patients with prolonged down time there may be minimal or no color change on the CO₂ detector due to poor lung perfusion.
 - d. If any doubt exists concerning proper endotracheal tube placement, revisualize with laryngoscope. If unable to confirm tube placement, consider managing with bag valve mask, or cricothyrotomy as indicated.

NOTE: Use of this protocol **will require completion** of an intubation data collection form attached to a copy of the run sheet and sent to the PEMSS Office (4101 Mockingbird) within four days.



Airway Management & Intubation – MICU Provider Guidelines

Designation of Condition: Paramedics should intubate patients who are apneic or severely hypoxic and unresponsive to oxygen and basic airway maneuvers, or who may have impending respiratory failure and impending respiratory arrest, due to facial burns, severe asthma, pulmonary edema, etc.

MICU Providers

Pre-medication authority:

- Consider this protocol as a standing order if the paramedic determines that sedation is crucial to airway management.

Etomidate will be the drug of choice to achieve adequate sedation for intubation.

Dose: 0.6mg/kg slow IV Should the patient need further sedation administer a second dose of Versed to maintain adequate sedation.

Etomidate (amidate) 0.6mg/kg IVP after adequate sedation has occurred with versed. (usually 2-3 minutes)

WT (KG)	VERSED	ETOMIDATE
10 kg	1 mg	6 mg
20 kg	2 mg	12 mg
30 kg	3 mg	18 mg
40 kg	4 mg	24 mg
50 kg	5 mg	30 mg
60 kg	5 mg	36 mg
70 kg	5 mg	42 mg
80 kg	5 mg	48 mg
90 kg	5 mg	54 mg
100 kg	5 mg	60 mg

<u>Drug Assisted Intubation</u>
<ol style="list-style-type: none"> 1. Oxygenate with BVM 2. Monitor ECG, pulse ox, vitals 3. Administer versed 0.1mg/kg IV in 2-3 minutes, administer Etomidate 0.6mg/kg IV 4. Intubate and secure, confirm placement – EtCo2, etc. 5. Frequent vital signs 6. If patient is agitated or recovers fully from sedation – administer a second dose of versed.

(Intubated Patients)

Adult EtCO ₂ Parameters	Pediatric EtCO ₂ Parameters
Intubated Non-Head injury 28-35mmHg	Intubated Non-Head injury 35-45mmHg
Intubated Head Injury 28-32mmHg	Intubated Head Injury 30-35mmHg
Hyperventilation Rate 20 (only for signs of herniation)	Hyperventilation Rate 30 (only for signs of herniation)

- An alternate airway device will be used as a “back-up” airway and where intubation attempts fail and the airway has become non-patent.

* Refer to the Combitube protocol or the Cobra PLA protocol

After moving an intubated patient to a receiving hospital bed or stretcher, the paramedic must re-confirm tube placement and patency and documented on the PEMSS Report.

Procedure Overview:

1. The crew is responsible for maintaining the patients’ airway.
2. Ventilate or assist ventilations with 100% Oxygen using a BVM, do not hyperventilate.
3. Utilize pulse oximetry on all patients, and wave-form End tidal Co2 if available.
4. Proper endotracheal tube placement **must be verified and documented** as such. These include:
 - a. Presence of bilateral breath sounds.
 - b. Absence of breath sounds over the epigastrium.
 - c. Presence of condensation on the inside of the endotracheal tube.
 - d. End tidal Co2 monitoring. (Waveform capnography) *
 - e. Use of esophageal endotracheal tube detector device.
 - f. Visualizing passing the tube passing through the vocal cords.
5. Perform vital signs every 5 – 10 minutes and document on medical record.
6. Complete Intubation data form and send a copy of the PEMSS report to the PEMSS Medical Director.

Indications for the above procedures:

1. A critical need for airway control exist, such as:
 - Persons who cannot tolerate awake intubations.
 - Combative patients with compromised airways.
 - Patients with depressed LOC.
 - Patients with hypoxia refractory to oxygen.
 - Multiple trauma patients who need an airway.
2. At any time the risk for potential/actual airway compromise is suspected.

Waveform Capnography will be required of all ALS/MICU Providers in the PEMSS System by January 2007

A. General Considerations:

1. One of the most important responsibilities of the pre-hospital provider is to rapidly evaluate, treat, and package the patient for transport. Our goal is to minimize time on scene and to perform the majority of treatment enroute.
2. Some studies have shown that, in major trauma, aggressive fluid resuscitation can be counterproductive. Again, rapid transport is the key, with IV administration enroute.
3. Pleural decompression, in a non cardiac arrest patient, is to be performed only in the presence of a **Tension Pneumothorax**. Decreased breath sounds, or the presence of subcutaneous emphysema alone is **not** an indication for pleural decompression. . The presence of a **Simple Pneumothorax** does not warrant chest decompression. Signs of Tension Pneumothorax include:

Severe shortness of breath, Absence of breath sounds on the affected side, Distended neck veins, Hypotension, Tracheal Deviation away from the affected side (a late sign).

B. Sucking Chest wounds:

1. Seal the wound as rapidly as possible with an occlusive dressing. The dressing should be sealed on two or three sides only.
2. Watch closely for signs and symptoms of a tension pneumothorax. If these signs develop, usually lifting one corner of the occlusive dressing will relieve the tension.

C. Impaled Objects: In general, do not remove impaled objects.

1. Remove impaled object if it is causing airway compromise resulting in respiratory distress, and this cannot be corrected without removal of the foreign body.
2. When possible, stabilize the impaled object on the body so that it does not move around and cause more internal injury.

D. Trauma in Pregnancy:

1. All pregnant trauma patients should receive supplemental O₂.
2. Supine hypotension syndrome should be avoided in the obviously pregnant patient. The patient should be placed on the backboard in a left lateral 15 degree tilt to avoid compression of the inferior vena cava by the gravid uterus.

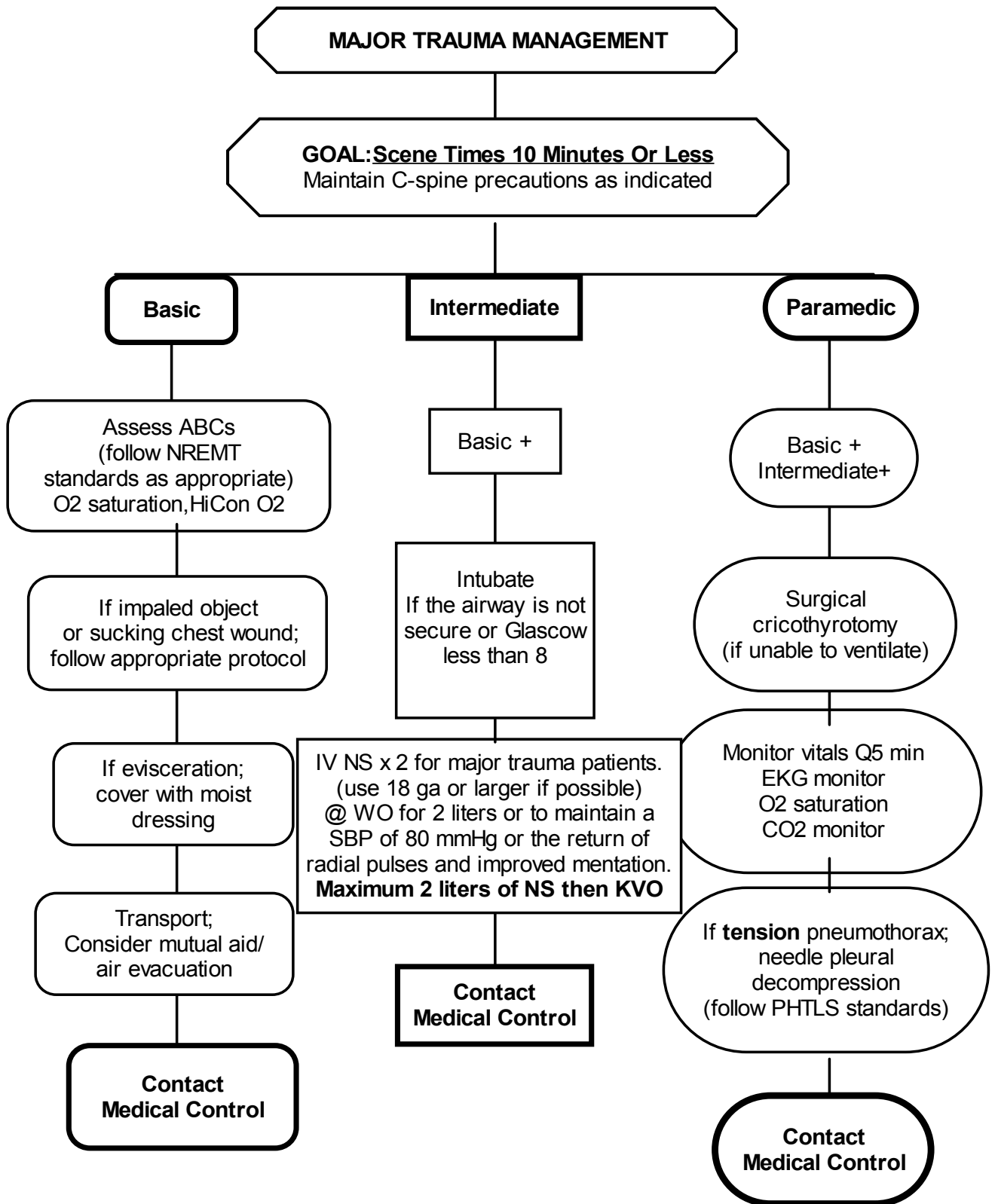
E. Crush Injuries: When a crushing object is removed from a patient and the damaged tissue is re-perfused, cellular toxins (e.g. myoglobin and potassium) are released into the circulation. This, along with massive fluid shifts can potentially cause lethal cardiac arrhythmias, hypotension, renal failure, and sudden death. This usually requires a lengthy entrapment by debris such as that found in a building collapse.

To counter the effects of Acute Crush Syndrome, large volumes of IV Normal Saline should be given before and after being freed from the object. Sodium Bicarbonate should also be given (1 mEq/kg up to 100 mEq) around the time the crushing force is released. Sodium Bicarbonate should not be used in crush injuries of short duration.

Do not delay extrication in order to give Sodium Bicarbonate or NS. If a patient with severe crush syndrome requires lengthy extrication, consider the use of Sodium Bicarbonate early on.

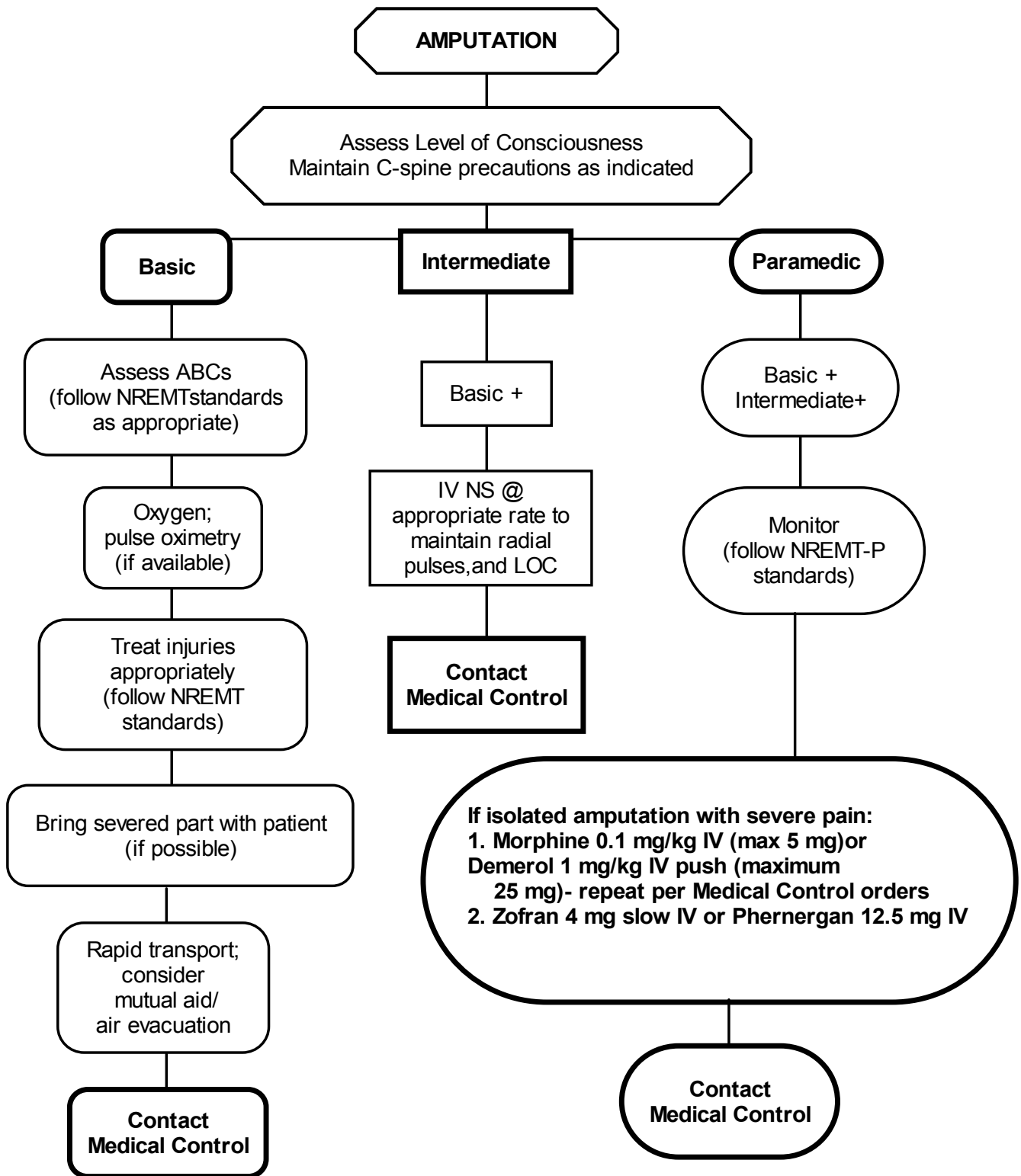
Traumatically injured patients are very susceptible to heat loss and preservation of body heat is paramount.

It is paramount that in severe trauma patients and crush injury patients to monitor the EKG.

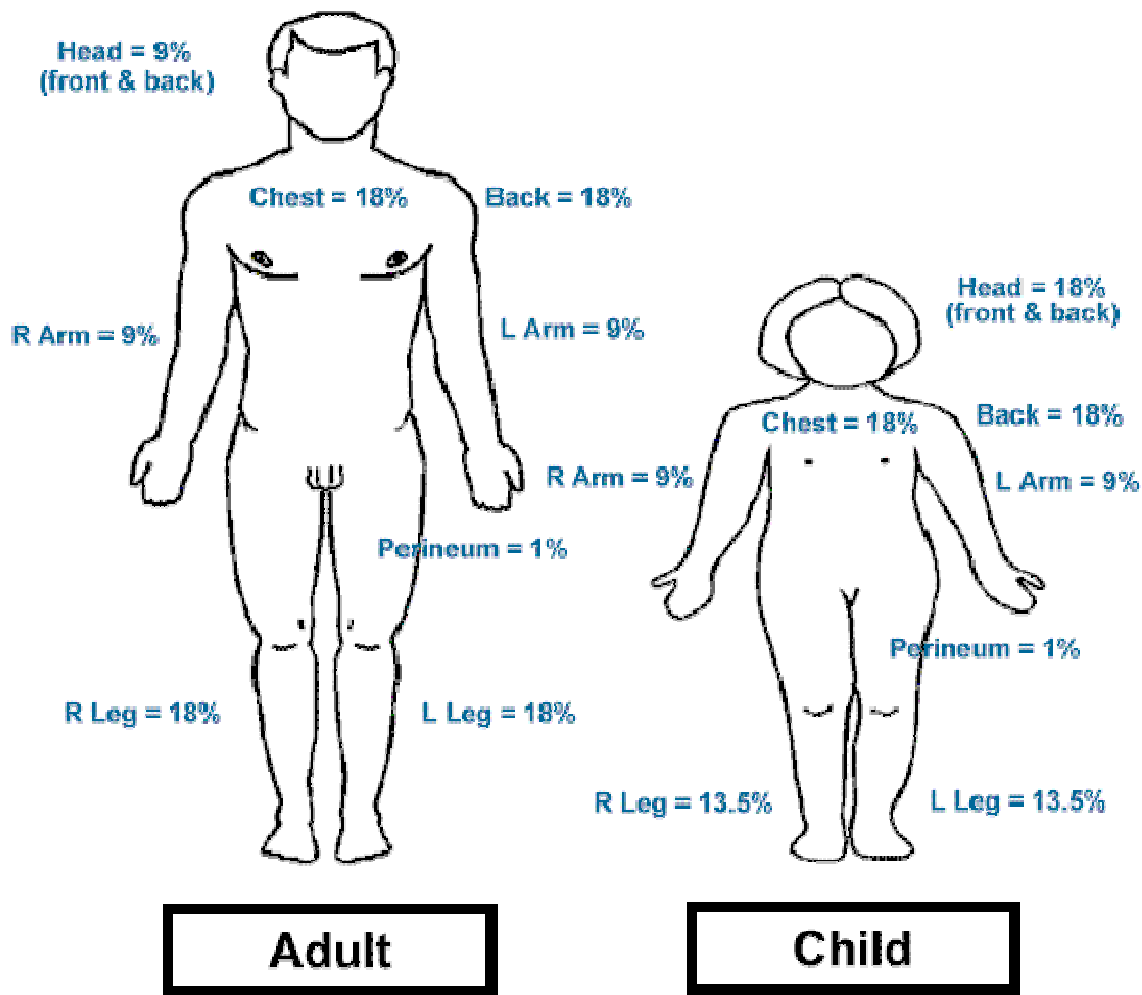


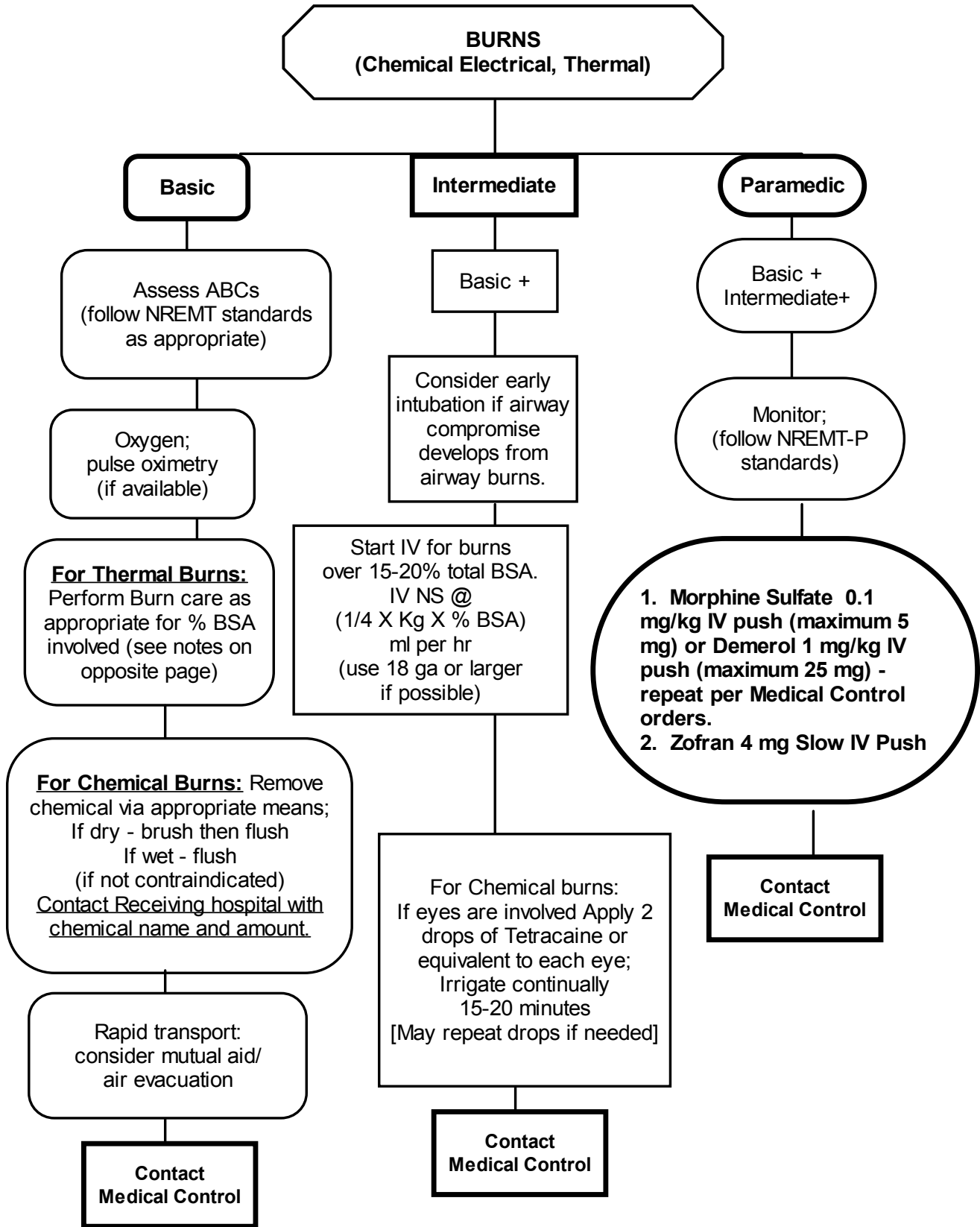
Guidelines for care of amputated body part(s) and tissue

1. Wrap body part or tissue in sterile gauze moistened with Normal Saline.
2. Place into a plastic bag or container.
3. Place bag or container into another container filled with ice water. Do not allow parts to come in contact with ice directly. If ice is unavailable use a cold pack.
4. All tissue or amputated body part(s) should be transported (if retrievable) to the hospital regardless of amount of tissue damage present. Do not delay transport of patient for prolonged extrication of body part(s). The amputated tissue can be transported separately if needed. Even tissue that does not look salvageable may have use as a skin graft for the patient.

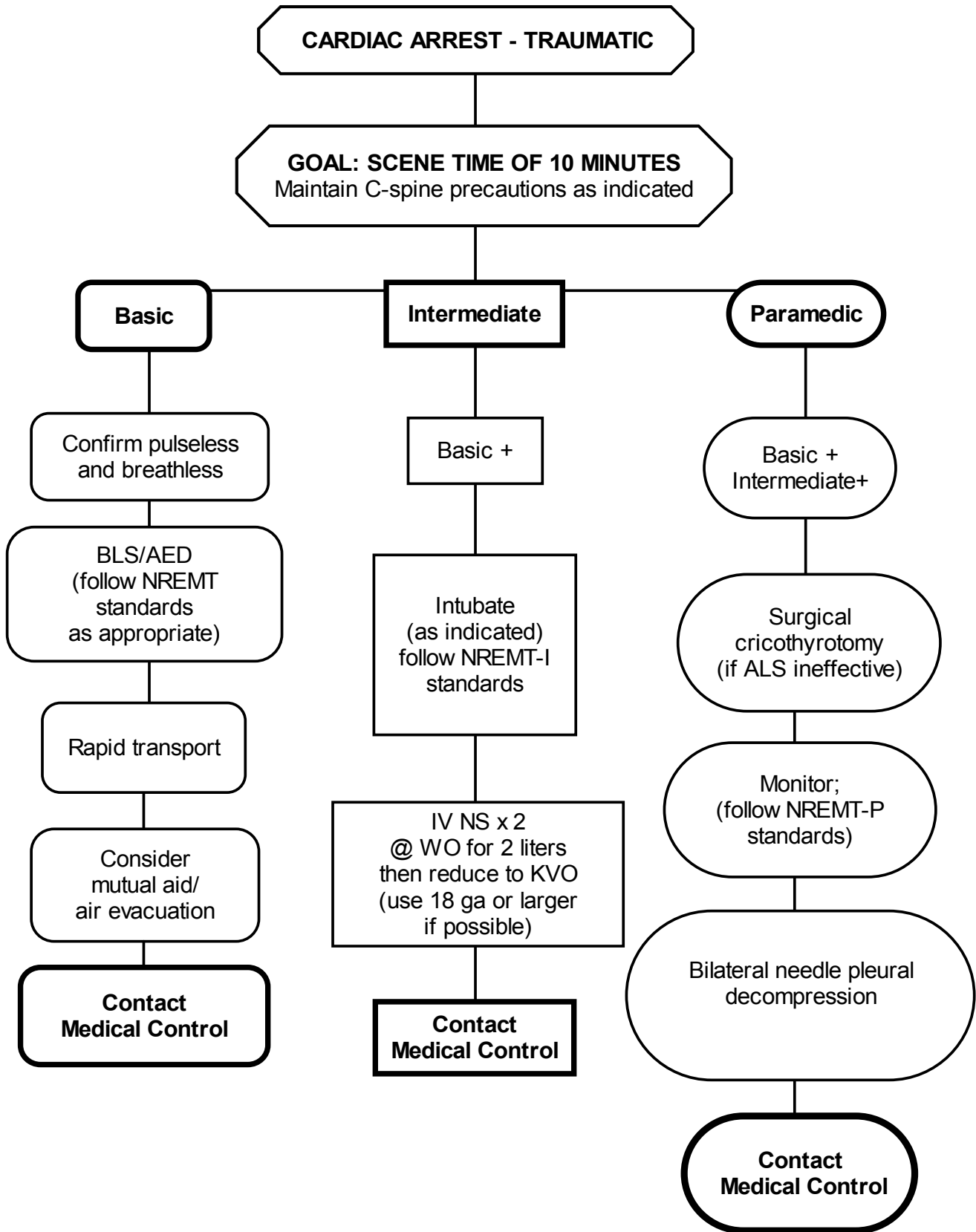


- A. Chemical Burns:
1. These burns present a hazard to both the patient and rescuer. Extreme care should be taken to avoid exposure to the chemicals involved.
 2. The eyes are particularly vulnerable to chemical burns. Eye irrigation should be started early and continued for at least 15 minutes.
 3. Tetracaine or equivalent.
- B. Electrical Burns:
1. Scene safety is the primary concern.
 2. Remember that most injuries from electrical burns are internal.
- C. Thermal Burns:
1. Look closely for any evidence of inhalation injury (cough, hoarseness, stridor, sooty sputum, facial burns, shortness of breath, singed facial hair, altered behavior).
 2. Remove any jewelry, belts, shoes, etc. from areas of burns.
 3. Remove any burned or singed clothing that is not stuck to the underlying skin of the patient.
 4. Assess depth of burn as well as the total body surface area (BSA) of the burn. The patient's hand is approximately 1% of this BSA. See the "Rule of Nines" Chart on page 31).
 5. Perform local burn care as follows:
 - a. Do not apply ice to the burned area.
 - b. Do not apply ointments or solutions to the burn.
 - c. Do not attempt to open blisters.
 - d. **Small burns (< 5% of BSA)**: Cover with sterile towels or gauze sponges soaked with cool saline or water - otherwise apply dry dressing.
 - e. **Larger burns (>5% of BSA)**: Cover large burns with dry, sterile or clean sheets. Do not use wet dressings since they may cause hypothermia on large burns.
 6. Shock in the very early stages of a burn is generally not from the burn itself. If shock is present be diligent to look for other causes.





1. Cardiac arrest as a result of a traumatic injury has a very poor survival rate. Treating a tension pneumothorax is one of the few interventions that can increase the patient's chances of survival.
2. All patients that are assessed as treatable under this protocol should have bilateral needle pleural decompression performed as a standing order.
3. The preferred site is the second intercostal space, midclavicular line.
4. If you suspect that a tension pneumothorax has developed again, insert another needle beside the initial needle.
5. Cardiac output can be monitored by Waveform capnography (EtCO₂).

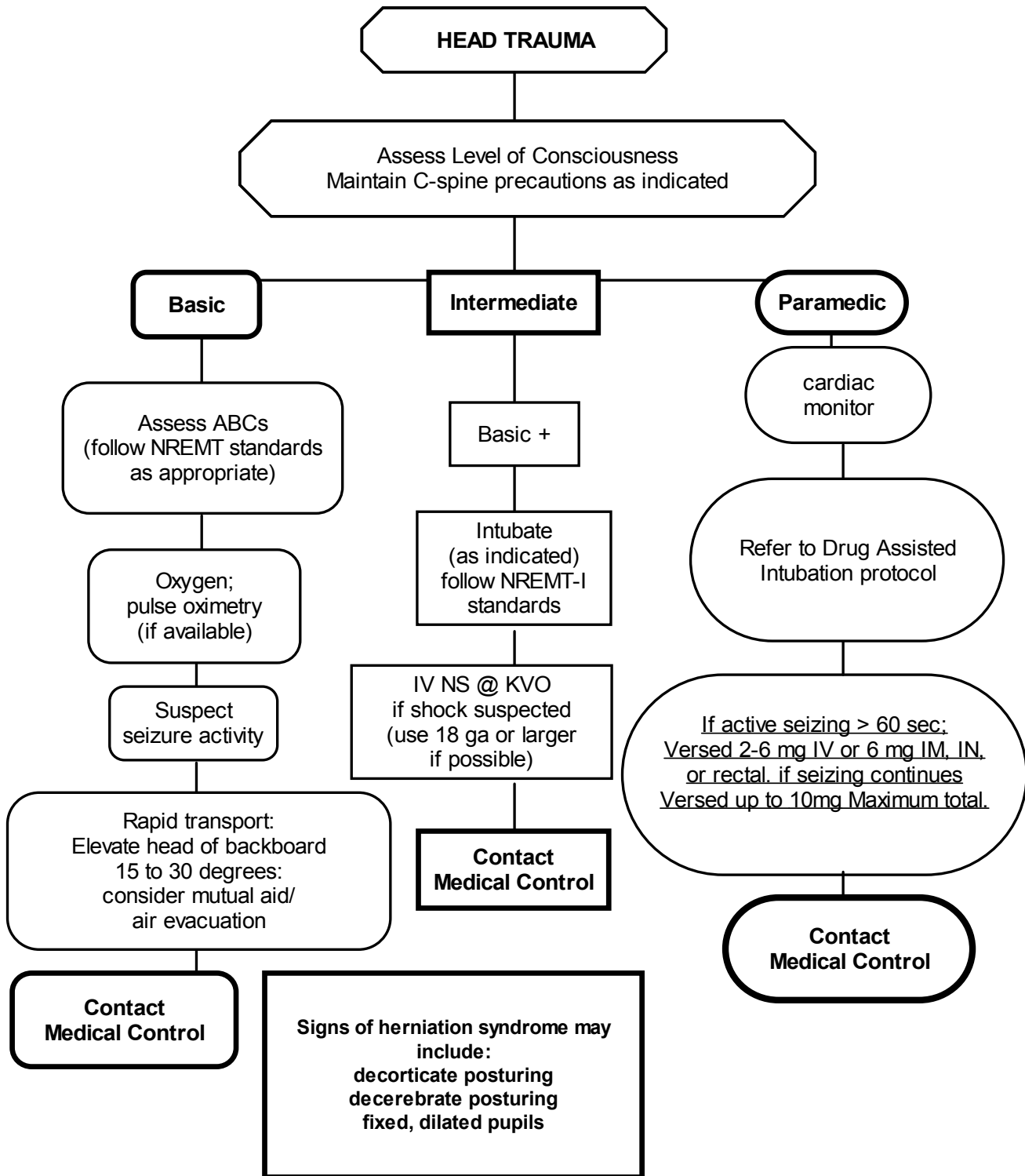


- A. General: Protocol applies to any trauma to patient's head or face which results in an injury manifested by some change in mental function or behavior - changes can range from coma to wild and combative to unusually tired, confused, amnesia, etc... Do not assume the behavior change is due to alcohol or drugs, even if these are known to be "on board" the patient. Severe head injury has been defined as a Glasgow Coma Score of 8 or less. It also includes patients with a higher score who subsequently deteriorates.
- B. The prehospital management of head injury is relatively limited. The goals of prehospital management include: airway maintenance, oxygenation, immobilization, and rapid transport to the nearest appropriate facility.
1. The primary rationale for endotracheal intubation is probably related to the reversal or prevention of critical hypoxemia, which, if present, will worsen intracranial pressure (**ICP**) problems.
 2. The need for therapeutic hyperventilation has been recently questioned. Adequate lung inflation and prevention of hypoventilation are better goals. A combative, head-injured patient may require at most 10-12 breaths/min (at 15 ml/kg). Therefore, sedated patients, and particularly those with hemodynamic compromise, should receive fewer positive pressure breaths per minute. In the prehospital setting, it is difficult and impractical to monitor parameters of intracranial pressure. Unmonitored hyperventilation could be dangerous and should be confined to brief periods - used only for signs of transtentorial herniation with unilateral or bilateral dilated, unresponsive pupil(s) or the rapidly deteriorating patient. Hyperventilate until signs or herniation resolve. Maintain SaO₂ > 90%.
- C. Hypovolemic shock in the presence of a head injury needs to be treated appropriately. Do not withhold fluid resuscitation in a hypotensive patient with head injury. Be careful to slow IV fluids down as blood pressure responds to fluid challenge. Avoid hypotension, Maintain blood pressure of 90mmHg.
- D. Do not use Lidocaine prior to intubation.
- E. *Normal Ventilation Rates:*

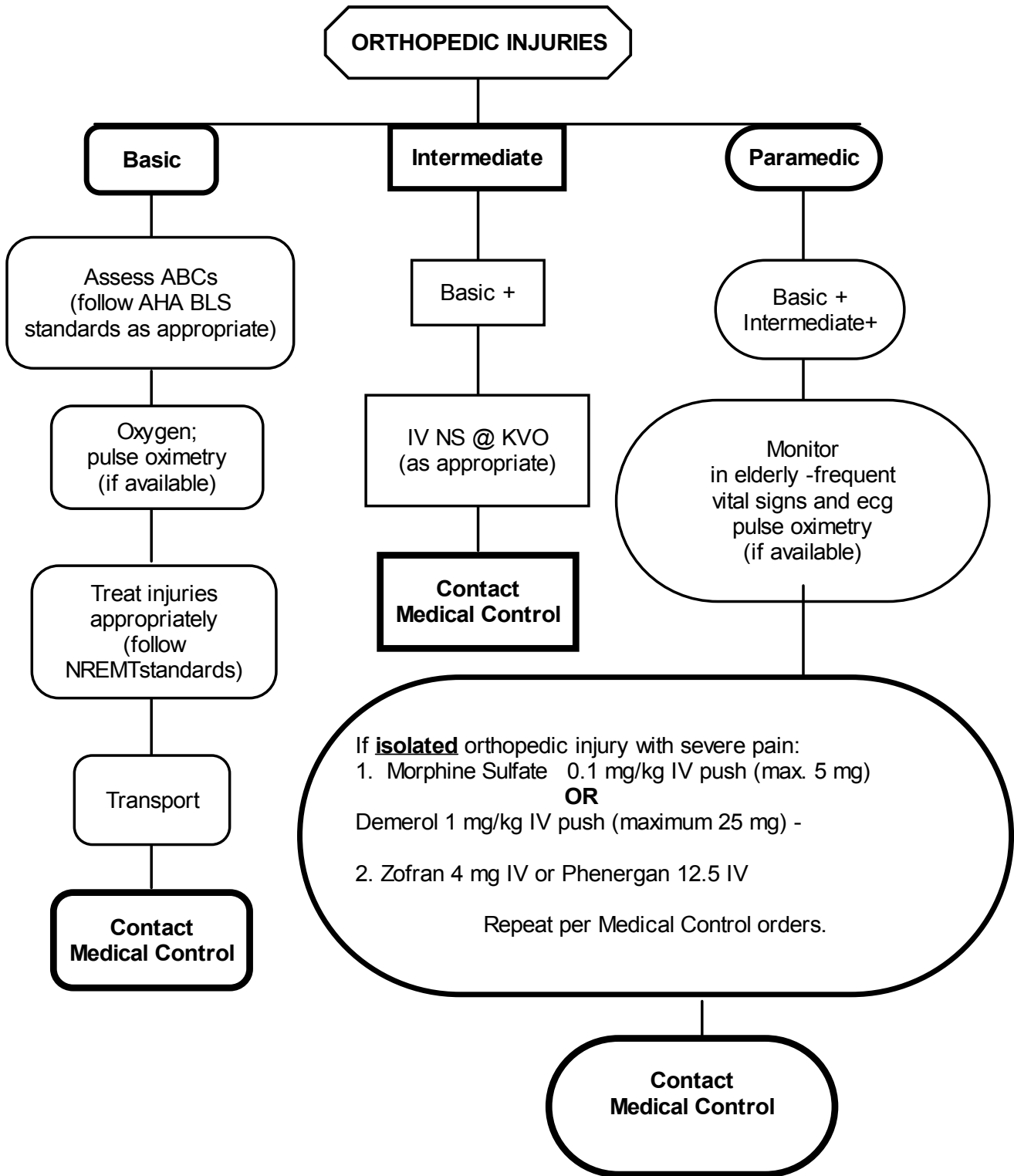
Adult	10 bpm
Children	20 bpm
Infants	30 bpm

- F. *Hyperventilation Rates:*

Adult	20 bpm
Children	30 bpm
Infants	40 bpm



1. In the pediatric patient (12 years or younger), Phenergan should be avoided.
2. Elderly patients can be very sensitive to pain medicines, so be judicious with pain medicines. It is better to give a smaller amount and re-dose, than to give a large dose and wish you could get some of it back out of the patient.
3. It is important in the very young or in the elderly or anyone you administer narcotics in IV doses, to constantly evaluate their condition and utilize the EKG monitor, pulse oximeter, and the use of Oxygen is strongly recommended, when the possibility of respiratory depression is introduced.



Corneal burns or abrasions

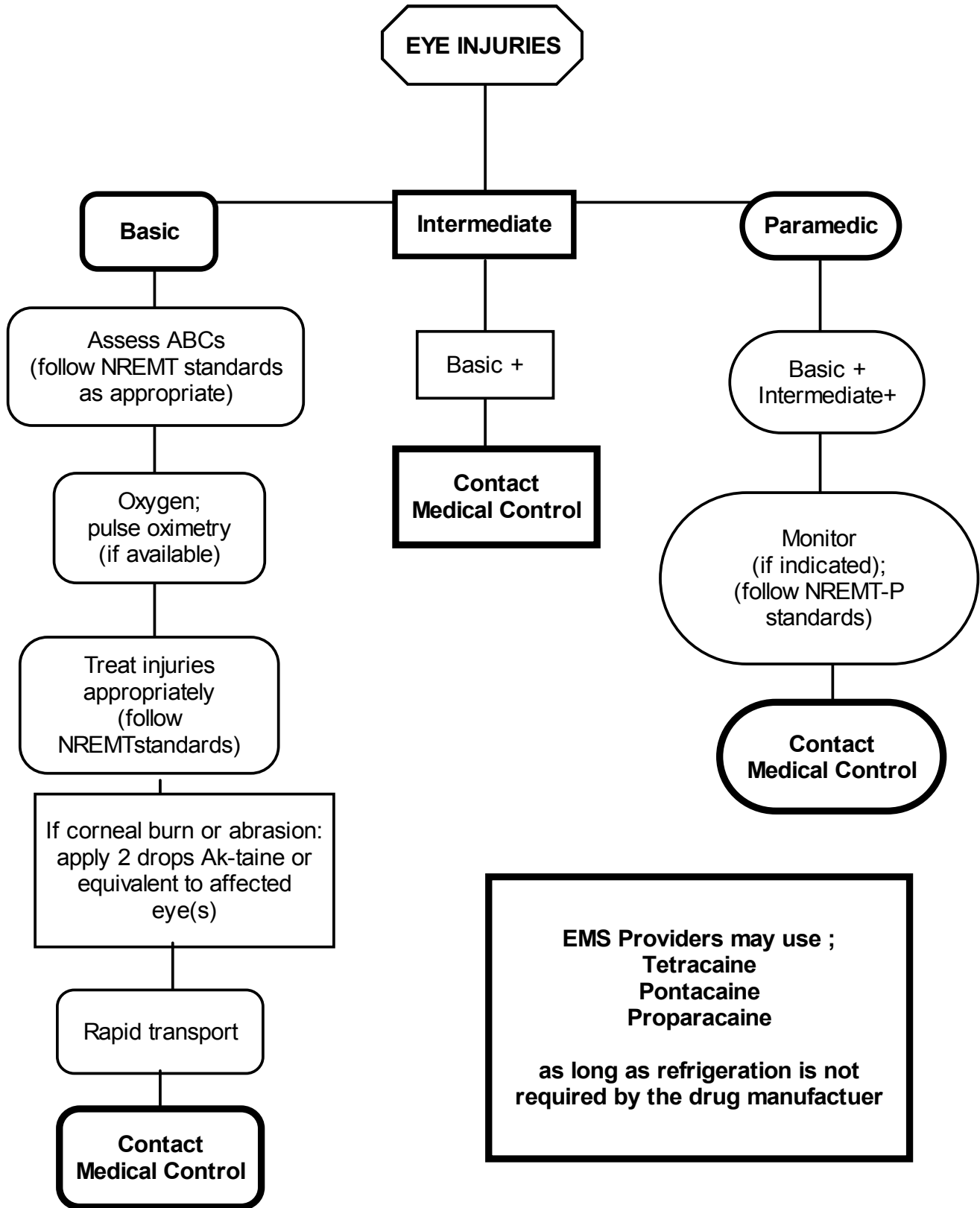
1. Lie patient down and have them close both eye's.
2. Instill two drops of tetracaine, or equivalent, into affected eye.
3. Instruct patient not to touch or rub eye(s).

Blunt or penetrating eye injuries

1. Lie patient down with head slightly elevated
2. Do not attempt to open the injured eye(s)
3. Instruct the patient to close both eyes.
4. Do not place any type of compressive bandage over the affected eye(s), and be careful not to apply any pressure to the eye.
5. In general do not remove any penetrating object from the eye.

Chemical substances to the eye

1. Flush the affected eye(s) with copious amounts of normal saline using a minimum of two liters for each eye.
2. If the substance is alkaline in nature continue to flush the eye(s) during transport.
3. Contact lenses should be removed.
4. Instill two drops of Tetracaine into the affected eye(s).
5. Instruct patient not to touch or rub eyes.



Sexual Assault Protocol

Sexual Assault is sexual contact without the consent of the person assaulted.
Rape is generally defined as penetration of the vagina or rectum of an unwilling female or the rectum of an unwilling male.

Rape is a Violent Crime.

Injuries commonly encountered during a sexual assault are usually facial or involve the extremities. Genital injuries only account for approximately 7 percent of all injuries. 60 to 80 % of all rapes and sexual assaults involve acquaintances or friends. Elderly victims are twice as likely to incur physical injuries not involving the genitalia.

The Protocol for Rapes and Sexual Assault will be:

1. Confirm scene safety.
2. Obtain a pertinent history related to the injuries (LOC, SOB, bleeding, or weapons) Do not question patient about past sexual history, or attempt to obtain non-medical facts such as assailant description or other information not related to patient care.
3. Do not examine the genitalia unless a patient is severely hemorrhaging and requires a pressure dressing to control the bleeding.
4. In cases of severe emotional upset, it may be better to have a same sex provider care for a rape victim's injuries (if possible).
5. Save any clothing you had to remove during your care. Handle the clothing as little as possible. Place items in a paper bag if at all possible. (avoid plastic bags as they may induce moisture into clothing).
6. Instruct patient not to urinate, defecate, douche, or wash prior to being treated and examined at the ER.
7. Always work in a calm, professional, and non-judgmental manner.
8. Northwest Texas Hospital Emergency Room should be the receiving facility for all sexual assaults and rape cases.
9. Advise the hospital that this is an assault and not to use terminology such as rape or provide any other details on the radio. Make certain that all information is relayed to law enforcement.

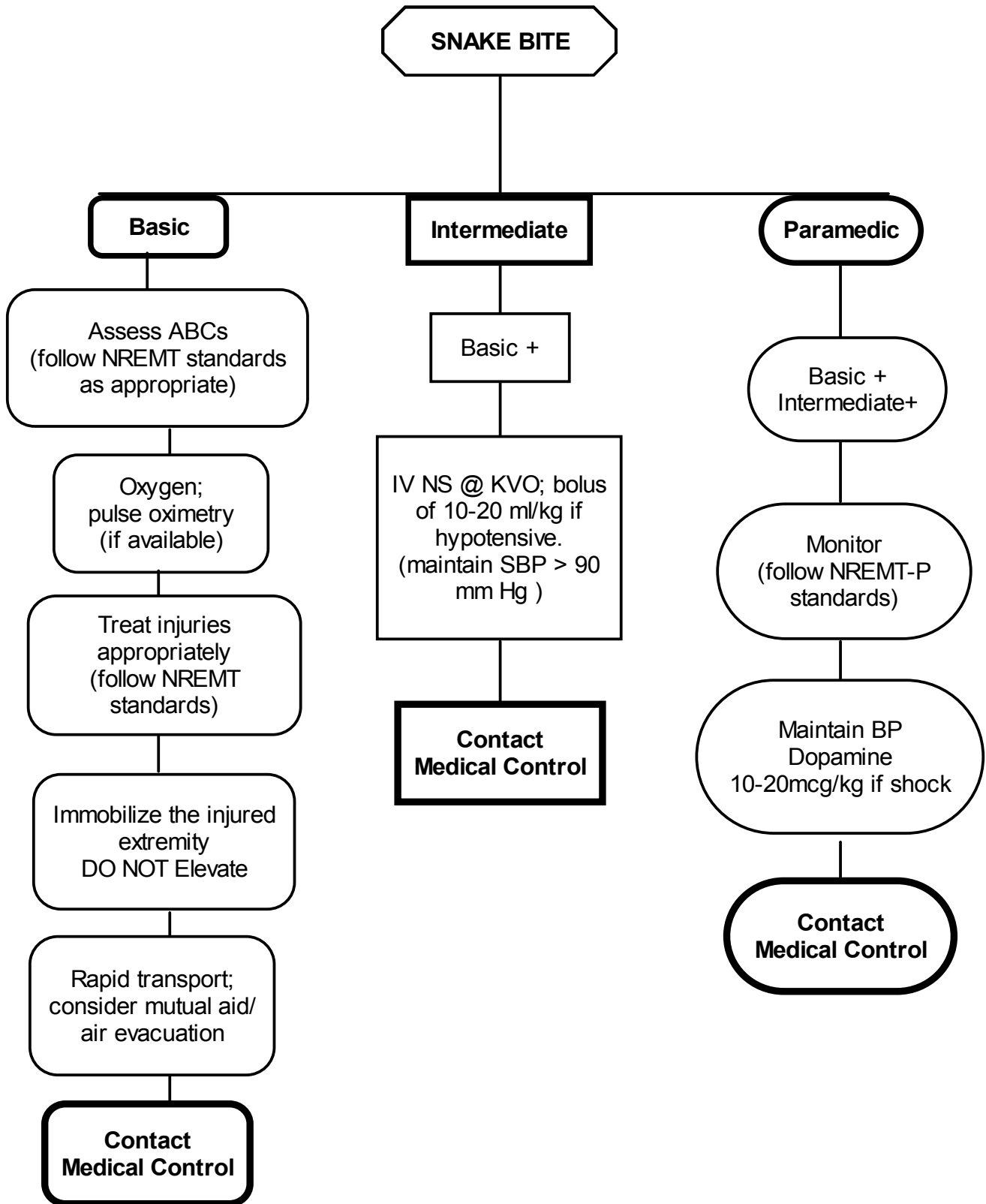
SUPPLEMENTAL NOTES:

1. Identify the snake only if safe to do so.
2. DO NOT apply ice or cold packs to the bite area.
3. DO NOT apply tourniquets.
4. DO NOT make incisions at the puncture(s).
5. DO NOT allow the patient to eat or drink.
6. DO NOT use constricting bands.
7. Rapid Transport

Snake bites are a difficult emergency to assess. Venomous snakes naturally reside in the Texas Panhandle, the *Crotalidae* (viperine), frequently called “pit vipers” and include the most common known and feared “Rattlesnake”.

There are many species of venomous snakes and each has its own antidote. Snake venom can be classified as heme or neuro toxic. Unfortunately, snake bites do not affect just the hematologic or neurologic systems, although they are primarily one or the other and contain properties of both. Hematotoxic poisons, found primarily in pit viper, attacks the blood system causing lysis of capillary cells, local thrombosis, gangrene, and intravascular clotting.

This is due to the presence of thrombase, hemorrhagin, and anti-coagulin in the venom. Neurotoxic venom acts by attacking the respiratory center and the 9th through 12th pair of cranial nerves.



SPINAL IMMOBILIZATION PROTOCOL

We have learned from clinical experience that spinal immobilization is not necessary on all patients transported to the hospital after a traumatic injury.

The purpose of this protocol is to help you identify some patients that may not need spinal immobilization. As in everything, your clinical judgment is very important in making the decision not to immobilize a patient.

If a patient meets the identified criteria, but you are uncomfortable transporting without spinal immobilization, then immobilize the patient. This may be due to mechanism of injury, severity of injury to other victims, or other factors.

When in doubt, immobilize the patient. As always, if you are going to immobilize any part of the spine, then you must immobilize the entire spine.

Spinal immobilization **MAY NOT** be required if the patient:

Is conscious, alert, oriented, able to perceive pain, has no neurological deficits, **AND**

Is not intoxicated,

Has no significant distracting injury (such as long bone fracture),

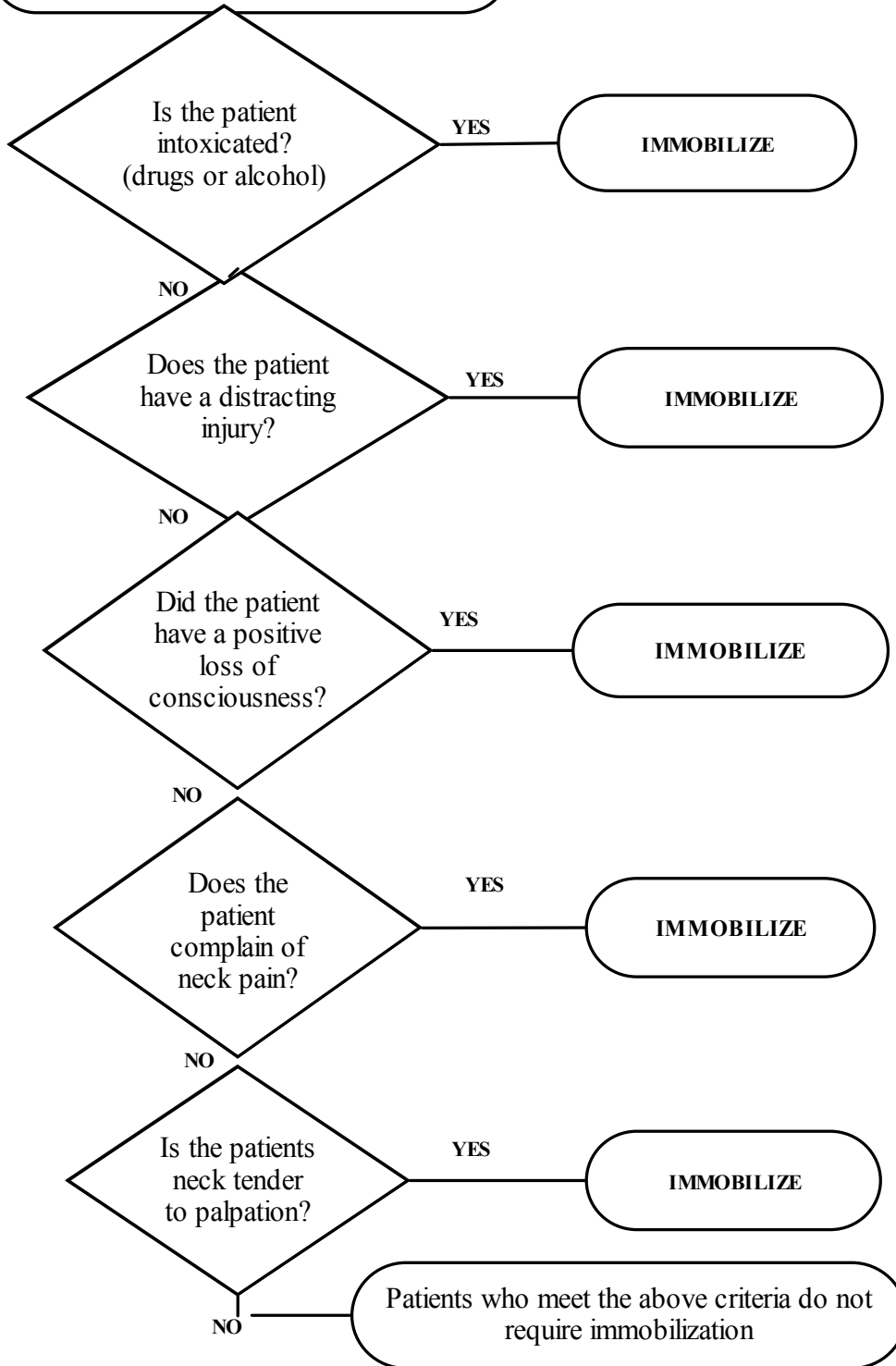
Has no vertebral column pain or discomfort;

Has no tenderness of the spine upon palpation,

Has no pain or discomfort of the vertebral column upon active movement.

SPINAL IMMOBILIZATION PROTOCOL
EMT, EMT-I, EMT-P

The Patient **must** be conscious, alert, oriented, able to perceive pain, and neurologically intact.



Supplemental notes

Spinal trauma, if not recognized and properly managed in the field, can result in significant life-long injury and impairment.

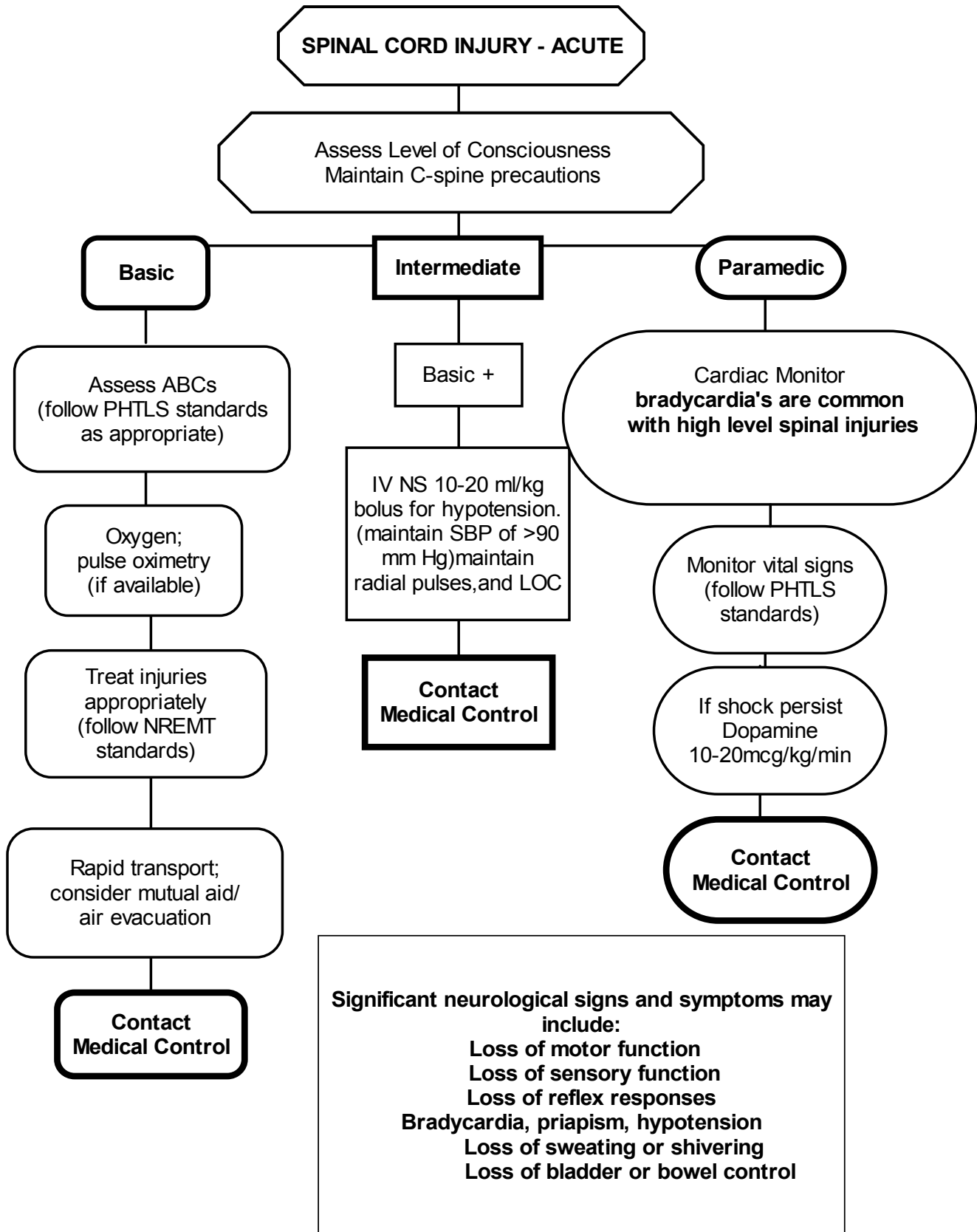
Any patient who has sustained an injury of spinal loading or stretching, significant injury above the clavicles, significant blunt trauma to the torso, a head injury resulting in an altered level of consciousness, or a major fall must be suspected of suffering a potential spinal cord injury.

Precautions should be taken to treat them according to protocol.

The patients' ability to walk should not be a factor in determining whether a patient needs to be treated for a potential spinal injury.

According to PHTLS, almost 20% of patients who required surgical repair of unstable spine injuries were found "walking around" at the accident scene by EMS personnel.

1. Spinal neurogenic shock is the result of the vasomotor instability due to the loss of sympathetic tone. The patient typically has a low blood pressure (80 to 100mm Hg). Despite hypotension, the patient's skin is warm, pink, and dry and in addition, despite the hypotension, there is also a paradoxical bradycardia.
2. Is there any loss of sensation or movement? If paralysis present, where? Is the patient having difficulty in moving his chest to breath or SOB. is there any point tenderness to the spinal column?
3. Always consider head injury in cases of spinal trauma, and spinal trauma in cases of head injury. Significant neurological signs and symptoms may include; loss of motor function, loss of sensory function, loss of reflex responses, bradycardia, priapism, hypotension, loss of sweating or shivering, and loss of bladder or bowel control.



Sports Injuries-Football Players and Motorcycle Helmets

Protective gear is a vital part of the game, but unfortunately injuries are inevitable. There is some confusion with regard to deciding what protective gear (if any) is appropriate to remove in the pre-hospital setting. Part of the confusion concerning this issue comes from the many different opinions from those involved in caring for these patients. Let's take a look at each major piece of equipment and consider the most appropriate treatment for the athlete with a suspected spine injury. This could apply to any injured person on a motorcycle or even a hockey player. As always, use your professional "common sense" when caring for these patients.

Face Mask

The facemask should be removed as soon as possible, regardless of whether or not the patient has airway compromise. This is different from the prior recommendation that called for removal of the facemask only in the presence of respiratory compromise. If one waits until the airway is compromised, precious time is lost trying to remove the mask. The best tools for removing the facemask are pruning shears or a screwdriver. The mask is removed by cutting the loop straps that hold the masks to the helmet, or by removing the screws that secure these loop straps to the helmet.

Helmet

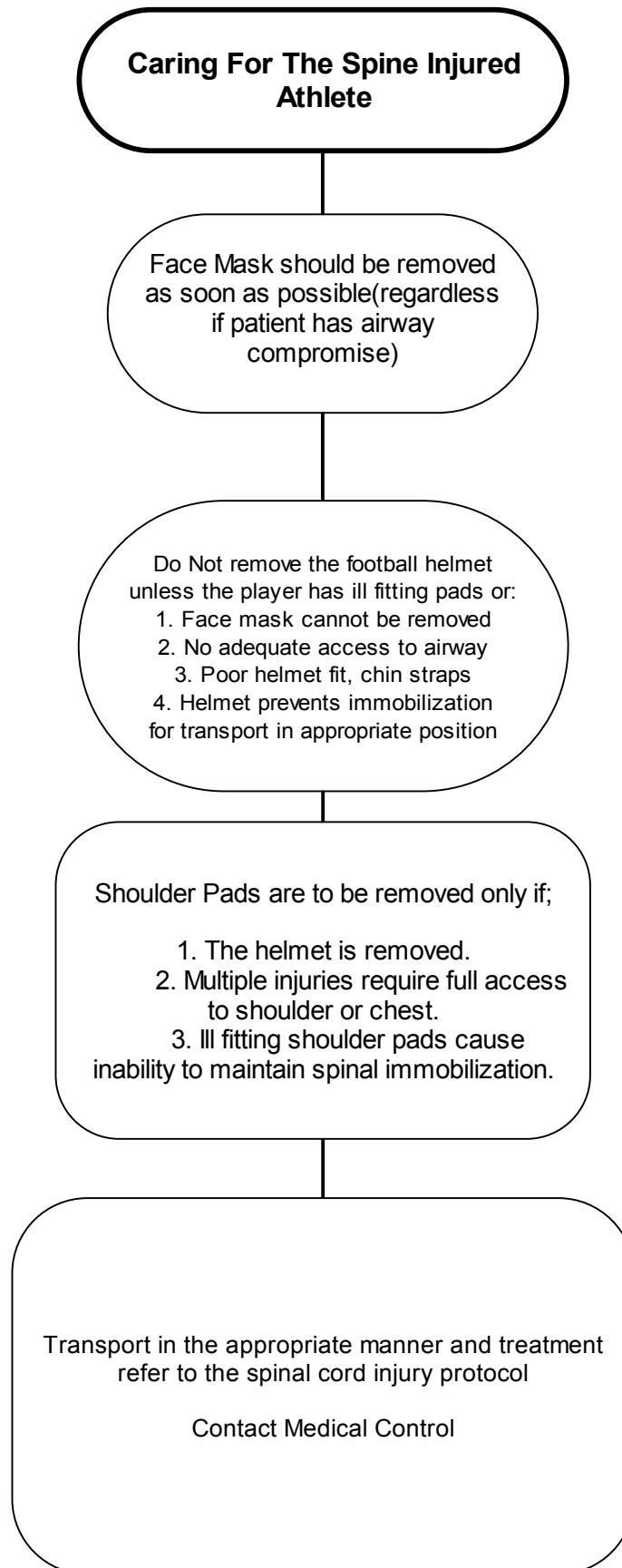
Routine removal of the football helmet in the pre-hospital environment is not recommended. When the helmet and pads are left in place, the spine is maintained in a near neutral position. When the helmet is removed and the shoulder pads are left in place, the spine is in a hyper-extended position. When the helmet is in place, without shoulder pads, the neck is in a flexed position. When caring for a patient with only a helmet, it is usually best to remove the helmet to maintain neutral alignment of the spine. This is important when dealing with motorcycle victims or other instances where a helmet is worn without shoulder pads. However, a football player wearing both shoulder pads and a helmet has his spine maintained in a neutral position by the equipment. In general, the helmet should be removed in the pre-hospital setting only under the following circumstances:

1. The facemask cannot be removed.
2. The design of the helmet does not give adequate access to the airway.
3. The helmet and chinstraps do not hold the head securely, so immobilization of the helmet does not also immobilize the head.
4. The helmet prevents immobilization for transport in an appropriate fashion.

Shoulder Pads

The shoulder pads can usually be opened in the front without the need to completely remove them. This allows access to the chest for auscultation, chest compressions, and even defibrillation. Both are left in place, or both are removed. Possible situations where shoulder pads may need to be removed are:

1. The helmet is removed.
2. Multiple injuries require full access to the shoulder or chest area.
3. Ill-fitting shoulder pads causing the inability to maintain spinal immobilization.



Supplemental Notes

Pain control is for the patient that presents with severe pain/discomfort from an isolated extremity injury or burn. The Paramedic will evaluate the mechanism of injury to rule out trauma to the head, chest, or abdomen.

The drug of choice for pain control in the pre-hospital setting will be Morphine Sulfate unless contraindicated, or if the patient is allergic to Morphine.
Adult dose is 0.1mg/kg maximum dose of 5mg IV only.

Any additional doses will be directed by **ON-LINE medical control**. Any patients who receive IV morphine shall be carefully observed for over sedation (unable to respond), blood pressure and respiratory depression. The actions of Morphine sulfate are reversible with **Nalaxone (narcan)**.

The safest way to administer Morphine is;
Draw up the MS in a 10cc syringe MS 10mg/1cc
Then fill the rest of the syringe with 9cc of NS. This will give you 1cc=1mg.

If the patient is allergic to Morphine sulfate then Demerol can be used. The adult dose is 1mg/kg IV push with a maximum of 25mg.

Zofran will be used for nausea and vomiting, especially where sedation is a concern.
Adults over 40kg the dose is 4mg SLOW IV

Phenergan can be used for nausea that can be caused by narcotics. The adult dose is 12.5-25mg IV push (adult patients only).

Morphine and Demerol are to be given **Slow IV Only** to avoid sudden nausea, vomiting, and hypotension. All patients that are treated with pain medication will not be allowed to walk, and shall remain secured to the stretcher at all times.

General Criteria

Requires critical care life support during inter-facility transport
Clinical condition required that the time spent out of the hospital environment be as short as possible.
Specific or timely treatment required is not available at the referring hospital.
Use of local ground transportation would leave the local area without adequate EMS coverage.
Potential delays associated with ground transport(road obstacles and traffic) is likely to worsen clinical condition.
Area was inaccessible to ground traffic.
Any patient deemed to need air transport by a physician.

Criteria for all patients

Multiple Trauma
MVA with ejection from vehicle
MVA, pedestrian patient struck by vehicle speed over 20 mph
MVA front bumper displaced to rear by more than 30 inches
Patient thrown from motorcycle traveling more than 20 mph
Fall from height greater than 15 feet
Amputation or near amputation
Severe hemorrhage, systolic pressure below 90 mmHg requiring transfusion
Body surface burns above 15% or to the face, hands, feet, airway or perineum
Great potential to experience injury to spinal cord, column, or neurological deficit
Face or neck injury, potential unstable airway, may require advanced procedures
Respiratory arrest within the last 12 hours
Acute respiratory failure not responsive to initial therapy
Cardiac arrest in the last 12 hours
Mechanical ventricular assistance
Cardiac pacemaker
Mechanical ventilator support
Risk of having unstable airway
Acute deterioration in mental status
Invasive therapy or hypothermia
Intra-aortic balloon pump
Arterial line
Indwelling pulmonary artery catheter
Intracranial pressure monitor
Systolic blood pressure less than 90mmHg or greater than 200mmHg
Acidosis with pH less than 7.2
High risk obstetrical condition

Additional Criteria for Pediatric Patients

Experienced or at risk for developing cardiac dysrhythmias
Experienced or at risk for developing acute respiratory failure or arrest
Invasive airway procedure with assisted ventilation
Respiratory rate less than 10 or greater than 50 breaths per minute
Systolic blood pressure in infant, less than 2 years old, less than 65mmHg
Systolic blood pressure in child, 2-5 years, less than 70mmHg
Systolic blood pressure in child, 6-12 years, less than 80mmHg
Near drowning with signs of hypoxia or altered mental state
Status epilepticus
Acute meningitis
Acute renal failure
Unstable toxicological syndrome
Reye's syndrome
Hypothermia

Any time an accident or emergency overwhelms the local response capability, an MCI is said to exist. When that MCI occurs in an urban or rural region, adequate measures must be taken to assure that all potential patients are assessed and transported at an appropriate time.

Pre-planning is the key to a well-organized approach to such an event.

- If you are notified of a potential MCI, Immediately contact the PEMSS Communications Center by radio or cell phone 800-692-1331 advise them of the situation and the: exact location you are responding to, if possible the latitude and longitude of the scene, and wind direction when you arrive.
- Advise the Communications Center of who will initiate the Incident Command System (Integration and Coordination) of all responding units or agencies, and how to reach you by radio or cell phone. (Follow National Incident Management System) - NIMS
- Advise as soon as possible the number of patients, the number of additional units you will need, and the need for aero-medical support.
- Utilize the START triage system.
- Update the Communication Center at regular intervals.
- Notify the Communication Center when all is clear.

DISASTER TRIAGE

I. SPECIFIC INFORMATION (S.T.A.R.T.)

A. Triage: Triage is the sorting of casualties and is, therefore, one of the most important functions to be performed at the scene of a disaster. Triage is a continuous process; it is necessary to re-evaluate all patient priorities, as resources become available. The most seriously injured persons can be quickly identified by:

1. Evaluating respiratory rate, less than or greater than 30.
2. Evaluating radial pulse
3. Evaluating mental status, able to follow simple commands
4. Establish Priorities: Casualties are sorted into four (4) categories:

1. Immediate (RED); Those who have serious injuries or medical problems (salvageable life threatening problems, taking into account the resources available);

- a. Airway and breathing difficulties which can be readily alleviated with head tilt and OPA insertion
- b. Gross bleeding controlled by direct pressure

2. Delayed (YELLOW): Those for whom treatment and transportation can be delayed while more seriously injured persons receive care.

3. Minor (GREEN): Those patients who can ambulate to an alternative location without assistance.

4. Dead/Dying (BLACK): Those patients who do not resume spontaneous breathing after positioning of the head and insertion of an OPA, and have no spontaneous pulse. These patients should be re-triaged, as resources become available.

I. IDENTIFICATION PROCEDURE

The Arizona Triage Tag is to be the identification tag used during a disaster situation. This is an organized system that incorporates the use of a heavy cardboard, color-coded tag with removable side tabs.

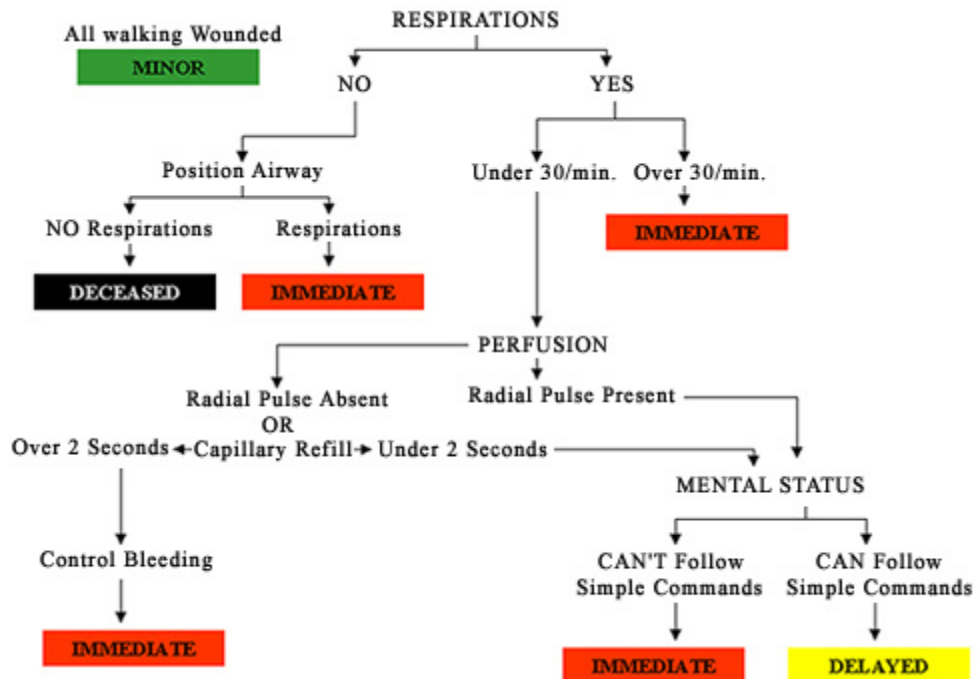
A. Four (4) tabs are color coded for expedient identification of priority:

1. IMMEDIATE (Red): Highest priority
2. DELAYED (Yellow): Second priority
3. MINOR (Green): Third priority
4. DEAD/DYING (Black): Lowest priority

B. The tags also contain numbers on each side tab and the main body of the tag. These numbers and the tags are maintained by the triage officer, the transport officer, and the hospital to facilitate patient tracking.

C. START Flow Chart

M I N O R	D E C E A S E D	I M M E D I A T E	D E L A Y E D	<i>Move Walking Wounded</i>
				No Resp after head tilt
				Breathing but Unconscious
				Resp - > 30
				Perfusion Cap refill > 2 sec or No Radial Pulse <i>Control bleeding</i>
				Mental Status – Can't follow simple commands
				Otherwise
				Remember R – 30 P – 2 M – Can do



D. Triage Tag

CONTAMINATED

Personal Property Receipt/
Evidence Tag *696741*

Destination _____ *696741*

Via _____ *696741*

TRIAGE TAG *696741*

S **L** **U** **D** **G** **E** **M**
Salivation Lacrimation Urination Defecation G.I. Distress Emesis Miosis

AUTO INJECTOR 1 2 3 4 5

Yes No Primary Decon
Yes No Secondary Decon

Solution

<input type="checkbox"/>	Blunt Trauma
<input type="checkbox"/>	Burn
<input type="checkbox"/>	C-Spine
<input type="checkbox"/>	Cardiac
<input type="checkbox"/>	Crushing
<input type="checkbox"/>	Fracture
<input type="checkbox"/>	Laceration
<input type="checkbox"/>	Penetrating Injury

Other: _____

VITAL SIGNS

Time	B/P	Pulse	Respiration

Time Drug Solution 2 Dose

MORGUE

IMMEDIATE Life Threatening Injury *696741*	IMMEDIATE Life Threatening Injury *696741*
DELAYED Serious Non Life Threatening *696741*	DELAYED Serious Non Life Threatening *696741*
MINOR Walking Wounded *696741*	MINOR Walking Wounded *696741*

EVIDENCE

Comments/Information

Patient's Name _____

RESPIRATIONS **R** Yes No
PERFUSION **P** + 2 Sec. - 2 Sec.
MENTAL STATUS **M** Can Do Can't Do

Move the Walking Wounded ▶ **MINOR**


No Respirations After Head Tilt ▶ **MORGUE**

Respirations - Over 30 ▶ **IMMEDIATE**

Perfusion - Capillary Refill Over 2 Seconds ▶ **IMMEDIATE**

Mental Status - Unable to Follow Simple Commands ▶ **IMMEDIATE**

Otherwise ▶ **DELAYED**

ENDORSED BY  ©1996 Disaster Management Systems, Inc. • Pomona, CA (909) 594-9596 • www.logetags.com

PERSONAL INFORMATION

NAME _____

ADDRESS _____

CITY _____ ST _____ ZIP _____

PHONE _____

COMMENTS _____ RELIGIOUS PREF. _____

MORGUE
Pulseless/Non-Breathing

IMMEDIATE Life Threatening Injury	IMMEDIATE Life Threatening Injury
DELAYED Serious Non Life Threatening	DELAYED Serious Non Life Threatening
MINOR Walking Wounded	MINOR Walking Wounded

EVIDENCE

II. DISASTER SCENE OPERATIONS

Follow approved area Incident Management System procedures.

A. When removing patients from a hazardous area:

1. Survey scene for potential hazards, number of patients, need for specialized help
2. Call for medical or technical backup as needed
3. Protect rescuers first; treat gas spills, remove power lines, etc.
4. Stabilize vehicle prior to entry
5. Perform primary survey and treat airway difficulties and severe bleeding first
6. If patient has no pulse or respirations and extrication is necessary before CPR can be provided, the patient should be considered dead
7. Triage patients and assign to available medical personnel
8. Apply cervical collar, immobilize spine prior to extrication
9. Perform quick secondary survey as possible; splint extremity fractures, if possible
10. Expedite safe extrication by specialists after management of life-threatening problems.
11. Perform or repeat complete secondary survey once patient is extricated.

B. Triage area: The triage area should be safely located away from the dangers of the hazard, generally uphill and upwind of the hazard.

C. Incoming ambulances: As incoming ambulances arrive, they should be directed to the staging officer at the staging area. They should not be driven to the triage area.

D. Ambulance Assignments: Ambulance crews should remain with their ambulances until given an assignment by the medical commander. Keys are to remain in the vehicles.

E. Ambulance Supplies: The ambulance supplies and equipment should be placed in a supply pool that is near the treatment area, and a responsible EMT provider placed in charge of the pool.

F. Volunteers: Volunteers can and should be used at a disaster scene to free firefighters, rescuers, and ALS personnel alike from activities that take them away from rescue and patient care activities. Volunteers may be used to:

- a. Block or control the flow of traffic if there are not enough police officers on the scene.
- b. Assist medical personnel in carrying patients from the wreckage to the triage and treatment point.
- c. Help to load the ambulances
- d. Assist the "walking wounded"
- e. Comfort victims and care for children
- f. Carry items from the supply pool to the treatment area

G. Sorting for transportation: As soon as victims are treated, a second triage must begin the sorting for transportation.

G. Transporting: As soon as the victims are ready for transportation, ambulances should be called from the staging area. The command post, or designee, should determine prior to the departure of the ambulance the hospital to which the ambulance should go.

I. Communication Network: The command post, or designee, should determine the channel for scene radio communications and designate the ambulance dispatch center(s) to announce when this channel is to be utilized by incoming units.

J. After Discharge of Patient: As ambulances discharge their patients and return to the scene, they should report directly to the staging officer.

K. Special Area for Relatives: A special area should be provided for relatives and friends away from the patient treatment area.

L. Temporary Morgue: Since bodies will not be removed from the scene until all the injured have been transported, a temporary morgue should be established.

II. National Incident Management System (NIMS)

The NIMS provides a consistent nationwide approach for Federal, State, territorial, tribal, and local governments to work effectively and efficiently together to prepare for, prevent, respond to, and recover from domestic incidents, regardless of cause, size, or complexity. On March 1, 2004, the Department of Homeland Security (DHS) issued the NIMS to provide a comprehensive national approach to incident management, applicable at all jurisdictional levels and across functional disciplines. HSPD-5 also required DHS to establish a mechanism for ongoing coordination to provide strategic direction for, and oversight of, the NIMS. To this end, the NIMS Integration Center (NIC) was established to support both routine maintenance and the continuous refinement of the NIMS.

The NIMS is the nation's first-ever standardized approach to incident management and response. The NIMS unifies Federal, State, territorial, tribal, and local lines of government into one coordinated effort. This integrated system makes America safer by establishing a uniform set of processes, protocols, and procedures that all emergency responders, at every level of government, will use to conduct response actions. This system ensures that those involved in emergency response operations understand what their roles are and have the tools they need to be effective.

This system encompasses much more than the Incident Command System (ICS), although ICS is a critical component of the NIMS. It also provides a common foundation for training and other preparedness efforts, communicating and sharing information with other responders and with the public, ordering resources to assist with a response effort, and for integrating new technologies and standards to support incident management. For the first time, all of the nation's emergency responders will use a common language, and a common set of procedures when working individually and together to keep America safe. The NIMS ensures that they will have the same preparation, the same goals and expectations, and most importantly, they will be speaking the same language.

At the State, territorial, tribal, and local levels, jurisdictions should support NIMS implementation by:

- **Completing the NIMS Awareness Course: “National Incident Management System (NIMS), An Introduction” IS 700**

This independent study course developed by the Emergency Management Institute (EMI) explains the purpose, principles, key components and benefits of NIMS. The course also contains "Planning Activity" screens, allowing participants an opportunity to complete some planning tasks during the course. The planning activity screens are printable so that they can be used after the course is complete. The course is available on-line and will take between forty-five minutes to three hours to complete. The course is available on the EMI web page at:

- **Formally recognizing the NIMS and adopting the NIMS principles and policies**

States, territories, tribes, and local entities should establish legislation, executive orders, resolutions, or ordinances to formally adopt the NIMS. The NIC will provide sample language and templates to assist you in formally adopting the NIMS through legislative and/or executive/administrative means.

- **Establish a NIMS baseline by determining which NIMS requirements you already meet**

We recognize that State, territorial, tribal, and local entities have already implemented many of the concepts and protocols identified in the NIMS. The 2004 DHS Homeland Security Grant Program encouraged grantees to begin utilizing the NIMS concepts, principles, terminology, and technologies. The NIC is developing the NIMS Capability Assessment Support Tool (NIMCAST). The NIMCAST is a web-based self-assessment system that States, territories, tribes, and local governments can use to evaluate their incident response and management capabilities. This useful tool identifies the requirements established within the NIMS and can assist you in determining the extent to which you are already compliant, as well as identify the NIMS requirements that you are not currently meeting. As gaps in compliance with the NIMS are identified, States, territories, tribes, and local entities should use existing initiatives, such as the Office for Domestic Preparedness (ODP) Homeland Security grant programs, to develop strategies for addressing those gaps. The NIC will formally pilot the NIMCAST with a limited number of States in September. Upon completion of the pilot, the NIC will provide all potential future users with voluntary access to the system. Additional information about the NIMCAST tool will be provided later this year.

- **Establishing a timeframe and developing a strategy for full NIMS implementation**

States, territories, tribes, and local entities are encouraged to achieve full NIMS implementation during FY 2005. To the extent that full implementation is not possible during FY 2005, Federal preparedness assistance must be leveraged to complete NIMS implementation by FY 2006. By FY 2007, Federal preparedness assistance will be conditioned by full compliance with the NIMS. Again, in order for NIMS to be implemented successfully across the nation, it is critical that States provide support and leadership to tribal and local entities to ensure full NIMS implementation. States should work with the tribal and local governments to develop a strategy for statewide compliance with the NIMS.

- **Institutionalizing the use of the Incident Command System (ICS)**

If State, territorial, tribal, and local entities are not already using ICS, you must institutionalize the use of ICS (consistent with the concepts and principles taught by DHS) across the entire response system. The 9/11 Commission Report recommended national adoption of the Incident Command System (ICS) to enhance command, control, and communications capabilities. All Federal, State, territory, tribal, and local jurisdictions will be required to adopt ICS in order to be compliant with the NIMS. Additional information about adopting ICS will be provided to you by the NIC.

FY 2006 and FY 2007 Requirements:

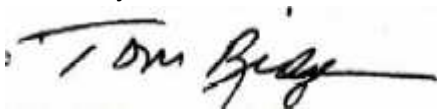
In order to receive FY 2006 preparedness funding, the minimum FY 2005 compliance requirements described above must be met. Applicants will be required to certify as part of their FY 2006 grant applications that they have met the FY 2005 NIMS requirements. Additional information about NIMS compliance and resources for achieving compliance will be forthcoming from the NIC. In addition, FY 2005 Federal preparedness assistance program documents will address State and local NIMS compliance. The NIC web page, www.fema.gov/nims, will be updated regularly with information about the NIMS and guidance for implementation. The NIC may be contacted at the following:

Gil Jamieson, Acting Director
NIMS Integration Center
500 C Street, SW
Washington, DC 20472
(202) 646-3850
NIMS-Integration-Center@dhs.gov

web page: www.fema.gov/nims

Thank you for your support in implementing the NIMS. I look forward to continuing our collective efforts to better secure the homeland and protect our citizens and appreciate all of your hard work in this important endeavor.

Sincerely,



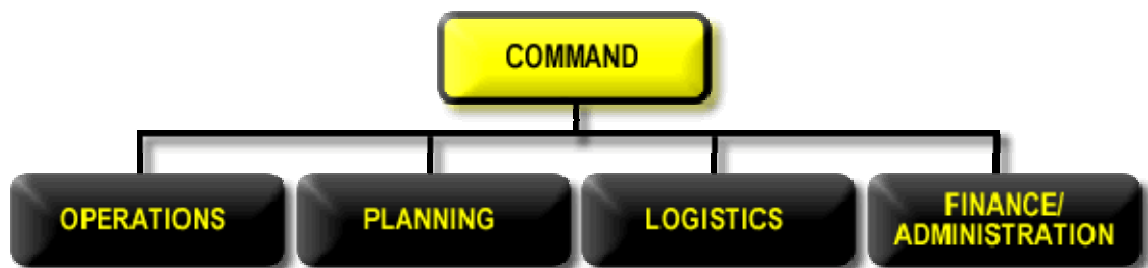
Secretary

U.S. Department of Homeland Security
Washington, DC 20528

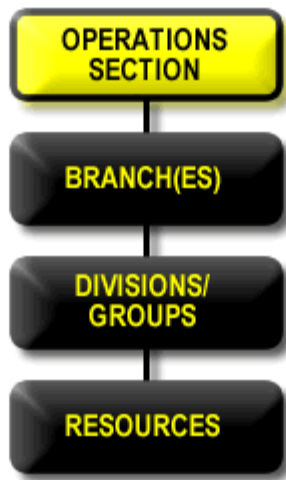


**Homeland
Security**

III. ICS-NIMS Organizational Charts



INCIDENT COMMAND SYSTEM: COMMAND STAFF & GENERAL STAFF



MAJOR ORGANIZATIONAL ELEMENTS OF OPERATIONS SECTION