

SECTION 1: ADMINISTRATIVE

- 1-1. Medical Control
- 1-2. Scope of Practice
- 1-3. Communications
- 1-4. Documentation
- 1-5. Lower Code / Cancellation / Diversion
- 1-6. Patient Treatment Rights
- 1-7. Patient Refusal
- 1-8. Treatment of Minors
- 1-9. Patient Hospital Destination
- 1-10. Time on Scene
- 1-11. Inter-Facility Transport
- 1-12. Do Not Resuscitate Orders
- 1-13. Physicians (Medical Professionals) at the Scene

1-1. MEDICAL CONTROL

Both Mount Carmel Hospital in Colville and Saint Joseph Hospital in Chewelah are the on-line Medical Control base stations for all Emergency Medical Service activities in Stevens County with the exception of Stevens County Fire District #1 which may utilize any of the Spokane area hospitals.

Medical Control is used for:

1. Any and all questions regarding patient disposition.
2. Clarification of orders.
3. General medical information.
4. In cases of disparity between the pre-hospital patient care protocols and the wishes of the patient, family and/or private physician.

On-line Medical Control is delegated to the on duty Emergency Room Physician at each hospital.

On-line Medical Control should be contacted using the appropriate frequency to activate the radio system.

On-line Medical Control may also be contacted by phone at (509)685-5120 (**MCH**) or (509)935-8211 (**SJH**).

On-line Medical Control may also be contacted by phone at (509) 474-3131 (**SHMC**) or (509) 458-5800 (**DMC**) or (509) 482-2460 (**HFH**)

Off-line Medical Control is the responsibility of the Stevens County Medical Program Director:

Samuel A. Artzis, MD
Stevens County MPD
509-684-3701

1-2. SCOPE OF PRACTICE

All Stevens County EMS Providers are to function within their respective scope of practice as defined by their Washington State approved training curriculum and WAC certification regulations. Should a patient's clinical assessment indicate the need for a higher level of service than originally dispatched, then the EMS Provider is to request rendezvous with the appropriate higher level of service (a tiered response system). This applies to both pre-hospital transport and inter-facility transfer. Questions regarding such should be addressed to the Stevens County MPD, On-line Medical Control, or respective EMS Councils.

Specific patient treatments should follow Stevens County Patient Care Protocols found in this document. Use Washington State protocols for all procedures not specifically found in this document. Compliance with these directives will be reviewed by the County MPD and the Stevens County Quality Improvement/Utilization Review Committee.

This document replaces all prior Stevens County EMS protocols.

1-3. COMMUNICATIONS

Radio contact will be made between the transporting EMS unit and the receiving hospital prior to arrival of the EMS unit using the standard reporting format outlined below. Contact will be made with Medical Control if a patient is to be transported to a facility outside of Stevens County.

- A. Hospital Emergency Ambulance Radio (H.E.A.R.) information protocol during transport: All users of the H.E.A.R. system are urged to transmit essential communications and keep air times as short as possible. The following protocols should be used. If Medical Control or the Receiving Facility feels additional communications are necessary, they may contact the transporting unit via the H.E.A.R. system.

Emergency Pre-Hospital H.E.A.R. Report Format:

1. Unit identification
2. Age and sex of patient(s)
3. Condition of patient(s) (stable, unstable, critical, arrest)
4. Chief complaint or reason for transport
5. Brief pertinent medical history (1-2 sentences, if possible)
6. Vital signs
7. Pertinent physical exam finding
8. Treatment rendered and response, if any
9. Estimated time of arrival (ETA)
10. Request for additional information or treatment

The H.E.A.R. report should be provided as soon as practical once transport has begun. If transport is delayed (e.g. prolonged extrication), it may be prudent to contact Medical Control or the receiving facility prior to initiating transport. All reports should be given in the above format and should be held to approximately sixty seconds. The H.E.A.R. report is not meant to be a full patient report and should only relay pertinent patient care information.

Patient identification information is inappropriate for the H.E.A.R. frequency. Where patient care at the hospital will be improved, patient identification information may be given by telephone.

Advise the Receiving Facility of pertinent changes in the patient's condition while en route and any changes in treatment plan.

If contact via H.E.A.R. system can not be established, then cell phone contact is appropriate. In the event of disrupted communications, pre-hospital providers will act **according to protocol and appropriately document afterwards.**

- B. Verbal report to the Receiving Physician and/or nurse: This report should contain more detail than the radio report. The EMS provider now has the time to present thorough details of the scene, complete assessment of the patient, and the results of treatment efforts.

1-4. DOCUMENTATION

All transporting agencies in Stevens County shall document their patient contacts using the State of Washington EMS Medical Incident Report (MIR) form. This written report is the medical/legal document of the assessment, management and transport of the patient. The importance of the completeness and accuracy of the report cannot be overemphasized. This is a legal record and may be called upon as evidence in any court of law. (Remember: If it is not written, it was not seen or done.)

The narrative section of the EMS MIR form will be completed using either the S.O.A.P. charting format or C.H.A.R.T. format:

S.O.A.P.:

- [S] Subjective and Scene: This is information which the patient, family, bystanders, or other witnesses tell you. (Age, gender, race, estimated weight, chief complaint, scene description, history of the event, pertinent past medical history, patient's private physician, medications, allergies and extenuating circumstances).
- [O] Objective: This is information you find on your examination and lab evaluation (monitor, EKG, blood sugar, etc.).
- [A] Assessment: This is your differential diagnosis (the amount or degree by which things differ) based on the Subjective and Objective information gathered.
- [P] Plan: This is your plan of treatment based on your Assessment. Document your patient care and its results. Record whether the patient's condition improved, stabilized or declined.

C.H.A.R.T.:

- [C] Chief Complaint: The major problem with the patient.
- [H] History: Subjective information told to you by the patient, family, etc. Follow S.A.M.P.L.E.D. guideline:
 - Symptoms
 - Allergies
 - Medications
 - Past Medical History
 - Last food/beverage intake
 - Events prior
 - Description of patient
- [A] Assessment: Physical findings, include vital signs.
- [R] Rendered Treatment: What you did for the patient and its effect.

[T] Transport/Transfer: How, where, who, transported. Changes during transport.

NOTE:

- Document completely instructions received via radio or phone communication. Document the name of the physician giving the orders.
- Document any patient refusal of treatment/transport (refer to section on Patient Treatment Rights, Section 1-6, page 9).
- Document rationale for any deviation from protocol.
- Both a verbal and written report shall be provided to the receiving physician and/or designee at the time of patient transfer. If a written report cannot be provided at the time of patient transfer (e.g. dispatched to another call), it shall be completed as soon as possible and no later than the end of the EMS provider's current shift.
- Faxing copies of MIR's to the hospital is acceptable.
- Times must be documented on the MIR for it to be complete.

1-5. LOWER CODE/CANCELLATION/DIVERSION

It is recognized that it is in the best interest of public safety and ultimately patient care to respond to all incidents in a safe and prudent manner at all times. To accomplish this, units responding Code (lights and sirens) may be lowered to a “Slow Code” response by the first Public Safety unit on the scene to determine that the patient does not require IMMEDIATE Emergency Medical Services for life- or limb-threatening conditions. A very small percentage of page outs are true life/limb threatening conditions.

1. First Responders (fire, EMS, or police) may lower/cancel response of the responding units when the patient does not require IMMEDIATE PATIENT CARE (BLS/ILS/ALS) INTERVENTIONS (i.e., non-injury accident).
2. First Responders (fire, EMS, or police) may cancel responding units, to include BLS, ILS and ALS, when there is no patient.
3. BLS first response or BLS transporting units may downgrade responding ILS or ALS units when their evaluation **clearly** indicates a lack of potential need by the following BLS criteria for adults:
 - a. Warm, pink, dry skin
 - b. Heart rate 60-100 and regular
 - c. Respiratory rate 10-24, deep and easy
 - d. Blood pressure **greater** than 100 mm/Hg, systolic
 - e. Blood pressure **less than** 180 mm/Hg, systolic
 - f. Blood pressure **less than** 110 mm/Hg diastolic
 - g. Patient is awake, alert, talking and making sense
 - h. No loss of consciousness now or prior to arrival
 - i. No seizure activity now or prior to arrival
 - j. No chest pain
 - k. No shortness of breath
 - l. No abdominal pain
 - m. No drug overdose/suicide attempt
 - n. No significant mechanism of injury or multiple trauma
 - o. No signs or symptoms of CVA or stroke

The patient may then be transported by the BLS.

A responding EMS unit may be diverted from one 911 call to a second call when all of the following conditions are met:

1. It is obvious the second call is of a greater life-threatening emergency than the first call.
2. The first EMS unit is decidedly closer to the second call.
3. A second EMS unit is immediately dispatched to the first call.
4. The diversion and response of the first unit to the second call might be vital to the patient's outcome.

1-6. PATIENT TREATMENT RIGHTS

Competent patients or family of competent patients who wish to refuse any portion of treatment and/or transport will be asked to sign the Medical Release form printed on the back of the Washington State Medical Incident Report. Any time a patient/family is refusing transport, EMS providers may wish to contact Medical Control. Contact should be made in such a way that Medical Control can speak directly to the patient/family. The EMS provider should be prepared to give a patient report to Medical Control and to follow any guidelines Medical Control advises. Documentation of all discussion with the patient/family and with Medical Control should be done in the narrative portion of the MIR. EMS providers should also document advice given by them to the patient/family directly on the Medical Release form, or in the narrative part of the MIR.

If a patient is conscious and competent, and injuries are not life threatening, every effort should be made to honor a patient/family's right to refuse treatment and/or transport when the patient/family chooses to exercise that right. EMS providers should attempt to obtain a patient's vital signs prior to having the patient sign the Medical Release. If the patient refuses having his/her vital signs obtained, document the refusal on the MIR.

When using the Medical Release form, EMS providers should follow the EMS Personnel Instructions printed on the bottom of the form. The following three instructions should be initiated by the EMS provider to indicate they have made special note of them:

Instruction #1: Make sure the patient is capable of making the decision

Instruction #2: Read this form slowly and clearly to the patient

Instruction #3: Ask the patient if they understand what has been read. THEN...ASK AGAIN!

If a patient is considered incompetent to refuse treatment/transport because the patient's judgment is impaired by medical/mental condition or illness, injury, drugs, or alcohol, the patient shall be treated/transported if there is any potential threat to life or limb. EMS providers may wish to contact Medical Control for guidelines and support. In cases of threat to life or limb, the risks of loss of life/limb far outweigh the risks of care without consent. (NOTE: EMS providers should never endanger themselves by attempting transport or treatment of combative patients who refuse care. Always seek help from Law Enforcement.)

At any time an interpreter is used to translate the refusal form and/or instructions to the patient/family, the EMS provider should have the interpreter sign the form as a witness and the notation "interpreter" should be placed next to the signature. If the interpreter is contacted by telephone, the EMS provider should note the name of the interpreter on the Medical Release form.

1-7. PATIENT REFUSAL SPECIFIC OPERATING PROCEDURE

Trauma patients (as all patients) have the right to refuse transport to designated facilities per protocol and will be transported to the facility of their choice whenever reasonable if:

- They have a non-life threatening condition and
- They are deemed mentally competent to make the decision.

In such cases, patients must be requested to sign a patient refusal form and be informed of a nature of their injuries and any expected risks as a result of such refusal. Medical Control will be consulted and details of the incident documented by the ambulance crew.

If, in the judgment of the provider, the patient has:

1. A life threatening condition
2. Level of consciousness is altered to make the patient incompetent of
3. The expected delay in care would compromise patient care to the extent that the condition becomes life threatening, the patient will be transported to the most appropriate designated facility per protocol. In such cases, the pre-hospital provider shall provide the patient with information about the serious nature of the injuries and the need for transport to the designated hospital as described.

Transfer of patients from Basic Life Support to ALS personnel may take place in the following ways:

1. On-site transfer directly to ALS air or ground transport.
2. En route transfer at an agreed upon rendezvous point to air or ground ALS transport.
3. By BLS transport unit with ALS personnel and equipment on board if for the sake of patient care this is deemed the most appropriate and expedient.

1-8. TREATMENT OF MINORS

Minor patients who suffer emergent life-or limb-threatening conditions or traumatic injury should be treated and transported without delay. If an adult responsible for the minor's well being is not present, the EMS provider should advise Law Enforcement and Medical Control of the course of action being taken.

In the case of a minor patient who suffers illness or injury that should be evaluated, but which is not immediately life-or limb-threatening and where an adult responsible for the minor's well being is not present, then the EMS provider must make a good faith effort to establish contact with an adult responsible for the minor's well being in order to obtain permission for treatment and/or transport.

If a responsible adult cannot be contacted, the EMS provider must document all efforts at contact and then contact Medical Control for direction. If Medical Control advises transport/treatment, Law Enforcement should be notified of the course of action. When a responsible adult is not available and a minor requiring evaluation, treatment and/or transport refuses such care, the EMS provider should again contact Medical Control for guidance and Law Enforcement for assistance as necessary.

Whenever a Stevens County EMS service makes contact with a minor who is not transported, the minor must be left in the care of a competent adult and not left solely in the care of other minors. Notify Medical Control (and/or Law Enforcement if indicated or so instructed by Medical Control).

1-9. PATIENT HOSPITAL DESTINATION

Critical/unstable patients will be transported to the nearest appropriate ER/hospital.

Medical: For medical conditions, patient should be taken to the closest facility capable of ACLS or PALS care.

Trauma: For trauma patients, Stevens County EMS providers will follow the State of Washington Pre-Hospital Triage (Destination) Procedures. Trauma patients who meet Washington State Trauma Triage Criteria must be transported to the highest level Trauma Designated Facility within 30 minutes transport time. (Refer to Section 4 - Trauma.)

For **non-critical/stable** patients, the choice of destination hospital shall be based on the following factors:

1. Patient preference: The choice of destination hospital shall rest primarily with the patient, their immediate family or the personal physician. On-line Medical Control should be notified if the receiving facility is other than the closest facility.
2. Medical Control: If the patient does not have a hospital preference, the closest facility will be chosen. In selected patients, Medical Control may change the patient's destination based on EMS field assessment and resource availability at the destination facility.

1-10. TIME ON SCENE

Any time a transporting agency EMS Provider cannot provide an adequate airway to a patient within two minutes after initial encounter, he/she is required to transport the patient immediately unless there are extenuating circumstances, e.g. imminent arrival of an ILS/ALS unit (in case of BLS first unit on scene) or inability to extricate.

Medical: If at any time, the EMS providers have been on scene or predict they will be on scene for more than 20 minutes after initial encounter, they will contact Medical Control when possible to give them a patient update.

Trauma: Once extrication has been accomplished, scene time should be ten minutes or less.

The EMS provider must clearly document any and all extenuating circumstances on the MIR.

1-11. INTER-FACILITY TRANSPORT

Inter-facility transport may occur at the BLS, ILS or ALS level within the following categories and under the following guidelines:

1. Transfer between hospitals for admission for services not available at the initial hospital.
2. Transport of patient to another facility for diagnostic evaluations with return to the initial facility.
3. Transport from an acute care facility to an extended care facility.
4. Transport of patient between facilities at the patient's request.
5. Transport of Mental Health patients to a state designated psychiatric facility.

As a general rule, it is the responsibility of the transferring facility to insure that medical necessities for safe patient transport are made. Medical instructions and orders of the attending physician will be followed unless specifically contrary to standing orders. If the attending physician accompanies the patient during the transfer, he/she may assume complete authority and direct all care. Medical Control should be aware and in agreement.

Registered nurses who accompany patients on inter-facility transports must have orders to give medications, as they do not have coverage under pre-hospital WAC to do so. Such orders may come from the attending physician, on-line Medical Control, or by the receiving physician. If orders are verbal, they should be clearly documented as such on the MIR.

The responsibility for arranging transfer to another facility resides with the transferring facility. In general, patients will not be transferred to another facility without being stabilized. Stabilization should include adequate evaluation and initiation of treatment to assure that transfer of the patient will not, within reasonable medical probability, result in material deterioration of the medical condition, death, or loss or serious impairment of bodily functions, parts or organs. Evaluation and treatment of patients prior to transfer should include the following:

1. Establish and assure an adequate airway and adequate ventilation.
2. Initiate control of hemorrhage.
3. Stabilize and splint the spine and/or fractures.
4. Establish and maintain adequate access routes for fluid and/or medication administration.
5. Initiate adequate fluid and/or blood product replacement.
6. Determine that the patient's vital signs (pulse, respiration, blood pressure and urinary output, if indicated) are sufficient to sustain adequate tissue perfusion.

It is understood that circumstances may arise for which full stabilization is not possible or appropriate; however, the potential benefits of transfer should outweigh the risks. It is the transferring facility's responsibility to establish the need for BLS, ILS or ALS care. The transferring facility will make arrangements for ALS transport.

In the event an emergency occurs en route that was not anticipated, pre-hospital patient care protocols will immediately apply. Medical Control should be contacted as appropriate and the

receiving facility should be contacted as soon as possible to inform them of changes in the patient's condition.

1-12. DO NOT RESUSCITATE ORDERS

Definition:

- A DNR (Do Not Resuscitate, No Code) Order is an order issued by a physician directing that, in the event the patient experiences a cardiopulmonary arrest (i.e., clinical death), cardiopulmonary resuscitation will not be administered.
- POLST (Physician Orders for Life-Sustaining Treatment) is an order issued by a physician that directs whether or not the patient wishes Resuscitation Efforts, Medical Interventions, Antibiotics, Artificially Administered Fluids and/or Nutrition.
- A Living Will is a legally executed document expressing the patient's wishes regarding their medical care around the time of the end of life. Many Living Wills do not specifically address cardiopulmonary resuscitation. As such, these particular Living Wills can not serve as a DNR order.
- Resuscitation includes attempts to restore failed cardiac and/or ventilatory function by procedures such as endotracheal intubation, mechanical ventilation, closed chest massage, defibrillation and use of ACLS medications.

Protocol:

When EMS personnel respond to a cardiac or respiratory arrest patient, full resuscitation must be initiated with the following exceptions:

1. The patient's private physician is present and orders that resuscitation attempts either not be initiated or be terminated. Medical Control should be notified.
2. A written DNR order, signed by the private physician, is present, e.g. nursing home patients.
3. When history and obvious physical signs are present which indicate that death occurred and resuscitation attempts are inappropriate (the obviously dead).
 - a. Rigor Mortis
 - b. Lividity
 - c. Decomposition
 - d. Incineration
 - e. Decapitation
 - f. Evisceration of the heart or brain
 - g. Complete partition of body parts incompatible with life
4. The original Washington State EMS-No CPR Directive form or bracelet, or the POLST form, is present. Form or bracelet should be intact and not defaced. The bracelet may be worn on either wrist or ankle or worn on a necklace/neck chain. The form should be at the patient's bedside, on the back of the bedroom door, on the back of the front door or on the refrigerator.

NOTE:

- The patient's wishes in regard to resuscitation should always be respected. Sometimes, however, the family may vigorously and persistently insist on resuscitation efforts even if a valid EMS-No CPR bracelet or form is found. In such circumstances, initiate CPR and contact on-line Medical Control for advice/orders.
- The following people can inform the EMS providers that the EMS No-CPR form has been revoked: The patient (by destroying the form or bracelet or by verbally withdrawing the directive), the attending physician, the legal surrogate for the patient expressing the patient's intent to revoke the directive.
- If some other type of advance directive or DNR order is found, then contact the patient's private physician and/or Medical Control for guidelines.
- The EMS provider shall document all DNR orders on the MIR.

1-13. PHYSICIANS (MEDICAL PROFESSIONALS) AT THE SCENE

Medical professionals at the scene of an emergency call may provide assistance to the EMS team and should be treated with professional courtesy. Medical professionals who offer assistance should identify themselves. If on-scene physicians wish to assume or retain responsibility for direction of patient care, they should provide proof of identification, follow the guidelines below, and accompany the patient to the receiving hospital.

When the patient's private physician is in attendance and has identified him/herself, the EMS team will comply with the private physician's instructions for the patient. Medical Control will be contacted for reporting. If orders are given by the private physician which are in conflict with Stevens County EMS Patient Care Protocols, clearance must be obtained through Medical Control.

In such cases, the physician at the scene may:

1. Request to talk directly to the Medical Control physician to offer advice or assistance.
2. Offer assistance to the EMS team with another pair of eyes, hands and/or suggestions, yet leave the EMS team under Medical Control and established patient care protocols.
3. Take total responsibility for the patient with the concurrence of the Medical Control Physician. (Remember, if the on-scene physician wishes to take total responsibility for patient care, they will accompany the patient to the hospital.)

If, during transport, the patient's condition should warrant treatment other than that requested by the private physician, then Medical Control will be contacted for information and for concurrence with the requested treatment.

These guidelines will also apply to cases where a physician may happen upon the scene of ongoing EMS care and chooses to interact/assist the EMS team.

Medical professionals, other than physicians, may offer assistance to the EMS providers but are not authorized to give orders to the EMS team except in pre-approved circumstances (e.g., RN accompanying the patient and EMS crew on an inter-facility transport).

SECTION 2: CARDIAC EMERGENCIES

- 2-1. Chest Pain/Acute Myocardial Infarction
- 2-2. Cardiac Arrest
- 2-3. Defibrillation
- 2-4. Asystole
- 2-5. Pulseless Electrical Activity (PEA)
- 2-6. Bradycardia
- 2-7. Tachycardia
- 2-8. Acute Pulmonary Edema
- 2-9. Cardiogenic Shock

2-1. CHEST PAIN / ACUTE MYOCARDIAL INFARCTION

BLS

PRIMARY ASSESSMENT:

- Administer high flow oxygen with a non-rebreather mask.
- Be alert for and treat shock.
- Be alert for irregular pulse.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Obtain and record vital signs every 5 minutes.
- Obtain pertinent and SAMPLE history including onset, location, quality, and duration of pain. OPQRST
- Administer 4 low-dose (81 mg each) chewable Aspirin (324 mg total) PO, unless contraindicated (refer to Section 8-5, page 114).

NOTE: When ASA is administered to cardiac patients, it is not being used for pain relief.

ADDITIONAL FIELD TREATMENT:

- Place patient in position of comfort, loosen tight clothing and reassure.
- The EMT-B may assist the patient in the self administration of the patient's own prescribed nitroglycerin, 1 tablet every 3-5 minutes to a maximum of three doses, if discomfort is not relieved and the systolic BP is >100mm Hg.
- Monitor and record the patient's vital signs after each dose of nitroglycerin is administered.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor. Consider applying the defib pads.
- IV – Establish saline lock or peripheral IV with Normal Saline, TKO.

ILS

In addition to all of the above:

- Draw baseline blood as needed. Start IV prior to drug therapy. If unable to establish IV, continue with drug therapy.
- Administer Nitroglycerin 0.4mg SL (tablet or transmucosal spray) if systolic BP >100mm Hg. May repeat every 3-5 minutes up to a maximum of three doses or chest pain is relieved. Discontinue administration if systolic BP is <100mm Hg or patient displays signs of inadequate perfusion at a higher BP.
- Monitor and record the patient's vital signs after each dose of nitroglycerin is administered.

- Contraindications for the administration of nitroglycerin:
 1. Patient has a head injury.
 2. Initial systolic BP < 100mm Hg.
 3. Patient has recently (within the last 48 hours) taken Viagra, Cialis, or other drug for erectile dysfunction.

NOTE:

- Prepare to deal with respiratory and cardiac arrest.
- Do not allow the patient to ambulate.
- Do Not Delay Transport!

2-2. CARDIAC ARREST

BLS

PRIMARY ASSESSMENT:

- Initiate CPR according to AHA standards.
- For hypothermic patients, see Section 5-2, page 83, Cold Emergencies.
- Suction secretions as needed.
- Administer high-flow oxygen via pocket mask or BVM.
- Attach AED or Manual Defibrillator and follow protocol, Section 2-3, page 24.

SECONDARY ASSESSMENT:

- Obtain history. If possible include time of arrest, whether witnessed, time of initial CPR and response time for EMS.

ADDITIONAL FIELD TREATMENT:

- Protect limbs from injury during movement

BLS SPECIAL SKILLS / ILS

In addition to all of the above and if trained:

- Attach heart monitor and identify rhythm
- If monitor shows Ventricular Fibrillation or Ventricular Tachycardia AND patient is unconscious AND does not have a PULSE, refer to specific Defibrillation protocol, Section 2-3, page 24.
- If patient is unconscious, pulseless and monitor does not show Ventricular Fibrillation or Ventricular Tachycardia, DO CPR and transport.
- Establish advanced airway (double-lumen airway) as needed.
- Establish saline lock or peripheral IV with Normal Saline, TKO during transport.

2-3. DEFIBRILLATION

BLS / ILS

PRIMARY ASSESSMENT:

- If cardiac arrest is witnessed, immediately attach an AED and defibrillate prior to initiating CPR. This only applies if the cardiac arrest IS A WITNESSED EVENT and AED IS AVAILABLE AND CAN BE ATTACHED IMMEDIATELY.
- Initiate CPR according to AHA standards (2 minutes) until defibrillator is attached.
- Prepare to insert double lumen airway after CPR and first shock, if available and trained.

A. AED

- Place electrode pads, connect cables, and turn on AED.
- Press Analyze button. If “SHOCK ADVISED”, press the Shock button and then immediately resume CPR starting with 30 compressions and then 2 breaths for 2 minutes. Check for a pulse.
- If no pulse, press Analyze button. If “SHOCK ADVISED”, press the Shock button and then immediately resume CPR starting with 30 compressions and then 2 breaths for 2 minutes. Check for a pulse. If no pulse, repeat this procedure one more time then check for pulse again.
- If no pulse, resume CPR, start transport and contact Medical Control for patient disposition before delivering any more shocks.

ANY TIME YOU GET THE “NO SHOCK ADVISED” MESSAGE:

- Check pulse and start transport immediately.
- If no pulse, continue or begin CPR for 2 minutes and then check for a pulse.
- If no pulse, continue CPR, stopping to analyze rhythm every 2 minutes. After three “No Shock Advised” continue CPR and repeat analyze every 3-4 minutes during transport.
- If you have a pulse, check blood pressure.
- If BP is more than 60 systolic, stop CPR.
- If BP is less than 60 systolic and patient remains unconscious, continue CPR.
- Maintain ventilations with 100% O2 until patient is breathing adequately.
- Contact Medical Control.

B. MANUAL DEFIBRILLATION

- Start with 2 minutes of CPR
- Place electrodes, connect cables and assess rhythm.
- Assess rhythm for no longer than 10 seconds.
- If shockable, deliver 1 shock at 360 joules
- Continue CPR for a full 2 minutes (30 compressions/2 breaths) before checking rhythm again.
- If still a shockable rhythm, deliver one more shock at 360 joules.
- Do CPR for 2 minutes.

- Stop CPR and analyze rhythm. If still shockable, deliver one more shock at 360 joules.
- We will give a total of no more than 9 shocks before calling Medical Control. At any time during those 9 shocks if you get a rhythm back and then the patient reverts back to a shockable rhythm you are allowed to start with a new set of 9 shocks.

ANY TIME YOU GET A RHYTHM OTHER THAN V-FIB OR V-TACH WITHOUT A PULSE:

- Continue or begin CPR for 2 minutes and then check for a pulse.
- If no pulse, continue CPR, stopping to analyze rhythm every 2 minutes.
- If you have a pulse, check blood pressure
- If BP is more than 60 systolic and stop CPR, monitor airway.
- If BP is less than 60 systolic and patient remains unconscious, continue CPR.
- Maintain ventilations with 100% O2 until patient is breathing adequately.
- Contact Medical Control.

SECONDARY ASSESSMENT:

- Obtain history, if possible. Include time of arrest, whether witnessed, time of initial CPR and response time for EMS.

ADDITIONAL FIELD TREATMENT:

- Protect limbs from injury during movement.

NOTE:

- **SHOCKABLE RHYTHMS:** Ventricular Fibrillation and Pulseless Ventricular Tachycardia
- **For Biphasic Waveform Defibrillator:**

The **M Series** supports the use of progressive shock sequences to provide an energy reserve, allowing the delivery of a higher energy shock if a lower energy shock fails to terminate the arrhythmia. A shock of 120J Biphasic would most closely approximate the current AHA recommended adult defibrillation using a monophasic defibrillator.

2-4. ASYSTOLE

BLS / ILS

- Follow Cardiac Arrest protocol, Section 2-2, page 23.

2-5. PULSELESS ELECTRICAL ACTIVITY (PEA)

BLS / ILS

- Follow Cardiac Arrest protocol, Section 2-2, page 23.

2-6. BRADYCARDIA

BLS

PRIMARY ASSESSMENT:

- Assess ABC's.
- Administer high-flow oxygen with a non-rebreather mask.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Obtain and record vital signs every 5 minutes (bradycardia is pulse <60/min).
- Obtain pertinent and SAMPLE history.

ADDITIONAL FIELD TREATMENT:

- Place patient in position of comfort, loosen tight clothing and reassure.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline, TKO.

ILS

In addition to all of the above:

- Draw baseline blood as needed.

NOTE:

- Prepare to deal with respiratory and cardiac arrest.
- Do not allow the patient to ambulate.

2-7. TACHYCARDIA

BLS

PRIMARY ASSESSMENT:

- Assess ABC's.
- Administer high-flow oxygen with a non-rebreather mask.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Obtain and record vital signs every 5 minutes (tachycardia is pulse >100/min).
- Obtain pertinent and SAMPLE history.

ADDITIONAL FIELD TREATMENT:

- Place patient in position of comfort, loosen tight clothing and reassure.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline, TKO.

ILS

In addition to all of the above:

- Draw baseline blood as needed.

NOTE:

- Prepare to deal with respiratory and cardiac arrest.
- Do not allow the patient to ambulate.

2-8. ACUTE PULMONARY EDEMA

BLS

PRIMARY ASSESSMENT:

- Maintain airway control as needed.
- Administer high-flow oxygen with a non-rebreather mask or BVM if indicated.
- Be alert for irregular pulse.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Obtain and record vital signs every 5 minutes.
- Keep patient warm.
- Obtain pertinent and SAMPLE history. If patient had/has chest pain, obtain: onset, location, quality and duration of pain.

ADDITIONAL FIELD TREATMENT:

- Place patient in position of comfort, preferably sitting upright.
- Do not delay transport.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline, TKO.

ILS

In addition to all of the above:

- Draw baseline blood as needed.

NOTE:

- Prepare to deal with respiratory and cardiac arrest.
- Do not allow the patient to ambulate.

2-9. CARDIOGENIC SHOCK

BLS

PRIMARY ASSESSMENT:

- Maintain airway control as needed.
- Administer high-flow oxygen with a non-rebreather mask.
- Be alert for irregular pulse.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Obtain and record vital signs every 5 minutes.
- Keep patient warm.
- Obtain pertinent and SAMPLE history. If patient had/has chest pain, obtain: onset, location, quality and duration of pain.

ADDITIONAL FIELD TREATMENT:

- Place patient in position of comfort, loosen tight clothing and reassure.
- Do no delay transport.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with large-bore catheter, Normal Saline, TKO.
- If patient is hypotensive (BP <90 systolic with signs of inadequate perfusion) in the absence of trauma/hypovolemia, give a full challenge of 250ml of Normal Saline IF lungs are clear and breath sounds are undiminished in all lobes.

ILS

In addition to all of the above:

- Draw baseline blood as needed.

NOTE:

- Prepare to deal with respiratory and cardiac arrest.
- Do not allow the patient to ambulate.

SECTION 3: MEDICAL

- 3-1. Respiratory Emergencies
- 3-2. Anaphylaxis
- 3-3. Seizures / Convulsions
- 3-4. Altered Level of Consciousness
- 3-5. CVA / Neurological Emergencies
- 3-6. Diabetic Emergencies
- 3-7. Hypertensive Crisis
- 3-8. Abdominal Pain (Non-Traumatic)
- 3-9. Poisoning
- 3-10. Overdose
- 3-11. Psychiatric Emergencies

3.1 RESPIRATORY EMERGENCIES

BLS

PRIMARY ASSESSMENT:

- Perform primary survey.
- Establish an airway; clean any upper airway obstructions. Follow AHA guidelines.
- Administer high-flow oxygen with a non-rebreather mask.
- Maintain upright position to facilitate breathing.
- Use pocket mask / BVM to assist respirations as needed.
- Monitor vital signs frequently.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Obtain pertinent and SAMPLE history.
- Auscultate chest for bilateral lung sounds, wheezes or rales.
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.

ADDITIONAL FIELD TREATMENT:

- Allow patient to seek position of comfort.
- If patient is hyperventilating, calm the patient and coach them to slow down their breathing rate.
- If patient has a personal prescribed inhaler, allow the patient to use it as prescribed. Assist if necessary.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline, TKO.
- If unconscious and not breathing without a gag reflex, place double-lumen airway.

ILS

In addition to all of the above:

- Draw baseline blood as needed. Start IV prior to drug therapy. If unable to establish IV, continue with drug therapy.
- With distress, and marked wheezing or very decreased breath sounds bilaterally, administer Albuterol as follows:

Adults and Pediatrics 2 to 12 Years of Age: The dosage for adults and for children weighing at least 15 kg (1 kg = 2.2 lbs) is 2.5 mg of albuterol (one unit dose vial). May repeat treatment up to 3 times.

Run nebulizer at 6-8 LPM. May give a child the treatment by blow-by if they won't take a mouthpiece or mask.

NOTE:

- The conscious, dyspneic patient may rapidly deteriorate to respiratory crisis or arrest. Always be PREPARED TO INTERVENE. If such occurs, notify Medical Control.
- Allergic reactions are frequently responsible for dyspneic episodes, thus inquiry for known allergies must include substances other than medications.
- Chronic obstructive pulmonary disease (COPD) patients may react adversely to high flow oxygen. DO NOT withhold oxygen if needed. Prepare to assist ventilations.
- Dyspnea is a symptom, not a disease. Reassess for cause and correct if possible.
- In asthma patients, differential diagnosis should be considered because asthma can mimic other pulmonary problems: CHF, anaphylaxis, pulmonary embolus, pneumothorax, etc.
- Patient with COPD may require ventilatory assistance, however caution should be used to avoid high pressure as they are also at an increased risk for pneumothorax.
- If Normal Saline is used on CHF/COPD patients, monitor lung sounds for pulmonary edema due to possible fluid overload.

3-2. ANAPHYLAXIS

BLS

PRIMARY ASSESSMENT:

- Perform primary survey.
- Keep patient calm.
- Administer high-flow oxygen at 12-15 LPM non-rebreather mask.
- Provide ventilatory assistance if needed.
- If displaying signs and symptoms of respiratory distress and/or shock, administer Epinephrine using the Epi-Pen Auto Injector following these steps:
 - Assure the fluid is not cloudy or crystallized.
 - Check medication name, dosage, and expiration date.
 - Administer Adult Epi-Pen auto injector (0.3mg) to patients over 60 lbs in the thigh muscle.
 - Administer Pediatric Epi-Pen Jr. auto injector (0.15mg) to patients up to 60 lbs in the thigh muscle.
- For patients 17 years of age or under, obtain verbal or written permission from the patient's parent or guardian to administer Epinephrine. (Written permission is preferred.)
- If no signs of respiratory compromise or shock, proceed to the secondary assessment.
- If Epi-Pen administration is refused, do not administer. Contact Medical Control and proceed to the secondary assessment.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Obtain and record pertinent medical history, known allergies, onset of symptoms, possible source of toxin, and prescribed medications in patient's possession.
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.

ADDITIONAL FIELD TREATMENT:

- Rescuer may assist the patient in the administration of the patient's own prescribed medications.
- If an insect sting, scrape stinger out, do not pull stinger out.
- Presence of edema of the tongue, mouth or throat is an indicator for immediate transport and Medical Control contact.
- Anticipate acute airway obstruction and/or respiratory arrest.
- Record time of injection and re-assess in 2 minutes.
- If cardiovascular collapse occurs, may apply and inflate PASG. Contact Medical Control.
-

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline.
- If unconscious and not breathing without a gag reflex, place double-lumen airway.

ILS

In addition to all of the above:

- If not already done, Administer Epinephrine as above or using 0.01 to 0.03 mg/kg 1:1000 subcutaneous, if available, instead of auto injector for both adult and child.
- If respiratory wheezing noted, treat with nebulized Albuterol as follows:

Adults and Pediatrics 2 to 12 Years of Age: The dosage for adults and for children weighing at least 15 kg (1 kg = 2.2 lbs) is 2.5 mg of albuterol (one unit dose vial). May repeat treatment up to 3 times.

Run nebulizer at 6-8 LPM. May give a child the treatment by blow-by if they won't take a mouthpiece or mask.

3-3. SEIZURES / CONVULSIONS

BLS

PRIMARY ASSESSMENT:

- Perform primary survey.
- Administer high-flow oxygen per non-rebreather mask. Provide ventilatory assistance as necessary.
- If possible, place patient on his/her side to facilitate airway management. Suction secretions as needed.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Protect patient from injury.
- Avoid unnecessary physical restraint.
- If Glucose Monitor trained, obtain blood glucose level. If necessary, administer oral glucose if patient is conscious and able to swallow.
- Obtain pertinent and SAMPLE history including:
 - Known seizure disorder
 - Medications and when last taken
 - Alcohol and drug intake
 - Recent trauma
 - Note fever in children <5 years of age
 - Duration of seizure

ADDITIONAL FIELD TREATMENT:

- Do not place objects into seizing patient's mouth.
- Protect dignity of patient.
- Do not transport during active seizure unless seizure lasts more than 5 minutes or patient becomes significantly injured.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline.
- If unconscious and not breathing without a gag reflex, place double-lumen airway.

ILS

In addition to all of the above:

- Draw baseline blood as needed.

- If blood glucose level is <60 or unable to determine glucose level and patient is still in seizure activity, administer Dextrose as follows:

Adult – 100 ml of a 50% Dextrose solution IV bolus running IV wide open and pushing the Dextrose slowly over 2 minutes. The IV catheter should be large bore (16 to 18 gauge).

Pediatric (less than 16 years of age) – 25% Dextrose at 0.5- 1.0 gm/kg over 2 minutes via IV or IO. 1 kg = 2.2 lbs

NOTE:

- Contact Medical Control if patient refuses transport. Keep in mind that all pediatric seizure patients need to be evaluated by a physician.

3-4. ALTERED LEVEL OF CONSCIOUSNESS

BLS

PRIMARY ASSESSMENT:

- Establish and protect airway.
- Suction secretions as needed.
- Administer high-flow oxygen with a non-rebreather or BVM assisted ventilations.
- Check vitals and perform mini-neurological survey (AVPU).
- Assess and treat for shock.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Identify mechanism of injury and/or etiology and treat as indicated.
- If Glucose Monitor trained, obtain blood glucose level. If necessary, administer oral glucose if patient is conscious and able to swallow.
- Obtain history.
- Neurological exam on all four extremities.
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.

ADDITIONAL FIELD TREATMENT:

- Maintain high index of suspicion for neck injury in the unconscious patient with unknown etiology.
- Consider differential diagnosis:
 - Cardiac event
 - Diabetic coma
 - Hyperthermia/hypothermia
 - Poisoning/overdose
 - Stroke/CVA
 - Trauma
 - Seizure/post-ictal state
 - Shock
- Keep suction available.
- Prepare to handle respiratory/cardiac arrest (contact Medical Control if such occurs).
- Prepare to handle seizures.
- Keep patient informed regardless of LOC.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline.
- If unconscious and not breathing without a gag reflex, place double-lumen airway.

ILS

In addition to all of the above:

- Draw baseline blood as needed.
- If blood glucose level is <60 or unable to determine glucose level, administer Dextrose as follows:

Adult – 100 ml of a 50% Dextrose solution IV bolus running IV wide open and pushing the Dextrose slowly over 2 minutes. The IV catheter should be large bore (16 to 18 gauge).

Pediatric (less than 16 years of age) – 25% Dextrose at 0.5- 1.0 gm/kg over 2 minutes via IV or IO. 1 kg = 2.2 lbs

- If patient is unresponsive for unknown reason or suspected narcotic overdose, administer Narcan as follows:

IM – Give 2 mg (5ml) all at once. (Vials are 0.4 mg/cc concentration.)

IV – Give 0.4 mg (1ml) per minute (2 mg over 5 minutes).

PEDS (5 years or less in age, or 20 kg or less in weight): 0.1 mg/kg Narcan IV/IO. 1 kg = 2.2 lbs

Verify concentration before administering. Be aware patient may become belligerent or hostile and may need restraint. May repeat every 2-3 minutes, maximum dose of 10mg.

3-5. BRAIN ATTACK / STROKE & NEUROLOGIC EMERGENCIES

BLS

PRIMARY ASSESSMENT:

- Establish and protect airway.
- Suction secretions as needed.
- Administer high flow oxygen with a non-rebreather or BVM assisted ventilations.
- Check vitals and perform mini neurological survey (AVPU).
- Assess and treat for shock.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Identify mechanism of injury and/or etiology and treat as indicated.
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.
- If Glucose Monitor trained, obtain blood glucose level. If necessary, administer oral glucose if patient is conscious and able to swallow.
- Obtain history.
- Neurological exam on all four extremities.

ADDITIONAL FIELD TREATMENT:

- Give reassurance, especially if patient is conscious. Though the patient may be unable to speak or may appear to be confused or unconscious, he/she may be aphasic and can actually comprehend what is happening around him/her.
- Use differential diagnosis; Stroke may mimic other conditions such as:
 - Hypoglycemia
 - Hypothermia
 - Drug overdose
 - Seizure (postictal state)

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline.
- If unconscious and not breathing without a gag reflex, place double-lumen airway.

ILS

In addition to all of the above:

- Draw baseline blood as needed.
- If blood glucose level is <60 or unable to determine glucose level, administer Dextrose as follows:

Adult – 100 ML of a 50% Dextrose solution IV bolus running IV wide open and pushing the Dextrose slowly over 2 minutes. The IV catheter should be large bore (16 to 18 gauge).

Pediatric (less than 16 years of age) – 25% Dextrose at 0.5- 1.0 gm/kg over 2 minutes via IV or IO. 1 kg = 2.2 lbs

- If patient is severely hypertensive, contact Medical Control.
- Do Not give Dextrose if coma is secondary to trauma without documentation of hypoglycemia. When Stroke is suspected, avoid affected limbs when establishing IVs if possible

3-6. DIABETIC EMERGENCIES

BLS

PRIMARY ASSESSMENT:

- Perform primary survey.
- Administer high-flow oxygen with a non-rebreather mask.
- If Glucose Monitor trained, obtain blood glucose level. If necessary, administer oral glucose if patient is conscious and able to swallow.

SECONDARY ASSESSMENT:

- Take vital signs.
- Attach pulse oximeter (if available).
- Obtain pertinent and SAMPLE history including:
 - Insulin, or oral hypoglycemic medications; type, dosage and time.
 - How much has the patient eaten/drank today (LOI).
 - Recent or current illness, heavy exercise, or high stress.
 - Pregnant?
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.

ADDITIONAL FIELD TREATMENT:

- Maintain body heat.
- Transport patient in position of comfort.
- If LOC deteriorates, contact Medical Control.

****INSULIN should NEVER be given. Always give sugar if in doubt.**

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline.
- If unconscious and not breathing without a gag reflex, place double-lumen airway.

ILS

In addition to all of the above:

- Draw baseline blood as needed.
- If blood glucose level is <60 or unable to determine glucose level, administer Dextrose as follows:

Adult – 100 ml of a 50% Dextrose solution IV bolus running IV wide open and pushing the Dextrose slowly over 2 minutes. The IV catheter should be large bore (16 to 18 gauge).

Pediatric (less than 16 years of age) – 25% Dextrose at 0.5- 1.0 gm/kg over 2 minutes via IV or IO. 1 kg = 2.2 lbs

- If patient is severely hypertensive, contact Medical Control.
- For hyperglycemia, especially in patients displaying signs and symptoms of ketoacidosis, establish an IV of Normal Saline at a rate of 500ml/hr and monitor patient closely, watching for signs or symptoms of pulmonary congestion.

If patient is not responsive to therapy, see Altered Level of Consciousness protocol, Section 3-4, page 39.

3-7. HYPERTENSIVE CRISIS

BLS

PRIMARY ASSESSMENT:

- Perform primary survey.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Take vital signs and establish hypertension (systolic = 140 or greater, diastolic = 90 or greater).
- Assess neurological and cardiac status.

ADDITIONAL FIELD TREATMENT:

- Administer oxygen at 15 LPM via non-rebreather mask if tolerated by patient. If not tolerated, administer oxygen at 6 LPM via nasal cannula.
- Consider etiology for hypertension by differential diagnosis:
 - CVA/Stroke
 - Myocardial Infarction
 - Acute Pulmonary Edema
 - Angina
 - Altered Level of Consciousness with severe headache

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline.

ILS

In addition to all of the above:

- Draw baseline blood as needed. Start IV prior to drug therapy. If unable to establish IV, continue with drug therapy.
- If patient's systolic blood pressure is greater than 220 and diastolic pressure is 120 or greater, then administer Nitroglycerin as follows:

0.4 mg SL (tablet or transmucosal spray). May repeat every 3-5 minutes up to a maximum of 3 doses until BP <160/90. Discontinue administration if patient displays signs of inadequate perfusion at a higher BP.
- Monitor and record the patient's vital signs after each dose of nitroglycerin is administered.

3-8. ABDOMINAL PAIN (NON-TRAUMATIC)

BLS

PRIMARY ASSESSMENT:

- Protect airway.
- Check vital signs frequently.
- Be alert for shock.
- Attach pulse oximeter (if available) if any complaints of shortness of breath and/or chest pain.

SECONDARY ASSESSMENT:

- Visualize and palpate abdomen.
- Check for distention and rigidity of abdomen.
- Check femoral pulses.
- Obtain history.

ADDITIONAL FIELD TREATMENT:

- Place patient in position of comfort.
- Nothing by mouth.
- Important history:
 - SAMPLE
 - Bowel function
 - Last menstrual period? Possibly pregnant?
 - Rectal bleeding
 - Vomiting
 - Ulcers
 - Appendicitis

Remember – Abdominal pain may be referred chest pain.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline.

ILS

In addition to all of the above:

- Draw baseline blood as needed. Run IV at a rate appropriate to patient's vital signs and condition.
- If signs of hypovolemic shock are present, may apply PASG (see PASG protocol, Section 8-3, page 112, and Shock protocol, Section 4-9, page 77).

3-9. POISONING

BLS

PRIMARY ASSESSMENT:

- **PROTECT YOURSELF FROM POSSIBLE EXPOSURE.**
- Perform primary survey.
- Be alert and treat for respiratory compromise.
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.
- Be alert and treat for shock.
- Be alert and treat for seizures.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Determine agent and route, contact Medical Control, obtain MSDS information and/or contact Poison Control at **1-800-222-1222**.
- Establish time of incident.
- Determine or estimate amount.
- Obtain pertinent and SAMPLE history.

ADDITIONAL FIELD TREATMENT:

- After brief assessment, treat according to protocol.
- Ingested poison, see Drug Overdose protocol (Section 3-10, page 49).
- Notify Medical Control if patient is unconscious or suffers respiratory compromise or seizures.
- If drug was ingested within 15-30 minutes and patient is conscious and alert with a gag reflex, **CONTACT MEDICAL CONTROL** for direction in administering IPECAC or ACTIVATED CHARCOAL as follows:

IPECAC:

ADULT: 30ml IPECAC PO and follow with 200 to 300 ml of water.

PEDS (1 to 12 years of age): 15ml IPECAC PO and follow with 10 to 20 ml/kg (1 kg = 2.2 lbs) of water.

ACTIVATED CHARCOAL:

ADULT & PEDS: 1 gram per kilogram (1 kg = 2.2 lbs) of body weight.

NOTE: Do not use IPECAC for ingested: acids or bases, hydrocarbons, camphor, Iodides, tricyclics or fast-acting sedatives, phenothiazines, strychnine.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline.
- If unconscious and not breathing without a gag reflex, place double-lumen airway.

ILS

In addition to all of the above:

- Draw baseline blood as needed.
- If narcotic drug overdose is suspected, or if respiratory depression or decreased LOC exists, administer Narcan as follows:

IM – Give 2 mg (5ml) all at once. (Vials are 0.4 mg/ml concentration.)

IV – Give 0.4 mg (1ml) per minute (2 mg over 5 minutes).

PEDS (5 year or less in age, or 20 kg or less in weight): 0.1mg/kg Narcan

IV/IO. 1 kg = 2.2 lbs

Verify concentration before administering. Be aware patient may become belligerent or hostile and may need restraint. May repeat every 2-3 minutes, maximum dose of 10mg.

NOTE:

- If decreased LOC, check blood glucose level. If blood glucose level is <60 or unable to determine glucose level, administer Dextrose as follows:

Adult – 100 ml of a 50% Dextrose solution IV bolus running IV wide open and pushing the Dextrose slowly over 2 minutes. The IV catheter should be large bore (16 to 18 gauge).

Pediatric (less than 16 years of age) – 25% Dextrose at 0.5- 1.0 gm/kg over 2 minutes via IV or IO. 1 kg = 2.2 lbs

3-10. OVERDOSE

BLS

PRIMARY ASSESSMENT:

- Perform primary survey.
- Be alert and treat for respiratory depression and compromise.
- Be alert for seizures. See Seizure protocol, Section 3-3, page 37.
- Be alert and treat for shock.
- Give 100% Oxygen per non-rebreather mask or BVM as necessary.
- If altered level of consciousness, see Altered Level of Consciousness protocol, Section 3-4, page 39.
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Gather information regarding the type, route, and amount of overdosed agent and time of ingestion, inhalation or injection.
- Obtain pertinent and SAMPLE history.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline.
- If unconscious and not breathing without a gag reflex, place double-lumen airway.

ILS

In addition to all of the above:

- Draw baseline blood as needed.
- If narcotic drug overdose is suspected, or if respiratory depression or decreased LOC exists, administer Narcan as follows:
- - IM** – Give 2 mg (5ml) all at once. (Vials are 0.4 mg/cc concentration.)
 - IV** – Give 0.4 mg (1ml) per minute (2 mg over 5 minutes).
 - PEDS (5 year or less in age, or 20 kg or less in weight):** 0.1mg/kg Narcan IV/IO. 1 kg = 2.2 lbs

Verify concentration before administering. Be aware patient may become belligerent or hostile and may need restraint. May repeat every 2-3 minutes, maximum dose of 10mg.

NOTE:

- If decreased LOC, check blood glucose level. If blood glucose level is <60 or unable to determine glucose level, administer Dextrose as follows:

Adult – 100 ml of a 50% Dextrose solution IV bolus running IV wide open and pushing the Dextrose slowly over 2 minutes. The IV catheter should be large bore (16 to 18 gauge).

Pediatric (less than 16 years of age) – 25% Dextrose at 0.5- 1.0 gm/kg over 2 minutes via IV or IO. 1 kg = 2.2 lbs

3-11. PSYCHIATRIC EMERGENCIES

BLS / ILS

PRIMARY ASSESSMENT:

- Perform primary survey.
- Protect yourself.

SECONDARY ASSESSMENT:

- Identify that the patient has a mental disorder which is a threat to him/herself and/or others.
- Quickly assess and provide appropriate treatment for any associated illness, injury or poisoning.
- If the patient refuses to be treated/transported, contact dispatch for law enforcement assistance.
- Advise receiving hospital of the situation and request MHP.

NOTE:

- Always request law enforcement assistance in any patient who displays violent or homicidal behavior.

Do Not spend time doing an extensive psychiatric evaluation at the scene.

SECTION 4: TRAUMA

- 4-1. General Considerations
 - A. Primary Survey
 - B. Secondary Survey and Management
 - C. Triage and Transport Specific Operating Procedure
 - D. Trauma Triage – START
 - E. Multi-Casualty Incident
- 4-2. Head Injuries
- 4-3. Neck and Spinal Injuries
- 4-4. Chest Injuries
- 4-5. Abdominal Trauma
- 4-6. Extremity Injuries
- 4-7. Amputations
- 4-8. Burns / Electrical Injuries
- 4-9. Shock / Bleeding Control

4-1. GENERAL CONSIDERATIONS FOR TRAUMA

For any traumatized patient, the goal is to minimize the time from the injury to definitive treatment and utilize only those prehospital treatments which increase the patient's probability of survival. Field trauma resuscitation should be primarily performed en-route to the hospital. Reduction of the prehospital time is the most important intervention for the injured patient and will have the greatest impact on the patient's outcome.

TRAUMA EVALUATION:

Initial assessment of the trauma victim consists of rapid primary survey with resuscitation of vital signs, a detailed secondary evaluation and a treatment phase. These phases are performed rapidly and often en-route to the hospital. If more than one EMT is present, the first arriving EMT can initiate the primary survey and resuscitation while the second can assist in this phase or proceed with the secondary survey and treatment phases.

The Primary Survey consists of identification of life threatening conditions. This includes airway management, spinal immobilization, breathing and respiratory assessment, circulation restoration with hemorrhage control and a quick neurological assessment. The following mnemonic is helpful in remembering these steps:

- A Airway and C-spine
- B Breathing
- C Circulation and hemorrhage control
- D Disability, neurological deficits
- E Expose and exam

The resuscitation phase is performed simultaneously with the Primary Survey. The life-threatening conditions identified in the Primary Survey are treated. Reassessment of unstable conditions is repeated frequently during transport.

The Secondary Survey is performed after the patient is adequately stabilized. If the situation dictates, this can be done en-route to the hospital. Here, a quick head-to-toe evaluation is made to evaluate non-life-threatening injuries.

CONTINUE TO REASSESS LIFE-THREATENING INJURIES:

During the Treatment Phase, all non-life-threatening injuries are to be treated. Splints are applied, minor wounds are dressed.

4-1-A. PRIMARY SURVEY / INITIAL EXAM

I. AIRWAY AND C-SPINE

- A. Assess airway while maintaining C-spine control
- B. Establish patent airway by chin-lift / jaw thrust
- C. Clear airway of foreign bodies. Suction as needed
- D. Oropharyngeal/nasopharyngeal airway as indicated

MAINTAIN C-SPINE CONTROL AT ALL TIMES.

II. BREATHING

- A. Assess: expose chest, observe depth and rate, movement, auscultation.
- B. Give oxygen via non-rebreather at 15 LPM.
- C. Ventilate as necessary.
- D. Treat open pneumothorax, flail segment, tension pneumothorax (see Chest Injuries, Section 4-4, page 69).

III. CIRCULATION

- A. Cardiac Output
 - 1. Assess pulse quality, rate, regularity, skin color, capillary refill. Palpated systolic blood pressure.
 - 2. CPR, as indicated.
 - 3. If trained, start IVs, as needed, large bore with Normal Saline. Do not delay transport to start peripheral IVs, DO IT EN ROUTE. If patient is hypotensive and tachycardic, give fluid bolus of 20-40ml/kg.
 - 4. EKG monitoring.
- B. Bleeding
 - 1. Assess for exsanguinating hemorrhage (bleeding/draining out rapidly).
 - 2. Apply direct pressure for external hemorrhage control.
 - 3. Apply PASG and inflate for lower extremity/pelvic/abdominal hemorrhage (see protocol in Section 8-3, page 112).

IV. DISABILITY

Assess level of consciousness using AVPU method along with pupil size and reaction.

- A** – Alert
- V** – Verbal stimuli
- P** – Painful stimuli
- U** – Unresponsive

V. EXPOSE AND EXAM

The patient should be adequately exposed in the field and or en route to the hospital to assess injuries.

4-1-B. SECONDARY SURVEY / FOCUSED EXAM

I. HEAD AND SKULL

- A. **Assess:** palpate, inspect, evaluate pupil function.
- B. If focal neurologic sign or Glasgow Coma Score of 8 or less are present, then hyperventilate with 100% oxygen via BVM.
- C. Maintain airway, suction as needed, hemorrhage control, stabilize impaled objects.

II. C-SPINE

- A. **Assess:** palpate, inspect
- B. Immobilize following protocol found under Head Injuries (Section 4-2, page 65) and/or Neck and Spinal Injuries (Sections 4-3, page 67).

III. CHEST

- A. **Assess:** palpate, inspect, auscultate.
- B. Stabilize flail segments.
- C. Close open pneumothorax with occlusive dressing.

IV. ABDOMEN AND PELVIS

- A. **Assess:** palpate, inspect.
- B. PASG as needed.
- C. Cover open wounds with saline-moistened dressing and appropriate cover.
- D. Eviscerations: cover with saline-moistened dressings. Do not attempt to replace.

V. EXTREMITIES

- A. **Assess:** palpate, inspect, evaluate neurovascular status (pulse, motor, sensory).
- B. Fractures:
 - 1. Straighten severely angulated fractures; re-evaluate neurovascular function.
 - 2. Do not push bones back into open wounds.
 - 3. Control bleeding, apply moistened dressing to open wounds.
 - 4. Splint appropriately; check neurovascular status after splinting.

VI. SPINE

- A. **Assess:** palpate, inspect, evaluate paresis and paralysis.
- B. Immobilize entire patient adequately.

VII. NEUROLOGICAL EXAMINATION

- A. **Assess:** mental status, including LOC, orientation and appropriateness.
- B. Pupillary size and reaction to light.
- C. Motor function.
- D. Sensory examination.

4-1-C. TRIAGE & TRANSPORT SPECIFIC OPERATING PROCEDURE

INTRODUCTION:

This tool is meant to direct patient triage in the event of trauma within Stevens County to their most appropriate destination.

STEP 1 & 2 PATIENTS:

All Step 1 & 2 trauma patients will be transported per State of Washington guidelines to the highest level trauma center within 30 minutes transport time via ground or air transport, according to Department of Health approved regional patient care procedures, unless there is airway compromise (please see attached State of Washington prehospital trauma triage destination procedures sheet). In this exceptional case of airway compromise, the patient will be transported to the closest designated facility to stabilize the airway.

In the remote northern portion of the county where there is no designated facility within 30 minutes transport time, the patient will be transported to the closest designated facility by ground transport. This hospital may serve as a rendezvous point for further transport to a higher level facility when deemed necessary.

First responders in our area often appropriately access air transport for Step 1 and Step 2 patients. However, there are occasions when upon the arrival of the ground transport team, it becomes apparent that the initial assessment over-estimated the seriousness of the injuries. In such cases, it is appropriate to cancel air transport. Discussion with Medical Control is expected in this case.

STEP 3 PATIENTS:

This category represents the majority of trauma patients in our county. By definition, this requires a call to Medical Control for each patient. Since we do not have one control entity to provide this service, ***Medical Control is defined as the Emergency Room Department for each of the area designated hospitals.*** This will require careful coordination and understanding between each of the system hospitals. ***In the southern portion of the service area, Medical Control will be St. Joseph's Hospital in Stevens County and Holy Family Hospital in Spokane County. In the northern portion of the county, Medical Control will be Mount Carmel Hospital.*** The EMS personnel on the scene will call the most appropriate hospital Emergency Department for discussion based on their on-scene evaluation to determine disposition. ***In general, Medical Control will be the nearest designated hospital.***

Patient down-time will be considered in determining the most appropriate and expedient transport of the patient. The "golden hour" rule for care of trauma patients may negate "30 minute transport" in remote areas, i.e. the expedient transport of the patient to the nearest designated hospital may override waiting for an ALS transport unit.

Since the remote portions of the county have no air transport readily available (i.e. it is greater than 30 minutes transport time to Spokane), transport time will be defined by ground transport time to the nearest designated facility.

4-1-D. STATE OF WASHINGTON PREHOSPITAL TRAUMA TRIAGE (DESTINATION) PROCEDURE

Purpose

The purpose of the Triage Procedure is to ensure that major trauma patients are transported to the most appropriate hospital facility. This procedure has been developed by the Prehospital Technical Advisory Committee (TAC), endorsed by the Governor's EMS and Trauma Care Steering Committee, and in accordance with RCW 70.168 and WAC 246-976 adopted by the Department of Health (DOH).

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

Explanation of Process

- A. **Any certified EMS and Trauma person can identify a major trauma patient and activate the trauma system.** This may include requesting more advanced prehospital services or aero-medical response.
- B. **The first step (1) is to assess the vital signs and level of consciousness.** The words "Altered mental status" mean anyone with an altered neurologic exam ranging from completely unconscious, to someone who responds to painful stimuli only, or a verbal response which is confused or an abnormal motor response.

The "and/or" conditions in Step 1 mean that any one of the entities listed in Step 1 can activate the trauma system.

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

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

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

- D. **The third step (3) for the prehospital provider is to assess the biomechanics of the injury and address other risk factors.** The conditions identified are reasons for the

provider to contact and **consult with Medical Control** regarding the need to activate the system. They do not automatically require system activation by the prehospital provider.

Other risk factors, coupled with a “gut feeling” of severe injury, means that **Medical Control should be consulted** and consideration given to transporting the patient to the nearest trauma facility.

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

Patient Care Procedures

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

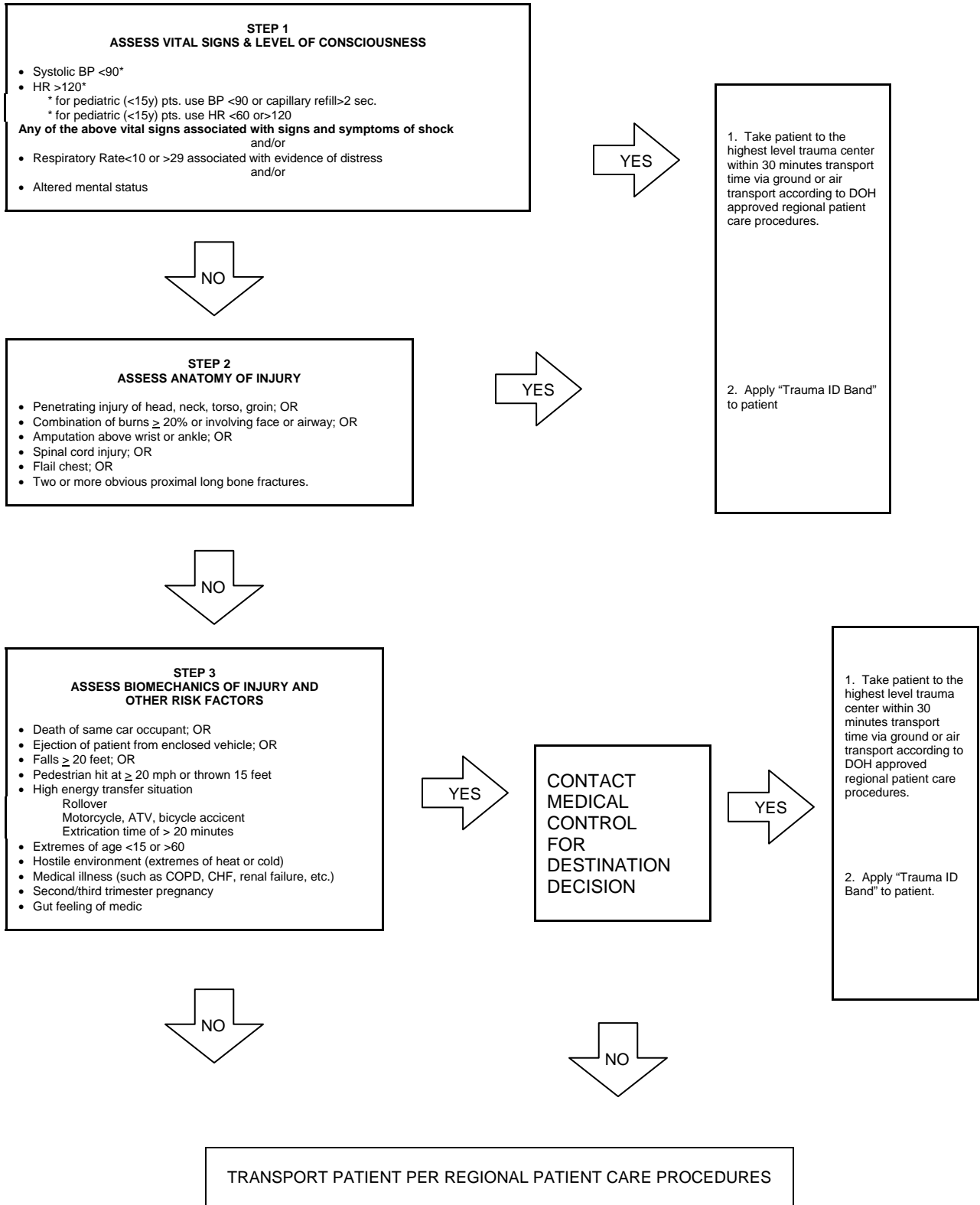
In summary, the Prehospital Trauma Triage Procedure and the Regional Patient Care Procedures are intended to work in a “hand in glove” fashion to effectively address EMS and Trauma patient care needs. By functioning in this manner, these two instruments can effectively reduce morbidity and mortality.

If you have any questions on the use of either instrument, you should bring them to the attention of your local or regional EMS and Trauma council or contact 1-800-458-5281.

1994/Disc1/triage.exp

STATE OF WASHINGTON PREHOSPITAL TRAUMA TRIAGE (DESTINATION) PROCEDURES EFFECTIVE DATE 1/95

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



4-1-E. MULTI-CASUALTY INCIDENT

Multi-casualty Incident (MCI): More casualties than can be handled by the initial responding resources. Rule of thumb: Three or more critically injured victims or need for more than two transport vehicles.

General Guidelines:

1. Normal trauma procedures may not apply.
2. Limit radio traffic.
3. Utilize your resources to do the greatest good for the greatest number.
4. All personnel need to be briefed and keep subordinates briefed.

Are you the first unit on scene?

(No) Check in with Incident Command.

(Yes) Activate the MCI protocols as first unit.

FIRST UNIT ON SCENE:

1. Senior person assumes Incident Command. Give the following information to dispatch:
 - a. The exact location of the incident.
 - b. Incident size-up (including immediate Danger Zone).
 - c. Estimate total number of patients.
 - d. Request for additional resources, e.g. fire, ambulances, air ambulances, team rescue, law enforcement, additional medical supplies.
 - e. Establish and name the command. For example: "812 to Control. Activate MCI protocol. We are at the MVA at milepost 12 on Hwy 395, approximately six critical patients. Dispatch two more ambulances and law enforcement. No hazards are visible. I will be Incident Command."
2. Assess scene for hazards. Establish immediate Danger Zone.
3. Assign another person as Triage Unit Leader and initiate S.T.A.R.T. triage system, if the scene is safe.
4. Establish and announce:
 - a. Command Post
 - b. Staging Area
 - c. Treatment Area
5. Assign and brief additional staff as needed and when available:
 - a. Staging/Equipment Manager
 - b. Communications Unit Leader
 - c. Safety Officer
6. When fatalities are involved, request coroner who will designate removal of bodies.
7. Consider transferring Incident Command to an arriving higher authority Command Officer, Fire or EMS, and assume Medical Supervisor, if not already filled.

CONTINUING COMMAND ROLES & RESPONSIBILITIES:

INCIDENT COMMANDER (IC):

1. Incident Command will manage the overall scene, delegating areas of responsibility to the most qualified individuals available. All requests for additional equipment, manpower, and other resources will be made by Incident Command.
2. Consider unified command with the Fire Department and Law Enforcement if it is a long-term incident.
3. Make sure arrangements are made for the welfare of the incident personnel (food, water, rest).
4. Create a demobilization plan.
5. Consider the need for a Critical Incident Stress Debriefing team upon termination of operations.

STAGE UNIT/TRIAGE OFFICER:

1. Assess and tag patients. Facilitate movement to treatment areas. Supervise litter crews.

TREATMENT UNIT LEADER:

1. Coordination of patient treatment, reassessment and preparation for transport of patients.
2. Direct movement of patients to loading location(s).
3. Supervise treatment teams.

TRANSPORTATION UNIT LEADER:

1. Direct and coordinate patient transportation.
2. Maintenance of records relating to patient identification, injuries, mode of transportation and destination.
3. Establish a landing zone (LZ) when needed, with IC and Air Operations.

FIRE GROUP/TEAM RESCUE SUPERVISOR:

1. Direct scene hazard mitigation and patient extrication activities

LAW ENFORCEMENT SUPERVISOR:

1. Direct traffic
2. Crowd control
3. Oversee investigation
4. Assist with safety/hazard control

4-2. HEAD INJURIES

BLS

PRIMARY ASSESSEMENT:

- Primary trauma survey per protocol.
- Activate Prehospital Trauma System per protocol in Section 4-1-D, page 60, if necessary.
- In all patients with head injuries, assume C-Spine injury. If any complaints of neck or back pain, any alteration in mental status (whether from injury, medical illness, drugs or alcohol) or any neurological deficits, then institute full spine immobilization per protocol.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Secondary trauma survey per protocol.
- Check scalp for lacerations, contusions and hematomas.
- Check skull for depressions and deformities.
- Check ears and nose for fluid, blood and foreign objects.

ADDITIONAL FIELD TREATMENT:

- Administer 100% oxygen. Do NOT hyperventilate. Ventilate the patient with BVM at a rate of 12 -20 times per minute.
- Place oral airway as needed.
- Check blood glucose level, recheck as needed. As necessary, administer oral glucose if patient is conscious and able to swallow.
- Determine Glasgow Coma Scale to help establish a baseline neurological status. Patients with scores of 8 or less often need intubation and early ALS intervention. Dispatch ALS intercept as directed by Trauma Triage (Destination) Procedure.

Glasgow Coma Score		
Eye Opening (E)	Verbal Response (V)	Motor Response (M)
4=Spontaneous	5=Normal conversation	6=Normal
3=To voice	4=Disoriented conversation	5=Localizes to pain
2=To pain	3=Words, but not coherent	4=Withdraws to pain
1=None	2=No words, only sounds	3=Decorticate posture
	1=None	2=Decerebrate
		1=None

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish peripheral large-bore IV(s) with Normal Saline. Run IV at rate appropriate to patient's BP and vital signs. Do not over bolus patient with isolated head injuries because it will result in increased ICP.

- If unconscious and not breathing without a gag reflex, place double-lumen airway. Ventilate the patient with 100% oxygen at a rate of 12 – 20 times per minute.

ILS

In addition to all of the above:

- Draw baseline blood.
- If blood glucose level is <60 or unable to determine glucose level, administer Dextrose as follows:

Adult – 100 ml of a 50% Dextrose solution IV bolus running IV wide open and pushing the Dextrose slowly over 2 minutes. The IV catheter should be large bore (16 to 18 gauge).

Pediatric (less than 16 years of age) – 25% Dextrose at 0.5- 1.0 gm/kg over 2 minutes via IV or IO. 1 kg = 2.2 lbs

- If patient is unresponsive for unknown reason or suspected narcotic overdose, administer Narcan as follows:

IM – Give 2 mg (5ml) all at once. (Vials are 0.4 mg/cc concentration.)

IV – Give 0.4 mg (1ml) per minute (2 mg over 5 minutes).

PEDS (5 year or less in age, or 20 kg or less in weight): 0.1mg/kg Narcan IV/IO. 1 kg = 2.2 lbs

Verify concentration before administering. Be aware patient may become belligerent or hostile and may need restraint. May repeat every 2-3 minutes, maximum dose of 10mg.

4-3. NECK AND SPINAL INJURIES

BLS

PRIMARY ASSESSMENT:

- Manually stabilize head, neck and spine until secured on appropriate device (back board with rigid collar).
- DO NOT HYPEREXTEND NECK.
- Primary trauma survey per protocol.
- Activate Prehospital Trauma System per protocol (Section 4-1-D, page 60).
- Check patient for jugular vein distention (JVD) prior to applying C-collar.
- Administer high-flow oxygen per non-rebreather mask.
- Use pocket mask/BVM to ventilate head injured patients with decreased LOC.
- Attach pulse oximeter (if available).
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.

SECONDARY ASSESSMENT:

- Secondary trauma survey per protocol.
- Perform neurological exam:
 - Assess motor response—
 - a. check ability to move all extremities.
 - b. check strength in all extremities.
 - c. check hand grips and foot flexion.
 - Assess sensory status—
 - a. check for bilateral sensations (face and extremities).

ADDITIONAL FIELD TREATMENT:

- If patient is unconscious, see Altered Mental Status protocol (Section 3-4, page 39).
- If decreased blood pressure, consider other injuries.
- Realignment of head, neck and spine MAY be necessary to facilitate immobilization or correct an airway problem. Return to an in-line neutral position if no resistance is met. Careful assessment prior to and after realignment is critical.

BLS SPECIAL SKILLS / ILS

In addition to all of the above and if trained:

- Heart Monitor – Attach monitor.
- IV – Establish peripheral large-bore IV(s) with Normal Saline. Run IV at rate appropriate to patient's BP and vital signs.
- Double-Lumen Airway - If unconscious and not breathing without a gag reflex, place double-lumen airway. Hyperventilate patients showing signs of Spinal Shock at a rate of 24 bpm with 100% oxygen. Maintain C-spine immobilization at all times.
- If patient shows signs of neurogenic shock, i.e., hypotension with slow pulse rate, treat initially with Trendelenburg position as tolerated and then with fluid challenge.

NOTE:

- A cervical collar alone WILL NOT provide secure cervical immobilization.
- Do not use traction on the cervical collar.
- If a patient has a helmet in place and it is poor fitting or interferes with any airway management, remove it in accordance with American College of Surgeons guidelines.

4-4. CHEST INJURIES

BLS

PRIMARY ASSESSMENT:

- Primary trauma survey per protocol in Section 4-1-A, page 56.
- Activate Prehospital Trauma System per protocol in Section 4-1-D, page 60, if necessary.
- Attach pulse oximeter (if available).
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.

SECONDARY ASSESSMENT:

- Secondary trauma assessment per protocol (Section 4-1-B, page 57).

ADDITIONAL FIELD TREATMENT: (treat as appropriate to your level)

- **PNEUMOTHORAX:**
 - a. Signs and symptoms: Respiratory distress, chest pain, decreased or absent breath sounds, asymmetrical chest wall movements. Assess for rib fractures on affected side.
 - b. Treatment: High flow oxygen via NRB. Consider patient condition and ETA to a medical center.
- **TENSION PNEUMOTHORAX:**
 - a. Signs and symptoms: Chest pain, trachea deviated to unaffected side, severe respiratory distress, distended neck veins, cyanosis, hypotension, PEA.
 - b. Treatment: High-flow oxygen via NRB. Partially remove occlusive dressing from sucking chest wound if present.
- **SUCKING CHEST WOUND:**
 - a. Signs and symptoms: Chest pain, penetrating chest injury, gurgling or sucking sounds at chest wall, respiratory distress.
 - b. Treatment: High-flow oxygen via NRB. Tape 4"x4" occlusive dressing on 3 sides of affected area creating flutter valve. Observe for signs and symptoms of tension pneumothorax.
- **FLAIL CHEST**
 - a. Signs and symptoms: Chest pain, paradoxical chest movement, splinting, movement of flail segment, crepitus, respiratory distress.
 - b. Treatment: High-flow oxygen via NRB. Support respiratory function; may require intubation. Pillow/splinting flail segment.
- **HEMOTHORAX:**
 - a. Signs and symptoms: Absent breath sounds, dullness to percussions, hypoxia, severe respiratory distress.
 - b. Treatment: High-flow oxygen via NRB. Massive quantities of blood may collect in the chest, requiring large amounts of IV fluids. Be alert for the development of tension pneumothorax.

- **CARDIAC TAMPONADE:**
 - a. Signs and symptoms: Chest pain, Beck’s triad (hypotension, venous distension, muffled heart sounds), Pulsus paradoxus (changes in blood pressure due to breathing cycle), penetrating chest wound and blood pressure is decreased out of proportion to amount of blood loss.
 - b. Treatment: High-flow oxygen via NRB.

- **MYOCARDIAL CONTUSION:**
 - a. Signs and symptoms: Chest pain, history of blunt trauma, rib or sternal fracture and cardiac dysrhythmia.
 - b. Treatment: High-flow oxygen via NRB. Monitor cardiac function in all patients of chest trauma and treat life-threatening dysrhythmias; if they arise, treat as in acute myocardial infarction. Transport expeditiously.

- **RIB FRACTURE:**
 - a. Signs and symptoms: Chest pain, localized pain, splinting, guarding, subcutaneous emphysema, decreased breath sounds on affected side, rib deformity, crepitus.
 - b. Treatment: High-flow oxygen via NRB. Observe for pneumothorax.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish peripheral large-bore IV(s) with Normal Saline. Run IV at rate appropriate to patient’s BP and vital signs.
- Double-Lumen Airway - If unconscious and not breathing without a gag reflex, place double-lumen airway. Hyperventilate at a rate of 24 bpm with 100% oxygen.

ILS

In addition to all of the above:

- Draw baseline blood.

4-5. ABDOMINAL INJURIES

BLS

PRIMARY ASSESSMENT:

- Primary trauma survey per protocol (Section 4-1-A, page 56).
- Activate Prehospital Trauma System per protocol (Section 4-1-D, page 60) if necessary.
- Attach pulse oximeter (if available).
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.

SECONDARY ASSESSMENT:

- Secondary trauma survey per protocol (Section 4-1-B, page 57).

ADDITIONAL FIELD TREATMENT:

- If patient is pregnant, place in the left lateral recumbent position, if able, during transport. If head/neck injury, maintain C-spine precautions.
- High-flow oxygen.
- Perform abdominal examination:
 - a. Check for wounds, abrasions, bruises, etc.
 - b. Observe for distension or evisceration.
 - c. Gently press the abdomen to check for tenderness or rigidity.
 - d. Do Not waste time auscultating bowel tones.
- Perform pelvic examination:
 - a. Feel the pelvic girdle for bony protrusions, depressions, grating or tenderness.
 - b. Press iliac crests from opposite sides.
 - c. Push gently on symphysis pubis.
 - d. Check for outward rotation and/or shortening of a leg, indication of a fractured hip.

Apply PASG as necessary, especially if pelvic fracture is suspected (abdominal/pelvic portion contraindicated in pregnancy).

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish peripheral large-bore IV(s) with Normal Saline. Run IV at rate appropriate to patient's BP and vital signs.
- Double-Lumen Airway - If unconscious and not breathing without a gag reflex, place double-lumen airway. Hyperventilate at a rate of 24 bpm with 100% oxygen.

In addition to all of the above:

- Draw baseline blood.

NOTE:

- If injury is in the upper abdomen, consider the possibility of chest injuries (see Chest Injuries protocol, Section 4-4, page 69).
- Injury to abdomen may cause vomiting. Protect the airway.
- Give nothing by mouth.
- Keep eviscerated bowel covered with a moist dressing.
- Immobilize impaled objects in place.

4-6. EXTREMITY INJURIES

BLS

PRIMARY ASSESSMENT:

- Primary trauma survey per protocol (Section 4-1-A, page 56).
- Activate Prehospital Trauma System per protocol (Section 4-1-D, page 60) if necessary.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Secondary trauma survey per protocol.
- Check distal pulse, sensation and motion BEFORE and AFTER splinting.

ADDITIONAL FIELD TREATMENT:

- Protect injury from excessive movement.
- Fractures and dislocations are splinted in the position found. However, realignment of a fracture MAY BE necessary to facilitate packaging a patient, correct a circulatory compromise, neurological deficit, or to allow transportation. Careful assessment prior to and following manipulation is critical.
- Apply cold packs to injury site when practical.
- Apply traction splint when signs and symptoms suggest possible femur fracture.
- Consider PASG and ILS/ALS dispatch in patients with the possibility of encountering profound shock or severely disfigured femur.
- Do not allow the obvious fracture to obscure other assessment findings.
- Contact Medical Control when diminished or absent neurovascular function is noted distal to the injury.
- High-flow oxygen per non-rebreather mask.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish peripheral large-bore IV(s) with Normal Saline. Run IV at rate appropriate to patient's BP and vital signs.

ILS

In addition to all of the above:

- Draw baseline blood.

4-7. AMPUTATIONS

BLS

PRIMARY ASSESSMENT:

- Primary trauma survey per protocol (Section 4-1-A, page 56).
- Activate Prehospital Trauma System per protocol (Section 4-1-D, page 60) if necessary.
- Attach pulse oximeter (if available).

SECONDARY ASSESSMENT:

- Secondary trauma assessment survey per protocol (Section 4-1-B, page 57).

ADDITIONAL FIELD TREATMENT:

- Care of amputated part:
 - Rinse part gently with normal saline to remove loose debris. Do Not Scrub.
 - Wrap amputated part in gauze moistened with saline.
 - Place wrapped part into plastic bag and seal with tape, do not fill bag with fluid.
 - Label with name, date, and time. Place bag into container filled with ice and water if available.
 - Do not submerge bag or allow part to freeze.
- Transport amputated part with patient, if possible.
- High-flow oxygen per non-rebreather mask.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish peripheral large-bore IV(s) with Normal Saline. Run IV at a rate appropriate to patient's BP and vital signs.

ILS

In addition to all of the above:

- Draw baseline blood.

4-8. BURNS / ELECTRICAL INJURIES

BLS

PRIMARY ASSESSMENT:

- Primary trauma survey per protocol (Section 4-1-A, page 56).
- Activate Prehospital Trauma System per protocol (Section 4-1-D, page 60) if necessary.
- Be alert for progressing airway problems in patients who have burns involving face, head, neck or chest (see Respiratory Emergencies protocol, Section 3-1, page 33).
- Be alert for smoke inhalation and/or respiratory tract burns.
- High-flow oxygen per non-rebreather mask for any patient with respiratory complaints, inhalation injury or head, neck or chest burns.
- Attach pulse oximeter (if available).
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.

SECONDARY ASSESSMENT:

- Secondary trauma survey per protocol (Section 4-1-B, page 57).
- Determine length of exposure to heat, chemical substance or electrical current.
- If possible, obtain copy of MSDS sheet for the contaminant if chemical burns are involved.

ADDITIONAL FIELD TREATMENT;

- **KEEP PATIENT WARM AT ALL TIMES!**
- **Chemical on skin:**
 - Remove contaminated clothing/jewelry and flood skin with water for ten minutes, wash gently with soap & water, rinse.
 - If contaminant is dry powder, brush off before washing.
 - Identify contaminant.
 - Wrap the disrobed patient in sterile burn sheets and/or dressings. Remember to wrap limbs and digits separately so that the burned tissue does not stick together.
- **Chemical in eyes:**
 - Flood eye(s) with luke warm water or Normal Saline continuously for at least 15 minutes; have patient blink frequently during irrigation.
 - Identify contaminant.
- **Electrical burn:**
 - Be sure electrical source is de-energized. **Keep yourself safe!**
 - Be alert for and treat cardiac arrest: (see Cardiac Arrest protocol, Section 2-2, page 23).
 - Be alert for possible spinal cord injuries.
 - Identify all electrical contact points.
 - Establish time of electrical contact.

- Use rule of nines for determining the percentage of body surface burned on a burn patient.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish peripheral large-bore IV(s) with Normal Saline. Run IV at rate appropriate according to burn formula (see below). If patient is hypotensive, titrate to BP.
- Double-Lumen Airway - If unconscious and not breathing without a gag reflex, place double-lumen airway.

ILS

In addition to all of the above:

- Draw baseline blood.

BURN FORMULA:

Adult: Use Parkland Formula to calculate the infusion rate: $4\text{ml/kg} \times \% \text{BSA} / 24$ hours (1/2 amount over first 8 hours, then 1/4 amount each subsequent 8 hour period).

Pediatric: Administer 20ml/kg fluid bolus and contact Medical Control for adjustment.

4-9. SHOCK / BLEEDING CONTROL

BLS

PRIMARY ASSESSMENT:

- Primary trauma survey per protocol (Section 4-1-A, page 56).
- Activate Prehospital Trauma System per protocol (Section 4-1-D, page 60) if necessary.
- Administer high-flow oxygen per non-rebreather mask.
- Control bleeding by applying direct pressure over wound with your GLOVED hand (use dressing if immediately available).
- After bleeding is controlled, apply a pressure dressing.
- Maintain body heat.
- If direct pressure fails, consider PASG.
- Attach pulse oximeter (if available).
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway as needed.

SECONDARY ASSESSMENT:

- Take and record vital signs every five minutes.
- Identify mechanism of injury/illness.
- Check extremities for perfusion/neurological function.
- NOTE: Normal BP for children over one year can be estimated (age in years X 2) + 80 = systolic BP.

ADDITIONAL FIELD TREATMENT:

- Elevate legs if patient's condition allows.
- Consider use of pressure points to control bleeding if direct pressure is unsuccessful.
- Attempt to determine etiology of shock.
- Decrease in BP is a late sign of shock.
- The elderly, children, pregnant women, patients on drugs, and athletes MAY NOT show early signs of shock and may deteriorate quickly.
- Transport critical patients rapidly.
- Assess bilateral breath sounds.
- May apply PASG, inflate only as indicated by patient's condition.
- Use of a tourniquet is the last resort.

BLS SPECIAL SKILLS / ILS

In addition to all of the above and if trained:

- Heart Monitor – Attach monitor.
- Double-Lumen Airway - If unconscious and not breathing without a gag reflex, place double-lumen airway.

- IV – Establish 2 peripheral large-bore IV(s) with Normal Saline en route as follows:

Adult: Administer a fluid challenge of 20 ml/kg and titrate to systolic blood pressure of 90mm/hg.

Pediatric (12 years and under): (Consider IO in patients under the age of 6 years if peripheral routes cannot be accessed.) Initial fluid bolus of 20ml/kg. Contact Medical Control for adjustment.

SECTION 5: ENVIRONMENTAL EMERGENCIES

- 5-1. Water Emergencies
- 5-2. Cold Emergencies
- 5-3. Heat Emergencies

5-1. WATER EMERGENCIES

BLS

PRIMARY ASSESSMENT:

- Primary trauma survey per protocol (Section 4-1-A, page 56).
- Activate Prehospital Trauma System per protocol (Section 4-1-D, page 60) if necessary.
- **Treat all patients in water accidents with a high suspicion for C-spine injury.**
- Administer 100% oxygen via a non-rebreather mask or assist ventilations with BVM if needed.
- Consider suction.
- Attach pulse oximeter (if available).
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.

SECONDARY ASSESSMENT:

- Secondary trauma survey per protocol (Section 4-1-B, page 57).
- If gastric distention interferes with artificial ventilation:
 - A. Place patient on their left side, while continuing to protect c-spine.
 - B. If there is no suspected spinal injury, place patient on left side to allow water, vomitus and secretions to drain from the upper airway.
 - C. Have suction immediately available.
 - D. Place hand over the epigastric area of the abdomen.
 - E. Apply firm pressure to relieve the distention.

(This procedure should only be done if the gastric distention interferes with the ability to artificially ventilate the patient effectively. It is preferable to have a double-lumen airway in place before decompression.)

ADDITIONAL FIELD TREATMENT:

DIVING ACCIDENTS:

- Victims should be rescued from the water by experienced prehospital personnel.
- Hypothermia should be considered an aggravating factor in every aquatic accident victim and rewarming should be started.
- If air embolism is suspected, the patient should be transported in the head down lying on left side to prevent additional gas emboli from traveling to the brain, if not contraindicated by other injuries.
- Obtain a detailed history if possible, including: the type of diving engaged in; the number of dives, depth, bottom time, and surface interval between repetitive dives for the past 72 hours; in water decompression; site of diving and environmental conditions (temperature, amount of surge); primary diving activity; presence of pre-disposing factors; dive complications; pre-dive and post-dive activities; onset of symptoms.

- Patient needs stabilization in emergency room first and definitive care in the nearest hyperbaric chamber.
- Consider bringing dive buddy for history.

SPECIAL SKILLS:

If trained:

- Heart Monitor - Attach heart monitor
- Double-Lumen Airway - If unconscious and not breathing without a gag reflex, place double-lumen airway as needed.
- Check blood glucose level. If <60, treat as per protocol.

ILS

In addition to all of the above:

- Draw blood and check glucose level en route. If glucose is <60, administer Dextrose as follows:

Adult – 100 ml of a 50% Dextrose solution large-bore IV bolus running IV wide open and pushing the Dextrose slowly over 2 minutes. The IV catheter should be large bore (16 to 18 gauge).

Pediatric (less than 16 years of age) – 25% Dextrose at 0.5- 1.0 gm/kg over 2 minutes via IV or IO. 1 kg = 2.2 lbs

5-2. COLD EMERGENCIES

BLS

PRIMARY ASSESSMENT:

- Administer high-flow oxygen per non-rebreather mask.
- Be alert for and treat shock.
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.

SECONDARY ASSESSEMENT:

- Identify mechanism of injury and be alert for other trauma (consider C-spine injury).
- Remove only wet clothing and maintain the patient in a warm, draft-free environment.
- Protect injured areas from pressure, trauma, and friction.
- Do not allow frostbitten extremity to thaw if there is any chance the limb may refreeze before evacuation is complete.
- If limb has started to thaw, do not allow patient to ambulate.

ADDITIONAL FIELD TREATMENT:

- **HANDLE ALL HYPOTHERMIA PATIENTS WITH CARE;** rough handling may precipitate ventricular fibrillation.
- If unconscious and hypothermic, maintain body temperature.
- If conscious:
 - Add heat packs to the groin, lateral chest and neck to help prevent heat loss.
 - Maintain core temperature by keeping the victim warm with blankets. Warm fluids may be administered to a conscious patient with Medical Control's concurrence.
 - Do a rectal temp with a hypothermia thermometer (if available).
- Check blood glucose level en route. As necessary, administer oral glucose if patient is conscious and able to swallow.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline TKO while en route. Use warmed fluid (100°F) if possible.
- If unconscious and not breathing without a gag reflex, place double-lumen airway.

ILS

In addition to all of the above:

- Draw blood and check glucose level en route. If glucose is <60, administer Dextrose as follows:

Adult – 100 ml of a 50% Dextrose solution large-bore IV bolus running IV wide open and pushing the Dextrose slowly over 2 minutes. The IV catheter should be large bore (16 to 18 gauge).

Pediatric (less than 16 years of age) – 25% Dextrose at 0.5- 1.0 gm/kg over 2 minutes via IV or IO. 1 kg = 2.2 lbs

NOTE:

- When practical, major rewarming should be left for a hospital setting.
- Warmed (>104°F) oxygen is preferred.
- CPR should **not** be initiated in the field if the chest is frozen/non-compliant or obvious lethal injury is present.
- Because the severely hypothermic heart is irritable and ventricular fibrillation can be induced by physical stimuli, it is important to accurately determine that functional cardiac activity is absent before beginning chest compression. In severe hypothermia, functional cardiac activity can be present but difficult to detect.
- Pulse rate can be very slow and pulse pressure is usually reduced in severe hypothermia.
- Environmental conditions can make even a strong pulse difficult to feel.
- Chest compression should NEVER be done if clinical signs of functional cardiac activity are present even if a pulse is not palpable under field conditions. This includes victims who show any movement, spontaneous respirations, response to positive pressure ventilation, organized rhythm on cardiac monitor, audible heart tones on auscultations or other signs of life.
- Chest compressions SHOULD be done if functional cardiac activity is absent (take up to 1-2 minutes to feel for pulse), if the victim loses a palpable pulse, or ventricular fibrillation or asystole is seen on cardiac monitor.
- Defibrillation requires core temperatures above 86°F to be effective.

5-3. HEAT EMERGENCIES

BLS

PRIMARY ASSESSMENT:

- Perform primary survey.
- Be alert for and treat shock (see Shock protocol, Section 4-9, page 77).
- Be alert for altered LOC (see Altered Level of Consciousness protocol, Section 3-4, page 39).
- Administer high-flow oxygen per non-rebreather mask.
- Check vital signs frequently, including temperature.

SECONDARY ASSESSMENT:

- Pertinent and SAMPLE history.
- Note skin condition and color.

ADDITIONAL FIELD TREATMENT:

- Remove patient from heat source, remove excessive clothing.
- Apply cool compresses to extremities and forehead.
- If patient's skin is hot and dry, begin aggressive cooling measures including wet sheets, cold packs to axilla and groin.
- If patient is alert and oriented, encourage oral fluid intake if tolerated and Medical Control concurs.
- Not all heat emergencies are environmental in nature. They may have infectious, neurological or pharmacological etiology.
- High body temperature may cause seizures, particularly in children or patients with a known seizure disorder (see Seizure protocol, Section 3-3, page 37).

BLS SPECIAL SKILLS / ILS

In addition to all of the above and if trained:

- Heart Monitor - Attach heart monitor.
- Start peripheral IV(s) as necessary with Normal Saline while en route.

SECTION 6: OBSTETRICAL / GYNECOLOGICAL EMERGENCIES

- 6-1. Obstetrical Emergencies
- 6-2. Excessive Vaginal Bleeding
- 6-3. Trauma Assessment and Care
- 6-4. Sexual Assault
- 6-5. Miscarriage
- 6-6. Pre-Delivery Seizures

6-1. OBSTETRICAL EMERGENCIES

BLS

PRIMARY ASSESSMENT:

- Note skin condition and color.
- Visually examine patient's perineum:
 - A. If the perineum is bulging or the baby's head is crowing, and/or
 - B. If the patient has had one or more normal deliveries and complains of urge to "push" or "bear down" or have a bowel movement, and/or
 - C. If contractions are 1-2 minutes apart,

THEN DELIVERY IS IMMINENT

- Prepare to deliver baby.
- Notify Medical Control.
- Start oxygen @ 4-6 LPM via nasal cannula.
- If complications are apparent (i.e., foot visible, cord visible, or severe vaginal bleeding), see Abnormal Deliveries below.

SECONDARY ASSESSMENT:

- Reassure mother.
- Obtain pertinent medical and obstetrical history.
- Membranes ruptured? Color of fluid? Date of expected birth? How many births?
- Onset, frequency, and duration of contractions.

ADDITIONAL FIELD TREATMENT:

- If delivery is imminent, remove clothes from lower body and prepare for delivery. Place mother supine with knees drawn up, legs apart.
- If possible, note fetal heart rate. (Any FHR <120 is too low. Suspect prolapsed cord. Turn patient on her left side and place 6 LPM oxygen via nasal cannula and transport patient immediately with knees to chest immediately.)

ASSIST IN THE DELIVERY:

- As crowning begins, use palm of hand to apply gentle pressure to infant's head. Use the other hand to position gauze between vaginal opening and head to protect it from the anus.
- Support infant's head with both hands as it emerges. Allow to rotate to one side.
- Slip your finger around infant's neck, feel for the presence of the umbilical cord. If it is wrapped loosely, you may be able to slip the cord over the head (or allow the infant to pass through the loop).
- If wrapped tight, clamp in two places. Then, using sterile scissors, cut between the clamps.
- With delivery of the head, support head and suction out the airway with a bulb syringe or suction catheter. Suction mouth first, then nose.
- For delivery of the shoulders, position hands on the head for support and instruct the patient to gently bear down. Exert gentle downward pressure with delivery of the anterior shoulder.

- Now apply gentle upward pressure, lift the posterior shoulder. Support the infant's body with delivery.
- Upon completion of the delivery, note time, re-suction the infant, dry rub infant with towel and wrap in a clean blanket. Keep the infant level with the patient's vagina to prevent hypovolemia.
- Clamp cord 6" from the infant, place second clamp 8" from infant and cut cord BETWEEN clamps.
- Assess infant's APGAR at one and five minutes.
- Treat any distress per Newborn Resuscitation protocol (Section 7-1, page 101).
- Do Not pull on the cord to deliver the placenta. It will deliver itself without difficulty.
- After delivery of placenta, place in a plastic bag for delivery to the hospital.
- **Note** - The greatest risk to the infant is airway obstruction and hypothermia. Treat accordingly.
- The greatest risk to the mother is postpartum hemorrhage. Watch for excessive vaginal bleeding and sign of shock. If placenta is delivered, externally massage the uterus.

ABNORMAL DELIVERIES:

1. Breech – Buttocks Presentation:

- Allow delivery to progress spontaneously.
- Support infant's body as it is delivered.
- If head delivers spontaneously, proceed as above.
- If head does not deliver within 2 minutes, insert gloved hand into vagina to take the pressure off the cord and to create an airway around the infant's face/mouth.
- **TRANSPORT IMMEDIATELY, NOTIFY MEDICAL CONTROL. DO NOT REMOVE HAND UNTIL RELIEVED BY HOSPITAL STAFF.**

2. Limb Presentation:

- Place mother in Trendelenburg position. (Alternative: left lateral decubitus with pelvis elevated.)
- Administer high-flow oxygen per non-rebreather mask.
- **TRANSPORT IMMEDIATELY. NOTIFY MEDICAL CONTROL.**

3. Prolapsed Cord:

- Place mother in Trendelenburg position and knee-chest position (or on hands and knees).
- Administer high-flow oxygen per non-rebreather mask.
- Insert gloved hand in vagina and push baby's head off cord.
- **TRANSPORT IMMEDIATELY. NOTIFY MEDICAL CONTROL. DO NOT REMOVE HAND UNTIL RELIEVED BY HOSPITAL STAFF.**

4. Multiple Births:

- While unusual, be alert to the possibility and stay with patient.

- Deliver additional infant(s) per same delivery protocol above.
5. Meconium Stain:
- Signs and symptoms – greenish or brownish-yellow amniotic fluid rather than clear, discoloration/staining on infant’s face, often indicates possible fetal distress during labor.
 - Do Not stimulate infant to breath prior to suctioning.
 - Suction oropharynx first, then nasopharynx.
 - Maintain newborn’s airway.

BLS SPECIAL SKILLS / ILS

In addition to all of the above and if trained:

- Start peripheral IV’s as necessary with Normal Saline (en route unless delivery is imminent).

6-2. EXCESSIVE VAGINAL BLEEDING

BLS

PRIMARY ASSESSMENT:

- Scene size up and initial patient assessment.
- Focused assessment.
- Clear the airway, provide oxygen and/or ventilatory assistance as necessary, if not done during initial assessment.
- Treat for shock.
- If bleeding due to trauma to external genitalia place appropriate external dressings to any wounds.
- Do not place dressings inside the vagina.
- Attach pulse oximeter (if available).

BLS SPECIAL SKILLS / ILS

In addition to all of the above and if trained:

- Attach heart monitor.
- Start large-bore IV with Normal Saline en route.

6-3. TRAUMA ASSESSMENT AND CARE

BLS / ILS

PRIMARY ASSESSMENT:

- During initial assessment and assessment of vital signs, remember the following about the physiology of pregnant women:
 - A. The pregnant patient has a pulse that is 10-15 beats per minute faster than the nonpregnant female. Vital signs may be interpreted as being suggestive of shock when they are normal for the pregnant female.
 - B. A woman in later pregnancy may have a blood volume that is up to 48% higher than her non-pregnant state. With hemorrhage, 30-35% blood loss may occur before otherwise healthy pregnant females exhibit signs or symptoms.
 - C. Although shock is more difficult to assess in the pregnant patient, it is the most likely cause of prehospital death from injury to the uterus.
- Question the conscious patient to determine if she has received any blows to the abdomen, pelvis, or back.
- Ask the patient if she has had bleeding or rupture of the bag of waters. When in doubt, examine the vaginal area for bleeding, being certain to provide privacy.
- Examine the unconscious patient for abdominal injuries, remembering to consider the mechanism of injury.

PATIENT CARE:

Remember that maintenance of respiration and circulation and the control of bleeding are vital not only to the mother but also to the fetus. A developing fetus is critically dependent on the uninterrupted oxygenated blood supply that enters the placenta. What is good for the mother is good for the baby. Since the mother-to-be may have undetected internal bleeding or the fetus may be injured, provide the following care to the injured mother:

- Provide resuscitation if necessary.
- Provide a high concentration of oxygen by using a non-rebreather mask. (Oxygen requirements of the woman in later pregnancy are 10-20% greater than normal. If in doubt, give oxygen.)
- Because of slowed digestion and delayed gastric emptying, there is a greater risk the patient will vomit and aspirate. Be ready with suction.
- Transport as soon as possible. All pregnant women should be transported in the left lateral recumbent position, supported with pillows or blankets, unless a spinal injury is suspected. If so, first secure the mother to a spine board, then tip board and patient as a unit to the left, relieving pressure on the abdominal organs and vena cava. Be sure to monitor and record vital signs.
- Provide emotional support. A pregnant woman who is a trauma victim will naturally worry about her unborn child. Remind her that the developing baby

is well protected in the uterus. Let her know that she is being transported to a medical facility that can take care of her needs and the needs of the unborn child.

6-4. SEXUAL ASSAULT

BLS / ILS

PRIMARY ASSESSMENT:

- Scene size up and initial patient assessment.
- Contact law enforcement and preserve evidence.
- Clear the airway, provide oxygen and/or ventilatory assistance as necessary, if not done during initial assessment.
- Follow treatment protocols for victims of trauma (Section 4, page 53).
- Advise patient not to wash, douche, urinate or defecate prior to physician exam.
- Do not examine genitalia unless obvious bleeding requires the application of a dressing.
- Do not place dressings inside vagina.
- If hypotensive, see Shock protocol (Section 4-9, page 77).
- Provide non-judgmental support.

6-5. MISCARRIAGE – SPONTANEOUS ABORTION

BLS

PRIMARY ASSESSMENT:

- Scene size up and initial patient assessment.
- Signs and symptoms – Cramp-like lower abdominal pain similar to labor, moderate to severe vaginal bleeding, which may be bright red or dark red, passage of tissue or clots.
- Clear the airway, provide oxygen and/or ventilatory assistance as necessary, if not done during initial assessment.
- Treat for shock.
- Place sterile pad over vaginal opening.
- Bring fetal tissues to the hospital.

BLS SPECIAL SKILLS / ILS

In addition to all of the above and if trained:

- Start IV with Normal Saline en route.

6-6. PRE-DELIVERY SEIZURES

BLS

PRIMARY ASSESSMENT:

- Scene size up and initial patient assessment.
- Focused Assessment – Signs and Symptoms:
 1. Mild pre-eclampsia:
 - a) Hypertension (BP above 140 and below 160 systolic)
 - b) Edema
 - c) Rapid weight gain
 2. Moderate to severe:
 - a) Hypertension (BP above 160 systolic)
 - b) Headache
 - c) Changes in behavior
 - d) Visual disturbances
 - e) Dyspnea
 - f) Cyanosis
 3. Eclampsia: (any of the above plus)
 - a) Seizure
 - b) Postictal
- Administer high-flow oxygen per non-rebreather mask and assist ventilations as necessary.
- If possible, place patient on her **left** side.
- Attach pulse oximeter (if available).

BLS SPECIAL SKILLS / ILS

In addition to all of the above and if trained:

- Attach heart monitor.

SECTION 7: PEDIATRICS

- 7-1. Newborn Resuscitation
- 7-2. Pediatric Cardiac Emergencies
- 7-3. Pediatric Respiratory Emergencies
- 7-4. SIDS

7-1. NEWBORN RESUSCITATION

BLS

PRIMARY ASSESSMENT:

- Establish and protect airway.
- Suction secretions, dry infant to provide stimulation and prevent chilling, keep infant warm, keep head covered.
- Check respiratory rate:
 - If rate is >20 or crying, no action.
 - If rate is <20, tactile stimulation, provide assisted ventilation (40 breaths/min) with pocket mask/BVM as needed.
- Check heart rate:
 - If rate >100, no action.
 - If rate 60-100, ventilate with high-flow oxygen as above.
 - If rate <60, ventilate with high-flow oxygen and begin chest compressions (120 compressions/min).
- Check color:
 - Normal, no action.
 - Central cyanosis, provide 100% oxygen and assist with ventilation as needed.

NOTE: Newborn Bradycardia is usually due to decreased oxygenation.

SECONDARY ASSESSMENT:

- Record APGAR score (see chart below) if infant is stable. Do Not delay resuscitation to get APGAR.

ADDITIONAL FIELD TREATMENT:

- Protect from injury during movement.
- Note that Acrocyanosis (blue extremities, pink trunk) is normal for Newborns because of sluggish peripheral circulation.

BLS SPECIAL SKILLS / ILS

In addition to all of the above and if trained:

- Attach heart monitor.

APGAR SCORE			
Sign	0	1	2
1. Heart Rate	None	Under 100 beats a minute	Over 100 beats a minute
2. Breathing and Crying	None	Weak cry, irregular breathing	Strong cry, regular breathing
3. Skin Color	Blue or Pale	Body pink, hands and feet blue	Entire body pink
4. Muscle Tone	Limp	Arms and legs bending some	Arms and legs bending actively
5. Reflex Response	None	Grimaces	Cries

7-2. PEDIATRIC CARDIAC EMERGENCIES

All providers (BLS, ILS and ALS) should follow the American Heart Association's Algorithms for Pediatric Care as outlined in the current Emergency Cardiovascular Care for Healthcare Providers.

Care is authorized appropriate to level of training and certification. In all cases of unstable Pediatric patients, Medical Control is to be notified.

7-3. PEDIATRIC RESPIRATORY EMERGENCIES

BLS

PRIMARY ASSESSMENT:

- Perform primary survey.
- Look for nasal flaring, tracheal tugging, intercostal retractions, cyanosis.
- If adequate ventilation, let child assume position of comfort.
- Administer high-flow oxygen with non-rebreather mask or blow-by.
- If inadequate ventilation, consider foreign body obstruction.
- If child has croupy cough or epiglottitis is suspected:
 - Put child in position of comfort.
 - Do Not attempt a procedure which may increase child's anxiety unless absolutely necessary to preserve airway.
 - Avoid examining or manipulating oropharynx.
 - Use pocket mask/BVM to ventilate if needed.
 - Epiglottitis may require forceful ventilation.
 - Continuously monitor airway in unconscious child. Notify Medical Control.
- If unconscious and not breathing without a gag reflex, place oropharyngeal airway.

SECONDARY ASSESSEMNT:

- Obtain pertinent history.
- If patient has a personal prescribed inhaler, assist the patient to use it.

SPECIAL SKILLS:

If trained:

- Heart Monitor – Attach monitor.
- IV – Establish saline lock or peripheral IV with Normal Saline, TKO.
- If unconscious and not breathing without a gag reflex, place double lumen airway.

ILS

In addition to all of the above:

- Treat asthma per protocol (Section 3, page 33).
- Albuterol may be given for croup/epiglottitis as follows:

Pediatrics 2 to 12 Years of Age: The dosage for for children weighing at least 15 kg (1 kg = 2.2 lbs) is 2.5 mg of albuterol (one unit dose vial). May repeat treatment up to 3 times.

Run nebulizer at 6-8 LPM. May give a child the treatment by blow-by if they won't take a mouthpiece or mask.

NOTE:

- The conscious, dyspneic child may rapidly deteriorate to respiratory crisis. Prepare to intervene.
- Dyspnea is a symptom, not a disease. Reassess for cause and correct if possible.

7-4. SUDDEN INFANT DEATH SYNDROME (SIDS)

BLS / ILS

- Check for signs of obvious death, disfiguration of face with “squashed nose”, frothy, blood-tinged mucous around infant’s mouth or nostrils; lividity (pooling of blood in independent body areas, may appear as blotching); rigor mortis.
- With obvious signs of death:
 - Do not resuscitate unless family refuses to acknowledge the infant’s death. Contact Medical Control.
 - Request appropriate law enforcement agency to scene.
 - Acknowledge parent’s grief. Offer appropriate assistance.
- If no signs of obvious death, begin CPR and transport immediately.

NOTE:

Carefully observe the environment, objects around the child, the behavior of adult present, and the various explanations offered. Sometimes what looks like SIDS could be child abuse or neglect.

SECTION 8: PROCEDURES

- 8-1. Blood Glucose Monitoring
- 8-2. Combi-Tube Airway Insertion
- 8-3. PASG (Pneumatic Anti-Shock Garment)
- 8-4. Restraints
- 8-5. Aspirin / Nitroglycerin
- 8-6. Intraosseous Infusion

8-1. BLOOD GLUCOSE MONITORING

BLS / ILS

1. Proper indications for monitoring (known diabetic, altered level of responsiveness, seizure).
2. BSI
3. Prepare equipment: place strip in monitor, open alcohol prep, prepare lancet.
4. Prepare patient – clean middle or ring finger.
5. Gently squeeze finger at the joint below the finger tip.
6. Use lancet to pierce the skin and immediately remove.
7. Gently squeeze finger to express a drop of blood.
8. Place blood on strip.
9. Clean finger off.
10. Properly dispose of lancet and infectious material.
11. Document reading & time on MIR.
12. Recheck level after administration of glucose.

AVERAGE BLOOD SUGAR LEVELS:

80 – 120 mg/dl **On waking & before meals**

180 mg/dl or less **2 hours after meals**

100 – 140 mg/dl **At bedtime**

8-2. COMBI-TUBE AIRWAY INSERTION

BLS SPECIAL SKILLS / ILS

If trained:

INDICATIONS:

1. Cardiac arrest.
2. Respiratory arrest without a gag reflex.

CONTRAINDICATIONS:

1. An intact gag reflex.
2. Under the age of 14 years or less than 5 feet.
3. Cases of known or suspected caustic poisoning.
4. Cases of known or suspected esophageal disease.
5. Conscious or unconscious breathing patient.

INSERTION OF THE COMBI-TUBE:

1. Ventilate the patient at a normal rate while preparing the combi-tube for placement.
2. Place the head in a neutral position in medical patients. Ensure c-spine precautions are always maintained during placement in trauma patients.
3. Insert the combi-tube into the mouth and advance gently until the teeth (or gums) are aligned between the two black rings on the tube.
4. Using the large syringe, inflate Line 1 through the blue pilot balloon with 100cc of air. This will inflate the large pharyngeal cuff.
5. Using the small syringe, inflate Line 2 through the white pilot balloon with 15cc of air. This will inflate the small distal cuff.
6. Attach the BVM with 100% oxygen to Tube #1 and begin ventilations. Watch for chest rise and auscultate breath sounds:
 - a. If breath sounds are present and no air exchange is heard over the epigastrium, continue ventilations. This is epigastric placement.
 - b. If breath sounds are absent and air is heard over the epigastrium, tracheal placement has been accomplished. Attach the BVM to Tube #2 and continue ventilations and monitoring lung sounds.
 - c. If lung sounds are absent through Tube #2 and air exchange is present over the epigastrium, deflate both cuffs and remove the combi-tube. Continue ventilations with BVM or pocket mask with 100% oxygen.
7. If unsuccessful after the second attempt to insert the combi-tube, discontinue the procedure and continue with ventilations.

REMOVAL OF THE COMBI-TUBE:

1. Only remove if patient regains consciousness and/or begins to fight the tube.
1. Turn the patient on his/her side.
2. Deflate both the pharyngeal and distal cuffs through Lines 1 and 2.

3. Gently remove the combi-tube.
4. Be prepared for the patient to vomit, suction as necessary.
5. Assure the patient's airway is patent and respirations adequate, assist ventilations as necessary with high-flow oxygen (10-15 lpm).

8-3. PASG (PNEUMATIC ANTI-SHOCK GARMENT)

BLS / ILS

INDICATIONS:

- Femur or pelvic fractures (may be used with a traction splint).
- Intra-abdominal hemorrhage due to trauma, aneurysm, etc.
- Any patient in hypovolemic shock as defined by blood pressure or by clinical signs of inadequate tissue perfusion.
- As indicated by Medical Control.

CONTRAINDICATIONS:

- Acute pulmonary edema and/or cardiogenic shock.
- Known diaphragmatic rupture.
- Uncontrolled hemorrhage outside the confines of the garment.
- Do not inflate abdominal section in late pregnancy or if respiratory compromise occurs.
- Inflate only the legs in pediatric patient under the age of 10.
- Head injury.
- Eviscerations.

PROCEDURE:

- Primary survey.
- Vital signs.
- Remove clothing from lower extremities.
- Place or slip trousers onto patient; abdominal section should not extend above umbilicus.
- Inflate PASG beginning with leg sections, then abdomen section until:
 - a. Patient's blood pressure is restored to 90-100 systolic.
 - b. Velcro starts to crackle.
 - c. Pop-off valve begins to operate.
- Turn valve on tubing to "close" position.
- Monitor vitals carefully every five minutes.
- Cardiac monitor as indicated by protocols.
- Deflation shall not be performed in the field except when pulmonary edema/respiratory compromise develops.
- Record time of application.

NOTE: Gauges are often inaccurate for filled usage and their use is discouraged.

COMPLICATIONS:

- Increase risk of emesis.
- Aggravate pulmonary edema.
- Increase intracranial pressure.
- Increase bleeding above garment.

8-4. RESTRAINTS

BLS / ILS

ENSURE PATIENT & PROVIDER SAFETY:

- Minimum of five people are needed (one for each limb and one to apply restraints).
- Document: An emergency existed, the need for treatment was explained, patient refused or was unconscious, evidence of patient's incompetence, failure of less restrictive methods, treatment was for patient's benefit, restraints were for patient's safety, reasons were explained to patient, type of restraint used, limbs restrained, injuries or lack of injuries incurred during restraint procedure and circulation checks every fifteen minutes distal to the restraints.

TYPES OF RESTRAINTS:

- Leather restraints (for patients on PCP or who are severely mentally retarded).
- Mechanical restraints (handcuffs/ankle shackles) never for a supine patient.
- Kerlix (always use double strength).
- Soft restraints (mostly used in hospitals).

CIRCULATION CHECKS:

- Circulation checks before and after restraints are mandatory!
- You don't want your patient to arrive at the ED with cyanotic hands and feet.
- Always check distal to restraints and document findings.

NEVER REMOVE RESTRAINTS:

- A cooperative patient will cooperate with restraints.
- Don't let a patient who "calms down" talk you into taking off restraints.
- The only exception to this is SEIZURES.
- Seizing patients should never be restrained.

COMMUNICATION:

- Avoid terms like "restraint" and "tie you up" because they will agitate the patient.
- Use terms like "safe, secure, comfortable, soft safety bracelets".
- Keep in mind that some patients feel more secure if they are restrained.

ANCHORING RESTRAINTS:

- There should be no "play" between restrained limb & point of anchor.
- Don't anchor to moving parts of equipment.
- Never restrain hands together in front of patient as they can be used as a weapon.
- Single wrist restraint for IV protection of a disoriented patient -- restrain above head.

SPIT SHIELDS:

- Use a non-rebreather mask (with O2 running).
- Document administration of oxygen.

8-5: ASPIRIN / NITROGLYCERIN – ACUTE CORONARY EVENT

BLS

INDICATIONS FOR USE IN AN ACUTE CORONARY EVENT:

Patient exhibits any of the following signs & symptoms:

- A. Uncomfortable pressure, fullness, squeezing or pain in the center of the chest that lasts more than a few minutes, or goes away & comes back
- B. Pain that spreads to shoulders, neck or arms
- C. Chest discomfort with lightheadedness, fainting, sweating, nausea or shortness of breath.

OR

Patient exhibits any **two** of the following signs or symptoms and you think it is of cardiac origin:

- A. Atypical chest pain, stomach or abdominal pain. This may include discomfort that can be localized to a point, that is “sharp” in nature, that is reproducible by palpation or that is in the “wrong” location (such as upper abdomen).
- B. Unexplained nausea (without vomiting) or lightheadedness (not vertigo-dizziness/faintness).
- C. Shortness of breath, and difficulty breathing (without chest pain).
- D. Unexplained anxiety, weakness or fatigue.
- E. Palpitations, cold sweat or paleness.

CONTRAINDICATIONS

- Patient is allergic to aspirin or Ibuprofen (Motrin, Advil) or any non-steroidal anti-inflammatory drug (NSAIDS).
- If they have just taken aspirin for this event, do not administer Aspirin.

PROCEDURES

- ILS/ALS upgrade & evaluation required if available.
- Be sure that the patient is alert and responsive.
- Give the patient 4 low-dose chewable Aspirin (324 mg total).
- Record your actions, including the dosage and time of administration.

NOTE:

- If the patient has his/her own Nitroglycerin and meets the criteria for administration, do not delay in assisting with administration of their Nitroglycerin.

In addition to all of the above:

- Draw baseline blood as needed. Start IV prior to drug therapy. If unable to establish IV, continue with drug therapy.
- Administer Nitroglycerin 0.4mg SL (tablet or transmucosal spray) if systolic BP >100mm Hg. May repeat every 3-5 minutes up to a maximum of three doses or chest pain is relieved. Discontinue administration if systolic BP is <100mm Hg or patient displays signs of inadequate perfusion at a higher BP.
- Monitor and record the patient's vital signs after each dose of nitroglycerin is administered.
- Contraindications for the administration of nitroglycerin:
 4. Patient has a head injury.
 5. Initial systolic BP < 100mm Hg.
 6. Patient has recently (within the last 48 hours) taken Viagra, Cialis, or other drug for erectile dysfunction.

8-6: INTRAOSSEOUS INFUSION

INDICATION:

Critically ill or injured patient in whom attempts at peripheral IV sites are unsuccessful.

CONTRAINDICATIONS:

Absolute

- Fracture within the same long bone.
- History of Osteogenesis Imperfecta.
- Infection at placement site.

Relative

- History of bleeding disorders.
- Two prior attempts at same location.
- History of Osteoporosis.

PROCEDURE:

- Choose leg least injured (if trauma).
- Prep with Betadine, anterior tibia 1-3 cm below tibial tuberosity, medial aspect.
- Insert 1" bone marrow needle with obturator in place through skin, periosteum and cortex of bone perpendicular to the skin or angled slightly away from knee (bevel directed away from respective joint).
- Rotate needle as you advance it.
- When needle "pops" into marrow of tibia, remove obturator and attach 5ml syringe and aspirate. If blood/marrow aspirated, place in a red and purple top tube for later analysis. Attach IV tubing to needle hub and flush with NS. If subcutaneous swelling occurs, stop IV, remove needle and cover wound. Note: positive aspiration does not necessarily indicate proper placement, conversely negative aspiration does not preclude proper placement.
- If IV flows properly, tape-secure the needle and tubing to the leg.
- All IV fluids and medications may be given by IO route.

COMPLICATIONS:

- Injury to growth plate of tibia at the knee. Avoid by angling away from the knee.
- Fracture of one of the bones of the leg. Avoid by using twisting motion with steady, gentle pressure to insert the needle.
- Osteomyelitis. Late and rare. Avoid by using sterile technique.

SPECIAL CONSIDERATIONS:

- Although use of IO venous access is usually in the pediatric patient 6 years old, IO lines may be used in any age of critically ill patients in whom venous access must be obtained when other methods have failed. Contact with Medical Control is recommended when the situation allows prior to placing an IO line in an adult.
- Flow through an IO line usually requires positive pressure to achieve significant flow rate.