

# CLARK COUNTY EMERGENCY MEDICAL SERVICES

## PREHOSPITAL CARE PROTOCOLS

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## **SECTION A INTRODUCTION**

### **CLARK COUNTY EMERGENCY MEDICAL SERVICES COUNCIL PREHOSPITAL PATIENT CARE PROTOCOLS**

#### ***INTRODUCTION***

The following \*PREHOSPITAL PATIENT CARE PROTOCOLS\* are intended as treatment protocols for both basic and advanced life support technicians working under the advice of the Medical Program Director for Clark County. They represent a consolidation of recommendations for patient care from many local and national sources.

- I. They are intended to:
  - A. Standardize, as much as possible, prehospital care for Clark County.
  - B. Provide the Emergency Medical Technician with a framework for prehospital care and an anticipation of supportive orders from the base hospital.
  - C. Provide base hospital physicians and nurses with an understanding of what aspects of patient care have been stressed to the EMT/EMT-P and what their treatment capabilities may be.
  - D. Provide the basic framework on which Medical Control can audit the performance of both basic and advanced life support personnel.
  - E. Differentiate between basic and advanced life support procedures. ALS procedures will be identified by an \* preceding the procedure. A \*\*\* is intended to identify an ALS therapy to be used only with Medical Control Physician concurrence.
  - F. Expedite patient delivery to institutions best equipped to handle their specific problems.
  
- II. They are not intended to:
  - A. Be absolute treatment doctrines, but rather guidelines with sufficient flexibility to meet the needs of complex cases.
  - B. Be a teaching manual for EMTs or Paramedics; it is assumed that each EMT is trained to his/her level of certification and that she/he will continue to meet the requirements of the State for continuing education for recertification. Medical Control will provide continuing education based on the results of patient care audit and review.
  - C. Interfere with the wishes of the patient or family, or the wishes of the patient's physicians.
  - D. Dictate details of care to advising physicians.
  - E. Warrant the EMS Provider as an independent field practitioner.

It is expected that all emergency medical technicians working within Clark County will be familiar with the portion of the PREHOSPITAL PATIENT CARE PROTOCOLS appropriate to their certification level. Written acknowledgement of the receipt of this document will be required.

## ***PATIENT TREATMENT RIGHTS***

### **I. Consent**

- A. These prehospital care protocols are intended for use with a conscious, consenting patient, or an unconscious (implied consent) patient.
- B. If condition warrants, treatment of a minor (under age 18) is done via implied consent.

### **II. Right to Make Decisions Regarding Care**

- A. If a conscious patient who is rational refuses treatment, the EMT should document the refusal (see guidelines for refusing care).
- B. If a conscious patient who is irrational (or impaired by alcohol or drugs) refuses treatment, the EMT should contact Medical Control and police and county mental health professional, if necessary (see guidelines for refusing care).
- C. If a patient's family, patient's physician, or nursing home refuses treatment for a patient, protocols are contained herein to deal with those situations.
- D. A rational patient has the right to select a hospital to which to be transported in a non-emergent situation.
- E. If a patient is a minor (under age 18) and no consenting adult is available and the minor refuses treatment, the EMT should contact Medical Control (and police, etc.)

-Note- When in doubt, contact the Medical Control and fully document all of your actions.

## ***MEDICAL CONTROL***

PeaceHealth Southwest Medical Center (PHSW) is Medical Control Base Station for clarification of orders or patient disposition, in cases of disparity between the prehospital care guidelines and private physician wishes, and for general medical information and for controlled substances or treatment (\*\*\*) .

If a patient is being transported to a facility outside of Clark County, Medical Control must be utilized for treatment concurrence while the EMS unit is within Clark County. When the transport unit is operating in Multnomah County, Medical Control is at Medical Resource Hospital, OHSU.

In cases where life-threatening conditions exist or when communication is impossible, controlled medical treatment(s) (\*\*\*) can be given without base station physician concurrence, or with the concurrence of the patient's private physician.

Medical Control will be contacted on all trauma patients if diversion to a Level I facility is anticipated. Occasionally, contact with Medical Control may be impossible prior to diversion/transport by Life Flight. In this instance, Medical Control will be contacted as soon as possible before leaving the scene by the Paramedic with patient/scene information

### ***QUICK REFERENCE FOR CLARK COUNTY EMS MEDICAL CONTROL CONCURRENCE PROCEDURES AND MEDICATIONS***

Paramedic consult with a base hospital physician at Southwest Washington Medical Center is required for the following procedures and medications.

1. FIELD TERMINATION OF ACLS when doubt for code termination exists.
2. DIVERSION to Portland area hospital for trauma, burn, hyperbaric patient.
3. TRAUMA SYSTEM ACTIVATION
4. TRAUMA SURGICAL PROCEDURES:
  - Pleural Decompression (needle thoracentesis)
  - Surgical Cricothyroidotomy
  - Needle-Jet Cricothyroidotomy
5. Combining CONTROLLED MEDICATIONS, **Versed** w/ **Fentanyl**, for pain.

### ***EMS RESPONSE MODES***

All Fire and Medic units responding on 911 calls will follow the Clark County Medical Priority Dispatch System (MPDS) EMS Response Modes. At times deviation from these modes may be appropriate. Any deviation by responding units shall be documented in writing and submitted to the unit's agency and Medical Program Director for review.

- I. Transportation Only (26-A-9 response determinant)
  - A. CRESA shall only notify the assigned ambulance on calls triaged as a sick person, with non-priority symptoms, needing transportation only.
- II. First Response Unit Delayed

When a first response unit realizes it will have a delayed response:

  - A. The first response unit shall advise CRESA to notify the responding ambulance of the delay;
  - B. CRESA shall advise the responding ambulance of the delayed response;
  - C. The responding ambulance shall upgrade to the First Response EMS Response Mode.
  - D. Delayed response is defined as any response time (time of dispatch to time of arrival) exceeding an EMS agency's response time standard for the incident location.
- III. Ambulance Closer to a Call

When a responding ambulance unit realizes it is closer to a call:

  - A. The ambulance crew shall advise the first responder of their location and respond according to the First Response EMS Response Mode;
  - B. The first responder shall decide if it will respond according to First Response or Ambulance Response Mode.
- IV. Cancelling Response; Slowing Response; Diverting to Another Call

See "Cancellation/Slowdown"

## ***CLARK COUNTY MEDICAL PRIORITY DISPATCH SYSTEM EMS RESPONSE MODES***

Response Determinant	Response Priority	Response Mode	
		First Response	Ambulance
ECHO	1	Hot	Hot
DELTA	2	Hot	Hot
CHARLIE	3	Hot	Hot
BRAVO	4	Hot	Cold
ALPHA	5	Cold	Cold
	6	Cold (no-response option)	Cold
	7	Cold	Cold (no-response option)

### ***CANCELLATION/SLOWDOWN/STAGING***

Once a call is received by an ALS transport unit, the unit will respond as rapidly as possible and make patient contact to determine and administer emergency medical care as needed.

#### **I. Cancelling of Response**

- A. CRESA reports the original caller has canceled the request for service. The Paramedic will make the decision to cancel or continue the call based on information from CRESA.
- B. A first-in responding unit reports that no patient is present.
- C. A first-in responding unit with an EMT, Paramedic, or EMS agency known to the responding unit arrives and reports to the ALS transport unit that the patient does not want or need contact by ALS transport unit. This cancellation can be due to:
  1. No need for treatment or minor care administered by the first-in units.
  2. Patient/Guardian desires POV transport (should be conveyed to transport unit). If first-in unit feels ALS transport Paramedic should continue in for evaluation, this should be conveyed to responding medic unit.
  3. It shall be the discretion of the Paramedic on the responding medic unit whether to continue to the scene.
  4. If the ALS transport unit does not respond, the first-in unit will obtain a waiver form signed by the patient or other responsible person stating that based on his/her own initiative they do not desire transport.

#### **II. Slowdown**

- A. Transport units may be slowed by first-in units, staffed by a Paramedic or EMT, after evaluating the patient and determining a slower response is appropriate.
- B. It would be more appropriate for the first-in unit to convey patient information to the medic unit so the responding Paramedic can decide if a slower response is appropriate.

#### **III. Diversion**

- A. An ALS transport unit may be diverted to another call when:
  1. It is obvious the second call is a life-threatening emergency and first-in units known to ALS transport unit as EMTs and/or Paramedics report that first call can await a second ambulance.
  2. A second ambulance is dispatched to the first call.
  3. The first ambulance is decidedly closer to the second call and the response by it to the second call might conceivably be vital to the patient's outcome.

## IV. Staging

- A. Stage/standby will be done only when responding to scenes involving acts of violence or other scene safety issues until the scene is secured by law enforcement or other means. Items to consider:
  - 1. Information from CRESA indicating violence or potential for violence, i.e., assault with weapon, violent individual(s), hostage situation.
  - 2. Information that raises questions regarding the safety of responders, i.e., hazardous material or other special rescue situation.
- B. Units will advise CRESA of intent to stage and request Law Enforcement (or other appropriate agency) response (if not already done). CRESA will notify all responding units of intent to stage.
  - 1. The responsibility to stage rests with the responding agency. Communication of intent to stage will be shared between multiple responding agencies.
- C. CRESA has no authority to tell a unit to stage. They should provide ALL pertinent information to the responding units so they can make the appropriate determination as to whether to stage. This should be the same complete information as provided to law enforcement responding units.

## ***PREHOSPITAL COMMUNICATIONS***

- I. Trauma Status of PHSW  
Responding units (including dispatch) shall not contact Medical Control to inquire the trauma status of PHSW when enroute to the scene; hospital trauma status will be given to the Paramedic requesting trauma system entry after evaluation of the patient.
  
- II. Hospital Notification Report Format (HEAR – Landline – 800mHz)
  - A. ALS/Emergency Report Format:
    1. Unit identification
    2. Age and sex of patient
    3. Transport code (emergent/Code 3 or non-emergent/ Code 1)
    4. Chief complaint or reason for transport
    5. Very brief pertinent medical history (one sentence if possible)
    6. Vital signs
    7. Pertinent treatment rendered
    8. Request for additional information or treatment
    9. Estimated time of arrival (ETA)

-Note- The prehospital report should be provided to the receiving facility as soon as practical once transport has begun. All reports should be given in this order and should take a maximum of sixty seconds. The prehospital report is not meant to be a full patient report and should relay only pertinent patient care information. (Patient identification information is inappropriate to be given in the HEAR report.) Format for trauma system patients will follow specific reporting format as indicated in Trauma Protocols.
  - B. BLS/Non-Emergency Report Format:
    1. Unit identification
    2. Age and sex of the patient
    3. Reason for transport
    4. Estimated time of arrival (ETA)

-Note- The prehospital report should be provided as soon as practical once transport has begun. All reports should be given in this order and should take a maximum of thirty seconds. (Patient identification information is inappropriate to be given in the HEAR report.) If possible, use landline for hospital contact on transfers.
  - C. Advise Medical Control or receiving emergency department of changes in patient's condition en route and request for further treatment.
  
- III. Verbal Report to Emergency Department Physician And/Or Triage Nurse
  - A. This should contain more detail than the radio report. The EMT now has the time to present thorough details of the scene, complete assessment of the patient, and complete report on patient care and the result of your efforts.
    1. Name, age, sex and patient's physician
    2. Chief complaint or injuries
    3. If trauma, describe the trauma scene
    4. Pertinent medical history
    5. Physical examination findings
    6. Explain patient treatments and results of such

***PREHOSPITAL COMMUNICATIONS (Continued)***

## IV. Written Reports/Documentation

- A. A State of Washington approved EMS Medical Incident Report (MIR) form (or other approved electronic report format) must be appropriately documented and filed for any call for EMS assistance resulting in patient contact within Clark County regardless of patient transport. This will apply to all responding agencies, both basic and advanced life support units, and includes public assist calls.
  - 1. Patient contact occurs when a provider contacts/sees/hears a patient, even if other providers are on scene. The treatments and evaluations provided, while said provider is in contact with the patient, shall be documented as per this dictate.
- B. Documentation format
  - 1. If a written format is used, SOAP narrative charting is the most acceptable method of report writing. This is a LEGAL record and may be called upon as evidence in any court of law. (IF IT IS NOT WRITTEN, IT WAS NOT SEEN OR DONE.)
  - 2. If an electronic report format is used then it is necessary to follow the MPD approved documentation guidelines for that particular charting application.
- C. Documentation of Response Determinant
  - 1. All calls to 911 will be triaged and dispatched, based on the Medical Priority Dispatch System and its inherent response determinants (ALPHA, BRAVO, CHARLIE, DELTA, ECHO). Complete documentation of patient care will include the determinant assigned at initial dispatch and any upgrades received while enroute.
- D. Documentation of Procedures
  - 1. Performance of any procedure will be documented in the MIR to include reason for procedure and patient response
  - 2. For all intubated patients, documentation of end tidal CO2 numeric value AND Capnograph will be affixed to the chart
  - 3. Whenever an EKG monitor is used, a copy of the EKG recording will be affixed to the chart. This includes 12 lead tracings and code summary reports.
- E. The patient care report is a legal document and should reflect the patient care incident as accurately as possible. As such, the report will be completed as soon as feasible after the patient encounter to ensure an accurate accounting of the incident. ALL REPORTS MUST BE COMPLETED PRIOR TO THE END OF SHIFT.
  - 1. Transporting units will leave a completed report or Field Worksheet at the receiving facility upon delivery of the patient. Transport agencies are required to provide a completed (final) MIR to the receiving facility within 24 hrs. of patient arrival.

## ***TRANSFER OF CARE/TIME ON THE SCENE***

### **I. Transfer of Care**

- A. In many situations, two or more ALS units (e.g., first responding fire ALS and ALS transport) will respond. When more than one Paramedic is on scene they will work cooperatively in making patient care decisions. If a disagreement exists on the correct course of action, Medical Control will be contacted for direction. An orderly and efficient transfer of patient care responsibilities from first-responding ALS personnel to the transport team must occur, including:
1. Transfer of patient care responsibility that does not interfere with or lengthen scene times.
  2. Written and/or verbal report that includes: documentation of vitals, findings, and all treatment(s) rendered.
  3. In cases of Multiple Patient Incident, protocol is established.

-Note- Many times, patient condition may warrant attendance during transport by both the first responding Paramedic and the transport Paramedic. In these situations, working cooperation when making patient care decisions is paramount and shall not be influenced by agency affiliation. Resources shall be utilized to the fullest for the benefit of patient care. The transport Paramedic has patient care responsibility/authority when the patient is in the ambulance, but may delegate this to the attending first responding Paramedic if indicated for patient care continuity.

### **II. Time on Scene**

- A. Any time an airway cannot be provided to a patient within 2 minutes after initiating emergency medical care, transport the patient immediately, unless there are extenuating circumstances.
- B. Medical – 30 minutes or less after initial encounter.
- C. STEMI/CVA – 15 minutes or less after initial encounter.
- D. Trauma - 10 minutes or less once extrication has been accomplished and the patient can be removed from the site.
- E. Code 99 - 30 minutes or less after initial encounter.
- Note- Document extenuating circumstances.

## ***LEVEL OF CARE DURING TRANSPORT***

### **\*PARAMEDIC AND EMT ON CAR\***

Attendance of the patient during transport will be appropriate to the degree of illness as determined by the Paramedic. All ALS transports will be attended by an emergency medical technician certified by Washington State DOH to provide appropriate ALS procedures. The only exception may occur during mass casualty incidents.

-Note- Inappropriate assignment of medical attendants will be grounds for suspension of standing orders for EMT-P and EMT.

## ***RECEIVING HOSPITAL***

### I. Triage Criteria:

- A. Non-Life Threatening Injuries or Illness - Hospital destination at the discretion of patient, family, or the patient's physician.
- B. Life Threatening Injuries or Illness, e.g., inability to control airway, uncontrollable hemorrhage – transport to the closest appropriate facility unless diversion criteria in effect.
- C. Patients meeting the following criteria will be transported to PHSW:
  - 1. Acute MI/STEMI
  - 2. Cardiac Arrest with return of spontaneous circulation.
  - 3. Trauma Activation (unless the following diversion criteria apply)
  - 4. Severe GI Bleed (Active bleeding, pt. in shock with suspected esophageal varices w/ hx of alcoholism and/or liver failure.)
- D. Stroke/CVA: Patients meeting stroke/CVA criteria will be transported as follows:
  - 1. Symptoms 3.5 hours or less – Closest stroke center or patient/family choice.
  - 2. Symptoms between 3.5 and 8 hours – PHSW only.
  - 3. Symptoms more than 8 hours – patient choice or closest facility (LSC or PHSW)
  - 4. Suspected intracranial hemorrhage of any duration - PHSW

### II. Diversion Criteria:

- A. Medical Diversion - Diversion by Medical Control may occur due to availability of resources, equipment, and/or facilities at PHSW. Destination hospital will generally be determined by closest facility.
- B. Trauma Diversion - The final decision for diversion to Emanuel or OHSU rests with Medical Control at PHSW. Contact Medical Control as soon as possible with patient information; if diverted, contact Trauma Communications Center (TCC) at OHSU for further instructions. Includes LifeFlight transport.
  - 1. Criteria for diversion may include:
    - a) Major burns (Refer to TRAUMA section, BURNS Protocol).
    - b) Pregnancy with multi-system trauma in shock, unresponsive to aggressive resuscitation or immediate surgery anticipated.
    - c) Pediatric trauma entry: Immediate consult directly with Medical Control physician for destination or diversion.
    - d) PHSW Medical Control advised diversion.
- C. Hyperbaric Diversion - Providence Hospital in Portland. Contact Medical Control as soon as possible with patient information including CO level; if directed to divert, contact Providence enroute.
- D. Diversion Based on Patient Request, Private Physician, and/or Primary Care/Health Plan:
  - 1. If patient condition critical (emergent/Code 3 transport) divert to closest facility.
  - 2. Potential for further diversions, i.e., receiving hospital on divert to another hospital. If intended hospital on divert, Paramedic may divert to closest facility.
  - 3. Other Considerations:
    - a) weather - traffic patterns, time of day, etc. - ambulance levels in the county (all agencies)

\*If, in the Paramedic's judgment, diverting to a Portland hospital will result in a prolonged out-of-service time, divert to the closest facility. The receiving ED physician will be informed of the criteria and reason for the diversion; these shall also be documented in the MIR and be included in the criteria for MPD review. Concurrence by Medical Control at PHSW is mandatory on all diversions to Portland unless contact impossible. Document concurrence/variance with MC on the MIR.

## ***INTERFACILITY TRANSPORT***

### I. General Responsibility and Instructions

- A. It is the responsibility of the transferring facility to insure that the medical necessities for safe patient transfer are met including stabilization.
- B. Medical instructions of the attending Physician and Registered Nurses will be followed unless contrary to standing orders.
- C. Attendance of the patient during transport.
  - 1. Physician - he or she will direct all care regardless of standing orders.
  - 2. Registered Nurse – he or she will direct the care of the patient via orders from the physician at transfer or the receiving hospital physician. The registered nurse may desire to defer emergency care in some situations to the Paramedic.

### II. Stabilization Prior to Transfer

- A. Patients will not be transferred to another facility without first being stabilized. Stabilization includes adequate evaluation and initiation of treatment to assure that transfer of a patient will not, within reasonable medical probability, result in material deterioration of the condition, death, or loss or serious impairment of bodily functions, parts, or organs.
- B. Stabilization of patients prior to transfer to include the following:
  - 1. Establish and assure an adequate airway and adequate ventilation.
  - 2. Initiate control of hemorrhage.
  - 3. Stabilize and splint the spine or fractures, when indicated.
  - 4. Establish and maintain adequate access routes for fluid administration.
  - 5. Initiate adequate fluid and/or blood replacement.
  - 6. Determine that the patient's vital signs (including blood pressure, pulse, respiration, and urinary output, if indicated) are sufficient to sustain adequate perfusion.
- C. ALS patient and Above Criteria Not Met:
  - 1. You may initiate prehospital protocols and guidelines including the establishment of intravenous lines, airway control, etc.
  - \*\*\* 2. You may refuse to transfer the patient until the facility has complied with the above evaluation and/or treatment. Should you decide this is necessary, contact Medical Control for concurrence and consultation or contact the MPD directly.

### III. Other Considerations

- A. If a BLS transport is requested and it is the judgment of the BLS crew that the patient needs to be transported by an ALS ambulance, it is mandated that dispatch be contacted and an ALS crew dispatched. Under no circumstances should a BLS crew transport a patient, if in their judgment, this is an ALS call. (Exception: mass casualty incidents.)
- B. Emergencies en route:
  - 1. Prehospital protocols and guidelines will immediately apply.
  - 2. Medical Control should be contacted for concurrence of any orders as appropriate; the receiving facility should be contacted as soon as possible to inform them of changes in the patient's condition.

-Note- Any deviation from this guideline or from the transport protocols should be reported to the MPD on an incident report within 24 hours of occurrence.

## ***NON-TRANSPORT OF PATIENTS***

The EMT may be of the judgment that the patient need not be transported by ambulance, but unless the patient and/or custodian agrees with this judgment transport will be done. In general, the only reasons for a non-transport are:

- Signed "Refusal for Transport," completed by patient, family or custodian;
- No patient (DOA, termination of Code 99 effort, etc.).

### **I. Patients Refusing Care and/or Transport (classified as follows):**

- A. No medical need exists.
- B. A person with normal decision making capacity who, after having been informed of risks and benefits of treatment/transport, voluntarily declines further services.
- C. Any other person is assumed to require a medical screening evaluation and EMS personnel will use all resources available to have that person treated and transported.

### **II. Impaired Decision Making Capacity Defined**

- A. Inability to understand the nature of his/her illness/injury.
- B. Inability to understand risks or consequences of refusing care/transport.
- C. Individuals impaired by:
  1. Alcohol/drugs
  2. Psychiatric conditions
  3. Injuries (head injury, shock, etc.)
  4. OBS (Alzheimer's, developmental delays, etc.)
  5. Minors (<18 years old)
  6. Language/communication barrier (incl. deafness)

### **III. Criteria for Informed Refusal/Consent**

- A. Person is given accurate information about possible medical problems and the risk/benefits of treatment or refusal.
- B. Person is able to understand and verbalize these risks and benefits.
- C. Person is able to make a decision consistent with his/her beliefs and life goals.

## ***PREHOSPITAL GUIDELINES FOR PATIENTS REFUSING CARE***

Establish if medical need exists. If the patient is refusing or resisting care, determine if patient capable of making informed decision OR patient not capable (in EMT's opinion) of making informed decision.

### **I. Capable of making informed decision, no medical need exists:**

- A. A refusal form is not necessary.
- B. MIR documentation will include the events necessitating the call to EMS as well as all criteria for no patient/medical need.

- II. Capable of making informed decision, minor medical need exists:
  - A. A refusal form is necessary. Form and MIR must be completed by Paramedic attending patient.
  - B. MIR documentation shall include:
    - 1. The patient's chief complaint.
    - 2. Events prior/reason for call to EMS.
    - 3. Pertinent medical history.
    - 4. Description of scene (if relevant to patient's c/c).
    - 5. Physical exam including vital signs and clinical impression.
    - 7. Prehospital interventions.
    - 8. Consultation with Medical Control or patient's MD (PMD) as necessary.
    - 9. Patient's response to medical care and/or transport attempts.
    - 10. Instructions to patient and/or family including risks/benefits of treatment/transport.
  
- III. Capable of making informed decision, immediate medical care and/or ambulance transport necessary:
  - A. A refusal form is necessary. Form and MIR must be completed by Paramedic attending patient.
  - B. Every effort will be made to convince these patients to accept necessary prehospital intervention and transport to definitive care. Options available to the Paramedic include:
    - 1. Solicit assistance from family, friends, and/or other close associates to persuade the patient to accept necessary treatment and transport.
    - 2. Solicit assistance from law enforcement (police hold), mental health professional (psychiatric hold), and/or clergy as the situation directs.
  - C. CONSULTATION WITH MEDICAL CONTROL IS MANDATORY.
  - D. MIR documentation shall include:
    - 1. The patient's chief complaint.
    - 2. Events prior/reason for call to EMS.
    - 3. Pertinent medical history.
    - 4. Description of scene (if relevant to patient's c/c).
    - 5. Physical exam including vital signs.
    - 6. Clinical impression.
    - 7. Prehospital interventions.
    - 8. Consultation with Medical Control or PMD as necessary.
    - 9. Patient's response to medical care and/or transport attempts.
    - 10. Instructions to patient and/or family including risks/benefits of treatment/transport.
  - E. If the patient still refuses treatment/transport, the attending Paramedic will be responsible for explaining the CLARK COUNTY EMS REFUSAL INFORMATION FORM. Completion of the form includes:
    - 1. Explanation of instructions and release of liability to the patient.
    - 2. Receipt of signature (dated) from patient or legal guardian.
    - 3. Completion of patient assessment, Medical Control consult, and patient disposition sections.

- IV. Not capable of making informed decision, medical care and/or ambulance transport necessary:
- A. A refusal form is necessary. Form and MIR must be completed by Paramedic attending patient.
  - B. Every effort will be made to convince these patients to accept necessary prehospital intervention and transport to definitive care. Options available to the Paramedic include:
    - 1. Solicit assistance from family, friends, and/or other close associates to persuade the patient to accept necessary treatment and transport.
    - 2. Solicit assistance from law enforcement (police hold), mental health professional (See Psychiatric Disorders Section), and/or clergy as the situation directs.
    - 3. Consider physical and/or chemical restraint per Medical Control concurrence based on the patient's condition and current situation.Physical and/or chemical restraint can occur only when the Paramedic believes the patient poses a danger to him/herself or others.
  - C. CONSULT WITH MEDICAL CONTROL IS MANDATORY.
  - D. MIR documentation shall include:
    - 1. The patient's chief complaint.
    - 2. Events prior/reason for call to EMS.
    - 3. Pertinent medical history.
    - 4. Description of scene (if relevant to patient's c/c).
    - 5. Physical exam including vital signs.
    - 6. Clinical impression.
    - 7. Prehospital interventions.
    - 8. Consultation with Medical Control or PMD as necessary.
    - 9. Patient's response to medical care and/or transport attempts.
    - 10. Instructions to patient and/or family including risks/benefits of treatment/transport.
  - E. If the patient still refuses treatment/transport, the attending Paramedic will be responsible for explaining the CLARK COUNTY EMS REFUSAL INFORMATION FORM. Completion of the form includes:
    - 1. Explanation of instructions and release of liability to the patient.
    - 2. Receipt of signature (dated) from patient or legal guardian.
    - 3. Completion of patient assessment, Medical Control consult, and patient disposition sections.
  - F. Every reasonable effort should be made to ensure patients receive necessary medical treatment and transport. If the patient seems hesitant regarding their medical care/transportation or any doubt exists, you should provide care/transportation.
  - G. Should the above efforts prove fruitless, it may be necessary to leave these patients at the scene. Aforementioned documentation guidelines will be adhered to.
- V. Patient in Custody and/or Incident Involving Law Enforcement
- A. If patient competent, follow protocol outlined above regarding medical need. The patient will require a full medical exam, pertinent to the nature of the chief complaint and mechanism of injury. If the patient refuses care and/or transport a refusal form must be signed by the patient.
  - B. If patient in custody of police, under arrest and/or restrained by officers who are refusing transport, document refusal in MIR with signature of arresting police officer on refusal form.
  - C. All other patients will be transported to the hospital by ambulance. It is not appropriate to allow transport by police vehicle of a patient with obvious medical need.

***PRIVATE PHYSICIAN AND/OR MEDICAL PROFESSIONALS AT THE SCENE***

When the patient's private physician is in attendance and has identified himself/herself upon the arrival of the ALS team, the ALS team will comply with the private physician's instructions for the patient. Base hospital will be contacted for reporting and estimated time of arrival. If orders are given which are inconsistent with established protocols, clearance must be obtained through the Medical Control Physician.

**I. The Physician at the Scene:**

- A. May request to talk directly to the Medical Control Physician to offer advice and assistance;
- B. Can offer assistance to the ALS Team with another pair of eyes, hands, or suggestions, leaving the ALS team under Medical Control;
- C. May take total responsibility for the patient with the concurrence of the Medical Control Physician.

**II. Transport**

- A. If during transport, the patient's condition should warrant treatment other than that requested by the private physician, Medical Control will be contacted for information and concurrence with any treatment, except in cases of cardiopulmonary arrest.

-Note- The above protocol will also apply to cases where a physician may happen upon the scene of a medical emergency and interacts with the ALS team.

**III. Medical Professionals at the Scene**

- A. Medical professionals at the scene of an emergency may provide assistance to Paramedics and should be treated with professional courtesy. Medical professionals who offer their assistance must identify themselves. Physicians must provide proof of their identity, if they wish to assume or retain responsibility for the care given the patient after the arrival of the Paramedic unit.

***DO NOT RESUSCITATE ORDERS***

## I. Definitions:

- A. A DNR (DO NOT RESUSCITATE OR NO CODE) Order is an order issued by a physician directing that in the event the patient suffers a cardiopulmonary arrest (i.e., clinical death), cardiopulmonary resuscitation will not be administered. DNR orders are only valid when a patient is under the care of skilled nursing personnel.
- B. A Living Will is a legally executed document expressing the patient's wish to not undergo ALS resuscitation.
- C. Physician Orders for Life Sustaining Treatment (POLST): Legal document signed by patient and physician indicating patient preference for life sustaining treatment. Includes preference for resuscitation; replaces EMS No-CPR.
- D. EMS No-CPR Form: signed by the patient (or legal guardian) and personal physician allowing EMS providers to withhold resuscitation if the patient is apneic and pulseless. Replaced by POLST form.
- E. 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 cardiac medications.

## II. Procedures:

- A. When the patient's family, friends, or nursing home personnel state that the patient is not to be resuscitated:
  - 1. BLS protocols will be followed while attempts to determine if a written POLST form, EMS No-CPR, DNR order, or a Living Will is present.
  - 2. In the absence of the above, call Medical Control or the attending physician, if known by you and available.
  - 3. The EMT must document the POLST form, EMS No-CPR form, DNR order, or Living Will in the patient care report.
- B. No BLS or ALS procedures should be performed on a patient who is the subject of a confirmed POLST form, EMS No-CPR, DNR order, or has a Living Will and who is PULSELESS AND NONBREATHING.
- C. See ***DEATH IN THE FIELD*** Protocol for further information.

**BLOOD DRAWS**

I. Legal Alcohol Determination

- A. Blood for legal alcohol determination may be drawn at request of law enforcement as provided by RCW 46.61.520, RCW 46.61.502, and/or RCW 46.61.522, if the patient is: (1) unconscious or (2) is under arrest for the crime of vehicular homicide or vehicular assault or is under arrest for the crime of driving while under the influence of intoxicating liquor or drugs, which arrest results from an accident in which another person is injured and there is a reasonable likelihood that such other person may die as a result of injuries sustained in the accident. Document law enforcement request on attached form.

DIRECTION TO TAKE BLOOD TEST

The undersigned states that \_\_\_\_\_  
 is either (1) unconscious or (2) is under arrest for the crime of vehicular homicide as provided in RCW 46.61.520 or vehicular assault as provided in RCW 46.61.522, or that such person is under arrest for the crime of driving while under the influence of intoxicating liquor or drugs as provided in RCW 46.61.502, which arrest results from an accident in which another person has been injured and there is a reasonable likelihood that such other person may die as a result of injuries sustained in the accident. The undersigned directs Clark County EMS to administer a blood test without the consent of the individual so unconscious or so arrested.

DATE \_\_\_\_\_ OFFICER \_\_\_\_\_

## ***MEDICATION ADMINISTRATION GUIDELINES***

- I. Controlled Medications
  - A. Controlled medications are maintained at each agency utilizing approved protocols and security, to include lot number and vial number. Agency operating procedures for controlled medication ordering, receipt, storage and administration may be individualized but they must follow these general guidelines:
  - B. When a controlled substance is used, the Clark County Controlled Drug Proof of Use form (or other approved tracking system) will be completed by the Paramedic administering the medication and the agency officer authorized to replace the medication. Wastage will be documented in the same fashion.
    - 1. Each agency will maintain the Controlled Drug Proof of Use form as a permanent record.
  - \* C. Paramedics only are authorized to administer controlled drugs.
    - 1. **Fentanyl**
    - \*\*\* 2. **Versed - Versed used with Fentanyl for musculoskeletal pain may be given only with Medical Control concurrence.**
  - D. Ordering of controlled medications, (to be done ONLY by the authorized agency officer):
    - 1. The DEA order form (222) will be completed by the agency authorized officer and submitted to the MPD for signature.
    - 2. The MPD will retain a copy of the order form (222) and the authorized officer will submit the form to the vendor.
    - 3. A scanned copy will be provided to allow for quarterly audits with the controlled medication vendor.
  - E. Receipt and storage of controlled medications.
    - 1. Receipt of controlled medication from the vendor will be done by approved agency personnel and overseen by the authorized agency officer in charge of controlled medications.
    - 2. Storage and disbursement of controlled medications will include records of lot and vial numbers and amounts distributed to ALS personnel.
    - 3. Controlled medications will be stored under double lock.
  - F. Inventory of controlled medications will be monitored for security by no less than two authorized agency officers to ensure compliance with these guidelines.
  - G. All ALS agencies with controlled medications must have operating procedures on file with the MPD's office.
  - H. All agencies will monitor controlled medication utilization by each Paramedic on a quarterly basis. This data will be submitted to the MPD for review.
- II. Allergies to Medications
  - A. All medications are administered only after ascertaining the patient is not allergic to them.
- III. IV Fluids
  - A. Intravenous access is to be established on all ALS patients unless unable.
  - B. The purposes of IV access are:
    - 1. Fluid resuscitation.
    - 2. Administration of IV medications per protocol.
    - 3. The anticipation of need for the above.
  - C. IV fluid of choice is a balanced salt solution (BSS). If fluid is not needed for resuscitation, this will be TKO or a saline lock.

## IV. Blood Products

- A. Blood may be administered en route, during interfacility transfer to unstable patients who are actively bleeding or in shock
  - 1. Blood will be provided by transferring facility and be administered via large bore IV blood tubing.
  - 2. Stop infusion if patient develops signs of allergic reaction and treat pt. accordingly.

## V. Intraosseous (IO) Access

## A. Indications

- 1. Attempts at peripheral sites unsuccessful (after ~1 minute), patient obtunded and requiring vascular access, i.e., trauma resuscitation, code 99.
- 2. Intravascular access necessary to administer fluids and/or medications and other peripheral IV sites unavailable.
- 3. Documentation of training for use with specific device must be provided to MPD prior to authorization for use.

## B. Insertion

- 1. Anterior proximal tibia, distal tibia and/or adult humeral head (EZ IO)

C. If patient not obtunded and c/o pain at insertion site, infuse 2ml of 2% **Lidocaine** (40 mg). May repeat prn for localized pain. *1mg/kg Peds, max 40mg*

## D. IO devices must be preapproved by the MPD prior to use.

**CLARK COUNTY PREHOSPITAL MEDICATION LIST**

MEDICATION	DOSE	INDICATION
Acetaminophen Suppositories	<i>Peds 20mg/kg</i>	- Fever >103°F
Activated Charcoal	50gm PO <i>Peds 1-2g/kg</i>	- Ingestion
Adenocard (Adenosine)	6 mg, 12mg x 2 prn <i>Peds 0.1 mg/kg, 0.2 mg/kg. Max peds single dose 12 mg</i>	- PSVT (dose 12, 12, 18 if pt. on theophylline; ½ normal dose if hx of heart transplant, Persantine, or Tegretol)
Albuterol (Proventil)	2.5mg/3cc Nebulized <i>Peds &lt;15kg 2.5-5mg/3cc &gt;15kg 5-10mg/3cc</i>	- Bronchospasm/wheezing due to asthma, COPD, anaphylaxis, inhalation, OD, PE, near drowning -Hyperkalemia
Amiodarone (Cordarone)	a) 300mg IV/IO may repeat 150 mg in 3-5 min. b) 150 mg over 10 min x 2 prn <i>Peds 5mg/kg bolus</i>	a) VF/pulseless VT b) VT/WCT
Atropine	a) 0.5mg max 3 mg b) 1-2mg q 5 min. <i>Peds 0.02mg/kg</i>	a) Bradycardia/RSI b) Organophosphate poisoning
Atrovent (Ipratropium Bromide)	500mcg/2.5ml Nebulized <i>Peds &lt;5 yo ½ adult dose</i>	- Bronchospasm/wheezing due to asthma, COPD, anaphylaxis, inhalation, OD, PE, near drowning
Calcium Chloride	a) 500mg b) 250-500mg <i>Peds 20mg/kg</i>	a) Hyperkalemia b) Calcium channel blocker OD
Dextrose D10 D50 <i>alternative</i>	10gm (100ml) repeat 5gm prn to normal BGL max 25gm <i>Peds 0.1gm/kg</i> 25 gm	- ALOC, Hyperkalemia - Hypoglycemia
Diltiazem (Cardizem)	0.25 mg/kg over 2min repeat 0.35 mg/kg (maximum 20-25mg) if successful drip 10 mg/hr	Afib, Aflutter with rapid ventricular response PSVT refractory to Adenosine
Diphenhydramine (Benadryl)	12.5-25mg <i>Peds 1mg/kg</i>	- Allergic reaction, Anaphylaxis - Dystonic reaction
Dopamine	2-10mcg/kg/min	- Shock, non-hypovolemic

Droperidol (Inapsine)	0.625-2.5 mg IV, IM <i>Peds 0.1mg/kg</i>	Sedation/chemical restraint
Epinephrine	a) 1mg q 3-5 min. <i>Peds 0.01mg/kg</i> b) 0.3mg IM, SL <i>Peds 0.01mg/kg</i> OR 0.1mg IV bolus q 3 mins prn max 0.5mg <i>Peds 0.01cc/kg</i> c) 2-10mcg/min IV infusion <i>Peds 0.1mcg/kg/min</i>	a) Cardiac Arrest b) Anaphylaxis c) Hypotension/profound bradycardia
Etomidate	0.3 mg/kg max 20 mg	Sedation prior to RSI
Fentanyl	25-50 mcg IV, IO, IM, IN max 3 mcg/kg (no more than 200 mcg/hr) <i>Peds 1-2 mcg/kg</i>	- Chest pain - Musculoskeletal pain
Furosemide (Lasix)	20-40mg <i>Peds 1mg/kg</i>	- CHF/ PE - Hypertensive crisis
Glucagon	a) 1mg SC, IM <i>Peds 0.5mg</i> b) 5 mg, IV <i>Peds 0.1 mg/kg</i>	a) Hypoglycemia b) Beta Blocker, Calcium Channel Blocker overdose
Ketamine	a) 2 mg/kg max 200 mg b) 0.5mg/kg	Sedation prior to RSI Sedation for CPAP
Lidocaine	1-1.5 mg/kg repeat 0.5-0.75 mg/kg prn to 3mg/kg max <i>Peds 1mg/kg</i>	VF, VT, WCT RSI w/ reactive airway disease
Magnesium Sulfate	a) 2gm over 5-10 mins b) 2gm over 5-10 min c) 2gm over 4-5 min d) 2gm over 5-20 min e) 2gm over 5-10 min <i>Peds 25-50 mg/kg</i>	a) Torsades VT b) PVC's, TCA OD c) WCT, status asthmaticus d) ETOH Seizure e) Eclamptic Seizure
Methylprednisolone (Solumedrol)	125mg IV <i>Peds 2 mg/kg</i>	- Asthma - Anaphylaxis
Midazolam (Versed)	2.5-10mg IV, Deep IM <i>Peds 0.1-0.2 mg/kg IV, Deep IM</i>	- Seizures - Sedation (RSI, pacing, cardioversion) - Cocaine, meth, MDMA, hyperadrenergic toxicity - Chemical restraint

Naloxone (Narcan)	0.4-2mgx2 prn IV, IM, IN, SL, IO <i>Peds If &gt;5yrs (or &gt;20kg)</i> 0.1mg/kg 0.5 mg prn (max as above)	- Narcotic OD w/ respiratory depression - ALOC w/o respiratory depression
Nitroglycerine	0.4mg (spray) SL 0.4mg (tablet) SL	- Chest pain - CHF/PE - Hypertensive crisis
Racemic Epinephrine	<i>Peds 0.5cc if child 20-40kg</i> <i>0.25cc if child &lt;20kg</i> Mix in 5cc NS via Med Neb	- Croup/Epiglottitis
Sodium Bicarbonate	a) 1mEq/kg (add 1amp to IV bag in TCA OD) b) 50mEq/50cc	a) Cardiac arrest, VF in hypothermia, TCA OD, near drowning. b) Hyperkalemia
Sodium Thiosulfate	50 ml 25% solution IV over 10 mins. <i>Peds - 1.65 mL/kg IV/IO infused over 10 to 20 minutes.</i>	Cyanide Poisoning
Succinylcholine	1.5mg/kg x 2 prn max single dose 200mg	- Facilitate intubation
Vecuronium (Norcuron)	0.1mg/kg	- Long Term Paralytic After confirmed intubation
Verapamil	5 mg may repeat q 15min max 30 mg	- NARROW complex supra ventricular rhythms
Zofran (Ondansetron)	4 mg <i>Peds &gt;2 years (20kg) 0.1 mg/kg do not exceed adult dose</i>	- Nausea/Vomiting - Prevent N/V with Fentanyl administration

***PREHOSPITAL EXPOSURE AND INFECTIOUS DISEASE CONTROL***

- I. Known or Suspected Exposure
  - A. If exposure occurs, follow agency SOP for notification of agency administrators.
    - 1. DO NOT WAIT TO REPORT. Should be done within 30 minutes of exposure or as soon as possible after patient delivery.
  - B. Upon hospital arrival with patient, notify ED charge nurse of potential exposure to communicable disease. In addition, inform the charge nurse of all other prehospital personnel who made patient contact (includes fire, police, etc.). The nurse will document this information in the "Prehospital Exposure Log." If you work for a non-transporting agency, contact administrative personnel as per your agency SOP.
    - 1. If communicable disease suspected, all personnel in contact with the patient will be documented on the prehospital exposure log and be contacted (or their agency contact person) upon confirmation of communicable disease.
    - 2. If communicable disease confirmed, all personnel documented on the prehospital exposure log (or their agency contact person) will be contacted by the charge RN or his/her designate.
  - C. Treatment/prophylaxis will be provided as per "Guidelines for Prophylaxis of Occupational Exposure to Common Infectious Diseases."
    - 1. If indicated, prehospital personnel will be required to sign in to FasTrack and complete workers compensation form.
- II. Unknown Exposure
  - A. Prehospital personnel (or their designated agency representative) will be contacted by the charge nurse upon confirmation of communicable disease.
  - B. All prehospital personnel will be documented on the "Prehospital Exposure Log."
  - C. Treatment/prophylaxis will be provided as per "Guidelines for Prophylaxis of Occupational Exposure to Common Infectious Diseases."
    - 1. If indicated, prehospital personnel will be required to sign in to FasTrack and complete workers compensation form.
- III. Exposure Defined
  - A. Exposure(s) of any bodily fluids into body openings, mucous membranes or cuts/wounds. Exposures typically occur through dirty needle sticks or splash-like mechanisms.
- IV. Flu Vaccination
  - A. During flu season per declaration by Clark County Public Health, the following procedure will be applied:
    - 1. Prehospital personnel receiving flu vaccine will follow standard infectious disease prevention during patient encounters.
    - 2. Personnel who are NOT vaccinated will follow standard infectious disease prevention during patient encounters including wearing a mask for ANY patient contact.
- V. Standard Infectious Disease Prevention
  - A. Gloves, eye protection and masks when contamination with body fluids or aerosol droplets is possible including response to ANY sick person at a care facility.

***ABANDONED NEWBORNS***

## I. Introduction:

- A. Senate Bill 5236 allows for the relinquishment of newborn children at hospitals or fire stations. The key provisions of this law include:
  - 1. Protecting parental anonymity
  - 2. Gathering the medical history of the parents and child
  - 3. Providing referral information to the parent about adoption options, counseling, medical and emotional aftercare services, domestic violence, and the legal rights of the transferring parent
  - 4. Notifying and releasing the newborn to child protective services (CPS).
    - a. SB 5236 defines newborn as less than 6 days old.

## II. Procedure:

- A. If delivery has not occurred and appears imminent follow Emergency Delivery protocol. Provide appropriate care to mother per protocol. Follow agency SOP.
- B. If EMS is presented with a newborn and child in extremis:
  - 1. Follow ***NEWBORN RESUSCITATION*** or ***MANAGEMENT OF THE SEVERELY ILL OR INJURED CHILD*** protocol.
- C. Patient not in immediate need for medical care:
  - 1. Ascertain child's medical history as appropriate:
    - a. History of birth including complications, date, time, etc.
    - b. Known congenital anomalies
  - 2. Paternal/Maternal medical history
    - a. Prenatal care
    - b. Drug use during pregnancy
    - c. Other factors influencing child's health
- D. Transport to PHSW or LSC.
  - 1. Notify staff en route of need for CPS referral.

## III. Circumstance:

- A. Maintaining parent confidentiality is paramount. Ascertain as much history as appropriate while providing a non-judgmental environment.
- B. Provide the following referral information to the parent(s) as time allows (patient care is the priority).
  - 1. Medical and emotional aftercare (i.e., TIP, Chaplaincy, etc.)
  - 2. CPS

## ***PREHOSPITAL RESEARCH***

### I. Introduction

- A. Prehospital research will be regularly conducted in Clark County. This may involve retrospective and concurrent data extrapolation from CAD and patient care documentation and will not influence current patient care protocols or clinical practice. However, some prospective projects will require modification of protocols and procedures and require prehospital personnel to become informed of the alterations in practice prior to study involvement. In the event of a prospective prehospital study the following guidelines should be used:
  - 1. All agencies affected by the project will enter into an agreement to participate.
  - 2. All involved personnel must attend necessary didactic and clinical skills training sessions pertaining to the research project, as per guidelines set forth by the MPD and the research team.

### II. Alterations in Patient Care Protocols/Procedures

- A. Alterations in patient care protocols/procedures, i.e., institution of new procedures/medications, change in destination procedures, addition of new devices, etc. will be followed as per guidelines set forth in the education programs.
- B. These alterations will be adhered to and supersede current protocols during the time of the study.
- C. When feasible and length of research project warrants, modified guidelines will be provided to participating personnel in the form of addenda to these protocols.

### III. Time Stamp for Protocols And Procedures

- A. Consistent and synchronized documentation of treatment and intervention time is paramount to the success of a research project. Time documentation will be done using the cardiac monitor/defibrillator, where applicable, or CAD supported time stamp.
- B. Any device used for documentation of treatment/intervention time will be synchronized with CRESA daily.

### IV. Upload of Cardiac Monitor/CPR Process Files

- A. If applicable to a study, electronic cardiac monitor and/or CPR process files will be acquired and submitted in accordance with EMS agency policy, software, and cardiac monitoring equipment.

***ALS ASSIST PROTOCOL***

- I. EMT Assistance with ALS Procedures
  - A. Properly trained EMTs are allowed to assist Paramedics with performance of the following procedures while on scene:
    - 1. Placement of 12 Lead ECG monitoring electrodes
      - a. EMT may notify responding Paramedic of 12 lead interpretation (NCEMS, FD 13, & FD 10 ONLY)
    - 2. Insertion of drip tubing into fluid resuscitation bags
    - 3. Performance of blood glucose determination via finger stick
    - 4. King Airway/IGel (NCEMS, FD 13, & FD 10 ONLY)
  - B. These procedures may be performed by EMTs after approved training has occurred and only under the direct supervision of and/or consultation with a Paramedic.

## **SECTION B CARDIAC**

### ***CPR/DEATH IN THE FIELD (DIF) PROTOCOL***

- I. Continuous CPR Defined
  - A. 100 compressions per minute for two minute cycles
    1. Minimize interruptions off chest for analysis and changing rescuers
    2. Ensure adequate depth of compressions and full chest recoil
    3. Interpose ventilations, do not interrupt compressions
    4. Ensure LP 12 in "paddles" mode for proper CPR process recording
- II. EMTs may withhold resuscitation of patients only if:
  - A. POLST, EMS-No CPR or Living Will:
    1. The patient is in a skilled nursing facility and there is a DNR order signed by a physician.
    2. Or there is an EMS-No CPR bracelet intact and not defaced or the original EMS-No CPR form is present.
    3. There is a POLST form present (Photocopies are authorized per WSMA).
    - \*\*\* 4. There is a signed and notarized Living Will present, and consultation has occurred with Medical Control.
  - B. There is an obvious sign of death, e.g., rigor mortis, decomposition, decapitation, dependent lividity, evisceration of heart or brain, or incineration.
  - C. The patient is a pulseless, apneic victim of a multiple casualty incident where resources of the EMS system are required for stabilization of other patients.
  - D. In addition to the conditions listed under withholding resuscitative efforts, a victim of trauma should be determined dead and should not be transported if:
    1. The patient is a victim of blunt trauma or penetrating trauma to the head and has no vital signs in the field (pulseless, apneic, fixed and dilated pupils).
    2. In instances prior to transport and where scene time combined with transport time will exceed six minutes, and the patient declines to the point that no vital signs (i.e., pulse/respiration) are present, the patient should be declared DIF unless the Paramedic elects to resuscitate the patient.
    3. In traumatic deaths, a cardiac monitor should not be used in initial assessment of the patient unless the Paramedic doubts death has occurred. If the monitor is used, only a recognizable QRS of at least eighty (80) per minute should be considered compatible with life in these trauma patients.

-Note- In all other cases, resuscitation should begin immediately by the first on-scene EMS personnel and advanced life support carried out per County protocols.

## III. Death in The Field

- A. The victim of a medical (non-traumatic) arrest should be determined to be dead in the field (DIF) and should not be transported if:
  - \* 1. The patient's ECG shows asystole or agonal rhythm upon initial monitoring and the patient has not responded to the initial cycle of advanced cardiac life support for asystole (see protocol). This patient may be determined to be dead in the field after consultation with Medical Control.
  - \*\*\* 2. The patient's ECG shows asystole or agonal rhythm upon initial monitoring and who in the Paramedic's best judgment is not resuscitable (ET CO<sub>2</sub> ≤ 9 ) . This patient may be determined to be dead in the field after consultation with Medical Control or the patient's physician.
  - \* 3. Full ACLS resuscitative efforts have been instituted and the patient's EtCO<sub>2</sub> remains at ≤ 9 mm/Hg.
  - \*\*\* 4. Patients found in Pulseless Electrical Activity (PEA) who have not responded to appropriate advanced cardiac life support measures for PEA (ET CO<sub>2</sub> < 9 ) may be determined to be dead in the field only after consultation with Medical Control or the patient's physician.
  - \*\*\* 5. The patient who has been shown to be unresponsive to appropriate and prolonged advanced cardiac resuscitative measures and who will require continuous CPR during transport may be determined to be dead in the field by the Paramedic in charge after consultation with Medical Control.

## IV. Documentation:

- A. All patient encounters will be recorded on a MIR with time and procedures documented.
- B. All non-resuscitation and termination of resuscitation will have an ECG strip documenting cardiac rhythm with time and date recorded on the strip. (Exception: traumatic arrest and/or obvious death as noted above).
- C. All conversation with Medical Control to be documented, to include time, physician's name, nurse's name, and instructions.
- D. Law Enforcement will be notified by the PIC on all cases of DIF. Clark County Medical Examiner must be contacted prior to Paramedic leaving the scene.

## V. Precautions:

- A. All hypothermic patients, possible drug overdose, victims of electrocution, lightning, and drowning should have resuscitative efforts begun.
- B. Consider the needs of survivors when discontinuing a code.
- \*\*\* C. If any doubt exists about the resuscitation of a patient, consult Medical Control.

***EMS-NO CPR AND POLST FORM***

- I. The responding EMS providers should perform routine patient assessment and resuscitation or interventions until they confirm the EMS-No CPR/POLST status in one of the following ways:
  - A. Determine the EMS-No CPR bracelet is intact and not defaced. The bracelet will be located on either wrist, either ankle, or on a necklace or neck chain;  
OR that the original EMS-No CPR form is present OR that a POLST form or wallet card is present. Use of the original POLST is strongly encouraged; photocopies/faxes ARE legal and valid.
  - B. If no bracelet is located, look for the original EMS-No CPR or POLST form at the bedside, on the back of the bedroom door, or on the refrigerator. In extended or intermediate care facilities, look for the form with the patient's chart.
  - C. If bracelet is not attached, or if it has been defaced and no valid EMS-No CPR form is located, the EMS-No CPR bracelet must be considered invalid.
- II. When the patient is determined to be "obviously dead," resuscitation measures shall not be initiated. The "obviously dead" are victims who, in addition to absence of respiration and cardiac activity, have suffered one or more of the following: decapitation, rigor mortis, evisceration of heart or brain, decomposition, incineration.
- III. After confirming that the patient has a valid EMS-No CPR or POLST form, the EMS provider should carry out these standard orders:
  - A. POLST
    1. Provide resuscitation based on patient's wishes identified on the form
    2. Provide medical interventions identified on the form
    3. Always provide comfort care
  - B. EMS-No CPR
    1. Do not begin resuscitation measures
    2. Provide comfort care
    3. Contact patient's physician or Medical Control with questions or problems
  - C. Other DNR Orders
    1. Follow specific orders in the DNR based on your certification level and communications with Medical Control
- IV. If resuscitative efforts have been started before learning of a valid EMS-No CPR or POLST order, then the EMS provider should STOP these treatment measures:
  - A. Basic CPR
  - B. Intubation (leave the endotracheal tube in place, but stop any positive pressure ventilations)
  - C. Cardiac monitoring and defibrillation
  - D. Administration of resuscitation medications
  - E. Any positive pressure ventilation (through bag valve masks, pocket face masks, endotracheal tubes)
- V. Revoking the valid DNR order. The following people can inform the EMS system that the EMS-No CPR form has been revoked:
  - A. The patient (by destroying the form and bracelet, by drawing a diagonal line or the word VOID across the form, or by verbally withdrawing the directive/form)
  - B. The attending Physician
  - C. The legal surrogate for the patient expressing the patient's revocation of the directive

Note: The patient's wishes in regard to resuscitation should always be respected. Sometimes, however, the family may vigorously and persistently insist on CPR even if a valid DNR directive/order exists. In such circumstances, initiate resuscitation efforts until relieved by Paramedics (for First Responders and EMTs). Advanced life support personnel should continue treatment and consult Medical Control.

#### VI. Documentation

- A. Complete the Medical Incident Report (MIR) form approved by your Medical Program Director.
- B. State in writing at the upper left hand corner of the narrative summary: "Patient identified as DNR by POLST, EMS-No CPR, or other directive."
- C. Record the name of the patient's attending Physician, and state whether you contacted the attending Physician.
- D. Record the reason why the EMS system was activated.
- E. Comfort the family and bystanders when patients have expired.
- F. Follow your local Medical Program Director's protocols for patients who have expired. Actions may include contact of the local coroner's office, the local law enforcement agency, the local chaplain service, or funeral home. The MIR form must still be completed.

#### VII. Comfort Care Measures

- A. Comfort care measures for the dying patient may include:
  - 1. Manually open the airway (do not provide positive pressure ventilation with a bag valve mask, pocket mask or endotracheal tube)
  - 2. Clear the airway (including stoma) of secretions with appropriate suction.
  - 3. Provide oxygen via nasal cannula at 2-4lpm
  - 4. Place patient in position of comfort
  - 5. Splint and control bleeding as necessary
  - 6. Treat pain as per protocol
  - 7. Provide emotional support to patient and family

**REMEMBER:**

No CPR does not mean no treatment or no caring. Providing comfort care measures is an important responsibility and service you provide to terminally ill patients and their families at a crucial moment in their lives. Once a death has occurred, the family and relatives become your patients.

## ***VENTRICULAR FIBRILLATION AND PULSELESS VENTRICULAR TACHYCARDIA***

### I. Initial Intervention

- A. Identify absence of pulse and respirations.
- B. Continuous CPR; for 2 minutes if unwitnessed arrest.
- C. Defibrillate  
 Witnessed Arrest:
  1. EKG or paddles for "Quick Look." Determine V fib or V tach.
  2. Defibrillate 200 J. Escalate energy dose to 300J then 360J as appropriate for subsequent defibrillations. *Children 2 J/kg first shock; 4 J/kg subsequent.*
 Unwitnessed Arrest:
  1. 2 minutes of Continuous CPR then defibrillate as per above
- \* D. IV balanced salt solution, TKO. ET Tube, 100% O<sub>2</sub>

### II. ALPS Study

- A. Inclusion: Non-traumatic cardiac arrest with persistent VF following one or more defibrillatory shocks, in which vascular access (IV/IO) is obtained.
- B. Exclusion: Known pregnancy, children under 18 years of age, prisoners, patients with known allergy or hypersensitivity to amiodarone or lidocaine, patients with DNR orders or a "No Study" bracelet, open label amiodarone or lidocaine use in field.
  1. If Exclusion Criteria apply, follow standard VF/VT protocol outlined below
- C. If ALPS vial broken or damaged, stop administration and follow standard VF/VT protocol below

### III. Drug Therapy - *(With each drug, CPR for 2 minutes then analyze/defibrillate prn).*

- Continuous Compression CPR shall be maintained until ROSC or termination of code.
- Drug selection and administration will be based on the last "analyzed" rhythm.
- DO NOT pause compressions to confirm rhythm unless patient becomes responsive.

- \* A. **Epinephrine**; 1.0 mg IV or IO (Repeat every 3-5 minutes prn). *Children 0.01mg/kg initial and subsequent doses*  
 - 2 min. CPR – Analyze/defibrillate prn.
- \* B. If VF persists:
  1. If pt. more than 45 kg, **ALPS Syringes #1A & #1B** IV/IO.
  2. If pt. less than 45 kg **give only ALPS Syringe #1A** IV/IO
 - 2 min. CPR – Analyze/defibrillate prn.
- \* C. If VF persists: **Epinephrine** as above  
 - 2 min. CPR – Analyze/defibrillate prn.
- \* D. If VF persists:
  1. If pt. more than 45 kg, **ALPS Syringes #2** IV/IO
  2. If pt. less than 45 kg, **ALPS syringe #1B** IV/IO
 - 2 min. CPR – Analyze/defibrillate prn.
- \* E. If VF persists: **Epinephrine** as above  
 - 2 min. CPR – Analyze/defibrillate prn.
- \* F. Continue CPR/Analyze/defibrillate/**Epi** 3-5 mins until ROSC or DIF criteria apply.

- \* G. If multifocal WCT (Torsades), Magnesium deficiency suspected, or all ALPS syringes used and VF persists: **Magnesium Sulfate** 2 grams bolus IV (dilute in 50cc BSS wide open)  
*Children 25-50 mg/kg*
  - H. If ROSC, maintain O2 sat of 94-96%, EtCO2 of 30-40 and monitor waveform.
    - 1. Induced hypothermia per protocol
- IV. If ALPS Enrollment:
- A. Notify ROC via the toll-free number, as soon as feasible, that a patient was enrolled (both fire first responders and transport agencies shall call).
  - B. On arrival at the hospital, the emergency department MUST be provided with a copy of the ALPS Hospital Notification form. A barcode label from the ALPS kit must be affixed to the form.
  - C. PCR: In addition to the usual information documented for a cardiac arrest, include:
    - 1. ALPS syringe number and time each was administered.
    - 2. Shock number that followed each administration of the ALPS drug.
    - 3. Drug kit number (barcode) from the ALPS kit that was used.
    - 4. The "CPR process" file from the cardiac monitor(s) used in the case MUST be uploaded and attached to the patient care record in accordance with your agency's usual procedure.
- V. Standard Therapy if ALPS Exclusion Criteria Met:
- A. Initial intervention as above. Follow ROSC protocol above prn.
  - B. Drug Therapy - *(With each drug, CPR for 2 minutes then analyze/defibrillate prn)*.
    - \* 1. **Epinephrine**; 1.0 mg IV or IO. (Repeat every 3-5 minutes prn) *Children 0.01 mg/kg initial and subsequent doses*
    - \* 2. If VF/Pulseless VT persists:
      - a). **Amiodarone** 300 mg IV or IO. Repeat 150 mg IV or IO in 3-5 mins prn  
*Children 5 mg/kg*
      - b). If Amiodarone contraindicated, **Lidocaine** 1.5 mg/kg IV/IO bolus, repeat 0.75 mg/kg bolus in 3-5 minutes prn max 3 mg/kg. *Children 1 mg/kg*
      - c). If multifocal WCT (Torsades) or Magnesium deficiency suspected, **Magnesium Sulfate** 2 grams bolus IV (dilute in 50cc D5W wide open)  
*Children 25-50 mg/kg*

***ASYSTOLE PROTOCOL***

## I. Initial Intervention

- A. Identify absence of pulse and respirations.
- \* B. Continuous CPR for 2 mins:
  - \* 1. Apply EKG Leads. Determine asystole in two leads.
  - \* 2. IV TKO with balanced salt solution
  - \* 3. ET tube, 100% O<sub>2</sub>. Capnography throughout

## II. Electrical Therapy

- \* A. Consider immediate transcutaneous pacemaker if:
  - 1. Perfusing bradycardia converting to asystole during resuscitation
  - 2. Asystole due to Adenocard administration

## III. Drug Therapy

- \* A. Initial drug  
**Epinephrine** 1.0 mg IV or IO. Repeat every 3-5 minutes prn *Children 0.01 mg/kg initial and subsequent doses*
- \* B. If rhythm is restored, follow appropriate protocols e.g., fibrillation, bradycardia, hypotension, etc. If asystole persists, consider termination of efforts.
- C. Continuously monitor effectiveness of CPR and oxygenation. Avoid hyperoxygenation, maintain O<sub>2</sub> sat of 94-96% if ROSC.

-Note-

Consider possible causes and treat per protocol: hypoxia, acidosis, hypothermia, hyperkalemia, drug overdose, hypokalemia, hypovolemia, tamponade, tension pneumothorax, pulmonary embolism, massive acute myocardial infarction.

***PULSELESS ELECTRICAL ACTIVITY***

## I. Initial Intervention

- A. Identify absence of pulse and respirations.
- \* B. Continuous CPR for 2 mins.
- \* C. EKG paddles or leads. Determine presence of PEA (electrical rhythm without pulses).
- D. Consider causes:
  - \* 1. Hypovolemia (volume infusion)
  - 2. Cardiac Tamponade
  - \*\*\* 3. Tension Pneumothorax (needle decompression)
  - 4. Hypoxia (ventilate)
  - 5. Drug Overdose (tricyclic, betablocker, calcium channel blocker, digitalis)
  - \* 6. Hyperkalemia (NaHCO<sub>3</sub>, CaCl<sub>2</sub>, D50, insulin)
  - \* 7. Acidosis (ventilate, NaHCO<sub>3</sub>)
  - \* 8. Massive Acute Myocardial Infarction (pressor agents)
  - 9. Massive Pulmonary Embolus
  - 10. Hypothermia
- \* E. Continue CPR for 2 mins
  - \* 1. IV; volume challenge with 300-500 cc. balanced salt solution
  - \* 2. ET tube, 100% O<sub>2</sub>. Capnography throughout

## II. Drug Therapy

- \* A. Initial drug (adults only)  
**Epinephrine** 1.0 mg IV or IO. Repeat every 3-5 minutes prn *Children 0.01 mg/kg initial and subsequent doses*
- \* B. If witnessed event, consider Transcutaneous Pacemaker if bradycardia
- \* C. Continuously monitor effectiveness of CPR and oxygenation. Avoid hyperoxygenation, maintain O<sub>2</sub> sat of 94-96% if ROSC

**DYSRHYTHMIAS**

## I. Initial Interventions

- A. Primary Survey, O2 and CPR, as needed.
- \* B. Apply EKG, IV TKO with balanced salt solution. ET tube, prn

## II Tachydysrhythmias

- A. Ventricular Tachycardia - (stable) with adequate perfusion.
  - 1. O2 High flow.\* IV
  - 2. 12 Lead prn (prior to and after treatment/conversion)
  - \* 3. **Amiodarone** 150 mg over 10 mins Repeat 150 mg after 10 mins if VT recurs
  - \* 4. IF VT persists, cardiovert as in unstable VT.
  - \* 5. If VT refractory, or Torsades or TCA OD, **Magnesium Sulfate** 2 gm IV slow (5-20 min. dilute in 50-100 cc BSS).
- B. Ventricular Tachycardia - (unstable- hypotension, CHF, chest pain, SOB)
  - 1. O2 high flow.
  - \* 2. IV
  - \* 3. **Versed** 2.5-5 mg IV as needed.
  - \* 4. Synch cardiovert 100, 200, 300, 360j (monophasic), OR 100, 150, 200, 200 j (biphasic) *Children 0.5 j/kg, 1 j/kg prn*
  - \* 5. If recurrent VT or persistent:
    - Amiodarone**, per protocol above
    - OR
    - Magnesium Sulfate**, per protocol above
- C. Wide-Complex Tachycardia (WCT) of uncertain type (thought to be supraventricular)
  - 1. STABLE and Monomorphic
    - a) O2 high flow, \*IV .
    - b) 12 Lead prn (prior to and after treatment/conversion)
    - c) **Adenocard** 6mg repeat 12mg x 2 prn rapid IV bolus.
    - \* d) If WCT rhythm persists, cardiovert as needed as if unstable.
  - \* 2. UNSTABLE (see definition above)
    - a) Cardiovert as per unstable VT
- D. Supraventricular (Narrow Complex) Tachycardia
  - 1. SINUS TACHYCARDIA:
    - a) consider cause (e.g., hypovolemia, etc.).
    - b) treat shock.
  - 2. ATRIAL FIB/FLUTTER – NO HYPOTENSION w/ rapid ventricular rate:
    - \* a) IV; 12 Lead as in above stable rhythms.
    - b) **Diltiazem** 0.25 mg/kg (maximum 20 mg) given slow over 2 mins. Avoid in pt. taking B-blockers. **CONTRAINDICATED** in pt. w/ known WPW. after 15 mins. may repeat at 0.35 mg/kg (maximum 25 mg).
    - c) after 15 mins. may repeat at 0.35 mg/kg (maximum 25 mg).
    - d) If conversion, 10 mg/hr drip.
    - e) **ALTERNATIVE: Verapamil** 5 mg IV slow over 2mins. (3 min. in >55 yo) May repeat 5 mg every 15 min prn to max of 30 mg.  
\* Caution: use only with narrow-complex SVT or supraventricular dysrhythmias; NO WIDE-COMPLEX TACHYCARDIAS. Do not use if pt. on oral B-blockers.
    - f) If hypotension after administration, fluids prn and **Calcium** 250 mg.
  - 3. ATRIAL FIBRILLATION/FLUTTER - unstable with rapid ventricular rate:
    - \* a) Cardiovert synchronized at 100,200,300,360 J. monophasic; 100,150,200,200 j. biphasic *Peds 0.5 j/kg, 1 j/kg prn* (**Versed** sedation as needed).

- D. Supraventricular Tachycardia (cont.)
4. PSVT, nodal tachycardia, PAT etc.
    - \* a) If stable, attempt vagal maneuvers:
      - Cough, valsalva
      - Carotid sinus massage: Establish bilateral carotid, no bruits; do right CSM, wait 1 minute; do left CSM if right unsuccessful.
    - \* b) If PSVT persists: **Adenocard**
      - Contraindication: 2<sup>o</sup> block/3<sup>o</sup> block, allergy, KNOWN WPW.
      - Caution: asthma, pregnancy, and pt. on Tegretol/Dipyridamole
      - Ineffective in A-fib/A-flutter
    - \* c) If PSVT persists: stable, i.e., NO hypotension w/ rapid ventricular rate: **Diltiazem** 0.25 mg/kg (maximum 20 mg) given slow over 2 mins. Avoid in patients taking B-blockers. After 15 mins. may repeat at 0.35 mg/kg (maximum 25 mg) **CONTRAINDICATED** in pt. w/ known WPW
      - If conversion, 10 mg/hr drip
      - **ALTERNATIVE: Verapamil** 5 mg IV slow over 2mins. (3 min. in >55 yo) May repeat 5 mg every 15 min prn to max of 30 mg.
      - \* Caution: use only with narrow-complex SVT or supraventricular dysrhythmias; NO WIDE-COMPLEX TACHYCARDIAS. Do not use if pt. on oral B-blockers.
      - If hypotension after administration administer fluids as appropriate and **Calcium** 250 mg
    - \* d) If hypotensive, fluid challenge 200-300 cc balanced salt.
      - Contraindication: pulmonary edema
    - \* e) If Unstable:
      - Synchronized cardioversion at 100, 200, 300, 360 J. monophasic; 50,100,150,200 biphasic *Children 0.5 j/kg, 1 j/kg prn*
      - **Versed** sedation, as needed

### III. Bradydysrhythmias (Sinus, A-V, Nodal, Idioventricular)

- A. No treatment needed if no serious signs or symptoms.
- B. If 2 or more serious signs or symptoms, (chest pain, dyspnea, decreased LOC, low BP, shock, APE/CHF, acute MI, PVCs, etc.):
  - \* 1. External Pacemaker
    - a) Primary initial treatment for high degree heart block (3<sup>rd</sup> degree and 2<sup>nd</sup> degree type II) and STEMI
    - b) Do not delay transcutaneous pacer while awaiting IV access or for Atropine to take effect.
  - \* 2. **Atropine** 0.5 mg IV, repeat every 2-5 minutes as needed (max 3 mg) to maintain rate 60/min.; discontinue Atropine if chest pain increases.
  - \* 3. **Epinephrine** 2-10 ug/min (1 mg/250cc D5W = 4 ug/cc); titrate for rate and BP.
  - \* 4. **Dopamine** 2-10 ug/kg/min for BP

**CONGESTIVE HEART FAILURE/PULMONARY EDEMA**

## I. Initial Interventions

- A. Primary Survey (rales and crackles).
- B. Sit patient up if possible; dangle legs.
- C. O<sub>2</sub>, high flow.
- \* D. If patient in extremis
  1. CPAP 100% fiO<sub>2</sub>
  2. Bag mask assist, intubate, as needed.
- \* E. EKG; 12 Lead. Treat Dysrhythmias as indicated per protocol.
- \* F. IV TKO or saline lock.

## II. Drug Therapy

- \* A. If systolic BP > 100
  1. **Nitroglycerine** 0.4 mg or **Nitrospray** 0.4 mg sublingual.
  2. May repeat **Nitroglycerine** or **Nitrospray** x 2 every 3-5 minutes; Caution in Right Sided Myocardial Infarction
- \* B. If systolic BP >100 and fluid overload state (JVD, rales, peripheral edema, hypertension)
  1. **Lasix** 20-40 mg IV. Use lesser dose if pt. new to drug.
- \* C. If suspected MI with associated chest pain:
  1. **Fentanyl** 25-50 mcg IV; may repeat titrating to effect to total 3 mcg/kg. Caution with Right sided MI

**CARDIOGENIC SHOCK**

## I. Initial Interventions

- A. Primary Survey.
  1. Supine position; Trendelenburg, as needed.
- B. O<sub>2</sub>, high flow. Intubate, as needed.
- \* C. EKG; 12 lead. Treat any dysrhythmias as per protocols.
- \* D. IV balanced salt solution; fluid challenge 200-300 cc in 5-10 minutes if no rales
  1. Continue if patient improves.
  2. If pulmonary edema develops, switch to TKO or saline lock.

## II. Drug Therapy

- \* A. **Dopamine** 2-10 ug/kg/min infusion, as needed if hypotension persists; decrease dosage as pressure improves.

**CHEST PAIN POSSIBLY CARDIAC ORIGIN/MYOCARDIAL INFARCTION**

## I. Initial Interventions

- A. Primary Survey.
- B. O<sub>2</sub> High flow. Titrate oxygen to the lowest level required to achieve SpO<sub>2</sub> 94–99%.
- \* C. EKG (lead II); treat any dysrhythmias as per protocols.
  - 1. If Ischemic event suspected obtain 12-lead EKG and transmit if able. -Note- DO NOT DELAY CARE TO OBTAIN 12-LEAD IN CRITICAL PATIENT!
- \* D. IV TKO or saline lock.

## II. Drug Therapy

- \* A. If systolic BP > 100
  - 1. **Nitroglycerine** 0.4 mg or **Nitrospray** 0.4 mg sublingual.
  - 2. May repeat **Nitroglycerine** or **Nitrospray** x 2 every 3-5 minutes, Caution in Right Sided Myocardial Infarction.
- \* B. **Fentanyl** 25-50 mcg IV; may repeat titrating to effect to total 3 mcg/kg. Caution with Right sided MI
- \* C. **Aspirin**, 162 mg PO. Contraindicated in known allergy, active bleeding ulcer, severe liver failure or severe systemic disease.

## III. If Acute MI Suspected: Early Response Protocol - STEMI

- A. Patient Selection
  - 1. Active chest pain <12 hours
  - 2. 12 lead EKG w/ ST elevation (1 mm or greater) in @ least 2 contiguous leads – ST Elevation MI (STEMI)
  - 3. No LBBB or paced rhythm – EXCEPTION: LBBB with concordance in 1 or more leads
  - 4. No active bleeding, severe liver failure, severe systemic disease
- B. Treatment
  - 1. Notify ED of Acute MI ASAP, transmit EKG using LP 12 internal data transmission as able.
  - 2. Provide above care prn including **ASA**, **NTG**, and analgesia as appropriate.
- C. Transport Emergently (Code 3) to PHSW.
- D. If initial 12 lead negative or inconclusive, repeat every 3-5 min if symptoms persist.
- E. If 12 lead indicates inferior MI (ST elevation in II, III, and AVf), do V<sub>3</sub> and V<sub>4</sub> R to confirm Right Sided MI (Nitro caution as above).

***AUTOMATED EXTERNAL DEFIBRILLATOR***

Pending Arrival of ALS Personnel

- I. Initial Intervention
  - A. Initial assessment (ABCs)
  - B. If no pulse and UNWITNESSED arrest:
    - 1. Continuous CPR for 2 minutes.
    - 2. Attach defibrillation electrodes and press Analyze. Do not delay CPR.
  - C. If no pulse and Witnessed arrest:
    - 1. Continuous CPR, attach electrodes and press Analyze. Do not delay CPR.
- II. Defibrillation Sequence
  - A. If shock advised, defibrillate.
    - 1. Continuous CPR for 2 minutes then Analyze.
    - 2. Defibrillate as prompted.
  - B. Continuous CPR for 2 minutes then Analyze
    - 2. Defibrillate as prompted.
  - C. Repeat until arrival of ALS personnel  
If V-fib persists, repeat CPR, analyze, defibrillate sequence until "No Shock Advised."  
-Note- Continue sequence until V-fib no longer present or patient converts to perfusing rhythm.
- III. Patient Regains Pulse (Return of Spontaneous Circulation)
  - A. If the patient regains pulse or pulse present during the above sequence:
    - 1. Assess vital signs.
    - 2. Support airway and breathing.
- IV. Other Considerations
  - A. "No Shock Advised" and no pulse present
    - 1. Resume CPR and Re-Analyze after 2 min. Submit record to the MPD's office.

## ***CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)***

### I. Introduction

- A. CPAP has been successfully demonstrated as an effective adjunct in the management of pulmonary edema secondary to congestive heart failure.
- B. CPAP is a non-invasive procedure that is easily applied and can be easily discontinued without untoward patient discomfort.
- C. CPAP may prove to be a viable alternative in many patients previously requiring endotracheal intubation by prehospital personnel.

### II. Prehospital Indications

- A. Congestive heart failure/Pulmonary edema
- B. Noncardiogenic pulmonary edema of any cause
- C. Respiratory insufficiency, e.g., Asthma/COPD/Pneumonia/CO poisoning

### III. Contraindications

- A. Absolute - Respiratory Arrest, Agonal Respirations, Unconscious, Pneumothorax, Facial Anomalies (e.g., burns, fractures, etc.), Facial trauma
- B. NOT to be used in children
- C. Relative - Decreased LOC, Claustrophobia, Patient Intolerance to equipment (e.g., mask), Tracheostomy (If lacking the adaptor)

### IV. Hazards

- A. Gastric distension, corneal drying, hypotension, pneumothorax
- B. COPD and asthmatic patients do not respond predictably to CPAP. They have a higher risk of complications such as pneumothorax, and thus should be treated cautiously in the field with CPAP.

### V. Procedure

- A. Place facemask and apply O2 device as per manufacturer recommendation.
- B. Airway pressure should be set at 5 cm/H2O and adjusted per patient response. Do not exceed 10 mm/H2O.
- C. Consider mild sedation prn if patient has difficulty tolerating device.
  - 1. **Versed** 2.5mg
  - OR
  - 2. **Ketamine** 0.5 mg/kg

***PREHOSPITAL CATH LAB/THROMBOLYTIC CHECKLIST***

- Hemorrhagic Stroke (other type CVA within 1 year)
- Intracranial Pathology (tumor, recent head trauma, etc.)
- Active Internal Bleeding Within 10 Days (except menses)
- Suspected Aortic Dissection
- Uncontrolled hypertension (BP>180/110)
- Current use of anticoagulants (not including aspirin)
- Recent trauma (2-4 weeks)
- Prolonged CPR (>10 min)
- Major surgery (< 3 weeks prior)
- Recent (2-4 weeks) internal bleeding
- Known allergy to thrombolytic and/or prior use.
- Jaundice, hepatitis, kidney failure
- Terminal Illness
- Pregnancy

## ***ROSC POST RESUSCITATION***

- I. Treatment
  - \* A. Intubate, maintain airway
    - 1. Titrate oxygen to the lowest level required to achieve SpO<sub>2</sub> 94–99%.
    - 2. Maintain EtCO<sub>2</sub> 35-40mm/Hg
  - B. If persistent hypotension (<90 systolic) consider fluid challenge
    - \* 1. If refractory: **Dopamine 5-10 mcg/kg/min**. Consider **Epinephrine 2 mcg/min** titrate.
  - C. **INDUCED HYPOTHERMIA** protocol if indicated
  - D. Perform 12 Lead EKG. If STEMI identified follow STEMI protocol.

## ***INDUCED HYPOTHERMIA***

- I. Indications (Must meet all indications)
  - A. Patients with a sustained return of spontaneous circulation (ROSC) >5 minutes post-cardiac arrest.
  - B. Unconscious and without purposeful response to pain or verbal stimuli.
  - C. Systolic BP >100 mmHg (may use pressors to maintain pressure).
- II. Contraindications
  - A. Age <15 years old.
  - B. Traumatic cardiac arrest or suspected significant hemorrhage.
  - C. Hypothermia already present.
  - D. Pulmonary edema.
  - E. Known pregnancy.
  - F. Refractory or recurrent VF/VT, 2<sup>nd</sup> or 3<sup>rd</sup> degree heart blocks.
- III. Cooling Methods
  - A. Exposure combined with ice packs and/or chilled normal saline (NS); stored at a temperature of approximately 4° C (39° F).
- IV. Procedure for Inducing Hypothermia
  - A. Remove patient's clothing (undergarments may remain).
  - B. Obtain a 12-lead ECG if feasible. If STEMI identified, follow STEMI protocol.
  - C. Apply ice packs to the groin and axilla.
  - D. Rapidly infuse up to 2L BSS through large bore IV (may be IO).
  - E. Establish a second IV for medication administration. Do not administer medications at the same time through the same IV line as the chilled saline.
  - F. If patient begins to shiver, move, or have an increased level of consciousness:
    - \* 1. **Versed** 5.0 mg IV or IO. May repeat to a maximum of 10 mg as long as systolic BP is >100 mmHg.
  - G. Transport to PHSW.

## **SECTION C MEDICAL**

### ***ANAPHYLAXIS***

- I. MILD REACTION - (Generalized Itching, Hives, No Dyspnea Or Wheezes)
  - \* A. **Benadryl** 12.5-25 mg IV (IM if unable to start IV) *Children 1 mg/kg.*
  - \* B. IV - balanced salt solution - EKG monitor.
  
- II. SEVERE REACTION - (Dyspnea, Wheezes, Laryngospasm, Shock)
  - A. IV **Epinephrine** - 1 mg 1:1000 in 500 cc BSS (2 mcg/cc), start at 1 cc/min and increase every 1 minute, prn. (titrate to HR, BP, PVCs) *Children: 0.1 mcg/kg/min, increase prn*
    1. Alternative Dosing:
      - a) IM **Epinephrine** 1:1000 - 0.3 mg *Child 0.01 mg/kg [0.01 cc/kg].*
      - b) IV **Epinephrine** – 1:10,000 - 0.1 mg (1cc) IV, repeat every 3-5 minutes as needed to maximum of 0.3-0.5 mg - monitor EKG closely. *Child: 0.01 mg/kg*

Caution For EPI Administration: Adult >50 y.o. or cardiac history
  - \* C. Airway, O2 high flow (ET Tube, cricothyrotomy prn).
  - \* D. EKG monitor.
  - \* E. IV - balanced salt solution; fluid challenge, as needed.
  - \* F. **Benadryl** 25-50 mg IV *Child 1 mg/kg.*
  - \* G. MedNeb for wheezes (per protocol) **Albuterol/Atrovent**
  - \* H. **Solumedrol** 125 mg IV *Child 2 mg/kg*
  - \* I. **Dopamine** per protocol, as needed, if above not effective for shock.
  
- III. ADDITIONAL ORDERS FOR BEE STING
  - A. Follow above orders.
  - B. Search for stinger, apply loose rubber tourniquet above and below stinger, remove with gentle scraping with knife-blade.
  - C. **Epinephrine** 1:1000 0.2 mg into sting site (not fingers, toes, nose, ear).

### ***ACUTE ABDOMEN - NONTRAUMATIC***

- I. Initial Intervention
  - A. Primary Survey.
  - B. Protect airway - anticipate vomiting. High flow oxygen (COPD caution).
  - \* C. EKG - Monitor vital signs frequently.
  - \* D. IV balanced salt solution TKO (consider second IV prn shock). If shock present, fluid challenge as per hypovolemia protocol. Nothing by mouth.
  - E. Secondary Survey: Carefully evaluate abdomen/check for pulses in legs.
  - \* F. **Fentanyl** 25-50 mcg prn (max 3mcg/kg) for severe pain
  - G. See **VOMITING/SEVERE NAUSEA** protocol prn.

**CVA**

## I. Initial Intervention

- A. Primary Survey, perform FAST assessment. Determine onset of symptoms or time last known normal for patient.
- B. Protect and maintain airway - place patient in lateral position, on paralyzed side if present - nasopharyngeal or oropharyngeal airway; suction prn.
- C. High flow O<sub>2</sub>
  - 1. Assist ventilation, as needed. - If intracranial bleed suspected, maintain normal ventilation rates and target EtCO<sub>2</sub> of 30-35 mm/Hg
  - \* 2. RSI as needed.
- \* D. EKG/Secondary Survey.
- \* E. Initiate IV TKO or saline lock

## II. Further Treatment/Transport

- A. Reassure patient if conscious; patient may understand and hear all conversation even though he/she appears comatose or confused.
- \* B. Treat the following as per protocols:
  - 1. Consider other cause of abnormal mental status (hypoglycemia, drugs, etc.).
  - 2. Predisposing conditions for stroke (hypertension, dysrhythmias).
- \* C. Altered mental status protocol (**Glucoscan/D50/Narcan/Thiamine**) prn.
- D. If hypertensive, assume bleed and do not attempt to lower blood pressure in field.
- E. Transport Emergently (Code 3) if the patient meets the following criteria:
  - 1. Less than 8 hour onset of the following sx:
    - a) Aphasia
    - b) Facial droop
    - c) Unilateral weakness or parasthesia
    - d) Inability to understand others or verbalize understanding
    - e) Loss of vision in one eye or visual field
    - f) Vertigo – sudden onset, persistent, progressive with headache
  - 2. Went to bed normal and woke with symptoms.
  - 3. Notify receiving facility to activate the stroke team.
- F. Patients meeting stroke/CVA criteria will be transported as follows:
  - 1. Symptoms 3.5 hours or less – Closest stroke center or patient/family choice (exception: Patient 80 years old or greater – PHSW).
  - 2. Symptoms between 3.5 and 8 hours – PHSW only.
  - 3. Symptoms more than 8 hours – patient choice or closest facility (LSC or PHSW)
  - 4. Suspected intracranial hemorrhage of any duration – PHSW
- G. The receiving Stroke Team may require further medical history from the patient's caregiver or immediate family members. It is preferred they be present when the patient arrives at the hospital. If this is not feasible, obtain a phone number that may be used by the Stroke Team for further information.

-Note- Clinical presentation of acute CVA may include: -Aphasia -Hemianopsia –Ataxia –Hemiparesis - Cranial nerve palsies -Loss of sensation –Diplopia –Quadriparesis –Dysarthria -Visual disturbances. Acute subarachnoid hemorrhage (aneurysm) may present with sudden, severe headache, neck pain, near syncope and may have a normal FAST exam. Suspected intracranial bleeding with FAST findings should be transported emergently (Code 3) to PHSW for neurosurgical evaluation.

***EPISTAXIS***

- I. Initial Intervention
  - A. Primary Survey.
  - B. Establish and maintain airway/supplemental oxygen, as indicated, anticipate vomiting, advise patient not to swallow blood.
  - C. Vital signs; treat shock if present or anticipated as per protocols.
  - D. Treat as anterior bleed initially: Sit patient up and lean forward slightly. Pinch anterior cartilaginous portion of nose firmly for 10 minutes, have patient breathe through mouth.
  - \* E. If no improvement, treat as posterior bleed and insert nasal balloon.
  
- II. Procedure for Insertion of Nasal balloon
  - \* A. Choose size of nasal balloon to fit patient (small, regular, large).
  - B. Sit patient up, if possible.
  - C. Check nasal balloon for eccentric inflation, then lubricate with Lidocaine jelly; have patient blow nose to clear clot; insert nasal balloon to hub along floor of nasal cavity.
  - D. Inject 8 cc of water (or air) slowly, then check patient for continued bleeding; inspect posterior nasopharynx.
  - E. Inject additional water or air, as needed, until bleeding stops, opposite nostril is occluded, or soft palate bulges; then remove enough water or air to relieve pressure. Document volumes of air/water used.
  - F. This procedure should be performed en route to the hospital.

***HEAT SYNDROMES***

- I. HEAT CRAMPS, HEAT EXHAUSTION
  - A. Primary Survey. Vital signs and secondary survey, as indicated. Oral temperature/LCD thermometer.
  - \* B. Cardiac monitor.
  - C. Move to cooler environment, remove excess clothing. Tepid compresses to forehead, neck, extremities.
  - D. Oral fluids, if possible (water, Gatorade, etc.).
  - \* E. Initiate IV with balanced salt solution, if unable to take oral fluids or if hypotensive. Fluid challenge with 200-500 cc rapidly.
  - F. Transport as necessary.
  
- II. HEAT STROKE
  - A. Primary Survey. Vital signs and secondary survey as indicated. Rectal temperature if comatose or LCD thermometer.
  - \* B. Intubate, as needed. High flow O<sub>2</sub> / protect and maintain airway.
  - C. Move to cooler environment, remove clothing, aggressive cooling with wet sheets, cool packs, evaporative airflow.
  - \* D. EKG.
  - \* E. IV with balanced salt solution / fluid challenge with 200 cc over 20 minutes unless pulmonary edema develops.
  - \* F. **Versed** per protocol for seizures or to control shivering when cooling.
  - \* G. Treat cardiac dysrhythmias per protocols. Rapid transport to hospital.
  - \* H. Altered mental status protocol (**Glucoscan/D50/Narcan/Thiamine**), as indicated.

## **HYPOGLYCEMIA**

### I. Initial Intervention

- A. Primary Survey / vital signs / neurologic exam.
- B. Establish and protect airway; O<sub>2</sub>.
- C. Consider:
  1. History from family, bystanders, Medic-Alert tag.
  2. Unknown coma: assume drugs, follow altered mental status protocol.

### II. Treatment

- \* A. Obtain blood for glucose sample; determine glucose level (normal range 60-120 mg/dL). If glucose low and patient conscious, administer oral glucose.
  - \* B. Establish IV. If unable to take oral glucose, infuse **100 ml of D10 (10 gm)**, if hypoglycemia; may repeat 50 ml of D10 (5gm) as needed to total 25gm.  
*Child 0.1 gram/kg.*
    1. *Alternate Dosing: 25 gm D50W IV*
  - \* C. If unable to establish IV and patient unable to take orals, and patient a known diabetic:
    1. **Glucagon**, 1 mg (unit) SC or IM. *0.5 mg peds*
    2. Continue to attempt intravenous access.
      - a) **D10** infusion when IV established.
  - \* D. If no response to glucose, follow **ALTERED MENTAL STATUS** protocol.
  - \* E. Repeat Glucoscan.
  - F. Perform EKG, secondary survey to evaluate for associated conditions.
  - G. Transport all patients on oral anti-hypoglycemic agents OR Insulin Pumps who develop hypoglycemia.
- Note- In general, give IV glucose for any hypoglycemia less than 50, even if oral glucose given.

## **HYPERKALEMIA**

### I. Recognition/Signs/Symptoms

- A. Suspect in known renal failure or dialysis patient.
- B. Signs/Symptoms: tingling, numbness, paresthesias, flaccid weakness, EKG changes (peaked T waves, prolonged P-R interval, wide QRS, PVCs, Bigeminy, VT, VF).

### II. Initial Intervention

- A. O<sub>2</sub>, Establish and maintain airway, as needed.
- B. CPR, as indicated.
- \* C. Cardiac monitor.

### III. Specific Therapy

- \* A. Establish IV
- \* B. **Calcium Chloride** 500 mg IV slowly (2-3 min). Flush tubing
- \* C. **Sodium bicarbonate** 50 mEq in 50 cc balanced salt solution administered over 10 minutes.
- \* D. **Albuterol** 3cc via Med Neb per protocol.
- \* E. 10 gm **D10**, followed by 5 units regular **Insulin** IV [if available from patient].
- \* F. **Lasix** 40 mg IV.
- \* G. Follow protocols for dysrhythmias.
- H. Rapid transport.

## ***HYPERTENSIVE EMERGENCIES***

- I. CAUTION:  
SUDDEN HEADACHE FOLLOWED BY ACUTE CEREBROVASCULAR ACCIDENT SYMPTOMS WITH FOCAL NEUROLOGIC SIGNS, OR COMATOSE PATIENT IN PRESENCE OF HYPERTENSION, SLOW PULSE WITH OR WITHOUT PVCs, IS INTRACRANIAL BLEED UNTIL PROVEN OTHERWISE. DO NOT ATTEMPT TO LOWER BLOOD PRESSURE IN THE FIELD.
  
- II. Initial Intervention
  - A. Establish hypertension (use appropriate size cuff). History, as available.
  - B. Hypertensive emergencies: Diastolic pressure >130 with:
    1. acute pulmonary edema,
    2. angina.
    3. hypertensive encephalopathy:
      - a) headache
      - b) nausea and vomiting
      - c) blurred vision
      - d) confusion
  
- III. Treatment
  - A. O2
  - \* B. IV TKO.
  - C. Semi-sitting or recumbent.
  - \* D. **Nitroglycerine** 0.4 mg or **Nitrospray** 0.4 sublingual. May repeat **Nitroglycerine** or **Nitrospray** x 2 every 3-5 minutes,
  - \* E. **Lasix** 20-40 mg IV
  - \* F. **Fentanyl** 25-50 mcg IV; may repeat titrating to effect to total 3 mcg/kg.
  - \* G. **Versed** as needed for seizures.
    1. Administer **Versed** early if hypertension due to cocaine toxicity
  - \* H. EKG

-Note- Aim for diastolic pressure 110-120 and/or improvement of symptoms.

***HYPOTHERMIA/COLD EXPOSURE***

## I. Initial Interventions

- A. Primary Survey.
  1. Remove wet clothing, protect against heat loss and wind chill.
  2. Maintain patient supine (do not allow patient to ambulate/exert themselves).
  3. Avoid rough handling.
  4. Monitor temperature (low read thermometer).
- \* B. EKG

## II. Pulse/Breathing Present

- A. Mild Hypothermia (34° – 36° C aka 93.2° - 96.8° F) Moderate Hypothermia (30° – 34° C aka 86° – 93.2° F):
  1. Institute rewarming procedures, i.e., O2 warmed and humidified, warm packs, heated blankets, warmed ambulance, etc.
  2. If temperature < 34° C begin truncal rewarming:
    - \* a) Warmed IV fluids (200 – 300 ml); avoid over-hydration
    - b) Heat packs to groin, axilla
- B. Severe Hypothermia (<30° C aka <80° F):
  - \* 1. Warmed IV fluids (200 – 300 ml); avoid over-hydration
  - 2. O2 warmed and humidified

-Note- Emergent (C3), gentle transport. Notify receiving facility of need for in-hospital rewarming procedures.

## III. Pulse/Breathing Absent

- A. Continuous CPR
- B. If V-Fib present or occurs:
  1. Defibrillate as for VF/pulseless VT.
  - \* 2. Intubate; ventilate with warmed, humidified O2.
  - \* 3. Warmed IV fluids (200 – 300 ml) avoid over-hydration.
- C. If temperature <30° C (<86° F)
  1. Continue CPR.
  2. Shocks for VF/VT per ACLS.
  3. Withhold IV medications.
  4. Continue above rewarming procedures during transport.
- D. If temperature >30° (>86° F)
  1. Continue CPR.
  2. Repeat defibrillation prn as core temperature rises
  3. IV medications as indicated (longer than normal dosing intervals)
  4. Continue above rewarming procedures during transport

## IV. Other Treatment Considerations

- \* A. Unconscious patient protocols; draw bloods, **Narcan** per protocol; **Thiamine** 100 mg IV; Glucoscan, if hypoglycemia known or suspected, **D10** per protocol.
- B. If frostbite present, protect with dry dressings, do not rub frostbitten areas, and permit only gradual warming by room temperature out of hospital.

***DROWNING/NEAR DROWNING***

- I. Initial Intervention
  - A. Primary Survey / protect cervical spine if diving accident.
  - B. Establish and maintain airway
    - 1. Clear mouth and pharynx, suction liberally with tonsil tip, sweep oropharynx with finger.
    - 2. Support ventilations, as needed.
    - \* 3. Intubate/CPAP, as needed.
    - 4. 100% O<sub>2</sub>; monitor lung sounds frequently.
  - \* C. EKG
  - \* D. Treat dysrhythmias per protocol.
  - \* E. IV, balanced salt solution TKO.
- II. Drug Therapy
  - \* A. **NaHCO<sub>3</sub>** 1-2 mEq/kg IV for apnea, cyanosis and/or prolonged submersion.
  - \* B. Unconscious patient protocol, as indicated.
    - 1. Glucoscan, treat hypoglycemia per protocol
    - 2. **Narcan** per protocol *Children >5 yrs (or 20 kg) 0.1 mg/kg*
    - 3. **Thiamine** 100 mg
- III. Other Considerations
  - A. All near-drowning patients should be transported to the hospital for evaluation.
  - B. Protect against and/or treat hypothermia per protocol

***DYSTONIC (PHENOTHIAZINE REACTION)***

- I. General Considerations
  - A. Characteristics:
    - 1. Sudden onset, usually younger patient
    - 2. Contractions of muscles of face, neck, back
    - 3. Protrusion/fasciculations tongue common
    - 4. Oculogyric crisis (eyes looking upwards)
    - 5. Laryngospasm sometimes present
    - 6. Better with voluntary activity
    - 7. Emotional patient (frightened)
    - 8. Drugs involved: Compazine, Prolixin, Stelazine, Haldol, Navane, Trilafon, Moban, Loxitane, Inapsine, Promethazine
- II. Initial Intervention/Drug Therapy
  - A. Primary survey, LOC, vital signs.
  - \* B. IV, TKO or saline lock.
  - \* C. **Benadryl** 25-50 mg IV/IM, usually complete relief in 1-2 minutes IV and 15-20 minutes IM.
  - D. Transport.

***HAZARDOUS MATERIALS INCIDENT***

- I. Is Police/Fire Security Line Established?
  - A. NO
    1. Secure scene
    2. Establish perimeter and call for police/fire assistance.
    3. Do not approach victims until HAZ-MAT Team security line established.
  - B. YES
    1. Ask for directions to Staging Area
    2. Report to Staging Area
  
- II. Take Contamination Precautions
  - A. Insure patient has been decontaminated and clothing and belongings have been removed. (Clear with HAZ-MAT Team.)
  - B. Place disposable sheets over gurney and floor, if needed.
  - C. Treat patient symptomatically: refer to protocols in HAZARDOUS MATERIAL INJURIES: A Handbook for Prehospital Care, Stutz, Ricks, Olsen
  
- III. Transport
  - A. Write down exact name of chemical/agent.
  - B. Obtain advice for further decontamination of vehicle or personnel, from HAZ-MAT Team.
  - C. Provide name of chemical/agent to Emergency Department staff prior to hospital arrival.
  - D. Double bag any contaminated clothing, equipment, sheets or blankets.
  - E. Delay patient unloading until cleared by Emergency Department staff.
  - F. Implement any secondary decontamination procedures for vehicle or personnel, if necessary.

-Note-

EMS personnel are urged to be alert for hazardous materials when responding on calls. Hazardous materials may be obvious, but often are not. If a vehicle has a diamond shaped placard or an orange numbered panel on its side or rear, assume the cargo to be hazardous. Consult the hazardous materials identification guidebooks carried on each unit. Not all hazardous materials will be clearly identified. Grocery trucks or delivery vehicles may be carrying hazardous materials without the diamond shaped placard or orange numbered panel to identify such transport. Common sense dictates that each EMT assume hazardous material is present unless proven otherwise.

Park uphill and upwind from suspected hazardous materials unless otherwise directed by a competent authority, usually the senior fire officer or incident commander.

Do not drive or walk through any suspected hazardous material.

***INHALATION OF TOXIC FUMES***

## I. CAUTION:

- A. Protect yourself from exposure. Patient should be removed from area of toxic substance by personnel equipped with proper safety gear (e.g., self-contained breathing apparatus).
- B. Follow Hazardous Materials Protocol as necessary

## II. Initial Intervention/Drug Therapy

- A. Early contact with Medical Control or Poison Control:
  - 1. Mary Bridge Children's Health Center (1-800-542-6319)
  - 2. Oregon Health Sciences University (1-800-452-7165 OR 503 494-8969)
- B. Establish and maintain airway
  - 1. Assist ventilations as necessary.
  - 2. 100% O<sub>2</sub>.
  - \* 3. Intubate, as needed.
- C. Monitor vital signs.
  - \* 1. EKG.
- \* D. IV balanced salt solution, as needed.
- \* E. **Albuterol** by Med Neb for wheezing.

## III. Specific Therapies

- A. CHLORINE GAS OR DUST:
  - 1. Humidified 100% O<sub>2</sub>
  - 2. Treat severe pulmonary edema or bronchospasm per protocol
- B. CYANIDE INHALATION:
  - 1. Signs of poisoning: AMS, Seizures/Coma, Tachypnea/Apnea, shock, vomiting
  - 2. Hyperventilate with 100% O<sub>2</sub> / assist ventilations
  - \* 3. **Sodium Thiosulfate**; infuse 50 ml 25% solution IV over 10 mins. *Child - 1.65 mL/kg IV / IO infused over 10 to 20 minutes.*
- C. HYDROGEN SULFIDE:
  - 1. Respiratory depression, assist ventilations
  - 2. Treat seizures per protocol.
- D. If specific industrial compound known, refer to protocols in: HAZARDOUS MATERIALS INJURIES: A Handbook for Prehospital Care, Stutz, Ricks, Olsen

**PAIN CONTROL**

## I. Appropriate Medications

A. **Fentanyl**

1. Should be given in 25-50 mcg increments (every 3-5 mins prn), titrated to relief of pain *Children 1-2 mcg/kg (may be given IN)*
2. May be given up to 3 mcg/kg total dose. Do not administer greater than 200 mcg/hr.
3. **Rapid injection may cause respiratory arrest or chest rigidity – administer slowly, over 30-60 seconds.**

## II. Indications for Acute Pain Control

- A. Facilitate packaging and transport, prevent exacerbation of symptoms, and alleviate discomfort. Examples include:
  1. Cardiac chest pain
  2. Abdominal pain due to dissection, AAA, etc.
  3. Musculoskeletal pain due to traumatic injury, DVT, or other disease process
  4. Burns
  5. Chest wall pain causing splinting
- B. Side effects
  1. CNS depression
  2. Hypotension/Hypertension
  3. Somnolence
  4. Allergy
  5. Respiratory depression
  6. Nausea
- C. Avoid use of narcotics for chronic pain syndromes

## III. Facilitation

- A. **Zofran** 4 mg IV for nausea *Children 0.1 mg/kg (do not exceed adult dose)*
- \*\*\* B. **Versed** 2-10 mg IV, ONLY with medical control concurrence for muscle spasms associated with pain *Children 0.1-0.2 mg/kg IV, Deep IM*

## IV. Other Considerations

- A. All patients should be monitored for respiratory depression, hypotension and cardiac rhythm. Treat discrepancies in each accordingly.

## ***POISONS AND OVERDOSAGES***

### I. Initial Intervention

- A. Primary Survey, LOC / vital signs.
- B. History as obtainable from patient and/or bystanders.
- C. Early contact with Medical Control or Poison Control:
  - 1. Mary Bridge Children's Health Center (1-800-542-6319)
  - 2. Oregon Poison Control Center at OHSU (1-800-452-7165 OR 503 494-8968)

### II. General Treatment Guidelines

- A. EXTERNAL CONTAMINATION ONLY:
  - 1. Protect medical and rescue personnel.
  - 2. Remove contaminated clothing.
  - 3. Brush off any solid material from skin.
  - 4. Flush contaminated skin or eyes with copious amounts of water.
- B. INTERNAL INGESTION:
  - 1. Responsive, alert patient with gag reflex:
    - \* a) **Activated charcoal** (Actidose) 50 gm PO per Poison Control or Medical Control *Child 1-2 gm/kg PO (usual 25 gm)*
    - b) Carefully monitor vitals and LOC.
    - c) Do not Ipecac. If parent has given Ipecac at home prior to your arrival, notify nurse upon arrival at hospital.
  - 2. Major overdose, gag depressed, LOC depressed:
    - a) Establish and protect airway.
    - b) Ventilate as needed with 100% O<sub>2</sub>.
    - \* c) Intubation, as needed. (If narcotics suspect administer **Narcan** prior to ET attempt.)
    - \* d) IV balanced salt solution.
    - \* e) Glucoscan. Draw bloods.
  - 3. Depressed respirations, unknown ingestion:
    - a) Establish and protect airway as above.
    - \* b) **Narcan** 2 mg IV *Child >5 yrs (or >20 kg) 0.1 mg/kg*
    - \* c) **100 ml of D10 (10 gm)**, if hypoglycemia; may repeat x 2, as needed *Child 0.1 gm/kg.*
    - \* d) **Thiamine** 100 mg IV, if alcoholism suspected.
    - \* e) EKG: Treat dysrhythmias or cardiac arrest per protocols.

### III. Specific Poison Therapies

- A. CHOLINERGIC (Organophosphate Insecticides)  
Salivation/Lacrimation/Urination/Defecation = SLUD
  - 1. Above assessment and general therapy.
  - \* 2. **Atropine** 1-2 mg IV, repeat every five minutes until secretions diminished. *Child 0.02 mg/kg*
  - 3. Suction prn.
  - \* 4. **Versed** 2.5-10 mg IV/IM for seizures per protocol. *Child 0.1-0.2 mg/kg IV/IM*

## III. Specific Poison Therapies (continued)

## B. TRICYCLIC ANTIDEPRESSANTS

1. Hyperventilate in assisting respirations.
- \* 2. Treat hypotension with fluid challenge.
- \* 3. If tachycardia >110, dysrhythmia or widening QRS, or if seizures:
  - a) 1 mEq/kg **NaHCO<sub>3</sub>** slow IV push. *Child - 1 mEq/kg.*
  - b) Add 50 mEq **NaHCO<sub>3</sub>** to IV bag for adult
  - c) **Magnesium Sulfate** 2 gm IV, slow push (5-20 min.) for wide QRS.  
*Child - 25-50 mg/kg*

## C. CYANIDE POISON

1. Signs of poisoning: AMS, seizures/coma, tachypnea/apnea, shock, vomiting
2. Hyperventilate with 100% O<sub>2</sub> / assist ventilations
- \* 3. Cyanide Antidote:
  - a) **Sodium Thiosulfate** 50 mL of 25% solution IV/IO infused over 10 to 20 minutes. *Child - 1.65 mL/kg IV / IO infused over 10 to 20 minutes.*

## D. If specific industrial compound known, refer to protocols in:

1. HAZARDOUS MATERIALS INJURIES: A Handbook for Prehospital Care, Stutz, Ricks, Olsen

## E. CALCIUM CHANNEL BLOCKERS OR BETA BLOCKERS with bradycardia:

- \* 1. **Atropine** 0.5-1.0 mg IV (max 3 mg) *Child 0.02 mg/kg*
- \* 2. **Calcium Chloride** 250-500 mg IV if Calcium blocker O.D. *Child 20 mg/kg*
- \* 3. **Glucagon** 5 mg IV (adults). *Child 0.1 mg/kg*
- \* 4. Fluid challenge 200-300 mg balanced salt solution. *Child 20 cc/kg*
5. Pace as needed.
- \* 6. **Dopamine** 2-10 mcg/kg/min for hypotension; *Child 5-20 mcg/kg/min* or **Epinephrine** drip 2 mcg/min increase as needed. *Child 0.1 mcg/kg/min increase as needed.*

## F. COCAINE, METHAMPHETAMINE, MDMA (ECSTASY).

1. Hyperadrenergic induced arrhythmias:
  - a) 100% O<sub>2</sub>
  - \* b) **Versed** 2.5-10 mg IV/IM
  - \* c) Stable V-tach: **Amiodarone** 150 mg
  - \* d) V-fib: treat per protocol, limit Epi to 1 mg every 5 min

## G. CARBON MONOXIDE:

1. CO poisoning suspected (e.g., AMS w/ multiple patients and/or sick pets at same location):
  - a) 100% O<sub>2</sub> NRM or CPAP if possible.
  - b) Determine CO level w/ commercial device (Masimo Rad 57).
  - c) If cyanide suspected, determine CO level prior to administering **Sodium Thiosulfate**.
  - d) SpCO between 3% and 25% with neurologic symptoms (HA, dizziness, nausea, syncope, LOC, seizures, coma) – treat and transport to ED.
  - e) SpCO greater than 25% - contact MC for diversion to hyperbaric chamber.
  - f) Treat symptoms per protocol (12 Lead indicated to r/o ischemia).

***POISONING AND OVERDOSE TOXIDROME TABLE***

<b>Toxidrome</b>	<b>Examples</b>	<b>Clinical Features</b>	<b>Antidotes</b>
Sympathomimetic	Cocaine Methamphetamine	Agitation Diaphoresis Hypertension Hyperthermia Dilated pupils Tachycardia	Midazolam
Opioid	Heroin Hydromorphone Methadone Oxycodone	Depressed mental status Hypoventilation Constricted pupils	Naloxone
Cholinergic (Anti-cholinesterase)	Pesticides • Carbamates • Organophosphates Nerve Agents	Muscarinic* Nicotinic** Central***	Atropine Pralidoximine (2-Pam) (Hazmat)
Sedative-Hypnotic	Barbiturates Benzodiazepines	Depressed mental status Hypotension Hypothermia	Supportive treatment
Cardiotoxic Drugs	Beta-blockers Calcium channel blockers	Bradycardia Conduction issues Hypotension	Glucagon Calcium
Anticholinergic	Atropine Jimson Weed Scopolamine Diphenhydramine	Delirium Hyperthermia Tachycardia Warm, dry skin	Supportive treatment Physostigmine (ED)
Sodium channel blockade	Tricyclic antidepressants Antiarrhythmics • Type IA – quinidine, procainamide • Type IC – flecanide, propafenone	Altered mental status Hypotension Seizures Wide complex tachycardia	Sodium Bicarbonate
<b>*Muscarinic</b>		<b>**Nicotinic</b>	<b>***Central</b>
Diarrhea, Urination, Miosis, Bradycardia, Bronchospasm, Bronchorrhea, Emesis, Lacrimation, Salivation, Sweating		Mydriasis, Tachycardia, Weakness, Hyperglycemia, Fasciculations	Confusion, Convulsions, Coma

## ***PSYCHIATRIC DISORDERS***

### I. General Considerations

- A. Immediate danger to patient or medical personnel:
  - 1. Protect yourself and others.
  - 2. Summon law enforcement. Use of force by law enforcement personnel is appropriate to render situation safe in order that care may be given to the patient.
  - 3. Request Mental Health Professional as needed.
- B. No evidence of immediate danger:
  - 1. Approach patient in a calm manner.
  - 2. Show self-confidence and convey concern for patient.
  - 3. Reassure patient he/she should and will be taken to a hospital where there are people who are interested in helping him/her.
  - 4. One EMT should establish rapport and deal with the patient.
- C. General approaches:
  - 1. Transport the patient as quickly as possible to an appropriate facility without causing undue emotional or physical harm.
  - 2. If the patient appears to have a significant mental disorder and is refusing transport, consider police and/or mental health professional assistance. A police officer may, at his/her discretion, place the patient on a hold or take them into custody. Should the officer elect to not place the person on hold, and that person is, in your opinion, significantly impaired and at risk to themselves or others, contact designated mental health professional (DMHP). Explain the situation to DMHP, including your assessment of the person's impairment. DMHP may then request that you transport the person to either Clark County Emergency Department for an emergency evaluation and will instruct Law Enforcement to place the person in custody. You may use physical and chemical restraint as per protocol (Restraint of Patients).
  - 3. Never stay alone with a psychiatric patient. Always have enough help to restrain the violent patient.
  - 4. Consider the armed patient potentially homicidal as well as suicidal.
- D. Transport of patients to Western State Hospital:
  - 1. Transport order written by county mental health professional.
  - 2. Transport protocols will be completed/met if a hospital patient (see ***INTER-FACILITY TRANSPORT***).
  - 3. If direct transport from county or city jail facility and if patient judged by EMT as not stable for transport (e.g., violent, ill, etc.), patient will be taken to PHSW Emergency Department for evaluation.
  - 4. Violent patients judged as unsafe for transport (possible for injury to patient or EMT personnel) may be sedated by Emergency Department physician at request of EMT-P. Suggested regimen for sedation:
    - a) **Inapsine** 0.625-2.5 mg IV or IM (If EPS develop follow with **Benadryl** 25 mg IV or IM).
    - OR
    - b) **Versed** 2.5-10 mg IV or IM.This may be repeated in 1-2 hours, as needed, and a dose may be given by EMT-P during transport. If sedated, patient will be closely monitored for vitals during transport.
  - 5. Emergencies arising during transport will be treated according to protocols and guidelines.

## ***RESTRAINT OF PATIENTS***

- I. PURPOSE:
 

Used to protect the safety of patients and responders; should only be utilized if the patient is exhibiting behavior that is a danger to self or others.
- II. PHYSICAL RESTRAINT:
  - A. Physical Restraint Guidelines:
    1. Use the minimum level of restraint required to ensure patient care and safe transportation (soft restraints may be sufficient). Call for law enforcement or additional manpower prior to attempting restraint procedures if it is apparent they will be needed. Do not endanger yourself or your crew.
    2. Avoid placing restraints that preclude evaluation of the patient's medical status.
  - B. Physical Restraint Procedure:
    1. Place patient face up on LBB, NOT PRONE. Closely monitor respiratory status.
    2. Secure ALL extremities to LBB. Try to restrain lower extremities first using soft restraints around both ankles. Next, restrain the patient's arms at his/her sides.
    3. May use C-spine precautions to control violent head or body movements.
    4. Secure LBB onto gurney using additional straps if necessary.
    5. Evaluate the patient's respiratory and cardiac status to ensure that no airway or circulatory compromise exists. Monitor SpO2 if possible.
    6. DO NOT tighten chest straps to the point that they restrict breathing.
- III. CHEMICAL RESTRAINT:
  - A. Chemical Restraint Guidelines:
    1. Sedative agents may be needed to restrain the violently combative patient.
  - \* B. Chemical Restraint Procedure:
    1. Evaluate the personnel needed to safely restrain the patient.
    2. Consider and treat medical causes of combativeness (hypoxia, head injury, hypoglycemia, etc.).
    3. **Inapsine** is preferred for patients with known or suspected psychiatric disorders. **Versed** is preferred for patients who are known or suspected to be under the influence of stimulants, intoxicants, in withdrawal or who are postictal.
    4. If cause of patient's agitation is unknown or suspected to be psychiatric:
      - a. **Inapsine** 2.5 mg IV or 5.0 mg IM. May repeat prn 2.5 mg to max. 5 mg IV and 10 mg IM. *Children 0.1 mg/kg (do not exceed adult dose)*  
**ALTERNATIVE – Geodon** 10 mg IM ONLY may repeat 10 mg IM prn max 20 mg
      - b. If EPS (dystonia, akathisia, and oculogyric crisis) **Benadryl** 12.5-25 mg IV/IM *Children 1 mg/kg IV or IM.*
    5. If cause of agitation is drug ingestion (especially stimulants), withdrawal or postictal state:
      - a. **Versed** 2.5–5.0 mg IV or 5.0 mg IM. *Child 0.1-0.2 mg/kg IV/IM slow IVP. May repeat x 1 prn*
      - b. May repeat prn to max 10 mg.
    6. If 10 minutes after administration of the second dose of **Inapsine**, **Geodon** or **Versed**, the patient remains combative, administer a different sedative medication as described above. Do NOT use **Geodon** and **Inapsine** concurrently.
    7. Patient MUST be EKG monitored. Record and monitor vitals and EKG after administration every 5 minutes.
    8. See **Inapsine** or **Geodon** protocol for further side effects and precautions.

## ***TASER DART REMOVAL***

### I. Taser Introduction

- A. A non-lethal neuromuscular interruption weapon deployed by law enforcement officers designed to create temporary motor skill dysfunction to a violent, combative subject.
  - 1. A taser works by firing two wire-attached darts that can strike a suspect from up to 15 feet or more. It delivers 50,000 volts of electricity but is not harmful to vital body functions such as heart rhythm, pacemaker function or respirations. However, it should instantaneously incapacitate the person. Each electric discharge can last a total of 5 seconds or more and is controlled by the officer who fires the device.

### II. Taser Dart Removal

- A. To be done only upon request by law enforcement officers:
  - 1. Ensure cartridge has been removed from the weapon or wires are cut.
  - 2. Place one hand on the patient where the probe is embedded and stabilize the skin surrounding the puncture site.
  - 3. Place your other hand firmly gripping the probe and in one quick, fluid motion pull the probe straight out of the puncture site.
  - 4. Check probe to make sure entire probe was removed and repeat procedure with remaining probes.
  - 5. Darts are a sharps hazard – treat as contaminated needle and dispose in sharps container or taser cartridge.
- B. CONTRAINDICATIONS to field removal:
  - 1. Probes embedded in the face, neck, groin or female breast should not be removed in the field. Transport for removal.

### III. Special Considerations

- A. Transport patients demonstrating any of the following:
  - 1. Evidence of excited delirium (acute exhaustive mania)
  - 2. Persistent, abnormal vital signs
  - 3. Abnormal subjective complaints including chest pain, shortness of breath, nausea or headaches
- B. Burn Hazard -- When a TASER is used in the presence of flammable liquid or vapor (e.g., pepper spray), there is a burn hazard. Electrical arcing from imperfect (but effective) dart contact can ignite the propellant.

***DROPERIDOL (INAPSINE)***

## I. Special Considerations:

## A. General Information:

1. A potent neuroleptic that produces tranquilization and sedation without altering the state of reflex alertness.
2. Has antiemetic properties
3. Produces mild alpha adrenergic blockade (Hypotension)
4. May have CV side effects including QT prolongation and Torsades.
5. Onset of action is 3-10 minutes (IV). Peak effect is seen up to 30 minutes. Duration of effect is 2-4 hours.

## B. Precautions:

1. Use reduced dose in renal/hepatic impairment and elderly.
2. Hypotension may occur.
3. May result in QT prolongation/Torsades in susceptible patient.
4. CNS depressants may be potentiated (narcotics, barbiturates).
5. EPS (dystonia, akathisia, and oculogyric crisis) are common.

## II. Indications:

- A. Sedation to facilitate restraint of combative patients in emergency situations
- B. Refractory nausea/vomiting

## III. Contraindications:

- A. Allergy or known idiosyncratic reaction (EPS)
- B. Congenital QT prolongation
- C. Parkinson's Disease
- D. Severe metabolic derangement (hypokalemia, hypomagnesemia)
- E. No Benadryl available
- F. No Monitor available

## IV. Administration

- \* A. IV established, if possible. O2 high flow, as possible.
- \* B. **Inapsine** 0.625 mg – 5 mg IV/IM *Children 0.1 mg/kg (do not exceed adult dose)*
- \* C. If EPS (dystonia, akathisia, and oculogyric crisis) **Benadryl** 12.5-25 mg IV/IM *Children 1 mg/kg IV or IM.*
- \* D. Patient **MUST** be EKG monitored. Record and monitor vitals and EKG after administration every 5 minutes.
- E. If hypotension occurs, fluid challenge 200cc - 300cc.
- F. If QT prolongation or Wide Complex Rhythm, treat per protocol.
- G. Use the lesser dosing regimen for nausea and vomiting.

***ZIPRASIDONE (GEODON)***

## I. General Information

- A. Major tranquilizer (antipsychotic) that produces marked tranquilization and sedation.
  - 1. Potentiates other CNS depressants.
  - 2. Produces mild alpha-adrenergic blockade resulting in hypotension.
  - 3. Onset of action of a single IM dose is 15 to 30 minutes following administration; the peak serum concentration is approximately 60 minutes. Duration of action is 2 to 5 hours.
- B. Precautions
  - 1. Hypotension may occur; treat per shock protocol.
  - 2. Use caution when administering Geodon to patients who have taken other CNS depressant drugs (sedative-hypnotics, alcohol). Consider a reduced dose in these cases.
  - 3. Geodon may induce Torsades. Monitor the patient's ECG Q-T interval following use if possible.
  - 4. Extrapyramidal symptoms have been reported in patients receiving Geodon. If severe, treat per protocol with Benadryl.

## II. Indications

- A. Sedation to facilitate restraint of combative patients in emergency situations.

## III. Contraindications

- A. Known allergy to Geodon
- B. No monitor or **Benadryl** available

## IV. Side Effects/Special Notes

- A. Do not use in patients with known history of QT prolongation, recent acute MI, or decompensated heart failure.
- B. Somnolence, dizziness, headache, nausea have occurred following administration. These are not life threatening and generally do not require treatment.

## V. Administration

- A. **Geodon** 10 mg IM ONLY. If sedation inadequate, repeat 10 mg prn max 20 mg.
- B. If EPS (dystonia, akathisia, and oculogyric crisis) **Benadryl** 12.5-25mg IV/IM.
- C. Patient MUST be EKG monitored. Record and monitor vitals and EKG after administration every 5 minutes.
- D. If hypotension occurs, fluid challenge 200cc - 300cc.
- E. If QT prolongation or Wide Complex Rhythms, treat per protocol

**RESPIRATORY EMERGENCIES**

## I. UPPER AIRWAY OBSTRUCTION

- A. Partial Obstruction
  - 1. O<sub>2</sub> 100%.
  - 2. Sit patient up and have him/her cough.
  - 3. Transport if obstruction is not cleared or if suspicious of aspiration.
- B. Complete Obstruction
  - 1. AHA protocol for complete obstruction.
  - \* 2. Laryngoscopy in unconscious with attempt to remove with MacGill forceps.
  - \*\*\* 3. If obstruction not removed and unable to ventilate, consider cricothyroidotomy or needle jet insufflation.
- C. Transport to closest hospital.

## II. INSUFFICIENT RESPIRATION OR ARREST

- A. Rule out obstruction. Ventilate with or bag-valve mask.
- \* B. Consider intubation/RSI
- C. 100% O<sub>2</sub>.
- \* D. IV balanced salt solution TKO.
- \* E. **Narcan** 2.0 mg IV, if cause unknown or if narcotics possible. *Child >5 yrs (or >20 kg) 0.1 mg/kg*

## III. ASTHMA

- A. Allow patient to achieve position of comfort; administer O<sub>2</sub>, high flow by mask, humidified.
- \* B. IV TKO or saline lock.
- C. If known asthmatic having recurrent attack:
  - \* 1. Mix **Albuterol** 2.5 mg/3 cc H<sub>2</sub>O with **Atrovent** 2.5 ml via MedNeb inhaler. (Note: May repeat prn ) Set O<sub>2</sub> at 6-10 liters for proper misting. *Child <15 kg 2.5-5 mg/3 cc. Peds >15 kg 5-10 mg/3cc (Note: May repeat prn or administer continuous)*
- \* D. EKG.
- \* E. **Solumedrol** 125 mg IV prn continued wheezes/dyspnea or long transport (> 10 minutes). *Child 2 mg/kg*
- \* F. **Magnesium** 2 gm in 50-100cc over 4-5 min IV *Child 25-50 mg/kg IV over 10-20 mins*
- \* G. Intubate/RSI (can use Lidocaine during the RSI sequence), as needed.
- H. *Child in status asthmaticus, unable to ventilate or to administer MedNeb:*
  - 1. **Epinephrine** IV infusion - *0.1 mcg/kg/min or 0.01 cc/kg IM.*

## IV. COPD

- A. Allow patient to achieve position of comfort.
- B. O<sub>2</sub>, 2 liter nasal cannula. If cyanotic or suspected MI or severe respiratory distress: high flow by mask. Be prepared to assist respiration.
  - 1. Consider CPAP 100% fiO<sub>2</sub>
- C. Intubate/RSI prn.
- \* D. IV TKO or saline lock.
- \* E. EKG. (Dysrhythms common in COPD.)
- \* F. Mix **Albuterol** 2.5 mg/3 cc H<sub>2</sub>O with **Atrovent** 2.5 ml via MedNeb inhaler. (Note: May repeat prn q 5 min. x 2.) Set O<sub>2</sub> flow at 6-10 liters per minute for proper misting.
- \* G. **Solumedrol** 125 mg.

## V. Considerations for all Patients

- \* A. Capnography- combine with patient presentation to ascertain ventilatory status.
  - 1. EtCO<sub>2</sub> normal range is 35-45 mm/Hg
  - 2. Normal EtCO<sub>2</sub> may be higher in COPD patient

***SEIZURES (MAJOR MOTOR/GRAND MAL)***

## I. Initial Intervention

- A. Primary Survey.
- B. Establish airway patency.
  - 1. Do not force teeth apart.
  - 2. Nasopharyngeal airways useful and well tolerated.
- C. 100% O<sub>2</sub>. Suction, as needed.

## II. Treatment/Drug Therapy

- A. If seizure has persisted more than 5-10 minutes or if repetitive:
  - \* 1. IV TKO.
  - \* 2. Glucoscan.
  - \* 3. EKG
  - \* 4. **100 ml of D10 (10 gm)**, if hypoglycemia; may repeat 5gm as needed to max 25gm *Child 0.1 gm/kg.*
  - \* 5. **Versed** 2.5-10 mg IV, IM until seizure stops *Child 0.1-0.2 mg/kg IV/IM slow IVP. May repeat x 1 prn*
  - \* 6. **Thiamine** 100 mg IV for adult, if alcoholism suspected.
  - \* 7. **Magnesium Sulfate** 2 gm IV over 5-10 minutes for possible alcohol withdrawal seizure.

## III. Other Considerations

- A. BE PREPARED TO MANAGE RESPIRATORY DEPRESSION.
- B. Seizures that self-terminate in known epileptic may not require treatment or transport.
- C. Seizures may be a sign of cerebral hypoxia from cardiac arrest.
- D. Seizures may be caused by dysrhythmias.
- E. Febrile seizures in children are usually brief in nature.

**SHOCK**

## I. General Considerations:

- A. Tachycardia is first sign of shock.
- B. Pulse pressure often narrows prior to fall in systolic BP.
- C. Changing level of consciousness important clue.

## II. Initial Intervention

- A. Maintain airway.
- B. 100% O<sub>2</sub>.
- C. Monitor vital signs frequently.
- \* D. EKG.
- E. Trendelenburg position, if tolerated and not interfering with respirations.

## III. Treatment

- \* A. IV large bore with balanced salt solution (Two lines recommended for trauma/sepsis).
- B. Hypovolemia - trauma/sepsis/neurogenic.
  - 1. Give up to two (2) liters fluid as rapidly as possible or until:
    - a) BP systolic is 110.
    - b) Neck vein distention develops.
    - c) Pulmonary rales develop.
  - 2. *Pediatric fluid challenge 20 cc/kg rapidly; may repeat x 2, as indicated.*
  - 3. If head injury and shock
    - a) Target BP 90 systolic.
    - b) Maintain normal ventilation rate.
    - c) Target EtCO<sub>2</sub> 35 mm/Hg.
  - 4. If sepsis/neurogenic shock and not responding to fluid:
    - \* a) **Dopamine** 2-10 mcg/kg/min *Children 2-20 mcg/kg/min*
- C. Hypovolemic - suspected abdominal aortic aneurysm.
  - 1. Fluids to blood pressure systolic 90-110 for adult.
- D. Cardiogenic/medical hypovolemic (DKA, etc.)
  - 1. Fluid challenge with 200-300 cc over 5-10 minutes (see protocol for cardiogenic shock). *Pediatric fluid challenge 20 cc/kg rapidly; may repeat x 2, as indicated.*
  - 2. **Epinephrine** drip 2 mcg/min; increase prn. *Child 0.1 mcg/kg/min increase prn.*
- E. Rapid transport.

**ALTERED MENTAL STATUS/UNKNOWN CAUSE**

## I. Initial Intervention

- A. Obtain history as possible.
- B. Quick physical exam with emphasis on cardiopulmonary resuscitation and neurologic status.
  - 1. Assume head and spine injury if trauma is a possibility and treat accordingly.
- C. Protect airway - suction, airway control, etc. prn.

## II. Treatment:

- A. 100% O<sub>2</sub>.
    - \* 1. Intubation prn
  - \* B. Glucoscan
    - \* 1. Repeat glucoscan after **D10** administration.
    - 2. Normal serum glucose 60-120mg/dL.
  - \* C. IV Balanced salt solution TKO.
  - \* D. EKG
  - \* E. **Thiamine** 100 mg IV If ETOH abuse likely.
  - \* F. **Dextrose** 10 grams infusion, if hypoglycemic; may repeat 5gm prn to max 25gm. *Child 0.1 gm/kg; may repeat x 2 every 5 minutes prn.*
  - \* G. **Narcan** dosing regimen:
    - 1. Respiratory depression/apnea 2.0 mg IV, IN, IM; may repeat x 2. *Child >5 yrs (or >20 kg) 0.1 mg/kg*
    - 2. Altered mentation (O<sub>2</sub> sat, ETCO<sub>2</sub> normal) titrate 0.5 mg prn to maintain airway and respirations. Do not exceed max dose as above.
- Note- If patient opiate dependent consider titrating dose and prepare for sx of withdrawal. Observe carefully during transport for changes in LOC, airway, pupils, and vital signs.

***NITROUS OXIDE (NITRONOX)***

Camas And North Country EMS Orders Only

- I. INDICATIONS - Pain control to include:
  - A. Chest pain secondary to suspected myocardial infarction
  - B. Trauma patients: fractures, burns, abrasions and contusions, etc.
  - C. Renal colic (kidney stone)
  - D. Pain not contraindicated as below
  
- II. CONTRAINDICATIONS - Will include, but may not be limited to:
  - A. Patient unable to self-administer
  - B. Shock state, or likely possibility of shock (e.g., trauma with probable internal hemorrhage)
  - C. Impaired consciousness (head injury, intoxication with alcohol or other drugs)
  - D. Chest injuries, blunt or penetrating - possible pneumothorax
  - E. COPD
  - F. Decompression sickness
  - G. Pregnant patients
  - H. Unable to make a good seal (maxillofacial injuries, young child, etc.)
  
- III. PROCEDURE:
  - A. Advise patient that the gas is an analgesic, and explain the procedure.
  - B. The patient will hold the mask in one hand.
  - C. Have the patient breathe the gas until pain is relieved.
  - D. Repeat the procedure if and when the pain returns.
  - E. Discontinue the administration if the patient is unable to self-administer the gas (e.g., becomes stuporous).
  - F. Monitor vital signs frequently (e.g., every 10 minutes).
  - G. Nausea and vomiting may occur.
  - H. If patient supine, instruct patient to remove mask to exhale.

## ***GASTRIC DECOMPRESSION – NASOGASTRIC INTUBATION / OROGASTRIC INTUBATION***

- I. Indications
  - A. Inability to adequately ventilate due to gastric distension
- II. Contraindications
  - A. Head/face injured trauma patient – orogastric intubation only
  - B. Anatomic anomalies preventing correct placement
- III. Procedure
  - A. Determine correct size and depth of tube.
    1. Size
      - a) Newborn 8.0 fr
      - b) Toddler/Preschool 10 fr
      - c) School age 12 fr
      - d) Adolescents/Adults 14-18 fr
    2. Depth
      - a) Nasogastric: Top of nose, over ear to xyphoid process
      - b) Orogastic : lip, around angle of mandible to xiphoid process
  - \* B. Insert tube
    1. Nasogastric:
      - a) Pass tube along nasal floor into stomach.
      - b) Instill air into tube w/ 20cc syringe and auscultate epigastrium.
      - c) Secure tube.
    2. Orogastic:
      - a) Visualize posterior pharynx, pass tube over tongue into stomach.
      - b) Instill air into tube w/ 20 cc syringe and auscultate epigastrium.
      - c) Secure tube.
  - C. Aspirate/suction stomach contents until patient can be adequately ventilated.
- IV. Precautions/Complications
  - A. In head trauma patient where gastric decompression would benefit ventilation, gastric tube placement will be through the mouth.
  - B. Complications associated with NG tube placement
    1. Epistaxis
    2. Intracranial placement
  - C. Complications associated with NG/OG tube placement
    1. Bronchial placement
    2. Pharyngeal perforation, esophageal obstruction or rupture
    3. Bronchial or alveolar perforation
    4. Pneumothorax
    5. Gastric or duodenal rupture

## ***VOMITING/SIGNIFICANT NAUSEA***

### I. Initial Intervention

- A. Obtain history and consider underlying cause
  - 1. Head injury/Increased intracranial pressure
  - 2. Shock/hypotension
  - 3. Stroke
  - 4. Communicable disease, e.g., Norovirus
  - 5. Other disease process

### II. Treatment

- A. 100% O2.
- B. EKG; monitor vitals
- C. IV Balanced salt solution (BP <95 and no pulmonary edema)
  - \* 1. Fluid challenge if hypotensive
- \* D. **Zofran** 4 mg IV SLOW *Children over 2 years of age: 0.1 mg/kg do not exceed adult dose*
  - 1. Can be administered with Fentanyl to prevent nausea during pain control
- \* E. If Zofran ineffective or refractory vomiting:
  - 1. **Inapsine** 0.625-2.5 mg IV, IM *Children over 2 years of age: 0.1 mg/kg (do not exceed adult dose.)*

## **SECTION D TRAUMA**

### ***TRAUMA PROTOCOLS***

#### **I. General Considerations**

- A. Ten minutes on-scene time, unless there are extenuating extrication problems.  
-Note- It cannot be overemphasized that adequate management of the severely traumatized patient can occur only in the operating room, and that field care is appropriate to stabilize the patient's vital functions and to ensure safe transport without further injury. In other words, a modified scoop and run approach is the standard of care.
- B. Upon evaluation of the patient(s) and determining the need for a trauma system entry, the Paramedic will contact Medical Control to discuss patient transport and destination. Use Trauma HEAR Report format for accurate relay of information. If diversion to Portland is advised:
  - 1. Contact Trauma Communications Center (TCC) at OHSU as soon as possible.
  - 2. Enter Oregon's Trauma System.
  - 3. Emanuel Hospital will be destination hospital under usual circumstances, except as indicated by TCC.

## II. TRAUMA TEAM/TRAUMA ALERT

- A. Initial evaluation of patient(s) and scene should be made rapidly to determine need for trauma center care or rapid transport. Establish DIRECT communication with Medical Control and request Trauma Team or Trauma Alert, if any of the following criteria are met:
1. TRAUMA TEAM
    - a) VITAL SIGNS AND LEVEL OF CONSCIOUSNESS
      - \* Glasgow Coma Scale < 14
      - \* Systolic blood pressure < 90 mmHg
      - \* Respiratory rate < 10 or > 29 breaths per minute (< 20 in infant < one year)
    - b) ANATOMY OF INJURY
      - \* All penetrating injuries to head, neck, torso, and extremities proximal to elbow and knee
      - \* Flail chest
      - \* Two or more proximal long-bone fractures
      - \* Crushed, degloved, or mangled extremity
      - \* Amputation proximal to wrist and ankle
      - \* Pelvic fractures
      - \* Open or depressed skull fracture
      - \* Paralysis
  2. TRAUMA ALERT
    - a) MOI/High Energy Impact
      - Falls
        - \* Adults: > 20 ft. (one story is equal to 10 ft.)
        - \* Children: > 10 ft. or 2-3 times the height of the child
      - High-Risk Auto Crash
        - \* Intrusion: > 12 in. occupant site; > 18 in. any site
        - \* Ejection (partial or complete) from automobile
        - \* Death in same passenger compartment
        - \* Vehicle telemetry data consistent with high risk of injury
        - \* Auto v. Pedestrian/Bicyclist thrown, run over, or with significant impact
        - \* Motorcycle Crash > 20 mph
    - b) Special Considerations
      - Age
        - \* Older Adults: Risk of injury or death increases after age 55 years
        - \* Children: Should be triaged to pediatric-capable trauma centers
      - Anticoagulation and Bleeding Disorders
      - Burns
      - Time Sensitive Extremity Injury
      - End-Stage Renal Disease Requiring Dialysis
      - Pregnancy > 20 Weeks
      - Paramedic Judgment

## ***LIFE FLIGHT/AIR AMBULANCE TRANSPORT***

### **I. GENERAL CONSIDERATIONS**

- A. Air Ambulance is appropriate for the critical trauma patient if transport time can be reduced by at least 10 minutes vs. ground. Consider the following when deciding on Air transport:
1. Transport time to a level I or II trauma center can be reduced by 10 minutes vs. ground transport. Factors affecting the 10 minute reduction include:
    - a. Transfer of patient care to Life Flight personnel
    - b. Establishing and transporting to the landing zone
  2. In general, incidents occurring within 20 miles of the trauma center do not necessitate helicopter transport.

### **II. STANDBY**

- A. LIFE FLIGHT may be placed on standby by:
1. 1st Responder
  2. EMT
  3. Paramedic
  4. Any Physician
  5. Any Police Officer
- Note- When LIFE FLIGHT is put on standby status, the helicopter is readied but remains available for any other requests on a priority basis. If another agency requests activation and you have LIFE FLIGHT on standby, LIFE FLIGHT will check with you for activation or stand-down.
- B. LIFE FLIGHT should be placed on standby by trained personnel on scene after patient assessment has been done. It would be appropriate to place LIFE FLIGHT on standby prior to personnel arrival based on the following guidelines:
1. If first response unit arrival at the scene will be greater than 10 minutes and the information dispatched purports to be the type of patient who will benefit from LIFE FLIGHT. Examples of situations:
    - a) gunshot or penetrating trauma
    - b) MVA: person trapped or multiple patients
    - c) auto-pedestrian
    - d) severe burns
    - e) major amputation
    - f) entrapment, i.e., cave-in, machine on person, etc.
    - g) any call the Paramedic deems is necessary

### **III. ACTIVATION**

- A. The decision to activate LIFE FLIGHT rests with a responding Paramedic (or a physician on scene):
1. As Paramedic arrives on scene and evaluates patient.
  2. Based upon information relayed to Paramedic by people on scene.
- B. In some cases, LIFE FLIGHT can be immediately dispatched (activated) to the scene prior to the arrival of a first-in unit or Paramedic, when:
1. Travel time for that first-in unit will be over 20 minutes and the situation as known purports to be the type of patient who will benefit from LIFE FLIGHT.
  2. Where it is known that difficult terrain will be encountered rendering ground access difficult but where the helicopter can get near the patient easily.
  3. Where the reporting party relates some other special circumstance indicating the need for its immediate activation.

## III. ACTIVATION (cont.)

4. On scene EMS responders relate to the Paramedic the need for activation of LIFE FLIGHT prior to that Paramedic's arrival.  
-Note- In those situations (A or B above), activation shall be done through CRESA with concurrence of responding Paramedic.
- C. Criteria for Activation
  1. Patient(s) meet criteria for trauma team/trauma alert and extrication and/or ground transport will be prolonged (>10 minutes).
  2. Type of injury may dictate immediate transport to level I (Emanuel Hospital, OHSU).
    - \*\*\*a) Medical Control at PHSW to be contacted as soon as possible for instruction and/or concurrence for diversion to Portland. Situations that may result in diversion include but are not limited to:
      - \* Burns (major).
      - \* Pregnancy with multi-system trauma in shock, unresponsive to aggressive resuscitation, or where surgery is anticipated immediately.
      - \* Pediatric patient with shock/respiratory distress.
  3. Multiple victims meeting trauma team criteria.
  4. Diversion to Portland by Medical Control due to hospital resources (PHSW down for trauma).
  5. LIFE FLIGHT should not be used for obvious DOAs, trauma codes and other situations where the outcome is an obvious fatality. (Refer to **DEATH IN THE FIELD** protocol.)
- D. Destination Hospital
  - \*\*\* 1. Unless diversion criteria above applies, the destination hospital shall be indicated to LIFE FLIGHT by the Paramedic in charge (PIC). The PIC will consult with Medical Control and TCC to determine destination

## IV. CANCELLATION

- A. LIFE FLIGHT may be cancelled by the Paramedic responsible for the patient upon examination of the patient and it is apparent that air transport is not necessary. (See Criteria for Activation.)

## V. CASE REVIEWS

- A. LIFE FLIGHT calls will be reviewed by Clark County QA Committee and reported to the Medical Program Director.

**AMPUTATION PROTOCOL**

## I. Initial Intervention

- A. Stump
  1. Cover with sterile dressing.
  2. Saturate with sterile saline.
  3. Cover with dry dressing.
- B. Severed Part
  1. Rinse gently with sterile saline to remove debris.
  2. Wrap severed part with moistened gauze; place in ziploc bag.
  3. Place bag in ice water.
  4. Place label with name, date, and time on bag.
- C. Partial Amputation
  1. Cover with sterile dressing.
  2. Saturate with sterile saline.
  3. Cover with dry dressing.
  4. Splint in anatomical position.
  5. Avoid torsion and angulation (reduce torsion into anatomical position).

## II. Treatment

- A. O2 prn.
- \* B. IV fluid challenge if hypotensive.
- \* C. **Fentanyl** 25-50 mcg IV for pain control. *Children 1-2 mcg/kg*

## III. General Considerations

- A. Do not use dry ice or put severed part in direct contact with ice.
- B. Control bleeding by direct pressure.
- C. Do not neglect total patient care in favor of caring for the amputation.
- D. Time is of the greatest importance to assure viability. Re-implantation of the amputated part is available at PHSW.

-Note- Lower extremity amputations seldom have re-implantation.

## ***BURN PROTOCOL***

### I. General Considerations

- A. Remove patient from the source of the burn.
  - 1. Douse or remove any smoldering clothing or bedding and any restricting jewelry, especially rings.
  - 2. If acid or chemical burns, remove clothing and brush off dry chemicals; flush with large amounts of water.

### II. Initial Intervention

- A. Evaluate and assist ventilation; high flow O<sub>2</sub> if potential exposure to carbon monoxide or if dyspnea present.
  - 1. Observe for signs of upper airway obstruction.
- B. CPR, if necessary.
- C. Treat for shock, control hemorrhage and splint any fractures per protocol prn.

### III. Treatment for Burns:

- A. Thermal Burns/Chemical Burns
  - 1. Cover with clean dressing or sheet.
  - 2. Do not use ointment, creams, sprays or anything else on burned skin.
  - 3. Do not use ice. Conserve warmth with sheets or blankets.
  - 4. Elevate the burned extremities.
- B. Electrical Burns:
  - 1. Always worse than they appear due to the deep injury.
  - 2. Monitor carefully for dysrhythmias.
  - 3. Protect C-spine.
  - 4. Seizure precautions.

### IV. Treatment During Transport

- \* A. IV TKO Balanced salt solution.
- B. Oxygen
  - \* 1. Consider endotracheal intubation if necessary to maintain open airway.
- C. If carbon monoxide or cyanide poisoning, refer to specific protocol and treat accordingly.
- \* D. **Fentanyl** 25-50 mcg IV for pain control. *Children 1–2 mcg/kg.*
- E. **Nitronox** per protocol (North Country/Camas).

### V. Assessment

- A. Describe the burn anatomically: i.e., "both hands and feet."
- B. Evaluate the burn for depth and area (using rule of 9); separate into critical and non-critical burns. The following are the criteria for critical burns:
  - 1. Burns complicated by respiratory tract injuries
  - 2. Partial thickness second degree burns of more than 30% of the body surface
  - 3. Full thickness and third degree burns of more than 10% body surface
  - 4. Burns of the hands, feet, face and genitalia
  - 5. Electrical burns
  - 6. Deep acid or caustic burns
  - 7. Burns in compromised patient (diabetic, in shock, or traumatic injuries)
- C. All critical burns should be referred to the Oregon Burn Center at Emanuel Hospital.

**HEAD & THORACIC TRAUMA**

## I. Initial Intervention:

- A. Maintain spinal immobilization as necessary.
- B. Clear airway; 100% O<sub>2</sub>.
- \* C. Intubate/RSI prn
  - 1. Maintain EtCO<sub>2</sub> 30-35 mm/Hg for head injured patient showing signs of increased intracranial pressure.

## II. SEVERE FACIAL TRAUMA AND/OR UNABLE TO ORALLY INTUBATE

- A. Life-threatening upper airway obstructions where other measures to establish an airway and ventilation have failed and endotracheal intubation is not feasible
- B. Management:
  - \*\*\* 1. Surgical Cricothyroidotomy
    - a) Identify cricothyroid membrane, incise skin with a vertical incision. Place appropriately sized Trach Tube through horizontal incision in cricothyroid membrane. NOT TO BE USED IN PEDIATRIC PATIENT!
    - b) This procedure to be used only in life-threatening situations.
    - c) Complications include hemorrhage, false passage, etc.
  - \*\*\* 2. Needle Jet Cricothyroidotomy
    - a) Identify cricothyroid membrane, direct #10-14 gauge over the needle catheter caudally into the trachea, attached to O<sub>2</sub> source.
    - b) This procedure to be used only in life-threatening situations.
    - c) Complications include hemorrhage, false passage, etc. Temporizing airway maneuver. CAN BE USED IN PEDIATRIC PATIENTS!

## III. TENSION PNEUMOTHORAX:

- A. Rapidly deteriorating patient
  - 1. Tachycardia, SOB, Hyperresonance to percussion
  - 2. Late sx include: JVD, tracheal deviation, sub Q emphysema
- B. Management:
  - \*\*\* 1. Pleural Decompression.
    - a) 2nd intercostal space, midclavicular line.
    - b) This procedure to be used only in life-threatening situations.
    - c) Complications include local hematomas, cellulitis, and pneumothorax.

**RAPID SEQUENCE INDUCTION (RSI)**

## I. Indications

- A. Need for immediate intubation assumed with failed intubation attempt

## II. Management:

- A. 100% O<sub>2</sub> assisted ventilations, BVM, hyperventilate patient prior to SUX if possible.
1. Suction as needed.
  - \* 2. IV secured. Surgical equipment available.
  - \* 3. Cardiac monitor.
- B. Pretreatment medications:
- \* 1. **Lidocaine** 1 mg/kg: Only for patients w/ suspected increased ICP, e.g., head trauma or suspected intracranial bleeding CVA with coma, Cushings triad, unequal pupils. Patients with RAD, e.g., asthma/allergic reaction.
  - \* 2. **Atropine** 0.5 mg IV - Adults with pulse <100 and all pts w/ hypoxic hx and decreased O<sub>2</sub> sat and increased CO<sub>2</sub> *All children <12 years old, 0.01 mg/kg IV;*
  - \* 3. **Etomidate** 0.3 mg/kg max 20 mg (Not in pediatric with septic shock)  
**ALTERNATIVE – Ketamine** 2 mg/kg max 200 mg single dose  
**ALTERNATIVE – Versed** 5 mg *Child, 0.1-0.2 mg/kg*
- \* C. **Succinylcholine** 1.5 mg/kg IV push max 200 mg single dose.
- D. Cricoid pressure (Sellick Maneuver) until intubation successful and ET tube cuff inflated.
- E. After fasciculations stop, ventilate patient 4-5 times with BVM.
- \* 1. Perform endotracheal intubation.
  2. If difficult intubation:
    - a) Reposition, BURP technique, change rescuer
    - b) Eschmann catheter
    - c) NASCAR technique
    - d) King Vision Laryngoscope
- \* F. If relaxation inadequate in 60-120 seconds, repeat dosage of Succinylcholine. Reattempt intubation.
- G. If intubation repeatedly unsuccessful, ventilate with BVM until spontaneous respirations return (6-10 minutes).
- \* 1. Insert IGEL rescue airway.
  - \*\*\* 2. Perform cricothyroidotomy if unable to ventilate patient.
    - \*\*\* a) Needlejet if patient less than 12
- \* H. Treat bradycardia per protocol with **Atropine** IV. Pre-treat with Atropine (as above) in hypoxic patient (↑CO<sub>2</sub> and ↓O<sub>2</sub> sat). Temporarily halt intubation, hyperventilate with BVM and 100% O<sub>2</sub>.
- I. Upon successful intubation, confirm ET tube placement by CAPNOGRAPHY and secure. Release cricoid pressure, ventilate with BVM and 100% O<sub>2</sub>, maintain EtCO<sub>2</sub> 35-45mm/Hg.
1. If no EtCO<sub>2</sub> reading or deteriorating waveform, pull tube and reattempt intubation.
- J. Document GCS/neuro prior to SUX.
- K. Once intubated, normal ventilation rates should be maintained. Administer 100% O<sub>2</sub> via Bag-valve-ET at ~12 per minute (assist peds at normal ventilation rates per age). For the patient with closed head injury maintain BP of 90 systolic and EtCO<sub>2</sub> 30-35 mm/Hg.
- \* 1. Consider **Versed** 5-10 mg IV/IO prn for post-intubation sedation *Child, 0.1-0.2 mg/kg*

***NEED FOR LONG TERM PARALYTIC:***

- I. Identified need for long-term paralytic after successful intubation:
  - A. Need for long term paralytic defined:
    - 1. Patient successfully intubated (confirmed by capnography) and beginning to arouse and or become combative
    - 2. Risk of losing patent airway exists
    - 3. Extended transport time
- II. Procedure
  - \* A. **Vecuronium** (Norcuron) 0.1 mg/kg IV bolus.
  - \* B. Sedation with **Versed** 5-10 mg prn.
  - C. Follow above recommendations for ventilations. Notify receiving physician of long acting paralytic use.
  - D. Other Considerations:
    - 1. Duration of action 25-40 minutes.
    - 2. Prolonged excretion in renal or hepatic failure patients.
    - 3. Like SUX, has no effect on consciousness or pain threshold.

## ***SPINAL IMMOBILIZATION ALGORITHM***

- I. Appropriate Patients for LBB Immobilization:
- A. Blunt trauma with ALOC
  - B. Spinal pain/tenderness
  - C. Neurologic complaint
  - D. Anatomic spinal deformity
  - E. High energy MOI with any of the following:
    - 1. Intoxication
    - 2. Inability to communicate
    - 3. Distracting injury
- II. Consider Mechanism of Injury:  
Fall, MVC, struck with object, ped struck, assault, bicycle accident, industrial, diving/drowning, H2O accident (i.e., boating), etc.
- A. **Patient Mentation:**
    - 1. Decreased Level of Consciousness?
    - 2. ETOH/Drug Ingestion?
    - 3. Loss of Consciousness Involved?
  - B. **Subjective Assessment:**
    - 1. Cervical, Thoracic, Lumbar Spinal Pain?
    - 2. Numbness/Tingling/Burning/Weakness?
  - C. **Objective Assessment:**
    - 1. Cervical, Thoracic or Lumbar Deformity or Tenderness?
    - 2. Other Severe/Distracting Injury?
    - 3. Pain w/ Cervical Range of Motion?
- IF YES TO ANY, IMMOBILIZE. IF NO TO ALL, MAY TREAT/TRANSPORT WITHOUT SPINAL IMMOBILIZATION**
- III. Consider Spinal Precautions with C-collar and Immobilization to the Gurney
- A. Pt. ambulatory at scene
  - B. Pt. requiring long transport, i.e., interfacility
  - C. Pt. where LBB not otherwise indicated

**MINIMIZING MOVEMENT AND ATTENTION TO SPINAL PRECAUTIONS IS STILL PARAMOUNT!**

## **SECTION E OB/GYN/CHILDBIRTH**

### ***OB/GYN/CHILDBIRTH***

#### I. General Considerations

- A. Most deliveries proceed without complications.
  - 1. Most pregnancies in labor may be transported with minimal of ALS care.
  - 2. Transport most pregnant females in the position of comfort.
- B. If possible, transport unconscious or traumatized third-trimester pregnant females in left lateral decubitus (protect spine).
  - 1. Treat hypotension in the pregnant female aggressively.
- C. Following emergency delivery, the baby has primary consideration.

### ***EMERGENCY DELIVERY***

#### I. If delivery appears imminent, proceed at scene:

- A. Initial Intervention
  - 1. O2 high flow.
  - 2. Place mother supine.
  - \* 3. Start large bore IV with balanced salt solution (time permitting).
- B. Delivery
  - 1. Apply gentle counterpressure to baby's head as it delivers.
  - 2. Assist delivery of shoulders and rest of body.
  - 3. After delivery, allow at least one minute before cutting cord. Clamp cord using two clamps 6-8 inches from baby's body; cut cord between clamps.
    - a. In baby requiring resuscitation these efforts take precedence over cord clamping.
  - 4. CHECK BLOOD GLUCOSE LEVEL OF INFANT (normal range 60-120 mg/dL).
- C. Postpartum
  - 1. Give newborn primary attention; keep warm, clear airway.
    - a. Suction only if breathing obstruction or need for PPV; includes non-vigorous babies with meconium staining.
  - 2. Let placenta deliver normally; do not pull on cord.
  - 3. Place delivered placenta in plastic bag for transport.
  - 4. After delivery of placenta, massage uterus firmly.
  - 5. Examine perineum for tears, apply direct pressure with gauze pad to any bleeding tears. Do not pack vagina.
  - 6. Estimate blood loss. Treat for hypovolemia as needed. Transport.

#### II. Breech Presentation

- A. Transport without delay.
  - 1. High flow O2 to mother.
  - 2. Place mother supine or in Trendelenburg.
- B. If delivery occurs during transport:
  - 1. Allow mother to push - do not pull the baby - gently extract.
  - 2. Support delivered body and extremities on your hand and arm.
  - 3. If head not delivered, place gloved hand in vagina to form a "V" around baby's mouth and nose should it begin to breathe.

## II. Breech Presentation (cont.)

4. If familiar with Mauriceau Maneuver:
  - a) Fingers of one hand inserted into infant's mouth or over mandible; fingers of other hand curved over shoulders.
  - b) Assistant exerts suprapubic pressure on head.

## III. Prolapsed Cord

- A. Frequent vital signs.
- B. Treatment
  1. High flow O<sub>2</sub> to mother.
  2. Place mother in knee-chest position or extreme Trendelenburg.
  3. Insert gloved hand into vagina and gently lift head/body off of cord.
  4. Observe cord for pulsations and continue until relieved by hospital staff.
- C. Rapid transport.

## IV. Cord Wrapped Around Neck

- A. Gently attempt to loosen cord.
  1. With two fingers behind baby's neck, try to slip cord forward, over baby's upper (anterior) shoulder and head. If unsuccessful, attempt to slip under lower shoulder and over head.
  2. If unsuccessful, clamp cord with two clamps, cut between clamps, and carefully unwrap cord from around neck.
- B. Assist delivery.

## V. Placental Previa/Abruptio Placenta

- A. Frequent vital signs.
- B. Treatment
  1. High flow O<sub>2</sub>.
  - \* 2. IV balanced salt solution - If hypovolemic, fluid challenge.
- C. Transport; contact delivery room en route.

## VI. Postpartum Hemorrhage

- A. Causes:
  1. Early - usually due to uterine atony or tears of the cervix
  2. Late - (7 - 10 days) - retained placental parts
- B. Treatment
  1. High flow O<sub>2</sub>.
  - \* 2. IV - large bore, one or more, with balanced salt solution. Fluid challenge if hypovolemic.
- C. External uterine massage (elevate and firm pressure).

## ***TOXEMIA OF PREGNANCY***

- I. Symptoms/Signs
  - A. Mild Pre-Eclampsia:
    - 1. Hypertension (moderate)
    - 2. Edema
    - 3. Weight gain
  - B. Moderate to Severe Pre-Eclampsia (any one of the following):
    - 1. Hypertension - >160 systolic or >110 diastolic
    - 2. Headache
    - 3. Cerebral disturbances (changes in behavior)
    - 4. Visual disturbances (flashes of light)
    - 5. Epigastric pain
    - 6. Dyspnea
    - 7. Cyanosis
  - C. Eclampsia [Toxemia] (any one of the above plus):
    - 1. Seizure or Post-ictal
- II. Treatment
  - A. Frequent vital signs.
  - B. High flow O<sub>2</sub>.
  - \* C. IV TKO.
  - \* D. Cardiac monitor.
  - E. Seizure precautions.
    - \* 1. If patient seizing, give **Versed** 2.5-10 mg IV/IM .
    - \* 2. **Magnesium Sulfate** 2 gm IV slow (5-10 min.).
  - F. Rapid transport - calm and reassure patient en route.

## ***SPONTANEOUS ABORTION***

- I. Treatment
  - A. Frequent vitals. Establish last menstrual period.
  - B. If hypotensive:
    - 1. High flow O<sub>2</sub>.
    - \* 2. Cardiac monitor.
    - \* 3. IV large bore with balanced salt solution per protocol.
  - C. Apply loose perineal pad. Collect any tissue passed and bring to the hospital.
  - D. Transport.

## SECTION F PEDIATRICS

### ***PEDIATRICS AT A GLANCE***

- I. Pediatrics Defined
  - A. Pediatric Patients: Individuals who have not reached their 15th birthday or who appear not to have reached their 15th birthday
  - B. Newborn Patients: Birth to hospital discharge
  - C. Most pediatric medical emergencies (not trauma) are respiratory emergencies.
    - 1. Most pediatric respiratory emergencies can be managed with oxygen, suction, proper patient positioning, and occasionally with PPV with bag and mask.
- II. Medication Considerations
  - A. Administration of medication to the pediatric patient is usually determined by weight. Dosages of a specific medication should never exceed the maximum identified adult dose.
  - \* B. **Pediatric Fluid Challenge:**
    - 1. *20 cc/kg Balanced salt solution rapidly IV. May repeat initial dose x 2, as needed. TKO fluid -- balanced salt solution preferred.*

### ***MANAGEMENT OF THE SEVERELY ILL OR INJURED CHILD***

- I. Initial Intervention
  - A. Establish responsiveness.
    - 1. Assess airway; open airway, as needed, avoiding hyperextension.
    - 2. Protect cervical spine.
    - 3. Ventilate, as needed.
    - \* 4. Endotracheal tube, as needed.
  - B. Assess pulse.
    - 1. CPR, as indicated; follow cardiac arrest protocols.
    - 2. Assess hemorrhage; control, if present.
  - C. Assess pulse rate, respirations, BP.
    - 1. Treat shock, as per protocol.
- II. Secondary Intervention And Treatment
  - A. Head-to-toe exam, as indicated.
    - 1. Brief history, including age, weight, general health, history of present illness, medications, fever, trauma.
  - B. Treatment:
    - \* 1. Establish cardiac monitor for shock, coma, irregular pulse, etc.
    - 2. O2 by face mask (6L), unless this causes agitation.
    - \* 3. If condition warrants IV fluids or IV medications, establish an IV with microdrip tubing and soluset.

### III. Pediatric Trauma

- A. Medical Control may divert certain categories of pediatric trauma entries to Level I facilities in Portland. Early contact with the Medical Control Physician is mandated to determine appropriate destination.
  - 1. Immediate Life Threats, i.e., physiologic/anatomic criteria:
    - a) Uncontrolled airway, hemorrhage, shock. PHSW as destination for stabilization.
  - 2. Non-immediate Life Threats, i.e., Trauma Alert:
    - b) A majority of these patients may be diverted to Emanuel or OHSU for specialty pediatric care and management.

### ***PEDIATRIC APNEA AND CYANOSIS***

#### I. Initial Intervention

- A. Assess for seizure activity; treat per protocol.
  - B. Protect airway against vomiting and aspiration.
  - C. O2 100% by mask, if cyanosis or apnea; ventilate with bag.
  - \* D. Intubate, as indicated, 100% O2, ventilate with bag.
  - \* E. IV balanced salt solution TKO, if IV medications warranted (or IO).
  - F. Transport.
- Note- Transport any child with history of apnea or cyanosis to hospital for evaluation.

### ***NEWBORN RESUSCITATION***

#### I. General Considerations

- A. Prevent heat loss from the infant.
  - 1. Quickly dry infant, remove wet linens from contact with the infant.
  - 2. Maintain warm environment, place in mother's arms if condition warrants.

#### II. Initial Intervention:

- A. Sniffing position usually opens airway.
  - 1. Bulb suction nose and mouth.
  - 2. If meconium is present, suction with meconium aspirator, as needed in non-vigorous baby.
  - 3. Marked meconium staining in non-vigorous baby:
    - \* a) Visualize cords, suction with meconium aspirator or #10 catheter.
    - \* b) Intubate and suction trachea with ET tube as suction tube.
    - \* c) Reintubate and attempt ventilations. Suction as needed.
- B. Breathing Control:
  - 1. Stimulate respirations by gently flicking heels, rubbing spine.
  - 2. Face mask with 6L O2.
  - 3. Positive pressure ventilation for:
    - a) Apnea or gasping respirations - APGAR score 5 or less.
    - b) Assess APGAR at 1 and 5 minutes after birth.
  - \* 4. Intubation for persistent apnea or APGAR less than 5 after 10 minutes.
- C. Clamp and cut cord 6-8 inches from baby. Transport delivered placenta to hospital.
  - \*\*\* 1. May use umbilical vein for IV access prn (MPD Certification Required).

## III. Further Treatment

- A. Persistent bradycardia (rate < 80) or asystole despite PPV
  - \* 1. **Epinephrine** 0.01 mg/kg (1:10,000), IV, IO, or ET tube.
- B. Respiratory depression due to maternal narcotics despite adequate O2 and PPV
  - \* 1. **Narcan** 0.1 mg/kg, ET tube, IM, IO, IV.
- C. Neonatal fluid resuscitation: 10 ml/kg balanced salt solution.

**APGAR SCORING**

SCORE	0	1	2
HEART RATE	ABSENT	<100	>100
RESP. EFFORT	ABSENT	SLOW, IRREGULAR	GOOD, CRYING
MUSCLE TONE	LIMP	SOME FLEXION OF EXTREMITIES	ACTIVE MOTION
REFLEX IRRITABILITY	NO RESPONSE	GRIMACE	COUGHS, SNEEZES
COLOR	BLUE/PALE	EXTREMITIES BLUE	COMPLETELY PINK

**CROUP AND EPIGLOTTITIS**

## I. Initial Interventions

- A. Calm patient. Sitting position preferable, parent's lap best, if possible.
- B. Assess rate and quality of respirations; note retractions.
  - 1. Do not attempt to visualize pharynx.

## II. Treatment

- A. NS nebulized by Med Neb and mask for mild stridor.
- B. For cyanosis and severe stridor:
  - 1. O2 high flow, humidified.
  - \* 2. **Racemic epinephrine**
    - a) *If child 20-40 kg 0.5 cc in 5 cc NS by MedNeb and mask*
    - b) *If child <20 kg 0.25 cc in 5 cc NS by MedNeb and mask*

-Note- Do not attempt intubation.

- C. For respiratory arrest or cyanosis with loss of consciousness:
  - 1. Supine position.
  - 2. Proper neck position and attempt positive pressure ventilation.
  - \* 3. If unable to ventilate, may attempt intubation.
  - \*\*\* 4. If unsuccessful, needle cricothyroidotomy with 14 gauge needle/catheter.

**FEVER**

- I. Initial Intervention
  - A. Oral or rectal temperature greater than 38<sup>0</sup> C (100<sup>0</sup> F):
    - 1. Remove heavy or swaddling clothes, keep lightly dressed.
    - 2. If no other problems than fever identifiable, no therapy required at scene.
  - B. If other problem (seizure, coma, etc.), follow indicated protocol.
    - 1. If child appears toxic, do not delay transport.
- II. Treatment
  - A. Fever associated with seizure.
    - 1. High flow O2 by mask.
    - 2. If fever above 103<sup>0</sup>, initiate cooling by removing clothing.
    - \* 3. **Tylenol (acetaminophen)** *rectal suppository; 20 mg/kg*
  - B. Status epilepticus
    - \* 1. IV balanced salt solution TKO.
    - \* 2. **Versed** *0.1-0.2 mg/kg; give slowly IV/IM over 1-2 minutes and be prepared to manage ventilations. May repeat prn.*

**SUDDEN INFANT DEATH SYNDROME**

- I. General Considerations
  - A. Infants usually less than six (6) months of age.
    - 1. Sudden, without apparent cause, during sleep.
    - 2. It may be impossible to differentiate SIDS from suspected child abuse.
- II. Interventions
  - A. CPR unless there are obvious signs of death (rigor, lividity, etc.).
    - 1. Follow protocol for cardiac arrest.
    - 2. Resuscitation may be terminated only by order of base station physician or family physician at the scene.
  - B. Support the parents. Avoid questions or comments suggesting blame.
  - C. Observe carefully and note:
    - 1. Location and position of child
    - 2. Objects immediately surrounding the child
    - 3. Behavior of all adults present
    - 4. The explanations provided
    - 5. Vomitus in mouth or foreign body present
  - D. Report all observations to Medical Control or to county coroner.

***CHILD ABUSE***

- I. General Considerations
  - A. Be alert to findings suspicious of child abuse:
    - 1. Explanations of mechanisms of injury conflicting with actual injury
    - 2. Suspicious injuries, e.g., cigarette burns, multiple bruises of varied age, belt marks, etc
    - 3. Child with history of repeated injuries
    - 4. Blame placed upon others
    - 5. Procrastination by caretaker(s) in seeking aid.
    - 6. Sexual abuse may accompany physical abuse, or may be present without signs of apparent physical abuse.
  - B. Treat any injuries per protocols.
    - 1. Transport without delay for critical cases.
  - C. Document as carefully as possible caretaker's descriptions of the event(s):
    - 1. Note the environment carefully including temperature.
    - 2. Note the reaction of all adults (include all caretakers) .
    - 3. Note clothing, stains, conditions, bring clothing in with patient.
    - 4. Encourage the caretaker(s) to allow transport of the child to the hospital for medical evaluation and/or treatment.
    - 5. Should caretaker(s) not allow transport, notify Law Enforcement.
  - D. Support and reassure the child:
    - 1. Be non-judgmental; be supportive to family concerns.

***CONSIDERATIONS FOR CHILD/INFANT DEATH SCENES***

- I. General Considerations
  - A. In addition to noting the Suspicions For Child Abuse:
    - 1. Notify appropriate agencies if not already on-scene including law enforcement and the Medical Examiner.
  - B. The following should be documented:
    - 1. Position of infant when originally found
    - 2. Where infant originally found, i.e., crib, waterbed, bassinet, etc.
    - 3. Position of face and was it covered by blankets/bedding, etc.
    - 4. Was infant/child sleeping alone
    - 5. Any airway obstruction or secretions in airway
    - 6. Any secretions noted on child's bedding (purge)
    - 7. Treatments rendered PTA including CPR, etc.
  - C. Be very cognizant of evidence preservation. RESUSCITATION ATTEMPTS TAKE PRECEDENCE. Take special care to document all attempts at invasive procedures including IVs, intubations, etc.

## **SECTION G PANDEMIC AND DISASTER PROCEDURES**

### ***VIRAL RESPIRATORY DISEASE PANDEMIC (PANFLU)***

- I. Triggers
  - A. Activation of the EMS Viral Respiratory Disease, Pandemic SOPs is made by Incident Command in consultation with Clark County Public Health.
- II. Communications
  - A. 9-1-1 Operations/Dispatch
    1. Ongoing Surveillance:
      - a) 9-1-1 will use protocol 26 (sick person) for patients whose primary chief complaint is flu-like non-priority symptoms (fever, nausea, and vomiting).
      - b) 9-1-1 will use the Severe Respiratory Infection (Flu-Like) Symptoms checklist on all patients with illness caused by the flu.
    2. Communicable Disease Outbreak:
      - a) 9-1-1 will use protocol 36 (Pandemic/Epidemic/Outbreak) when a communicable disease outbreak has been declared locally that has an impact to emergency medical resources.
- III. Worker Safety/Infection Control
  - A. Enhanced Protective Equipment (PPE) Procedures:
    1. All Patient Contact – PPE including: gloves, NIOSH approved N95 mask (surgical mask is appropriate if N95 is not available), and eye protection.
    2. Patients with Respiratory/GI symptoms – PPE outlined above, plus: cover patient with surgical face mask; disposable gown/overalls and shoe covers.
    3. Change in response configuration to minimize personnel exposure at each call.
    4. Every job not involving patient contact – PPE including: Regular hand washing, and cleaning of work surfaces (minimum prior to each shift/staff change).
  - B. Vaccination / Antiviral Therapy:
    1. Emergency Responder Points of Distribution (POD) – Agency management in consultation with the Clark County Health Department will consider/coordinate activation of the Emergency Responder PODs for appropriate vaccination/antiviral therapy.
  - C. Staff Entry Control Process:
    1. All Fire/EMS agencies shall establish (a) health care screening site(s) to clear employees prior to entering the work site at the start of each shift.
  - D. Decontamination and Cleaning of Equipment/Work Areas:
    1. Clean off all surfaces and equipment (including glasses and stethoscope) using the approved bio-spray or alcohol based hand cleaner.

2. Dispose of all cleaning supplies in red hazardous waste bag.
3. Use bio-wipes or alcohol based hand cleaner to clean hands and forearms until soap and water are available.
4. *Driver Prior to Transport and Technicians at end of Transport and Decontamination of Ambulance and Equipment* - Remove disposable gown/overalls, face mask, gloves and disposable BP cuff into hazardous waste bag and secure.
5. *First Responders* - Place all equipment used during the call in a red hazardous waste bag until decontamination prior or enroute to next call.
6. *Driver on Arrival at Receiving Facility* - Use new suit, gloves, face mask, and eye protection.
7. Once patient has been transferred, decontaminate inside of ambulance patient care area and equipment prior to arrival at next call.

IV. Patient Care and Transport (Respiratory Distress (Flu Like) Symptoms)

A. PPE

B. Assess Patient for Priority Symptoms

1. Chief Complaint
2. Vital Signs (including check for orthostatic changes and temperature)
3. Medical History/ Travel History

C. Incident Command will advise 9-1-1 and Fire/EMS agencies which of the following Care and Transport options to use:

1. Care and Transport to ED

- a) Allow patient to achieve position of comfort.
- b) Cover patient with surgical face mask, or administer O2 via face mask, to reduce aerosolization of virus .
- c) EKG, IV TKO (if patient is dehydrated provide fluid challenge based on shock guidelines).
- d) Proper cooling techniques based on temperature.
- e) Provide "Infection Control Guidance for Families."
- f) Use patient isolation techniques.
  - Close off ambulance driver's compartment.
  - Drape patient compartment.
- g) Early EMS Report.

2. Care and No Transport

- a) Provide a handout explaining the demand of limited resources and decision of no transport.
- b) Provide "Home Care and Protective Equipment for Families Packet" and explain contents and use.
- c) Advise to call 9-1-1 should priority symptoms occur.
- d) Advise Home Health Care of patient condition and location for in-home support and care.

## ***GENERAL DISASTER AND EARTHQUAKE STANDARD OPERATING PROCEDURES***

- I. Scope
  - A. The EMS Standard Operating Procedures (SOPs) for General Disaster and Earthquake provides general guidelines in disaster response and communications and earthquake incident specific information. This SOP is intended to serve as a guideline and should not prohibit Incident Commanders, Medical Control or lead Paramedics from using their best judgment in providing prehospital care and transport.
- II. Concept of Operations
  - A. Initial Actions:
    1. Determine if communication to dispatch is operational by listening. DO NOT CONTACT DISPATCH UNLESS DIRECTED TO DO SO, OR WHEN INVOLVED IN ACTIVE CALL.
    2. REMAIN AVAILABLE BY RADIO, CELLULAR PHONE, AND PAGER.
    3. IF RADIO COMMUNICATIONS ARE LOST, REPORT TO THE NEAREST AREA EMERGENCY OPERATIONS CENTER (AEOC).
    4. Conduct a Station Status Report per your agency's procedures if appropriate.
    5. Agency supervisors may conduct a ROLL CALL to determine injuries and damage. NOTE – IF EARTHQUAKE, MOVE UNITS OUT OF GARAGE ON TO APRON.
  - B. Communications:
    1. 9-1-1 Operations/Dispatch
      - a) If call demand exceeds resources, CRESA will initially dispatch the higher priority calls and stage lower priority calls.
      - b) As volume increases, CRESA may implement AEOC DISPATCHING.
        - i. CRESA will notify all affected agencies.
        - ii. See the AEOC Dispatch POD and Radio Assignment for radio frequencies.
      - Note – ALL Ambulance services will be dispatched on Fire Tap (or ambulance contractor's dispatch center).
  - C. Incident Operations and Responsibilities
    1. Incident Command and Coordination
      - a) NIMS/ICS – National Incident Management System (NIMS) and Incident Command System (ICS).
      - b) IC – Incident Command (IC) is typically assigned to the lead agency (i.e., fire, police, etc.) having jurisdictional authority and incident management responsibility.
      - c) ICP – The Incident Command Post (ICP) is responsible for management of primary tactical level operations. It may be located at the incident site, or remote in the case of multiple incidents or prolonged operations.
      - d) DOC – Department Operations Center (DOC) is facility that supports operations of a given agency.
      - e) In Clark County there are 5 Area Emergency Operations Centers (AEOCs) that provide situation/damage assessment and resource coordination and support for operations within the given Area. An ICP may also be co-located at an AEOC.
      - f) The Clark Regional Emergency Operations Center (CREOC)

2. Fire Service
  - a) Provides on-scene Incident Command and implement ICS as appropriate
  - b) Restricts entry and establishes appropriate zones (hot, warm, cold) as necessary
  - c) Implements the Passport System
  - d) Provides patient decontamination as needed
  - e) Provides fire suppression, hazardous materials and technical rescue response
3. Ambulance Service
  - a) Follow the Multiple Casualty Incident guidelines as necessary.
    - i. Typically functions as Transportation Unit Leader within the Medical Division or Group of the ICS Organization, but should be prepared to function as Triage and Treatment Leaders as assigned by the IC or Medical Division Supervisor
    - ii. Coordinates ambulance staging with Staging Manager
  - b) If you are not assigned a specific ICS position, STAY WITH YOUR VEHICLE AND BY YOUR RADIO until directed by the Staging Manager for assignment or entry into loading area.
  - c) Coordinates storage and distribution of prehospital emergency medical supplies.
4. Law Enforcement
  - a) May be Incident Command if the event involves a crime
  - b) Provides incident site(s) perimeter control
  - c) Provides traffic control
  - d) Coordinates evacuation
  - e) Provides crime scene investigation as needed
5. Clark County Medical Examiner
  - a) Provides identification, storage and disposition of the deceased.
  - b) Coordinates notification of next-of-kin.
  - c) Coordinates establishment of temporary morgues as necessary.