

Marin County Emergency Medical Services



PREHOSPITAL CARE MANUAL

July 2016

"Excellent Care – Every Patient, Every Time"

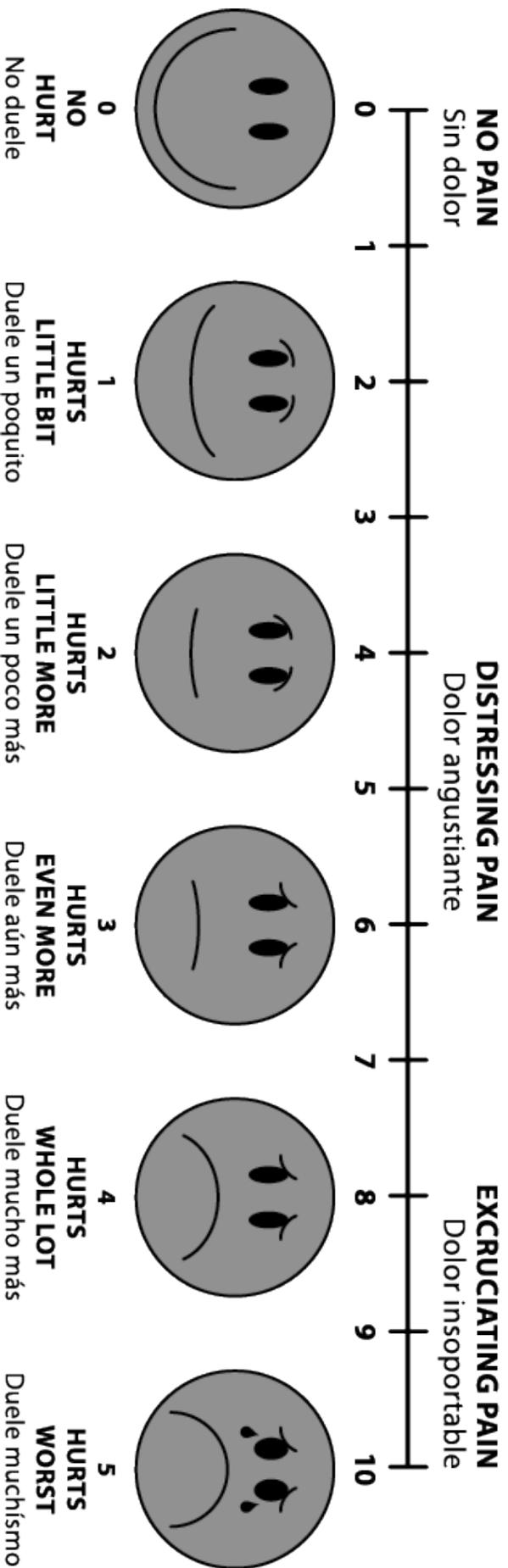


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PATIENT TRANSFER AND TRANSPORTATION

PURPOSE

To provide guidance regarding the movement of injured patients from non-trauma facilities to trauma facilities and from one level of trauma facility to a different level of trauma facility and to review the availability of transportation for those purposes.

RELATED POLICIES

Interfacility Transfer, #8107; EMS Aircraft, #5100

DEFINITIONS

- A. *Non-trauma facilities* are acute care facilities not holding a trauma center designation.
- B. *Trauma facilities* are acute care facilities holding a trauma center designation of Level I, Level II, Level III or EDAT.

POLICY

- A. All acute care facilities in Marin County, as part of an inclusive trauma system, will provide care to injured patients and participate in the Trauma System Plan.
- B. Prehospital care personnel will evaluate trauma patients on initial contact and determine the appropriate destination based on the apparent severity of the injury, the location of the patient, the time to transport to definitive care and the availability of transport resources related to the location of the appropriate facility.
- C. Patient transfer may be accomplished in one of the following ways:
 - 1. Transfer from a non-trauma facility to a trauma facility. To facilitate this type of patient transfer, a rapid re-triage for adults and pediatrics patients may be used (see 4606 A and B);
 - 2. Transfer from a trauma facility to a trauma facility with a higher level designation 4606 A and B may be used to identify the types of patients which may benefit from the transfer;
 - 3. Transfer after stabilization and initial care (per EMTALA regulations) to a like facility of the patient's choosing;
 - 4. Transfer after definitive care (per EMTALA regulations) to a non-trauma facility for on-going care. The transfer of patients from one facility to another must be based upon medical treatment decisions and not in whole or in part on the patient's financial or social status or their ability to pay for care or services. Decisions to transfer the patient at their request or the request of their insurer must, at all times, be made in a manner consistent with good medical practice.
- E. As the lead agency, the Marin County EMS Agency will initiate and maintain contracts with Level I, Level II and specialty care facilities on behalf of the Marin County Trauma System Plan.
 - 1. All contracts arranging for care of patients injured in Marin County will include provisions for the establishment of transfer guidelines indicating the type of patients or injuries anticipated to be transferred under the terms of the agreement.
 - 2. Marin County facilities are required to have transfer agreements and to specify the type of patient or injury to be transferred under the terms of the agreement.
 - 3. Additional transfer agreements must include provisions assuring that required trauma

data is provided to the transferring facility to complete data collection and quality improvement processes.

- F. In all instances of patient transfer, it is the responsibility of the transferring facility to assure the following:
1. That the transfers occur in accordance with all state and federal laws and regulations;
 2. That all pertinent patient records are transferred with the patient;
 3. That the receiving facility and receiving physician have accepted the patient
 4. That the method of transfer is appropriate to the needs of the patient at the time that the transfer occurs; and
 5. Arranging appropriate transportation for the patient
- G. If expected patient care is within Paramedic Scope of Practice and timely transfer is needed, contact 9-1-1 to request *Emergency Interfacility Transfer*. If expected patient care exceeds Paramedic Scope of Practice, contact appropriate transport agencies (CCT Transport) or arrange for nursing staff and/or MD to accompany paramedic or EMT during transport to the receiving facility.
1. Patients being transferred should receive, during the transport, a level of care and attention equivalent to the level of care necessary before and following the transfer.
 2. Level of care refers to the type of equipment and supplies needed and to the level of expertise of caregivers.

TRAUMA TRIAGE AND DESTINATION GUIDELINES

PURPOSE

To provide additional explanation and guidance for the Marin County Trauma Triage Criteria Tool to help identify trauma patients in the field and, based upon their injuries, direct their transport to an appropriate level of trauma care facility.

RELATED POLICIES

Service Area for Hospitals, #4603; EMS Aircraft, #5100; Ambulance Diversion Policy, #5400; Destination Guidelines, GPC 4; Determination of Death, ATG 6; Multi-Casualty Incident, GPC 12

DEFINITIONS

- A. **Designated Trauma Center** refers to an acute care facility holding designation as a Level I, Level II, Level III, or EDAT. In Marin County, Marin General Hospital is the designated "Level III trauma center" and Kaiser is the designated "EDAT."
- B. **Provide Trauma Notification** means that field personnel will advise the trauma center as soon as possible of their impending arrival by providing a Trauma Notification (see Trauma Triage Tool).
- C. **Time closest facility** is that facility which can be reached in the shortest amount of time.

GENERAL POLICY

- A. It is the overall goal of the Marin County Trauma System to provide treatment of injured patients at Marin County hospitals.
- B. Whenever physician consultation is indicated within this policy, contact shall be made with Marin General Hospital Level III trauma center.
- C. The following policy statements pertain to use of the Trauma Triage Tool (see 4613a):
 - 1. Patients shall be determined to meet criteria for transport to a designated trauma center if they meet the criteria listed in the Trauma Triage Tool.
 - 2. Physician consultation is REQUIRED in the following circumstances:
 - a. The paramedic is unable to transport the patient to the indicated facility in an expedient manner;
 - b. The paramedic assesses the patient and scene conditions and believes transport to a different level of care is indicated;
 - c. Patient requests a facility not indicated by the Trauma Triage Criteria Tool.
 - 3. Physician consultation is RECOMMENDED whenever assistance in resolving treatment decisions or transport destinations is desired.
 - 4. Unmanageable airway: Patients with airway compromise unmanageable by BLS or ALS adjuncts will be transported to the closest receiving facility.
 - 5. Traumatic Arrest in the Field Prior to Paramedic Arrival: Patients found in cardiopulmonary arrest due to blunt or penetrating trauma may be determined dead at the scene and not transported. Determination of death must meet criteria found in Policy ATG-6 (Determination of Death).
 - 6. In MCI incidents, triage principles (START triage) may preclude initiation of CPR (refer to policy - ATG 6).

- D. Destination for Adult patients who meet Physiologic or Anatomic Criteria:
1. Transport to time closest trauma center.
 2. If the estimated ground transport time to the closest trauma center exceeds 30 minutes, consider use of air ambulance.
 - a. Estimated ground transport time is evaluated from the time the patient is packaged and ready for transport. Consider traffic conditions, weather, and other relevant factors.
 - b. Estimated air transport time includes: minutes until arrival (if helicopter is not already on the ground); scene and load time of flight crew (typically 10 minutes); flight time to trauma center; and off-load time (typically 7-10 minutes). If helicopter is on the ground at the time the patient is ready for transport, then air transport time is evaluated as time to load, flight time to trauma center and time to off-load to the ED.
- E. For adult patients meeting mechanism of injury or additional factors criteria, transport to Marin General.
- F. Pediatric patients who meet Physiologic or Anatomic Criteria:
1. Transport directly to Children's Hospital Oakland (see Trauma Triage Tool).
 2. If ETA (transport time) is anticipated to be >30 minutes, physician consultation should be obtained with the Level III trauma center to determine destination.
- G. Incidents involving three or more patients meeting Physiologic or Anatomic Criteria will be handled in the following manner:
1. Prehospital providers should obtain a physician consultation from the Level III trauma center, regarding destinations anytime three or more patients meet Physiologic or Anatomic Criteria. If an incident is deemed to be an MCI, prehospital providers will utilize the multicasualty plan for destination guidelines.
 2. Helicopter dispatch should be initiated for all incidents in which three or more patients meet A&P criteria.
 3. Patients meeting physiologic and anatomic triage criteria that the Level III trauma center cannot accept should be transported to an out-of-county Level I or II trauma center in the most appropriate and expedient manner.
- H. The EDAT will be used for patients meeting mechanism of injury trauma triage criteria that Level III trauma center is unable to accept.

MARIN COUNTY TRAUMA TRIAGE TOOL
Adult Patients (age 14 and older)

Step 1 – Major Physiologic Factors

- 1. Glasgow Coma Scale \leq 13
- 2. Systolic blood pressure (mmHg) <90 mm Hg
- 3. Respiratory rate <10 or >29 breaths per minute

Provide **Full** Trauma Notification & Transport to Time Closest Trauma Center: Marin General Hospital by ground, or Level II by air.

YES NO

Assess Anatomic Factors

Step 2 – Major Anatomic Factors

- 1. Penetrating injuries to head, neck, torso, or extremities proximal to elbow or knee
- 2. Flail chest
- 3. Two or more proximal long-bone fractures
- 4. Crushed, degloved, mangled or amputated extremity proximal to wrist or ankle
- 5. Pelvic fractures
- 6. Open or depressed skull fracture
- 7. Paralysis (partial or complete)
- 8. Burns with anatomic factors

Provide **Full** Trauma Notification & Transport to Time Closest Trauma Center: Marin General Hospital by ground, or Level II by air.

YES NO

Assess Mechanism of Injury Factors

Step 3 – Mechanism of Injury Factors

- 1. Falls
 - Adults >20 feet (one story is equal to 10 feet)
 - Children >10 feet or three times the height of the child
- 2. High-risk auto crash
 - Passenger space intrusion >18" (>12" occupant site)
 - Ejection (partial or complete) from automobile
 - Death in same passenger compartment
- 3. Auto vs. pedestrian or auto vs. bicyclist: thrown, run over, or with >20 mph impact
- 4. Motorcycle or bicycle crash: thrown and > 20 mph impact
- 5. Burns with MOI factors

Provide **Limited** Trauma Notification & transport to Marin General Hospital Trauma Center

YES NO

Assess Additional Factors

Step 4 – Additional Factors

- 1. Older Adults; Risk of injury/death increases significantly after age 65
- 2. Anticoagulant use and/or bleeding disorders with head / torso injury
- 3. End-stage renal disease requiring dialysis
- 4. Pregnancy >20 weeks

Does assessment of these additional factors, or other complaints or exam findings cause paramedic to be concerned about the patient?

Provide **Limited** Trauma Notification & Transport to Marin General Hospital Trauma Center

YES NO

Transport to closest emergency dept. or emergency dept. of patient's choice

MARIN COUNTY TRAUMA TRIAGE TOOL
Pediatric Patients (age <14 yrs)

Step 1 – Major Physiologic Factors

- | |
|---|
| <ol style="list-style-type: none"> 1. Glasgow Coma Scale ≤13 2. Systolic BP <80 mm Hg – age 7-14 3. Systolic BP <70 mm Hg – age < 7 |
|---|

<p>Transport to Oakland Children’s Hospital if ETA 30 min. or less, otherwise transport to Marin General Hospital and provide <u>Full</u> Trauma Notification</p>
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<p>Assess Anatomic Factors</p>

Step 2 – Major Anatomic Factors

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Penetrating injuries to head, neck, torso, or extremities proximal to elbow or knee 2. Flail chest 3. Two or more proximal long-bone fractures 4. Crushed, degloved, mangled or amputated extremity proximal to wrist or ankle | <ol style="list-style-type: none"> 5. Pelvic fractures 6. Open or depressed skull fracture 7. Paralysis (partial or complete) 8. Burns with anatomic factors |
|--|--|



<p>Transport to Oakland Children’s Hospital if ETA 30 min. or less, otherwise transport to Marin General Hospital and provide <u>Full</u> Trauma Notification</p>
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<p>Follow Steps 3 & 4 on page 1 for Adult Trauma Patients</p>
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SPECIAL CONSIDERATIONS

1. The clinical findings, including past medical history, are critical to identifying the trauma patient, especially when assessing Mechanism of Injury (MOI) and Additional factors (AF).
2. A thorough clinical assessment is especially important in:
 - Patients with persistent & unexplained respiratory difficulty, tachycardia, or peripheral vaso-constriction;
 - Any patient <5 yrs of age who has suffered major trauma but for whom it is not possible to fully determine physiologic status;
 - Inability to communicate (e.g., language barrier, substance or psychiatric impairment)
3. There are mechanisms of injury not identified in the Trauma Triage Tool that may be associated with trauma. Any fall or impact with significant velocity is likely to produce a candidate for trauma activation.

“PROVIDE TRAUMA NOTIFICATION” means field personnel will advise the trauma center as soon as possible of their impending arrival by providing a Trauma Notification. This information will be used to activate the trauma team. This information is best provided directly from the field by the EMT, paramedic or Incident Commander. Direct communication with the hospital via MERA is preferred. The notification must include at a minimum the following information:

1. Age / Gender
2. Incident type (e.g., MVA, fall, stab wound, gunshot wound)
3. Injury and/or complaints
4. Category:
 - “Full Trauma” (Anatomic or Physiologic factors) or
 - “Limited Trauma” (Mechanism or Additional factors)
5. ETA

As soon as practical after the Trauma Notification has been given, a more thorough report should be provided to the trauma center, including vital signs.

Trauma Center consultation is recommended for questions about destinations for injured patients.

EMS AIRCRAFT

I. PURPOSE

To provide policy for integrating dispatch and utilization of aircraft into the Marin County EMS system as a specialized resource for prehospital response, transport, and care of patients.

II. RELATED POLICIES

- A. Emergency Medical Dispatch Policy, #4200
- B. Trauma Triage and Destination Guideline Policy, #4613
- C. Prehospital/Hospital Contact Policy, # 7001

III. PHILOSOPHY

Aircraft utilization provides a valuable adjunct to the Marin County EMS System by minimizing the time to definitive care in prescribed circumstances. The time to definitive care for critically ill or injured patients can be a critical factor in optimizing their outcome.

IV. AUTHORITY

California Administrative Code, Title 22, Divisions 2.5 and 9.

V. APPLICABILITY

All aircraft providing prehospital patient transport within the Marin County EMS System must be authorized by the EMS agency in their county of origin or by the EMS Authority or by a United States Government agency.

VI. POLICY

- A. The patient's condition, available ground resources, incident location in relation to receiving facility and call circumstances will be evaluated by caregivers in the field to determine if air transport is appropriate.
- B. The type of aircraft to be requested will be determined by the Incident Commander and/or the County Communications Center based on provider availability, response time criteria and nature of the service needed. See Appendix A.

VII. PROCEDURE FOR AIRCRAFT DISPATCH

- A. Aircraft will be dispatched simultaneously with ground units for specific circumstances as follows:
 - 1. Area of the call is inaccessible to ground unit(s) or ground access is compromised;
 - 2. Air assistance may be needed with rescue activities; or

3. Ground transport time to the hospital is > 30 minutes and the applicable Emergency Medical Dispatch Protocol (policy #4200, Appendix A) recommends simultaneous dispatch.
 4. Level III Trauma Center is on trauma diversion status.
- B. Aircraft Dispatch may also occur in the following manner:
1. Upon request of the responding unit while en route to the scene.
 2. Upon request of onscene personnel following patient assessment.

VIII. PROCEDURE FOR AIRCRAFT USE

- A. For trauma patients:
1. The patient meets Trauma Triage Tool anatomic or physiologic criteria and the time closest facility is the Level II Trauma Center; or
 2. Ground transport or delay to definitive care could worsen the patient's injury.
- B. For medical patients: Ground transport or delay to definitive care could worsen the patient's illness.
- C. Procedural Considerations
1. EMS aircraft should not transport patients in continued cardiac arrest. Aircraft personnel discretion to transport patients receiving CPR may be warranted in certain situations (refractory VF, unsafe scene conditions, hypothermia, etc.).
 2. Marin County Communications Center will notify law enforcement and fire agencies with jurisdiction over the landing zone.
 3. The EMS aircraft may be canceled by the onscene Incident Commander after consultation with the senior medical person on-scene.
- D. Medical control
1. Medical control is vested in the most medically qualified health care professional at the scene (ref. Chapter 5 1798.6).
 2. Treatment decisions will be made according to medical control policies and procedures governing the provider agency having responsibility for care.
 3. Destinations may be requested by Marin County personnel related to the level of care desired (i.e., pediatric trauma center, burn center, Level II Trauma Center, etc.), rather than the specific hospital.

C. GENERAL AND RELATED PROCEDURES

1. Marin County personnel may accompany a patient in an EMS aircraft during transport if all of the following conditions are met:
 - a. Personnel have been providing care for the patient prior to arrival of the aircraft;
 - b. Aircraft pilot and crew request that personnel accompany the patient during transport to assist with care
2. Patient care records will be kept as follows:
 - a) Marin County personnel will complete the Marin County Patient Care Record as per policy/procedure and fax it to the receiving hospital.

- b) EMS aircraft crew will complete a patient care record as required by policy/procedure within their county of origin.
3. The following times, when available, will be relayed to and recorded by Marin County Communications Center:
 - a) ETA at time of original dispatch request
 - b) When airborne, en route to scene
 - c) Arrival at scene
 - d) Departure from scene
 - e) Destination hospital
 - f) Arrival at receiving hospital
4. As part of the Quality Improvement Program, a peer review committee will review all aircraft dispatches.
5. Aircraft may be utilized by acute care hospitals for interfacility transfers.
 - a) Hospitals will contact EMS aircraft providers directly.
 - b) The hospital requesting an EMS aircraft will notify the Marin County Communications Center of aircraft activity so fire and law enforcement agencies can be notified of the probable aircraft landing site.
 - c) Hospitals shall notify the Marin County EMS Office of interfacility transfers. This may be done following each transfer or on a yearly basis.

APPENDIX A

PROVIDER LIST and CLASSIFICATION DEFINITIONS

Provider Name	Classification	Function	Staffing	Location
Stanford University Hospital Helicopter (LIFEFLIGHT)	Air Ambulance	Medical	Pilot Flight Nurses (2)	Palo Alto
California Shock/Trauma Air Rescue (CALSTAR)	Air Ambulance	Medical	Pilot Critical Care Nurses (2)	Concord
Redwood Empire Air care Helicopter (REACH)	Air Ambulance	Medical	Pilot Critical Care Nurse/EMT-P	Santa Rosa and Concord
Sonoma County Sheriff's Department helicopter (Henry 1)	ALS Rescue	Law, Medical, Long-line rescue	Pilot Paramedic EMT-I	Santa Rosa
California Highway Patrol Helicopter (H-30)	ALS Rescue	Law, Medical	Pilot Paramedic	Napa
U.S. Coast Guard Helicopter	Auxiliary	Water rescue, Long-line rescue	2 Pilots Crew includes 1 EMT-I rescue swimmer	San Francisco Airport

CLASSIFICATION DEFINITIONS

- “Air Ambulance” means any aircraft specifically constructed, modified, or equipped and used for the primary purpose of responding to emergency calls and transporting critically ill or injured patients whose medical flight crew has at a minimum two attendants certified or licensed in advanced life support.
- “Rescue Craft” means an aircraft whose usual function is not prehospital emergency medical transport but which may be utilized for prehospital emergency patient transport when use of an air or ground ambulance is inappropriate or unavailable.
- “ALS Rescue Aircraft” means a rescue aircraft that is equipped to provide ALS service, staffed with a minimum of one ALS medical flight crew member.
- “Air Rescue Service” means an air service used for emergencies including search and rescue.
- “BLS Rescue Service” means a rescue aircraft whose medical crew has, at a minimum, one attendant certified as an EMT-1.
- “Auxiliary Aircraft” is a rescue aircraft which does not have a medical flight crew or whose flight crew does not meet the minimum requirements of a BLS Rescue Aircraft.

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AMBULANCE DIVERSION POLICY

I. PURPOSE

To define the circumstances under which ambulance traffic may be diverted from an expected or "usual" receiving facility.

II. RELATED POLICIES

- A. Trauma Triage and Destination, #4613
- B. Destination Guidelines, GPC 04

III. AUTHORITY

"In the absence of decisive factors to the contrary, ambulance drivers shall transport emergency patients to the most accessible medical facility equipped, staffed, and prepared to receive emergency cases and administer emergency care appropriate to the needs of the patient." California Administrative Code, Title 13, Section 1105 (c).

IV. DEFINITIONS

- A. **Full diversion** means a rerouting of all ambulance traffic.
- B. **Condition specific diversion** may occur when a normally available service, procedure or piece of equipment is temporarily unavailable and results in the rerouting of specific patients, dependent on the reason for diversion. Condition Specific Diversion may include the following:
 - 1. CT Scanner Inoperable
 - 2. Neurosurgeon Not Available
 - 3. Trauma Center Diversion
 - 4. Emergency Department (ED) Saturation
 - 5. Cath Lab Diversion

V. POLICY

- A. Each Receiving Hospital shall establish an internal hospital plan, approved by and on file with the EMS Office. The plan shall include, but not be limited to the following:
 - 1. Definitions and standards for activation which are consistent with this policy/procedure.
 - 2. Identification of the internal approval process, including persons or positions that must be involved in the decision-making process.

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3. Mechanisms for notification, on-going monitoring, removal from diversion status; identification and activation of backup ED and ICU physical space according to state licensing guidelines; call-in mechanism for additional staff; identification of patients who can be safely transferred within the facility; internal review of the diversion and reporting to the EMS Office.
- B. Full diversion may occur only if the receiving emergency department is incapacitated by a physical plant breakdown (i.e., fire, bomb threat, power outage, etc.) which renders patient care unsafe. In the event of a full diversion, all patients will be rerouted to other facilities as appropriate.
- C. The need to institute a Condition Specific Diversion is determined according to each facility's plan, consistent with the following:
1. The following patients may not be rerouted:
 - a. Obstetrical patients in active labor
 - b. Patients with respiratory distress and unmanageable airway
 - c. Patients with uncontrolled external hemorrhage
 - d. Patients requiring ALS, but having no paramedic in attendance
 - e. Patients with CPR in progress
 - f. Stable patients who insist on transport to a specific hospital. Ambulance personnel will inform the patient of the diversion status and document that the patient refused transport to an alternate facility.
 2. Destinations of all other patients will be determined in accordance with the type of diversion.
 3. **CT Scanner Inoperable:**
 - a. Full trauma activations with signs and symptoms of head, neck or spinal cord injury, transport to Level II Trauma Center; if conditions preclude air transport contact Level III Trauma Center.
 - b. Limited trauma activations meeting the above criteria will be transported to the EDAT.
 - c. Patients with the following get transported to closest facility with functioning CT scanner:
 1. Signs or symptoms of a new CVA
 2. Head injury patients not meeting trauma criteria with anticoagulant use and/or bleeding disorders
 4. **Neurosurgeon Not Available:**
 - a. Patients with signs and symptoms of head, neck or spinal cord trauma: transport to Level II Trauma Center; if conditions preclude air transport contact Level III Trauma Center (MGH).
 - b. Patients with signs and symptoms of CVA and/or medical conditions that may require Neurosurgical intervention: transport to the closest appropriate facility in Marin County with a functioning

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CT scanner for initial evaluation and stabilization. Transfer, if indicated, is the responsibility of the hospital, including the maintenance of formal transfer agreements with other facilities.

5. Trauma Center Diversion:

- a. Trauma patients will be diverted from the trauma center when the trauma surgeon and back-up trauma surgeon are encumbered with the care of trauma patients either in the operating room or emergency department.
- b. Patients who meet Physiologic and/or Anatomic Trauma Triage Criteria (Full activations) shall be transported to the time-closest Level I or Level II Trauma Center by air or ground.
- c. Patients who meet “Mechanism of Injury” and/or “Additional Factors” Trauma Triage Criteria (Limited activations) shall be transported to the EDAT.
- d. The following conditions DO NOT constitute acceptable grounds for Trauma Center Diversion:
 1. A lack of clinical specialty backup, inpatient bed space, monitored beds, or inpatient nursing staff.
 2. ED Saturation Diversion
 3. Inoperable CT Scanner (see section V.C.3.)

6. ED Saturation Diversion:

- a. Ambulance traffic may be diverted due to emergency department saturation when emergency department resources are fully committed and unable to accept incoming ambulance traffic.
 - b. Trauma, STEMI, and suspected CVA patients will NOT be rerouted.
 - c. Under this policy, ***no diversion incident shall exceed two hours***. At the end of a two hour diversion period, a hospital must again contact the Communications Center to initiate another diversion status.
 - d. Under no circumstance is lack of in-patient hospital beds, other than in the Emergency Department, grounds for diversion. Hospitals are expected to accept ALL ambulance patients and to provide emergency stabilization and appropriate transfer if necessary.
- D. In all cases of diversion, senior management or designee must be notified and must approve activation of the diversion status.
- F. In the event that more than one Trauma Center or more than two receiving hospitals within Marin County meet their internal plan criteria and wish to activate diversion status at the same time, diversion status for all will be discontinued upon direction of the EMS Office.

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VII. INITIATING AND TERMINATING DIVERSION STATUS

A. Initiating diversion

1. The facility shall implement the internal plan prior to initiating diversion status. The request to initiate status must be approved by senior management.
2. The impacted facility shall contact the Communications Center, announcing their need to initiate diversion status, including the following information:
 - a. Criteria for diversion
 - b. Name of senior management person approving diversion status
 - c. Expected duration of diversion
3. The Communications Center shall notify all other hospitals, the EMS Office, and providers as they are dispatched to calls, of the hospitals' diversion status and type of diversion.

B. Termination of diversion

1. Diversion status will be terminated as soon as possible.
2. Diversion status is terminated when the hospital notifies the Communications Center who will then notify all other hospitals, the EMS Office, and provider agencies as they are dispatched on calls.
3. The name of senior management approving the termination of the diversion status shall be reported.

C. EMS Agency staff are available to assist with solving system-related problems and can be reached by contacting the Communications Center.

D. The EMS Agency will track the frequency and duration of diversion, making periodic reports to system participants.

E. Documentation of Diversion

1. Hospitals must complete the Ambulance Diversion Form and fax it to the EMS agency within 48 hours (415.499.3747) for ALL diversions. Refer to Appendix A.
2. An EMS Notification Form should be submitted to the EMS agency for any problem associated with patient care during a diversion.



AMBULANCE DIVERSION REPORT FORM

MARIN COUNTY EMS AGENCY
 1600 Los Gamos Dr. #220, San Rafael, CA 94903
 ph. 415-473-6871 fax 415-473-3747
 www.MarinEMS.org

Kaiser
 Diversion (circle):
 Full ED Sat CT Cath Lab

Marin General
 Diversion (circle):
 Full ED Sat CT Cath Lab Trauma Neuro
 NEDOCS LEVEL (ED Sat only) _____

Novato
 Diversion (circle):
 Full ED Sat CT

	Date	Time	Charge Nurse	Dispatcher Name	ReddiNet Updated
Start					
End					

Dispatch Updated Every Two Hours (ED Sat Only):										
Time										
Initials										

Name & Title of Person Authorizing Diversion: _____

Name & Title of Person Completing Form: _____

Reason for Diversion (ED Sat/Full Only): _____

After end of diversion, fax this completed form to Marin County EMS
 Details can be found in Marin County EMS Policy #5400, Ambulance Diversion

PREHOSPITAL/HOSPITAL CONTACT

PURPOSE

To provide guidelines for contact between prehospital care personnel and receiving facilities

DEFINITIONS

- A. Report Only - a notification to the receiving facility that a patient is enroute
- B. Early Notification – a communication meant to provide an early alert to hospital staff that a specialty care patient is enroute. Early Notifications include:
 - 1. Early Trauma Notification
 - 2. Early Stroke Notification
 - 3. Early STEMI Notification
 - 4. Early Sepsis Notification
- C. Physician Consult - a consultative discussion between field personnel and an ED physician.

POLICY

- A. Report Only
 - 1. Shall occur anytime a prehospital unit transports a patient.
 - 2. May be performed by any prehospital personnel.
 - 3. Reports shall include the following:
 - a. Transport unit identification
 - b. Level of transport (code 2 or 3)
 - c. Level of care being provided (ALS or BLS)
 - d. Age/gender of patient
 - e. General category of patient (type of illness or injury) or treatment guideline being used for an ALS patient.
 - f. Condition of patient (stable, improving or worsening)
 - g. Estimated time of arrival to receiving facility
- B. Early Notification (Trauma/Stroke/STEMI/Sepsis)
 - 1. Shall be performed at the earliest possible time, prior to leaving the scene when feasible.
 - 2. Is required when patient meets criteria.
 - 3. May be performed by paramedic, Incident Commander, or other delegated personnel
 - 4. Shall include all elements of Section A. above and all of the following:
 - a. Type of Notification (Trauma, Stroke, STEMI, Sepsis)
 - 1. Sepsis
 - 2. Stroke: Last known well, patient identifying information

3. STEMI: 12-lead findings, patient identifying information
 4. Trauma: Full or Limited
 - b. ETA
 5. As soon as practical after the an Early Notification has been given, a more thorough report should be provided to the Trauma Center, including vital signs.
- C. Physician Consult
1. Shall occur when specified in an ALS or BLS Treatment Guideline.
 2. Trauma Center consultation is recommended for questions about the destinations for injured patients. Consult shall be made with Marin General Hospital.
 3. Physician Consult communication shall include the following:
 - a. The need for physician consultation
 - b. Statement of need (e.g. additional Versed, assistance with Determination of Death, etc.)
 - c. Patient assessment and presentation.
- D. If a paramedic attempts contact for any of the reasons above and is unable to contact the intended receiving facility, personnel may contact another in-county hospital. If no facility can be contacted, the following should occur:
1. Treatment should be administered according to the appropriate ALS or BLS treatment guideline.
 2. Medications or treatments listed as “physician consult required” may not be administered or performed
 3. Documentation of the communications failure should be completed as detailed in policy #7002, Communication Failure.
- E. In the event of a declared multiple patient incident, paramedics may operate according to the Multiple Patient Management Plan (MPMP) omitting contact or hospital consultation.

RELATED POLICIES

Trauma Triage and Destination Guidelines, #4613

Communication Failure, #7002

PATIENT CARE RECORD (PCR)

I. PURPOSE

To establish requirements for completion, reporting, and submission of Marin County approved Patient Care Records.

II. RELATED POLICIES

ALS to BLS Transfer of Care, ATG 4
Against Medical Advise (AMA), GPC 2
Release at Scene (RAS), GPC 3

III. DEFINITIONS

- A. Patient – someone who meets any one of the following criteria:
 - 1. Has a chief complaint or has made a request for medical assistance
 - 2. Has obvious symptoms or signs of injury or illness
 - 3. Has been involved in an event when mechanism of injury would cause the responder to reasonably believe that an injury may be present
 - 4. Appears to be disoriented or to have impaired psychiatric function
 - 5. Has evidence of suicidal intent
 - 6. Is dead
- B. Emergency Medical (EM)/Authorization Order (AO) – a number assigned by a Marin County Communication's Center to identify each 9-1-1 call dispatched for medical assistance.
- C. Electronic Patient Care Record (ePCR) - the permanent record of prehospital patient evaluation, care, and treatment.
- D. Field Transfer Form (FTF) – a temporary, paper record of patient care
- E. Triage Tag – a paper record for multi-casualty incidents involving 6 or more patients

IV. POLICY

- A. An ePCR shall be completed for every call for which an EM/AO is issued.
- B. For all patients transported, the ePCR will be completed by the personnel assigned to the transport unit.
- C. For non-transported patients (e.g. AMA, RAS, Dead on Scene), the ePCR will be completed by the paramedic or EMT most involved in patient care and responsible for the patient's disposition.
- D. For calls where there is no medical merit, the ePCR will be completed according to provider agency's policy.
- E. The ePCR is the permanent PCR and will be filled out in a clear, concise, accurate, and complete manner and will include all care provided in the prehospital setting. When possible, it shall include all 12 lead ECGs and any ECG other than normal sinus rhythm.
- F. The completed PCR includes all care rendered by the transporting providers as well as any care given prior to arrival of the transporting unit by bystanders and/or first responders. Documentation of care provided by first responders (of a different agency than the transport unit) may be required by their department policy.
- G. When a patient is transported to a receiving facility, one copy of the PCR shall be left with the receiving facility upon transfer of care.
 - 1. In the event that personnel are unable to leave a completed PCR at the facility, a FTF will be completed in full and left in lieu of the ePCR. However, ALL critical

patients (e.g., cardiac arrest, Early Notification patients) MUST have a completed PCR left at the hospital upon transfer of care. If a FTF was utilized, an ePCR will be completed and received by the facility as soon as possible and no later than 3 hours of transfer of care.

- H. For ground transportations to an out-of-county facility, a FTF will be given to the receiving provider and a completed ePCR shall be produced and sent to that facility within 3 hours of transfer of care.
- I. For air ambulance transportations, a FTF will be given to the air ambulance personnel, and an ePCR will be created within 3 hours of transfer of care and sent to the receiving facility via ePCR program or FAX.
- J. Personnel assigned outside of the county to provide medical-mutual aid (e.g. fire-line EMT/Paramedic), shall complete a FTF for each patient contact. The FTF will be created on site and a copy submitted to the provider agency as soon as possible after returning to the county.
- K. Willful omission, misuse, tampering, or falsification of documentation of patient care records is cause for formal investigative action under Section 1978.200 of the California Health and Safety Code.

V. GENERAL INSTRUCTIONS

- A. The patient care record is part of the patient's permanent medical record and is used for, but not limited to, the following purposes:
 - 1. Transfer of information to other healthcare providers
 - 2. Medical legal documentation
 - 3. Billing for services
 - 4. Development of aggregate data reports for Continuous Quality Improvement (CQI), including specific quality indicators and identification of educational needs
 - 5. EMS Agency case investigation
- B. Reference to a Marin County EMS Notification Form or similar record should not be included on the patient care record.
- C. If ALS to BLS transfer of care is determined to be appropriate, documentation of assessments and all care rendered must be completed by both the ALS and the BLS units according to policy ATG 4.
- D. Provider agencies are responsible for training their employees in the initiation, completion, distribution of patient care records, HIPAA and any accompanying forms based on the EMS Agency's currently approved training curriculum.

APPROVED MEDICAL ABBREVIATIONS

PURPOSE

To identify the abbreviations and symbols which an Emergency Medical Technician (EMT) or Paramedic may use for documentation purposes in Marin County.

ABBREVIATIONS

Abbreviation / Symbol	Description
♀	female
♂	male
⊕	positive
⊖	negative
°C	degrees Celsius
°F	degrees Fahrenheit
(L)	left
(R)	right
1°	primary
2°	secondary
<	less than
>	greater than
@	at
Δ	change
↓	decrease(d)
↑	increase(d)
≈	approximately
x	times
ā	before
A/O	alert and oriented
A/S	at scene / arrived at scene
abd	abdomen
AC	antecubical
AFIB	atrial fibrillation
AICD	Automatic Internal Cardiac Defibrillator
AKA	above the knee amputation
ALOC	altered level of consciousness
ALS	Advanced Life Support
AM	morning
AMA	against medical advice
AMI	acute myocardial infarction
AOS	arrived on scene
approx	approximately
ASA	acetylsalicylic acid, aspirin
ASAP	as soon as possible
ATF	arrived to find
B/C	because
BBB	bundle branch block
BG	blood glucose
BGL	blood glucose level

Bilat	bilateral
BKA	below the knee amputation
BLS	Basic Life Support
BM	bowel movement
BP	blood pressure
bpm	beats per minute
BS	blood sugar
BSA	burn surface area
BVM	bag valve mask
Ā	with
C/C	chief complaint
C/O	complain of
C2	code two
C3	code three
CA	cancer
CAD	coronary artery disease
CHF	congestive heart failure
CHP	California Highway Patrol
CMPA	Central Marin Police Authority
CO	complain of / carbon monoxide
COPD	chronic obstructive pulmonary disease
CP	chest pain
CPAP	continuous positive airway pressure
CPR	cardio pulmonary resuscitation
CPSS	Cincinnati prehospital stroke scale
CSM	circulation, sensation, movement
CVA	cerebral vascular accident
DDM	designated decision maker
DKA	diabetic ketoacidosis
DM	Diabetes mellitus
DNR	do not resuscitate
DVT	deep vein thrombosis
dx	diagnosis
ECG	electrocardiogram
ED	emergency department
EKG	electrocardiogram
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
EMT-P	Paramedic
ENRT	enroute
ER	Emergency Room
ESO	electronic PCR software
ET	endotracheal
ETA	estimated time of arrival
ETCO ₂	end-tidal carbon dioxide
ETI	endotracheal intubation
ETOH	alcohol
ETT	endotracheal tube
F	female
FTF	Field transfer form

fx	fracture
G	Gram
G	gauge
GCS	Glasgow Coma Scale
GI	gastrointestinal
gm	gram
GSW	gunshot wound
gtt(s)	drop(s)
GU	genitourinary
h	hour
H/N/B	head, neck, back
H ₂ O	water
HA	headache
HHN	hand-held nebulizer
HOB	Head of bed
HR	heart rate
HTN	hypertension
Hwy	highway
hx	history
ICD	Internal Cardiac Defibrillator
ICU	intensive care unit
IM	intramuscular
IN	intranasal
IO	intraosseous
IV	intravenous
IVP	intravenous push
JVD	jugular venous distension
KED	Kendrick Extrication Device
kg	kilograms
KSR	Kaiser San Rafael
KTL	Kaiser Terra Linda
L	liter
L	left
lac	laceration
LKW	Last known well
LL	left lateral
LLQ	left lower quadrant
LOC	loss of consciousness / level of consciousness
LS	lung sounds
Lt	left
LUQ	left upper quadrant
m	min
M	male
m/o	Month old
mA	Milliamp
MAD	mucosal atomization device
MCSO	Marin County Sheriff's Office (deputy)
MD	medical doctor
mEq	milliequivalent
mg	milligram
mg/Dl	milligrams per deciliter

MGH	Marin General Hospital
MI	myocardial infraction
MICU	mobile intensive care unit
MIN	minimum / minute
ml	milliliter
MOI	mechanism of injury
MPH	miles per hour
MS	morphine sulfate / multiple sclerosis
MSo4	morphine
MVA	motor vehicle accident
MVC	motor vehicle crash
MVPD	Mill Valley Police Department
N&V or N/V or NV	nausea and vomiting
NaCL	Sodium Chloride
NAD	no apparent distress
NC	nasal cannula
NCH	Novato Community Hospital
NEG	negative
Neuro	neurological
NITRO	nitroglycerin
NKDA	no known drug allergies
NPA	nasopharyngeal airway
NPD	Novato Police Department
NRB	non-rebreather mask
NS	normal saline
NSR	normal sinus rhythm
NTG	nitroglycerine
NVD	nausea, vomiting, diarrhea
O ₂	oxygen
O ₂ sat	peripheral capillary oxygen saturation
OD	overdose
ODT	orally disintegrating tablet
OPA	oropharyngeal airway
̄	after
P/W/D	pink warm dry
PAC	premature atrial contraction
PALP	palpitation
PARA	parity, e.g. gravid 2, para 1 means the patient has been pregnant twice and given birth once; also written G2P1
PCN	penicillin
PE	pulmonary edema / pedal edema / patient exam
PEA	pulseless electrical activity
PERL	pupils equal reactive to light
PERRL	Pupils equal, round, reactive to light
PJC	premature junctional contraction
PM	evening
PMD	primary/personal/private medical doctor
PO	by mouth
POC	position of comfort
POLST	Physician Orders for Life Sustaining Treatment
PRN	as needed

PSYCH	psychiatric
PT	patient
PTA	prior to arrival
PTS	patients
PTSD	post traumatic stress disorder
Pulse Ox	peripheral capillary oxygen saturation
PVC	premature ventricular contraction
PVH	Petaluma Valley Hospital
PVT	private
PX	pain
q	every
R	right
RA	room air
RAS	released at scene
RLQ	right lower quadrant
RMC	routine medical care
RN	registered nurse
ROM	range of motion
ROSC	return of spontaneous circulation
RP	reporting party
RPM	respirations per minute
RR	respiratory rate
Rt	right
Rx	prescription
\bar{s}	without
S. Brady	sinus brady
S. Tach	sinus tachycardia
S/NT/ND	Soft, non-tender, no distention
S/P	status post
S/S	signs and symptoms
SBP	systolic blood pressure
SC, SQ	subcutaneous
SL	sublingual
SM	small
SMR	spinal motion restriction
SNF	skilled nursing facility
SOB	shortness of breath
SPO ₂	peripheral capillary oxygen saturation
SRPD	San Rafael PD
STEMI	ST Segment Elevation Myocardial Infarction
SVT	supraventricular tachycardia
TACH	tachycardia
TB	tuberculosis
TEMP	temperature
TIA	transient ischemic attack
TKO	to keep open
TOC	transfer of care
TRANS	transport / transfer
TTT	Trauma Triage Tool
TX	treatment
UCSF	University California San Francisco

UOA	upon our arrival
USGC	United States Coast Guard
UTI	urinary tract infection
UTL	unable to locate
UTO	unable to obtain
V	victim
V/S or VS	vital sign
VA	Veteran's Administration
VF	ventricular fibrillation
VT	ventricular tachycardia
W/	with
w/c	wheelchair
w/o	wide open
WBC	white blood count
WNL	within normal limits
Y/O or YO	Year(s) old

ADULT CARDIAC ARREST

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- To provide effective, quality cardiopulmonary resuscitation in a sequential and organized manner

CRITICAL INFORMATION

- Witnessed vs. Unwitnessed
- Bystander CPR vs. No Bystander CPR
 - For documentation purposes, inappropriately given CPR = NO CPR

TREATMENT

- Confirm arrest: Unresponsive, no breathing or agonal respirations, no pulse
- Compressions (if hypothermic, delay compressions for 3 minutes; focus on ventilations and active rewarming first)
 - Begin compressions at a rate of at least 110 per minute, using a metronome or other similar device that produces regular, metrical feedback at 110 beats per minute.
 - Consider mechanical CPR device if available
 - Compress the chest at least 2 inches and allow for full recoil of chest
 - Manual CPR is not optimal in the back of a moving ambulance. If transporting a patient needing CPR, consider using mechanical CPR if available
 - Change compressors every 2 minutes
 - Minimize interruptions in compressions. If necessary to interrupt, limit to 10 seconds or less
 - Do not stop compressions while defibrillator is charging
 - Resume compressions immediately after any shock
- Monitor/Defibrillator
 - Priority of second rescuer is to apply pads while compressions are in progress
 - Determine rhythm and shock if indicated
 - Follow specific treatment guideline based on rhythm
- Basic Airway Management
 - During the first 5 minutes of resuscitation BLS airway management is preferred
 - Open airway and provide 2 ventilations after every 30 compressions
 - Ventilation should be about one second each- enough to cause visible chest rise. Avoid excessive ventilation.
 - Use two-person BLS Airway management (one holding mask and one squeezing bag) whenever possible
- Establish IV/IO Access (IO preferred)
- Advanced Airway Management
 - **Placement of advanced airway is not a priority during the first 5 minutes of resuscitation unless no ventilation is occurring with basic maneuvers**
 - King Airway is the preferred device if an advanced airway is required.
 - Laryngoscopy for endotracheal tube placement must occur with CPR in progress. Compressions should not be interrupted for more than 10 seconds for advancement of tube through the cords
 - AVOID EXCESSIVE VENTILATION – provide no more than 8-10 ventilations per minute
 - Maintain O2 saturation level of 94%-99%.
 - Continuous monitoring of End-Tidal CO2 to monitor effectiveness of CPR and advanced airway placement.

- Treatment on Scene
 - Movement of patient during CPR may be detrimental to patient outcome.
 - Provide resuscitation on scene until ROSC, or patient meets Determination of Death criteria.
 - Regardless of the above, transportation is warranted in the following situations: refractory VF, unsafe scene conditions, unstable airway, hypothermia as a primary cause of arrest (<95F/35C), any patient pulled from a fire in cardiac arrest.
 - To assure ROSC continues, remain on scene for 5-10' to assure ROSC, and then transport to a STEMI Receiving Center.

RELATED POLICIES/ PROCEDURES

- Determination of Death ATG6
- Determination of Death BLS5
- King Airway Procedure ALS14
- Ventricular Fibrillation / Pulseless Ventricular Tachycardia C1
- PEA C2
- Asystole C3
- Return of Spontaneous Circulation C10

CANCELLATION OF ALS UNIT

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- First Responders request to cancel an ALS unit

TREATMENT /PROCEDURE

- First Responder personnel may cancel the response of ALS personnel under the following conditions:
 - Patient does not have a priority complaint or symptoms warranting a Level D response as outlined in Emergency Medical Dispatch Policy 4200
 - Patient meets criteria for BLS Declaration of Death in the pre-hospital setting

RELATED POLICIES/ PROCEDURES

- Emergency Medical Dispatch Policy 4200
- Determination of Death in the Pre-hospital Setting First Responder/BLS Personnel BLS 5

AGAINST MEDICAL ADVICE (AMA)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- For patients or Designated Decision Maker (DDM) refusing medical care against the advice of the medical personnel on scene or of the receiving hospital

PHYSICIAN CONSULT - required

- Patient requests transport to a facility that is not the recommended destination, and that decision would create a life-threatening or high-risk situation
- Patient requests an out of county transport when informed of the recommended destination within Marin County
- Pediatric Apparent Life-Threatening Event (ALTE)

PHYSICIAN CONSULT – strongly recommended, but not required

- Patients ≥ 65 years requesting AMA with the following complaints:
 - Chest pain
 - SOB/ Dyspnea
 - Syncope
- New onset of headache
- New onset of seizure
- TIA/ resolving stroke symptoms
- Traumatic injuries
- Pediatric complaints
- Pregnancy related issues

CRITICAL INFORMATION

- Patients who may legally give consent or refuse medical treatment are as follows:
 - At least 18 years of age
 - A minor (<18 years) who is lawfully married/ divorced, or on active duty with the armed forces
 - A minor who seeks prevention or treatment of pregnancy or sexual assault
 - A minor ≥12 years of age seeking treatment of rape, contagious diseases, alcohol or drug abuse
 - A self sufficient minor, ≥ 15 years of age, caring for themselves
 - A legally emancipated minor
- DDM is an individual to whom the patient or a court has given legal authority to make medical decisions concerning the patient's healthcare (a parent or Durable Power of Attorney)
- An AMA may be obtained by telephone consent from patients who do not have a DDM physically present

TREATMENT/ PROCEDURE

- All patients requesting medical attention will be offered treatment and/ or transportation after a complete assessment.
- Mentally competent patients/ DDMs have the right to accept or refuse any or all pre-hospital care and transportation as long as medical personnel have explained the care and the patient /DDM understands by restating the nature and implications of such decisions.
- The following information must be provided to the patient or DDM by the EMS personnel:
 - The recommended treatment and benefits for receiving care

- The risks and possible complications involved
- Reasonable consequences for not seeking care and treatment for the condition
- EMS personnel should advise the patient of alternative care and transport options which may include:
 - Private transport to a clinic, a physician's office or an Emergency Department
 - Telephone consultation with a physician
- Have patient/ DDM sign the AMA form

SPECIAL CONSIDERATION

- Consider early involvement of law enforcement if there is any threat to self, others or grave disability
- Treat as necessary to prevent death or serious disability
- If the patient cannot legally refuse care or is mentally incapable of refusing care, document on the PCR that the patient required immediate treatment and /or transport, and lacked the mental capacity to understand the risks / consequences of the refusal (implied consent)
- Do not request a 5150 hold unless the patient presents a danger to self or others as an apparent result of a psychiatric problem.
- At no time are field personnel to put themselves in danger by attempting to transport or treat a patient who refuses. At all times, good judgment should be used, appropriate assistance obtained, and supporting documentations completed.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Who activated 911 and the reason for the call
- Any medical care provided
- The apparent competency of the patient/ DDM to sign out AMA
- The ability of the patient/ DDM to verbalize understanding of his/her illness or injury, as well as any risks involved and potential outcomes for not receiving treatment or transport
- Reasons given by the patient/DDM for refusing care/ transport and alternate plan for patient follow up if one has been stated
- The presence or absence of any impairment such as drugs or alcohol
- The patient/ DDM understanding that they may re-access 911 if needed
- Signature of the patient/ DDM on the AMA form, or reason why signature was not obtained

RELATED POLICIES/ PROCEDURES

- Pediatric Apparent Life-Threatening Event (ALTE) P14

RELEASE AT SCENE (RAS)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- EMS personnel and the patient or Designated Decision Maker (DDM) concur that the illness/injury does not require immediate treatment/transport via emergency / 911 services

PHYSICIAN CONSULT

- If there are any questions or concerns regarding the patient's disposition

CRITICAL INFORMATION

- Patients who may legally request RAS are as follows:
 - At least 18 years of age
 - A minor <18 years who is lawfully married/divorced, or on active duty with the armed forces
 - A minor ≥12 years of age seeking treatment of rape, contagious diseases, alcohol or drug abuse
 - A self sufficient minor, ≥ 15 years of age, caring for themselves
 - A legally emancipated minor
- DDM is an individual that the patient or a court has legally given authority to make medical decisions on behalf of the patient.
- Patients who do not have a DDM physically present may be released at the scene after telephone consent is obtained (this would most often occur with a minor when the parent is not at the scene).

TREATMENT/ PROCEDURE

- All patients requesting medical attention will be offered treatment and/ or transportation after a complete assessment.
- Mentally competent patients/ DDM have the right to accept or refuse any or all pre-hospital care & transportation as long as medical personnel have explained the care & the patient /DDM understands by restating the nature and consequences of such decisions.
- EMS personnel should advise the patient of alternative care & transport options which may include:
 - Private transport to a clinic, a physician office or an Emergency Department
 - Telephone consultation with a physician
- Have patient/ DDM sign the RAS form

SPECIAL CONSIDERATION

- Consider involvement of law enforcement early if there is any threat to self or others.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Who activated 911 and the reason for the call
- The apparent competency of the patient/ DDM to sign the RAS form
- The ability of the patient/ DDM to verbalize the understanding of his/her illness or injury, risks and the outcome for not treating/ transporting
- Alternate plan for patient follow up
- The presence or absence of impairment due to drugs/ alcohol
- The patient/ DDM understanding that they may re-access 911 if needed
- Signature or reason stated why it was not obtained on the RAS form

RELATED POLICIES/ PROCEDURES

- Against Medical Advice GPC 2

**MARIN COUNTY EMS
AGAINST MEDICAL ADVICE (AMA)–RELEASE AT SCENE (RAS) FORM**

CRITERIA FOR REFUSING CARE

The patient meets all of the following:

1. Is an adult (18 or over), or if < 18 meets the criteria stated in the AMA/RAS policy
2. Exhibits no evidence of:
 - Altered level of consciousness
 - Alcohol or drug ingestion that impairs judgment
3. Understands the nature of the medical condition, as well as the risks and consequences refusing care

1. ACKNOWLEDGMENT OF INFORMATION:

A. AMA: I have been advised that medical assistance on my behalf is necessary, and that refusal of said assistance could be hazardous to my health, and under certain circumstances, including disability and/or death. I have been advised to discuss my medical complaints with my regular health care provider as soon as possible. Nevertheless, I refuse to accept treatment or transport to a medical facility and assume all risks and consequences of any decision.

or

B. RAS: I acknowledge that I may have a medical problem, which may require additional medical attention, and that an ambulance is available to transport me to the hospital. Instead, I elect to seek alternative medical care and refuse further treatment and/or transport.

2. RELEASE OF LIABILITY: By signing this form, I am releasing the County of Marin, the responding Provider Agency(ies), and the Receiving Hospital (if contacted) of any liability or medical claims resulting from my decision to refuse the medical care/transport offered.

I have read and understand the “Acknowledgment of Information” and “Release of Liability”. I also acknowledge that I have received a Notice of Privacy Practices.

Signature: _____ **Refused to sign, Reason:** _____
Relationship (if not the patient): Lawful: parent guardian conservator (pertains to a child/dependent only)
 Physician Consulted: _____
Telephone consent/refusal obtained. Witnessed by: _____
 Interpreter used: _____

<p>DISPOSITION:</p> <p><input type="checkbox"/> Released in care or custody of self.</p> <p><input type="checkbox"/> Released in custody of law enforcement Agency: _____ Badge #: _____</p> <p>Released in care or custody of: <input type="checkbox"/> Parent <input type="checkbox"/> Guardian <input type="checkbox"/> Other: _____</p>
--

<p>Instructions</p> <ol style="list-style-type: none">1. If you change your mind or your condition changes, call 9-1-1 (in an emergency), go to an emergency department in your area, or call your private doctor (if appropriate).2. _____3. _____
--

Completed by (Print) _____ Signature _____ Unit #/Agency # _____

Witness Information
Signature: _____ Name Printed: _____
Address: _____ City: _____
State: _____ Zip: _____ Phone: () _____ Driver's License #: _____

Patient Name: _____ EM/AO#: _____
DDM: _____ Date: _____

DESTINATION GUIDELINES

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- To identify destination choices and appropriate facilities for patients in Marin County

PHYSICIAN CONSULT

- Patient requests transport to a facility not capable of providing specific care for their needs

CRITICAL INFORMATION

- Destination choices:
 - The destination for patients shall be based upon several factors including, but not limited to the clinical capabilities of the receiving hospital, the patient's condition, and paramedic discretion.
 - When the patient's condition is unstable or life threatening, the patient should be transported to the time closest receiving facility:
 - Patients with unmanageable airway
 - Uncontrolled external hemorrhage
 - CPR in progress
 - Patients requiring ALS but having no paramedic in attendance
 - The following factors will be considered in determining patient destination:
 - Patient condition
 - Clinical capabilities of the receiving hospital
 - Paramedic discretion
 - Patient/family request
 - Patient's physician request or preference
 - Patients with return of spontaneous circulation post cardiac arrest will be transported to the nearest STEMI Receiving Center.
 - Burn patients, without other trauma mechanism, shall be transported by ground ambulance to the time closest emergency department.
 - Marin County receiving facilities:
 - **Marin General Hospital**- Level III Trauma Center- Greenbrae
 - Neurological Emergencies- sudden, witnessed onset of coma or rapidly deteriorating GCS with high likelihood of intracranial bleed
 - Pregnant patients - 20 weeks or > with a complaint related to pregnancy
 - STEMI Receiving Center (SRC)
 - Primary Stroke Center
 - **Kaiser Permanente San Rafael** – Emergency Department Approved for Trauma (EDAT) – Terra Linda
 - STEMI Receiving Center (SRC)
 - Primary Stroke Center
 - **Novato Community Hospital**- Basic level receiving facility – Novato
 - Primary Stroke Center

RELATED POLICIES/ PROCEDURES

- Trauma Triage & Destination Guidelines Policy 4613
- STEMI Policy C 9
- Ambulance Diversion Policy 5400
- Pediatric Sexual Assault P16
- Sexual Assault GPC 10
- Cerebrovascular Accident (Stroke) N 4
- Burns E4 and P12

INTER-FACILITY TRANSFER

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Inter-facility transfer of patients from a Marin County Facility (includes physician's office with physician in attendance) for destinations within or outside Marin County

CRITICAL INFORMATION

- Transporting personnel will operate under the medical direction of the transferring physician in compliance with the County of Marin, State and Federal laws, through direct contact or standing orders, in a safe and timely manner.
- **Level I- BLS unit** (EMT- I, EMT-I staffing):
 - Patient is non-critical & deemed stable
 - EMT-I Scope of Practice
- **Level II- ALS unit** (EMT-I, EMT-P staffing; Respiratory Therapist if continuous respiratory assistance required):
 - EMT-P Scope of Practice
 - Any situation where by continuous respiratory assistance is needed
- **Level III- ALS or critical care unit** (EMT-I, EMT-P, RN):
 - IV containing medication is not on the "Paramedic Drug list" or their use is anticipated.
 - PA, arterial or ICP lines present. IABP in place.
 - Patient is not considered stable and/ or physician requests Level III transport.
- **Level IV- ALS or critical care unit** (EMT-I, EMT-P, R.N., physician and other staff as needed):
 - Patient is unstable and level of care is medically indicated.

TREATMENT

- The transferring physician will provide the following information:
 - Patients name
 - Diagnosis/ level of acuity
 - Destination
 - Transfer date and time
 - Accepting unit
 - Accepting physician
 - Special equipment with patient
 - Additional personnel attending patient or required for transport
 - Insurance information, if available
- The transporting unit agrees to accept transfer based on reported information and advises ETA of transfer unit.
- The transferring unit must receive an appropriate patient status report from the transferring physician and/ or RN.
- Transfer personnel receive patient report and confirm appropriate level of care for transfer (see critical information for Level's of care).
- If transferring personnel do not agree with or are unable to provide the level of care requested, they will confer with the transferring physician to assure appropriate level of care during transfer.
- Copies of all pertinent medical records, lab reports, x-rays and transfer forms accompany patient to receiving hospital.

- The following communication is required by each transporting unit:
 - **Level I**
 - Between transporting unit and receiving hospital
 - **Level II, III, IV**
 - Patient remains stable enroute - no communication is necessary
 - Patient unstable enroute - contact transferring physician; if unavailable, request another physician in that facility or contact any other available Marin County hospital physician

DOCUMENTATION- ESSENTIAL ELEMENTS

- Inter-facility transfer calls with hospital contact will be reviewed by hospitals directing the calls.
- Statistics on total numbers of ALS level transfer calls per month will be maintained by each provider and submitted to the EMS Office on request (transfers with EMT-P, RN and MD).

RELATED POLICIES/ PROCEDURES

- Consolidated Omnibus Budget Reconciliation Act (COBRA) 1985
- Emergency Medical Treatment & Labor Act (EMTLA) 1986
- Authorized Procedures for EMT-1 Personnel BLS PR 1
- Extended Scope of Practice Procedures for EMT-P ALS PR 1

MEDICAL PERSONNEL ON SCENE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Determination of patient care responsibilities at the scene of an emergency when someone present identifies themselves as medically trained

PHYSICIAN CONSULT

- On-scene physician has chosen option #2 or #3 on the “Note to Physicians on Involvement with EMT-I and EMT-Ps” card and should speak directly with the receiving hospital physician.

TREATMENT

- Person is not a physician:
 - First Responder/ EMT-I or EMT-P should inform the non-physician individual that they may assist and/ or offer suggestions within the scope of their licensure but may not assume medical management for the patient.
 - Continue with care in usual manner
 - Ask to see proof of licensure/ certification/ accreditation
- Person is a physician:
 - Unless physician is known to the pre-hospital personnel, ask to see proof of licensure.
 - First Responder/ EMT yield medical management to the physician until the arrival of ALS personnel.
 - Upon arrival of ALS personnel, the EMT-P will provide the physician with “Note to Physicians on Involvement with EMT-Is and Paramedics” card (Appendix A) to determine option #1, #2, or #3, he/ she has chosen to follow.
 - Option #1:
 - The physician assists the ALS treatment team and/ or offers suggestions, but allows the EMS personnel to provide medical treatment according to policy.
 - Option #2 :
 - The physician requests to provide on-scene medical advice and/ or assistance after speaking with the intended receiving hospital physician.
 - Option #3 :
 - The physician is willing to take total responsibility for care, and will physically accompany the patient to the hospital.
 - Make all ALS equipment and supplies available to the physician and offer assistance as needed.
- Complete a “System Notification Form” (available on web site) for review of the call

DOCUMENTATION- ESSENTIAL ELEMENTS

- Document all care rendered to the patient on the PCR and ensure that the physician signs for all instructions and medical care given; include physician’s phone number.

RELATED POLICIES/PROCEDURES

- Note to Physicians on Involvement with EMT-1s and Paramedics GPC 6A

DO NOT RESUSCITATE (DNR) PHYSICIANS ORDER FOR LIFE-SUSTAINING TREATMENT (POLST)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patients in respiratory or cardiopulmonary arrest with valid DNR documentation at scene

PHYSICIAN CONSULT

- If there is any problem of any sort at the scene or if any therapy was instituted and the therapy is now in question

CONTRAINDICATION

- DNR order is not valid in suspected homicide or suicide situations

CRITICAL INFORMATION

- If the patient or Designated Decision Maker (DDM) requests treatment, including resuscitation, the request should be honored.
- The patient should receive treatment for pain, dyspnea, major hemorrhage, relief of choking or other medical conditions.
- Do Not resuscitate (DNR) means **NO**:
 - Assisted ventilation
 - Chest compressions
 - Defibrillation
 - Intubation
 - Cardiotoxic drugs
- Approved pre-hospital DNR directives include:
 - A DNR directive signed by both the patient and physician; a copy or original is valid
 - A DNR order signed by a physician in the patient's chart at a licensed health facility
 - A Physician's Order for Life-Sustaining Treatment (POLST) form indicating DNR
 - An Emergency Medical Services Authority/ California Medical Association (EMSA/CMA) "Pre-hospital Do Not Resuscitate" form
 - An approved medallion (e.g. Medic-Alert) inscribed with the words: "Do Not Resuscitate-EMS"
 - A DNR order issued by the patient's physician who is on scene, or who issues a DNR order verbally over the phone to field personnel
- If any doubt exists begin CPR immediately. Once initiated, CPR should be continued unless it is determined the patient meets determination of death criteria or a valid DNR order / form is presented. If conflicting documents exist, follow the most recently dated document.

TREATMENT

- Follow standard procedures on arrival and assess the patient
- If information of a DNR exists, responders must see the signed order, form or medallion and should not accept a verbal order unless from the intended receiving ED physician or from the patient's own physician, who is in attendance or is available by phone.
- If a patient with a DNR order collapses in public, responders will notify the appropriate public safety agency and remain on the scene until their arrival.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Bring the DNR form or order to the hospital if patient is transported.
- Attach a copy of the DNR to the PCR. If a copy is unavailable document the following:
 - Type of DNR
 - Date order was issued
 - Name of physician
- If the physician issued the DNR order verbally, document the physician's name and phone number.

ANATOMICAL GIFT/ DONOR CARD SEARCH

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Conducting a “reasonable search” on an unconscious adult patient for whom it appears death is imminent for the purpose of locating documents to identify organ donation requests.

CRITICAL INFORMATION

- This procedure shall be secondary to the requirement that ambulance or emergency personnel provide emergency services to the patient.

TREATMENT/PROCEDURE

- Conduct the search in the presence of a witness not involved in the search, preferably a law enforcement officer.
- If the individual is declared or pronounced dead in the field the coroner or law enforcement officer should perform the search instead of pre-hospital personnel.
- If pre-hospital personnel searched the patient before arrival of the law enforcement/ coroner, notification of such search must be disclosed when law enforcement and/or coroner arrive at the scene.
- Documentation of donor status must remain with the patient.
- Notify the receiving hospital if documentation of donor status is located.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Identification of witness involved in search

RELATED POLICIES/ PROCEDURES

- Title 22 Health & Safety Code 7150.55 (a,b,c)

SUSPECTED CHILD/ DEPENDENT ADULT/ ELDER ABUSE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Identification and guidelines for reporting and treating suspected child abuse (persons < 18 years of age), dependent adults between the ages of 18 and 64 years (those with physical or mental limitations restricting their ability to carry out normal activities) and elder adults (> 65 years)
- Abuse is defined as harmful, wrongful, neglectful or improper treatment which may result in physical or mental injury.

TREATMENT

- BLS/ ALS RMC
- Treat and transport the patient according to Destination Guidelines Policy GPC 4
- If patient or patient's DDM (Designated Decision Maker) refuses transportation to the hospital and patient's life is not in imminent danger:
 - Leave the scene, contact law enforcement, establish radio contact with the intended receiving hospital, describe situation including reasons for suspecting abuse.
- If patient or patient's DDM refuses transportation to the hospital and patient's life is in imminent danger:
 - Stay on the scene, request local law enforcement agency to respond and place patient in protective custody.
- If abuse is suspected in individuals other than the patient:
 - Follow the procedures stated above for imminent and/ or non-imminent danger.
- Contact one of the following protective service agencies by phone within 24 hours and submit completed report within 36 hours of incidence:
 - Marin Child Protective Services, 415-499-7418. State of California Report of Suspected Child Abuse Report SS 8583 (see GPC 9A)
 - Marin County Adult protective Services, 415-507-2774. State of California Report of Suspected Dependent Adult/ Elder Abuse Form SOC 341 (see GPC 9B)

CRITICAL INFORMATION

- Common findings in victims of child abuse are as follows:
 - Suspicious fractures in children < 3 years
 - Multiple fractures
 - Unexplained bruising
 - Starvation/ dehydration
- Common findings in parents/ guardian of abused child/ elder/ dependent adult are as follows:
 - Contradictory stories regarding patient's injury
 - Evasive answers in questions
 - Anger directed towards or little concern for the patient
 - Drug use
 - Inability to locate guardian

RELATED POLICIES/ PROCEDURES

- California Department of Social Services, Welfare & Institution Code (SS 15630, 15658 (a) (1), 8583
- Destination Guidelines Policy GPC 4

SEXUAL ASSAULT

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patients with complaints consistent with sexual assault

CRITICAL INFORMATION

- Preserve possible evidence and advise patient not to clean, bathe or change clothes until after examination by hospital personnel
- Notify police and dispatch of nature of call

TREATMENT

- BLS / ALS RMC
- Calm/ reassure patient
- Assign responder of same gender as patient if possible
- Treat medical conditions, traumatic injuries per protocol
- Transport to an appropriate Marin County hospital, following the Destination Guidelines Policy.
- If patient/ Designated Decision Maker (DDM) refuses transport, instruct patient not to bathe, shower, or change clothes until after contact with and advice by law enforcement. Advise patient of alternative care/ transport options per AMA and RAS Policy.

SPECIAL CONSIDERATION

- If patient's clothing is removed and law enforcement is not at scene, place clothing in a paper bag and bring to the hospital. Do not use a plastic bag.
- A patient who requires/requests a specialized evidentiary examination will first be transported to a Marin County hospital. Once medically cleared the patient will be transported by the appropriate law enforcement agency to Kaiser Permanente Vallejo Medical Center.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Date and time of alleged assault
- Details of injuries noted
- Patient description of mechanism of injury

RELATED POLICIES/ PROCEDURES

- AMA Policy GPC 2
- RAS Policy GPC 3
- Destination Guidelines Policy GPC 4
- ALS to BLS Transfer of Care ATG 4
- Trauma Triage and Destination Guidelines Policy 4613

PATIENT RESTRAINT

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Violent or potentially violent patient capable of harming themselves or others

CONTRAINDICATIONS

- The following devices and restraint techniques should NOT be applied by EMS personnel:
 - Hard plastic ties or any restraint device requiring a key to remove
 - Backboard, scoop-stretcher or flat as a "sandwich" restraint
 - Restraint of a patient's hands and feet behind the patient
 - Methods or materials that could cause vascular or neurological compromise

EQUIPMENT

- Quick release synthetic, soft, or padded leather restraints

PROCEDURE

- BLS/ ALS RMC
- Apply the minimum restraint necessary to accomplish patient care and safe transportation.
- Restraints must not compromise airway, breathing or circulation
- Restraint equipment applied by law enforcement (i.e. handcuffs, plastic ties, hobble restraints, or WRAP) must not compromise airway, breathing or circulation
- Evaluate restrained extremities for CSM every 15 minutes

SPECIAL CONSIDERATIONS

- Aggressive or violent behavior may be indications of: head trauma, alcohol or drug ingestion, metabolic disorders, stress and psychiatric disorders which require ALS intervention.
- Restraints applied by law enforcement require the officer's continued presence

DOCUMENTATION- ESSENTIAL ELEMENTS

- Reason for application of restraints
- Which agency applied restraints
- CSM every 15 minutes

RELATED POLICIES/ PROCEDURES

- Adult Sedation ATG 3

MULTI-CASUALTY INCIDENT (M.C.I.)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Any incident with multiple patients may indicate the use of the County Multiple Patient Management Plan (MPMP).

PROCEDURE

- Initiate the MPMP for scene management.
- Request additional resources as needed.
- Evaluate each patient using S.T.A.R.T. (Simple Triage and Rapid Treatment)
- Triage and tag patients into the appropriate category (Dead, Immediate, Delayed, Minor).

RELATED POLICIES/ PROCEDURES

- Marin County Multiple Patient Management Plan

SPINAL MOTION RESTRICTION (SMR)

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

Any patient identified by Marin County's Spinal Injury Assessment [GPC 13A] to warrant full or modified SMR. The spinal injury assessment should be performed prior to application of SMR. SMR describes the procedure used to care for patients with possible unstable spinal injuries.

CONSIDERATIONS

- Full SMR is not benign; it can lead to pain, respiratory compromise, skin breakdown (decubiti) and contribute to cerebral hypo-perfusion in patients with stroke or head injury
- **Routine use of SMR should be avoided.** Its use should be reserved for patients with confirmatory physical findings or high clinical suspicion of unstable spinal fracture
- **SMR is not indicated in patients with isolated penetrating trauma [GPC 13A]**
- Use SMR with caution with patients presenting with **dyspnea** and position appropriately
- If patient experiences negative effects of SMR methods used, alternative measures should be implemented as soon as possible.
- **Pregnant patients (>20 Weeks)** should be positioned on the left side, immobilized as appropriate, supporting fetus
- **Combative patients:** Avoid methods that provoke increased spinal movement and/or combativeness
- **Athletic Equipment** (football helmet and shoulder pads; lacrosse helmet and shoulder pads; baseball/softball catcher's helmet)
 - In event of suspected spine injury during participation in equipment-intensive sport, removal of equipment is recommended prior to application of SMR
 - Equipment should be removed by the rescuers most familiar with the equipment (i.e. Athletic Trainers when present)
 - Removal of helmet and/or shoulder pads provides early access to the patient's airway/chest
- **Pediatric patients**
 - Consider the use of SpO2 and EtCO2 to monitor respiratory function
 - Consider use of padded pediatric motion restricting board
 - Avoid methods that provoke increased spinal movement
 - If choosing to apply SMR to patient in car seat, ensure that proper assessment of patient posterior is performed
 - Car seats:
 - Infants or children restrained in a front or rear-facing car seat (excludes booster seats) may be immobilized and extricated in the car seat. The infant or child may remain in the car seat if the immobilization is secure and his/her condition allows (no signs of respiratory distress or shock).
 - Children restrained in a booster seat (with or without a back) need to be extricated and immobilized following standard SMR procedures.

PROCEDURE

Full SMR (Cervical Collar with full length-vacuum splint or rigid device with lateral immobilization and straps)

- Indications
 - Patients with obvious acute neurologic deficit (paralysis or weakness)
 - Priapism or suspected spinal shock

- Procedure
 - **Assess motor/sensory function before SMR and regularly reassess and document** motor/sensory function (include finger abduction, wrist/finger extension, plantar/dorsal flexion and sharp/dull exam if possible) following application of SMR
 - **Remove athletic equipment (if applicable)**
 - **Apply soft or rigid cervical collar**
 - Cervical collar may be omitted for patients with isolated lumbar and/or lower thoracic spine tenderness.
 - If needed, **extricate patient** limiting movement of the spine
 - **Apply adequate padding** on backboards or use vacuum mattress to prevent tissue ischemia and increase comfort.
 - Secure patient to device.
 - **Consider the use of SpO2 and EtCO2** to monitor respiratory function

Modified SMR (may include any of the following: soft or rigid cervical collar alone; self limiting motion; padding to limit movement; KED; or ½ length vacuum splint)

- Indications
 - Patients who do not meet criteria above but who are at high risk due to blunt trauma mechanism
 - Ambulatory/self-extricated patients who have mid-line neck pain and/or tenderness.
- Procedure
 - **Use the least invasive methods/tools** available which minimize patient discomfort and respiratory compromise. Least invasive examples: Lateral, semi-fowler's or fowler's position with cervical collar only; soft collars; pillows; vacuum splint or gurney mattress; children's car seats.
 - **Hard backboards should only be used when absolutely necessary** (e.g. patient transfer). Consider pull sheets, other flexible devices (e.g. flat stretchers), or scoops and scoop-like devices.
 - **Provide manual stabilization** restricting gross motion. **Alert and cooperative patients** may be allowed to self-limit motion if appropriate with or without cervical collar
 - **self-extrication** is allowable for patients meeting criteria for Modified SMR

RELATED POLICIES/ PROCEDURES

Spinal Injury Assessment GPC13A

SPINAL INJURY ASSESSMENT

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patients with potential for unstable spinal injury. Any patient with a mechanism of injury should be evaluated for application of spinal motion restriction (SMR)

CRITICAL INFORMATION

- Omit SMR if all assessment criteria are assessed AND normal.
- If the immobilization process is initiated prior to assessment, STOP and perform spine injury assessment to determine best course of action.
- Studies show that immobilizing trauma victims may cause more harm than good.
- Penetrating trauma victims benefit most from rapid assessment and transportation to a trauma center without SMR.
- Penetrating trauma victims (stabblings, gunshots) to the head, neck, and/or torso SHOULD NOT receive SMR unless there is one or more of the following:
 - Obvious neurologic deficit to the extremities
 - Significant secondary blunt mechanism of injury (e.g. fell down stairs after getting shot)
 - Priapism
 - Neurogenic shock
 - Anatomic deformity to the spine secondary to injury
- Consider SMR in high-risk patients (see algorithm)

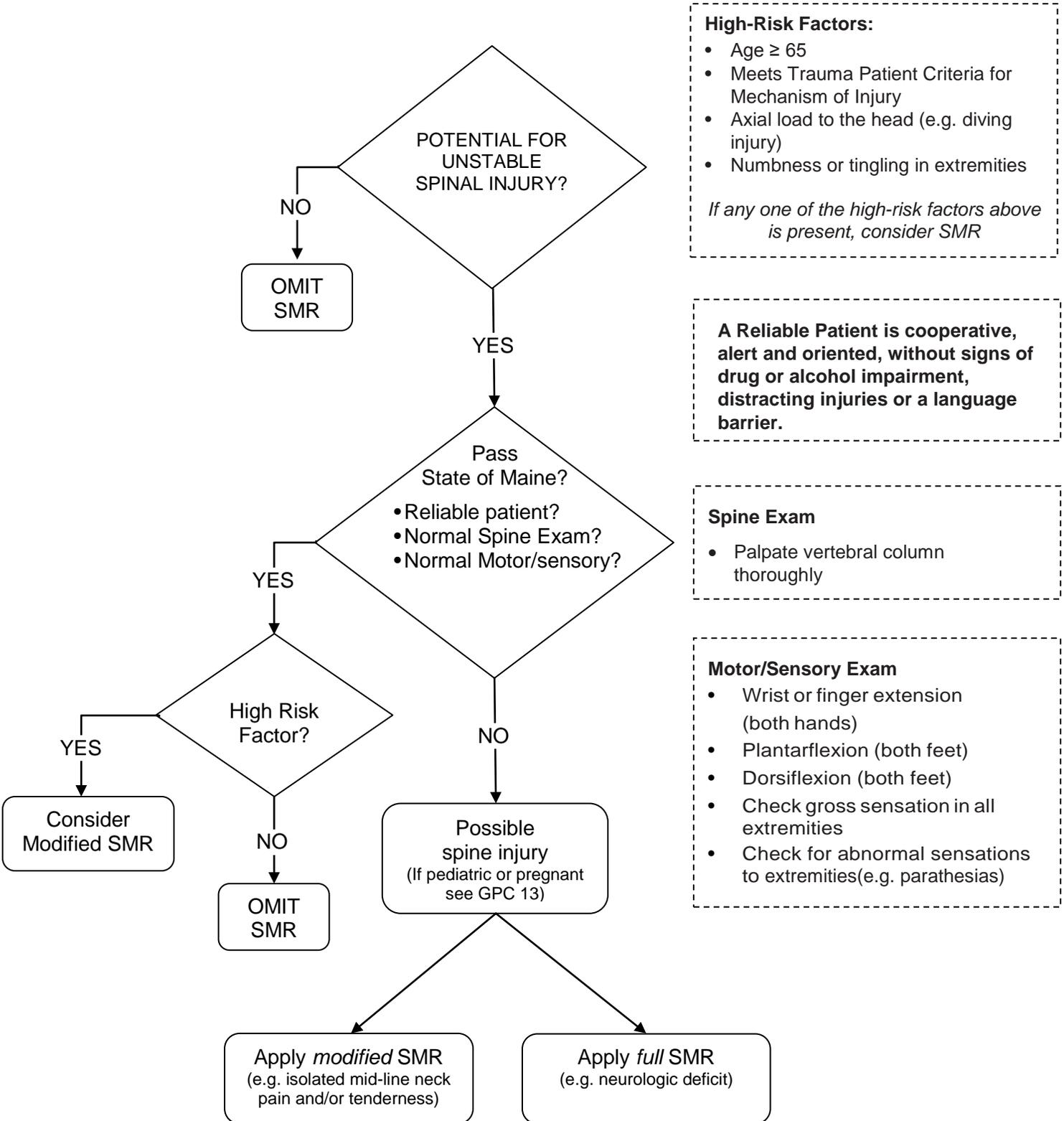
DOCUMENTATION- ESSENTIAL ELEMENTS

- Sensation and motor function of all extremities prior and subsequent to application of SMR
- Neurological, motor, sensory, other examination findings & situational circumstances which qualifies patient for omission of SMR

RELATED POLICIES/ PROCEDURES

- Spinal Motion Restriction GPC 13

PROCEDURE



BARIATRIC PATIENT TRANSPORTS PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

To be used when the weight of the patient exceeds the weight limitations of the ambulance equipment.

CRITICAL INFORMATION

- The emergent need to transport a patient shall supersede the application of this policy.
- At all times, the dignity of the patient will be preserved and considered a high priority for all personnel.
- Ambulance cots shall be clearly labeled with weight capacity information.
- Additional personnel shall be utilized when moving bariatric patients to prevent injury to rescue personnel and the patient.
- The additional time to move the patient shall be considered when evaluating the decision to wait for a bariatric transport unit.

EQUIPMENT

- Bariatric Ambulance

PROCEDURE

- When ambulance crews are faced with a patient that exceeds the weight limitations of the standard ambulance equipment, personnel shall request a 'bariatric ambulance' from their dispatcher. Crews will provide the estimated weight of the patient.
- The dispatcher shall contact the local private ambulance providers to determine if they have a bariatric unit available. The private ambulance provider will provide an ETA to the incident scene.
- Dispatchers will relay this information to the personnel at the incident who will then confirm their need for the specialized equipment.
- If the patient's condition is such that a delay in transport (caused by the use of a bariatric equipped ambulance) will potentially cause additional harm to the patient, ambulance personnel should consider transporting the patient on the floor of the standard ambulance. In those cases, floor and wall cot hardware shall be removed (if possible) so as not to compromise patient safety.
- Bariatric patients shall only be transported in an ambulance.
- As early as possible, field personnel will relay to the destination hospital that they are inbound with a bariatric patient. The communication will include the approximate weight of the patient.
- Field personnel shall notify their agency CQI coordinator and immediate supervisor of any incident involving the management and transport of a bariatric patient. Management personnel will review all cases for appropriate care.

SPECIALTY PATIENT

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

I. DEFINITION

A Specialty Patient is a patient with unique medical or behavioral prehospital needs which fall outside current county protocols.

II. PURPOSE

Medical technology and increased home health capabilities have created a special population of patients that may interface with the EMS system. The purpose of this policy is to provide specifically approved care and EMS services to those who are identified as Specialty Patients. The Agency will work with that patient (and/or DDM) and his or her primary care physician in order to develop and approve a Specialty Patient Protocol (SPP) which will provide guidance to EMS should the need arise.

III. PROCEDURE

A. Active and Current SPP in place

1. COMM center will notify first responders of SPP enroute to call
2. Responding EMS units are to follow current SPP for that particular patient which has been approved by the Marin County Medical Director and which will be located in the lock box of all ALS units and with the inventory checklist of all BLS units.
3. Unless specified in the SPP, transport the patient according to Destination Guidelines GPC 4. In some cases, if the patient is stable, transport may involve bypassing the closest facility for a more distant yet medically appropriate destination.
4. If the patient or DDM requests changes to their current protocol, the transporting unit will contact the intended receiving facility for physician consult. Personnel shall not exceed their established scope of practice.

B. No SPP in place

1. When an EMS provider identifies the possible need for an SPP, the provider shall contact their immediate supervisor and the provider's Medical Director (i.e., a fire department may be notified by a patient's physician that the patient is in need of an SPP).
2. If the possible need is identified during the course of rendering care to a patient, the provider shall treat the patient according to existing protocols. At the conclusion of the call, the provider shall contact their immediate Supervisor and the provider's Medical Director.

C. All established and approved SPPs will be written on official Marin County letterhead and signed by the current Marin County EMS Agency Medical Director. Issue date and expiration date will be included.

D. Current SPPs will be reviewed annually as part of Policy and Procedure updates.

ROUTINE MEDICAL CARE (RMC)

BLS

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- To define Routine Medical Care (RMC) in the pre-hospital setting

TREATMENT

- Assess Airway, Breathing and Circulation (ABC)
- Apneic and/ or pulseless:
 - Begin CPR in accordance with the standards established by the American Heart Association, including Early Defibrillation
- Patient breathing with pulse present:
 - Administer oxygen per the Airway/Oxygen protocol; using airway adjuncts indicated for signs and symptoms
- Control significant external bleeding using direct pressure. If bleeding remains uncontrolled, apply gauze or hemostatic dressing and/or tourniquet.
 - Limb with the tourniquet must remain exposed
 - Hemostatic dressing must be approved by California EMS Authority
- Check vital signs – repeat q 5 min. for emergent patients and q 15 min. for non-emergent patients.
- Obtain pulse oximetry, if available
- Obtain:
 - Chief complaint
 - History of current event
 - Past medical history
 - Medications
 - Allergies
- Perform full secondary patient exam
- If indicated, apply spinal motion restriction
- Place patient in position of comfort or in other positions as needed to maintain adequate breathing and/ or circulation

CHEST PAIN/ ACUTE CORONARY SYNDROME BLS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Chest discomfort or pain, suggestive of cardiac origin or other symptoms of ACS (Acute Coronary Syndrome) which may include weakness, nausea, vomiting, diaphoresis, dyspnea, dizziness, palpitations, "indigestion"

TREATMENT

- BLS RMC
- Limit patient's physical activity
- Allow patient to self-administer own **aspirin** as directed by their own physician
- Allow patient to self-administer own **NTG** as directed by their own physician only if SBP > 100

SPECIAL CONSIDERTIONS

- Discomfort or pain: OPQRST, Previous episodes, 0-10 scale
- Suspicion of ACS is based upon patient history. Be alert to patients likely to present with atypical symptoms or "silent MI's" (women, elderly and diabetics).
- If patient is having an MI, **NTG** may cause significant hypotension.
- If the patient has taken erectile dysfunction (ED) medication within the last 24 hrs (Viagra/Levitra) or 36 hrs (Cialis) instruct patient not to take **NTG**.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Medical history (cardiac history; other medical problems including hypertension, diabetes or stroke)
- OPQRST information
- Vital signs before/after **NTG** administration
- Erectile dysfunction medications taken
- Level of pain

BRONCHOSPASM/ ASTHMA/ COPD

BLS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Acute or progressive shortness of breath, chest discomfort, wheezing, cyanosis

PHYSICIAN CONSULT

- **EpiPen** for severe asthma

TREATMENT

- BLS RMC
- Mild to moderate (alert, may be unable to speak full sentences, limited accessory muscle use)
 - Assist patient with own medication if available
-  Severe symptoms (altered mental status, minimal air movement, inability to speak, cyanosis)
 - **EpiPen**

SPECIAL CONSIDERATION

- Suspect carbon monoxide in cases of exposure to fire; do not rely on pulse oximetry in this setting

DOCUMENTATION - ESSENTIAL ELEMENTS

- Physical finding of wheezing, decreased lung sounds
- Administration of oxygen

RELATED POLICIES/ PROCEDURES

- Auto Injector EpiPen BLS PR 4

SEIZURE BLS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patient with reported or continuing seizure activity

TREATMENT

- BLS RMC

SPECIAL CONSIDERATION

- Consider treatable etiologies (hypoglycemia, hypoxia, narcotic overdose, unusual odor of alcohol, signs of trauma, medic alert tag)
- Be attentive to excessive oral secretions, vomiting, and inadequate tidal volume
- Treatment should be based on the severity and length of the seizure activity

DOCUMENTATION- ESSENTIAL ELEMENTS

- Past medical history (i.e., seizures, diabetes)
- Number, description, duration of seizures

DETERMINATION OF DEATH FIRST RESPONDER BLS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

Patient in cardiac arrest where resuscitation may not be indicated

PROCEDURE

- Confirm pulseless and apneic
- CPR may be withheld and death declared if ANY of the following criteria are met:
 - Obvious clinical signs of irreversible death (e.g., rigor mortis, dependent lividity, decapitation, transection, or decomposition)
 - A valid, signed, and dated advance directive or POLST form indicating that resuscitation is not desired
 - MCI incidents-where death is determined according to S.T.A.R.T. triage
- When patient meets criteria for declaration of death in the field:
 - Notify the appropriate law enforcement agency if applicable
 - Remain on the scene until law enforcement or coroner arrive if applicable
 - Complete a Field Determination of Death Form at scene and leave one copy for coroner if applicable

DOCUMENTATION-ESSENTIAL ELEMENTS

- Criteria for discretionary determination of death (i.e., DNR or valid POLST form)
- When possible, attach copy of DNR to PCR or include type of DNR and physician information.

RELATED POLICIES/ PROCEDURES

- DNR GPC 7
- BLS PR 6
- Patient Care Record (PCR) 7006

EARLY TRANSPORT DECISIONS

BLS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Emergent patient with life or limb threatening conditions including:
 - Severe respiratory distress or respiratory arrest
 - Airway compromise or obstruction
 - Significant neurological decline from baseline evaluation
 - Anticipated or current shock
 - Uncontrolled bleeding
 - Open chest or abdomen
 - Tension pneumothorax
 - Pericardial tamponade
 - Prolapsed cord, impending breech delivery, abnormal presenting part
 - Multi-system trauma
 - Severe burns - Second or third degree burns (contact with caustic material, electricity or fire) involving 20% or more of body surface area (BSA) for adults or 10% BSA for pediatric patients or if associated with respiratory involvement
 - Isolated head injury with unconsciousness/ posturing

PROCEDURE

- BLS RMC
- Verify estimated time of arrival of ALS unit, or consider helicopter transport
- Update responding ALS unit on need for early transport to the closest, appropriate facility.
- If ALS arrival time is longer than time to transport to the closest facility, begin transport and consider rendezvous with ALS unit en route if appropriate.
- If transport time to the closest facility is > 10 minutes and ALS transport or rendezvous is not immediately available, begin transport and consider helicopter rendezvous if helicopter transport would result in reduced transport time to an emergency facility.

SPECIAL CONSIDERATION

- If patient is in extremis and transport unit is not available, transport in available vehicle.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Projected ETA of ALS unit if BLS transport undertaken
- Detailed description of life or limb threatening conditions
- Helicopter request and ETA

RELATED POLICIES/ PROCEDURES

- Destination Guidelines GPC 4

ROUTINE MEDICAL CARE (RMC) ALS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- To define procedures indicated by ALS RMC per treatment guidelines or
- Patient condition warrants ALS care/assessment, but does not meet the indication of any other treatment policy

TREATMENT

- As indicated:
 - Vascular access
 - Blood glucose monitoring as indicated by ALOC or patient history
 - Cardiac monitor
 - Advanced airway management
 - Initiate oxygen therapy for respiratory distress, signs of hypoxia, suspected CO poisoning, or SpO₂ saturation <94%
 - Temperature
 - ETCO₂
 - 12 lead ECG
 - For pediatric patients, use length based color-coded resuscitation tape and apply corresponding wrist band

ADULT PAIN MANAGEMENT

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patient exhibits or is determined to have measurable or anticipated pain or discomfort

PHYSICIAN CONSULT

- Patients with SBP < 100
- Patients with head trauma; multi-system trauma that includes abdominal/thoracic trauma; decreased respirations; ALOC (GCS < 15); or women in labor
- > 20 mg **Morphine Sulfate** is needed for pain management
- Concomitant administration of **Morphine Sulfate** and **Midazolam**

CRITICAL INFORMATION

- Origin of pain (examples: isolated extremity trauma, chronic medical condition, burns, abdominal pain, multi-system trauma)
- Mechanism of injury
- Approximate time of onset
- Complaints or obvious signs of discomfort
- Use Visual Analog Scale (0-10) or Wong/Baker Faces Pain Rating Scale if non-English speaking adult. Express results as a fraction (i.e. 2/10 or 7/10)
- Vital signs
- Presence of special infusion apparatus for narcotic or oncology agents may help to determine dosing

TREATMENT

- **Morphine Sulfate** IV/IO: 5 mg slowly; MR q 5 minutes, max. dose 20 mg.
 - If unable to establish IV/IO, administer Morphine Sulfate IM 5-10 mg; MR in 20 minutes, max. dose 20 mg
-  If significant pain persists after Morphine Sulfate 10 mg IV/IO, may consider **Midazolam** 1mg IV/IO with physician consult; MR in 3 minutes to maximum dose 2 mg.
- If nausea/vomiting, consider **Ondansetron** (Zofran ©) 4mg ODT/IM or slow IV/IO over 30 seconds; MR x1 in 10 minutes
- If patient unable to take Morphine Sulfate, refer to Sedation Policy, ATG3.
- Maintain O2 saturation ≥ 94%

DOCUMENTATION- ESSENTIAL ELEMENTS

- Initial and post treatment pain score, expressed in a measurable form (i.e. 7/10)
- Interventions used for pain management (i.e. ice pack, splint, Morphine Sulfate, Midazolam)
- Reassessment after interventions
- Initial and post treatment vital signs: BP, HR, RR, O2 Saturation, ETCO2 (and GCS in patients with ALOC)
- Physician consult if required

ADDENDUM A

Visual Analog Scale

0 1 2 3 4 5 6 7 8 9 10

No pain

Worse pain ever



0
NO HURT



2
HURTS
LITTLE BIT



4
HURTS
LITTLE MORE



6
HURTS
EVEN MORE



8
HURTS
WHOLE LOT



10
HURTS
WORST

ADULT SEDATION

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Cardioversion / Cardiac Pacing
- Agitation / combativeness interfering with critical ALS interventions and airway control or that endangers patient or caregiver
- Patients unable to tolerate Morphine Sulfate for pain management

PHYSICIAN CONSULT

- Head injury (airway is stable)
- Multiple system trauma (airway is stable)
- Concomitant administration of **Morphine Sulfate** and **Midazolam**

CRITICAL INFORMATION

- Relative contraindications:
 - Nausea / vomiting
 - ALOC
 - Hypotension (SBP < 100)
 - Suspected drug / alcohol intoxication

TREATMENT

- ALS RMC, including ETCO₂
- Cardioversion / cardiac pacing
 - If patient is conscious, administer **Midazolam** 1 mg slow IV/IO. May repeat 1 mg every 3 minutes to desired degree of sedation. Maximum dose = 0.05 mg/kg.
 - **Morphine Sulfate** IV/IO/IM for pain management as needed; maximum dose of 5 mg.
- Agitation, combativeness or for patients unable to tolerate Morphine Sulfate- administer **Midazolam**
 - IV/IO: 1 mg slowly; MR q 3 minutes to maximum dose 0.05 mg/kg.
 - IN: 5 mg (2.5 mg in each nostril)
 - IM: 0.1 mg/kg; MR x 1 in 10 minutes
- Patients receiving sedation for airway management who have long transport times may receive sedation maintenance doses of **Midazolam** 1 mg IV/IO every 15 minutes

Midazolam for Sedation Weight Based Chart - MAXIMUM DOSE for IV/IO only

Kg	Lb	Dose (0.05 mg/kg)
40	88	2 mg
45	99	2.25 mg
50	110	2.5 mg
55	121	2.75 mg
60	132	3 mg
65	143	3.25 mg
70	154	3.5 mg
75	165	3.75 mg
80	176	4 mg
85	187	4.25 mg
90	198	4.5 mg
95	209	4.75 mg
>100	>220	5 mg

SPECIAL CONSIDERATION

- Sedation for airway management does not mandate intubation, but may require airway/ventilation support
- Patients receiving **Midazolam** may experience hypotension

RELATED POLICIES

- Patient Restraint GPC11
- Continuous Positive Airway Pressure (CPAP) Procedure ALS PR 13
- External Cardiac Pacing Procedure ALS PR 11

ALS TO BLS TRANSFER OF CARE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patient needs or desires transport to a hospital and does not meet criteria for ALS interventions
- Criteria for transfer of care must include:
 - Patent airway, maintained without assistance or adjuncts
 - No hemodynamic changes are anticipated during transport
 - No imminent changes are anticipated in the patient's present condition
 - GCS \geq 14

CRITICAL INFORMATION

- The EMT in attendance must be comfortable with the patient's condition
- Transport by the ALS transport ambulance should be considered if the transfer of care to the BLS staffed ambulance would incur a time delay greater than the projected transport time to the intended receiving facility

SPECIAL CONSIDERATION

- The ALS first responder or provider will complete a County approved Patient Care Record (PCR) and submit the data electronically as described in Policy 7006.
- The ALS first responder will provide the BLS transport unit with a handwritten record detailing the ALS assessment, a copy of which will be left at the receiving hospital.

DOCUMENTATION- ESSENTIAL ELEMENTS

- The transfer of patient responsibility
- ALS transferring unit is identified on the BLS PCR

RELATED POLICIES/ PROCEDURES

- Patient Care Record 7006

ADULT INTRAOSSEOUS INFUSION

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patient in extremis, cardiac arrest, profound hypovolemia, or septic and in need of immediate delivery of medications / fluids and immediate IV access is not possible

CRITICAL INFORMATION

- All approved ALS IV medications may be administered IO
- No more than 2 attempts for IO access at scene
- Absolute contraindications:
 - Recent fracture of involved bone (less than 6 weeks)
 - Vascular disruption proximal to insertion site
 - Inability to locate landmarks
- Relative contraindications:
 - Infection or burn overlying the site
 - Congenital deformities of the bone
 - Metabolic bone disease

SPECIAL CONSIDERATION

- Pressure bags for optimal flow of IO infusions
- Administer **Lidocaine** 2% prior to saline bolus if patient responsive to painful stimuli

DOCUMENTATION- ESSENTIAL ELEMENTS

- Insertion site

RELATED POLICIES/ PROCEDURES

- Adult Intraosseous Procedure ALS PR 2

DETERMINATION OF DEATH - ALS

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

Patient in cardiac arrest who does not meet criteria for BLS Determination of Death and does not have a valid DNR order.

PROCEDURE

- Confirm pulseless and apneic. Apply leads and document rhythm in two monitoring leads for one minute or in one lead if an AED is the only available monitor.
- Determination of death can be made prior to, or immediately after, initiating resuscitation when:
 - Medical (**ALL** must be present)
 - The presenting rhythm is asystole
 - Event was unwitnessed
 - Effective bystander CPR was not initiated, based on CPR guidelines/paramedic judgment
 - **No evidence of potentially reversible cause of arrest (e.g. hyperkalemia or hypothermia)**
 - No AED or manual shock delivered
 - Trauma (**EITHER** may be present)
 - MCI incident where triage principles preclude initiation of CPR
 - Blunt, penetrating or profound multi-system trauma with asystole or PEA
- If determination of death cannot be made, perform ALS resuscitation for 20 minutes.
 - If the above procedures have been completed without ROSC, resuscitation may be discontinued and determination of death made when **ANY** of the following are present:
 - Information (e.g. valid DNR or POLST form) becomes available which precludes continuation of resuscitation efforts
 - $\text{ETCO}_2 \leq 10\text{mm/Hg}$ and the rhythm is asystole or PEA
- If determination of death can still not be made for medical arrests, continue resuscitation for ten additional minutes (30 minutes total) at which point resuscitation may be discontinued and determination of death made if ROSC has not occurred. If patient in refractory VF, transport is warranted.

PHYSICIAN CONSULT

- Evidence exists that resuscitative efforts are not desired or appropriate (e.g. family request) and above criteria is not met
 - $\text{ETCO}_2 > 10\text{mm/Hg}$ after 30 minutes of resuscitation efforts
- When applicable, notify the appropriate law enforcement agency and remain on the scene until law enforcement or coroner arrives
 - Complete the Determination of Death form and leave a copy at the scene if the patient will be transferred to the coroner

DOCUMENTATION- ESSENTIAL ELEMENTS

- Criteria for discretionary determination of death (i.e., DNR or valid POLST form)
- Name and phone number of physician authorizing termination of resuscitation
- When possible, attach copy of DNR to PCR or include type of DNR and physician information

RELATED POLICIES/ PROCEDURES

- BLS Determination of Death BLS 5
- DNR GPC 7
- Cardiac Policies: Asystole C3; PEA C2; Cardiac Arrest Guidelines
- Cold Induced Injuries E2
- Trauma Triage and Destination Guideline Policy 4613

ADULT MEDICATIONS AUTHORIZED/ STANDARD DOSE

DRUG	CONCENTRATION	STANDARD DOSE
Activated Charcoal	25 gm/ bottle or 50 gm/ bottle	1 gm/ kg PO (not to exceed 50 gm)
Adenosine (Adenocard)	6 mg/ 2 ml	6 mg 1 st dose, 12 mg 2 nd dose (rapid IV/IO push) followed by 20 ml saline flush after each dose
Albuterol	2.5 mg/ 3ml NS	5 mg/ 6 ml NS; (MDI: Fireline only)
Amiodarone	150 mg/ 3ml	<i>VFib or Pulseless VTach:</i> 300 mg IV/ IO push followed by one 150MG push in 3-5 min. <i>Perfusing/Recurrent VTach</i> –150 mg IV/ IO over 10 min. (15 mg/ min); MR q 10 min. as needed
Aspirin (chewable)	Variable	162-325 mg PO
Atropine	1 mg/ 10 ml	<i>Bradycardia:</i> 0.5 mg IV/ IO, MR q 3-5 min. to max of 3 mg. <i>Organophosphate Poisoning:</i> 2.0 mg slowly IV/ IO; MR 2-5 min. until drying of secretions
Calcium chloride 10%	1 GM/ 10 ml	<i>Crush syndrome:</i> 1gm IV/ IO slowly over 5 min. for suspected hyperkalemia (flush line with NS before & after administration)
Dextrose 10%	25 GM/250 ml	125 ml bolus IV/IO over 10 minutes; recheck BG and repeat as needed
Diphenhydramine (Benadryl)	50 mg/ 1ml	<i>Allergic reaction:</i> 50 mg IV/ IO/ IM; max 50 mg <i>Phenothiazine reaction:</i> 1 mg/ kg slowly IV/ IO; max 50 mg. <i>Motion sickness:</i> 1 mg/kg IM/IV to maximum dose of 50 mg; maximum IV rate is 25 mg/minute
Dopamine	400 mg/ 250 ml Pre-mix	See specific policy dosing chart
Epinephrine 1:1000	1 mg/ 1ml EpiPen® (0.3mg) auto-injector	<i>Allergic Reaction/ Anaphylaxis:</i> 0.01 mg/ kg IM to max 0.5 mg or EpiPen®; MR x 1 in 5 minutes) <i>Bronchospasm/ Asthma/ COPD:</i> 0.01 mg/kg IM; max. dose 0.5 mg. MR once in 5 minutes or EpiPen®

Epinephrine 1: 10,000	1 mg/ 10 ml	<i>Anaphylaxis:</i> If unresponsive, no palpable BP, no palpable pulse - give 0.01 mg/kg to max of 0.5 mg/ 0.5 ml IV/ IO <i>Cardiac Arrest:</i> 1mg (10 ml) IV/ IO followed by 20 ml NS flush q 3-5 min. during resuscitation
Glucose Paste	15 GM / tube	30 GM PO
Glucagon		1 mg IM
Ipratropium (Atrovent)	500 mcg per unit dose (2.5 ml)	500 mcg
Lidocaine 2% (preservative free)	20 mg / 1 ml	IO insertion: infuse 20-40 mg IO over 30-60 seconds
Nerve gas Auto-Injector Kit contains: Atropine Pralidoxime Chloride (2 PAM)	2 mg (0.7 ml) 600 mg (2 ml)	<i>Small Exposure to vapors/ liquids:</i> 1 dose of both medications (Atropine & 2-PAM), MR X1 in 10 minutes. <i>Larger exposure to liquids/ vapors:</i> 3 doses initially (both medications)
Midazolam (Versed)	2 mg/2 ml (IV/IO/IM) 5 mg/1 ml (IN)	<i>Cardioversion/ Pacing:</i> 1 mg slow IV/ IO; MR 1 mg q 3 min.; Max dose = 0.05 mg/kg <i>Seizure:</i> 1 mg IV slowly; MR in 3 min. to maximum dose 0.05 mg/kg. For IN: 5 mg (2.5 mg in each nostril). For IM: 0.1 mg/kg; MR x 1 in 10 minutes. <i>Sedation:</i> see specific policy
Morphine Sulfate	10 mg/ 1ml	<i>Chest Pain:</i> 2-5 mg slow IV/IO; MR q 2-3 min. to max of 10 mg <i>Pain Management/ Trauma Patient:</i> 5 mg slow IV/ IO, MR q 5 min if SBP >100; max dose 20 mg <i>Pulmonary Edema:</i> 2-5 mg slow IV/ IO. Physician Consult required
Naloxone (Narcan)	2 mg/ 2 ml	0.4- 2.0mg IV/IO/IM/SL/IN; MR in 5 min;
Nitroglycerine	0.4 mg/ tablet or spray	1 SL; MR q 5 min. if SBP > 100
Ondansetron (Zofran)	4 mg	4 mg ODT/IM or slow IV over 30 sec; MR x 1 in 10 minutes
Sodium Bicarbonate	50 mEq/ 50 ml	1 mEq/ kg IV/ IO

NOTE: If the above concentrations become unavailable, providers may use alternate available concentrations or packaging.

VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Pulseless, apneic with cardiac rhythm of ventricular fibrillation or wide complex tachycardia

CRITICAL INFORMATION

- Witnessed or unwitnessed
- Effective Bystander CPR

TREATMENT

- See Cardiac Arrest Policy
- Defibrillate as per manufacturer’s recommendations:
 - LifePak: 200J, 300J, 360J
 - Zoll: 120J, 150J, 200J
 - Repeat defibrillations 30-60 seconds after drug administrations
- CPR for 2 minutes between shocks. Do not check rhythm immediately after shock.
- Manual CPR is preferred. If available, may use mechanical CPR for extrication/transportation (contraindicated in pediatrics and traumatic arrests)
- BLS airway management is preferred in the first 5 minutes of CPR. If NO ventilation occurring with basic maneuvers, proceed to advanced airway.
- ALS RMC
- If VF/VT converts to another rhythm post defibrillation, refer to appropriate protocol for further treatment
- If VF/VT continues: **Epinephrine** 1:10,000 1.0 mg IV/IO; repeat q 3-5 minutes;
- If VF/VT persists after three defibrillations or recurs:
 - **Amiodarone** 300 mg IV/IO push (diluted in, or followed by, 20 to 30 ml **NS**). Initial dose can be followed by ONE 150 mg IV/IO push in 3 to 5 minutes
- If rhythm converts with return of pulses, refer to ROSC policy.
- If rhythm converts with return of pulses after **Amiodarone**, monitor and consider infusion of **Amiodarone** drip (150mg in 100 ml NS, 1 mg/minute= 40 gtts/min. with 60 drops ml/ tubing)

SPECIAL CONSIDERATIONS

- Establishment of IV/IO, airway and medication administration should occur during CPR and should not interrupt the CPR cycles
 - If rhythm converts without administration of **Amiodarone**, monitor and transport
 - Consider pre-cordial thump if witnessed and no defibrillator immediately available
 - Consider and treat possible contributing factors:

<ul style="list-style-type: none"> ▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia 	<ul style="list-style-type: none"> ▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma
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DOCUMENTATION – ESSENTIAL ELEMENTS

- Bystander CPR
- Witnessed or unwitnessed

RELATED POLICIES / PROCEDURES

Return of Spontaneous Circulation C10

PULSELESS ELECTRICAL ACTIVITY

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Pulseless, apneic with rhythm that includes electromechanical dissociation (EMD), pseudo-electromechanical dissociation (pseudo-EMD), idioventricular rhythms, ventricular escape rhythms and bradycardia

CRITICAL INFORMATION

- Witnessed or unwitnessed
- Effective Bystander CPR

TREATMENT

- See Cardiac Arrest Policy
- ALS RMC
- Establish IV/ IO **NS** 250-500 ml fluid challenge then TKO
- Administer **Epinephrine** 1mg (1:10,000) IV/ IO. Repeat q 3-5 min.
- If hyperkalemia is suspected in renal dialysis patients, administer 500 mg of **10% Calcium Chloride** and 1 mEq/kg of **Sodium Bicarbonate** IV/ IO
- If rhythm converts with return of pulses, refer to ROSC Policy
- If the above procedures have been completed without ROSC, consider field determination of death

SPECIAL CONSIDERATIONS

- Establishment of IV/IO, airway and medication administration should occur during CPR and should not interrupt the CPR cycles
- Consider and treat possible contributing factors:

<ul style="list-style-type: none"> ▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia 	<ul style="list-style-type: none"> ▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma
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DOCUMENTATION- ESSENTIAL ELEMENTS

- Witnessed or unwitnessed
- Bystander CPR

RELATED POLICIES/ PROCEDURES

- Determination of Death ALS ATG 6
- Return of Spontaneous Circulation (ROSC) C 10
- Trauma Triage and Destination Guidelines 4613

ASYSTOLE

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Pulseless, apneic with no electrical activity on cardiac monitor

CRITICAL INFORMATION

- Determination of death can be made immediately if all of the following are present:
 - Event was unwitnessed
 - Effective bystander CPR was not initiated
 - No AED used or manual shock applied
 - Asystole has been documented in two monitoring leads for one minute or in one lead if an AED is the only available monitor
- If all of the above criteria not met, begin treatment

TREATMENT

- See Cardiac Arrest Policy
- ALS RMC
- IV/IO NS, 250-500 ml then TKO
- **Epinephrine** 1 mg (1:10,000) IV/IO; circulate for 2 min., check rhythm & pulse. MR q 3 -5 min
- Establishment of IV/IO, airway and medication administration should occur during CPR and should not interrupt the CPR cycles.
- If hyperkalemia is suspected in renal dialysis patients, administer 500 mg of 10% **Calcium Chloride** and 1 mEq/kg of **Sodium Bicarbonate** IV/IO.
- If rhythm converts with return of pulses, refer to ROSC Policy
- Consider field determination of death if patient remains in asystole and meets Determination of Death ALS criteria

SPECIAL CONSIDERATION

- Consider and treat possible contributing factors:

<ul style="list-style-type: none"> ▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia 	<ul style="list-style-type: none"> ▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma
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DOCUMENTATION- ESSENTIAL ELEMENTS

- Time death was determined

RELATED POLICIES/ PROCEDURES

- Determination of Death ALS Policy ATG 6
- Return of Spontaneous Circulation C10

BRADYDYSRHYTHMIAS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- HR < 50 with adequate or inadequate perfusion

TREATMENT

- Adequate perfusion
 - ALS RMC
- Inadequate perfusion (acute altered mental status, ongoing chest pain, hypotension or other signs of shock)
 - ALS RMC
 - Atropine** 0.5 mg IV/IO Repeat q 3-5 min. to total of 3 mg. (Atropine should not delay pacing for patients with inadequate perfusion).
 - Transcutaneous pacing for high-degree blocks (type II second-degree or third-degree)
 - Fluid bolus of 250-500 ml NS if hypotensive and lungs clear. Repeat as needed. If inadequate response, **Dopamine** 400 mg/250 ml pre-mixed solution. Start 2-10ug/kg/min. Titrate to SBP 100.

DOPAMINE			
400 mg in 250 ml D5W (pre-mixed) 60 drops/min = 60 ml/hr			
Weight (kg)	gtts/min to = 2-10 ug/kg/min	Weight (kg)	gtts/min to = 2-10 ug/kg/min
35-44	3 -15 gtts/min	85-94	7-35 gtts/min
45-59	4-20 gtts/min	95-109	8-40 gtts/min
60-74	5-25 gtts/min	110 & up	9-45 gtts/min
75-84	6-30 gtts/min		

SPECIAL CONSIDERATIONS

- Consider and treat possible contributing factors:

<ul style="list-style-type: none"> Hypovolemia Hypoxemia Hydrogen ion (acidosis) Hypo/Hyperkalemia Hypoglycemia Hypothermia 	<ul style="list-style-type: none"> Toxins (overdoses) Tamponade, cardiac Tension pneumothorax Thrombosis (coronary / pulmonary) Trauma
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DOCUMENTATION / ESSENTIAL ELEMENTS

- Time pacing started/ stopped

RELATED POLICIES/ PROCEDURES

- Adult Sedation Policy ATG 3
- External Cardiac Pacing Procedure ALS PR 11

WIDE COMPLEX TACHYCARDIA

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Regular, wide ventricular complexes greater than 150 beats/minute, with pulses present

TREATMENT

- ALS RMC
- **Stable** (Normal mental status and/ or signs of normal or mildly decreased perfusion):
 - 12-lead ECG
 - Infuse **Amiodarone** 150 mg IV/IO (add 150 mg to 100 ml of **NS** and infuse total over 10 minutes). May repeat q 10 minutes as needed.
- **Unstable** (Signs of poor perfusion: decreased LOC, SBP < 100, CHF, chest pain, SOB):
 - Synchronized cardioversion @ 100J, 200J, 300J, 360J
 - If patient is conscious, consider sedation with **Midazolam** 1 mg SLOW IV/IO push loading dose; May repeat with 1-2 mg in 3 minutes to achieve desired degree of sedation (use with caution if patient is hypotensive).
 - If any delay in synchronized cardioversion and the patient is critical, defibrillate the patient.
 - If no response to cardioversion infuse **Amiodarone** 150 mg IV/IO (add 150 mg to 100 ml of **NS** and infuse total over 10 minutes). May repeat q 10 minutes as needed.
 - If rhythm converts refer to appropriate protocol for further treatment.

SPECIAL CONSIDERATION

Consider and treat possible contributing factors:

<ul style="list-style-type: none"> ▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia 	<ul style="list-style-type: none"> ▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma
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RELATED POLICIES/ PROCEDURES

- Ventricular fibrillation/ Pulseless Ventricular Tachycardia C1
- Adult Sedation ATG 3

NARROW COMPLEX TACHYCARDIA

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- QRS < 0.12 sec. documented rhythm in two leads (if >0.12 sec., go to Wide Complex Policy)
- Includes Atrial Fibrillation, Atrial Flutter, and SVT (SVT is regular HR > 150)

TREATMENT

- ALS RMC
- Proximal vein is preferred IV site
- **Stable SVT Patients** (normal mental status and/or signs of normal or mildly decreased perfusion):
 - Obtain 12-lead ECG
 - Consider valsalva maneuver
 - If no response to valsalva:
 - **Adenosine** 6 mg RAPID IVP followed by 20 ml saline flush
 - If no response after 1 - 2 min:
 - **Adenosine** 12 mg RAPID IVP followed by 20 ml saline flush
 - Elevate the extremity after each rapid bolus
- **Stable Atrial Fibrillation and Atrial Flutter:**
 - Obtain 12-lead ECG
- **Unstable SVT/ Atrial Fibrillation/ Atrial Flutter** (signs of poor perfusion: decreased LOC, BP < 100, CHF, or chest pain):
 - If patient is conscious, consider sedation with **Midazolam** 1 mg SLOW IV/IO (use with caution if patient is hypotensive)
 - Synchronized cardioversion @ 100J, 200J, 300J, 360J (or biphasic equivalent)
 - If any delay in synchronized cardioversion and the patient is critical, defibrillate the patient.

SPECIAL CONSIDERATION

- Consider treating possible contributing factors:

<ul style="list-style-type: none"> ▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia 	<ul style="list-style-type: none"> ▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma
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DOCUMENTATION- ESSENTIAL ELEMENTS

- 12-lead ECG findings

RELATED POLICIES/ PROCEDURES

- Wide Complex Tachycardia C 6
- Adult Sedation ATG 3

CHEST PAIN/ ACUTE CORONARY SYNDROME ALS

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Chest discomfort or pain, suggestive of cardiac origin.
- Other symptoms of Acute Coronary Syndrome (ACS) which may include weakness, nausea, vomiting, diaphoresis, dyspnea, dizziness, palpitations, “indigestion”
- Atypical symptoms or “silent MIs” (women, elderly, and diabetics)

PHYSICIAN CONSULT

- Additional treatment for ongoing pain when BP<100

TREATMENT

- ALS RMC
- **ASA** 162-325 mg (chewable), even if patient has taken daily ASA dose.
- 12-lead ECG; if elevation in leads II, III, and AVF, suspect RVI and perform right-sided ECG.
- For chest discomfort or pain, **NTG** 0.4 mg SL/ spray, MR q 5 min. if systolic BP > 100
 - Withhold the NTG if the patient has RVI or has taken erectile dysfunction (ED) medication within the last 24 hrs (Viagra/Levitra) or 36 hrs (Cialis).
- If pain persists, give **Morphine Sulfate** 2-5 mg slowly IV; MR q 2-3 minutes to a total of 10 mg.
- Consider NS 250cc IV fluid bolus if BP < 100.
- For recurrent episodes of ventricular tachycardia with persistent chest pain, administer **Amiodarone** 150 mg in 100 ml NS, IV/IO; infuse over 10 minutes. May repeat q 10 minutes as needed.

SPECIAL CONSIDERATION

- IV access before NTG if any one of the following applies:
 - SBP <120
 - Patient does not routinely take NTG
- Consider other potential causes of chest pain: pulmonary embolus, pneumonia, aortic aneurysm and pneumothorax.
- Infarctions may be present with normal 12-leads.
- Routine administration of oxygen is not indicated if saturation is >93%

DOCUMENTATION- ESSENTIAL ELEMENTS

- OPQRST information
- Vital signs before/after **NTG** administration
- Cardiac rhythm documentation
- ECG findings
- Erectile dysfunction medications taken
- Level of pain

RELATED POLICIES/ PROCEDURES

- 12-lead Electrocardiogram ALS PR 12
- Destination Guidelines GPC 4
- STEMI C 9

ST ELEVATION MYOCARDIAL INFARCTION (STEMI)

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Patients with acute ST Elevation Myocardial Infarction (STEMI) as identified by machine read

📞 PHYSICIAN CONSULT

- If patient is symptomatic for STEMI, but computer interpretation is not in agreement, **transmit ECG** and consult the STEMI Receiving Center (SRC) receiving physician.
- If above findings occur, but transmission is not available, activate SRC with Early STEMI Notification.

TREATMENT/ PROCEDURE

- ALS RMC
- Treat patient under appropriate protocol
- Routine administration of oxygen is not indicated if saturation is >93%
- Determine if patient is stable or unstable, and transport to appropriate facility
- Provide Early STEMI Notification and identifying patient information
 - If elevation in leads II, III, and AVF, suspect RVI and perform right-sided ECG.
- Transmit all STEMI ECGs to SRC if possible
 - To determine if patient is stable or unstable:

Stable	Unstable
<ul style="list-style-type: none"> ▪ Stable VS and no indication of shock 	<ul style="list-style-type: none"> ▪ SBP < 90 (prior to NTG and Morphine Sulfate administration) ▪ Signs of acute pulmonary edema ▪ Ventricular tachyarrhythmia requiring defibrillation or antiarrhythmic therapy ▪ Patient's condition, based on paramedic judgment, requires immediate hospital intervention

- Stable patient:
 - May go to preferred SRC if the estimated transport time is not more than 15 minutes longer than the nearest SRC
 - Preferred SRC defined:
 - Patient preference
 - SRC used by treating cardiologist.
- Unstable patient:
 - Transport to the closest SRC

SPECIAL CONSIDERATION

- Early notification report to include: age, gender, patient identifying information, symptoms (including presence or absence of chest pain), and 12-lead findings

DOCUMENTATION- ESSENTIAL ELEMENTS

- 12-lead findings
- How preferred SRC is determined

RELATED POLICIES/ PROCEDURES

- Destination Guidelines GPC 4
- 12-lead ECG Procedure ALS PR 12
- Chest Pain / ACS C8

RETURN OF SPONTANEOUS CIRCULATION (ROSC) ALS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- The presence of a palpable pulse and/or blood pressure for at least 30 seconds after cardiac arrest

TREATMENT

- ALS RMC
 - Maintain oxygen saturation 94%-99%
 - ETCO₂ if available
 - Avoid excessive ventilation. Start at 10-12 breaths/min and titrate to target ETCO₂ 35-40 mm Hg
- 12-lead ECG / Early notification if STEMI
- Elevate head 30° if patient is conscious
- Transport to nearest available STEMI Receiving Center
- For BP < 90 mm Hg:
 - NS 1-2 liter bolus; if no improvement:
 - **Dopamine** 2-10 mcg/kg/min. Titrate to SBP 100

DOPAMINE			
400 mg in 250 ml D5W (pre-mixed)		60 drops/min = 60 ml/hr	
Weight (kg)	gtts/min to = 2-10 ug/kg/min	Weight (kg)	gtts/min to = 2-10 ug/kg/min
35-44	3-15 gtts/min	85-94	7-35 gtts/min
45-59	4-20 gtts/min	95-109	8-40 gtts/min
60-74	5-25 gtts/min	110 & up	9-45 gtts/min
75-84	6-30 gtts/min		

SPECIAL CONSIDERATION

- Consider and treat possible contributing factors:

<ul style="list-style-type: none"> ▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia 	<ul style="list-style-type: none"> ▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma
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DOCUMENTATION- ESSENTIAL ELEMENTS

- Cardiac rhythm documentation
- 12-lead findings

RELATED POLICIES/ PROCEDURES

- 12-lead Electrocardiogram ALS PR 12
- Destination Guidelines GPC 4

HEAT ILLNESS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Exposure to unusually high temperatures, humidity, or vigorous exercise resulting in heat cramps, heat exhaustion, or heat stroke

CRITICAL INFORMATION

- Heat Cramps:
 - Severe painful cramping of fatigued muscles in the setting of heat stress, often following fluid replacement with hypotonic fluids
- Heat Exhaustion:
 - Systemic symptoms, often vague and nonspecific, precipitated by significant hypovolemia under conditions of heat stress, and characterized by any of the following: weakness, fatigue, nausea, vomiting, headache, impaired judgment, vertigo, syncope, tachycardia, hypotension and dizziness, often orthostatic. Mental status is normal.
- Heat Stroke:
 - Catastrophic life-threatening failure of homeostatic thermoregulatory mechanisms, manifested by extreme elevation of body temperature & severe CNS dysfunction, which may present as disorientation, delirium, seizure or coma.

TREATMENT

- Move to a cool environment and remove clothing
- ALS RMC
- Heat cramps:
 - Replenish electrolytes by mouth or IV **NS** 250 ml fluid challenge; recheck vitals q 250 ml; MR to a total of 1000 ml
- Heat exhaustion and heat stroke:
 - Cooling measures
 - IV fluids as stated above
- Treat ALOC, seizures or shock per appropriate policy

COLD INDUCED INJURY

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Exposure to cold and/or wet environment

TREATMENT and CRITICAL INFORMATION

- Move patient to a warm, protected environment as soon as possible
- Remove all wet clothing and cover entire body (including head & hands) with warm blankets
- ALS RMC – obtain **core** temperature (epitympanic or rectal), treat hypoglycemia per ALOC policy

TEMPERATURE	SYMPTOMS	VS	TREATMENT
Mild 90-95F /32-35C	shivering, apathy, ataxia LOC	increased HR, increased RR, NL BP	IV fluids (warm if available); warm blankets, hot packs to chest, back, groin, axilla
Moderate 82-90F/28-32C	shivering may cease; decreasing LOC; atrial dysrhythmias (will resolve with warming)	may be bradycardic and hypotensive; pulse may be difficult to detect	as above; handle patient gently and try to keep horizontal;
Severe <82F/<28C	minimally or completely unresponsive; ventricular dysrhythmias	profound hypotension; difficult to detect any VS (auscultate for heart sounds)	as above; critical to handle patient gently and keep horizontal; IV fluids (warm if available) @ 20ml/kg bolus; reassess after 500 ml; repeat as necessary for SBP > 90

- If there are no signs of life and asystole remains after 60 seconds, ventilate for three minutes; auscultate for heart rate and assess for electrical activity for 60 seconds.
- If still asystolic and no pulse, begin CPR; if VF/VT defibrillate once @ 200 or 360J (depending on manufacturer) and if no change, begin CPR.
- If PEA (even very slow); withhold CPR; continue warming measures; begin transport, continue IV fluid boluses (as above); handle gently and manage airway.
- Withhold ACLS medications until core temperature reaches 86F/30C
- Hypothermia from submersion: Based on reliable report or witness, if submersion is <60 minutes, attempt resuscitation/active rewarming. If submersion is known to be >60 minutes, resuscitation should not be initiated (see Determination of Death Policy, ATG6).

SPECIAL CONSIDERATION

- Subtler presentations exist in the elderly, newborns, chronically ill, patients taking medications and alcohol
- Handle the patient gently for all procedures; physical manipulations have been reported to precipitate ventricular fibrillation.
- Continue re-warming in patients with temperature < 35C (95°F) with known or suspected hypothermia (hypothermia from submersion <60 minutes) as the primary cause or significant contributor of death, unless obvious death or valid DNR are present.

ENVENOMATION

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Unidentified and/or identified poisonous snake bite (physical evidence: puncture wound or symptoms of envenomation: local pain, swelling or numbness)

CRITICAL INFORMATION

- Identify or provide description of snake

TREATMENT

- ALS RMC
- Remove rings, bracelets, or other constricting items from affected extremity
- Limit patient's movement as much as possible
- Mark extent of affected area, noting time on skin
- Immobilize extremity at or below heart level and monitor distal pulses
- Consider pain management.
- If exhibiting signs of allergic reaction or shock, refer to Allergic Reaction Policy
- Expedite transport

SPECIAL CONSIDERATION

- Contact hospital early to allow preparation for treatment
- Do not apply tourniquets, incise skin, apply ice, or suction

DOCUMENTATION- ESSENTIAL ELEMENTS

- Estimated time of snake bite

RELATED POLICIES/ PROCEDURES

- Allergic Reactions/ Anaphylaxis M 3
- Adult Pain Management ATG 2

BURNS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Second or third degree burns (contact with caustic material, electricity or fire) involving 15% or more of body surface area or those associated with respiratory involvement

CRITICAL INFORMATION

- Consider early intubation for severe facial burns
- Burns with trauma mechanism need to be transported according to the Marin County Trauma Triage Tool

TREATMENT

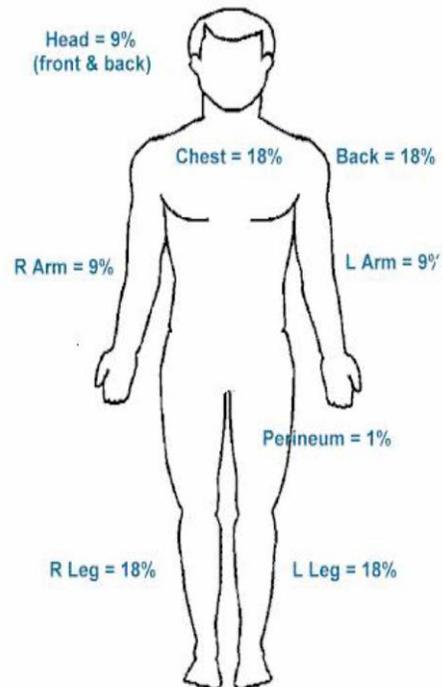
- ALS RMC
- Thermal/Electrical:
 - Remove patient to safe area
 - Eliminate source and stop the burning process (water may be used in the first few minutes to stop the burning process)
 - Remove all clothing/ jewelry
- Chemical:
 - Brush away any dry chemicals
 - Attempt to identify chemical; flush affected area with copious amounts of water unless contraindicated
- Support ventilation with high flow oxygen
 - If wheezing, consider bronchodilator therapy- **Albuterol** 5 mg in 6 ml NS HHN
 - Re-evaluate airway frequently
- Expose affected area and apply clean dry sheet
- Keep patient warm to avoid hypothermia
- IV **NS** wide open; reassess VS after one liter
- Pain management as indicated
- Transport by ground. If there is respiratory involvement, transport to the time closest ED by air or ground.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Estimated body surface area percentage affected

RELATED POLICIES/ PROCEDURES

- Adult Pain Management ATG 2
- Bronchospasm/ Asthma/ COPD R 4
- Destination Guidelines GPC 4
- Marin County Trauma Triage Tool



Adult

DROWNING/ NEAR DROWNING

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Drowning: loss of consciousness in water, now in full arrest
- Near Drowning: loss of consciousness in water, not in full arrest

TREATMENT

- ALS RMC
- Ensure patent airway
- Protect cervical spine if neck injury suspected
- High flow oxygen. Prepare to support ventilations with appropriate airway adjuncts (CPAP if available)
- Anticipate vomiting: take precautions against aspiration and be prepared to suction
- Remove wet clothing
- Keep patient warm and dry

SPECIAL CONSIDERATION

- If patient had LOC in water and presents in full arrest, treat as CARDIOPULMONARY ARREST, using specific dysrhythmias treatment guideline.

RELATED POLICIES/ PROCEDURES

- Spinal Immobilization GPC 13
- Cold Induced Injury E 2
- CPAP ALS PR 13

NON-TRAUMATIC SHOCK

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- SBP < 100 and signs of shock, suggestive of cardiac origin or after severe vomiting, diarrhea or signs of infection

CRITICAL INFORMATION

- Presence of rales. If rales present, see Acute Pulmonary Edema R 5

TREATMENT

- ALS RMC
- Treat dysrhythmia per protocol
- 12-lead ECG if patient has medical history and/or presenting complaints consistent with acute coronary syndrome. If positive for STEMI, see STEMI Policy.
- Give 250-500 ml. Recheck vital signs every 250 ml. May give up to two liters fluid.
- If lungs remain clear after fluid challenge and SBP remains < 100 then:
 - IV / IO infusion of **Dopamine** 400 mg/250 ml D5W (pre-mixed). Begin at 10ug/kg/min.
- Monitor blood pressure every five minutes. Aim for SBP ≥ 100.
- Consider placing multifunction Defib/ Pacer Pads

DOPAMINE			
400 mg in 250 ml D5W (pre-mixed)		60 drops/min = 60 ml/hr	
Weight (kg)	gtts/min to = 10 ug/kg/min	Weight (kg)	gtts/min to = 10 ug/kg/min
35-44	15 gtts/min	85-94	35 gtts/min
45-59	20 gtts/min	95-109	40 gtts/min
60-74	25 gtts/min	110 & up	45 gtts/min
75-84	30 gtts/min		

SPECIAL CONSIDERATION

- Consider other causes of shock and treat as per specific protocols for the following:
 - GI Bleeding
 - Anaphylaxis
 - Tension pneumothorax
 - Vaginal hemorrhage
 - Pulmonary edema

DOCUMENTATION- ESSENTIAL ELEMENTS

- 12-lead ECG finding
- Vital signs pre/post fluid boluses
- History of progression of illness

RELATED POLICIES/ PROCEDURES

- 12-lead Electrocardiogram Procedure ALS PR 12
- Destination Guideline GPC 4

GASTROINTESTINAL BLEEDING

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- History of dark, tarry stools, frank bleeding, or vomiting blood, with or without abdominal pain

CRITICAL INFORMATION

- History of previous episodes of gastrointestinal bleeding
- Use of anticoagulant drugs
- History of syncope or falls

TREATMENT

- ALS RMC
- If hypotensive, fluid challenge, 250-500 ml recheck vital signs q 250 ml
- If in shock, start second large bore IV ; fluid challenge 500-1000 ml, recheck vital signs q 250 ml
- Shock position if tolerated, keep patient warm

DOCUMENTATION- ESSENTIAL ELEMENTS

- Estimated blood loss

RELATED POLICIES/ PROCEDURES

- Non-Traumatic Shock M 1
- Severe Nausea/Vomiting M 5

ALLERGIC REACTION & ANAPHYLAXIS

ALS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Urticaria, wheezing or signs and/ or shock after exposure to common allergens (stings, drugs, nuts, seafood, medications)

CRITICAL INFORMATION

- Respiratory: wheezing, stridor, respiratory distress
- Skin: itching, hives, rash
- Symptoms indicating early shock such as nausea, weakness, anxiety
- Past history of severe allergic reactions and hospitalizations

TREATMENT

- Mild: hives, rash
 - ALS RMC
 - **Benadryl** 50 mg IM/IV
- Moderate: hives, rash, mild bronchospasm/ wheezes, normotensive
 - ALS RMC
 - **Benadryl** 50 mg IM/IV
 - **Epinephrine** 1:1,000 IM 0.01mg/kg (max 0.5 mg)
 - **Albuterol** 5 mg/6 ml NS via HHN, if indicated for respiratory symptoms
- Severe (Anaphylaxis)
 - ALS RMC
 - Treat dysrhythmias per appropriate protocol
 - High flow O₂; advanced airway as needed
 - **Epinephrine** 1:1,000 IM 0.01mg/kg (max. 0.5 mg)
 - Large bore IV and fluid challenge 250-500 ml; MR
 - If unresponsive/ no palpable BP /no palpable pulse: **Epinephrine (1:10,000)** 0.01 mg/kg IV/IO (max 0.5 mg)
 - **Albuterol** 5 mg/ 6ml NS via HHN, repeat if indicated
 - **Benadryl** 50 mg IV/IO/IM
 - If hypotension persists after two fluid challenges, begin **Dopamine** infusion at 10 mcg/ kg/ min. Monitor BP every five (5) minutes.

DOPAMINE			
400 mg in 250 cc D5W (pre-mixed)		60 drops/min = 60 cc/hr	
Weight (kg)	gtts/min to = 10 ug/kg/min	Weight (kg)	gtts/min to = 10 ug/kg/min
35-44	15 gtts/min	85-94	35 gtts/min
45-59	20 gtts/min	95-109	40 gtts/min
60-74	25 gtts/min	110 & up	45 gtts/min
75-84	30 gtts/min		

SPECIAL CONSIDERATION

- **Epinephrine** may cause anxiety, tremors, palpitations, tachycardia, and headache in the elderly (> 50yrs), and may precipitate AMI, hypertensive crisis and dysrhythmias.
- Confirm proper dilution and dose of **Epinephrine** prior to administration
- Edema of any of the soft structures of the upper airway may be lethal. Frequently assess and prepare for early intubation.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Pulse oximetry
- Level of distress (mild, moderate, severe) & associated respiratory distress findings

POISONS/DRUGS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Ingestion and/or exposure to one or more toxic substances

CRITICAL INFORMATION

- Identify substance/drug if possible and amount ingested
- Time of ingestion and length of exposure
- Risk of exposure to field providers

TREATMENT

- ALS RMC
- Consider contacting Poison Control Center at 1(800) 404-4646 for additional information. If information from Poison Control is outside of scope of practice, contact the intended receiving facility for consult.
- **Hydrocarbons or Petroleum distillates** (kerosene, gasoline, lighter fluid, furniture polish):
 - Do not induce vomiting.
 - Transport immediately.
- **Caustic/ Corrosives** (Ingestion of substances causing intra-oral burns, painful swallowing or inability to handle secretions):
 - Do not induce vomiting.
 - Consider dilution with no more than 1-2 glasses of water or milk if no respiratory compromise or change in mental status.
- **Insecticides** (organophosphates, carbonates; cause cholinergic crisis characterized by bradycardia, increased salivation, lacrimation, sweating, muscle fasciculation, abdominal cramping, pinpoint pupils, incoherence or coma:
 - If skin exposure, decontaminate patient, remove clothing, wash skin, avoid contamination of prehospital personnel
 - **Atropine** 2 mg IV slowly. Repeat 2-5 minutes until drying of secretions, reversal of bronchospasm and reversal of bradycardia. Maximum dose 10 mg.
 - If seizures, **Midazolam (Versed)** 1 mg IV slowly; MR in 3 minutes to maximum dose 0.05 mg/kg
 - For IN: 5 mg (2.5mg in each nostril)
 - For IM: 0.1mg/kg; MR x 1 in 10 minutes
- **Cyclic Antidepressants** (frequently associated with respiratory depression, almost always tachycardic, widened QRS and ventricular arrhythmias generally indicate life-threatening ingestions):
 - In the presence of life-threatening dysrhythmias (hemodynamically significant supraventricular rhythms, ventricular dysrhythmias or QRS > 0.10):
 - Hyperventilate if assisting ventilations or if intubated.
 - **Sodium bicarbonate** 1 mEq/kg IVP
 - If seizures, **Midazolam (Versed)** 1 mg IV slowly; MR in 3 minutes to maximum dose 0.05 mg/kg
 - For IN: 5 mg (2.5 mg in each nostril)
 - For IM: 0.1mg/kg; MR x 1 in 10 minutes

- **Phenothiazine reactions** (restlessness, muscle spasms of the neck, jaw, and back; oculogyric crisis, history of ingestion of phenothiazine, or unknown medication):
 - **Benadryl** 1mg/ kg slow IVP to max of 50 mg
- **Other non-caustic drugs** (patient awake and alert):
 - If within 1 hour of ingestion, consider **Activated charcoal** 1 GM/kg PO, not to exceed 50 GM
 - If level of consciousness diminishes, protect airway, suggest lateral position with head down.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Obtain history of ingestion, substance, amount and time of ingestion, bring sample to hospital if possible
- Vomiting prior to ED arrival

RELATED POLICIES/ PROCEDURES

- Seizures N2

SEVERE NAUSEA/VOMITING

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Severe nausea
- Intractable vomiting
- Patients \geq 4 years of age
- Motion sickness

CRITICAL INFORMATION

- Contraindicated in patients with known sensitivity to Ondansetron or other 5-HT₃ antagonists:
 - Granisetron (Kytril)
 - Dolasetron (Anzemet)
 - Palonosetron (Aloxi)

TREATMENT

- ALS RMC
- **Ondansetron** (Zofran ®) 4 mg ODT/IM or slow IV over 30 seconds; MR x 1 in 10 min
- **If nausea due to motion sickness, Benadryl** 1mg/kg IM/IV to maximum dose of 50 mg; maximum IV rate is 25 mg/minute

DOCUMENTATION- ESSENTIAL ELEMENTS

- Need for antiemetic therapy

SEPSIS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Documented or suspected source of infection AND at least TWO of the following:
 - HR > 90
 - RR > 20
 - SBP < 90
 - Temperature >100.4 or <96

CRITICAL INFORMATION

- If rales present, see Acute Pulmonary Edema R5 and continue to treat as below.

TREATMENT

- ALS RMC
- Two large bore IVs or IOs (only one may be in antecubital fossa)
- Initiate 20cc/kg fluid bolus. May give up to two liters fluid.
- Early Sepsis Notification
- If SBP < 90 consider:
 - IV / IO infusion of **Dopamine** 400 mg/250 ml D5W (pre-mixed). Begin at 2-10ug/kg/min.
 - Monitor blood pressure every five minutes. Aim for SBP \geq 100.

DOPAMINE			
400 mg in 250 ml D5W (pre-mixed)		60 drops/min = 60 ml/hr	
Weight (kg)	gtts/min to = 2-10 ug/kg/min	Weight (kg)	gtts/min to = 2-10 ug/kg/min
35-44	3-15 gtts/min	85-94	7-35 gtts/min
45-59	4-20 gtts/min	95-109	8-40 gtts/min
60-74	5-25 gtts/min	110 & up	9-45 gtts/min
75-84	6-30 gtts/min		

SPECIAL CONSIDERATION

- Consider other causes of shock and treat as per specific protocols

DOCUMENTATION- ESSENTIAL ELEMENTS

- Suspected source of infection
- History of progression of illness

RELATED POLICIES/ PROCEDURES

- Destination Guideline GPC 4
- Acute Pulmonary Edema R5

COMA/ ALTERED LEVEL OF CONSCIOUSNESS

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- GCS < 15, etiology unclear (consider AEIOU TIPS); sudden onset of weakness, paralysis, confusion, speech disturbances, headache

TREATMENT

- ALS RMC
- Position patient with head elevated 30 degrees or left lateral recumbent if vomiting
- If BS < 60 or immeasurable:
 - **Dextrose 10% 25GM/250ml:**
 - 125 ml bolus IV/IO over 10 minutes; recheck BG and repeat as needed
- If BS < 60 or immeasurable and unable to start IV:
 - **Glucagon 1 mg IM**
- Narcotic overdose:
 - **Narcan 0.4 mg-2 mg IVP/ IM/ IN**

SPECIAL CONSIDERATION

- Consider indication for C-spine precautions; consider diabetes-related complications
- If CVA suspected, see CVA/Stroke Policy N 4

RELATED POLICIES/ PROCEDURES

- Intranasal Medications Midazolam(Versed) and Narcan Procedure ALS PR 7
- CVA / Stroke Policy N4

SEIZURES ALS

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Recurring or continuous generalized seizures with ALOC

TREATMENT

- ALS RMC
- Treat hypoglycemia according to ALOC policy
- **Narcan** 2 mg IV/ IM/ SL/ IN if opiate overdose is suspected and the patient is in respiratory failure or shock
- **Midazolam (Versed)**
 - IV/IO: 1 mg slowly; MR q 3 minutes until seizure stops or maximum dose 0.05 mg/kg.
 - IN: 5 mg (2.5 mg in each nostril)
 - IM: 0.1 mg/kg; MR x 1 in 10 minutes if still seizing.

SPECIAL CONSIDERATION

- Consider treatable etiologies (hypoglycemia, hypoxia, narcotic overdose, unusual odor of alcohol, signs of trauma, medic alert tag) prior to administering anti-seizure medications.
- Expect and manage excessive oral secretions, vomiting, and inadequate tidal volume.
- Treatment should be based on the severity and length of the seizure activity.
- Focal seizures without mental status changes may not require pre-hospital pharmacological intervention.
- Never administer **Midazolam (Versed)** rapid IVP/IO since cardiac and/or respiratory arrest may occur.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Blood glucose level
- Number, description, duration of seizures
- Dosage of medications, times administered

RELATED POLICIES/ PROCEDURES

- Intranasal Medications Midazolam (Versed) & Narcan ALS PR 7
- ALOC N1

SYNCOPE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Episode of brief loss of consciousness, dizziness, often postural

CRITICAL INFORMATION

- Evaluate cardiac rhythm, precipitating factors, associated symptoms, medical history/medications. If abnormal vital signs or loss of consciousness, do not do postural vital signs.

TREATMENT

- ALS RMC
- Cardiac monitor - treat dysrhythmias per specific treatment guidelines
- 12-lead ECG if patient has medical history and/or presenting complaints consistent with acute coronary syndrome. If positive for STEMI, see 12-lead ECG Procedure.
- IV **NS** TKO or saline lock; 250-500 ml fluid challenge if hypotensive or tachycardic
- Treat hypoglycemia according to ALOC policy

CEREBROVASCULAR ACCIDENT (STROKE)

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

Sudden onset of weakness/paralysis, speech or gait disturbance

TREATMENT

- ALS RMC
 - Secure IV access (antecubital preferred) if patient meets Early Stroke Notification criteria
 - Elevate head of bed 20-30% elevation or place in left lateral decubitus
- Provide **Early Stroke Notification** if all of the following are true:
 - Abnormal Cincinnati Prehospital Stroke Scale (CPSS) score
 - Last known well < 4.5 hours
 - Symptoms are most likely due to stroke and not a stroke mimic
 - Blood glucose level >70
- If the patient meets criteria for early notification
 - During radio report, provide patient identifying information – hospital medical record number if known and/or last name and DOB of patient
 - Rapidly transport to patient's preferred Primary Stroke Center (PSC), as long as the estimated transport time is not > 15 minutes longer than the closest PSC.
 - Preferred PSC: patient's preference or PSC with patient's medical records
 - No preferred PSC: transport to the closest PSC
 - Notify family members/medical decision maker that their immediate presence at the hospital is critical for optimal care
 - Bring names and best phone numbers for the patient's medical decision maker and whoever last saw the patient normal whenever possible
- If high suspicion of rapidly progressive intracranial bleed (sudden, witnessed onset of coma or rapidly deteriorating GCS especially in setting of severe headache) transport to Marin General Hospital

DOCUMENTATION- ESSENTIAL ELEMENTS

- Criteria for Early Stroke Notification
- Choose CVA as Primary Impression
- **Name and contact information for patient family member/decision maker and/or those who had last seen the patient normal (e.g., skilled nursing personnel)**
- Documentation of CPSS and hospital notification
- Time last known well (document in military time). If time last known to be well is unknown or indeterminate, document and report
- Blood glucose level
- GCS
- History of intracranial hemorrhage
- Serious head injury within 2 months
- Taking anticoagulant medications (e.g. Warfarin/ Coumadin, Pradaxa/Dabigatran, Xarelto/Rivaroxaban, Eliquis/Apixaban, Lovenox/Enoxaparin)
- Improving neurological deficit

RELATED POLICIES/ PROCEDURES

- Destination Guidelines GPC 4
- Prehospital / Hospital Contact Policy 7001
- Ambulance Diversion Policy 5400
- Coma/ALOC N1

Cincinnati Pre-Hospital Stroke Scale (CPSS)

Facial Droop (the patient shows teeth or smiles)

___ Normal: both sides of the face move equally

___ Abnormal: Right side of the face does not move as well as the left

___ Abnormal: Left side of the face does not move as well as the right

Arm Drift (the patient closes their eyes and extends both arms straight out for 10 seconds)

___ Normal: both arms move the same, or both arms do not move at all

___ Abnormal: Right arm either does not move, or drifts down compared to the left

___ Abnormal: Left arm either does not move, or drifts down compared to the right

Speech (the patient repeats "The sky is blue in Cincinnati." or other sentence)

___ Normal: the patient says the correct words with no slurring of words

___ Abnormal: the patient slurs words, says the wrong words, or is unable to speak

VAGINAL HEMORRHAGE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Profuse or abnormal vaginal bleeding, any bleeding in pregnancy, including signs of shock

TREATMENT

- ALS RMC
- Pregnant patients > 20 weeks gestation:
 - Position on left side & support abdomen, including patients immobilized on backboards
- Non-pregnant:
 - Trendelenberg position
- IV **NS** 250 ml; MR as needed to maintain SBP \geq 100
- Bleeding in 3rd trimester or post-partum with blood loss > 500 ml:
 - 2nd large-bore IV
- If post-partum and placenta delivered:
 - Fundal massage and put infant to breast if appropriate

CRITICAL INFORMATION

- Last menstrual period

DOCUMENTATION- ESSENTIAL ELEMENTS

- Estimate blood loss
- Estimated weeks of gestation

RELATED POLICIES/ PROCEDURES

- Non-Traumatic shock M 1
- Destination Guidelines GPC 4

IMMINENT DELIVERY (NORMAL)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Anticipated delivery as indicated by regular contractions, bloody show, low back pain, feels like bearing down, crowning of infant head

TREATMENT

- ALS RMC
- Provide reassurance to mother, provide instructions during delivery
- Contact hospital and start IV **NS** TKO if time allows prior to delivery
- As head is delivered, gently suction baby's mouth and nose keeping the head dependent
- If the cord is around neck and can't be slipped over the head:
 - Double clamp and cut between clamps
- Allow delivery, dry baby and keep warm, placing baby on mother's abdomen or breast
- Allow cord to stop pulsating, then clamp and cut 6-8 inches from baby
- Assess baby by Apgar score at 1 and 5 minutes
- Allow delivery of placenta, save and bring to the hospital
- If infant is premature (<36 weeks gestation), prepare for neonatal resuscitation and early transport

DOCUMENTATION- ESSENTIAL ELEMENTS

- Determine gestational age, number of babies in utero
- Gravida and Para
- Apgar score at 1 and 5 minutes

APGAR SCORE			
Sign	0	1	2
Heart rate (bpm)	Absent	Slow (<100)	≥100
Respirations	Absent	Slow, irregular	Good, crying
Muscle tone	Limp	Some flexion	Active motion
Reflex irritability	No response	Grimace	Cough, sneeze, cry
Color	Blue or pale	Pink body with blue extremities	Completely pink

RELATED POLICIES/ PROCEDURES

- Destination Guidelines Policy GPC 4
- Neonatal Resuscitation P 2
- Obstetrical / Gynecology Emergencies BLS Procedure BLS PR 8

IMMINENT DELIVERY (COMPLICATIONS)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Presentation of buttocks, extremity or umbilical cord prior to deliver of infant head
- Prolapsed Cord: Cord presents first and is compressed during delivery compromising infant circulation

TREATMENT

- Breech presentation (buttocks or feet):
 - Begin transport with early receiving hospital contact
 - BLS / ALS RMC
 - Allow delivery to proceed passively until baby's waist appears
 - Rotate baby to face down position (do not pull)
 - If head does not deliver in 3 minutes:
 - Insert gloved hand into vagina to create an air passage for infant
- Limb presentation:
 - Position mother on gurney with hips elevated and left lateral
- Prolapsed cord (cord presents first, compressed during delivery and compromising infant circulation):
 - Insert gloved hand into vagina and gently push presenting part off cord. Do not attempt to reposition cord.
 - Cover cord with saline soaked gauze
 - Place mother in knee-chest position
 - IV **NS** TKO only if not delaying transport

RELATED POLICIES/ PROCEDURES

- Destination Guidelines Policy GPC 4
- Neonatal Resuscitation Policy P 2

SEVERE PRE-ECLAMPSIA/ ECLAMPSIA

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Third trimester pregnancy with the following signs and symptoms:
 - Hypertension (SBP systolic >160, DBP >110)
 - Mental status changes
 - Visual disturbances
 - Peripheral edema (pre-eclampsia)
 - Seizures and/or coma (eclampsia)

PHYSICIAN CONSULT

- Administration of **NTG**

TREATMENT

- Position on left side
- ALS RMC
- Transport quickly with a quiet environment (no siren)
- IV NS TKO started enroute
- Seizures: **Midazolam (Versed)**
 - IV: 1 mg slowly; MR in 3 minutes to maximum dose 0.05 mg/kg.
 - IN: 5 mg (2.5 mg in each nostril)
 - IM: 0.1 mg/kg; MR x 1 in 10 minutes if still seizing.
- If DBP>110:
 -  **NTG** 0.4 mg spray/SL; MR in 10 minutes

RELATED POLICIES/ PROCEDURES

- Seizures N 2
- Destination Guidelines GPC 4

RESPIRATORY ARREST

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Absence of spontaneous ventilations; pulse present

TREATMENT

- ALS RMC
- If suspected narcotic overdose:
 - Assist breathing with BVM (Do not insert advanced airway before **Narcan**)
- Administer **Narcan** 0.4-2.0 mg/kg, IV/IO/IM/SL/IN
 - **For IN administration:** 2 mg (1 mg per nostril). Pinch nostrils for approx. 2-3 minutes after administration to allow absorption of medication
- If respiratory depression persists, repeat above doses in 5 minutes

RELATED POLICIES/ PROCEDURES

- Intranasal Medication Midazolam (Versed) & Narcan Procedure ALS PR 16

AIRWAY OBSTRUCTION

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Presence of upper respiratory infection, sore throat, fever, stridor or drooling
- Mechanical upper airway obstruction with history of food aspiration (especially if elderly)

CRITICAL INFORMATION

- Ability to speak
- Ability to manage secretions

TREATMENT

- ALS RMC
- Visualize airway
- Suspected mechanical upper airway obstruction; Conscious patient- able to speak:
 - Suctioning if needed to control secretions
 - Transport in position of comfort, avoid agitating patient
- Suspected mechanical upper airway obstruction; Conscious patient-unable to cough or speak:
 - Ask the patient if he/she is choking
 - Administer abdominal thrusts/Heimlich maneuver until the foreign body is expelled or the patient becomes unconscious
 - After obstruction is relieved, reassess airway, lung sounds, skin color and vital signs
- Unconscious patient:
 - Perform a tongue-jaw lift followed by finger sweep to remove object
 - Begin CPR
 - Prepare to use Magill forceps if BLS not effective
- Suspected epiglottitis
 - Transport in an upright sitting position
 - If patient deteriorates or the airway becomes completely obstructed, attempt positive pressure ventilation via BVM. Endotracheal intubation should be performed only if BVM is inadequate.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Frequent pulse oximetry recordings

ACUTE RESPIRATORY DISTRESS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATIONS

- Increased respiratory rate or sensation of difficulty breathing that is not clearly due to the clinical entities specified in other guidelines. Symptoms may be due to pneumonia, inhalation of toxic substances, pulmonary embolus.

TREATMENT

- ALS RMC
- Position of comfort
- Consider CPAP with decreased SAO₂

DOCUMENTATION- ESSENTIAL ELEMENTS

- Pulse oximetry

RELATED POLICIES/ PROCEDURES

- CPAP Procedure ALS PR 13

BRONCHOSPASM/ ASTHMA/ COPD ALS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Acute or progressive shortness of breath, chest discomfort, wheezing, cyanosis

TREATMENT

- ALS RMC
- Mild to moderate (alert, may be unable to speak full sentences, limited accessory muscle use).
 - **Albuterol** 5 mg in 6 ml NS HHN, MR if necessary
 - **Ipratropium (Atrovent)** 500 mcg (2.5 ml) HHN
- Severe (altered mental status, minimal air movement, inability to speak, significant desaturation <90%, cyanosis)
 - Consider CPAP
 - If **Albuterol** and **Atrovent** not effective:
 - **Epinephrine** 1:1,000 IM 0.01mg/kg (max 0.5mg); MR once in 5 minutes

SPECIAL CONSIDERATION

- Do not repeat **Albuterol / Ipratropium (Atrovent)** if significant tachycardia or chest pain.
- **Epinephrine** may cause anxiety, tremor, palpitation, tachycardia, hypertension and headache, and may precipitate AMI, hypertensive crisis and intracranial hemorrhage.
- Consider use of patient actuated nebulizer with prolonged scene times and/or transport times over 10 minutes.
- Suspect carbon monoxide in cases of exposure to fire or smoke in confined areas; pulse oximetry in these settings is not an accurate measure of respiratory status

DOCUMENTATION- ESSENTIAL ELEMENTS

- Wheezing, decreased lung sounds
- SAO2

RELATED POLICIES/ PROCEDURES

- CPAP Procedure ALS PR 13

ACUTE PULMONARY EDEMA

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Acute onset of respiratory difficulty; associated with the following signs or symptoms:
 - Rales
 - Hypertension
 - Tachypnea
 - Diaphoresis
 - Chest discomfort
 - History of cardiac disease
 - Occasional wheezes
 - Near drowning

PHYSICIAN CONSULT

- **Morphine Sulfate**

TREATMENT

- ALS RMC
- If tolerated, position patient in a sitting position, with legs dependent.
- 12-lead ECG if available
- If SBP > 100:
 - Apply CPAP
 - **Nitroglycerin** 0.4 mg SL; MR q 5 if SBP > 100
 -  If no response, consider physician consult for **Morphine Sulfate** 2-5 mg IV
- If SBP < 100:
 - Consider **NS** 250-500 ml IV fluid challenge
 - Consider **Dopamine** 400 mg/250 NS (premix), begin infusion at 5 mcg/kg/min and increase to 10 mcg/kg/min, if BP < 100. Monitor BP q 3-5 min

DOPAMINE			
400 mg in 250 ml D5W (pre-mixed)		60 drops/min = 60 ml/hr	
Weight (kg)	gtts/min to = 10 ug/kg/min	Weight (kg)	gtts/min to = 10 ug/kg/min
35-44	3-15 gtts/min	85-94	7-35 gtts/min
45-59	4-20 gtts/min	95-109	8-40 gtts/min
60-74	5-25 gtts/min	110 & up	9-45 gtts/min
75-84	6-30 gtts/min		

SPECIAL CONSIDERATION

- Do not give **NTG** if patient has taken erectile dysfunction medication (ED) within the previous 24 hours for Levitra/Viagra or 36 hours for Cialis.

DOCUMENTATION- ESSENTIAL ELEMENTS

- SpO2

RELATED POLICIES/ PROCEDURES

- CPAP Procedure PR 13

PNEUMOTHORAX / TENSION PNEUMOTHORAX

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Acute onset of respiratory distress with decreased unilateral or bilateral breath sounds. Signs and symptoms may include the following:
 - Extreme dyspnea
 - Neck vein distension
 - Agitation
 - Hypotension
 - Cyanosis
 - Hyperresonance to percussion on affected side
 - Tracheal shift away from the affected side

TREATMENT

- ALS RMC
- Needle thoracostomy on affected side with signs of tension pneumothorax
- Rapid transport

SPECIAL CONSIDERATION

- Condition may be precipitated by the following:
 - Trauma
 - Pre-existing lung disease
 - Cancer related treatment
 - Marfan's syndrome

DOCUMENTATION- ESSENTIAL ELEMENTS

- Decompression site
- SAO2 before and after decompression

RELATED POLICIES/ PROCEDURES

- Needle Thoracostomy and Pleural Decompression Procedure ALS PR 8

TOXIC INHALATION

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Respiratory distress caused by inhalation of toxic gases
- Symptoms may include headache, malaise, dizziness, nausea/vomiting, seizures, coma; which may be associated with cherry- red color of mucous membranes (late sign)
- Consider carbon monoxide (CO) poisoning with any patient exposed to products of combustion

TREATMENT

- Rapid removal of patient from toxic environment
- High flow oxygen; give oxygen despite normal oxygen saturation levels
- ALS RMC
- If wheezing - **Albuterol** 5 mg in 6 ml **NS** via HHN, repeat as indicated
- CO monitoring, if available

High Suspicion of CO poisoning:

- Any patient (non-smoker) with CO level >9%
- Any patient (smoker) with CO level >12%

At Risk for CO poisoning (at risk=pregnant, children <6y, elderly, patients with history of respiratory problems)

- Any "at risk" patient (non smoker) with CO level >4%
- Any "at risk" patient (smoker) with CO level >8%
- Any patient with CO symptoms and confirmed source of CO

DOCUMENTATION – ESSENTIAL ELEMENTS

- Nature of exposure
- CO levels
- At-risk criteria

TRAUMATIC INJURIES

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Suspected or apparent injuries which meet conditions listed on the Marin County Trauma Triage Tool

CRITICAL INFORMATION

- Rapid transport to the appropriate trauma receiving facility is important and must be taken into account in the field management of trauma patients

TREATMENT

- ALS RMC
- Early trauma center notification
- Control of bleeding
- If SBP < 100, consider 2 large bore IVs; fluid challenge 250-500 ml
- Pain management as appropriate
- For head injury patients, consider **Zofran** to prevent vomiting which could increase ICP.
- Prepare for early and rapid transport to the appropriate trauma center

SPECIAL CONSIDERATION

- If injury may have resulted from abuse, neglect, assault, attempted suicide/ homicide and/ or other crimes, refer to Suspected Child/ Dependent Adult/ Elder Abuse Policy for reporting.

RELATED POLICIES/ PROCEDURES

- Destination Guidelines GPC 4
- Suspected Child/ Dependent Adult/ Elder Abuse GPC 9
- Spinal Immobilization GPC 13
- Adult Pain Management ATG 2
- Trauma Triage Tool 4613a
- Severe Nausea and Vomiting M 5

CRUSH SYNDROME

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Extended extremity or torso entrapment (usually > 2hours)

CRITICAL INFORMATION

- Rapid transport to the appropriate trauma receiving facility is important and must be taken into account in the field management of trauma patients

TREATMENT

- ALS RMC
- Pre-extrication:
 - **Albuterol** 5.0 mg in 6 ml NS HHN. Consider use of patient actuated nebulizer with prolonged scene times and/or transport times > 10 min.
 - **Sodium Bicarbonate** 1 mEq/kg up to 100 mEq IVP/IO (flush line with **NS** before and after administration)
 - **NS** 20 ml/kg IV/IO bolus, prior to release of compression, in addition to standard trauma fluid resuscitation
 - Pain management as appropriate
- Post-extrication:
 - **Albuterol** 5.0 mg in 6 ml NS HHN if wheezing or evidence of hyperkalemia. Consider use of patient actuated nebulizer with prolonged scene times and/or transport times > 10 min.
 - If suspected hyperkalemia (absent P waves, peaked T waves, prolonged QRS and/ or evidenced by hypotension), **Calcium Chloride** 1 gm IV/IO slowly over 5 min. (flush line with **NS** before and after administration)

SPECIAL CONSIDERATION

- Do not run Sodium Bicarbonate and Calcium Chloride concurrently; either flush line well or use two lines.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Length of entrapment time
- Additional contributing factors

RELATED POLICIES/ PROCEDURES

- Destination Guidelines GPC 4
- Trauma Triage Tool 4613a
- Spinal Immobilization GPC 13
- Adult Pain Management ATG 2

MANAGEMENT OF LESS-THAN-LETHAL INTERVENTIONS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Injuries incurred from police interventions such as taser, bean bags, or chemical agents

CRITICAL INFORMATION

- Assess for symptoms of excited delirium: bizarre/aggressive behavior, dilated pupils, hyperthermia, incoherent speech, inconsistent breathing pattern, fear/panic, profuse sweating
- Suspected or known substance abuse
- Level of consciousness prior to injury
- Past medical history of cardiac or respiratory disease

TREATMENT

- BLS/ALS RMC
- Remove clothing if injured with pepper spray or tear gas
- Irrigate eyes with NS as needed
- Bio-Shield® or other OTC agent may be used to assist in minimizing chemical agent exposure
- If taser injury
 - Remove embedded probes and dispose of in sharps container. If probes cannot be removed due to patient's agitation / location of probe/ or safety hazard, cover the probe with gauze
 - Do NOT remove probes if located in the following areas:
 - Face
 - Neck
 - Groin
 - Spinal column or any area deemed to be problematic
- Pain management as appropriate
- All patients who sustain a taser injury must be transported to a hospital
- Treat according to Adult Sedation Protocol if agitation / combativeness interferes with critical ALS interventions and airway control or that endangers patient or caregiver

RELATED POLICIES/ PROCEDURES

- Destination Guidelines GPC 4
- Adult Pain Management ATG 2
- Trauma Triage Tool 4613a
- Adult Sedation ATG 3
- Patient Restraint GPC 3

PEDIATRIC PULSELESS ARREST

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Pulseless, chaotic, disorganized electrical rhythm (Ventricular Fibrillation/ VF)
- Pulseless, organized "wide complex" rhythm, rate > 150/ min (Ventricular Tachycardia/ VT)
- Electrical activity other than VF or VT that does not produce a palpable pulse (Asystole, Pulseless Electrical Activity/ PEA)

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Witnessed or unwitnessed
- Bystander CPR
- If arrest witnessed, time without CPR

TREATMENT

- Compressions until defibrillator available
- ALS RMC
- **VF/ VT:**
 - Defibrillate: Manual – 2 – 4J/kg; if unavailable use AED with dose attenuator; CPR for 2 minutes
 - **Epinephrine** IV/IO (1:10,000) 0.01mg/kg; repeat q 3-5 min.
 - CPR for 2 minutes
 - Defibrillate: Manual - 4 J/ kg; if unavailable use AED with dose attenuator; CPR for 2 minutes
 - **Amiodarone** 5 mg/kg IVP/IO (max. dose 300 mg); may repeat up to two times for refractory rhythm
- **Asystole/ PEA:**
 - **Epinephrine** IV/ IO (1:10,000) 0.01 mg/kg; repeat q 3-5 min.
 - Give 5 cycles of CPR and reassess rhythm

SPECIAL CONSIDERATION

- If unable to access IV/IO, **Epinephrine** (1: 1,000) ET 0.1mg/ kg; repeat q 3-5 min
- If pediatric dose attenuator is not available, use a standard AED
- Consider and treat possible contributing factors:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia | <ul style="list-style-type: none"> ▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma |
|---|---|

NEWBORN RESUSCITATION

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Prehospital delivery of a newborn

CRITICAL INFORMATION

- Assess for term gestation, crying or breathing, heart rate, and muscle tone.
- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.

TREATMENT

- Provide routine newborn care if no abnormal findings on initial exam (see assessment above).
 - Provide warmth
 - Clear airway if necessary
 - Dry / stimulate
- If weak / absent respiratory effort or decreased / absent muscle tone:
 - Provide warmth
 - Open airway
 - Stimulate
- Reassess heart rate and respiratory effort
 - If HR > 100/MIN, breathing is unlabored, and patient's color improves, continue supportive care
 - If HR > 100/MIN and breathing is labored and color does not improve, provide supplemental O₂
 - If HR < 100/MIN perform BVM at 40-60 per minute; consider ETT
 - If HR remains < 60/MIN perform BVM with chest compressions at 3:1 ratio
 - 90 compressions / 30 ventilations per minute
 - If HR < 60 continues, perform endotracheal intubation and administer **Epinephrine** 1:10,000 0.01mg/kg ET/IO/IV (may give up to 0.1mg/kg via ET). IV/IO PREFERRED. Repeat every 3-5 min
- IV/IO if not previously initiated
- Administer fluid bolus of 10 ml/kg IV/IO
- Assess for hypoglycemia and treat according to Pediatric Dosing Guide
- Continuous assessment of heart rate and respiratory effort en route

SPECIAL CONSIDERATIONS

- **Epinephrine** administration is indicated for asystole or spontaneous heart rate less than 60 beats per minute despite adequate ventilation with 100% oxygen and chest compressions after 30 seconds. Epinephrine by ETT is the fastest route and minimizes delay in resuscitation.
- **Narcan** is contraindicated in neonatal resuscitation.
- Clamp and cut cord after one minute.
- Peripheral cyanosis is normal.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Presence of meconium
- APGAR score at 1 and 5 minutes

APGAR SCORE			
Sign	0	1	2
Heart rate (bpm)	Absent	Slow (<100)	≥100
Respirations	Absent	Slow, irregular	Good, crying
Muscle tone	Limp	Some flexion	Active motion
Reflex irritability	No response	Grimace	Cough, sneeze, cry
Color	Blue or pale	Pink body with blue extremities	Completely pink

PEDIATRIC RESPIRATORY DISTRESS

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Patient exhibits any of the following:
 - Wheezing
 - Stridor
 - Grunting
 - Nasal flaring
 - Apnea

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent = >14 years

TREATMENT

- ALS RMC
- Position of comfort to maintain airway
- Allow parent to administer oxygen if possible
- Upper Airway/ Stridor:
 - Mild to moderate respiratory distress: 3ml NS via HHN
 - Moderate to severe respiratory distress: **Epinephrine** 1:1,000 5 mg in 5 ml via nebulizer
- Lower Airway Obstruction/ Wheezing:
 - **Albuterol** 2.5 mg in 3 ml NS via HHN, mask, or bag-valve-mask; MR x 1 and
 - **Ipratropium** 500 mcg in 2.5 ml NS via HHN or bag-valve-mask
 - If response inadequate, **Epinephrine** 1:1,000 (0.01 mg/kg) IM, maximum single dose 0.3 mg; MR x 1.
- Foreign Body Obstruction:
 - Attempt to clear airway:
 - < 1 year: 5 back blows and 5 chest thrusts
 - > 1 year: 5 abdominal thrusts
 - Visualize larynx and remove foreign body with Magill forceps
- Respiratory failure/ apnea/ complete obstruction.
 - Attempt positive pressure ventilation via bag-valve-mask, if unable to ventilate, attempt intubation

SPECIAL CONSIDERATIONS

- Assess key history factors: recent hospitalizations, asthma, allergies, croup, and medication usage

PEDIATRIC BRADYCARDIA

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- HR < 60 causing cardio-respiratory compromise

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent = >14 years
- History of exposure to substances or medications

TREATMENT

- ALS RMC
- 12-lead ECG
- Obtain IV/IO access
- If responsive and no signs of shock
 - Monitor and transport
- If shock present:
 - Chest compressions if HR < 60 and patient is < 8 years with poor perfusion:
 - **Epinephrine** 1:10,000 IV/IO: 0.01 mg/kg (0.1 ml/kg); MR q 3-5 min.
 - If first degree block or Mobitz type I, **Atropine** 0.02 mg/kg IV/IO (max single dose: 0.5 mg; minimum single dose: 0.1 mg); MR x 1
 - Consider endotracheal intubation
- Consider cardiac pacing if no response to above treatment.

SPECIAL CONSIDERATIONS

- Consider and treat possible contributing factors:

<ul style="list-style-type: none"> ▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia 	<ul style="list-style-type: none"> ▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma
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RELATED POLICIES/ PROCEDURES

- External Cardiac Pacing Procedure ALS PR 11

PEDIATRIC TACHYCARDIA POOR PERFUSION

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Rapid heart rate (HR > 220 infant; HR > 180 child) with pulse and poor perfusion

📞 PHYSICIAN CONSULT

- **Amiodarone**

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent = >14 years

TREATMENT

- ALS RMC
- 12-lead EKG
- If normal QRS ≤ 0.09 seconds; Probable Sinus Tachycardia or Supraventricular Tachycardia:
 - Consider vagal maneuvers, but do not delay other treatments
 - If vascular access readily available, **Adenosine** 0.1mg/kg IV/ IO; max first dose 6 mg. MR X 1; (double the dose), maximum dose 12 mg. Follow each dose with rapid 10 ml flush.
 - Premedicate with **Midazolam** 0.05 mg/kg IV/IO (maximum 1 mg per dose; Maximum total dose = 5 mg).
 - Do not delay cardioversion if patient unstable.
 - Cardiovert: 0.5-1J/kg; if not effective, increase to 2 J/kg
- Wide QRS ≥ 0.09 seconds; Probable Ventricular Tachycardia:
 - Cardiovert (see above)
 - 📞 **Amiodarone** if no response to cardioversion: 5 mg/kg IV over 20-60 minutes

SPECIAL CONSIDERATION

- Consider and treat possible contributing factors:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia | <ul style="list-style-type: none"> ▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Pain ▪ Trauma |
|---|---|

PEDIATRIC SHOCK

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Inadequate organ and tissue perfusion to meet metabolic demands

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent = >14 years

TREATMENT

- ALS RMC
- IV/ IO X 2; Use length-based color-coded resuscitation tape to determine fluid boluses; repeat bolus as needed
- Check blood glucose and treat if <60 mg/dl (<40 mg/dl neonate):
 - Neonate = **D10W** 2 ml/kg IV/IO over 10 minutes
 - > Neonate: **D10W** 5 ml/kg IV/IO over 10 minutes
 - If unable to establish vascular access; **Glucagon** .03 mg/kg (max = 1 mg) IM; MR x 2 q 15 minute intervals
- For symptoms of anaphylaxis, follow Allergic Reaction Policy P 8

SPECIAL CONSIDERATION

- Fluid resuscitation may require 40-60 ml/kg or more

PEDIATRIC ALLERGIC REACTION

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Exposure to allergens causing airway, breathing and/or circulatory impairment

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape and in conjunction with the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent = >14 years
- Exposure to common allergens (stings, drugs, nuts, seafood, meds), prior allergic reactions
- Presence of respiratory symptoms (wheezing, stridor)

TREATMENT

- ALS RMC
- Mild (hives, rash)
 - **Benadryl** 1mg/kg IM (MR in 10 minutes; max. dose 50 mg)
- Moderate / Severe
 - **Epinephrine** IM (1:1000) 0.01mg/kg (MR in 15 minutes); max. dose 0.6 mg
 - **Benadryl** 1mg/kg IM/IV/IO (MR in 10 minutes; max. dose 50 mg)
 - **Albuterol** 2.5 mg/3 ml NS HHN if bronchospasms present; MR X1 if no improvement
 - If hypotensive, fluid challenge **NS** 20 ml/kg IV/IO, MR
 - If no palpable pulse or BP; **Epinephrine** IV/IO (1:10,000) 0.01mg/kg; MR q 3-5 minutes

DOCUMENTATION- ESSENTIAL ELEMENTS

- Allergen if known

PEDIATRIC SEIZURES

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Recurring or continuous generalized seizures with ALOC

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent = >14 years
- Evaluate for and treat hypoglycemia, hypoxia, narcotic overdose, trauma, fever, etc. prior to administering anti-seizure medications

TREATMENT

- ALS RMC
- Vascular access for prolonged seizures
- Check blood glucose and treat if <60 mg/dl (<40 mg/dl neonate):
- Neonate = **D10W** 2 ml/kg IV/IO over 10 minutes
- > Neonate: **D10W** 5 ml/kg IV/IO over 10 minutes
 - If unable to establish vascular access; **Glucagon** .03 mg/kg (max = 1 mg) IM; MR x 2 q 15 minute intervals
- **Midazolam (Versed)**
 - IV/IO: 0.05 mg/kg (maximum 1 mg per dose). MR q 3 minutes until seizure stops and/or total dose of 5 mg is reached.
 - IN: 0.2 mg/kg (split dose equally per nostril); Maximum dose = 5 mg
 - IM: 0.1 mg/kg; MR x 1 in 10 minutes if still seizing.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Number, description, and duration of seizures

RELATED POLICIES/ PROCEDURES

- Intranasal Medications Midazolam (Versed) & Narcan ALS PR 7
- Pediatric Dosing Guide P18A

PEDIATRIC ALTERED LEVEL OF CONSCIOUSNESS (ALOC)

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Abnormal neurologic state where child is less alert and interactive than is age appropriate

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent = >14 years
- **Narcan** is contraindicated with neonatal resuscitation

TREATMENT

- ALS RMC
- Check blood glucose and treat if < 60 mg/dl (neonate < 40 mg/dl):
- Neonate = **D10W** 2 ml/kg IV/IO over 10 minutes
- > Neonate: **D10W** 5 ml/kg IV/IO over 10 minutes
- If unable to establish vascular access; **Glucagon** .03 mg/kg (max = 1 mg) IM; MR x 2 q 15 minute intervals
- **Narcan** 0.1 mg/kg IM/ IV/ IO/ IN. MR Q 5 minutes up to 2 mg if no improvement in ALOC and strong suspicion of opiate exposure

RELATED POLICIES/ PROCEDURES

- Intranasal Medications Midazolam (Versed) and Narcan ALS PR 7
- **Pediatric Dosing Guide P18A**

PEDIATRIC TOXIC EXPOSURES

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Probable ingestion and/or exposure to one or more toxic substances, including alcohol and medications

📞 PHYSICIAN CONSULT

- Calcium Channel Blocker, Beta-Blockers, and Tricyclic overdoses**

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent = >14 years
- Bring identifying substance containers to hospital when possible / appropriate

TREATMENT

- ALS RMC
- Fluid bolus **NS** 20 ml/kg IV/IO as indicated
- If suspected opiate overdose in patient > four weeks, administer **Narcan** 0.1 mg/kg IV/IO/IM/IN prior to advanced airway
 - Hydrocarbons or Petroleum Distillates**
 - Do not induce vomiting
 - Transport immediately
 - Calcium Channel Blockers / Tricyclics / Beta-Blockers**
 - Transport immediately
 - If within one hour of ingestion Administer **Activated Charcoal** 1 gm/kg PO, max. of 50 gms, if airway is protected
 - 📞 Physician consultation for additional treatments (i.e., Calcium Chloride, Sodium Bicarb)
 - Caustics/Corrosives**
 - Do not induce vomiting
 - Consider dilution with no more than 1-2 glasses of water or milk if NO respiratory compromise or change in mental status
 - Insecticides** (organophosphates, carbonates; cause cholinergic crisis characterized by bradycardia, increased salivation, lacrimation, sweating, muscle fasciculation, abdominal cramping, pinpoint pupils, incoherence or coma):
 - Decontaminate patient
 - Atropine** 0.05 mg/kg IV/IO slowly every 5-10 minutes until symptoms resolve.
 - If seizures, **Midazolam (Versed)**:
 - IV / IO: 0.05 mg/kg (maximum 1 mg per dose). May repeat every 3 minutes until seizure stops and/or total dose of 5 mg is reached.
 - IM: 0.1 mg/kg; May repeat x 1 in 10 minutes if still seizing.
 - IN: 0.2 mg/kg (split dose in half for each nostril). Maximum dose = 5 mg
 - Phenothiazine Reactions**
 - Benadryl** 1 mg/kg IM/IV/IO to max. of 50 mg
 - Other Non-Caustic Drugs**, awake and alert
 - If within one hour of ingestion: **Activated Charcoal** 1 gm/kg PO, max. of 50 gms

SPECIAL CONSIDERATION

- Early contact with Poison Control Center

DOCUMENTATION- ESSENTIAL ELEMENTS

- Toxic substance identification
- Approximate time of exposure / ingestion

RELATED POLICIES/ PROCEDURES

- Intranasal Medications Midazolam(Versed) and Narcan ALS PR 7
- Pediatric Seizures P 9
- Pediatric Dosing Guide P18A

PEDIATRIC BURNS

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Second or third degree burns (i.e., caustic material, electricity or fire) involving 10% or more of body surface area or those associated with respiratory involvement

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band. Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; Adolescent = >14 years
- Consider early intubation for severe facial burns
- Burns with trauma mechanism are to be transported according to the Marin County Trauma Triage Tool

TREATMENT

- ALS RMC
- Thermal/Electrical:
 - Remove patient to safe area
 - Eliminate source and stop the burning process (water may be used in the first few minutes to stop the burning process)
 - Remove all clothing/ jewelry
- Chemical:
 - Brush away any dry chemicals
 - Attempt to identify chemical; flush affected area with copious amounts of water unless contraindicated
- Support ventilation with high flow oxygen. If wheezing, consider bronchodilator therapy
Albuterol 2.5 mg HHN; MR x 1
- Re-evaluate airway frequently
- Expose affected area and apply clean dry sheet
- Keep patient warm to avoid hypothermia
- Fluid bolus 20 ml/kg **NS** IV/IO
- Pain management as indicated
- Transport by ground. If there is respiratory involvement, transport to the time closest ED by air or ground.

SPECIAL CONSIDERATION

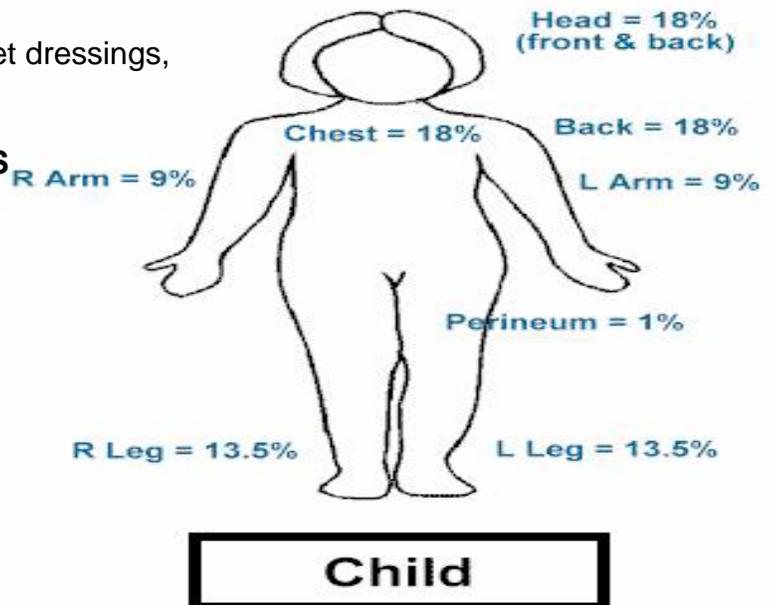
- Avoid hypothermia, do not use ice or wet dressings, and keep patient warm
- IV/IO required if BSA >10%

DOCUMENTATION- ESSENTIAL ELEMENTS

- Estimated percentage of BSA affected

RELATED POLICIES/ PROCEDURES

- Pediatric Pain Management P15
- Pediatric Shock P7
- Pediatric Dosing Guide P18A



PEDIATRIC TRAUMA

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Suspected or apparent injuries which meet conditions listed on the Marin County Trauma Triage Tool

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent = >14 years
- Rapid transport to the appropriate trauma receiving facility is of paramount importance and must be taken into account in the field management of pediatric trauma patients.

TREATMENT

- ALS RMC
- Early trauma center notification
- Secure airway, maintaining C-spine precautions as per policy
- IV/ IO **NS** bolus 20 ml/kg; MR X 1
- Pain management as appropriate

SPECIAL CONSIDERATION

- If injury may have resulted from abuse, neglect, assaults, and/or other crimes, refer to Suspected Child Elder and/or Dependent Adult Abuse Policy for reporting.

RELATED POLICIES/ PROCEDURES

- Destination Guidelines GPC 4
- Trauma Triage and Destination Guidelines, 4613
- Suspected Child, Elder and/ or Dependent Adult Abuse GPC 9
- Spinal Immobilization GPC 13
- Pediatric Pain Management P15
- Pediatric Dosing Guide P 18A

PEDIATRIC APPARENT LIFE-THREATENING EVENT (ALTE)

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- A frightening episode to the observer characterized by some combination of:
 - Apnea (central or obstructive)
 - Color change (cyanosis, pallor, erythema)
 - Marked change in muscle tone
 - Unexplained choking or gagging

PHYSICIAN CONSULT

- Parent/Designated Decision Maker (DDM) refuses medical care and/or transport

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years;
- adolescent = >14 years
- Although ALTE usually occurs in patients < 12 months, any patient under 24 months who experiences any of the above indications should be considered
- Medical history: cardiac arrhythmias/anomalies, child abuse, meningitis, near SIDS, seizures, sepsis, toxic exposure, trauma

TREATMENT

- ALS RMC
- Check blood glucose and treat if < 60 mg/dl (< 40 mg/dl if neonate):
 - Neonate = **D10W** 2 ml/kg IV/IO over 10 minutes
 - > Neonate: **D10W** 5 ml/kg IV/IO over 10 minutes
 - If unable to establish vascular access; **Glucagon** .03 mg/kg (max = 1 mg) IM; MR x 2 q 15 minute intervals

SPECIAL CONSIDERATION

- Most ALTE patients have a normal physical exam
- Assume parental history is real. Encourage transport no matter how well the patient might appear.

DOCUMENTATION- ESSENTIAL ELEMENTS

- Severity, nature and duration of the episode
- General appearance of the patient, skin color, extent of interaction with the environment
- Evidence of trauma

RELATED POLICIES/ PROCEDURES

- Suspected Child/Dependent Adult/ Elder Abuse GPC 9
- Pediatric Dosing Guide P 18A

PEDIATRIC PAIN MANAGEMENT

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- To provide analgesia for pediatric patients (6 months to 14 years or up to 45 kg), especially if anticipated extrication, movement, or transportation would exacerbate the patient's level of pain

PHYSICIAN CONSULT

- Patients less than 6 months of age
- Patients with head, chest, or abdominal trauma; decreased respirations; ALOC (GCS < 15)
- Additional doses of narcotic after initial doses administered

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Origin of pain (examples: isolated extremity trauma, chronic medical condition, burns, abdominal pain, multi-system trauma)
- Mechanism of injury
- Approximate time of onset
- Complaints or obvious signs of discomfort
- Use Visual Analog Scale (0-10) or Wong/Baker Faces Pain Rating Scale (see Appendix A). Express results as a fraction (i.e. 2/10 or 7/10).

TREATMENT

- ALS RMC
- **Morphine Sulfate** 0.1mg/kg IV/IO/IM; MR x 2 in 15 minutes following IV/IO administration, or in 30 minutes following IM administration.  Physician consult for additional doses
- Have **Narcan** available
- If nausea/vomiting, consider **Ondansetron** (Zofran ©)
 - **Ages 2-3:** 2mg ODT or slow IV/IO over 30 seconds; MR x1 in 10 minutes
 - **Age ≥4:** 4mg ODT or slow IV/IO over 30 seconds; MR x 1 in 10 minutes

DOCUMENTATION- ESSENTIAL ELEMENTS

- Initial and post treatment pain score, expressed in a measurable form (i.e. 7/10)
- Interventions used for pain management (i.e. ice pack, splint, **Morphine Sulfate**)
- Reassessments made after interventions
- Initial and post treatment vital signs (including GCS in patients with ALOC)
- Physician consult if required

ADDENDUM A

Visual Analog Scale

0 1 2 3 4 5 6 7 8 9 10
No pain Worst Pain Ever



PEDIATRIC SEXUAL ASSAULT

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Patients under 14 years of age with complaints consistent with sexual assault

CRITICAL INFORMATION

- Preserve possible evidence and advise patient not to clean, bathe or change clothes until after examination by hospital personnel
- Notify police and dispatch of nature of call
- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band

TREATMENT

- BLS/ ALS RMC
- Calm/ reassure patient
- Assign responder of same sex as patient if possible
- Treat medical conditions/ traumatic injuries per protocol
- If no medical conditions/ traumatic injuries are apparent and assault occurred within 72 hours of report:
 - Law Enforcement will take the victim to Children's Hospital Oakland (CHO) for a medical evidentiary examination and should call the Emergency Department at CHO (510) 428-3240 and ask for the ED Social Worker on call
- If no medical conditions / traumatic injuries and the assault occurred > 72 hours of the report
 - Law Enforcement will make a decision of whether or not to proceed with the forensic medical examination
- If patient/ Designated Decision Maker (DDM) refuses transport, instruct patient/DDM not to shower and advise of alternative care/ transport options per AMA or RAS Policy

DOCUMENTATION- ESSENTIAL ELEMENTS

- Date and time of alleged assault
- Details of injuries noted
- Law Enforcement actions and determination of destination
- Patient's destination

RELATED POLICIES/ PROCEDURES

- AMA Policy GPC 2
- RAS Policy GPC 3
- Destination Guidelines GPC 4
- Pediatric Dosing Guide P 18A

PEDIATRIC INTRAOSSEOUS INFUSION

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Immediate delivery of medications or fluids is needed for patient in profound hypovolemia, cardiac arrest, extremis from other cause and IV cannot be established in 90 seconds

CONTRAINDICATIONS

- Absolute contraindications:
 - Recent fracture of involved bone (less than 6 weeks)
 - Vascular disruption proximal to insertion site
 - Inability to locate landmarks
- Relative contraindications:
 - Infection or burn overlying the site

CRITICAL INFORMATION

- Age and/or weight of patient will determine correct device
- Limit attempts at IO access at scene to no more than 2

SPECIAL CONSIDERATION

- Pressure bags for optimal flow of IO infusions

DOCUMENTATION- ESSENTIAL ELEMENTS

- Number of attempts to establish peripheral IV if applicable
- Number of attempts to establish IO
- Insertion site
- Patency at time of transfer of care

PEDIATRIC MEDICATIONS AUTHORIZED/ STANDARD INITIAL DOSE

DRUG	CONCENTRATION	STANDARD DOSE
Activated Charcoal	25 GM/ bottle	1 gm/ kg PO; not to exceed 50 gm.
Adenosine (Adenocard)	6 mg/ 2 ml	Tachycardia Poor Perfusion: 0.1mg/kg; max. first dose 6mg. MR x 1 (double the dose); max. dose 12mg. (Rapid IV/IO push, each dose followed by 5 ml NS flush). Tachycardia Adequate Perfusion: Dose as above after physician consult
Albuterol	2.5 mg/ 3 ml NS	2.5 mg/ 3ml NS
Amiodarone	150 mg/ 3 ml	Pulseless Arrest: 5 mg/ kg IV/ IO followed by or diluted in 20-30 ml NS. Maximum single dose 300 mg. Tachycardia with poor perfusion: 5mg/kg IV/IO over 20-60 min.
Atropine	1 mg/ 10 ml	Bradycardia: 0.02 mg/kg IV/ IO (minimum dose 0.1 mg.; single max. dose 0.5mg). MR X 1. Organophosphate Poisoning: 0.05 mg/kg IV/IO; MR q 5-10 min. max. dose 4mg or until relief of symptoms
Dextrose 10%	D10%	ALOC (Neonate): 2 ml/ kg IV/IO ALOC (>Neonate): 5 ml/ kg IV/IO
Diphenhydramine (Benadryl)	50 mg/ 1 ml "or" 50 mg/ 10 ml	1 mg/ kg IV/IO/IM IV/ IO max. dose 25 mg/ min. IM max. dose, 50 mg.
Epinephrine 1:1000	1 mg/ 1ml EpiPen Jr.® 0.15mg	Allergic Reaction moderate/ severe/ anaphylaxis: 0.01 mg/ kg IM (0.01ml/ kg). Max. dose of 0.6 mg (0.6 ml). EpiPen Jr®.; repeat as needed in 5 min. Upper Airway/ Stridor: 5mg in 5ml via nebulizer

Epinephrine 1:10, 000	1 mg/ 10 ml	<i>Anaphylaxis:</i> If no response to Epi 1:1000, give 0.01mg/ kg (0.1ml/kg) of 1:10,000 IV/ IO. <i>Bradycardia:</i> 0.01mg/ kg (0.1ml/kg) IV/ IO. <i>Cardiac Arrest:</i> 0.01 mg/kg (0.1ml/kg) IV/ IO
Glucagon	1 mg/ 1 ml	<i>Hypoglycemia/Beta Blocker OD:</i> 0.03 mg/kg IM (max. dose 1 mg)
Ipratropium (Atrovent)	500 mcg per unit dose (2.5 ml)	Unit dose
Lidocaine 2% (preservative free)	20 mg/1 ml	<i>IO insertion for pts >3kg;</i> Infuse 0.5mg/kg slowly (up to a maximum dose of 40mg). May repeat as needed x 1 using ½ of initial bolus.
Midazolam (Versed)	2 mg/ 2ml IN: 5 mg/1 ml	<i>Cardioversion:</i> 0.05 mg/kg slow IV/IO. Max.initial dose 1 mg <i>Seizure (see policy for specifics):</i> IV/IO=0.05 mg/kg; MR q 3' (Max=5mg) IM=0.1mg/kg; MR in 10 minutes x1 IN= 0.2mg/kg; Max.= 5 mg.
Morphine Sulfate	10 mg/ 10 ml 10 mg/ 1 ml	<i>Pain Management:</i> 0.1mg/ kg (0.1ml/ kg) slow IV/ IO/ IM. MR X 1 in 15 min. if IV/ IO or 30 min if IM. <i>Burns:</i> 0.1 mg/kg IV/IO/IM in incremental doses up to 0.3mg/kg
Naloxone (Narcan)	2mg/2ml	<i>Suspected OD in non-neonate:</i> 0.1 mg/ kg (0.25 ml/ kg) IV/ IO/ IM
Ondansetron (Zofran)	4 mg	<i>Patients ≥ 4 yrs:</i> 4 mg ODT or slow IV over 30 seconds <i>Patients 2-4yrs:</i> 2mg ODT or slow IV over 30 seconds.
Sodium Bicarbonate	50 mEq/ 50 ml	<i>Tricyclic Antidepressant OD with significant dysrhythmias:</i> 1mEq/ kg IV/ IO

NOTE: If the above concentrations become unavailable, providers may use alternate available concentrations or packaging.

AUTHORIZED PROCEDURES FOR EMT-1 PERSONNEL

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

In addition to the items listed in the basic Scope of Practice of Emergency Medical Technician (EMT), EMTs may perform the following:

PROCEDURE

- Administer over the counter medications including Oral glucose or sugar solutions and aspirin.
- Monitor intravenous lines delivering glucose solutions or isotonic balanced salt solutions including Lactated Ringer's for volume replacement;
- Monitor, maintain, and adjust if necessary in order to maintain, a preset rate of flow and turn off the flow of intravenous fluid;
- Transfer a patient, who is deemed appropriate for transfer by the transferring physician, and who has nasogastric (NG) tubes, gastrostomy tubes, heparin locks, foley catheters, tracheostomy tubes and/or indwelling vascular access lines, excluding arterial lines;

EMT OPTIONAL SKILLS

- Accreditation for EMTs to practice optional skills shall be limited to those whose certificate is active and are employed within the jurisdiction of the LEMSA by an employer who is part of the organized EMS system.
- The following optional skills may be performed after the EMT has received training approved by the LEMSA.
 - Administration of epinephrine by auto-injector for suspected anaphylaxis and/or severe asthma. EMTs must demonstrate skills competency at least every two years to maintain accreditation.
 - Administration of prepackaged Atropine and Pralidoxime Chloride.

OXYGEN THERAPY PROCEDURE

BLS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Signs or symptoms of hypoxia, e.g., SpO₂ < 94%, respiratory distress, ALOC
- Significant trauma or blood loss

EQUIPMENT

- Airway adjuncts
- Pulse Oximetry
- Nasal cannula
- Non-Rebreather mask
- Bag Valve Mask (BVM)
- Suction

PROCEDURE

- Apply appropriate oxygen delivery device
- If pulse oximetry available, titrate SpO₂ between 94 - 99%
- Consider the need for assisted ventilation for inadequate breathing

RELATED POLICIES & PROCEDURES

- BLS 1 Routine Medical Care

ADMINISTRATION OF ORAL GLUCOSE BLS PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATIONS

- Patients with ALOC and / or suspected hypoglycemia as indicated by the following symptoms:
 - Diabetic history
 - Abnormal or combative behavior
 - Pale, moist skin

EQUIPMENT

- Oral glucose and/ or juices that contain sugar

PROCEDURE

- Responsive patients with a gag reflex:
 - Give sweetened fluids (orange/ fruit juice) to drink
 - Do not use “diet” preparations as they do not contain sugar
- Lethargic patients, not following commands and unable to drink fluids:
 - Place patient in left or right lateral position
 - Place **Glucose paste** 30 gm PO between the dependent cheek and gum
 - Monitor airway, being prepared to suction if necessary
- Transfer patient to higher level of care as soon as possible

ADMINISTRATION OF EPI-PEN BLS PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patients experiencing anaphylactic reaction and/ or severe asthma. The following symptoms may be present:
 - Stridor
 - Bronchospasm / wheezing / diminished breath sounds
 - Severe abdominal pain
 - Respiratory distress (nasal flaring or grunting in pediatric patients)
 - Tachycardia
 - Shock (SBP < 100)
 - Edema of the tongue, lips, face
 - Generalized urticaria / hives

PHYSICIAN CONSULT

- Patients presenting with severe asthma
- Necessity for a second EpiPen dose

EQUIPMENT

- Auto injector **EpiPen®**
- Auto injector **EpiPen Jr.®**

PROCEDURE

- BLS RMC
- Remove allergens
- Administer appropriate **EpiPen®**
 - **Adult Auto-Injector** (0.3 mg IM/ 0.3 ml) (weight >30 kg/ 66 lbs)
 - **Pediatric Auto-Injector** (0.15 mg IM/ 0.15 ml) (weight <30 kg/ 66 lbs)
- Record time of injection and reassess in 2 minutes
- Monitor airway and be prepared to assist with ventilations if necessary
-  A second injection in 5 minutes may be necessary if patient's condition does not improve.
- Transfer care to ALS personnel as soon as possible

SPECIAL CONSIDERATION

- Training shall include the manufacturer's instructions as well as demonstration of skills competency every two years after initial training according to Title 22, Div. 9, Chapter 2.
- Training in this procedure is the responsibility of the provider agency who desires to utilize this procedure

TRAUMATIC EMERGENCIES

BLS PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- For the following traumatic emergencies:
 - Head Trauma
 - Traumatic Paralysis/ Spinal Trauma
 - Eye Trauma
 - Open/ Sucking Chest Wounds
 - Flail or Crushed Chest
 - Tension Pneumothorax
 - Evisceration of Abdomen
 - Extremity Trauma
 - Amputations
 - Pelvic Instability
 - Impaled Objects
 - Burns
 - Trauma in pregnant patients

CONTRAINDICATION

- Patients meeting anatomic, physiologic, high energy transfer and other mechanism of injury on the Marin County Trauma Triage Tool should be transported with ALS level of care.

EQUIPMENT

- Airway management per patients condition
- BP monitor
- Suction

PROCEDURE

- BLS RMC
- Spinal immobilization
- Control bleeding
- Prevent further injuries
- Prepare for early and rapid transport to the appropriate facility
- The following BLS care should be provided for the following injuries:
 - **Head Trauma**
 - Suction as needed
 - Frequent evaluation of LOC
 - Support airway if emesis occurs
 - Calm/ reassure patient
 - **Traumatic Paralysis**
 - Frequent evaluation of CSM, neuro checks
 - **Eye Trauma**
 - Cover both eyes

- **Open/ Sucking Chest Wound**
 - Fowlers position unless contraindicated
 - Occlusive dressing if sucking wound
 - Monitor for tension pneumothorax
- **Flail or Crushed Chest**
 - Splint chest wall if flail with bulky dressing or towel
 - Assist with positive pressure ventilations
- **Tension Pneumothorax**
 - Fowlers position unless contraindicated
 - Remove occlusive dressing if present
- **Evisceration of Abdomen**
 - Cover abdominal wound with moist, bulky dressing
 - Keep patient warm
- **Extremity Trauma**
 - Expose extremity
 - Check/ recheck CSM
 - Dress wound if needed
 - Immobilize extremity
 - Elevate and apply cold pack
- **Amputations**
 - If complete amputation - cover amputated part with dry gauze and place in plastic bag, place bag in cold pack
 - If incomplete amputation - treat as open extremity injury
- **Pelvic Instability**
 - Immobilize
- **Impaled Objects**
 - Supine or shock position
 - Immobilize impaled object so internal end does not move when patient is moved
 - Dress wound without dislodging object
 - Prioritize and treat life threatening injuries
 - Anticipate rapid deterioration
- **Burns**
 - Thermal/ Electric:
 - Eliminate source
 - Remove jewelry, but do not remove stuck clothing
 - Expose affected areas
 - Evaluate depth/ surface area
 - Apply dry dressing on any burn involving >10% of body surface area
 - Keep patient warm to avoid hypothermia
 - Chemical:
 - Same treatment as above *and*
 - Remove all clothing
 - Identify chemical if possible
 - Unless contraindicated, brush dry chemicals off and flush affected areas with copious amounts of water

- Inhalation:
 - Reevaluate airway frequently

- **Trauma in Pregnancy**
 - Assess for vaginal bleeding
 - Assess for gestational age
 - If gestational age > 20 weeks, tilt backboard to left recumbent position

SPECIAL CONSIDERATION

- Consider and evaluate whether the injury resulted from abuse, neglect, assaultive or abusive behavior, suicide, homicide, and/ or is the scene of a crime

RELATED POLICIES/ PROCEDURES

- Destination Guidelines GPC 4
- Suspected Child, Dependent Adult and/ or Elder Abuse GPC 9

MEDICAL EMERGENCIES

BLS PROCEDURES

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATIONS

- For the following emergencies:
 - Syncope/ Near Syncope/ Fainting
 - Abdominal pain (non-traumatic)
 - Allergic Reaction
 - ALOC
 - Unconscious/ Unresponsive
 - Cardiac Arrest
 - SOB
 - Seizure (active)
 - Post- Seizure (post-ictal)
 - Chest Pain

EQUIPMENT

- Airway management appropriate for patient condition
- BP monitor
- Suction

PROCEDURES

- BLS RMC
- Reassure patient
- Transfer care to ALS unit as patient condition warrants
- **Syncope/ near syncope/ fainting:**
- Consider C-spine immobilization
- **Abdominal pain (non-traumatic):**
 - Nothing by mouth
 - Prepare for vomiting
 - Check bilateral BP, pedal pulses
- **Allergic reaction:**
 - Loosen clothing
 - Assist patient with self administration of **EpiPen** per policy
- **ALOC/Unconscious/ Unresponsive:**
 - If diabetic, give sweetened drink or administer **Glucose paste** per policy
 - Ventilate with positive pressure devices
- **Cardiac Arrest:**
 - Place patient supine on firm surface and remove patient shirt
 - CPR
 - Attach A.E.D.
 - Suction as needed
 - If ALS arrival time is longer than time to transport to the closest facility, begin transport and consider rendezvous with ALS unit en route if appropriate.
 - Consider pronouncement of death in the field

- **SOB/Airway Obstruction:**
 - Position of comfort, usually upright
 - Allow patient to self administer any inhaled medications
 - Consider different causes of SOB with pediatric patients
- **Seizure** (active):
 - Protect patient from injury (move furniture, etc.)
 - Consider possible treatment of diabetic patient (see ALOC)
 - If febrile seizure initiate cooling measures
- **Post- Seizure** (post-ictal):
 - Follow above treatment on seizures
 - Frequently evaluate patient's level of consciousness and anticipate recurring seizures
 - Suction as needed
- **Chest Pain:**
 - Limit patient's physical activity
 - Allow patient to self-administer own **NTG & aspirin** (see Chest Pain BLS 2)
- **Psychiatric Patient:**
 - Protect self, others from combative or violent behavior
 - Prepare for rapid changes in behavior due to possible ingestion of poisons, alcohol and drugs. If possible bring ingested substances to hospital for analysis.

RELATED POLICIES/ PROCEDURES

- Administration of Oral Glucose BLS PR 3
- Administration of EpiPen Procedure BLS PR 4
- Chest Pain / Acute Coronary Syndrome BLS 2

ENVIRONMENTAL EMERGENCIES

BLS PROCEDURES

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- For the following environmental emergencies:
 - Near Drowning
 - Bites/ Stings (animal/ snake)
 - Heat Injuries
 - Cold Injuries
 - Localized cold injuries

EQUIPMENT

- Airway management per patient condition
- BP monitor
- Suction
- Dressings
- Cold packs
- Hot packs

PROCEDURE

- BLS RMC
- **Near Drowning**
 - Consider C-spine precautions
 - Keep patient warm
 - Prepare to log-roll if vomiting occurs
 - Frequent evaluation of lung sounds
- **Bites/ Stings**
 - Restrict patient physical activity
 - Immobilize extremity
 - Apply cold pack to site
 - Advise patient to self-administer Bee Sting Kit or responder to use **EpiPen** as per policy
 - Watch for allergic reactions and refer to Medical Emergencies Procedures BLS PR 6
- **Animal Bites**
 - Apply appropriate dressing
 - Re-evaluate size of swelling every 5-10 minutes
- **Snake Bites**
 - Do not use ice
 - Apply constricting bands above & below injury site
- **Heat Injuries**
 - Limit patient physical activity
 - Remove clothing
 - Splash/ sponge with cool water
 - Small amounts of H₂O by mouth
 - Do not over-cool patient
 - If ALOC with dry skin, apply cold packs and wet towels to neck, axilla & inguinal areas; rapid transport with air conditioning.

- **Cold Injuries**

- Remove wet clothing and patient from cold environment
- Apply warming measures with blankets, heaters, etc. If patient is no longer shivering be less aggressive with re-warming efforts and minimize stimulation of patient.

- **Localized Cold Injuries**

- Gently remove clothing from injured area
- Cover area with sterile dressing
- Avoid direct contact with affected area

OBSTETRICAL/ GYNECOLOGY EMERGENCIES

BLS PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patient reports or demonstrates vaginal **bleeding** and **imminent delivery** (need to bear down, pushing, have urge for bowel movement)

EQUIPMENT

- OB Kit

PROCEDURE

- BLS RMC
- Calm/ reassure patient
- Save and transport any passed tissue
- **Vaginal bleeding:**
 - Supine or shock position, if pregnant place in left lateral position
 - Observe for development of shock
 - If immediately post-partum, consider fundal massage
- **Imminent delivery:**
 - Prepare sterile/ clean area for delivery
 - Assist with delivery
 - Keep baby and mother warm
 - Prepare for possible multiple births
 - Prepare for possible childbirth related complications
 - Assess for possible neonatal resuscitation

CRITICAL INFORMATION

- Prepare for rapid transport in both situations

DOCUMENTATION- ESSENTIAL ELEMENTS

- Time and onset of pain and bleeding
- Gravida and Para
- APGAR score at 1 and 5 minutes

APGAR SCORE			
Sign	0	1	2
Heart rate (bpm)	Absent	Slow (<100)	≥100
Respirations	Absent	Slow, irregular	Good, crying
Muscle tone	Limp	Some flexion	Active motion
Reflex irritability	No response	Grimace	Cough, sneeze, cry
Color	Blue or pale	Pink body with blue extremities	Completely pink

RELATED POLICIES/ PROCEDURES

- Neonatal Resuscitation Policy P 2

NERVE GAS AUTO-INJECTOR PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Exposure to nerve/ chemical agents (Sarin, Soman, Tabun, Vx) exhibiting signs and symptoms that may include the following:
- **S.L.U.D.G.E.M.**
 - Salivation
 - Lacrimination
 - Urination
 - Defecation
 - Gastrointestinal pain and gas
 - Emesis
 - Miosis

Mild Symptoms	Severe Symptoms
Blurred vision, miosis	Strange or confused behavior
Excessive, unexplained teary eyes	Severe difficulty breathing or copious airway secretions
Excessive, unexplained runny nose	Severe muscular twitching and general weakness
Increased salivation, drooling	Involuntary urination and defecation
Chest tightness / difficulty breathing	Convulsions
Tremors / muscular twitching	Unconsciousness
Nausea / vomiting	
Unexplained wheezing / cough	
Acute onset of stomach cramps	
Tachycardia or bradycardia	

CONTRAINDICATION

- Not to be administered as a prophylactic to nerve agents

EQUIPMENT

- Duodote or Mark I

PROCEDURE

- For MILD symptoms of exposure:
 - Administer one (1) injection into the mid-lateral thigh if patient experiences two or more MILD symptoms of exposure. Wait 10-15 minutes for medication to take effect.
 - If after 10-15 minutes the patient does not develop any of the SEVERE symptoms listed above, no additional injections are recommended.
 - If at any time after the first dose, the patient develops any of the SEVERE symptoms, administer two (2) additional injections in rapid succession.
 - Transport
- For SEVERE symptoms of exposure:
 - Immediately administer three (3) injections into the mid-lateral thigh in rapid succession.
 - Transport

SPECIAL CONSIDERATION

- Medical Directors shall coordinate all training activities for those providers opting to carry Auto-Injector kits
- Training shall include following of the manufacturer's instructions as well as:
 - Indications for self / public administration
 - Demonstration of skills competency every two years after initial training according to Title 22, Div. 9, Chapter 2.

ADULT INTRAOSSEOUS PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATIONS

- Patient in extremis, cardiac arrest, profound hypovolemia, or septic and in need of immediate delivery of medications / fluids and immediate IV access is not possible

CONTRAINDICATIONS

- Absolute contraindications:
 - Recent fracture of involved bone (less than 6 weeks)
 - Vascular disruption proximal to insertion site
 - Inability to locate landmarks
- Relative contraindications:
 - Infection or burn overlying the site
 - Congenital deformities of the bone
 - Metabolic bone disease

EQUIPMENT

- Intraosseous infusion needle and/ or mechanical device
- Commercially prepared chlorhexidine with alcohol swab or ampule. If patient has allergy to chlorhexidine, use alcohol swab only.
- Sterile gauze pads
- 10-12 ml syringe filled with 10 ml saline
- IV NS solution and tubing with 3 way stopcock
- Supplies to secure infusion
- Pressure bag
- **Lidocaine 2%** (Preservative Free)

PROCEDURE

- Aseptic technique must be followed at all times
- Position and stabilize site
- Locate primary site, 1-2 cm medial to tibial tuberosity
- Locate secondary site according to manufacturer's specification
- Prepare insertion site using aseptic technique
- Air or gauze dry
- Insert IO needle according to manufacturer's directions
- Confirm placement
- Attach syringe with 10 ml of saline to needle
- Rapid bolus with 10 ml saline
 - * If patient awake and/or responsive to pain, infuse 2% **Lidocaine** 20-40 mg over 30-60 seconds prior to 10 ml rapid saline bolus. Wait 30-60 seconds before fluid infusion. May repeat Lidocaine in 15 minutes if needed.
- If resistance is met, remove needle, apply pressure to site
- Disconnect syringe
- Attach pre-flooded IV tubing
- Stabilize as recommended by manufacturer
- Fluid administration may require pressure
- Monitor insertion site and patient condition

ADULT ORAL INTUBATION PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Severe ventilatory compromise where the airway cannot be adequately maintained by BLS techniques

CONTRAINDICATION

- Absolute
 - Epiglottitis
- Relative
 - Spontaneous respirations are present
 - Responsive patient with intact gag reflex
 - Suspected opiate overdose
 - Profound hypoglycemia

EQUIPMENT

- Battery powered laryngoscope handle, extra batteries and bulbs or equivalent devices
- Laryngoscope blades
- McGill forceps
- Cuffed endotracheal tubes
- ETTI
- Lubricating jelly
- Disposable stylets
- Suction
- Pulse oximetry
- End Tidal CO2 detector
- Esophageal Detector Device (EDD)
- Capnometer or capnograph when available

PROCEDURE

- Open airway and pre-oxygenate with BVM for 1-3 minutes with 100% O2. Avoid hyperventilation in cardiac arrest.
- Select proper ETT
- Insert stylet
- Select proper sized blade and visualize the larynx
- Suction as needed
- If possible, provide continuous high flow oxygen during procedure
- Under direct visualization insert ETT 2-3 cm past the cords. Each attempt should not exceed 30 seconds, hyperventilating between attempts.
- Remove stylet
- Inflate cuff
- Verify placement using all of the following:
 - Rise and fall of chest
 - Absence of epigastric sounds
 - Bilateral breath sounds
 - Capnometry/capnography or EDD *and* Colormetric Device
- Secure the tube. Consider spinal immobilization to prevent extubation. Do NOT use C-collar.

- Reassess tube placement after each patient movement. If any doubt about placement, confirm by capnography or direct visualization.

SPECIAL CONSIDERATION

- Defibrillation should precede intubation in cardiac arrest VF / VT situations
- Limit intubation attempts (an attempt is defined as passing the device beyond the patient's teeth):
 - Cardiac arrest – one attempt with ETT; if unsuccessful, insert King Airway. Optimally, intubation should be accomplished with no interruptions in CPR. If interruption of CPR is necessary, it should be for no more than 10 seconds.
 - Respiratory arrest – two attempts with ETT, hyperventilating between attempts. If unsuccessful, insert King Airway.
 - Head Trauma – one attempt with ETT; if unsuccessful, insert King Airway.
- Consider use of ETTI if difficult intubation.
- If unable to intubate, manage airway with other airway adjunct

RELATED POLICIES/ PROCEDURES

- Endotracheal Tube Introducer (ETTI) Procedure ALS PR 4
- King Airway Procedure ALS PR 14
- Head Trauma T 2

ENDOTRACHEAL TUBE INTRODUCER (ETTI) PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Airway structure or condition which prevents adequate visualization by standard tools of endotracheal intubation. May include:
 - Patients with Grade II through IV laryngeal views (Cormack-Lehane grade)
 - Patients with airway edema regardless of laryngeal view

CONTRAINDICATION

- Endotracheal tubes smaller than 6.0

EQUIPMENT

- Intubation supplies
- ETT Introducer

PROCEDURE

- Perform laryngoscopy and obtain the best possible laryngeal view
- Holding the ETTI in your right hand and the angled tip pointing upward, gently advance the ETTI anteriorly (under the epiglottis) to the glottic opening (cords).
- For grade II views:
 - Direct through the cords
- For all other situations:
 - Direct the ETTI to the area where the cords should lie, and feel for washboard sensation as the tip ratchets on the tracheal rings.
- Gently advance the ETTI until resistance is encountered at the carina. Because the ETTI can potentially cause pharyngeal/ tracheal perforation, NEVER FORCE IT. If no resistance is encountered and the entire length of the ETTI is inserted, the device is in the esophagus.
- The ETTI is correctly placed when you see the device going through the cords, when the ratcheting of the tip on the trachea, and/or when resistance is met while advancing the device (ETTI is at the carina).
- Once positioned, withdraw the ETTI until the 37 cm black line mark is aligned with the lip and advance an endotracheal tube over the ETTI and into the trachea. This indicates that the tip is well beyond the cords and the proximal end has enough length to slide the endotracheal tube over it.
- If resistance is encountered – caused by the endotracheal tube catching on the arytenoids or aryepiglottic folds – withdraw the endotracheal tube slightly, rotate 90 degrees and reattempt. If this is unsuccessful, attempt with a smaller tube.
- Once the endotracheal tube is in position, while holding the tube, remove the ETTI through the endotracheal tube.
- Because this is a blind intubation, capnography should be utilized to confirm tracheal placement.

SPECIAL CONSIDERATION

- Use the confirmation methods standard for endotracheal intubation to verify placement of the endotracheal tube, both prior to and after initiating ventilation.

RELATED POLICIES/ PROCEDURES

- Adult Oral Intubation ALS PR 3

PROCEDURE FOR INTRANASAL MEDICATIONS MIDAZOLAM (VERSED) & NARCAN

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- No IV access with the following symptoms:
 - Status epilepticus
 - Suspected narcotic overdose with respiratory depression

CONTRAINDICATION

- Epistaxis
- Complete mucosal blockage of both nostrils
- Nasal trauma
- Any recognizable septal abnormalities
- Retropharyngeal lacerations/ dissections

EQUIPMENT

- MAD adapter
- Syringe
- Suction

PROCEDURE

- With medication in syringe, attach atomizer (do not lubricate tip).
- Stabilizing the head, place applicator in nares and briskly compress the syringe plunger.

SPECIAL CONSIDERATION

- Be attentive to excessive oral secretions, vomiting, and inadequate tidal volume.
- Intranasal administration of Midazolam is an optional medication delivery system

RELATED POLICIES/ PROCEDURES

- Seizure ALS N 2
- Coma/ ALOC N 1
- Respiratory Arrest R 1
- Pediatric Seizure P 9

NEEDLE THORACOSTOMY/ PLEURAL DECOMPRESSION PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- To relieve tension pneumothorax as indicated by a combination of the following:
 - Severe dyspnea and/ or difficulty with ventilation, especially with an intubated patient
 - ALOC and or agitation
 - Absent or unequal breath sounds on affected side
 - Signs of shock
 - Neck vein distention
 - Paradoxical movement of the chest
 - Hyper resonance to percussion on the affected side
 - Tracheal shift away from the affected side

EQUIPMENT

- 14 gauge or larger needle ≥ 2 inches
- Heimlich or other one-way valve
- 10 ml syringe

PROCEDURE

- Choose appropriate site on the affected side:
 - If patient head is elevated, locate the second intercostal space, mid-clavicular line
 - If patient is flat, locate the 4th or 5th intercostal space, midaxillary line
- Prepare site with Betadine
- Attach the large gauge IV needle to a large syringe.
- With patient exhaling, introduce the needle at a 90 degree angle, just over the rib at the selected site.
- Advancing slightly superior to the rib, continue until lack of resistance or a “pop” is felt as the needle enters the pleural space.
- If the air and/ or blood returns under pressure or is easily aspirated, continue to advance the catheter superiorly and remove the needle.
- When no further air escapes, attach a one- way valve.
- Secure the catheter with the valve in a dependent position.
- Reassess patient

VERIFICATION OF TUBE PLACEMENT PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- To verify the placement of an endotracheal tube

CONTRAINDICATIONS

- Do not use the EDD (Esophageal Detector Device) when performing oral intubation on patients < 5 years of age or < 20 kg.

EQUIPMENT

- Esophageal Detector Device (EDD)
- End Tidal Carbon Dioxide Detector (ETCO₂ Detector)
- Stethoscope
- Capnography device

PROCEDURE

- After tube placement, apply EDD prior to first ventilation.
- Check for the following:
 - Auscultate the lungs; assess for presence and equality of breathe sounds
 - Movement of air through the tube
 - Presence of condensation in the tube
 - Auscultate the stomach; assess for absence of air movement
- Apply capnometer or capnography if available.

DOCUMENTATION

- Response of EDD
- Color change of ETCO₂ Detector
- Number and waveform of capnography

RELATED POLICIES/ PROCEDURES

- Adult Oral Intubation Procedure ALS PR 3

IV ACCESS PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- To describe a method for establishment of intravenous access in the pre-hospital setting

EQUIPMENT

- IV catheter
- Equipment to secure line
- Tourniquet
- Syringe
- IV fluid / IV tubing if indicated

PROCEDURE

- Select insertion site and needle size as appropriate to the patients condition using the smallest catheter and most distal site indicated
- Apply a tourniquet above the insertion site
- Don a clean pair of gloves
- Clean insertion site using a back and forth motion for 30 seconds with commercially prepared chlorhexidine with alcohol swab or ampule. If patient has allergy to chlorhexidine, clean with alcohol swab only.
- Allow the site to air dry for 2 minutes. If site is not dry after time, dry with sterile 2X2
- Insert IV catheter; assure patency
- Attach appropriate solution, begin flow, adjust rate or attach "lock" if saline lock appropriate
- Secure with anchoring tape, avoiding puncture site
- Apply occlusive sterile dressing over the needle insertion site. Do not put tape over the occlusive dressing.
- If saline lock was started, irrigate with 5 ml NS.
- Saline locks may be used in lieu of intravenous lines when:
 - Treatment protocol specifies IV NS TKO
 - Fluid resuscitation or challenge is not anticipated

EXTERNAL CARDIAC PACING PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Symptomatic bradycardia which may include: HR < 50 with decreasing perfusion, chest pain, shortness of breath, decreased LOC, pulmonary congestion or congestive heart failure

PHYSICIAN CONSULT

- Concomitant administration of **Morphine Sulfate** and **Midazolam**

CRITICAL INFORMATION

- If patient is unstable, do not delay pacing for IV access

EQUIPMENT

- Cardiac monitor/ defibrillator/ external pacemaker
- Pacing capable electrode pads

PROCEDURE

- ALS RMC
- Administer **NS** 250 ml bolus IV/IO
- If patient is conscious, administer **Midazolam** 1 mg slow IV/IO. May repeat 1 mg every 3 minutes to desired degree of sedation. Maximum dose = 0.05 mg/kg.
-  **Morphine Sulfate** IV/IO/IM for pain management as needed; maximum dose of 5 mg.
- If tolerated, position patient supine, applying pacing electrodes to bare chest according to manufacturers recommendations (anterior/ posterior or sternal/ apex).
- Confirm and record ECG.
- Set pacing rate at 80, turn on pacing module, and confirm pacer activity on monitor.
- Increase output control until capture occurs or maximum output is reached.
- Once capture is confirmed, increase output by 10%
- Confirm pulses with paced rhythm.
- Monitor vital signs and need for further sedatives or pain control.

DOCUMENTATION

- MiliAmps needed for capture
- Time pacing started/ discontinued

RELATED POLICIES/ PROCEDURES

- Bradydysrhythmia C 4
- Adult Sedation ATG 3

12-LEAD ECG PROCEDURE

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Patients with a medical history and/ or presenting complaints consistent with Acute Coronary Syndrome (ACS). Indications for the procedure may include one or more of the following:
 - Chest or upper abdominal pain, described as pressure or tightness
 - Nausea or vomiting
 - Diaphoresis
 - Shortness of breath and/ or difficulty with ventilation
 - Anxiety, feeling of “doom”
 - Syncope or dizziness
 - Other signs or symptoms suggestive of ACS

PHYSICIAN CONSULT

- If interpretation of ECG is inconclusive and ST segment elevation is present, seek immediate consultation with STEMI Receiving Center (SRC)

EQUIPMENT

- ECG machine and leads

PROCEDURE

- Attach ECG limb leads to arms and legs.
- Attach ECG chest leads as follows:
 - V1: right of sternum, 4th intercostal space
 - V2: left of sternum, 4th intercostal space
 - V3: halfway between V2 and V4
 - V4: left 5th intercostal space, mid-clavicular line
 - V5: horizontal to V4, anterior axillary line
 - V6: horizontal to V5, mid- axillary line
 - V4R- V6R: right 5th intercostal space, mid-clavicular line to mid axillary line (for suspected right ventricular infarction (RVI) and/ or physician request). Lead V4R must be obtained whenever ST segment elevation is noted in leads II, III, and AVF

SPECIAL CONSIDERATIONS

- If the 12-lead ECG demonstrates ST elevation and an acute ST elevation Myocardial Infarct is suspected refer to STEMI Policy C 9
- Infarctions may be present with a normal 12-lead ECG. Consider taking a 15-lead ECG.

RELATED POLICIES/ PROCEDURES

- Chest Pain/ Acute Coronary Syndrome C 8
- STEMI Policy C 9

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patients > 8 years of age in severe respiratory distress and signs of CHF, COPD, and asthma.
- Near drowning

CONTRAINDICATION

- Absolute
 - Age < 8
 - Respiratory or Cardiac Arrest
 - Agonal respirations
 - Severely depressed level of consciousness
 - Signs and symptoms of pneumothorax
 - Inability to maintain airway patency
 - Major trauma (especially head trauma with signs of ICP or significant chest trauma)
 - Facial anomalies or trauma (e.g., burns, fractures)
 - Vomiting
- Relative Contraindications
 - Systolic BP <100
 - History of Pulmonary Fibrosis or history of barotrauma
 - Decreased LOC
 - Claustrophobia or inability to tolerate mask (after 1-2 minutes trial)

EQUIPMENT

- CPAP equipment
- In-line nebulizer

PROCEDURE

- ALS RMC
- Place patient in a seated position with legs dependant
- Follow manufacturer directions for CPAP device set up
- Explain device to patient
- Apply device to patient; set flow rate in excess of the patients inspiratory flow rate & monitor every 5 minutes including continuous SAO₂
- If albuterol and/or ipratropium appropriate, may administer with CPAP in-line nebulizer.
- Reassess V/S q 5 minutes after CPAP applied
- Increase oxygen percentage if patient does not demonstrate improvement after 5 minutes of application; repeat as needed to obtain improvement
- Remove the CPAP device and assist ventilations with BVM and/or intubation if patient condition worsens

SPECIAL CONSIDERATION

- Consider using sedation to alleviate possible anxiety associated with the CPAP device

RELATED POLICIES/ PROCEDURES

- Adult Sedation ATG 3
- Bronchospasm/Asthma/COPD R4

KING AIRWAY PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- When ventilation cannot be adequately maintained by BVM or other BLS techniques and intubation is anticipated to be difficult or intubation is unsuccessful after no more than one attempt (cardiac arrest patients) or two attempts (respiratory arrest patients)

CONTRAINDICATION

- Responsive patient with an intact gag reflex
- Patient with known esophageal disease
- Patients who have ingested caustic substances
- Tracheal stoma

EQUIPMENT

- King Airway
- Syringe
- Water soluble lubricant
- Portable suction device
- Capnometry/capnography or Colormetric Device
- Stethoscope

Size	Patient Criteria	Color	Inflation Volume
3	4 – 5 ft.	Yellow	45 - 60 ml.
4	5 – 6 ft.	Red	60 - 80 ml.
5	> 6 ft.	Purple	70 - 90 ml.

PROCEDURE

- Open airway and pre-oxygenate with BVM for 1-3 min. with 100% O₂. Avoid hyperventilation in cardiac arrest.
- Test cuff according to manufacturer's instructions
- Apply water soluble lubricant to the distal end of the tube.
- Position the head into the "sniffing" position or neutral position if trauma is suspected
- Remove dentures before placing tube to prevent laceration of the cuffs
- Without exerting excessive force, advance tube until base of connector is aligned with teeth or gums
- Inflate cuffs based on size of tube
- Attach bag-valve to King Airway
- While gently bagging the patient to assess ventilation, withdraw the airway until ventilation is easy and free flowing
- Verify placement using all of the following:
 - Rise and fall of chest
 - Bilateral breath sounds
 - Absence of epigastric sounds
 - Capnometry/capnography or Colormetric Device
- Secure the tube with tape or commercial tube holder, noting depth marking on tube

SPECIAL CONSIDERATION

- If there is any doubt about the proper placement of the King Airway, deflate the cuffs and remove device; ventilate the patient with BVM for 30 seconds and repeat sequence of steps
- If unsuccessful on second attempt, resume BLS airway management

METERED DOSE INHALER (MDI) FIRELINE MEDICINE PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- To deliver an aerosolized bronchodilator for patients experiencing bronchospasm in the fireline medicine setting

EQUIPMENT

- Metered dose inhaler Albuterol OR
- Metered dose inhaler Atrovent

PROCEDURE

- Have patient sit or stand in an upright position
- Remove dust cap and have the patient hold the MDI in an upright position
- Gently shake MDI for 5-10 seconds
- Have patient tilt head back slight and exhale normally and completely
- Patient should place lips around mouthpiece to produce a seal
- While inhaling slowly, have patient press down on inhaler to release the medication
- Inform patient to continue inhaling until they have taken the deepest breath possible
- Hold breath for 10 seconds
- Exhale slowly through pursed lips
- Administer a second dose as described above

PEDIATRIC INTRAOSSEOUS INFUSION PROCEDURE

ALWAYS USE STANDARD PRECAUTIONS

INDICATIONS

- Patient in extremis, cardiac arrest, or profound hypovolemia and in need of immediate delivery of medications or fluids and IV access is not possible in 90 seconds

CONTRAINDICATIONS

- Absolute:
 - Recent fracture of involved bone (less than 6 weeks)
 - Vascular disruption proximal to insertion site
 - Inability to locate landmarks
- Relative:
 - Infection, scarring or burn overlying the site
 - Congenital deformities of the bone
 - Metabolic bone disease

EQUIPMENT

- Automatic Intraosseous needle (IO) or manual device
- Betadine swabs/ solution/ gauze
- 5-12 ml syringe
- Lidocaine 2% (Preservative Free)
- Saline
- IV NS solution
- IV tubing with 3-way stopcock
- Supplies to secure infusion

PROCEDURE

- Aseptic technique must be followed at all times
- All approved ALS IV medications may be administered IO
- Position and stabilize leg
- Prepare skin with betadine swabs or solution on gauze
- Air or gauze dry
- Fill 5-12 ml syringe with 5 ml saline
- IV NS solution, flood tubing with a 3-way stopcock
- Automatic IO device:
 - Locate primary site 1-2 cm distal to the tibial tuberosity and 1-2 cm medial
 - Locate secondary site according to manufacturer's specification
 - Insert needle through skin at 90-degree angle to the periosteal surface (bone contact)
 - Rotate applying gentle, steady pressure, letting the driver do the work
 - Stop when a change of resistance is felt (indicating entrance into the medullary space)
 - Stabilize hub and remove stylet
 - Confirm placement
 - For patients >3kg: If awake and/or responsive to pain, infuse 2% Lidocaine 0.5mg/kg slowly (max dose = 40mg; treat according to the Pediatric Dosing Guide P18A). Allow the Lidocaine to work 30-60 seconds prior to administering fluids.
 - Attach 5-12 ml syringe with 5 ml saline to needle

- Syringe bolus with 5 ml saline
- Manual IO device:
 - 1 cm medial or distal to tibial tuberosity (0-6years)
 - 1-2 cm medial or distal to tibial tuberosity (6-12 years)
 - Choose the desired depth of injection (see packet insert for manufactures instructions)
 - Position needle, insert at 90 degrees, and remove devices following manufacturer's instructions
 - Confirm placement
 - For patients >3kg: If awake and/or responsive to pain, infuse 2% Lidocaine 0.5mg/kg slowly (max dose = 40mg; treat according to the Pediatric Dosing Guide P18A). Allow the Lidocaine to work 30-60 seconds prior to administering fluids.
 - Attach 5-12 ml syringe with 5 ml of saline in needle
 - Flush with 5 ml saline
- Aspirate to confirm position, if needle flushes without resistance proceed
- If resistance is met, remove needle and apply pressure to site
- Attach pre-flooded IV tubing
- Stabilize according to manufacturer's direction
- Administer fluid boluses via syringe utilizing the 3-way stopcock

SPECIAL CONSIDERATIONS

- Limit attempts for IO access at scene to no more than 2

PEDIATRIC ORAL INTUBATION PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Severe ventilatory compromise where the airway cannot be adequately maintained by Bag Valve Mask (BVM) ventilation (BVM is the preferred airway for pediatric patients)
- Tracheal suctioning for meconium staining

CONTRAINDICATION

- Epiglottitis

EQUIPMENT

- Use length based color-coded resuscitation tape whenever possible
- Battery powered laryngoscope handle, extra batteries and bulbs
- Laryngoscope blades: curved size 1-3, straight size 0-3
- Pediatric McGill forceps
- Cuffed and uncuffed endotracheal tubes
- Lubricating jelly
- Disposable pediatric stylets
- Suction
- Pulse oximetry
- Pediatric End Tidal CO2 detector
- Esophageal Detector Device (EDD)
- Capnometer or capnograph when available

PROCEDURE

- Open airway and ventilate with BVM for 1-3 minutes with 100% O2. Avoid hyperventilation in cardiac arrest.
- Select proper ETT
- Insert stylet
- Select proper sized blade and visualize the larynx
- Suction as needed
- Apply cricoid pressure to prevent regurgitation
- Under direct visualization insert ETT 2-3 cm past the cords. Each attempt should not exceed 30 seconds, hyperventilating between attempts.
- Remove stylet and bag ventilate
- Confirm placement with the following methods:
 - Bilateral chest and epigastric auscultation
 - EDD
 - Capnography, or capnometer if not available
 - Direct visualization of tube passing through vocal cords
- Secure the tube. Consider spinal immobilization to prevent extubation. Do NOT use C-collar.
- Reassess tube placement after each patient movement. If any doubt about placement, confirm by capnography or direct visualization.

SPECIAL CONSIDERATION

- Defibrillation should precede intubation in cardiac arrest situations
- Limit intubation attempts:
 - Cardiac arrest – one attempt with ETT; if unsuccessful, BVM
 - Respiratory arrest – two attempts with ETT; if unsuccessful, BVM
 - Head Trauma – one attempt with ETT; if unsuccessful, BVM

RELATED POLICIES/ PROCEDURES

- Neonatal Resuscitation P 2

NERVE GAS AUTO-INJECTOR PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Exposure to nerve/ chemical agents (Sarin, Soman, Tabun, Vx) exhibiting signs and symptoms that may include the following:
- **S.L.U.D.G.E.M.**
 - Salivation
 - Lacrimination
 - Urination
 - Defecation
 - Gastrointestinal pain and gas
 - Emesis
 - Miosis

Mild Symptoms	Severe Symptoms
Blurred vision, miosis	Strange or confused behavior
Excessive, unexplained teary eyes	Severe difficulty breathing or copious airway secretions
Excessive, unexplained runny nose	Severe muscular twitching and general weakness
Increased salivation, drooling	Involuntary urination and defecation
Chest tightness / difficulty breathing	Convulsions
Tremors / muscular twitching	Unconsciousness
Nausea / vomiting	
Unexplained wheezing / cough	
Acute onset of stomach cramps	
Tachycardia or bradycardia	

CONTRAINDICATION

- Not to be administered as a prophylactic to nerve agents

EQUIPMENT

- Duodote or Mark I

PROCEDURE

- For MILD symptoms of exposure:
 - Administer one (1) injection into the mid-lateral thigh if patient experiences two or more MILD symptoms of exposure. Wait 10-15 minutes for medication to take effect.
 - If after 10-15 minutes the patient does not develop any of the SEVERE symptoms listed above, no additional injections are recommended.
 - If at any time after the first dose, the patient develops any of the SEVERE symptoms, administer two (2) additional injections in rapid succession.
 - Transport
- For SEVERE symptoms of exposure:
 - Immediately administer three (3) injections into the mid-lateral thigh in rapid succession.
 - Transport

SPECIAL CONSIDERATION

- Medical Directors shall coordinate all training activities for those providers opting to carry Auto-Injector kits
- Training shall include following of the manufacturer's instructions as well as:
 - Indications for self / public administration
 - Demonstration of skills competency every two years after initial training according to Title 22, Div. 9, Chapter 2.

OPERATIONS CHAPTER

Concept of Operations Alerts and Activations, Description

The Marin County Multiple Patient Management Plan uses alerts and activations as a system for notification of, and some level of description of, an incident at its onset.

The alerting process is used to ensure that the EMS system as a whole is aware of and preparing to respond to an incident that may exceed local capabilities.

The activation process is to advise the EMS system that an actual incident has occurred. For the initial activation (>5 patients requiring transport), it is important to convey the level of response that may be anticipated for the incident. The Incident Commander should report that this is a small incident: "This is a local MCI" or a large incident: "This is a Level 1 or larger Incident." Any incident larger than a Level 1 may be determined once the overall impact of the incident is evaluated. In this case, the Incident Commander should only be concerned with scene management and resource ordering. The MHOAC Program will coordinate resources from the Region, State and/or Federal partners and also work to stabilize the EMS System. When needed, assistance or coordination may be provided by OES, EOC and/or DOC staff. Fire and Law Mutual Aid is requested through the Fire and Law mutual aid systems and, when possible, coordinated with the MHOAC program.

The Marin County Trauma Triage Tool should be followed when activating the MPMP until the readily available trauma center resources are utilized. Several factors weigh into the number of trauma patients that would fall into this group including: traffic, available trauma centers, available aircraft, weather, and ability to care for trauma patients at the scene. Once available trauma center resources are utilized, the Trauma Triage Tool may be waived and patients should be categorized and distributed following START/JumpSTART and the Patient Routing Worksheet Activation Levels 1 and 2 (pages 25 & 26)

FIRESCOPE FOG 420-1 Chapter 15 Multi-Casualty is a reference document for this plan and describes the progression from the initial response organization to reinforced, multi-group and multi-branch responses. The FIRESCOPE response structure progression may not progress in correlation to the activation levels described in this plan. This FIRESCOPE document should be used as guidance for scene incident operations. The MPMP plan describes the transition from scene incident management to county, regional, state and federal response management.

The California Public Health and Medical Emergency Operations Manual also uses activation or response levels that we have emulated; additionally, the state uses a Health and Medical Status System and Incident Typing System which is described in detail. The Medical Status System and Incident Typing System will be handled by the MHOAC Program or the EOC/DOC. Initial resource requests and size-up information will be used to prepare the early notifications for the state.

EMS SYSTEM ALERT

This section gives a description, examples and actions to be taken to alert the system of an MCI or unusual incident.

- Provides early notification to prepare the EMS system for larger than expected numbers of patients.
- An Alert may be requested by any emergency service responder or based on report information initiated by the Marin County Communications Center.
- Alerts should either be elevated to Activation or cancelled once the scene has been appropriately evaluated.

ALERT INITIATION

- The IC notifies their dispatch center to initiate an Alert.
- The dispatch center in the local jurisdiction immediately notifies Marin County Communications.

ALERT CANCELLATION

- The IC notifies their dispatch center to cancel an Alert.
- The dispatch center in the local jurisdiction immediately notifies Marin County Communications.

Examples of Incidents Which May Trigger Alert
<ul style="list-style-type: none"> • Greater alarm structure or wildland fires • Hazardous Materials Incidents (proven or suspected) • Facility evacuation (skilled nursing, hospitals, schools, etc.) • Law enforcement activities (hostage situations, SWAT operations, etc.) • Vehicle accidents involving multiple vehicles and/or patients • Intelligence information indicates that an incident may occur that may cause a large number of ill or injured • Medical Mutual Aid is requested or is being provided to another county • Complete or partial failure of EMS system critical infrastructure (e.g., hospital compromise, communications system)
LEMSA Actions
<ul style="list-style-type: none"> • The MHOAC or designee initiates actions to ensure the integrity of the EMS system, as appropriate • The Office of Emergency Services may be notified • The County Public Health Officer may be notified • Region II Regional Disaster Medical Health Specialist (RDMHS) may be notified
County Communications Actions
<ul style="list-style-type: none"> • Dispatch only resources specifically requested by the IC. • Determine number of fire and private ambulances available for system or incident response • Notify Fire Service Battalion Chiefs, private ambulance Field Supervisors, and Sheriff's Office Watch Commander • Notify hospitals • Notify MHOAC or designee
Hospital Actions
<ul style="list-style-type: none"> • All hospitals update bed availability (HAVBED) via ReddiNet

Multiple Patient Management Plan

ACTIVATIONS

This section gives a brief and general description of the general responsibilities of each involved Agency.

- Advises the EMS system that an actual incident has occurred
- May be requested by any emergency service Incident Commander

ACTIVATION INITIATION

The IC notifies their dispatch center to initiate an Activation. The IC shall provide the following information to their dispatch center. The local dispatch center shall provide the information immediately to Marin County Communications.

- Level of Activation (Local MCI or Level 1 or Higher)
- Estimated number of patients requiring transportation
- Ground and/or air ambulance staging locations
- Safety or approach instructions
- Request Additional resources needed

ACTIVATION CANCELLATION

The IC notifies their local dispatch center to cancel the Activation.

The local dispatch center in that jurisdiction immediately notifies Marin County Communications.

Marin County Communications notifies responders and hospitals that the Activation has been cancelled.

ACTIVATION LEVEL SUMMARY and EXAMPLES

This section provides examples of the size of incident that would most likely match the activation level.

<p>Local MCI</p> <p>6-15 Patients</p>	<p>Operational Focus is on incident management including the use of resources necessary to mitigate the problem (scene safety, security, specialty response, on-scene patient evaluation, etc.). EMS system modifications may be implemented. (e.g. suspending hospital diversions, amending dispatch criteria, etc.)</p> <p>Example: Multiple vehicle collision involving 15 patients requiring transportation.</p>
<p>Level 1</p> <p>16-30 Patients</p>	<p>Operational and Strategic Focus shifts from individual incident management to maintaining the County's EMS system and a possible transition from focused patient care to population based care. EMS system modifications are implemented. In-county mutual aid resources are requested.</p> <p>Example: Aircraft collision, skilled nursing facility evacuation, large motor vehicle collision, involving 20-30 patients.</p>
<p>Level 2</p> <p>31-100 Patients</p>	<p>Operational and Strategic Focus is on scene management, resources necessary to mitigate the incident and maintain the County's EMS System. This includes a transition from focused patient care to population based care. It is necessary to make modifications to the daily 911-EMS system to support the incident and stability of the system. This includes the use of out-of-county mutual aid resources from Region II.</p> <p>Example: Large aircraft collision, hospital facility evacuation, isolated natural incident, involving 80 patients.</p>
<p>Level 3</p> <p>>100 Patients</p>	<p>Operational and Strategic focus is on scene management, resources necessary to mitigate the incident and maintain the County's EMS System. This includes a transition from focused patient care to population based care. It is necessary to make modifications to the daily 911-EMS system to support the incident and stability of the system. This includes the use of out-of-county mutual aid resources from regional, state and federal partners.</p> <p>Example: Significant natural incident or other incidents involving more than 100 patients.</p>

Activation Action Plan Roles and Responsibilities Guide Table
 (Actions should be considered in a progressive manner from MCI to Level 3)

Description	Actions
Communications	<p>Local MCI</p> <ul style="list-style-type: none"> • Local jurisdictions and hospitals operate on their own talk groups • Responding ambulances communicate on designated Talk Groups • On-scene coordination/car-to-car communications may occur on an assigned Tactical Talk Group <p>Level 1</p> <ul style="list-style-type: none"> • Communications plan prepared <p>Level 2</p> <ul style="list-style-type: none"> • Command and Control coordination occur on talk groups as assigned • On-scene communications occurs on assigned tactical talk groups <p>Level 3</p> <ul style="list-style-type: none"> • Alternate communications systems may be employed
Documentation	<p>Local MCI</p> <ul style="list-style-type: none"> • Triage tags used, followed by a Patient Care Report (PCR) when available for each patient per county policy • Patient Status Sheet used by Transportation Group Supervisor • All ICS positions complete appropriate ICS forms <p>Level 1</p> <ul style="list-style-type: none"> • Only Triage tags used for each patient during the incident • After Action Report completed • PCR may be completed post incident <p>Level 2</p> <p>Same as Level 1</p> <p>Level 3</p> <p>Same as Level 1</p>
Patient Destination	<p>Local MCI</p> <ul style="list-style-type: none"> • One (1) immediate, one (1) delayed and two (2) minor patients may initially be routed to closest appropriate facilities, Additional patients may be assigned by the coordinating hospital • The Transportation Group Supervisor shall ensure than no one hospital is inappropriately taxed through contact with coordinating hospital • Trauma Triage Criteria and destination may be waived at the discretion of the Coordinating Hospital or the Medical Group Supervisor • Hospitals are informed of Local MCI Activation via ReddiNet (no bed query requested) • Medical Communications Coordinator (Med Comm) notifies Coordinating Hospitals of pending ambulance arrivals • Coordinating Hospital initiates MCI on ReddiNet <p>Level 1</p> <ul style="list-style-type: none"> • Ambulance diversions cancelled • Two (2) immediate, two (2) delayed and four (4) minor patients may initially be routed to closest appropriate facilities, additional patients to be assigned by the coordinating hospital • The coordinating hospital shall ensure that patients are distributed appropriately • Trauma Triage Criteria and destination waived • All hospitals update bed availability (HAVBED) via ReddiNet

Description	Actions
	<p>Level 2</p> <ul style="list-style-type: none"> • Coordinating hospital and MHOAC, coordinate patient distribution • Use of field treatment sites/alternate care sites may be implemented • Hospitals are informed of Level 2 Activation via ReddiNet and immediately report total in-house bed availability. • Hospitals may implement in-house disaster/surge capacity plans <p>Level 3</p> <ul style="list-style-type: none"> • Marin LEMSA routes patients to out-of-county facilities (through the EOC or DOC when activated) • Hospitals are informed of Level 3 Activation via ReddiNet and/or phone and immediately report total in-house bed availability.
EMS Resources	<p>Local MCI</p> <ul style="list-style-type: none"> • Request for resources will be made by the IC • The private EMS ambulance providers may be requested for 911 response <p>Level 1</p> <ul style="list-style-type: none"> • Private EMS ambulance providers may suspend routine transfers for the duration of the activation • Local EMS system response will be altered • Non-traditional EMS resources may be used (e.g. buses or other vehicles) <p>Level 2</p> <ul style="list-style-type: none"> • MHOAC and Fire Mutual Aid Coordinator coordinate requests for mutual aid ambulances <p>Level 3 Same as Level 2</p>
Public Safety Answering Points (PSAPs)	<p>Local MCI</p> <ul style="list-style-type: none"> • Local fire or law enforcement PSAP continues normal operations not related to the incident. • County Communications coordinates the dispatch of all incident ambulances and medical-health resources <p>Level 1</p> <ul style="list-style-type: none"> • County Communications advises all ambulance dispatch centers of event <p>Level 2 Same as Level 1</p> <p>Level 3 Same as Level 1</p>
LEMSA / MHOAC	<p>Local MCI</p> <ul style="list-style-type: none"> • Monitors incident • May respond to incident as an agency representative • Provides incident support and assistance as needed

Description	Actions
	<p>Level 1</p> <ul style="list-style-type: none"> • Takes any appropriate actions which may include suspension of hospital diversion, policy modification or suspension, amended dispatch procedures, or any other actions needed for incident mitigation • Ensures adequate resources are available to support the incident and the EMS system • Provides technical assistance in support of the incident • Coordinates Field Treatment Sites/Alternate Treatment Sites • Coordinates in-county medical-health resources, including activation of MMRC • Manages medical mutual aid requests • Coordinates with the Operational Area EOC and RDMHS <p>Level 2</p> <ul style="list-style-type: none"> • Based on the size and/or nature of the event, the HHS DOC or County Emergency Operations Center may be activated to coordinate medical health resources. In absence of activation, the EMS Administrator/MHOAC or designee will have responsibility for completing tasks. • Coordinates global patient destination/distribution • Coordinates field treatment sites/alternate care sites • Coordinates in-county medical-health resources • Coordinates medical mutual aid requests • Coordinates with the County EOC and RDMHS <p>Level 3</p> <ul style="list-style-type: none"> • Authorizes use of mutual aid including ordering of resources • Coordinates with Region 2 and other Operational Areas
Notifications	<p>Local MCI</p> <ul style="list-style-type: none"> • Fire and Law enforcement agencies • Hospitals are informed via ReddiNet • Private ambulance operations managers • County Communications managers • LEMSA / MHOAC <p>Level 1</p> <ul style="list-style-type: none"> • Local public safety agency determines internal notifications • OES notified <p>Level 2</p> <ul style="list-style-type: none"> • EMS and HHS Emergency Operations Staff notified • All public safety and private ambulance dispatch centers notified <p>Level 3 Same as Level 2</p>
Recommended ICS Structure (Medical Positions)	<p>Local MCI</p> <ul style="list-style-type: none"> • Medical Group Supervisor • Triage Unit Leader • Treatment Unit Leader • Transportation Unit Leader • Air Ambulance Coordinator • Medical Communications Coordinator • Any position assigned by the IC if qualified and trained for that position

Description	Actions
	<p>Level 1 Same as Local MCI and add:</p> <ul style="list-style-type: none"> • Agency representatives • Technical Specialists • Other ICS positions as required <p>Level 2 Same as Level 1 and add:</p> <ul style="list-style-type: none"> • Medical Branch Director • Other ICS positions as required <p>Level 3 Same as Level 2 and add:</p> <ul style="list-style-type: none"> • Other ICS positions as required
Site Plan	<p>Local MCI</p> <ul style="list-style-type: none"> • Incident Command Post identified • Ambulance staging area identified • Treatment areas identified • Ambulance loading area • Ambulance travel pattern <p>Level 1 Same as Local MCI</p> <p>Level 2 Same as Local MCI</p> <p>Level 3 Same as Local MCI</p>

ANTICOAGULANT LIST*

warfarin / Coumadin

clopidogrel / Plavix

dabigatran / Pradaxa

apixaban / Eliquis

rivaroxaban / Xarelto

enoxaparin / Lovenox

deltaparin / Fragmin

edoxaban / Savaysa

fondaparinux / Arixtra

tinzaparin / Innohep

desirudin / Iprivask

*Most common anticoagulants as of July 2016 and may not include all available.

HOSPITAL DIVERSION QUICK REFERENCE

FULL DIVERSION

Closed to ALL ambulance traffic

CONDITION-SPECIFIC DIVERSIONS

Regarding the condition-specific diversions below, *the following patients may not be diverted:*

- Hemodynamic instability
- Active labor
- Respiratory distress and unmanageable airway
- Uncontrolled external bleeding
- BLS unit with patient requiring ALS treatment
- CPR in progress
- Patients who request transport to a specific hospital after being fully informed of its diversion status

CONDITION-SPECIFIC DIVERSIONS

ED Saturation

Divert all except these patients:

- STEMI Notification
- Stroke Notification
- Trauma Notification
- Cardiac Arrest with ROSC

CT

Divert these patients:

- Those presenting with acute stroke symptoms
 - Those with a head injury and on anticoagulants or with known bleeding disorders
 - Trauma Notification patients if they have head, neck or spinal trauma
- Note: - Full Notifications go to Level II by air (if air not available, consult MGH)
- Limited Notifications go to Kaiser

Cath Lab

Divert STEMI Notification patients

Note: Transport by air or ground to the closest facility with an open cath lab

Trauma

Divert Trauma Notification patients

Note: - Full Notifications go to Level II by air (if air not available, consult MGH)
- Limited Notifications go to Kaiser

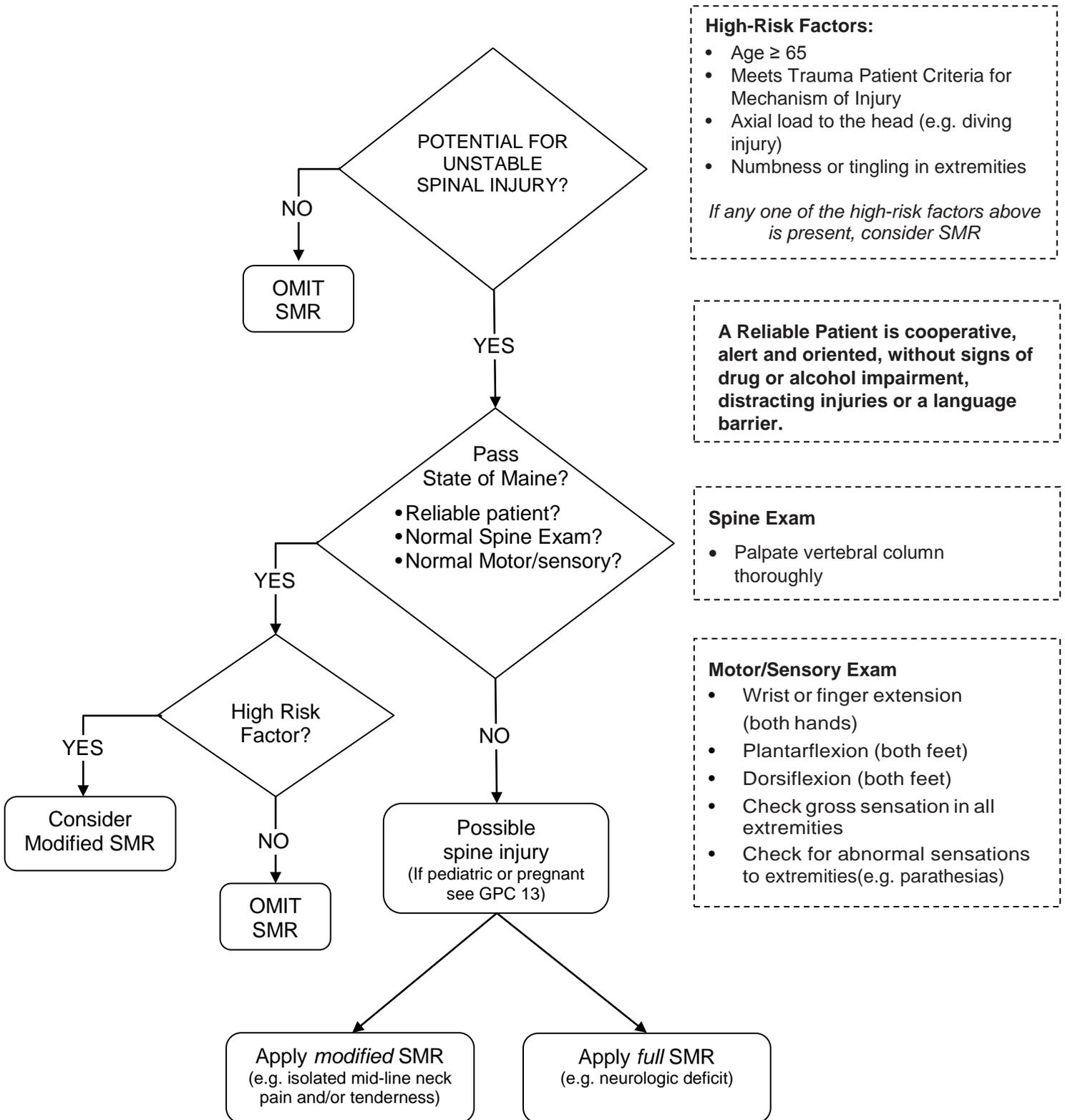
Neuro

Divert these patients:

- Signs and symptoms of severe head, neck or spinal cord trauma
- Note: Transport to Level II (if air not available, consult MGH)
- Signs and symptoms of hemorrhagic CVA or other conditions that may require a neurosurgeon (e.g., interventricular shunt malfunction)
- Note: Transport by air or ground to closest facility with an open CT scanner

IF YOU HAVE ANY QUESTIONS, PLEASE CONSULT HOSPITAL!
FOR FULL VERSION, REFER TO AMBULANCE DIVERSION POLICY # 5400

SPINAL MOTION RESTRICTION



MARIN COUNTY TRAUMA TRIAGE TOOL

Adult Patients (age 14 and older)

Step 1 – Major Physiologic Factors

1. Glasgow Coma Scale ≤ 13
2. Systolic blood pressure (mmHg) < 90 mm Hg
3. Respiratory rate < 10 or > 29 breaths per minute

Provide Full Trauma Notification & Transport to Time Closest Trauma Center: Marin General Hospital by ground, or Level II by air.

YES

NO

Assess Anatomic Factors

Step 2 – Major Anatomic Factors

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Penetrating injuries to head, neck, torso, or extremities proximal to elbow or knee 2. Flail chest 3. Two or more proximal long-bone fractures 4. Crushed, degloved, mangled or amputated extremity proximal to wrist or ankle | <ol style="list-style-type: none"> 5. Pelvic fractures 6. Open or depressed skull fracture 7. Paralysis (partial or complete) 8. Burns with anatomic factors |
|--|--|

Provide Full Trauma Notification & Transport to Time Closest Trauma Center: Marin General Hospital by ground, or Level II by air.

YES

NO

Assess Mechanism of Injury Factors

Step 3 – Mechanism of Injury Factors

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Falls <ul style="list-style-type: none"> - Adults > 20 feet (one story is equal to 10 feet) - Children > 10 feet or three times the height of the child 2. High-risk auto crash <ul style="list-style-type: none"> - Passenger space intrusion $> 18"$ ($> 12"$ occupant site) - Ejection (partial or complete) from automobile - Death in same passenger compartment | <ol style="list-style-type: none"> 3. Auto vs. pedestrian or auto vs. bicyclist: thrown, run over, <u>or</u> with > 20 mph impact 4. Motorcycle or bicycle crash: thrown <u>and</u> > 20 mph impact 5. Burns with MOI factors |
|--|--|

YES

NO

Provide Limited Trauma Notification & transport to Marin General Hospital Trauma Center

Assess Additional Factors

Step 4 – Additional Factors

1. Older Adults; Risk of injury/death increases significantly after age 65
2. Anticoagulant use and/or bleeding disorders with head / torso injury
3. End-stage renal disease requiring dialysis
4. Pregnancy > 20 weeks

Does assessment of these additional factors, or other complaints or exam findings cause paramedic to be concerned about the patient?

YES

NO

Provide Limited Trauma Notification & Transport to Marin General Hospital Trauma Center

Transport to closest emergency dept. or emergency dept. of patient's choice

Trauma Center consultation is recommended for questions about destinations for injured patients.

Name	Address	City	ED	Main
Kaiser Hospital, Terra Linda	99 Montecillo Road	San Rafael	415-444-2400	415-444-2000
Marin General Hospital	250 Bon Air Road	Greenbrae	415-925-7203	415-925-7000
Novato Community Hospital	180 Rowland Way	Novato	415-209-1350	415-209-1300
Children's Hospital Oakland	747 52d Street	Oakland	510-428-3240	510-428-3000
CPMC - Pacific	2333 Buchanan Street	San Francisco	415-600-3333	415-600-6000
CPMC - Pediatrics	3700 California Street	San Francisco	415-600-4444	415-600-4000
CPMC - Davies Medical Center	45 Castro Street	San Francisco	415-600-0600	415-600-6000
Kaiser Hospital, SF	2425 Geary Blvd	San Francisco	415-833-3300	415-833-2000
San Francisco General	1001 Potrero Avenue	San Francisco	415-206-8111	415-206-8000
St. Francis Memorial	900 Hyde Street	San Francisco	415-353-6300	415-353-6000
St. Mary's Medical Center	450 Stanyan Street	San Francisco	415-750-5700	415-668-1000
UCSF Medical Center	505 Parnassus Avenue	San Francisco	415-502-8841	415-476-1000
UCSF Benioff Children's Hospital	1975 4Th Street	San Francisco	415-353-1818	415-353-1203
VA SF Medical Center	4150 Clement Street	San Francisco	7415-50-2052	415-221-4810
Kaiser Hospital, Santa Rosa	401 Bicentennial Way	Santa Rosa	707-393-2025	707-393-4000
Petaluma Valley Hospital	400 N. McDowell Blvd	Petaluma	707-778-2634	707-778-1111
Santa Rosa Memorial Hospital	1165 Montgomery Drive	Santa Rosa	707-525-5207	707-546-3210
Sutter Medical Center of Santa Rosa	30 Mark West Springs Rd	Santa Rosa	707-576-4040	707-576-4000

Marin County Fire Stations											
SMFD		CMFD		SRFD		MFD		RVFD		MCFD	
1	289-4155	13	927-5049	51	485-3310	58	479-0122	18	453-7434	WOODACRE	473-6717
4	380-1101	14	927-5077	52	485-3139	NFPD		19	258-4619	POINT REYES	473-7699
9	388-8182	LFD		53	492-1058	61	878-2681	20	258-4620	MARIN CITY	446-7610
TFPD		15	927-5007	54	485-3144	62	878-2682	21	258-4621	THROCKMORTO	388-5414
10	435-7203	16	927-5041	55	485-3143	63	878-2683	MVFD		HICKS VALLEY	662-2503
11	435-7200	KFPD		56	485-3144	64	878-2684	6	389-4155	TOMALES	707-878-2464
		17	453-7464	57	485-3145	65	878-2685	7	389-4130	MEDIC 18	446-4440
NPS 561-5505		Stinson Beach 868-0622				Inverness 669-7151			Bolinias 868-1566		

EMS AGENCY					
1600 Los Gamos Drive, #220, Lobby C, San Rafael, CA 94903					
phone: 473-6871, fax: 473-3747					
www.MarinEMS.org					
Administrator	Miles Julihn	473-6833	EMS Specialist		Troy Peterson 473-3287
Medical Director	Dustin Ballard	473-2588	EMS Specialist		Randy Saxe 473-7455
Secretary	Evelyn Colindres	473-2219	CQI Coordinator		Karrie Groves 473-6871
			Trauma Coordinator		Mike Modrich 473-6871
Certification/Accreditation paperwork is ONLY accepted at the EMS office in-person Mon., Wed., & Fri. 8 AM – 2 PM. Other times available by appointment.					

Communications Center	
MED	473-7236
LAW	473-7234
FIRE	473-7235

Poison Control
800-222-1222