MARIN HEALTH & HUMAN SERVICES
Health, Well-being & Safety

Larry Meredith, Ph.D., Director

DIVISION OF PUBLIC HEALTH
EMERGENCY MEDICAL SERVICES

Date: June 30, 2010

To: Holders of EMS Policy and Procedure Manuals

From: Bill Teufel, MD
EMS Agency Medical Director

Subject: **Update to Policy Manual, Change Notice #29**

Enclosed please find Update #28 to the EMS Policy and Procedure Manual. These new and revised policies and procedures are effective **July 1, 2010**. Please update the Record of Change page and replace the Table of Contents and Signature page.

Revised Policies and Procedures include:

- 4613a Trauma Triage Tool
- 5002 Ambulance Supply/Equipment
- 5005 ALS Non-Transport Supply/Equipment
- 5006 ALS First Responder
- 7001 Prehospital Contact
- ALS PR 12 12-lead ECG
- ATG 3 Adult Sedation
- ATG 7 Adult Medications
- BLSPR 4 Auto-Injector EpiPen
- C1 Ventricular Fibrillation
- C8 Chest Pain ALS
- E4 Burns
- Field Determination of Death Form
- GPC 4 Destination Guidelines
- N4 CVA/Stroke
- O1 Vaginal Hemorrhage
- P7 Pediatric Shock
- P12 Pediatric Burns
- P18 Pediatric Medications

New Policies and Procedures include:

- M5 Severe Nausea Vomiting
- ALS PR 16 MDI
- 5010 Provider Equipment/Supplies
- 5011 CCT Equipment/Supplies

Deleted Policies include:

- C5 Ventricular Ectopy
- N4a Addendum A (now included in the corresponding policy, N4)

SPECIAL NOTIFICATION:

Effective October 1, 2010, the Combitube Procedure (ALS PR 06) will be eliminated as a Marin County approved advanced airway device, leaving the King Airway as the only approved rescue airway.

All policies are available on the EMS web site at: www.MarinEMS.org

If you have not received training on these changes, please contact your CQI Liaison or Training Officer. Please ensure that the changes are made in your manual.

Thank you.

COUNTY OF MARIN

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Division of Public Health Services

Emergency Medical Services Agency

Policy and Procedure Manual

July 1, 2010

Miles Julihn, EMS Administrator, EMS Agency

William L. Teufel, MD, Medical Director, EMS Agency

EMS Program Policy & Procedure Manual

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MARIN COUNTY TRAUMA TRIAGE TOOL

Adult Patients (age 14 and older)

Step 1 – Major Physiologic Factors

1. Glasgow Coma Scale <14
2. Systolic blood pressure (mmHg) <90 mm Hg
3. Respiratory rate <10 or >29 breaths per minute

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

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

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

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

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

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?

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

NO → **Transport to closest emergency dept. or emergency dept. of patient's choice**

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

MARIN COUNTY TRAUMA TRIAGE TOOL

Pediatric Patients (age <14 yrs)

Step 1 – Major Physiologic Factors

1. Glasgow Coma Scale <14
2. Systolic BP <80 mm Hg – age 7-14
3. Systolic BP <70 mm Hg – age < 7

YES → **Transport to Oakland Children's Hospital if ETA 30 min. or less, otherwise transport to Marin General Hospital and provide Full Trauma Notification**

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

YES → **Transport to Oakland Children's Hospital if ETA 30 min. or less, otherwise transport to Marin General Hospital and provide Full Trauma Notification**

NO → **Follow Steps 3 & 4 on page 1 for Adult Trauma Patients**

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.

AMBULANCE SUPPLY/EQUIPMENT REQUIREMENTS

I. PURPOSE

To establish minimum requirements for ambulance vehicles, equipment and supplies.

II. AUTHORITY

A. California Administrative Code, Title 13, Chapter 2

B. California Emergency Medical Services Authority

C. Marin County Ambulance Ordinance

III. POLICY

A. Vehicles

1. Ambulance vehicles shall meet all standards specified in the California Administrative Code, including the possession of a valid emergency vehicle permit issued by the California Highway Patrol.

2. Vehicles will be maintained cleanly and in good mechanical and body condition at all times.

3. All ambulances will have adequate space in the patient care compartment as described in the Ambulance Ordinance.

4. Equipment to enable communication with the County Communications Center, provider dispatcher and receiving hospital will be carried as follows:

a. All medical transport units will carry Marin MERA radios
b. Non-fire service units must have a company dispatch radio
c. Cell phones are optional and desired for triple redundant communications

B. Safety Equipment: Safety Equipment to be carried on ambulances and maintained in good working order shall include all items listed in the California Administrative Code and recommended by the Emergency Medical Services Authority. Items recommended by the Authority are listed below:

1. Seat Belts - Two in rear compartment (one on bench)
2. Heating and Air Conditioning in both the front and rear compartments
3. Marin County map current within last two years
4. Fire extinguisher with current annual inspection

C. Emergency Care Equipment and Supplies: Ambulances will carry all items listed in the California Administrative Code, those recommended by the Emergency Medical Services Authority, and those required by the County of Marin. See Policy 5010.

D. If staffed at an ALS level, ambulances must, in addition, carry drugs, solutions and equipment as listed in Policy 5010.

E. If staffed at a Critical Care Transport level, ambulances must, in addition, carry drugs, solutions and equipment as listed in Policy 5011.

ALS NONTRANSPORT SUPPLY/EQUIPMENT REQUIREMENTS

I. PURPOSE

To establish minimum requirements for supplies and equipment to be maintained by ALS staffed non-transport vehicles.

II. DEFINITION

A. For the purposes of this policy, "ALS staffed non-transport vehicle" shall be defined as follows:

1. Vehicle must be owned and maintained by an approved provider agency
2. Vehicle must have the capability to respond Code 3
3. Vehicle must be staffed by an on-duty paramedic employed by an approved provider agency.
4. Vehicle must be responding to an incident in conjunction with an ALS transport vehicle.

III. POLICY

A. Vehicle must carry equipment to enable communication with the County Communications Center, the appropriate receiving hospital, and the transport unit reasonably expected to arrive on-scene.

B. ALS non-transport vehicles must reasonably expect to

1. Carry or have immediate access to supplies and equipment as listed in Policy 5010.
2. Have access to an ALS transport vehicle within 20 minutes.

C. If an ALS vehicle cannot reasonably expect to meet the criteria listed , they must carry a full complement of ALS equipment and supplies as listed in Policy 5010.

ALS FIRST RESPONDER POLICY

I. PURPOSE

To define the role and function of the ALS First Responder within the Marin County EMS system.

II. DEFINITION

A. The ALS First Responder is a licensed paramedic, accredited in Marin County and working for an ALS provider. This policy is applicable only when the paramedic is not staffing an ALS transport unit and is assigned to a first response vehicle.

B. First Response vehicle refers to a fire department vehicle dispatched by an official dispatching agency in response to a request for medical assistance.

III. ROLE

To augment the currently operating ALS system by initiating defined ALS skills prior to the arrival of the ALS treating unit for a specific group of patients.

IV. POLICY

A. The ALS First Responder will carry the ALS equipment as listed in Policy 5010 (ALS First Responder level).

B. When arriving at the scene of a life-threatening emergency prior to the ALS unit, the ALS First Responder may perform the following skills

1. Advanced airway management
2. Cardiac defibrillation/cardioversion
3. Establish IV access and administer fluids
4. Administration of epinephrine

C. Other than as specified above, the ALS First Responder will comply with all Marin County ALS Treatment Guidelines and all pertinent EMS policies and procedures

1. If ALS skills are initiated prior to arrival of the ALS unit, the name of the ALS First Responder will appear on the PCR as such.

D. When ALS skills are initiated prior to the arrival of the ALS unit, ALS First Responder should accompany the patient to the hospital

1. If unable to accompany the patient, a separate, completed PCR (if not transported with the patient) should be FAXed to the hospital as soon as possible, but no later than the end of that shift and a verbal report called to the receiving hospital.

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Non-transport	ALS Transport
AIRWAY EQUIPMENT					
Airways:					
• Oropharyngeal (Sizes 0 – 6)	2 each	1 each	1 each	1 each	2 each
• Nasopharyngeal (soft rubber)					
14 Fr., 18 Fr., 22 Fr., 26 Fr.	1 each	1 each	1 each	1 each	1 each
30 Fr.	1 each	1 each	1 each	1 each	1 each
32 Fr.	2 each	1 each	1 each	1 each	2 each
34 Fr.	2 each	1 each	1 each	1 each	2 each
36 Fr.	2 each	1 each	1 each	1 each	2 each
Atomizer for intranasal medication administration (MAD device)	0	0	1	1	3
Bite Stick	2	0	1	1	2
Combitube OR King Airway					
Combitube (Adult and Small Adult)	0	1 or	1 each or	1 each or	1 each or
King Airway					
• Size 3	0		1	1	1
• Size 4	0	1	1	1	1
• Size 5	0		1	1	1
Continuous Positive Airway Pressure Device	0	0	(optional)	(optional)	1
Cricothyroidotomy Kit (High pressure insufflation system for oxygen delivery; 14-g. over-the-needle catheter, 2 ¼"long; 10 ml. syringe; 3-way stopcock; Betadine swabs; suction; tape; PPE)	0	0	0	(optional)	1
Impedance Threshold Device	0	0	1	1	2
Intubation Equipment					
• Laryngoscope handle (battery powered)		1	1	1	1
• Additional batteries		0	2	2	2
• Blades (curved 2 – 4)		1 x #4	1 each	1 each	1 each
• Blades (straight 0 – 4)		1 x #4	1 each	1 each	1 each
• Bulbs (extra)			1	1	1
• Magill forceps (adult and pediatric)			1	1 each	1 each
• Endotracheal tubes					
sizes 2.5-6.0 mm: cuffed and/or uncuffed		Size 6 = 1	1 each	1 each	2 each
sizes 6.0-8.0 mm: cuffed		Size 7.5 = 1	1 each	1 each	2 each
• Disposable stylets (adult and pediatric)		1	1	1 each	2 each
• End-Tidal CO2 Detectors					
Adult – Colormetric		Adult = 1	1	1	2
Pediatric – Colormetric			1	1	2
OR					
• Capnograph or digital (optional)			1	1	1

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Non-transport	ALS Transport
• Esophageal Detector Device (optional if Capnometer is utilized)		1	1	1	1
• Endotracheal Tube Introducer (ETTI)		1	1	1	2
• ET Tube Holder (adult and pediatric)			1	1 each	2 each
• Meconium Aspirator			1	1	1
Nebulizer					
• Hand-held OR Patient activated			1	1	2
• In-line nebulizer equipment with T-piece			1	1	2
Oxygen Equipment and Supplies					
• Fixed tank in vehicle with regulator; M-tank or H-tank	1		0	0	1
• Regulator	1		1	1	1
• Portable tank (minimum D tank)	1		1	1	2
• Face masks: transparent, non-rebreathing (adult, child, infant)	2 each		1 each	1 each	4 each 2,2
• Nasal cannulas (adult, child, infant)	4 each		1 each	1 each	4 each 2,2
• Portable Pulse Oximetry	0	optional	0	1	1
Pleural Decompression kit: ≥14g needle, ≥2 ¼ inches long; Heimlich valve; occlusive dressing;10 ml syringe		1	1	1	1
Resuscitation bag-valve-mask (BVM) Adult, pediatric, infant	1 each	1 adult	1 each	1 each	2/1/2001
Suction Equipment and Supplies					
• Suction apparatus – battery powered	1	1 portable self contained unit	1 portable self contained unit	1 portable self contained unit	1
• Suction apparatus – portable	1				1 x 1 fixed
• Pharyngeal tonsil tip (rigid)	2				2
• Suction catheters: 6 Fr, 8 Fr, 10 Fr, 14 Fr, 16 Fr, 18 Fr	2 each				2 each
• Suction canister	2				
• Suction tubing	2				2
DRESSING MATERIALS					
Bandages					
• 4 x 4" sterile gauze pads	12	6	12	12	12
• 10 x 30" universal dressings	2	0	2	2	2
• 40" triangular bandage with safety pins	4	2	2	4	4
• Elastic bandage 3" (Ace)	2	2	2	2	2
• Occlusive dressing	4	2	2	4	4
• Roller bandages (2", 3", 4", or 6")	6	2	3	6	6
Band-Aids (Assorted)	1 box	0	1 box	1 box	1 box
Burn Sheets (sterile) or commercial burn kit	2	2	2	2	2
Cold Packs / Hot Packs	2 each	Mar-00	2 each	2 each	4 each
Tape (1" and 2")	1 each	1" = 2 rolls	1 each	1 each	1 each
Trauma shears	1	1	1	1	1

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Non-transport	ALS Transport
EQUIPMENT AND SUPPLIES					
Alcohol swabs	0	6	12	12	12
Bedpan/Fracture Pan/Covered Urinal	2	0	0	0	1 each
Betadine swabs or solution	0	4	4	4	8
Blanket - disposable	2	2	1	1	2
Blood Pressure Cuffs (adult, large arm, thigh, pediatric, infant)	1 each	1 adult	1 x adult, thigh, pedi	1 x adult, thigh, pedi	1 each
Bulb Syringe	1	0	1	1	1
Drinking Water (one gallon)	1				1
Emesis basin/ disposable bag/ Covered waste container	2	0	1	1	2
EMS Field Manual Patient Care (8000) Series			1	1	1
Glucometer	0	1	1	1	1
Irrigation Equipment					
• Saline (sterile) 1000 ml	2	0	1	1	2
• Tubing for irrigation	2	0	1	1	2
Length based color-coded resuscitation tape (most current)	0	0	1	1	1
Lubricant, water soluable	0	0	4 packs	4 packs	4 packs
Monitor/defibrillator equipment					
• Cardiac monitor – (portable) must have strip recorder, defibrillator/transcutaneous pacing ability for child / adult. May be biphasic or monophasic (biphasic preferred)	0	0	12-lead optional (pacing optional)	1	1
• ECG electrodes	0	0		1 box	1 box
• 12-lead ECG capability	0	2		1 set	1 set
• A.E.D.	1 pedi opt	1 pedi opt	1	1 optional	1
OB Delivery					
• Separate and sterile kit includes: Towels, 4" x 4" dressing, umbilical tape or clamp, sterile scissors or other cutting utensil, bulb suction, sterile gloves, and blanket	1		1	1	1
• Thermal absorbent blanket and head cover, aluminum foil roll, or appropriate heat-reflective material (enough to cover newborn)	1		1	1	1
• Appropriate heat source for ambulance compartment	1		0	0	1
Pen Light	1	1	1	1	1
Sharps container	1	1	1	1	2
Sheet, pillow case, blanket, towel	4 each	0	0	0	4 each
Pillow	2	0	0	0	2 or equivalent
Stethoscope	1	1	1	1	1
Triage tags	20	6	20	20	20
Biohazard bags (large and small)	4 each	2 small	2 each	2 each	4 each

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Non-transport	ALS Transport
PPE kit (gloves, gown, booties, face shield, cap)	2 per person	0	1per person	1 per person	2 per person
Disposable gloves	Box	6 pair	Box	Box	Box
Face protection mask – N95	2 pp	0	1 pp	1 pp	2 pp
Stair chair	Optional	0	0	0	optional
Scoop stretcher	Optional	0	0	0	Optional
Break-away flat	Optional	0	0	0	Optional
IMMOBILIZATION and RESTRAINT DEVICES					
Cervical collars – rigid or adjustable					
Sizes to fit all patients over 1 yr old	4, 2, 2	1 adjustable	2, 1, 1	2, 1, 1	4, 2, 2
Head immobilization device	4	0	2	2	4
Spinal immobilization (radiolucent) backboard	2	0	1	1	2
• Strap system, adult	2		1	1	2
• K.E.D. or equivalent	1		0	0	1
Splints (vacuum/cardboard/equivalent)					
• Short, medium, long	3 each	1 moldable	2 each	2 each	3 each
Traction splint, adult / pediatric	1 each	0	Adult only	Adult only	1 each
Quick release synthetic soft restraints (or padded leather)	1	0	0	0	1
IV EQUIPMENT / SYRINGES / NEEDLES					
Arm board (Short)			1	1	2
Catheters – 1" long 14g, 16g, 18g, 20g, 22g, 24g		2 each	2 each	2 each	4 each
Intraosseous Equipment – adult and pedi					
• IO needles and/or mechanical device		0	optional	optional	1
• Extra batteries if needed by model					1
Intravenous Solutions - 0.9% NL Saline					
• 100 cc bag		1000 cc total	1	1	2
• 1000 cc bag			2	2	6
Pressure Infusion Bags		0	0	0	1
Saline Lock		0	2	2	4
Syringes					
• 1 cc TB with removable needle		2	2 each all sizes	2 each all sizes	4
• 3 cc with 25 g x 5/8/" needle		0			4
• 10 cc without needle		2			2
• 30 cc without needle		0			2
Extension set		0	2	2	4
Constriction band	0	2	2	2	2
Tubing – with adjustable flow					
• macro drip (10gtt/cc – 15gtt/cc- adjustable)		2	2 each	2 each	4 each
• micro drip (60gtt/cc)		0	or 2 adjustable	or 2 adjustable	or 4 adjustable
• Pediatric in-line drip regulator		0			1

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Non-transport	ALS Transport
MEDICATIONS AND SOLUTIONS					
Activated Charcoal, 25 gms		0	1 bottle	1 bottle	2 bottles
Adenosine, 6 mg in 2 ml NS		0	30 mg	30 mg	60 mg
Albuterol Unit Dose		1	3	3	9
Amiodarone, 150 mg in 3 cc NS		3	3	3	6
ASA (chewable), 81 mg		1	1 bottle	1 bottle	1 bottle
Atropine, 1 mg in 10 ml		2	3	3	6
Calcium Chloride 10%, 1 gm in 10 ml		0	1	1	2
Dextrose 10%		0	1	1	2
Dextrose 25%		0	1	1	2
Dextrose 50%, 25 gms/50 ml		1	2	2	4
Diphenhydramine, 50 mg/1ml		4	2	2	4
Dopamine (pre-mix), 400 mg/ 250 ml		0	1	1	2
Duo-Dote (Nerve Gas Auto-injector)	See County policy				
Epinephrine 1:1000, 1 mg/1 ml		4	3	3	6
Epinephrine 1:10,000, 1 mg/10 ml		4	3	3	9
Furosemide (Lasix), variable		0	120 mg	120 mg	240 mg
Glucagon, 1 mg		1 mg	1 mg	1 mg	2 mg
Glucose Paste, 15 gm/ tube	1	1 tube	1 tube	1 tube	2 tubes
Ipratroprium (Atrovent), Unit Dose		0	1	1	4
Midazolam, 2 mg/2 ml		0	optional	3	5
Midazolam, 5 mg/1 ml		0	optional	1	2
Morphine Sulfate, 10 mg/1 ml		2	optional	2	4
Naloxone (Narcan), 2 mg/ 5 ml		0	3	3	6
Nitroglycerine, 0.4mg /tablet or spray		1 container	1 container	1 container	1 container
Sodium Bicarbonate, 50 mEq/ 50 ml		0	1	1	2
Zofran		0	1	1	4

Category: Providers
General
Critical Care Transport

Policy No.: 5011
Date: 07/01/2010

CRITICAL CARE TRANSPORT DRUG, SOLUTION AND EQUIPMENT LIST

IN ADDITION TO ITEMS LISTED IN POLICY 5010 (ALS TRANSPORT) , units staffed to perform critical care transports must include the following:

1. A minimum of two personnel, appropriate to individual patient care needs (refer to Interfacility Transfer policy # 8107) must be available to attend the patient.

2. All transports must occur in accordance with federal and local laws, including the Consolidated Omnibus Budget Reconciliation Act (COBRA) and its amendments (OBRA).

3. Communication equipment must be present that will allow contact between the transporting vehicle and the transferring and receiving hospitals.

4. The following equipment is recommended by the Guidelines Committee of the American College of Critical Care Medicine; the Society of Critical Care Medicine and American Association of Critical-care Nurses Transfer Guidelines Task Force and is hereby required for use in Marin County (equipment included in the BLS or ALS equipment lists is not re-listed here).

Airway equipment 50 ml flex tube with patient adapter Infant med. concentration mask with tubing Booted hemostat Heimlich valve Scalpel with blade for cricothyrotomy Positive end-expiratory pressure valve Pressure gauge with airway adapter tubing and test lung
Armboards
Arterial line tubing and monitoring equipment
Butterfly needles, pediatric sizes
Irrigating syringes
Infant, pediatric electrodes
Infusion pumps
IV Administration sets 3-way stopcocks with extensions Pedi-drip sets Blood tubing
IV catheters up to 24 guage
IV solutions 1000 Lactated Ringers solution 250 cc D5/W
Kelly clamp
Pulse oximeter
Salem sumps (asst. sizes)

If appropriate for patient external pacer neonatal isolette transport ventilator

5. The following medications are recommended by the Guidelines Committee of the American College of Critical Care Medicine; the Society of Critical Care Medicine and American Association of Critical-Care Nurses Transfer Guidelines Task Force and is hereby required for use in Marin County (medications included in the ALS medication list is not re-listed here).

Aminophylline		Nitroglycerin for IV use
Cetecaine Spray		Nitroprusside
Dexamethasone		Phenytoin
Digoxin		Potassium Chloride
Heparin		Procainamide
Mannitol		Propranalol
Magnesium		Verapamil

6. Equipment and medications shall be additionally tailored to meet all anticipated needs of the individual patient being transported.

PREHOSPITAL/HOSPITAL CONTACT POLICY

I. PURPOSE

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

II. RELATED POLICIES

A. Trauma Triage and Destination Guidelines, #4613
B. Communication Failure, #7002
C. EMS Communication System, #7004
D. BLS Treatment Guidelines, #8201
E. Emergency Medical Response Plan
F. STEMI C9
G. CVA/Stroke N4

III. 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. STEMI Notification
C. Physician Consult - a consultative discussion between field personnel and an ED physician.

IV. 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 care being provided (ALS or BLS)
      c. Estimated time of arrival to receiving facility
      d. Level of transport (code 2 or 3)

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)

B. Early Notification (Trauma/Stroke/STEMI)

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. Early Notification shall include the following:
   a. Age/Gender
   b. Incident type (eg., MVA, fall, stab wound, gunshot wound, Stroke, STEMI)
   c. Injury and/or complaint (Trauma); last known normal (Stroke), presence or absence of chest pain and 12-lead findings (STEMI)
   d. Trauma Triage Tool Category:
      1. Anatomic or Physiologic = "Full Trauma"
      2. Mechanism or Additional Factors = "Limited Trauma"
   e. ETA
5. As soon as practical after the Early Notification has been given, a more thorough report should be provided to the intended receiving facility, including vital signs.

C. Physician Consult

1. Shall occur when specified in an ALS or BLS Treatment Guidelines.
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. Patient assessment information as appropriate.
   c. Policy or procedure being followed which mandates physician consult or order

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 Level 3 or Level 4 Emergency Medical Response, paramedics may operate according to the appropriate ALS treatment guideline, omitting contact or hospital consultation.

12-LEAD ECG PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Patients with a medical history and/ or presenting complaints consistent with Acute Coronary Syndrome (ACS); 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)

CONTRAINDICATIONS

- Life threatening conditions including ventricular tachycardia, ventricular fibrillation, or 3rd degree AV block
- Uncooperative patients
- Any situation in which a delay to obtain ECG would compromise care of the patient

EQUIPMENT

- ECG machine and leads if available

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

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

ADULT SEDATION

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Agitation / combativeness interfering with critical ALS interventions and airway control or that endangers patient or caregiver
- Cardioversion / Cardiac Pacing

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- Head injury (airway is stable)
- Multiple system trauma (airway is stable)
- Cardiac pacing / cardioversion having received narcotics

CRITICAL INFORMATION

- Relative contraindications:
  - Nausea / vomiting
  - ALOC
  - Hypotension (SBP < 100)
  - Suspected drug / alcohol intoxication
  - Concomitant narcotic administration in the agitated/ combative patient

TREATMENT

- ALS RMC
- Cardioversion / cardiac pacing- **Midazolam** 1 mg slow IV/IO push loading dose; may repeat 1-2 mg in 3 minutes to achieve desired degree of sedation
- Agitation / combativeness- **Midazolam**
  - IV/IO: 2 mg slowly; MR in 3 minutes to maximum dose .1mg/kg.
  - IN: 5 mg (2.5 mg in each nostril)
  - IM: 0.1 mg/kg
- 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

Kg	Lb	Dose (0.1 mg/kg)
40	88	4 mg
45	99	4.5 mg
50	110	5 mg
55	121	5.5 mg
60	132	6 mg
65	143	6.5 mg
70	154	7 mg
75	165	7.5 mg
80	176	8 mg
85	187	8.5 mg
90	198	9 mg
95	209	9.5 mg
>100	>220	10 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

- Head Trauma T2
- Patient Restraint GPC11
- Continuous Positive Airway Pressure (CPAP) Procedure ALS PR 13

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 1st dose, 12 mg 2nd & 3rd 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
Amiodarone	150 mg/ 3ml	*VFib or Pulseless VTach:* 300 mg IV/ IO push followed by one 150MG push in 3-5 min. *Perfusing/Recurrent VTach:* 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	*Cardiac arrest:* 1mg (10ml) IV/ IO q 3-5 min. to max. of 3 mg IV *Bradycardia:* 0.5 mg IV/ IO, MR q 3-5 min. to max of 3 mg. *Organophosphate Poisoning:* 2.0 mg slowly IV/ IO; MR 2-5 min. until drying of secretions
Calcium chloride 10%	1 GM/ 10 ml	*Crush syndrome:* 1gm IV/ IO slowly over 5 min. for suspected hyperkalemia (flush line with NS before & after administration)
Dextrose 50%	25 GM/ 50 ml	25 GM IV/ IO
Diphenhydramine (Benadryl)	50 mg/ 1ml	*Allergic reaction:* 50 mg IV/ IO/ IM; max 50 mg *Phenothiazine reaction*: 1 mg/ kg slowly IV/ IO; max 50 mg.
Dopamine	400 mg/ 250 ml Pre-mix	See specific policy dosing chart
Epinephrine 1:1000	1 mg/ 1ml EpiPen® (0.3mg) auto-injector	*Allergic Reaction/ Anaphylaxis:* 0.01 mg/ kg IM to max 0.5 mg or EpiPen®; MR x 1 in 5 minutes) *Bronchospasm/ Asthma/ COPD:* 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**	***Anaphylaxis:*** **If unresponsive, no palpable BP, no palpable pulse - give 0.01 mg/kg to max of 0.5 mg/ 0.5 ml IV/ IO** ***Cardiac Arrest:*** **1mg (10 ml) IV/ IO followed by 20 ml NS flush q 3-5 min. during resuscitation**
Furosemide (Lasix)	**Variable**	**0.5 mg/kg IV/ IO given over 1-2 min. Physician Consult required**
Glucose Paste	**15 GM / tube**	**30 GM PO**
Glucagon		**1 mg IM**
Ipratropium (Atrovent)	**500 mcg per unit dose (2.5 ml)**	**500 mcg**
Nerve gas Auto-Injector Kit contains: Atropine Pralidoxime Chloride (2 PAM)	**2 mg (0.7 ml)** **600 mg (2 ml)**	***Small Exposure to vapors/ liquids:*** **1 dose of both medications (Atropine & 2-PAM), MR X1 in 10 minutes.** ***Larger exposure to liquids/ vapors:*** **3 doses initially (both medications)**
Midazolam (Versed)	**2 mg/2 ml (IV/IO/IM)** **5 mg/1 ml (IN)**	***Cardioversion/ Pacing:*** **1 mg slow IV/ IO; MR 1-2 mg q 3 min. to max dose 0.1 mg/kg** ***Seizure:*** **2 mg IV slowly; MR in 3 min. to maximum dose 0.1mg/kg. For IN: 5 mg (2.5 mg in each nostril). For IM: 0.1 mg/kg** ***Sedation:*** **see specific policy**
Morphine Sulfate	**10 mg/ 1ml**	***Chest Pain:*** **2-5 mg slow IV/IO; MR q 2-3 min. to max of 10 mg** ***Pain Management/ Trauma Patient:*** **5 mg slow IV/ IO, MR q 5 min if SBP >100; max dose 20 mg** ***Pulmonary Edema:*** **2-5 mg slow IV/ IO. Physician Consult required**
Naloxone (Narcan)	**2 mg/ 5 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**
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.

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

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- Patients presenting with severe asthma

EQUIPMENT

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

PROCEDURE

- BLS RMC
- Remove allergens
- Administer appropriate **EpiPen ®**
  - Adult (>30 kg/ 66 lbs): Adult Auto-Injector (0.3 mg IM/ 0.3 ml)
  - Infant and child (<30 kg/ 66 lbs): Pediatric Auto-Injector (0.15 mg IM/ 0.15 ml)
- 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 it

VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

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

CRITICAL INFORMATION

- Witnessed or unwitnessed
- Bystander CPR

TREATMENT

- Witnessed arrest: CPR until defibrillator available
- Unwitnessed arrest: CPR for 2 minutes prior to defibrillation
- ALL arrests: CPR for 2 minutes between shocks. Do not check rhythm immediately after shock.
- Defibrillate as per manufacturer's recommendations (see below). Repeat 30-60 seconds after drug administrations
  - Manufacturer's defibrillation recommendations:
    - Medtronic Biphasic: initial shock-200J, second-300J, third-360J
    - Zoll Biphasic: initial-120J, second-150J, third-200J
    - Monophasic: all shocks at 360J
- 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;
  - Consider **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 and SBP< 90, give 250-500 ml fluid challenge
- If rhythm converts with **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:

▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia	▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma

DOCUMENTATION – ESSENTIAL ELEMENTS

- Bystander CPR
- Witnessed or unwitnessed

CHEST PAIN/ ACUTE CORONARY SYNDROME ALS

ALWAYS USE BODY SUBSTANCE ISOLATION 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"

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- 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
- 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 evidence of right ventricular infarction (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 and lungs are clear.
- 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
  - ECG indicates possible inferior / RVI
  - Patient does not routinely take NTG
- Suspicion ACS is based upon patient history. Be alert to patients likely to present with atypical symptoms or "silent MI's" (women, elderly and diabetics).
- Consider other potential causes of chest pain: pulmonary embolus, pneumonia, aortic aneurysm and pneumothorax.
- Infarctions may be present with normal 12-leads.

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

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

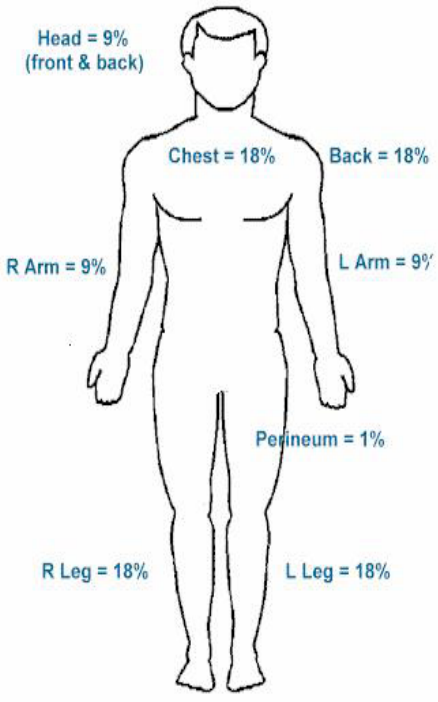
- ALS RMC
- Thermal/Electrical:
  - Remove patient to safe area
  - Eliminate source and stop the burning process (water may be used in the first few minutes to stop the burning process)
  - Remove all clothing/ jewelry
- Chemical:
  - Brush away any dry chemicals
  - Attempt to identify chemical; flush 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

DESTINATION GUIDELINES

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

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

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- 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

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

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 per 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.

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

SEVERE NAUSEA/VOMITING

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Severe nausea
- Intractable vomiting
- Patients ≥ 4 years of age

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

DOCUMENTATION- ESSENTIAL ELEMENTS

- Need for antiemetic therapy

CEREBROVASCULAR ACCIDENT (STROKE)

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- ALOC and positive finding per the Cincinnati Pre-hospital Stroke Scale (CPSS)

CRITICAL INFORMATION

- Criteria for Early Stroke Notification:
  - Evidence of hemispheric stroke per the CPSS (see below)
  - Last known normal less than 4 hours
  - Blood glucose between 70 and 400 mg/dl
- If patient presents with sudden, witnessed onset of coma or rapidly deteriorating GCS with high likelihood of intracranial bleed, transport to Marin General Hospital

TREATMENT

- ALS RMC
- If patient meets criteria listed above:
  - Rapid transport to closest facility with operating CT scanner
  - Early Stroke Notification

DOCUMENTATION- ESSENTIAL ELEMENTS

- Criteria for Early Stroke Notification
- GCS
- History of intracranial hemorrhage
- Serious head injury within 2 months
- Seizure within 6 hours of last known normal
- Taking blood thinning medications (e.g. Warfarin/ Coumadin)
- Improving neurological deficit

RELATED POLICIES/ PROCEDURES

- Destination Guidelines GPC 4
- Prehospital / Hospital Contact Policy 7001

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 ≥ 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

PEDIATRIC SHOCK

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Inadequate organ and tissue perfusion to meet metabolic demands

CRITICAL INFORMATION

- Use length based color-coded resuscitation tape whenever possible
- 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
  - Neonate - 2 years = **D25W** 2 ml/kg IV/IO
  - ≥2 years = **D50W** 1 ml/kg IV/IO
  - 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 BURNS

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

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

CRITICAL INFORMATION

- Use length based color-coded resuscitation tape whenever possible
- 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** 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
- 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

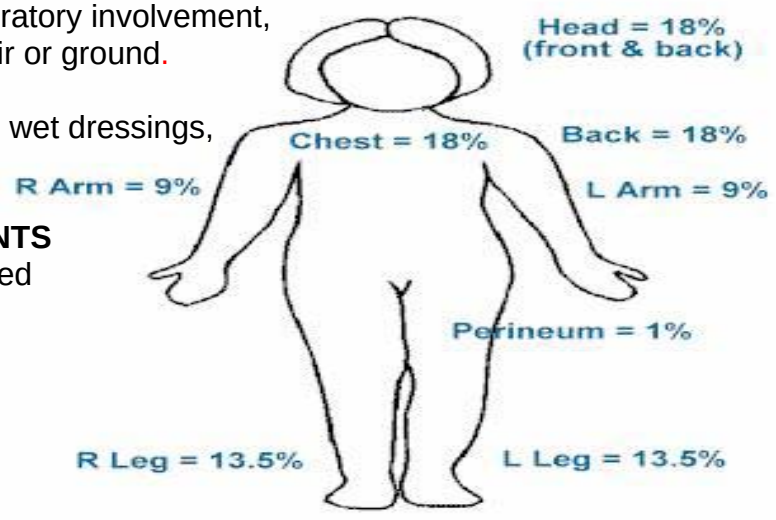
- Avoid hypothermia, do not use ice or wet dressings, and keep patient warm
- IV/IO required if BSA >10%

DOCUMENTATION- ESSENTIAL ELEMENTS

- Estimated percentage of BSA affected

RELATED POLICIES/ PROCEDURES

- Pediatric Pain Management P15
- Pediatric Shock P7



Child

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 and pretreatment for pediatric intubations:*** **0.02 mg/kg IV/ IO (minimum dose 0.1 mg.; single max. dose 1mg). MR X 1.** ***Organophosphate Poisoning:*** **0.5 mg/kg IV/IO; MR q 5-10 min. max. dose 4mg or until relief of symptoms**
Dextrose 10%	**D10% or D50W- diluted 1:4**	***ALOC (Neonate)*****: 2 ml/ kg IV/IO**
Dextrose 25%	**2.5 GM/ 10 ml**	***ALOC (< 2 years)*****: 2 ml/ kg IV/IO**
Dextrose 50%	**25 GM/ 50 ml**	***ALOC (> 2 years)*****: 1 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 0.3 mg (0.3 ml). EpiPen Jr®.; repeat as needed in 5 min.**
Epinephrine 1:10, 000	**1 mg/ 10 ml**	***Anaphylaxis:* If no response to Epi 1:1000, give 0.01mg/ kg (0.1ml/kg) of 1:10,000 IV/ IO.** ***Bradycardia:* 0.01mg/ kg (0.1ml/ kg) IV/ IO.** ***Cardiac Arrest:* 0.01 mg/kg (0.1ml/ kg) IV/ IO**
Glucagon	**1 mg/ 1 ml**	**0.03 mg/kg IM (max. dose 1 mg)**
Ipratropium (Atrovent)	**500 mcg per unit dose (2.5 ml)**	**Unit dose**
Midazolam (Versed)	**2 mg/ 2ml** **IN: 5 mg/1 ml**	***Cardioversion:* 0.05 mg/ kg slow IV/ IO/ IM. Max. dose 5 mg.** ***Seizure:* IV/ IO 0.05mg/ kg slow.** **IN: 0.2-0.4 mg/kg (PRN) every 5 min. until seizures stop and/or max. dose of 5 mg is reached**
Morphine Sulfate	**10 mg/ 10 ml**	***Pain Management*: 0.1mg/ kg (0.1ml/ kg) slow IV/ IO/ IM. MR X 1 in 15 min. if IV/ IO or 30 min if IM.** ***Burns:* 0.1 mg/kg IV/IO/IM in incremental doses up to 0.3mg/kg**
Naloxone (Narcan)	**2 mg/ 5 ml**	***Suspected OD in non-neonate:* 0.1 mg/ kg (0.25 ml/ kg) IV/ IO/ IM**
Ondansetron (Zofran)	**4 mg**	***Patients ≥ 4 yrs*: 4 mg ODT/IM or slow IV over 30 seconds**
Sodium Bicarbonate	**50 mEq/ 50 ml**	***Tricyclic Antidepressant OD with significant dysrhythmias:* 1mEq/ kg IV/ IO**

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

MARIN COUNTY EMS
FIELD DETERMINATION OF DEATH FORM

EVERY FIELD MUST BE COMPLETED. PRINT CLEARLY.

Patient Name - Last		First	

Date		AO #		Gender	
Unit ID		Agency			
Location					
Time Arrived on Scene					
Time Determination / Pronouncement of Death					

Describe the condition of the body upon arrival		
Was the body moved?	☐ YES ☐ NO	If YES, describe below
Was CPR performed?	☐ YES ☐ NO	
Procedures / Medications used?	☐ YES ☐ NO	If YES, describe below

Name of Paramedic/EMT	
Signature	
Contact phone number	

White- Leave with deceased Canary- Attach to original PCR Pink- Engine Company

Revised 7/1/2010