COUNTY OF MARIN

DEPARTMENT OF
HEALTH AND HUMAN SERVICES
Promoting and protecting health, well-being, self-sufficiency, and safety of all in Marin County.

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

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To: Holders of EMS Policy and Procedure Manuals

From: Dustin Ballard, MD
EMS Agency Medical Director

Subject: Update to Policy Manual

Please find the 2024 update to the EMS Policy and Procedure Manual. These new and revised policies and procedures are effective **April 1, 2024.**

Please make sure you have received the required policy education from your department educators.

Revised or New Policies and Procedures include:

- 2010 EMS system notification
- 4613a Trauma Triage Tool – Adult
- 4613b Trauma Triage Tool – Pediatrics
- 7008 Language Barrier Policy
- 5010 EMS Provider Equipment List
- 5100 EMS Aircraft
- 7006 Patient Care Record
- ALS PR8 Needle Thoracostomy/Pleura Decompression Procedure
- BLS PR1 Authorized Procedures for EMT Personnel
- BLS PR12 Pelvic Binder Application Procedure
- ATG2 Adult Pain Management
- ATG6 Determination of Death ALS
- ATG7 Adult Medication Standard Dosages
- BTG2 BLS Determination of Death
- GPC1 Cancellation of ALS unit
- GPC2 AMA
- GPC3 RAS
- GPC4 Destination Guidelines
- GPC10 Sexual Assault-Human Trafficking
- GPC11 Patient Restraint
- GPC16 Pediatric Patient Transport
- C0 Adult Cardiac Arrest
- C1 VF/pVT
- C8 Chest Pain-ACS

- C9 STEMI
- O2 Imminent Delivery
- O4 Severe Pre-Eclampsia/Eclampsia
- PC1 Pediatric Cardiac Arrest
- PE1 Pediatric Burns
- R2 Airway Obstruction

EMS SYSTEM NOTIFICATION

Purpose

To ensure the safety of the public and the integrity and quality of the EMS system by providing an accessible, consistent, and structured process for the submission and followthrough of EMS system notifications

Related Policies

- Quality Improvement, 2000 et seq.

Authority

- Health and Safety Code, Title 22, Division 9
- Health and Safety Code Section 1797.204, 1797.220 and 1798.200

Policy

EMS system notifications may be initiated by any individual, provider agency or hospital staff member, or system stakeholder/partner. Notifications may be related to any aspect of the EMS system, including policies/protocols, operations, equipment, medications, personnel, or patient care. EMS notifications may be submitted anonymously.

Examples of system notifications include, but are not limited to:

- Any event that represents a threat to public health and safety as cited in the Health and Safety Code 1798.200
- Any event that resulted in or has the potential to lead to an adverse patient outcome
- Unjustified deviations from protocol
- Recognition of exemplary patient care
- Educational opportunity
- Unusual occurrence
- Possible EMS system issue

A. Notification procedure

It is preferred that EMS system notifications be submitted electronically through the link on the EMS Agency website to the standardized notification form. For those who prefer, a paper form is also available for download on the EMS Agency website and must be submitted to cqi@marinhhs.org as an attachment.

Notification submissions via the online link are automatically sent to the EMS Agency for review. If someone from an EMS provider agency submits the notification, a copy of the notification is automatically sent to the Quality Assurance (QA) Coordinator for that person's agency.

Following receipt of a notification form, EMS Agency staff will review the details of the notification and determine one or more of the following actions be taken:

- Request for additional information
- Immediate follow-up with the provider agency
- Request that a Detailed Response Form (DRF) be completed and submitted

- Initiation of an investigation (mandatory reporting event)
- Recommend QA Coordinator follow up with the provider

B. Requests for Follow-up

Any provider QA Coordinator receiving a notification shall acknowledge receipt to the EMS Agency within 24 business hours. The provider QA Coordinator shall then review the details of the event and submit a response (including a summary of findings and patient disposition) to the EMS Agency QA Coordinator and Medical Director within 72 business hours.

In some instances, the EMS Agency may request that a Detailed Response Form (DRF) be completed by the QA Coordinator and/or agency Medical Director for submission to the EMS Agency. DRFs shall be completed and submitted within 14 days of request by the EMS Agency.

All responses should consider all available information, the provider's CQI Plan, and any relevant county and state policies, protocols, and regulations.

The EMS Medical Director will have final approval of a satisfactory resolution to all EMS notifications. The EMS Agency or Medical Director may also refer issues to the closed session of the Marin County Quality Council.

The EMS Agency will notify all involved providers when the review process is completed and associated issues are resolved.

C. Mandatory Reporting Events

Any of the following actions shall be considered evidence of a threat to public health and safety and may result in the denial, suspension, or revocation of a certificate or license issued under this division, or in the placement on probation of a certificate holder or license holder under this division:

- Fraud in the procurement of any certificate or license under this division
- Gross negligence
- Repeated negligent acts
- Incompetence
- The commission of any fraudulent, dishonest, or corrupt act that is substantially related to the qualifications, functions, and duties of prehospital personnel
- Conviction of any crime that is substantially related to the qualifications, functions, and duties of prehospital personnel. The record of conviction, or a certified copy of the record, shall be conclusive evidence of the conviction
- Violating, or attempting to violate, directly, or indirectly, or assisting in, or abetting the violation of, or conspiring to violate, any provision of this division, or the regulations adopted by the authority pertaining to prehospital personnel
- Violating or attempting to violate any federal or state statue of regulation that regulates narcotics, dangerous drugs, or controlled substances
- Addiction to, the excessive use of, or the misuse of, alcoholic, beverages, narcotics, dangerous drugs, or controlled substances
- Functioning outside the supervision of medical control in the field care system operating at the local level, except as authorized by any other license or certification
- Demonstration of irrational behavior or occurrence of a physical disability to the extent that a reasonable and prudent person would have reasonable cause to believe that the ability to

perform the duties normally expected may be impaired

- Unprofessional conduct exhibited by any of the following:
  I. The mistreatment or physical abuse of any patient resulting from force in excess of what a reasonable and prudent person trained and acting in a similar capacity while engaged in
  II. the performance of their duties would use if confronted with a similar circumstance. Nothing in this section shall be deemed to prohibit an EMT-I, EMT-II, or EMT-P from assisting a peace officer, or a peace officer who is acting in the dual capacity of peace officer and EMT-I, EMT-II, or EMT-P, from using that force that is reasonably necessary to effect a lawful arrest or detention.
  II. The failure to maintain confidentiality of patient medical information, except as disclosure is otherwise permitted or required by law in Part 2.6 (commencing with Section 56) of Division 1 of the Civil Code
  III. The commission of any sexually related offense specified under Section 290 of the Penal Code

Just Culture Paradigm

The Marin County EMS Agency endorses a Just Culture approach when responding to EMS notifications

A. Definition:
- A Just Culture is one where accountability is fairly balanced between the organization or system and the individual. It allows errors, near miss events, adverse events, unsafe conditions, and system problems to be easily reported without fear of retaliation. This enables providers to better identify opportunities for system improvement, which will enhance the safety and quality of emergency medical care and services delivered. The approach to addressing errors in a Just Culture distinguishes between three types of behavior.

B. Behavior Types:
- ***Human Error*:** Product of our current system design and behavioral choices
  - Manage through changes in:
    I. Choices
    II. Processes
    III. Procedures
    IV. Training
    V. Design
    VI. Environment
- **At-Risk Behavior:** A choice- risk believed insignificant or justified
  - Manage through:
    I. Removing incentives for at-risk behaviors
    II. Creating incentives for healthy behaviors
    III. Increasing situational awareness

- **Reckless Behavior:** Conscious disregard of substantial and unjustifiable risk
  - Manage through:
    I. Remedial action
    II. Punitive action

D. Scope:
- This policy applies to all county personnel having responsibility for patient care (e.g., certified/licensed personnel at the level of EMT or higher)

E. Just Culture Principles
- Just Culture is not designed to, nor will replace and/or circumvent, an employer's standards of behavior and/or discipline wherein a potential or real violation of these policies has been determined
- Just Culture does not override occurrences that require mandatory reporting to the EMS Authority or other local, state, or federal authorities
- Just Culture principles will be applied whenever there is an opportunity to assess the behavior or performance of personnel
- Response to errors, near misses, and adverse events will be influenced by the individual's behavioral choices, not the outcome of the event
- EMS personnel will not be punished or retaliated against for reporting an error, near miss, adverse event, system problem, safety, or quality concern
- The employer shall evaluate for possible punitive action for repetitive errors and/or behavioral choices, or for reckless or malicious behavior
- EMS personnel will not be held accountable for system flaws over which they have no control

TRAUMA TRIAGE TOOL

Patients 14yrs and older

Uncontrolled Airway- Transport to closest Emergency Department

Major Physiologic Factors

- GCS ≤13 (attributed to traumatic head injury)
- SBP <90mmHg
- Respiratory rate <10 or >29 breaths per min
- Respiratory distress or need for respiratory support

Yes → Provide Trauma Notification and transport to closest trauma center: MarinHeath Medical Center (MHMC) by ground, or a Level II by air

No ↓

Major Anatomic Factors

- Penetrating injuries to head, neck, torso, or extremities proximal to elbow or knee
- Two or more proximal long bone fractures
- Crushed, degloved, mangled or amputated extremity proximal to wrist or ankle
- Active bleeding requiring tourniquet or wound packing with continuous pressure
- Open or depressed skull fracture
- Flail chest
- Paralysis (partial or complete)
- Burns with anatomic factors
- Pelvic fractures

Yes → Provide Trauma Notification and transport to closest trauma center: MarinHeath Medical Center (MHMC) by ground, or a Level II by air

No ↓

Mechanism of Injury Factors

- Falls >10ft
- High-risk auto crash and
  - Passenger space intrusion >18” (>12” occupant side)
  - Ejection (partial of complete) from vehicle
  - Death in same passenger compartment
- Rider separated from vehicle (motorcycle, ATV, horse, motorized bike/scooter/skateboard) with significant impact
- Pedestrian/bicyclist thrown, run over, or with significant impact
- Burns with MOI factors

Yes → Provide Trauma Notification and transport to MHMC Level III Trauma Center

No ↓

EMS Judgement

- Additional factors that cause paramedic be concerned about the patient including, but not limited to:
  - Age ≥65 with significant head impact
  - Anticoagulant/anti-platelet use or bleeding disorders with significant head/torso injury

Yes → Provide Trauma Notification and transport to MHMC Level III Trauma Center

No → Transport to closest ED or ED of patient’s choice

Trauma Notification

- Field personnel will advise the trauma center a minimum of 10 minutes prior to arrival (or as soon as possible if transport is <10min) by providing a Trauma Notification. This information will be used to activate the trauma team. Communication with the hospital via MERA is preferred. The notification must include at a minimum the following information:
  - Medic unit and transport code
  - Trauma Notification
  - Patient age and gender
  - **M**- Mechanism of injury
  - **I**- Injury and/or complaints; significant injuries and findings
  - **V**- Vital signs; blood pressure, pulse, respiratory rate, GCS
  - **T**- Treatment/interventions
  - ETA

SPECIAL CONSIDERATIONS

- The clinical findings, including past medical history, are critical to identifying the trauma patient, especially when assessing Mechanism of Injury (MOI) and additional factors
- A thorough clinical assessment is especially important in patients with:
  - Persistent and unexplained respiratory difficulty, tachycardia, or peripheral vasoconstriction
  - Inability to communicate (e.g. language barrier, substance abuse or psychiatric impairment)
- There are MOI 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
- Pregnant patients ≥20 weeks with a pregnancy related complaint must be transported to MHMC

☎ *PHYSICIAN CONSULT*

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

PEDIATRIC TRAUMA TRIAGE TOOL

Pediatric Patients <14yrs

Uncontrolled Airway- Transport to closest Emergency Department

Major Physiologic Factors

- GCS ≤13 (attributed to traumatic head injury)
- SBP <80mmHg age 7-14 or <70mmHg age <7
- Respiratory rate <20 in infant <1yr or requiring ventilatory support
- RA SpO2 <90%

Yes → Transport to Oakland Children's Hospital if ETA 30min or less, otherwise transport to MarinHealth Medical Center Level III Trauma center and provide Trauma Notification

No ↓

Major Anatomic Factors

- Penetrating injuries to head, neck, torso, or extremities proximal to elbow or knee
- Two or more proximal long bone fractures
- Crushed, degloved, mangled or amputated extremity proximal to wrist or ankle
- Active bleeding requiring tourniquet or wound packing with continuous pressure
- Open or depressed skull fracture
- Flail chest
- Paralysis (partial or complete)
- Burns with anatomic factors
- Pelvic fractures

Yes → Transport to Oakland Children's Hospital if ETA 30min or less, otherwise transport to MarinHealth Medical Center Level III Trauma center and provide Trauma Notification

No ↓

Mechanism of Injury Factors

- Falls >10ft, or three times the height of the child
- High-risk auto crash and
  - Passenger space intrusion >18" (>12" occupant side)
  - Ejection (partial of complete) from vehicle
  - Death in same passenger compartment
- Child age 0-9 years unrestrained or in unsecured child restraint seat
- Rider separated from vehicle (motorcycle, ATV, horse, motorized bike/ scooter/skateboard) with significant impact
- Pedestrian/bicyclist thrown, run over, or with significant impact
- Burns with MOI factors

Yes → Provide Trauma Notification and transport to MHMC Level III Trauma Center

No ↓

EMS Judgement

- Anticoagulant/anti-platelet use
- Bleeding disorders with head/torso injury
- Other complaints or exam findings that cause paramedic to be concerned about the patient

Yes → Provide Trauma Notification and transport to MHMC Level III Trauma Center

No → Transport to closest ED or ED of patient's choice

Trauma Notification

- Field personnel will advise the trauma center a minimum of 10 minutes prior to arrival (or as soon as possible if transport is <10min) by providing a Trauma Notification. This information will be used to activate the trauma team. Communication with the hospital via MERA is preferred. The notification must include at a minimum the following information:
  - Medic unit and transport code
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  - **T**- Treatment/interventions
  - ETA

SPECIAL CONSIDERATIONS

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  - Persistent and unexplained respiratory difficulty, tachycardia, or peripheral vasoconstriction
  - Inability to communicate (e.g. language barrier, substance abuse or psychiatric impairment)
- There are MOI 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

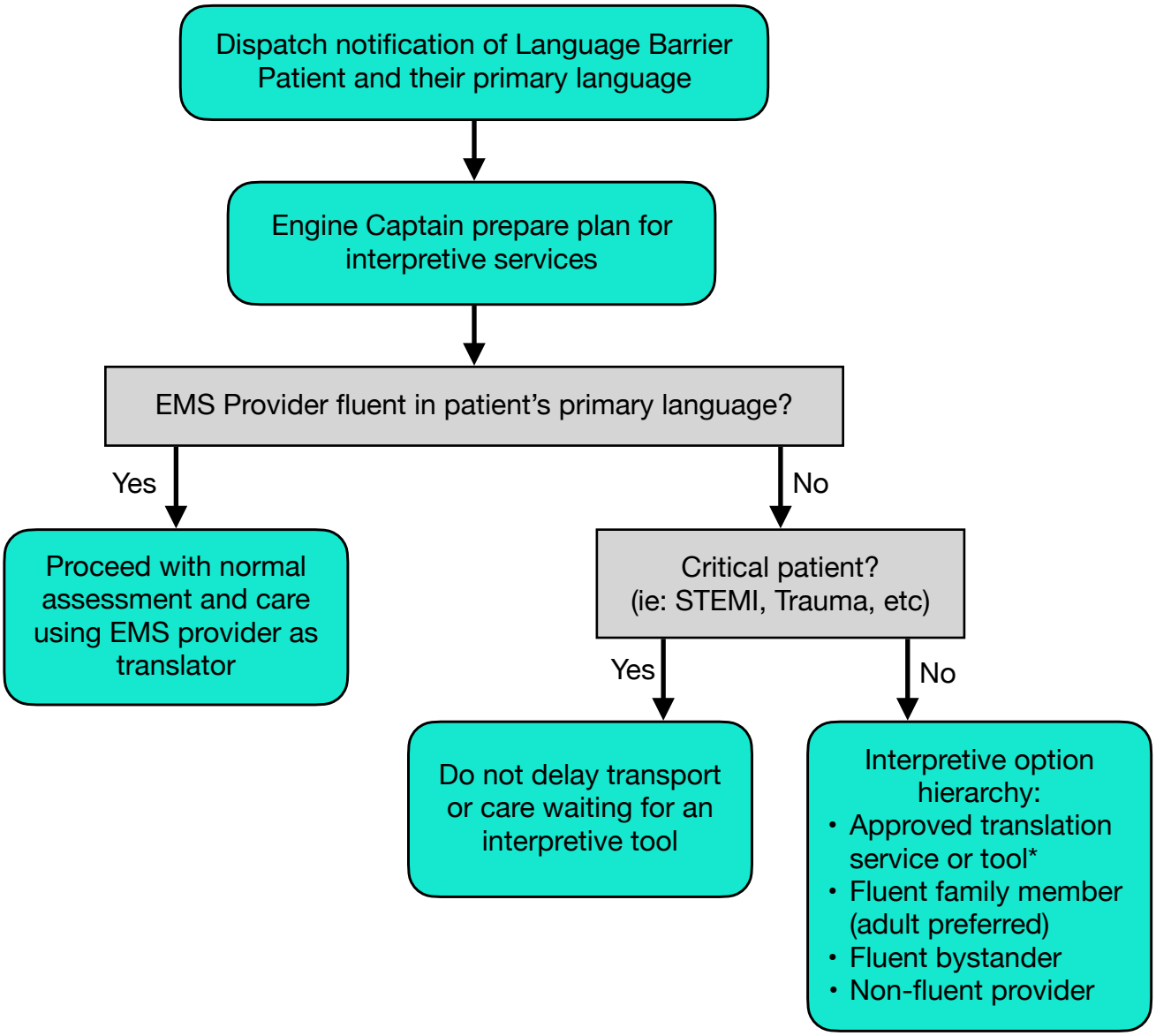
☎ *PHYSICIAN CONSULT*

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

LANGUAGE BARRIER POLICY

Purpose

- To provide guidance to field providers related to best practice when encountering an EMS patient where language may be a barrier to assessment and care



- On-scene delay acceptable in order to obtain adequate interpretation for the following patients:
  - AMA/RAS
  - Assault or abuse
  - Psychiatric

***Approved Technology**

- Recommended:
  - E-bridge
  - In Demand Interpreting
  - Yes/No template tools
- Acceptable:
  - Translation mobile app
  - Language line

EMS PROVIDER EQUIPMENT LIST

ALS First Responder	
AIRWAY EQUIPMENT	
Airways:	
Nasopharyngeal: sizes 14, 18, 22, 26, 28, 30, 32, 34, 36 Fr.	1 each
Oropharyngeal: sizes 0-6	1 each
Supraglottic Airway- I-Gel or King: sizes 3-5	1 each
Atomizer for intranasal medication administration (MAD device)	2
Continuous Positive Pressure Airway Device	optional
End-Tidal CO2 Detectors:	
Colormetric Adult	1
OR	
Capnograph or digital capnometer (optional)	1
Intubation Equipment:	
Additional batteries	2
Blades, curved: sizes 1-4	1 each
Blades, straight: sizes 0-4	1 each
Bulbs (extra or disposable)	1
Endotracheal tubes, cuffed: sizes 6.0-8.0mm cuffed	1 each
Endotracheal tube holder: adult	1
Endotracheal Tube Introducer (ETTI)	1
Esophageal detector device (optional if capnometer is utilized)	1

ALS First Responder	
Laryngoscope handle (battery powered)	1
Magill forceps: adult and pediatric	1 each
Stylets: disposable, adult	1
Videolaryngoscopy: adult	optional
Nebulizer:	
Hand-held OR Patient activated	1
In-line nebulizer equipment with T-piece	1
Oxygen Equipment and Supplies:	
Masks:	
Adult: non-rebreathing	1
Pediatric: simple or non-rebreathing	1
Nasal cannulas:	
Adult	1
Pediatric	1
Infant	1
Oxygen tank: fixed in vehicle with regulator; H-tank or M-tank	0
Oxygen tank: portable (minimum D-tank)	1
Portable Pulse Oximetry	1
Regulator	1
Pleural decompression kit: ≥14g needle, ≥3 inches long; Heimlich valve; occlusive dressing; 10ml syringe	1

ALS First Responder	
Resuscitation Bag-Valve-Mask (BVM): adult, child, infant	1 each
Suction Equipment and Supplies:	
Pharyngeal tonsil tip (rigid)	equivalent
Suction apparatus: Portable/battery powered	1
Suction apparatus: Wall mount	0
Suction canister (extra)	0
Suction catheters: sizes 6, 8, 10, 14, 16, 18Fr.	0
Suction tubing	0
DRESSING MATERIALS	
Bandages:	
4x4” sterile gauze pads	12
10x30” universal dressings	0
ABD pads	0
Bulk non-sterile	0
Elastic bandage 3” (Ace wrap)	2
Hemostatic dressings (must be CA EMSA approved)	optional
Occlusive dressing	2
Roller bandages: 2”, 3”, 4”, or 6”	3
Band-Aids (assorted)	1 box
Burn sheets (sterile) or commercial burn kit	2
Cold packs/Hot packs	2 each
Cryothermic ice packs	optional
Tape: 1” and 2”	1 each
Trauma shears	1

ALS First Responder	
EQUIPMENT AND SUPPLIES	
Alcohol swabs	12
Bedpan OR Fracture pan/Covered urinal	0
Betadine swabs or solution	4
Biohazard bags: large and small	2 each
Blanket: disposable	1
Blood pressure cuffs: adult, large arm, thigh, child, infant	1x adult, thigh, child
Bulb syringe	1
Company radio	optional
Drinking water: one gallon or saline solution 2 liters	1
Emesis basin/Disposable bag/Covered waste container	1
EMS Field Manual Patient Care (8000) Series	1
Face protection mask: N95 or P100	1 per
Fire extinguisher	optional
Flashlight	0
Gloves: disposable, S/M/L	1 box each
Glucometer	1
Irrigation equipment: Sterile saline 1000ml	1
Length based color-coded resuscitation tape (most current)	1
Lubricant: water soluble	4 packs
Marin County map	optional
Mechanical CPR device	0
MERA radio	optional

ALS First Responder	
Monitor/defibrillator equipment:	
Cardiac monitor: (portable) must have strip recorder, defibrillator/transcutaneous pacing ability for child/adult. May be biphasic or monophonic (biphasic preferred)	pacing optional
ECG electrodes	0
12-lead ECG capability	1
AED	1
OB delivery:	
Separate and sterile kit includes: towels, 4x4” dressing, umbilical tape or clamp, sterile scissors or other cutting utensil, bulb suction, sterile gloves and blanket	1
Thermal absorbent blanket and head cover, aluminum foil roll, or appropriate heat-reflective material (enough to cover newborn)	1
Appropriate heat source for ambulance compartment	0
Newborn transport wrap	optional
Pen light	1
Pillow	0
PPE kit: gloves, gown, booties, face shield, cap	1 per person
Road flares or equivalent (30 min)	0
Scoop stretcher, breakaway flat or equivalent	0
Sharps container	1
Sheet, pillow case, blanket, towel	0
Spare tire	optional
Stair chair or equivalent	0
Stethoscope	1
Thermometer (with core temp capability)	0

ALS First Responder	
Tourniquet (CAT) and/or SWAT	2
Triage tags	20
Vehicle emergency lights	optional
IMMOBILIZATION AND RESTRAINT DEVICES	
Cervical collars: adjustable sizes to fit all patients over 1 year old	
Adult	2
Pediatric	1
Head immobilization device	2
Pediatric ambulance transportation device	0
Quick release soft restraints (synthetic or padded leather)	0
Spinal immobilization backboard: (radiolucent)	1
Strap system, adult	1
KED or equivalent	0
Splints: (vacuum/cardboard/moldable/equivalent) short, medium, long	1 each
Traction splint: adult, pediatric	0
IV EQUIPMENT / SYRINGES / NEEDLES	
Arm board (short)	1
Catheters: 1” long, sizes 14, 16, 18, 20, 22, 24g	2 each
Constriction band (rubber tourniquet)	2
Intraosseous equipment: adult and pediatric	
Extra batteries of need by model	0
IO needles and/or mechanical device	optional

ALS First Responder	
Intravenous solutions: 0.9% normal saline	
100ml bag	1
1000ml bag	2
Pressure infusion bag	0
Saline lock (extension set)	2
Stop cock: 3-way	1
Syringes:	
1ml TB with removable needle	2
3ml with 25g 5/8” needle	0
10ml without needle	1
30ml without needle	0
Filter needle	2
Tubing: with adjustable flow	
Macro drip (10gtt/ml-15gtt/ml, adjustable)	2
Micro drip (60 gtt/ml)	1
Vented (for acetaminophen IV administration)	optional
MEDICATIONS AND SOLUTIONS	
Acetaminophen (Tylenol/Ofirmev) 1000mg/100ml	optional
Adenosine 6mg/2ml	18mg
Albuterol unit dose	3
Amiodarone 150mg/3ml	4
Aspirin (chewable) 81mg	1 bottle
Atropine 1mg/10ml	3
Atropine 8mg/20ml (multi dose)	1

ALS First Responder	
Calcium Chloride 10% 1gm/10ml	1
Check and Inject Kit (EMS Agency approved providers only)	0
CYANOKIT (or hydroxocobalamin equivalent)	0
Dextrose 10% 25mg/250ml	1
Diphenhydramine 50mg/ml	2
Duo-Dote (nerve gas auto-injector)	see policy
Epinephrine 1mg/ml (5mg min)	1
Epinephrine 1mg/10ml	3
Glucagon 1mg	optional
Glucose paste 15gm/tube	2
Ipratroprium (Atrovent) unit dose	1
Lidocaine 2% 20mg/ml	0
Midazolam (Versed) 2mg/2ml	2
Midazolam (Versed) 5mg/ml	2
Morphine Sulfate 10mg/ml (may substitute with Sublimaze)	3
Naloxone (Narcan) 2mg/5ml	3
Naloxone (Narcan) Leave behind kit	2
Naloxone Spray (Narcan)	optional
Nitroglycerin 0.4mg tablet or spray	1 container
Normal Saline 3ml (for HHN)	optional
Ondansetron (Zofran) 4mg tablet	4
Ondansetron (Zofran) 4mg/2ml	1
Sodium Bicarbonate 50mEq/50ml	2
Sublimaze (Fentanyl) 100mcg/2ml (may substitute with Morphine)	3

ALS Transport Unit	
AIRWAY EQUIPMENT	
Airways:	
Nasopharyngeal: sizes 14, 18, 22, 26, 28, 30, 32, 34, 36 Fr.	2 each
Oropharyngeal: sizes 0-6	2 each
Supraglottic Airway- I-Gel or King: sizes 3-5	2 each
Atomizer for intranasal medication administration (MAD device)	3
Continuous Positive Pressure Airway Device	1
End-Tidal CO2 Detectors:	
Colormetric Adult	2
OR	
Capnograph or digital capnometer (optional)	1
Intubation Equipment:	
Additional batteries	2
Blades, curved: sizes 1-4	1 each
Blades, straight: sizes 0-4	1 each
Bulbs (extra or disposable)	1
Endotracheal tubes, cuffed: sizes 6.0-8.0mm cuffed	2 each
Endotracheal tube holder: adult	1
Endotracheal Tube Introducer (ETTI)	2
Esophageal detector device (optional if capnometer is utilized)	1
Laryngoscope handle (battery powered)	1
Magill forceps: adult and pediatric	1 each

ALS Transport Unit	
Stylets: disposable, adult	2
Videolaryngoscopy: adult	optional
Nebulizer:	
Hand-held OR Patient activated	2
In-line nebulizer equipment with T-piece	2
Oxygen Equipment and Supplies:	
Masks:	
Adult: non-rebreathing	4
Pediatric: simple or non-rebreathing	2
Nasal cannulas:	
Adult	4
Pediatric	2
Infant	2
Oxygen tank: fixed in vehicle with regulator; H-tank or M-tank	1
Oxygen tank: portable (minimum D-tank)	2
Portable Pulse Oximetry	1
Regulator	1
Pleural decompression kit: ≥14g needle, ≥3 inches long; Heimlich valve; occlusive dressing; 10ml syringe	1
Resuscitation Bag-Valve-Mask (BVM): adult, child, infant	2,1,1
Suction Equipment and Supplies:	
Pharyngeal tonsil tip (rigid)	2
Suction apparatus: Portable/battery powered	1

ALS Transport Unit	
Suction apparatus: Wall mount	1
Suction canister (extra)	2
Suction catheters: sizes 6, 8, 10, 14, 16, 18Fr.	2 each
Suction tubing	2
DRESSING MATERIALS	
Bandages:	
4x4” sterile gauze pads	12
10x30” universal dressings	6
ABD pads	6
Bulk non-sterile	1 box/pkg
Elastic bandage 3” (Ace wrap)	2
Hemostatic dressings (must be CA EMSA approved)	optional
Occlusive dressing	4
Roller bandages: 2”, 3”, 4”, or 6”	6
Band-Aids (assorted)	1 box
Burn sheets (sterile) or commercial burn kit	2
Cold packs/Hot packs	4 each
Cryothermic ice packs	optional
Tape: 1” and 2”	2 each
Trauma shears	1
EQUIPMENT AND SUPPLIES	
Alcohol swabs	12
Bedpan OR Fracture pan/Covered urinal	1
Betadine swabs or solution	8

ALS Transport Unit	
Biohazard bags: large and small	1
Blanket: disposable	2
Blood pressure cuffs: adult, large arm, thigh, child, infant	1 each
Bulb syringe	2
Company radio	1
Drinking water: one gallon or saline solution 2 liters	1
Emesis basin/Disposable bag/Covered waste container	2
EMS Field Manual Patient Care (8000) Series	1
Face protection mask: N95 or P100	2 per person
Fire extinguisher	1
Flashlight	1
Gloves: disposable, S/M/L	1 box each
Glucometer	1
Irrigation equipment: Sterile saline 1000ml	2
Length based color-coded resuscitation tape (most current)	1
Lubricant: water soluble	4 packs
Marin County map	1
Mechanical CPR device	1
MERA radio	1
Monitor/defibrillator equipment:	
Cardiac monitor: (portable) must have strip recorder, defibrillator/transcutaneous pacing ability for child/adult. May be biphasic or monophonic (biphasic preferred)	1
ECG electrodes	1 box

ALS Transport Unit	
12-lead ECG capability	1
AED	0
OB delivery:	
Separate and sterile kit includes: towels, 4x4” dressing, umbilical tape or clamp, sterile scissors or other cutting utensil, bulb suction, sterile gloves and blanket	1
Thermal absorbent blanket and head cover, aluminum foil roll, or appropriate heat-reflective material (enough to cover newborn)	1
Appropriate heat source for ambulance compartment	1
Newborn transport wrap	1
Pen light	1
Pillow	2
PPE kit: gloves, gown, booties, face shield, cap	2 per person
Road flares or equivalent (30 min)	6
Scoop stretcher, breakaway flat, or equivalent	optional
Sharps container	2
Sheet, pillow case, blanket, towel	4 each
Spare tire	1
Stair chair or equivalent	1
Stethoscope	1
Thermometer (with core temp capability)	1
Tourniquet (CAT) and/or SWAT	2
Triage tags	20
Vehicle emergency lights	set

ALS Transport Unit	
IMMOBILIZATION AND RESTRAINT DEVICES	
Cervical collars: adjustable sizes to fit all patients over 1 year old	
Adult	4
Pediatric	2
Head immobilization device	4
Pediatric ambulance transportation device	1
Quick release soft restraints (synthetic or padded leather)	1
Spinal immobilization backboard: (radiolucent)	2
Strap system, adult	2
KED or equivalent	1
Splints: (vacuum/cardboard/moldable/equivalent) short, medium, long	2 each
Traction splint: adult, pediatric	1 each
IV EQUIPMENT / SYRINGES / NEEDLES	
Arm board (short)	2
Catheters: 1” long, sizes 14, 16, 18, 20, 22, 24g	4 each
Constriction band (rubber tourniquet)	2
Intraosseous equipment: adult and pediatric	
Extra batteries of need by model	1
IO needles and/or mechanical device	1
Intravenous solutions: 0.9% normal saline	
100ml bag	2
1000ml bag	6

ALS Transport Unit	
Pressure infusion bag	1
Saline lock (extension set)	4
Stop cock: 3-way	2
Syringes:	
1ml TB with removable needle	4
3ml with 25g 5/8” needle	4
10ml without needle	2
30ml without needle	2
Filter needle	2
Tubing: with adjustable flow	
Macro drip (10gtt/ml-15gtt/ml, adjustable)	4
Micro drip (60 gtt/ml)	2
Vented (for acetaminophen IV administration)	1
MEDICATIONS AND SOLUTIONS	
Acetaminophen (Tylenol/Ofirmev) 1000mg/100ml	1
Adenosine 6mg/2ml	36mg
Albuterol unit dose	6
Amiodarone 150mg/3ml	6
Aspirin (chewable) 81mg	1 bottle
Atropine 1mg/10ml	10
Atropine 8mg/20ml (multi dose)	1
Calcium Chloride 10% 1gm/10ml	2
Check and Inject Kit (EMS Agency approved providers only)	0

ALS Transport Unit	
CYANOKIT (or hydroxocobalamin equivalent)	1
Dextrose 10% 25mg/250ml	2
Diphenhydramine 50mg/ml	4
Duo-Dote (nerve gas auto-injector)	see policy
Epinephrine 1mg/ml (5mg min)	2
Epinephrine 1mg/10ml	9
Glucagon 1mg	1
Glucose paste 15gm/tube	2
Ipratroprium (Atrovent) unit dose	4
Lidocaine 2% 20mg/ml	2
Midazolam (Versed) 2mg/2ml	4
Midazolam (Versed) 5mg/ml	4
Morphine Sulfate 10mg/ml (may substitute with Sublimaze)	6
Naloxone (Narcan) 2mg/5ml	6
Naloxone (Narcan) Leave behind kit	2
Naloxone Spray (Narcan)	optional
Nitroglycerin 0.4mg tablet or spray	1 container
Normal Saline 3ml (for HHN)	optional
Ondansetron (Zofran) 4mg tablet	8
Ondansetron (Zofran) 4mg/2ml	4
Sodium Bicarbonate 50mEq/50ml	1
Sublimaze (Fentanyl) 100mcg/2ml (may substitute with Morphine)	6

ALS Fireline Tactical

AIRWAY EQUIPMENT	
Airways:	
Nasopharyngeal: sizes 14, 18, 22, 26, 28, 30, 32, 34, 36 Fr.	1 each
Oropharyngeal: sizes 0-6	1 each
Supraglottic Airway- I-Gel or King: sizes 3-5	1 x #4
Atomizer for intranasal medication administration (MAD device)	2
Continuous Positive Pressure Airway Device	0
End-Tidal CO2 Detectors:	
Colormetric Adult	1
OR	
Capnograph or digital capnometer (optional)	0
Intubation Equipment:	
Additional batteries	0
Blades, curved: sizes 1-4	1 x #4
Blades, straight: sizes 0-4	1 x #4
Bulbs (extra or disposable)	0
Endotracheal tubes, cuffed: sizes 6.0-8.0mm cuffed	1 x #7.5
Endotracheal tube holder: adult	0
Endotracheal Tube Introducer (ETTI)	1
Esophageal detector device (optional if capnometer is utilized)	1
Laryngoscope handle (battery powered)	1
Magill forceps: adult and pediatric	0

ALS Fireline Tactical

Stylets: disposable, adult	0
Videolaryngoscopy: adult	0
Nebulizer:	
Hand-held OR Patient activated	0
In-line nebulizer equipment with T-piece	0
Oxygen Equipment and Supplies:	
Masks:	
Adult: non-rebreathing	0
Pediatric: simple or non-rebreathing	0
Nasal cannulas:	
Adult	0
Pediatric	0
Infant	0
Oxygen tank: fixed in vehicle with regulator; H-tank or M-tank	0
Oxygen tank: portable (minimum D-tank)	0
Portable Pulse Oximetry	0
Regulator	0
Pleural decompression kit: ≥14g needle, ≥3 inches long; Heimlich valve; occlusive dressing; 10ml syringe	1
Resuscitation Bag-Valve-Mask (BVM): adult, child, infant	1 adult
Suction Equipment and Supplies:	
Pharyngeal tonsil tip (rigid)	equivalent
Suction apparatus: Portable/battery powered	1

ALS Fireline Tactical	
Suction apparatus: Wall mount	0
Suction canister (extra)	0
Suction catheters: sizes 6, 8, 10, 14, 16, 18Fr.	0
Suction tubing	0
DRESSING MATERIALS	
Bandages:	
4x4” sterile gauze pads	6
10x30” universal dressings	0
ABD pads	0
Bulk non-sterile	0
Elastic bandage 3” (Ace wrap)	2
Hemostatic dressings (must be CA EMSA approved)	optional
Occlusive dressing	2
Roller bandages: 2”, 3”, 4”, or 6”	2
Band-Aids (assorted)	0
Burn sheets (sterile) or commercial burn kit	2
Cold packs/Hot packs	2 each
Cryothermic ice packs	optional
Tape: 1” and 2”	2 x1”
Trauma shears	1
EQUIPMENT AND SUPPLIES	
Alcohol swabs	6
Bedpan OR Fracture pan/Covered urinal	0
Betadine swabs or solution	4

ALS Fireline Tactical	
Biohazard bags: large and small	2 small
Blanket: disposable	2
Blood pressure cuffs: adult, large arm, thigh, child, infant	1 adult
Bulb syringe	0
Company radio	optional
Drinking water: one gallon or saline solution 2 liters	0
Emesis basin/Disposable bag/Covered waste container	0
EMS Field Manual Patient Care (8000) Series	0
Face protection mask: N95 or P100	0
Fire extinguisher	0
Flashlight	0
Gloves: disposable, S/M/L	6 pair each
Glucometer	1
Irrigation equipment: Sterile saline 1000ml	0
Length based color-coded resuscitation tape (most current)	0
Lubricant: water soluble	0
Marin County map	0
Mechanical CPR device	0
MERA radio	optional
Monitor/defibrillator equipment:	
Cardiac monitor: (portable) must have strip recorder, defibrillator/transcutaneous pacing ability for child/adult. May be biphasic or monophonic (biphasic preferred)	0
ECG electrodes	0

ALS Fireline Tactical	
12-lead ECG capability	0
AED	1
OB delivery:	
Separate and sterile kit includes: towels, 4x4” dressing, umbilical tape or clamp, sterile scissors or other cutting utensil, bulb suction, sterile gloves and blanket	0
Thermal absorbent blanket and head cover, aluminum foil roll, or appropriate heat-reflective material (enough to cover newborn)	0
Appropriate heat source for ambulance compartment	0
Newborn transport wrap	optional
Pen light	1
Pillow	0
PPE kit: gloves, gown, booties, face shield, cap	0
Road flares or equivalent (30 min)	0
Scoop stretcher, breakaway flat, or equivalent	0
Sharps container	1
Sheet, pillow case, blanket, towel	0
Spare tire	0
Stair chair or equivalent	0
Stethoscope	1
Thermometer (with core temp capability)	0
Tourniquet (CAT) and/or SWAT	2
Triage tags	6
Vehicle emergency lights	0

ALS Fireline Tactical	
IMMOBILIZATION AND RESTRAIN DEVICES	
Cervical collars: adjustable sizes to fit all patients over 1 year old	
Adult	1
Pediatric	0
Head immobilization device	0
Pediatric ambulance transportation device	0
Quick release soft restraints (synthetic or padded leather)	0
Spinal immobilization backboard: (radiolucent)	0
Strap system, adult	0
KED or equivalent	0
Splints: (vacuum/cardboard/moldable/equivalent) short, medium, long	1 moldable
Traction splint: adult, pediatric	0
IV EQUIPMENT / SYRINGES / NEEDLES	
Arm board (short)	0
Catheters: 1” long, sizes 14, 16, 18, 20, 22, 24g	2 each
Constriction band (rubber tourniquet)	2
Intraosseous equipment: adult and pediatric	
Extra batteries of need by model	0
IO needles and/or mechanical device	0
Intravenous solutions: 0.9% normal saline	
100ml bag	0
1000ml bag	1

ALS Fireline Tactical	
Pressure infusion bag	0
Saline lock (extension set)	0
Stop cock: 3-way	0
Syringes:	
1ml TB with removable needle	2
3ml with 25g 5/8” needle	0
10ml without needle	2
30ml without needle	0
Filter needle	2
Tubing: with adjustable flow	
Macro drip (10gtt/ml-15gtt/ml, adjustable)	2
Micro drip (60 gtt/ml)	0
Vented (for acetaminophen IV administration)	optional
MEDICATIONS AND SOLUTIONS	
Acetaminophen (Tylenol/Ofirmev) 1000mg/100ml	optional
Adenosine 6mg/2ml	0
Albuterol MDI with spacer	1
Amiodarone 150mg/3ml	4
Aspirin (chewable) 81mg	1 bottle
Atropine 1mg/10ml	2
Atropine 8mg/20ml (multi dose)	0
Calcium Chloride 10% 1gm/10ml	0
Check and Inject Kit (EMS Agency approved providers only)	0

ALS Fireline Tactical	
CYANOKIT (or hydroxocobalamin equivalent)	optional
Dextrose 10% 25mg/250ml	0
Diphenhydramine 50mg/ml	4
Duo-Dote (nerve gas auto-injector)	see policy
Epinephrine 1mg/ml (5mg min)	4
Epinephrine 1mg/10ml	4
Glucagon 1mg	1
Glucose paste 15gm/tube	2
Ipratroprium (Atrovent) unit dose	0
Lidocaine 2% 20mg/ml	0
Midazolam (Versed) 2mg/2ml	0
Midazolam (Versed) 5mg/ml	2
Morphine Sulfate 10mg/ml (may substitute with Sublimaze)	2
Naloxone (Narcan) 2mg/5ml	2
Naloxone (Narcan) Leave behind kit	optional
Naloxone Spray (Narcan)	0
Nitroglycerin 0.4mg tablet or spray	1 container
Normal Saline 3ml (for HHN)	optional
Ondansetron (Zofran) 4mg tablet	6
Ondansetron (Zofran) 4mg/2ml	0
Sodium Bicarbonate 50mEq/50ml	0
Sublimaze (Fentanyl) 100mcg/2ml (may substitute with Morphine)	2

BLS Transport	
AIRWAY EQUIPMENT	
Airways:	
Nasopharyngeal: sizes 14, 18, 22, 26, 28, 30, 32, 34, 36 Fr.	2 each
Oropharyngeal: sizes 0-6	2 each
Supraglottic Airway- I-Gel or King: sizes 3-5	0
Atomizer for intranasal medication administration (MAD device)	2
Continuous Positive Pressure Airway Device	0
End-Tidal CO2 Detectors:	
Colormetric Adult	0
OR	
Capnograph or digital capnometer (optional)	Optional
Intubation Equipment:	
Additional batteries	0
Blades, curved: sizes 1-4	0
Blades, straight: sizes 0-4	0
Bulbs (extra or disposable)	0
Endotracheal tubes, cuffed: sizes 6.0-8.0mm cuffed	0
Endotracheal tube holder: adult	0
Endotracheal Tube Introducer (ETTI)	0
Esophageal detector device (optional if capnometer is utilized)	0
Laryngoscope handle (battery powered)	0
Magill forceps: adult and pediatric	0

BLS Transport	
Stylets: disposable, adult	0
Videolaryngoscopy: adult	0
Nebulizer:	
Hand-held OR Patient activated	1
In-line nebulizer equipment with T-piece	0
Oxygen Equipment and Supplies:	
Masks:	
Adult: non-rebreathing	4
Pediatric: simple or non-rebreathing	2
Nasal cannulas:	
Adult	4
Pediatric	2
Infant	2
Oxygen tank: fixed in vehicle with regulator; H-tank or M-tank	1
Oxygen tank: portable (minimum D-tank)	2
Portable Pulse Oximetry	1
Regulator	1
Pleural decompression kit: ≥14g needle, ≥3 inches long; Heimlich valve; occlusive dressing; 10ml syringe	0
Resuscitation Bag-Valve-Mask (BVM): adult, child, infant	1 each
Suction Equipment and Supplies:	
Pharyngeal tonsil tip (rigid)	2
Suction apparatus: Portable/battery powered	1

BLS Transport	
Suction apparatus: Wall mount	1
Suction canister (extra)	2
Suction catheters: sizes 6, 8, 10, 14, 16, 18Fr.	2 each
Suction tubing	2
DRESSING MATERIALS	
Bandages:	
4x4” sterile gauze pads	12
10x30” universal dressings	2
ABD pads	6
Bulk non-sterile	1 box/pkg
Elastic bandage 3” (Ace wrap)	2
Hemostatic dressings (must be CA EMSA approved)	optional
Occlusive dressing	4
Roller bandages: 2”, 3”, 4”, or 6”	6
Band-Aids (assorted)	1 box
Burn sheets (sterile) or commercial burn kit	2
Cold packs/Hot packs	4 each
Cryothermic ice packs	optional
Tape: 1” and 2”	2 each
Trauma shears	1
EQUIPMENT AND SUPPLIES	
Alcohol swabs	12
Bedpan OR Fracture pan/Covered urinal	1
Betadine swabs or solution	0

BLS Transport	
Biohazard bags: large and small	4 each
Blanket: disposable	2
Blood pressure cuffs: adult, large arm, thigh, child, infant	1 each
Bulb syringe	1
Company radio	1
Drinking water: one gallon or saline solution 2 liters	1
Emesis basin/Disposable bag/Covered waste container	2
EMS Field Manual Patient Care (8000) Series	1
Face protection mask: N95 or P100	2 per person
Fire extinguisher	1
Flashlight	1
Gloves: disposable, S/M/L	1 box each
Glucometer	1
Irrigation equipment: Sterile saline 1000ml	2
Length based color-coded resuscitation tape (most current)	0
Lubricant: water soluble	4 packs
Marin County map	1
Mechanical CPR device	0
MERA radio	1
Monitor/defibrillator equipment:	
Cardiac monitor: (portable) must have strip recorder, defibrillator/transcutaneous pacing ability for child/adult. May be biphasic or monophonic (biphasic preferred)	0
ECG electrodes	0

BLS Transport	
12-lead ECG capability	0
AED	1
OB delivery:	
Separate and sterile kit includes: towels, 4x4” dressing, umbilical tape or clamp, sterile scissors or other cutting utensil, bulb suction, sterile gloves and blanket	1
Thermal absorbent blanket and head cover, aluminum foil roll, or appropriate heat-reflective material (enough to cover newborn)	1
Appropriate heat source for ambulance compartment	1
Newborn transport wrap	0
Pen light	1
Pillow	2
PPE kit: gloves, gown, booties, face shield, cap	2 per person
Road flares or equivalent (30 min)	6
Scoop stretcher, breakaway flat, or equivalent	optional
Sharps container	1
Sheet, pillow case, blanket, towel	4 each
Spare tire	1
Stair chair or equivalent	1
Stethoscope	1
Thermometer (with core temp capability)	optional
Tourniquet (CAT) and/or SWAT	2
Triage tags	20
Vehicle emergency lights	set

BLS Transport	
IMMOBILIZATION AND RESTRAIN DEVICES	
Cervical collars: adjustable sizes to fit all patients over 1 year old	
Adult	4
Pediatric	2
Head immobilization device	4
Pediatric ambulance transportation device	1
Quick release soft restraints (synthetic or padded leather)	1
Spinal immobilization backboard: (radiolucent)	2
Strap system, adult	2
KED or equivalent	1
Splints: (vacuum/cardboard/moldable/equivalent) short, medium, long	2 each
Traction splint: adult, pediatric	1 each
IV EQUIPMENT / SYRINGES / NEEDLES	
Arm board (short)	0
Catheters: 1” long, sizes 14, 16, 18, 20, 22, 24g	0
Constriction band (rubber tourniquet)	0
Intraosseous equipment: adult and pediatric	
Extra batteries of need by model	0
IO needles and/or mechanical device	0
Intravenous solutions: 0.9% normal saline	
100ml bag	0
1000ml bag	0

BLS Transport	
Pressure infusion bag	0
Saline lock (extension set)	0
Stop cock: 3-way	0
Syringes:	
1ml TB with removable needle	0
3ml with 25g 5/8” needle	0
10ml without needle	0
30ml without needle	0
Filter needle	0
Tubing: with adjustable flow	
Macro drip (10gtt/ml-15gtt/ml, adjustable)	0
Micro drip (60 gtt/ml)	0
Vented (for acetaminophen IV administration)	0
MEDICATIONS AND SOLUTIONS	
Acetaminophen (Tylenol/Ofirmev) 1000mg/100ml	0
Adenosine 6mg/2ml	0
Albuterol MDI with spacer	0
Amiodarone 150mg/3ml	0
Aspirin (chewable) 81mg	1 bottle
Atropine 1mg/10ml	0
Atropine 8mg/20ml (multi dose)	0
Calcium Chloride 10% 1gm/10ml	0
Check and Inject Kit (EMS Agency approved providers only)	2

BLS Transport	
CYANOKIT (or hydroxocobalamin equivalent)	0
Dextrose 10% 25mg/250ml	0
Diphenhydramine 50mg/ml	0
Duo-Dote (nerve gas auto-injector)	0
Epinephrine 1mg/ml (5mg min)	0
Epinephrine 1mg/10ml	0
Glucagon 1mg	0
Glucose paste 15gm/tube	2
Ipratroprium (Atrovent) unit dose	0
Lidocaine 2% 20mg/ml	0
Midazolam (Versed) 2mg/2ml	0
Midazolam (Versed) 5mg/ml	0
Morphine Sulfate 10mg/ml (may substitute with Sublimaze)	0
Naloxone (Narcan) 2mg/5ml	0
Naloxone (Narcan) Leave behind kit	optional
Naloxone Spray (Narcan)	1 kit
Nitroglycerin 0.4mg tablet or spray	0
Normal Saline 3ml (for HHN)	2
Ondansetron (Zofran) 4mg tablet	0
Ondansetron (Zofran) 4mg/2ml	0
Sodium Bicarbonate 50mEq/50ml	0
Sublimaze (Fentanyl) 100mcg/2ml (may substitute with Morphine)	0

CCT Unit	
AIRWAY EQUIPMENT	
Airways:	
Nasopharyngeal: sizes 14, 18, 22, 26, 28, 30, 32, 34, 36 Fr.	2 each
Oropharyngeal: sizes 0-6	2 each
Supraglottic Airway- I-Gel or King: sizes 3-5	2 each
Atomizer for intranasal medication administration (MAD device)	3
Continuous Positive Pressure Airway Device	1
End-Tidal CO2 Detectors:	
Colormetric Adult	2
OR	
Capnograph or digital capnometer (optional)	1
Intubation Equipment:	
Additional batteries	2
Blades, curved: sizes 1-4	1 each
Blades, straight: sizes 0-4	1 each
Bulbs (extra or disposable)	1
Endotracheal tubes, cuffed: sizes 6.0-8.0mm cuffed	2 each
Endotracheal tube holder: adult	1
Endotracheal Tube Introducer (ETTI)	2
Esophageal detector device (optional if capnometer is utilized)	1
Laryngoscope handle (battery powered)	1
Magill forceps: adult and pediatric	1 each

CCT Unit	
Stylets: disposable, adult	2
Videolaryngoscopy: adult	optional
Nebulizer:	
Hand-held OR Patient activated	2
In-line nebulizer equipment with T-piece	2
Oxygen Equipment and Supplies:	
Masks:	
Adult: non-rebreathing	4
Pediatric: simple or non-rebreathing	2
Nasal cannulas:	
Adult	4
Pediatric	2
Infant	2
Oxygen tank: fixed in vehicle with regulator; H-tank or M-tank	1
Oxygen tank: portable (minimum D-tank)	2
Portable Pulse Oximetry	1
Regulator	1
Pleural decompression kit: ≥14g needle, ≥3 inches long; Heimlich valve; occlusive dressing; 10ml syringe	1
Resuscitation Bag-Valve-Mask (BVM): adult, child, infant	2,1,1
Suction Equipment and Supplies:	
Pharyngeal tonsil tip (rigid)	2
Suction apparatus: Portable/battery powered	1

CCT Unit	
Suction apparatus: Wall mount	1
Suction canister (extra)	2
Suction catheters: sizes 6, 8, 10, 14, 16, 18Fr.	2 each
Suction tubing	2
DRESSING MATERIALS	
Bandages:	
4x4” sterile gauze pads	12
10x30” universal dressings	6
ABD pads	6
Bulk non-sterile	1 box/pkg
Elastic bandage 3” (Ace wrap)	2
Hemostatic dressings (must be CA EMSA approved)	optional
Occlusive dressing	4
Roller bandages: 2”, 3”, 4”, or 6”	6
Band-Aids (assorted)	1 box
Burn sheets (sterile) or commercial burn kit	2
Cold packs/Hot packs	4 each
Cryothermic ice packs	optional
Tape: 1” and 2”	2 each
Trauma shears	1
EQUIPMENT AND SUPPLIES	
Alcohol swabs	12
Bedpan OR Fracture pan/Covered urinal	1
Betadine swabs or solution	8

CCT Unit	
Biohazard bags: large and small	4 each
Blanket: disposable	2
Blood pressure cuffs: adult, large arm, thigh, child, infant	1 each
Bulb syringe	1
Company radio	1
Drinking water: one gallon or saline solution 2 liters	1
Emesis basin/Disposable bag/Covered waste container	2
EMS Field Manual Patient Care (8000) Series	1
Face protection mask: N95 or P100	2 per person
Fire extinguisher	1
Flashlight	1
Gloves: disposable, S/M/L	1 box each
Glucometer	1
Irrigation equipment: Sterile saline 1000ml	2
Length based color-coded resuscitation tape (most current)	1
Lubricant: water soluble	4 packs
Marin County map	1
Mechanical CPR device	1
MERA radio	1
Monitor/defibrillator equipment:	
Cardiac monitor: (portable) must have strip recorder, defibrillator/transcutaneous pacing ability for child/adult. May be biphasic or monophonic (biphasic preferred)	1
ECG electrodes	1 box

CCT Unit	
12-lead ECG capability	1
AED	0
OB delivery:	
Separate and sterile kit includes: towels, 4x4” dressing, umbilical tape or clamp, sterile scissors or other cutting utensil, bulb suction, sterile gloves and blanket	1
Thermal absorbent blanket and head cover, aluminum foil roll, or appropriate heat-reflective material (enough to cover newborn)	1
Appropriate heat source for ambulance compartment	1
Newborn transport wrap	optional
Pen light	1
Pillow	2
PPE kit: gloves, gown, booties, face shield, cap	2 per person
Road flares or equivalent (30 min)	6
Scoop stretcher, breakaway flat, or equivalent	optional
Sharps container	2
Sheet, pillow case, blanket, towel	4 each
Spare tire	1
Stair chair or equivalent	1
Stethoscope	1
Thermometer (with core temp capability)	1
Tourniquet (CAT) and/or SWAT	2
Triage tags	20
Vehicle emergency lights	set

CCT Unit	
IMMOBILIZATION AND RESTRAIN DEVICES	
Cervical collars: adjustable sizes to fit all patients over 1 year old	
Adult	4
Pediatric	2
Head immobilization device	2
Pediatric ambulance transportation device	1
Quick release soft restraints (synthetic or padded leather)	1
Spinal immobilization backboard: (radiolucent)	2
Strap system, adult	2
KED or equivalent	1
Splints: (vacuum/cardboard/moldable/equivalent) short, medium, long	2 each
Traction splint: adult, pediatric	1 each
IV EQUIPMENT / SYRINGES / NEEDLES	
Arm board (short)	2
Catheters: 1” long, sizes 14, 16, 18, 20, 22, 24g	4 each
Constriction band (rubber tourniquet)	2
Intraosseous equipment: adult and pediatric	
Extra batteries of need by model	1
IO needles and/or mechanical device	1
Intravenous solutions: 0.9% normal saline	
100ml bag	2
1000ml bag	6

CCT Unit	
Pressure infusion bag	1
Saline lock (extension set)	4
Stop cock: 3-way	2
Syringes:	
1ml TB with removable needle	4
3ml with 25g 5/8” needle	4
10ml without needle	2
30ml without needle	2
Filter needle	2
Tubing: with adjustable flow	
Macro drip (10gtt/ml-15gtt/ml, adjustable)	4
Micro drip (60 gtt/ml)	2
Vented (for acetaminophen IV administration)	1
MEDICATIONS AND SOLUTIONS	
Acetaminophen (Tylenol/Ofirmev) 1000mg/100ml	1
Adenosine 6mg/2ml	36mg
Albuterol unit dose	1
Amiodarone 150mg/3ml	6
Aspirin (chewable) 81mg	1 bottle
Atropine 1mg/10ml	10
Atropine 8mg/20ml (multi dose)	1
Calcium Chloride 10% 1gm/10ml	2
Check and Inject Kit (EMS Agency approved providers only)	0

CCT Unit	
CYANOKIT (or hydroxocobalamin equivalent)	optional
Dextrose 10% 25mg/250ml	2
Diphenhydramine 50mg/ml	4
Duo-Dote (nerve gas auto-injector)	see policy
Epinephrine 1mg/ml (5mg min)	2
Epinephrine 1mg/10ml	9
Glucagon 1mg	2
Glucose paste 15gm/tube	2
Ipratroprium (Atrovent) unit dose	4
Lidocaine 2% 20mg/ml	2
Midazolam (Versed) 2mg/2ml	4
Midazolam (Versed) 5mg/ml	optional
Morphine Sulfate 10mg/ml (may substitute with Sublimaze)	optional
Naloxone (Narcan) 2mg/5ml	6
Naloxone (Narcan) Leave behind kit	optional
Naloxone Spray (Narcan)	0
Nitroglycerin 0.4mg tablet or spray	1 container
Normal Saline 3ml (for HHN)	optional
Ondansetron (Zofran) 4mg tablet	8
Ondansetron (Zofran) 4mg/2ml	4
Sodium Bicarbonate 50mEq/50ml	2
Sublimaze (Fentanyl) 100mcg/2ml (may substitute with Morphine)	optional
ADDITIONAL REQUIRED EQUIPMENT	
Infant and pediatric ECG electrodes	

CCT Unit	
Neonatal isolette	
Salem sump nasogastric tupes, assorted sizes	
Transport ventilator	
Airway equipment:	
50ml flex tube with patient adapter	
Booted hemostat	
Heimlich valve	
Infant medication concentration mask with tubing	
Positive end-expiratory pressure valve (PEEP)	
Pressure gauge with airway adapter tubing and test lung	
Scalpel with blade for cricothyrotomy	
IV supplies:	
Arterial line tubing and monitoring equipment	
Blood tubing	
Butterfly needles	
Infusion pump	
Irrigating syringes	
Pediatric drip sets	
IV solutions:	
D5W 250ml	
Lactated ringers 1000ml	
Medications:	
Dexamethasone	
Diazepam	

CCT Unit	
Digoxin	
Heparin	
Magnesium	
Mannitol	
Metoprolol	
Nitroglycerine drip	
Phenytoin	
Procanamide	
Solumedrol	
Verapamil	

EMS AIRCRAFT

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. Aircraft utilization provides a valuable adjunct to the Marin County EMS System by minimizing the time to definitive care in prescribed circumstances

Related Policies

- Emergency Medical Dispatch Policy, 4200
- Prehospital/Hospital Contact Policy, 7001
- Trauma Triage and Destination Guideline Policy, 4613

Authority

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

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

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

Procedure for Aircraft Dispatch

A. Aircraft will be dispatched simultaneously with ground units for specific circumstances as follows:
   - Area of the call is inaccessible to ground unit(s) or ground access is compromised;
   - Air assistance may be needed with rescue activities; or
   - Ground transport time to the hospital is > 30 minutes and the applicable Emergency Medical Dispatch Protocol (policy #4200, Appendix A) recommends simultaneous dispatch
   - Reported traumatic injury and Level III Trauma Center is on trauma diversion

B. Aircraft Dispatch may also occur in the following manner:
   - Upon request of the responding unit while en route to the scene
   - Upon request of on-scene personnel following patient assessment

Procedure for Aircraft Use

A. Consider use of an EMS aircraft where:
   - A patient meets Trauma Triage Tool anatomic or physiologic criteria and the time closest facility is a Level II Trauma Center
   - Ground transport time is greater than 30 minutes

B. Procedural Considerations
   - EMS aircraft should not transport patients in cardiac arrest. Aircraft crew shall have discretion to transport patients receiving CPR in certain situations (refractory VF, unsafe scene conditions, hypothermia, etc)
   - Marin County Communications Center will notify law enforcement and fire agencies with jurisdiction over the landing zone
   - The EMS aircraft may be cancelled by the on-scene Incident Commander

C. Medical Control
   - Treatment decisions will be made according to medical control policies and procedures governing the provider agency having responsibility for care

General and Related Procedures

A. Marin County EMS personnel may accompany a patient in an EMS aircraft during transport if all the following conditions are met:
   - Personnel have been providing care for the patient prior to arrival of the aircraft and
   - EMS aircraft crew will complete a PCR as required by policy/procedure within their county of origin and forward a copy to Marin County EMS Agency

B. Patient care reports will be kept as follows:
   - Marin County personnel will complete a Marin County PCR as per policy/procedure, and when known, forward it to the receiving hospital
   - EMS aircraft crew will complete a PCR as required by policy/procedure within their county of origin, and forward a copy to Marin County EMS Agency

C. The following times, when available, will be relayed to and reordered by Marin County Communications Center:
   - ETA at time of original dispatch request
   - When airborne, en route to scene
   - Arrival at and departure from scene
   - Destination hospital
   - Arrival at receiving hospital

D. As part of the Quality Improvement Program, the EMS Agency will review all aircraft dispatches

E. Aircraft may be utilized by acute care hospitals for interfaculty transfers
   - Hospitals will contact EMS aircraft providers directly
   - 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 probably aircraft landing site
   - Hospitals shall notify the Marin County EMS Agency of interfacility transfers by EMS aircraft on a monthly 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
Global Medical Response- REACH (CON AIR 1)	Air Ambulance	Medical Fire	Pilot Flight Nurse Paramedic	Concord
Global Medical Response- REACH (CON AIR 2)	Air Ambulance	Medical Fire	Pilot Flight Nurse Paramedic	Concord
Sonoma County Fire (SOCO 1)	Air Ambulance	Medical Fire	Pilot Flight Nurse Paramedic	Santa Rosa
Sonoma County Sheriff's Department Helicopter (Henry 1)	ALS Rescue	Law Long-line Rescue Medical	Pilot Paramedic EMT	Santa Rosa
California Highway Patrol Helicopter (H-30)	ALS Rescue	Law Medical	Pilot Paramedic	Napa
U.S. Coast Guard Helicopter	Auxiliary	Long-line Rescue Water Rescue	Pilot (2) EMT Rescue Swimmer	San Francisco Airport

Classification Definitions

A. ***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

B. ***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

C. ***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

D. ***Air Rescue Service*** means an air service used for emergencies including search and rescue

E. ***BLS Rescue Service*** means a rescue aircraft whose medical crew has, at a minimum, on attendant certifies as an EMT-1

F. ***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

PATIENT CARE RECORD (PCR)

Purpose

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

Related Policies

- ALS to BLS Transfer of Care, ATG 4
- Against Medical Advice (AMA), GPC 2
- Release at Scene (RAS), GPC 3
- Trauma Re-Triage, 4604 A & B
- Traumatic Injuries, T 1
- Approved Medical Abbreviations, 7006

Definitions

- *Patient*- someone who meets any one of the following criteria:
  I. Has a chief complaint or has made a request for medical assistance
  II. Has obvious signs or symptoms of injury or illness
  III. Has been involved in an event when mechanism of injury would cause the responder to reasonably believe that an injury may be present
  IV. Appears to be disoriented or to have impaired psychiatric function
  V. Has evidence of suicidal intent
  VI. Is deceased
- *Emergency Medical (EM) Number*- assigned by the Marin County Communication Center to identify each 9-1-1call dispatched for medical assistance
- *Incident Number*- The unique number assigned to all requests for service. Commonly referred to as the “F” number.
- *Electronic Patient Care Record (ePCR)*- the permanent record of prehospital patient evaluation, care, and treatment
- *Field Transfer Form (FTF)*- a temporary paper record of patient care used only when ePCR is unavailable
- *Posting*- the process of uploading the ePCR from Elite Field to the ImageTrend server.
- *Completed PCR*- the PCR is considered complete when it has been posted and locked

Policy

A. A PCR shall be completed for every call for which an EM is issued

B. A PCR shall be completed and posted as soon as possible or within 24 hours of completion of call

C. A PCR shall be completed and posted as soon as possible or within 3 hours of completion of call for notification patients (ie: sepsis, stroke, STEMI, trauma) or critical patients (ie: cardiac arrest and/or airway emergency)

D. The PCR shall be completed by the personnel assigned to the transport unit. EMS personnel shall not leave shift with incomplete PCRs outstanding. All crew members are responsible for the accuracy of the content in the PCR

E. Willful omission, misuse, tampering, or falsification of documentation of patient care records is a violation under Section 1978.200 of the California Health and Safety Code

Transported Patients

A. When available, posted information shall contain at a minimum:

- Patient name
- Patient address
- Patient phone number
- Date of birth
- Chief Complaint
- Contact information of the best medical historian
- Medical decision maker (when not the patient)
- Pertinent findings on exam
- Last known well (if applicable)
- Vital signs
- Medications
- Allergies
- Presence of advanced directive/DNR
- Medications administered
- Procedures performed
- Kaiser/insurance number

B. The PCR shall include all care rendered by the transporting providers as well as any care given prior to arrival by first responders and/or bystanders. When possible, it shall include all 12 lead ECGs and any ECG other than normal sinus rhythm. When possible, pertinent photographs from the scene should be attached to the PCR (e.g. vehicle damage).

C. A paper FTF shall only be used as a backup during system downtime, equipment failures, loss of internet connectivity, while on a fire line assignment, or any incident/situation where personnel do not have the ability to capture and post data via ImageTrend

D. Data gathering and documentation responsibilities should never take precedence over hand-on rescue and patient care and therefore may not always be possible to complete during an incident. Nevertheless, prehospital information, particularly for critical patients, is essential for the emergency department and hospital course of care and every effort to obtain the information should be made

Non-Transports (Cancelled, AMA, RAS, Dead on Scene)

A. For all calls where there is no patient transported, the unit that completes the PCR will be determined according to provider agency policy

B. All AMA patients must have a documented assessment and vital signs. The paramedic or EMT most involved in patient care is responsible for completing the PCR

C. Personnel assigned outside of the county to provide medical mutual aid (e.g. fire-line EMT/ Paramedic, cover engine assignment), shall complete a FTF for each patient contact. The FTF will be created on site and retained by the provider agency

D. 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

Documentation Requirements

A. When reasonably possible, complete demographic information should be included in the PCR

B. Only approved medical abbreviations may be used- see 7006b

C. A clear history of the present illness with chief complaint, onset time, associated complaints, pertinent negatives, mechanism of injury, etc. The information should accurately reflect the patient's chief complaint as stated by the patient and should be sufficient to refresh the clinical situation after it has faded from memory, including but not limited to:

- An appropriate physical assessment that includes all relevant portions of a head-to-toe physical exam
- A minimum of at least two complete sets of vital signs (VS) for every transported patient including pulse, respirations, blood pressure and pulse oximetry. Repeat and document VS every 5 minutes for emergent patients, and every 15 minutes for non-emergency patients (e.g. BLS patients). When required by policy, a temperature should also be documented at least once in the VS section. For children ≤ 3 years of age, blood pressure does not need to be documented unless the child is critically ill in whom blood pressure measurement may guide treatment decisions
- A pain scale shall be documented for all patients ≥ 6 months who have a GCS >14
- All pediatric patients being treated and transported by ALS will be measured with a color-coded resuscitation tape. The corresponding color wrist band will be applied, and the patient treated according to the Pediatric Dosing Guide (PTG 2A)
- All pertinent medications taken by the patient prior to and/or administered by a first responder should be documented if known
- The CAD to PCR interface should be used to populate all PCR data fields it supplies. Imported data may be manually corrected as needed
- When the cardiac monitor is applied, data will be transferred to the PCR from the device. If transferred automated VS do not correlate with manually obtained values, or are not consistent with the patient's clinical condition, providers should manually check VS and record manual results
- All 12-lead ECGs must be imported. Any significant rhythm changes should be documented
- For drug administrations, the drug dosage, route, administration time and response shall be documented
- All treatments and patient response to treatments shall be documented in chronological order
- For patients with extremity injury, neuromuscular status must be noted before and after immobilization

- For patient with spinal motion restriction, document motor function before and after motion restriction
- For IV administration, document catheter placement, catheter size, number of attempts, and flow rate if applicable
- Any Physician Consult request and response
- All information pertaining to EMS personnel, including signatures

NEEDLE THORACOSTOMY/ PLEURAL DECOMPRESSION PROCEDURE

Indications

- 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, rapid deterioration of vital signs
  - Neck vein distention
  - Paradoxical movement of the chest
  - Hyper-resonance to percussion on the affected side
  - Tracheal shift away from the affected side

Procedure Preparation

- 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 intercostal space, anterior-axillary line
- Prepare site with Betadine or chlorhexidine
- Attach the large gauge IV needle to a large syringe

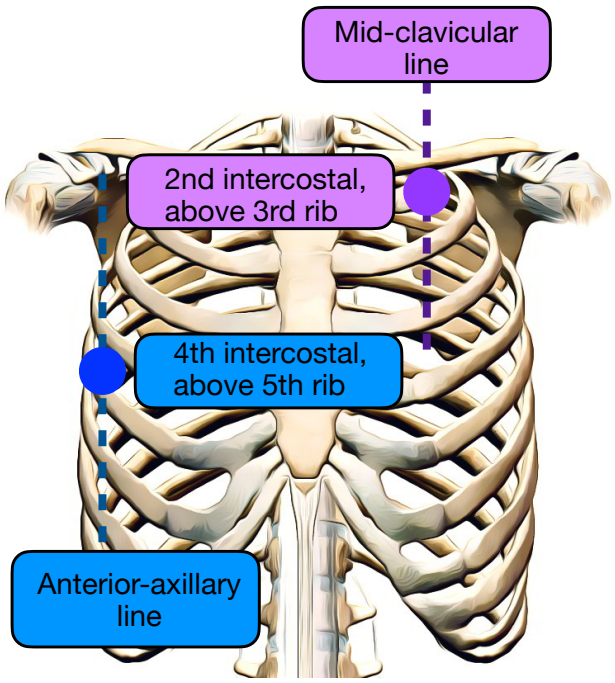
Equipment

- 14g or larger ≥ 3 inches
- Heimlich or other one-way valve
- 10ml syringe

Procedure

- With the patient exhaling, introduce the needle at a 90° 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



ADULT PAIN MANAGEMENT

Indications

- Patient with apparent or reported pain

ALS RMC

Pain >6?

No

Pt is >50kg
- **Acetaminophen (Tylenol/Ofirmev)** 1000mg IV infused over 15-20 min

Yes

- Consider **Acetaminophen** 1000mg IV infused over 15-20 min
- **Morphine**
  - IV/IO: 5mg slowly
    - MR q5 min;
    - Max dose: 20mg
  - IM: 5-10mg
    - MR in 20 min;
    - Max dose: 20mg

OR

- **Fentanyl**
  - IV/IO/IN: 50-100mcg
    - MR q5 min;
    - Max dose: 300mcg
    - For IN: administer 1/2 dose in each nostril
  - IM: 50-100mcg
    - MR in 30 min

If nausea/vomiting
- Consider **Zofran** 4mg ODT/IM or slow IV/IO over 30 seconds
- MR x1 in 10 min

If Morphine/Fentanyl unavailable or patient unable to tolerate
- **Midazolam**
  - IV/IO: 1mg slowly
    - MR q3 min;
    - Max dose 0.05mg/kg
  - IM: 2-4mg if no IV
  - IN: 5mg (2.5mg in each nostril)

☎ PHYSICIAN CONSULT FOR OPIOIDS
- Patients with SBP <100
- Patients with ALOC (GCS <15); acute onset of severe headache; multi-system trauma that includes abdominal/ thoracic trauma; decreased respirations; or women in active labor
- >20mg **Morphine** or >300mcg **Fentanyl** is needed for pain management
- Concomitant administration of **Opioids** and **Midazolam**

ALS DETERMINATION OF DEATH

Indications

- Patient in cardiac arrest who does not meet criteria for BLS determination of death (DOD) and does not have a valid DNR order. **Excludes MCI incidents where triage principles preclude the initiation of CPR and circumstances where scene or bystander safety is threatened.**

- Apply leads and document rhythm in two leads for minimum of 1 minute
- DOD can be made prior to, or immediately after initiating resuscitation when:

Medical- **ALL** must be present

- Presenting rhythm is asystole
- Event was NOT witnessed
- Effective bystander CPR was NOT initiated
- No evidence of potentially reversible cause of arrest
- No AED or manual shock delivered

If determination of death cannot be made

- Perform ALS resuscitation for 20 minutes on scene
- If ETCO2 ≤20mmHg and the rhythm is asystole or PEA, resuscitation may be discontinued and determination of death made

If determination of death still cannot be made

- If ETCO2 ≥20 mmHg and the rhythm is asystole or PEA continue resuscitation for ten additional minutes (30 minutes total) at which point determination of death can be made
- ☎ **PHYSICIAN CONSULT** if ETCO2 ≥20mmHG after 30min of resuscitation

Trauma- **ALL** must be present

- Blunt, penetrating or profound multi-system trauma, or significant blood loss
- Pulseless and Apneic
- Absence of potentially reversible cause of arrest

Does patient meet all above criteria?

Yes → Do not initiate resuscitation

No → Initiate resuscitation

- ☎ **TRAUMA CENTER CONSULT** for further care and destination decision
  - If consult is not available, transport patient to the closest facility if there is the following:
    - Unmanageable airway
    - Uncontrolled external hemorrhage
    - CPR in progress (unless transporting to SRC for refractory V-Fib

When patient meets criteria for declaration of death in the field:

- Notify the appropriate law enforcement agency and remain on the scene until released by law enforcement
- Complete a Field Determination of Death Form at scene and leave a copy with law enforcement or coroner, if applicable

ADULT MEDICATION STANDARD DOSAGES

DRUG	CONCENTRATION	STANDARD DOSE
Acetaminophen (Tylenol/Ofirmev)	1000mg/100ml	**IV/IO** 1000mg over 15-20 min
Adenosine	6mg/2ml	**IV/IO** 6mg rapid push followed by 20ml NS flush *Repeat:* 12mg
Albuterol	2.5mg/3ml NS	**Nebulized** 5mg/6ml NS
Amiodarone	150mg/3ml	**IV/IO** VF/Pulseless VTach: 300mg push *Repeat:* 150mg push in 3-5min Perfusing/Recurrent VTach: 150mg over 10 min (15mg/min) *Repeat:* q10 min PRN
Aspirin (Chewable)	Variable	***PO*** 324mg
Atropine	1mg/10ml	**IV/IO** Bradycardia: 1mg *Repeat:* q3-5 min *Max total:* 3mg Organophosphate Poisoning: 2mg slowly *Repeat:* q2-5 min until drying of secretions
Calcium chloride 10%	1gm/10ml	**IV/IO** Suspected Hyperkalemia in: Asystole/PEA: 1gm Crush Syndrome: 1gm over 5 min Flush with NS before and after
Cyanokit	5gm/vial	**IV/IO** 5 grams over 15min *Repeat:* x1 if severe signs *Max total dose:* 10 grams

DRUG	CONCENTRATION	STANDARD DOSE
Dextrose 10%	25gm/250ml	**IV/IO** 125ml bolus over 10 min; recheck BG *Repeat:* as needed
Diphenhydramine (Benadryl)	50mg/ml	**IV/IO/IM** 50mg
Epinephrine	1mg/ml EpiPen ® 0.3mg	**IM** Allergic reaction/Anaphylaxis: 0.3mg or EpiPen ® *Repeat:* x1 in 5 min **Nebulized** 5ml
Epinephrine	0.1mg/ml	**IV/IO** 1mg (10ml) followed by 20ml NS flush *Repeat:* q3-5min *Max dose:* 3mg
Epinephrine (Push-Dose)	0.01mg/ml	**IV/IO** ☎ SBP <80: Mix 1ml Epinephrine (0.1mg/ml) with 9ml NS in a 10ml syringe *Initial:* 1ml *Repeat:* q3-5 min, titrate to maintain SBP >80
Fentanyl (Sublimaze)	100mcg/2ml	**IV/IO** 50-100mcg slowly *Repeat:* q5 min *Max dose:* 300mcg **IM** 50-100mcg *Repeat:* in 30 min **IN** 50-100mcg; administer 1/2 dose in each nostril *Repeat:* q5 min *Max dose:* 300mcg

ADULT MEDICATION STANDARD DOSAGES

DRUG	CONCENTRATION	STANDARD DOSE
Glucose Paste	15 grams/tube	**PO** 30 grams
Glucagon	1mg/ml	**IM** 1mg
Ipratropium (Atrovent)	500mcg/2.5ml Unit dose	**Nebulized** 500mcg
Lidocaine 2%	20mg/ml	**IO** 20-40mg over 30-60 seconds *Repeat:* q15 min
Midazolam (Versed)	2mg/2ml (IV/IO/IM) 5mg/1ml (IN)	**IV/IO** Cardioversion/Pacing/Seizure (after EMS arrival): 1-2mg slowly *Repeat:* q3 min Sedation: See specific policy **IM** Seizure (after EMS arrival): 5mg *Repeat:* x1 in 2 min if still seizing Cardioversion/Pacing: 2-4mg Sedation: See specific policy **IN** Cardioversion/Pacing/Seizure (after EMS arrival): 5mg (2.5mg in each nostril) Sedation: See specific policy
Morphine Sulfate	10mg/1ml	**IV/IO** 5mg slowly *Repeat:* q5 min if SBP >100 *Max dose:* 20mg **IM** 5-10mg *Repeat:* q20 min *Max dose:* 20mg

DRUG	CONCENTRATION	STANDARD DOSE
Naloxone (Narcan)	2mg/2ml	**IV/IO, IM** 0.4-4mg *Repeat:* q2-3 min until patient responds **IN** 2-4mg (split evenly between nostrils) *Repeat:* q2-3 min until patient responds
Nerve Gas Auto-Injector (Atropine, Pralidoxime Chloride [2-PAM])	2mg (0.7ml) 600mg (2ml)	**IM** Small Exposure to Vapors/ Liquids: 1 dose of both medications *Repeat:* x1 in 10 minutes Larger Exposure to Vapors/ Liquids: 3 doses initially of both medications
Nitroglycerine	0.4mg/tablet or spray	**SL** 1 tablet or spray *Repeat:* q5 min if SBP >100
Ondansetron (Zofran)	4mg	**IV/IO** 4mg slowly over 30 seconds *Repeat:* x1 in 10 min **ODT/IM** 4mg *Repeat:* x1 in 10 min
Sodium Bicarbonate	50mEq/50ml	**IV/IO** 50mEq

AUTHORIZED PROCEDURES FOR EMT PERSONNEL

Policy

- Upon proper training, EMTs may perform all procedures authorized in the EMT Scope of Practice according to CCR Title 22, Division 9, Chapter 2

EMT Optional Skills

- Accreditation for EMTs to practice optional skills shall be limited to those whose certificate is active and who are employed within the jurisdiction of the Marin County EMS Agency by a provider who is part of the Marin County organized EMS system
- The following optional skills may be performed after the EMT has received training approved by the Marin County EMS Agency:
  - Administration of pre-packaged Atropine and Pralidoxime Chloride (2-Pam)
  - Administration of epinephrine by pre-filled syringe and/or drawing up the proper medication dose into a syringe for suspected anaphylaxis and/or severe asthma

PELVIC BINDER APPLICATION PROCEDURE

Indications

- High risk mechanism of injury (e.g. falls, crush, MVC, auto vs ped) AND one of the following:
  - Pelvic instability
  - Lower back, hip, or groin pain
- The intention of application is to reduce potential life-threatening bleeding and provide stability for a suspected pelvic fracture

Equipment

- Commercial pelvic binder (e.g. SAM Pelvic Sling II, T-Pod)

Position patient in supine position

↓

Slide pelvic binder under patient, positioning and applying device according to manufacturer's recommendations

Critical Information

- Contraindication: Pediatric patients

BLS DETERMINATION OF DEATH

Indications

- Patient in cardiac arrest where resuscitation may not be indicated

- Confirm pulseless and apneic
- CPR may be withheld and death declared if ANY of the following criteria below are met:

Valid, Signed, and Dated Advance Directive or POLST

- Form indicates that resuscitation is not desired

MCI Incident

- Death is determined according to S.T.A.R.T. triage

Submersion ≥1 hour

- Physical examination of body with accurate and reliable history of submersion time

Obvious Clinical Signs of Irreversible Death

- Rigor Mortis
- Dependent Lividity
- Decapitation
- Transection
- Decomposition
- Incineration

Significant MOI

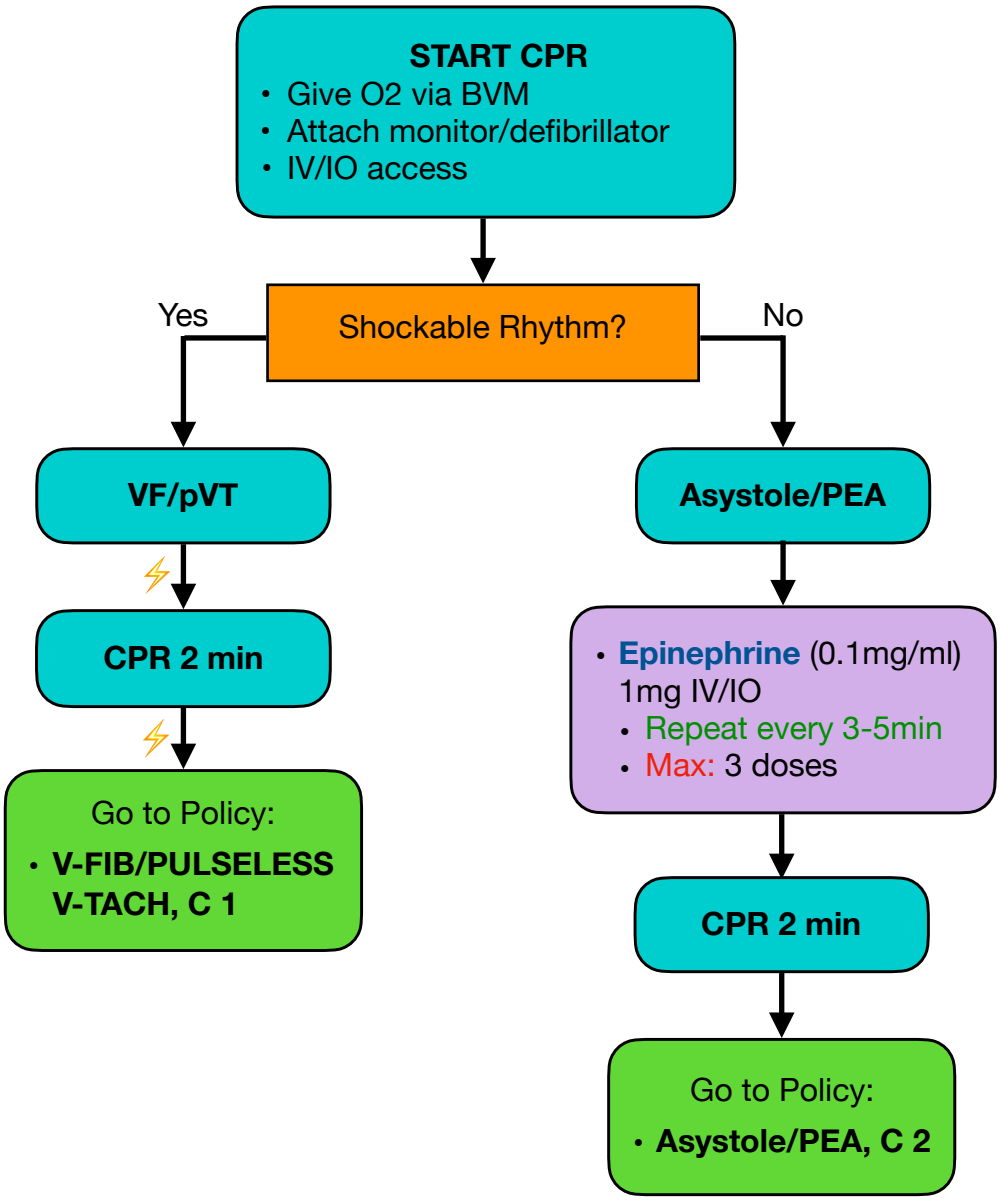
- Evidence of significant trauma or blood loss

Consideration for ALS Care (ATG 6)- Strong family insistence on resuscitation and/or circumstances where scene or bystander safety is threatened

Once 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

ADULT CARDIAC ARREST



CRITICAL INFORMATION

- Witnessed vs Unwitnessed
- Consider pre-cordial thump if witnessed and defibrillator not immediately available
- Compress at 100-120/min, 2" depth with full recoil of chest
- Use metronome or similar device
- Mechanical CPR is mandatory during transportation
- Change compressors every 2 minutes
- Minimize interruptions
- Defibrillate at 200J, 300J, 360J, or at manufacturer's recommendation
- Do not stop compressions while defibrillator is charging
- Resume compressions immediately after shock

BLS Airway Management

- BLS airway preferred during first 5 minutes
- Use two-person BLS airway management whenever possible
- Avoid excessive ventilation
- 30:2 compression/ventilation ratio

ALS Airway Management

- King Airway/iGel/Video laryngoscopy (VL)
- Laryngoscopy for ETT must occur with CPR in progress. Do not interrupt CPR for >10 seconds for tube placement
- Use continuous ETCO2 to monitor CPR effectiveness and advanced airway placement
- Maintain SpO2 94-99%
- 1 breath every 6 seconds

SPECIAL CONSIDERATIONS

- Transportation is warranted in the following situations: unsafe scene conditions, unstable airway, hypothermia/hyperthermia as primary cause of arrest
- Consider transport of any patient pulled from a fire who does not meet BLS Determination of Death or received Cyanokit
- To assure ROSC continues, remain on scene for 5-10 minutes and then transport to a STEMI Receiving Center

V-FIB/PULSELESS V-TACH

START MANUAL CPR
- Give O2 via BVM
- Attach monitor/defibrillator
- Apply defibrillator pads in anterior/posterior position
- IV/IO access

⚡

CPR 2 min

⚡

Shockable Rhythm? — No → Go to Policy:
- **Asystole/PEA, C 2**
- **ROSC, C 10**

⚡

CPR 2 min
- Consider advanced airway

- **Epinephrine** (0.1mg/ml) 1mg IV/IO
  - Repeat every 3-5min
  - Max: 3 doses

Shockable Rhythm? — No → Go to Policy: **Asystole/PEA, C 2**; **ROSC, C 10**

⚡

CPR 2 min
- Treat reversible causes

- **Amiodarone** 300mg IV/IO
  - Repeat in 3-5min 150mg

If VF/pVT after 3rd Shock

Apply additional set of defibrillation pads in standard (apical) placement

⚡

If VF/pVT after 4th Shock
- If not already in place, apply Mechanical CPR device
- Transport to SRC

CRITICAL INFORMATION

- Compress at 100-120/min, 2” depth with full recoil of chest
- Mechanical CPR for transport

Airway Management

- BLS airway preferred during first 5 minutes
- Do not interrupt CPR for >10 seconds for intubation
- Use continuous ETCO2

Drug Therapy.

- If ROSC after **Amiodarone**, consider **Amiodarone drip** 150mg in 100ml NS, 1mg/min = 40gtts/min with 60gtt/ml tubing
- If hyperkalemia is suspected in renal dialysis patients, give 1 gram of 10% **Calcium Chloride** IV/IO and 50mEq of **Sodium Bicarbonate** IV/IO

Reversible Causes

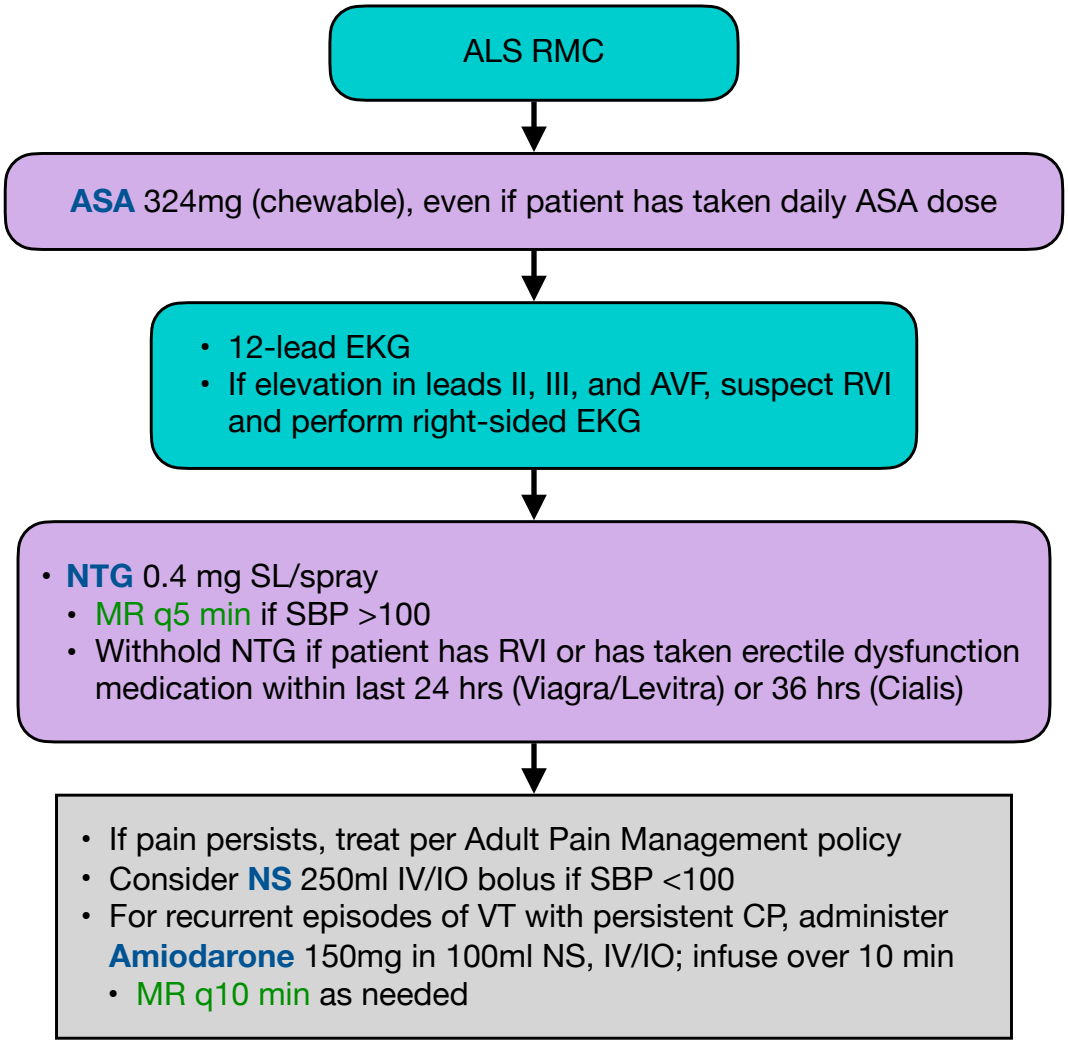
- Hypovolemia
- Hypoxia
- Hydrogen Ion (Acidosis)
- Hypo/Hyperkalemia
- Hypothermia
- Tension Pneumothorax
- Tamponade (cardiac)
- Toxins
- Thrombus

- ☎ **PHYSICIAN CONSULT** to transport rVF patients with: age >75yrs, terminal diagnosis, unwitnessed arrest, non-cardiac etiology (known or suspected)

CHEST PAIN/ACUTE CORONARY SYNDROME

Indications

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



SPECIAL CONSIDERATIONS

- IV access before **NTG** if SBP <120 or Patient doesn’t routinely take **NTG**
- Routine O2 administration unnecessary if SpO2 >94%
- Infarctions may be present with normal 12-leads
- Consider other potential causes of chest pain: pulmonary embolus, pneumonia, aortic aneurysm, and pneumothorax
- ☎ Physician consult if possible contraindication to aspirin (ie: head injury, GI bleed, etc.)

ST ELEVATION MYOCARDIAL INFARCTION (STEMI)

Indications

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

ALS RMC

Unstable?
- SBP <90 prior to NTG & opioid administration
- S/Sx of acute pulmonary edema
- Ventricular tachyarrhythmia requiring defibrillation or anti-arrhythmic therapy
- Patient's condition based on paramedic judgement requires immediate hospital intervention

Yes

- Transport to closest SRC
- Provide Early STEMI notification and identifying patient information
  - If elevation in leads II, III, and AVF, suspect RVI and perform right-sided EKG
- Transmit all STEMI EKGs to SRC if possible
- Go to policy: **Chest Pain/Acute Coronary Syndrome, C 8**

No

- May go to preferred SRC if the estimated transport time is not more than 15 min longer than nearest SRC
  - Preferred SRC defined:
    - Patient preference
    - SRC used by treating cardiologist
- Provide Early STEMI notification and identifying patient information
  - If elevation in leads II, III, and AVF, suspect RVI and perform right-sided EKG
- Transmit all STEMI EKGs to SRC if possible
- Go to policy: **Chest Pain/Acute Coronary Syndrome, C 8**

☎ *PHYSICIAN CONSULT*

- If patient is symptomatic for STEMI, but monitor interpretation is not in agreement, **transmit EKG** and consult the SRC receiving physician
- If above findings occur, but transmission is not available, activate SRC with early STEMI notification

CANCELLATION OF ALS UNIT

Indication

- First Responders request to cancel an ALS unit

- First Responder personnel may cancel the response of ALS personnel under the following conditions:
  - Patient does not have a priority complaint or symptoms warranting an ALS response
  - Patient meets criteria for BLS Declaration of Death in the pre-hospital setting

AGAINST MEDICAL ADVICE (AMA)

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

- All patients requesting medical attention will be offered treatment and/or transportation after a complete assessment, including a full set of vital signs
- Mentally competent patients/DDMs have the right to accept or refuse any or all pre-hospital care and transportation as long as EMS 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 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
  - Alternative care and transport options which may include private transport to a clinic, physician's office or an Emergency Department, or telephone consultation with a physician

↓

- Have patient/DDM sign the AMA form
- If patient refuses to sign, document on PCR

☎ *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 brief resolved unexplained event (BRUE)

☎ *PHYSICIAN CONSULT- strongly recommended*

- Patients ≥65 years requesting AMA with the complaint(s) of chest pain, SOB, syncope
- New onset of headache
- New onset of seizure
- TIA/resolving stroke symptoms
- Traumatic injuries (particularly head injury on anticoagulants)
- Pediatric complaints
- Pregnancy related issues

SPECIAL CONSIDERATIONS

- 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

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 for patients who do not have a DDM physically present

RELEASE AT SCENE (RAS)

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

- All patients requesting medical attention will be offered treatment and/or transportation after a complete assessment, including a full set of vital signs
- Mentally competent patients/DDMs have the right to accept or refuse any or all pre-hospital care and transportation as long as EMS personnel have explained the care and the patient/DDM understands by restating the nature and implications of such decisions

↓

- EMS personnel should advise the patient/DDM of alternative care and transport options which may include:
  - Private transport to a clinic, physician's office, or an Emergency Department
  - Telephone consultation with a physician

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- Have patient/DDM sign the RAS form
- If patient refuses to sign, document on PCR

☎ *PHYSICIAN CONSULT*

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

SPECIAL CONSIDERATIONS

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

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 RAS may be obtained by telephone consent for patients who do not have a DDM physically present

DESTINATION GUIDELINES

Indication

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

Kaiser Permanente San Rafael Medical Center
Emergency Department Approved for Trauma (EDAT)
- Terra Linda -

- STEMI receiving center (SRC)
- Primary Stroke Center
- General Pediatric Receiving Center (PedRC)

MarinHealth Medical Center (MHMC)
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 wks with a complaint related to pregnancy
- Neonates (≤28 days) with signs of shock
- STEMI receiving center (SRC)
- Primary Stroke Center
- Advanced Pediatric Receiving Center (PedRC)

Novato Community Hospital
Basic level receiving facility
- Novato-

- Primary Stroke Center
- General Pediatric Receiving Center (PedRC)

☎ PHYSICIAN CONSULT

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

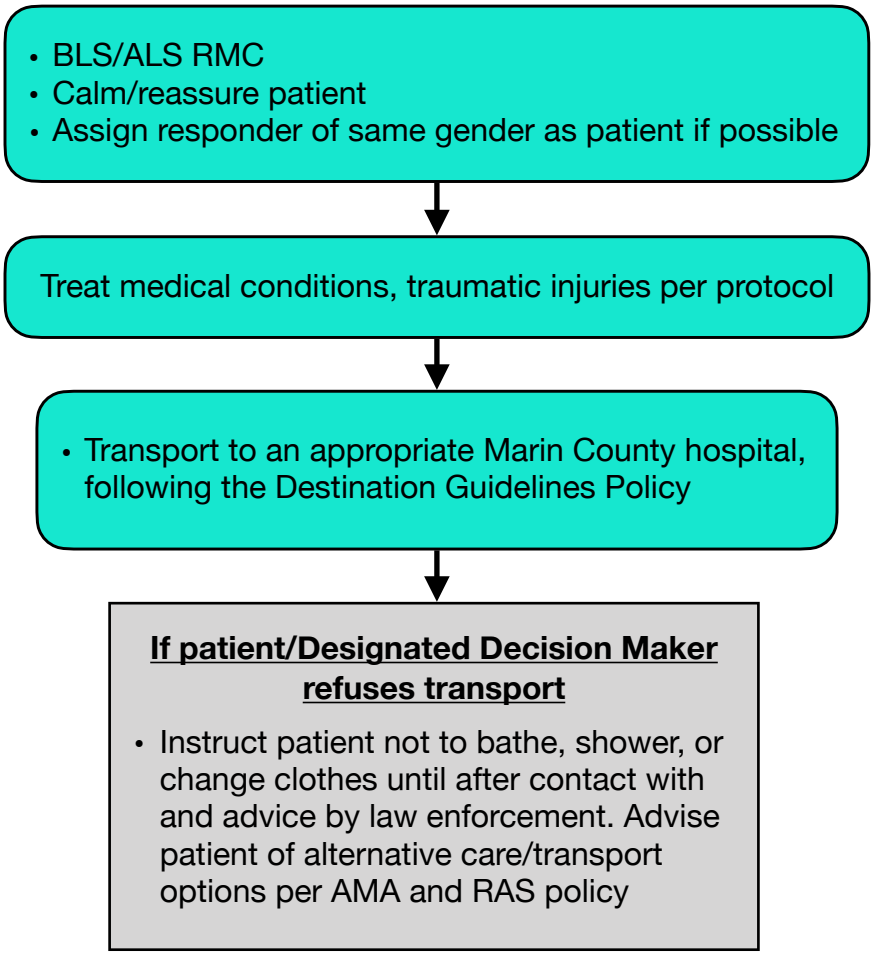
CRITICAL INFORMATION

- 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 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 (unless transporting to SRC for rVF)
  - Patient 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 (ROSC) post cardiac arrest will be transported to the nearest SRC
- Burn patients, without other trauma mechanism, shall be transported by ground ambulance to the time closest emergency department (ED)
- Neonates (≤28 days) with signs of shock shall be transported to MarinHealth Medical Center
- Patients with psychiatric complaints will be transported to their preferred facility or the closest ED unless specialty care (trauma, STEMI, stroke, pregnancy) is warranted
- Ventricular Assist Device (VAD) patients: If patient is stable and complaint is not related to VAD, transport per above guidelines. If VAD related, the patient may need to bypass local facilities and go to VAD center. If concerned about patient stability, refer to guidelines and request physician consult
- Prior to arrival, prehospital personnel must notify the receiving facility of any patient with a known history of violence or behavior which may pose a risk to staff (uncooperative, aggressive, disruptive)

SEXUAL ASSAULT/HUMAN TRAFFICKING

Indication

- Patients with complaints consistent with sexual assault or evidence of human trafficking
- Human trafficking involves labor or services, through the use of force, fraud, or coercion for the purposes of subjection to involuntary servitude, peonage, debt bondage or slavery
- Commercial sex acts through the use of force, fraud or coercion
- Any commercial sex act, if the person is under 18 years of age, regardless of whether any form of coercion is involved



SPECIAL CONSIDERATIONS

- 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 a Sexual Assault Exam Center

Critical Information

- Preserve possible evidence and advise patient not to clean, bathe or change clothes until examination by hospital personnel
- Notify police and dispatch of nature of call
- EMS personnel are encouraged to report to local law enforcement suspected human trafficking cases
  - Warning signs of human trafficking include:
    - Individuals who are segregated from contact with others, or don't have control of their own ID/documents
    - Locations with unsuitable living conditions or unreasonable security measures
    - Incidents where responders are approached and asked for protection/asylum from other individuals at a scene
  - For suspected human trafficking, offer the patient the 24/7 National Human Trafficking hotline number: 1-888-373-7888 or they can text "HELP" or "INFO" to 233733

PATIENT RESTRAINT

Indication

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

BLS/ALS RMC

↓

Apply the minimum restraint necessary to accomplish patient care and safe transportation

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- 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 min

Equipment

- Quick release synthetic, soft, or padded leather restraints

Critical Information

- Patient may not be transported in the prone position
- 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
    - Restraining of a patient’s hands and feet behind the patient
    - Methods or materials that could cause vascular or neurological compromise

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

PEDIATRIC PATIENT TRANSPORT

Purpose

- To provide guidance regarding the safe transport of the pediatric patient in an ambulance

General Information

- Transportation of a child in any of the following ways is not permissible:
  - Unrestrained
  - On a parent/caregiver's lap or held in their arms
  - Using only horizontal stretcher straps if the child cannot be properly restrained according to the stretcher manufacturer's specifications for proper restraint of patients
  - On the bench seat or any seat perpendicular to the forward motion of the vehicle
- "Car seat" refers to a size appropriate car seat which has rear and/or forward facing belt paths and which have been secured appropriately
- "CRS" refers to a child restraint system designed specifically for ambulance stretcher use and which has been properly secured

- The child's age and weight shall be considered when utilizing an appropriate restraint system
- Use of child's own car seat is only permitted for one of the following (children <2 years must be rear facing):
  - The child is not a patient and is being transported with the parent or caregiver who is a patient
  - No other restraint systems are available
  - Minor vehicle crash (ie: "fender bender")
- The child shall be secured by harness at all times. Whenever possible, procedures should be performed around the harness straps
- A CRS is not required if the patient is longer than the length based tape

Transportation of a child requiring monitoring or interventions

- Preferred: Transport using a CRS
- Alternative: With the child's head at the top of the stretcher, secure the child to the stretcher with three horizontal straps and one vertical strap across each shoulder

Transportation of a child who is not a patient

- Consider delaying transport until additional vehicles are available if it will not compromise other patient care or transport
- Preferred: Transport child in a vehicle other than an ambulance using a car seat
- Preferred alternative: Transport child using the rear-facing EMS provider captain's chair built-in child restraint
- Alternative: Transport child in a car seat in the front passenger seat of the ambulance with the airbags off

Transportation of a child requiring cervical spinal immobilization, spinal motion restriction, or lying flat

- Preferred: Use CRS. When appropriate, use cervical collar and secure child to stretcher

Transportation of a child or children requiring transport as part of a multiple patient transport (newborn with mother, multiple children, etc)

- Preferred: If possible, transport each as a single child according to guidance above. Additional resources may be necessary
- Preferred for mother and newborn: Transport the newborn in a newborn transport wrap (I.e., Aegis Neonate wrap)
- Alternative for mother and newborn: Transport the newborn in a CRS secured appropriately to stretcher. Transport mother in rear-facing EMS provider captain's chair if mother is medically stable. Consider the use of additional units to accomplish safe transport

IMMINENT DELIVERY (NORMAL)

Indications

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

ALS RMC

- Provide reassurance and instructions during delivery
- Notify intended receiving hospital
- If infant is < 36 weeks gestation, prepare for neonatal resuscitation and early transport

Start IV; **NS** TKO if time allows prior to delivery

During Delivery

- As head is delivered, gently wipe baby's mouth and nose keeping head dependent
- If the cord is around neck and can't be slipped over the head: Double clamp and cut between clamps

After Delivery

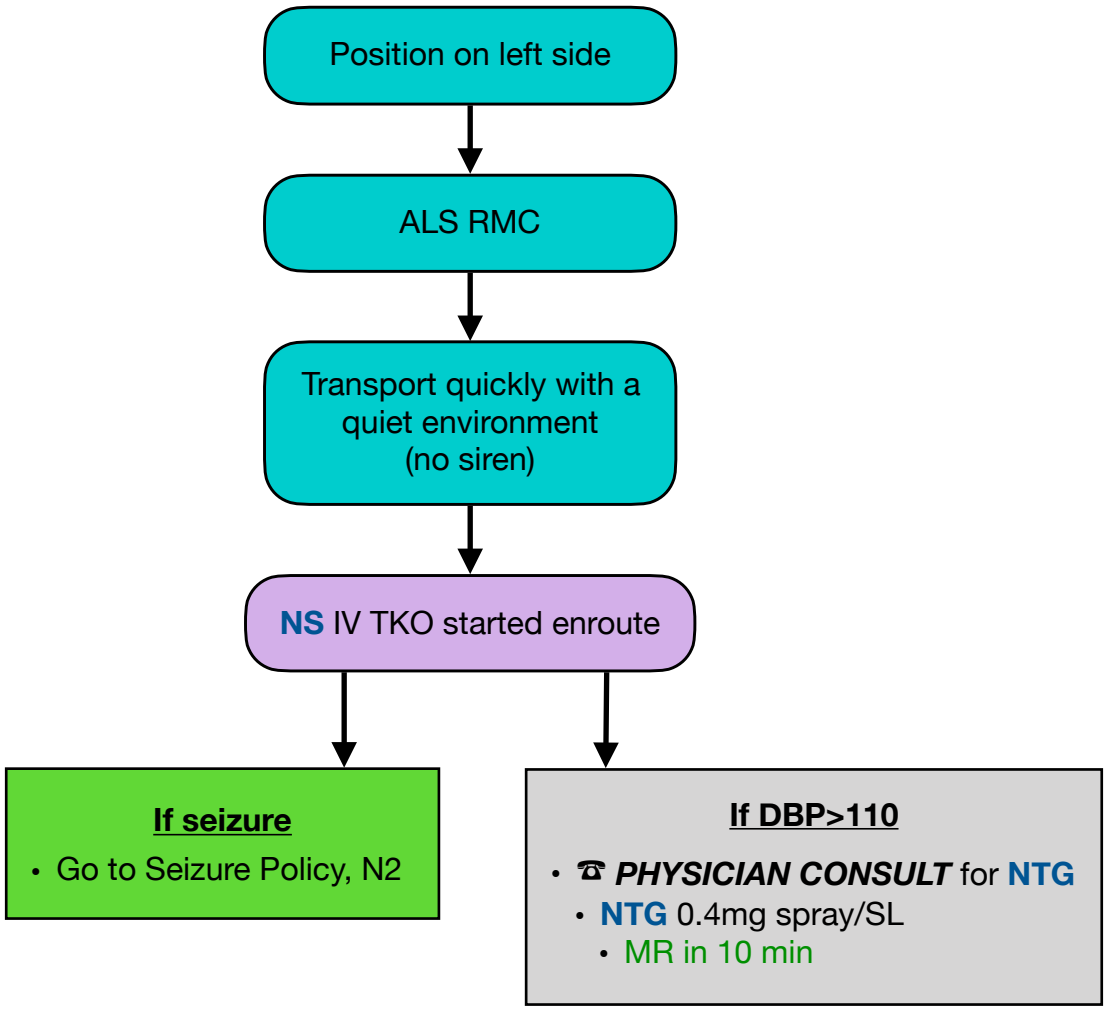
- Allow delivery, dry baby and keep warm
- Place baby on mother's abdomen or breast
- Delay cord clamping until 30-60 seconds after birth, then clamp and cut 6-8 inches from baby
- Apgar score at 1 and 5 minutes
- Allow delivery of placenta, save and bring to hospital

Sign	0	1	2
Heart Rate	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

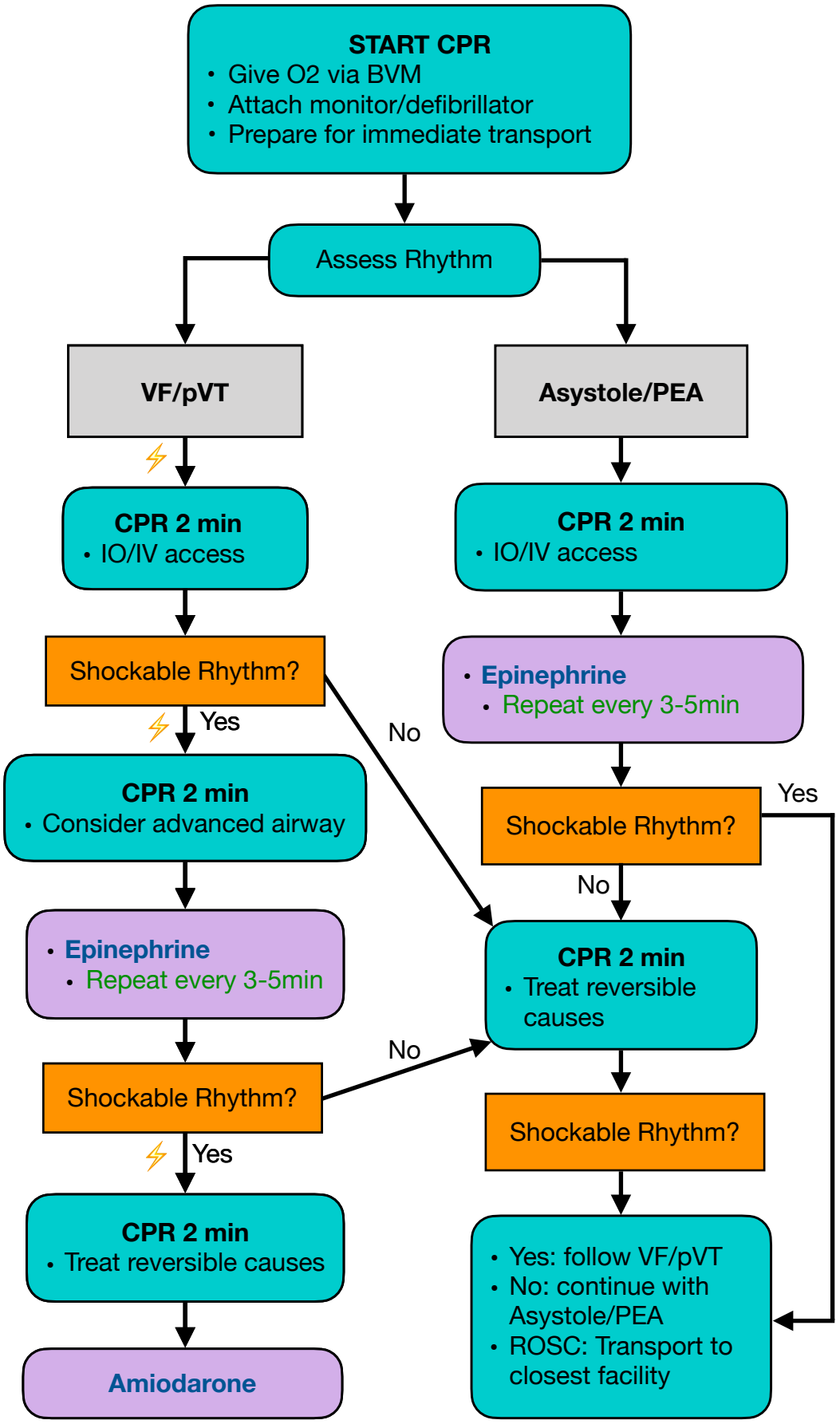
SEVERE PRE-ECLAMPSIA/ ECLAMPSIA

Indications

- Pregnancy >20 weeks gestation or up to 6 weeks postpartum
  - Pre-eclampsia:
    - Hypertension (SBP ≥160 or DBP ≥110)
    - Mental status changes
    - Persistent headache
    - Visual disturbances
    - Peripheral edema
  - Eclampsia:
    - Pre-eclampsia symptoms and seizure



PEDIATRIC CARDIAC ARREST



CPR Ratios

- One rescuer: 30:2
- Two rescuer: 15:2

Defibrillation

- 2-4J/kg

Airway Management

- BLS airway is preferred
- Avoid excessive ventilation
- Place younger child in sniffing position for neutral airway positioning
- Consider advanced airway only if patient height > color coded resuscitation tape **and** unable to ventilate with BVM
- Laryngoscopy for ETT must occur with CPR in progress.
- **Do not interrupt CPR for >10 seconds for tube placement**
- Use ETCO2
- Maintain SpO2 94-99%
- 1 breath every 2-3 sec.

Drug Therapy

- **Epinephrine** 0.01mg/kg (0.1mg/ml) IV/IO
  - Repeat every 3-5 min
- **Amiodarone** 5mg/kg IV/IO followed by or diluted in 20ml NS after 3rd shock
  - Max dose: 300mg

Reversible Causes

- Hypovolemia
- Hypoxia
- Hydrogen Ion (Acidosis)
- Hypo/Hyperkalemia
- Hypothermia
- Tension Pneumothorax
- Tamponade (cardiac)
- Toxins
- Thrombus
- Trauma

PEDIATRIC BURNS

Indications

- Damage to the skin or an inhalation injury caused by contact with fire, heat, electricity, or caustic material

- Remove patient to safe area and stop the burning process
  - Remove contact with the agent, unless adhered to the skin
  - Brush away dry chemicals
  - Flush with cool water to stop the burning process or to decontaminate
  - Expose affected area and apply clean dry sheet
- Remove all clothing/jewelry
- Keep patient warm to avoid hypothermia

ALS RMC

- High-flow oxygen via NRB for burns involving the chest and for patients with evidence/suspicion of inhalation injury

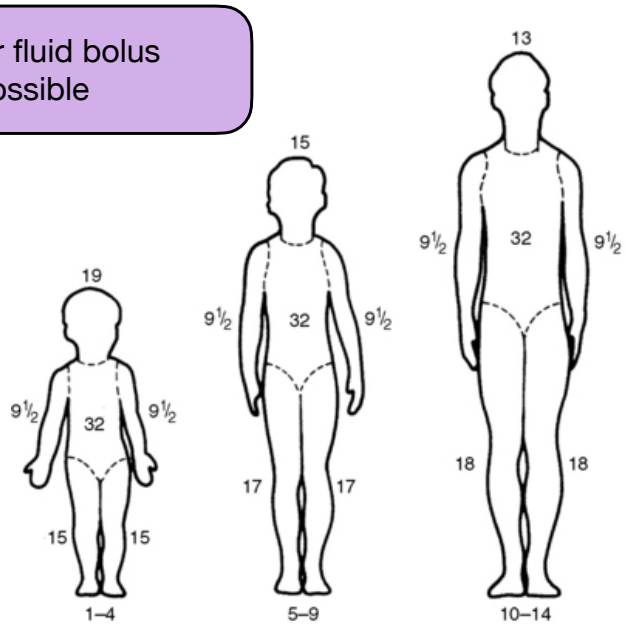
If wheezing

- Consider **Albuterol** 2.5mg in 3ml NS HHN
  - MR x1

- **NS** TKO IV/IO, do not administer fluid bolus
- Pain management as soon as possible

CRITICAL INFORMATION

- Perform frequent airway assessments and consider early intubation for inhalation injury (ie: facial or chest burns, singed nares, soot/blisters in oropharynx)
- Burns with trauma mechanism need to be transported per the Marin County Trauma Triage Tool



AIRWAY OBSTRUCTION

Indications

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

ALS RMC

Visualize airway

Able to Speak

- Suction as needed to control secretions
- Transport in position of comfort
- Avoid agitating patient

Upper Airway/ Stridor

- **Mild-moderate distress**: **NS** 3ml HHN
- **Moderate to severe distress**: **Epinephrine** (1mg/1ml concentration) 5ml HHN

Unable to Cough or Speak

- Ask patient if they're choking
- Administer abdominal thrusts/Heimlich maneuver until foreign body is expelled or patient becomes unconscious
- After obstruction is relieved reassess:
  - Airway
  - Lung sounds
  - Skin color
  - Vital signs

Suspected Epiglottitis

- Transport in upright position
- If patient deteriorates or the airway becomes obstructed, attempt positive pressure ventilation via BVM.
- ☎ ***PHYSICIAN CONSULT*** for endotracheal intubation and should be performed only if BVM is inadequate

Unconscious

- Perform tongue-jaw lift followed by finger sweet to remove object
- Begin CPR
- Prepare to use Magill forceps if BLS not effective