



DEPARTMENT OF
HEALTH AND HUMAN SERVICES

Promoting and protecting health, well-being, self-sufficiency, and safety of all in Marin County.



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Date: March 31, 2023

To: Holders of EMS Policy and Procedure Manuals

From: Dustin Ballard, MD
EMS Agency Medical Director

Subject: Update to Policy Manual

Please find the 2023 update to the EMS Policy and Procedure Manual. These new and revised policies and procedures are effective **April 1, 2023**.

An error was noted after the prehospital care manuals were printed:

Policy C8 Chest Pain

Under Special Considerations, the last bullet: eliminate the wording "...other anti-coagulant use" as a physician consult is not required for this situation. The policy has been updated with this change on the website however we ask that you review and amend your protocol books as need be.

Policy GPC 5, Interfacility Transfer Procedure, has been removed.

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

Revised Policies and Procedures include:

- 4613a Trauma Triage Tool – Adult
- 5010 EMS Provider Equipment List
- 5012 Interfacility Transfers
- 5100 EMS Aircraft
- 7001 Hospital Report/Consult
- 7005 ReddiNet Policy
- 7006 Patient Care Record
- ATG7 Adult Medication Standard Dosages
- GPC2 AMA
- GPC3 RAS
- GPC7 DNR/POLST
- GPC11 Patient Restraint
- GPC12 MCI
- C0 Adult Cardiac Arrest

- C1 VF/pVT
- C2 Asystole/PEA
- C4 Bradycardia
- C8 Chest Pain
- M4 Poisons/Drugs
- N1 Coma/ALOC
- N2 Seizure
- N4 Stroke/TIA
- O2 Imminent Delivery (Normal)
- R1 Respiratory Arrest
- R5 Acute Pulmonary Edema
- T1 Traumatic Injury
- PC4 Pediatric Tachycardia
- PTG 2A Pediatric Medication Dosages
 - PTG 2A-8 Orange
 - PTG 2A-9 Green

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 < 90 mmHg
- Respiratory rate < 10 or > 29 breaths per min

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
- Flail chest
- Two or more proximal long bone fractures
- Crushed, degloved, mangled or amputated extremity proximal to wrist or ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis (partial or complete)
- Burns with anatomic factors

Yes

No

Mechanism of Injury Factors?

- Falls > 20 ft (1 story = 10ft)
- High-risk auto crash and
 - Passenger space intrusion > 18 " (> 12 " occupant side)
 - Ejection (partial or complete) from vehicle
 - Death in same passenger compartment
- Auto vs. pedestrian or auto vs. bicyclist: thrown, run over, or with > 20 mph impact
- Motorcycle or bicycle crash: thrown and > 20 mph impact
- Burns with MOI factors

Yes

Provide Trauma Notification and transport to MHMC Level III Trauma Center

No

Additional factors?

Assessment of additional factors (e.g. age > 65 , anticoagulant use, anti-platelet use, bleeding disorders with head/torso injury, pregnancy > 20 wks, etc) or other complaints or exam findings cause paramedic to be concerned about the patient

Yes

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, temperature, 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

☎ PHYSICIAN CONSULT

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

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 monophasic (biphasic preferred)	pacing optional
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ECG electrodes	0
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12-lead ECG capability	1
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AED	1
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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
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Thermal absorbent blanket and head cover, aluminum foil roll, or appropriate heat-reflective material (enough to cover newborn)	1
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Appropriate heat source for ambulance compartment	0
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Newborn transport wrap	optional
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Pen light	1
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Pillow	0
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PPE kit: gloves, gown, booties, face shield, cap	1 per person
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Road flares or equivalent (30 min)	0
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Scoop stretcher, breakaway flat or equivalent	0
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Sharps container	1
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Sheet, pillow case, blanket, towel	0
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Spare tire	optional
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Stair chair or equivalent	0
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Stethoscope	1
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Thermometer (with core temp capability)	0
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ALS First Responder

Tourniquet (CAT) and/or SWAT	2
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Triage tags	20
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Vehicle emergency lights	optional
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IMMOBILIZATION AND RESTRAINT DEVICES

Cervical collars: adjustable sizes to fit all patients over 1 year old	
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Adult	2
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Pediatric	1
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Head immobilization device	2
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Pediatric ambulance transportation device	0
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Quick release soft restraints (synthetic or padded leather)	0
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Spinal immobilization backboard: (radiolucent)	1
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Strap system, adult	1
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KED or equivalent	0
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Splints: (vacuum/cardboard/moldable/equivalent) short, medium, long	1 each
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Traction splint: adult, pediatric	0
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IV EQUIPMENT / SYRINGES / NEEDLES

Arm board (short)	1
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Catheters: 1" long, sizes 14, 16, 18, 20, 22, 24g	2 each
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Constriction band (rubber tourniquet)	2
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Intraosseous equipment: adult and pediatric

Extra batteries of need by model	0
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IO needles and/or mechanical device	optional
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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	1
Glucose paste 15gm/tube	2
Ipratropium (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
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Continuous Positive Pressure Airway Device	1
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End-Tidal CO2 Detectors:

Colormetric Adult	2
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OR

Capnograph or digital capnometer (optional)	1
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Intubation Equipment:

Additional batteries	2
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Blades, curved: sizes 1-4	1 each
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Blades, straight: sizes 0-4	1 each
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Bulbs (extra or disposable)	1
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Endotracheal tubes, cuffed: sizes 6.0-8.0mm cuffed	2 each
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Endotracheal tube holder: adult	1
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Endotracheal Tube Introducer (ETTI)	2
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Esophageal detector device (optional if capnometer is utilized)	1
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Laryngoscope handle (battery powered)	1
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Magill forceps: adult and pediatric	1 each
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ALS Transport Unit

Stylets: disposable, adult	2
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Videolaryngoscopy: adult	optional
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Nebulizer:

Hand-held OR Patient activated	2
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In-line nebulizer equipment with T-piece	2
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Oxygen Equipment and Supplies:

Masks:

Adult: non-rebreathing	4
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Pediatric: simple or non-rebreathing	2
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Nasal cannulas:

Adult	4
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Pediatric	2
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Infant	2
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Oxygen tank: fixed in vehicle with regulator; H-tank or M-tank	1
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Oxygen tank: portable (minimum D-tank)	2
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Portable Pulse Oximetry	1
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Regulator	1
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Pleural decompression kit: ≥14g needle, ≥3 inches long; Heimlich valve; occlusive dressing; 10ml syringe	1
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Resuscitation Bag-Valve-Mask (BVM): adult, child, infant	2,1,1
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Suction Equipment and Supplies:

Pharyngeal tonsil tip (rigid)	2
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Suction apparatus: Portable/battery powered	1
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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 monophasic (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	2
Glucose paste 15gm/tube	2
Ipratropium (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
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Continuous Positive Pressure Airway Device	0
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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
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Videolaryngoscopy: adult	0
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Nebulizer:

Hand-held OR Patient activated	0
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In-line nebulizer equipment with T-piece	0
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Oxygen Equipment and Supplies:

Masks:

Adult: non-rebreathing	0
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Pediatric: simple or non-rebreathing	0
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Nasal cannulas:

Adult	0
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Pediatric	0
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Infant	0
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Oxygen tank: fixed in vehicle with regulator; H-tank or M-tank	0
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Oxygen tank: portable (minimum D-tank)	0
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Portable Pulse Oximetry	0
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Regulator	0
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Pleural decompression kit: ≥14g needle, ≥3 inches long; Heimlich valve; occlusive dressing; 10ml syringe	1
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Resuscitation Bag-Valve-Mask (BVM): adult, child, infant	1 adult
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Suction Equipment and Supplies:

Pharyngeal tonsil tip (rigid)	equivalent
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Suction apparatus: Portable/battery powered	1
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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 monophasic (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
Ipratropium (Atrovent) unit dose	0
Lidocaine 2% 20mg/ml	0
Midazolam (Versed) 2mg/2ml	10
Midazolam (Versed) 5mg/ml	0
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 monophasic (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
Ipratropium (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 monophasic (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
Ipratropium (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 tubes, 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	

INTERFACILITY TRANSFERS

PURPOSE

To provide policy and direction for interfacility transfers originating or terminating in Marin County.

RELATED POLICIES

4604 Trauma Re-Triage, 5200 Medical Mutual Aid

AUTHORITY

Health & Safety Code 1797.200, 1797.218, 1797.222; Marin County Code of Ordinances, Chapter 7.60, "Ambulance Transportation Services"

DEFINITIONS

1. **Certificate of Operation** – annual certificate issued by the Marin County EMS Agency to a private ambulance company doing business in Marin that has met all regulatory requirements.
2. **Emergent Transfer** – A patient transfer that requires immediate transportation by ambulance to another facility for a higher level of care (e.g., STEMI, stroke, trauma, etc.). Typically facilitated by local 911 ALS resources.
3. **Interfacility Transfer** – The transfer of a patient by ambulance from one healthcare facility to another healthcare facility.
4. **Permitted Ambulance** – An ambulance with a current inspection permit from the Marin County EMS Agency.
5. **Permitted Ambulance Service Provider** – A private ambulance service provider with a current Certificate of Operation on file with the Marin County EMS Agency.
6. **Rapid Re-Triage** – An emergent transfer of a trauma patient from an Emergency Department to a designated Trauma Center.
7. **Specialty Care Transfer** – A patient transfer that utilizes a hospital-based specialty team (NICU, PICU, ECMO, Stroke) for patient care.

POLICY

Interfacility transfers may only be conducted by established local fire department ambulance service providers and permitted private ambulance service providers. Non-permitted ambulance providers are only authorized to facilitate interfacility transfers that originate outside of Marin County and terminate in Marin County. Interfacility transfers requiring ALS or CCT level of care must utilize a vehicle staffed, equipped, and permitted for that level of care.

Unless otherwise directed, transporting personnel shall operate under the medical direction of the sending physician in compliance with the County of Marin, State, and Federal laws, through direct contact or standing orders, and in a manner permitted by their scope of practice.

A list of current permitted ambulance service providers shall be maintained on the Marin EMS Agency website at: www.MarinEMS.org

PROCEDURE

The sending facility shall have confirmed acceptance by receiving facility prior to the transfer. The transferring unit must receive an appropriate patient status report from the transferring physician and/or RN. If transferring personnel do not agree with or are unable to provide the level requested, they will confer with the sending physician to assure the appropriate level of care during transfer.

The standard scope of practice allows for:

- **EMT**

- Monitoring of intravenous lines delivering glucose solutions or isotonic balanced salt solutions including Ringer's Lactate. Monitor, maintain, and adjust if necessary, in order to maintain a preset rate of flow and turn off the flow of intravenous fluid.
- Monitoring of nasogastric (NG) tubes, gastrostomy tubes, heparin locks, foley catheters, tracheostomy tubes with or without simple oxygen masks and humidification, wound-vac devices, Jackson-Pratt drains, clamped PleurX drains, and/or indwelling vascular access lines, excluding arterial lines.
- Transporting patients with completely patient-controlled devices including CPAP/BiPAP, medication pumps, etc. requiring no monitoring or adjustment during transport.

- **Paramedic**

- Monitoring and adjustment of intravenous fluids containing potassium ≤ 40 mEq/L.
- Monitoring of thoracostomy tubes.
- Performing suctioning of patients not on mechanical ventilators with stomal intubation.
- Monitoring of patients with nitroglycerin paste initiated prior to transport.

Emergent Transfers

An emergent interfacility transfer such as the rapid re-triage of a trauma patient or confirmed STEMI patient shall be facilitated by a local ALS fire department ambulance provider. Private ambulance providers may be utilized for emergent transfers only if there is no local ALS fire department provider available or the level of care is above the ALS level.

Specialty Team Transports

For purposes of this policy and the Marin County Ambulance Regulations, a specialty team transport is not required to be conducted in a permitted ambulance so long as the ambulance provider possesses a current Certificate of Operation for Marin County and all patient care is delivered by the hospital-based specialty team.

Any provider conducting a specialty team transport originating in Marin County must comply with data reporting requirements described in the current Ambulance Regulations.

Use of Air Ambulance Resources

Only hospitals with an approved on-site helipad may directly receive interfacility transfers by air ambulance.

When coordinating an outgoing interfacility transfer requiring the use of an air ambulance, the sending facility shall contact the Fire/EMS Communication Center to dispatch appropriate fire department units to secure the emergency landing zone.

It is the responsibility of the air medical provider or sending facility staff to make ground transportation arrangements at the sending facility. Every attempt shall be made to utilize a non 911 provider for the transport of patients and crew to and from the landing site.

Special Considerations

- For emergent transfers with CCT service requirements, when no provider is able to fulfill the transfer request within the required ETA and further delay would cause a significant risk of increased morbidity or mortality, under the direction of the sending physician, a sending facility caregiver (RN, NP, PA, Physician or RT) may attend to the patient during transport utilizing the highest level ambulance available as a last resort.
- Transporting team members shall provide care within their own scope of practice.
- All advanced monitoring equipment or medications anticipated to be required during transport that are not already present in the ambulance inventory must be brought with the caregiver.
- An EMS Event Form must be completed following any such transport.

Local Disasters

In the case of a disaster where no permitted ambulance service provider is available, non-permitted ambulances from non-permitted ambulance service providers may be used to transfer patients.

Appendix A

Guideline for determining level of service (BLS-ALS-CCT)

Condition	BLS	ALS	CCT
Oxygen by mask or cannula	✓		
IV fluids running (Normal Saline, Lactated Ringers, Dextrose)	✓		
Confuse/disoriented but stable LOC	✓		
Patient-controlled devices (medication pump, CPAP/BiPAP)	✓		
Tracheostomy not requiring suctioning	✓		
Central IV line, clamped	✓		
Medical devices including nasogastric (NG) tubes, gastrostomy tubes, heparin locks, foley catheters, tracheostomy tubes with or without simple oxygen masks and humidification, wound-vac devices, Jackson-Pratt drains, clamped PleurX drains, and/or indwelling vascular access lines, excluding arterial lines	✓		
Tracheostomy requiring suctioning		✓	
Pre-established IV containing potassium or nitroglycerin paste		✓	
Cardiac/pulse oximetry/capnography monitoring		✓	
Monitoring thoracostomy tubes		✓	
Medications in paramedic scope		✓	
Paramedic level interventions		✓	
Continuous respiratory assistance/mechanically vented			✓
Medications outside paramedic scope or mechanical IV pump			✓
Invasive monitoring including IABP, ICP, CVP, or PA lines			✓
Arterial line in place			✓
Blood or blood products			✓
Medical devices not managed by patient outside paramedic scope			✓

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; Trauma Triage and Destination Guideline Policy, #4613; Prehospital/Hospital Contact Policy, # 7001

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:
 - 1. Area of the call is inaccessible to ground unit(s) or ground access is compromised;
 - 2. Air assistance may be needed with rescue activities; or
 - 3. Ground transport time to the hospital is > 30 minutes and the applicable Emergency Medical Dispatch Protocol (policy #4200, Appendix A) recommends simultaneous dispatch.
 - 4. Reported traumatic injury and Level III Trauma Center is on trauma diversion.
- B. Aircraft Dispatch may also occur in the following manner:
 - 1. Upon request of the responding unit while en route to the scene.
 - 2. Upon request of onscene personnel following patient assessment.

PROCEDURE FOR AIRCRAFT USE

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

B. Procedural Considerations

1. 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.).
2. Marin County Communications Center will notify law enforcement and fire agencies with jurisdiction over the landing zone.
3. The EMS aircraft may be canceled by the on-scene Incident Commander.

C. Medical control

1. 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 personnel may accompany a patient in an EMS aircraft during transport if all of the following conditions are met:**

1. Personnel have been providing care for the patient prior to arrival of the aircraft;
2. Aircraft pilot and crew request that personnel accompany the patient during transport to assist with care.

B. Patient care records will be kept as follows:

1. Marin County personnel will complete a Marin County PCR as per policy/procedure, and when known, forward it to the receiving hospital.
2. 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 recorded by Marin County Communications Center:

1. ETA at time of original dispatch request
2. When airborne, en route to scene
3. Arrival at scene
4. Departure from scene
5. Destination hospital
6. 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 interfacility transfers.**

1. Hospitals will contact EMS aircraft providers directly.
2. The hospital requesting an EMS aircraft will notify the Marin County Communications Center of aircraft activity so fire and law enforcement agencies can be notified of the probable aircraft landing site.
3. 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 LIFELIGHT	Air Ambulance	Medical	Pilot Nurses (2)	Palo Alto
CONAIR - 1	Air Ambulance	Medical/Fire Support	Pilot/Nurse/Paramedic	Concord
CONAIR - 2	Air Ambulance	Medical/Fire Support	Pilot/Nurse/Paramedic	Concord
Sonoma County Fire SOCO-1	Air Ambulance	Medical/Fire Support	Pilot/Nurse/Paramedic	Santa Rosa
Sonoma County Sheriff's Office Henry 1	ALS Rescue	Law, Medical, Long-line rescue	Pilot/Paramedic/EMT	Santa Rosa
California Highway Patrol H-30	ALS Rescue	Law, Medical	Pilot Paramedic	Napa
U.S. Coast Guard Helicopter	Auxiliary	Water rescue, Long-line rescue	2 Pilots EMT rescue swimmer	SFO

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, one attendant certified 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.

HOSPITAL REPORT/CONSULT

Purpose

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

Related Policies

- Trauma Triage and Destination Guideline Policy, 4613
- BLS Treatment Guidelines
- Communication Failure, 7002
- STEMI, C 9
- EMS Communication System, 7004
- Stroke/TIA, N 4
- MCI Plan
- Sepsis, M 6

Definitions

- **Report Only** is a notification to the receiving facility that a patient is enroute
- **Notification** is a communication meant to alert hospital staff that a specialty care patient is enroute. Notifications include:
 - I. Trauma
 - II. Stroke
 - III. STEMI
 - IV. Sepsis
- **Physician Consult** is a consultative discussion between field personnel and an ED physician

Policy

A. Report Only

- Shall occur anytime a prehospital unit transports a patient
- May be performed by any prehospital personnel
- Reports shall include the following:
 - I. Transport unit identification
 - II. Level of care being provided (ALS or BLS)
 - III. Estimated time of arrival to receiving facility
 - IV. Level of transport (code 2 or 3)
 - V. General category of patient (type of illness or injury) or treatment guideline being used for an ALS patient
 - VI. Condition of patient (stable, improving, or worsening)

B. Notification (Trauma/Stroke/STEMI/Sepsis)

- Field personnel will advise the receiving facility a minimum of ten minutes prior to arrival (or as soon as possible if transport less than ten minutes)

- Is required when patients meets notification criteria
- Notifications shall include the following:
 - I. Unit and transport code
 - II. Notification type (e.g., Trauma, Stroke, STEMI, Sepsis)
 - III. Age/Gender
 - IV. Pertinent findings for the specific notification (see related protocol)
 - V. ETA

C. Physician Consult

- Shall occur when specified in an ALS or BLS Treatment Protocol
- Trauma Center consultation is recommended for questions about the destinations for injured patients. Consult shall be made with MarinHealth Medical Center Level III Trauma Center
- Physician Consult shall include the following:
 - I. The need for physician consultation
 - II. Patient assessment information as appropriate
 - III. Policy or procedure being followed which mandates physician consult or order

D. If attempts to contact for any of the reasons above and unable to contact the intended receiving facility, personnel may contact another in-county hospital. If no facility can be contacted, the following shall occur:

- Treatment should be administered according to the appropriate ALS or BLS treatment protocol
- Medications or treatments listed as “physician consult required” may not be administered or performed
- Documentation of the communications failure should be completed as detailed in policy #7002, Communication Failure

E. In the event of a declared multiple patient incident, paramedics may operate according to the MCI Plan omitting contact or hospital consultation

REDDINET POLICY

PURPOSE

To provide guidance for the use of the ReddiNet Communications system

RELATED POLICIES

Ambulance Diversion Policy, #5400; Medical Mutual Aid Policy, #5200; Marin County Multiple Casualty Incident (MCI) Plan

POLICY

A. Facility information and status

1. Each facility using the ReddiNet system shall complete and update daily their facility information and status screens as outlined on the facility information form.
2. Each facility shall complete and maintain the password request form provided by ReddiNet and is responsible for maintenance of authorized licensed users.

B. MCI Operations

1. The Communications Center staff shall initiate the MCI via ReddiNet upon direction from the Incident Commander. The ReddiNet "Help and Support" shall serve as the guidance for ReddiNet operations and is accessed at the bottom of the ReddiNet screen.
2. The MCI Plan shall serve as the overall guidance for operations during an MCI.

C. Ambulance Diversion

1. All diversions will be initiated and terminated via ReddiNet.
2. Policy #5400 shall be used as the guidance for ambulance diversions.

D. Memo

1. The memo feature is for urgent communications that can be sent to several facilities simultaneously.
2. Memos may be completed by any facility and must be written in a professional manner.
3. Memos shall include originators last name.
4. HAvBED is the number of empty staffed beds that are available.
5. The facility may choose to have any department in the hospital input the information.

E. Assessment Polls

1. Assessment Polls may be initiated from several different departments in the facility that is licensed to do so.
2. Assessment Polls must be written in a professional manner.
3. Assessment Polls that are to be used on an ongoing basis shall be approved by the EMS Program and done in consultation with the participating facilities.

F. Drills

1. Drills shall be conducted on a regular basis with all system users.
2. See "Training" under Help and Support for details.

PATIENT CARE RECORD (PCR)

Purpose

To establish requirements for the timely completion, submission, and reporting of Marin County 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, 7006B

Definitions

Patient- someone who meets any one or more of the following criteria:

- Has a chief complaint or has made a request for medical assistance;
 - Has obvious signs or symptoms of injury or illness;
 - Has been involved in an event where mechanism of injury would cause the responder to reasonably believe that an injury may be present;
 - Appears to be disoriented or to have impaired psychiatric function;
 - Has evidence of suicidal intent;
 - Is deceased.
-
- **Emergency Medical (EM) Number** - A unique number assigned by the Marin County Communication Center to identify each 911call 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 and the delivery of care.
 - **Field Transfer Form (FTF)** - a paper record of patient care used by field personnel only when an ePCR is unavailable.
 - **Posting** - the process of uploading the ePCR from ImageTrend Elite to the server.
 - **Completed PCR** - the status of a PCR when it has been posted to the server and locked.

Policy

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

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

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

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 accuracy of the content of the PCR.

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

The PCR shall be completed by the personnel assigned to the transport unit.

When available, the PCR 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

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 ePCR (e.g. vehicle damage).

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.

Data gathering and documentation responsibilities should never take precedence over hands-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 (e.g. Cancelled, AMA, RAS, Dead on Scene)

An ePCR shall be completed as soon as possible and no later 24 hours following completion of the call.

- A. For calls where there is no patient transported, the unit that completes the ePCR shall 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 paper PCR for each patient contact. The PCR 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 for PCR documentation (see Policy 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 two complete sets of vital signs (VS) for every patient including pulse, respirations, blood pressure and pulse oximetry. Repeat and document VS every 5 minutes for unstable patients, and every 15 minutes for stable 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 shall be measured with a color-coded resuscitation tape. The corresponding color wrist band shall be applied, and the patient treated according to the Pediatric Dosing Guide (PTG 2A)
 - All pertinent medications taken by the patient prior and/or administered by a first responder shall be documented if known.
 - The CAD to PCR interface should be used to populate all PCR data fields as appropriate. Imported data may be manually corrected as needed.
 - When the cardiac monitor is applied, data shall 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 must be documented.
 - For drug administrations, the drug dosages, 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 patients 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 electronic signatures.

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 <i>Repeat:</i> 12mg
Albuterol	2.5mg/3ml NS	Nebulized 5mg/6ml NS
Amiodarone	150mg/3ml	IV/IO VF/Pulseless VTach: 300mg push <i>Repeat:</i> 150mg push in 3-5min Perfusing/Recurrent VTach: 150mg over 10 min (15mg/min) <i>Repeat:</i> q10 min PRN
Aspirin (Chewable)	Variable	PO 324mg
Atropine	1mg/10ml	IV/IO Bradycardia: 1mg <i>Repeat:</i> q3-5 min <i>Max total:</i> 3mg Organophosphate Poisoning: 2mg slowly <i>Repeat:</i> 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 <i>Repeat:</i> x1 if severe signs <i>Max total dose:</i> 10 grams

DRUG	CONCENTRATION	STANDARD DOSE
Dextrose 10%	25gm/250ml	IV/IO 125ml bolus over 10 min; recheck BG <i>Repeat:</i> as needed
Diphenhydramine (Benadryl)	50mg/ml	IV/IO/IM 50mg
Epinephrine	1mg/ml EpiPen ® 0.3mg	IM Allergic reaction/Anaphylaxis: 0.3mg or EpiPen ® <i>Repeat:</i> x1 in 5 min
Epinephrine	0.1mg/ml	IV/IO 1mg (10ml) followed by 20ml NS flush <i>Repeat:</i> q3-5min
Epinephrine (Push-Dose)	0.01mg/ml	IV/IO ☎ SBP <80: Mix 1ml Epinephrine (0.1mg/ml) with 9ml NS in a 10ml syringe <i>Initial:</i> 1ml <i>Repeat:</i> q3-5 min, titrate to maintain SBP >80
Fentanyl (Sublimaze)	100mcg/2ml	IV/IO 50mcg slowly <i>Repeat:</i> q5 min <i>Max dose:</i> 200mcg IM 50mcg <i>Repeat:</i> in 30 min IN 50mcg; administer 1/2 dose in each nostril <i>Repeat:</i> q5 min <i>Max dose:</i> 200mcg

ADULT MEDICATION STANDARD DOSAGES

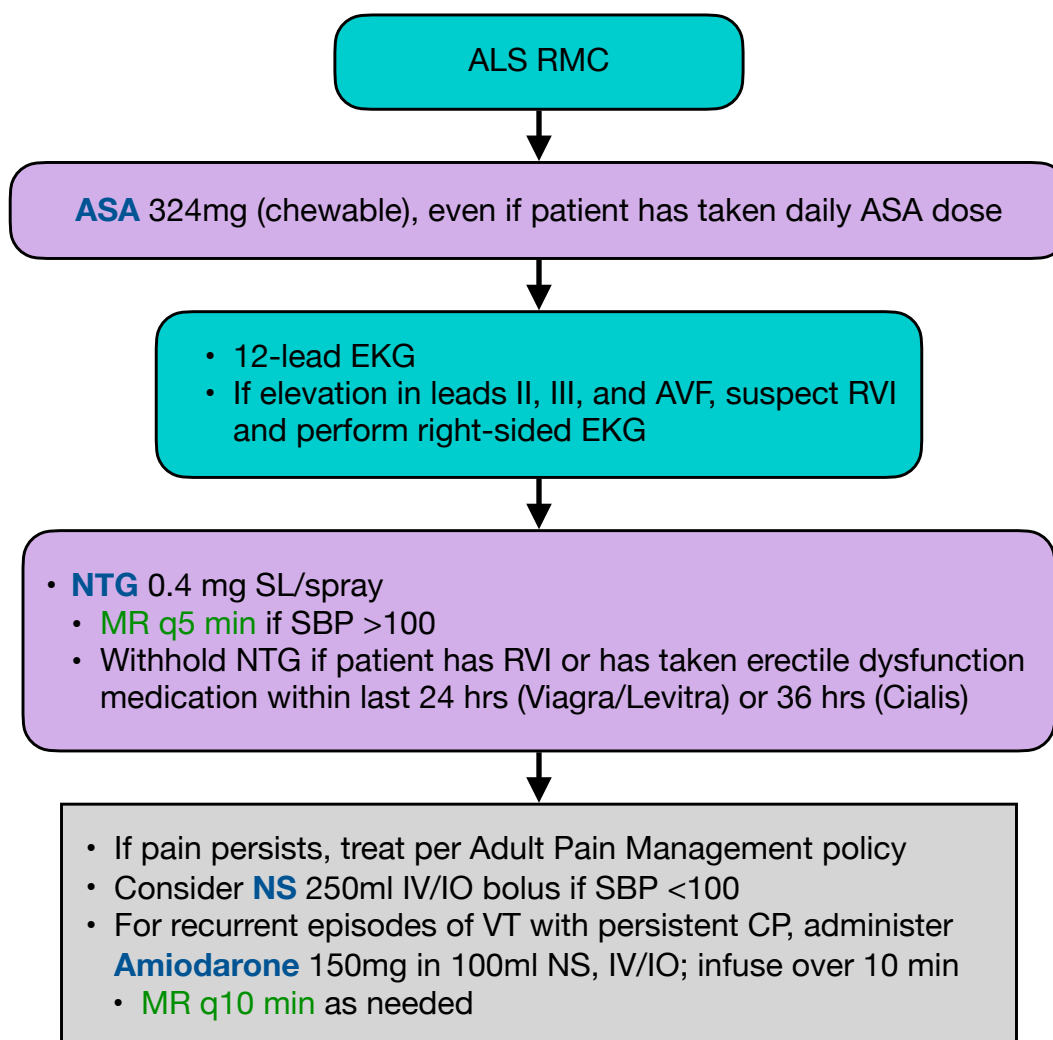
DRUG	CONCENTRATION	STANDARD DOSE
Glucose Paste	15 grams/tube	<u>PO</u> 30 grams
Glucagon	1mg/ml	<u>IM</u> 1mg
Ipratropium (Atrovent)	500mcg/2.5ml Unit dose	<u>Nebulized</u> 500mcg
Lidocaine 2%	20mg/ml	<u>IO</u> 20-40mg over 30-60 seconds <i>Repeat:</i> q15 min
Midazolam (Versed)	2mg/2ml (IV/IO/IM) 5mg/1ml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

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

CHEST PAIN/ACUTE CORONARY SYNDROME

Indications

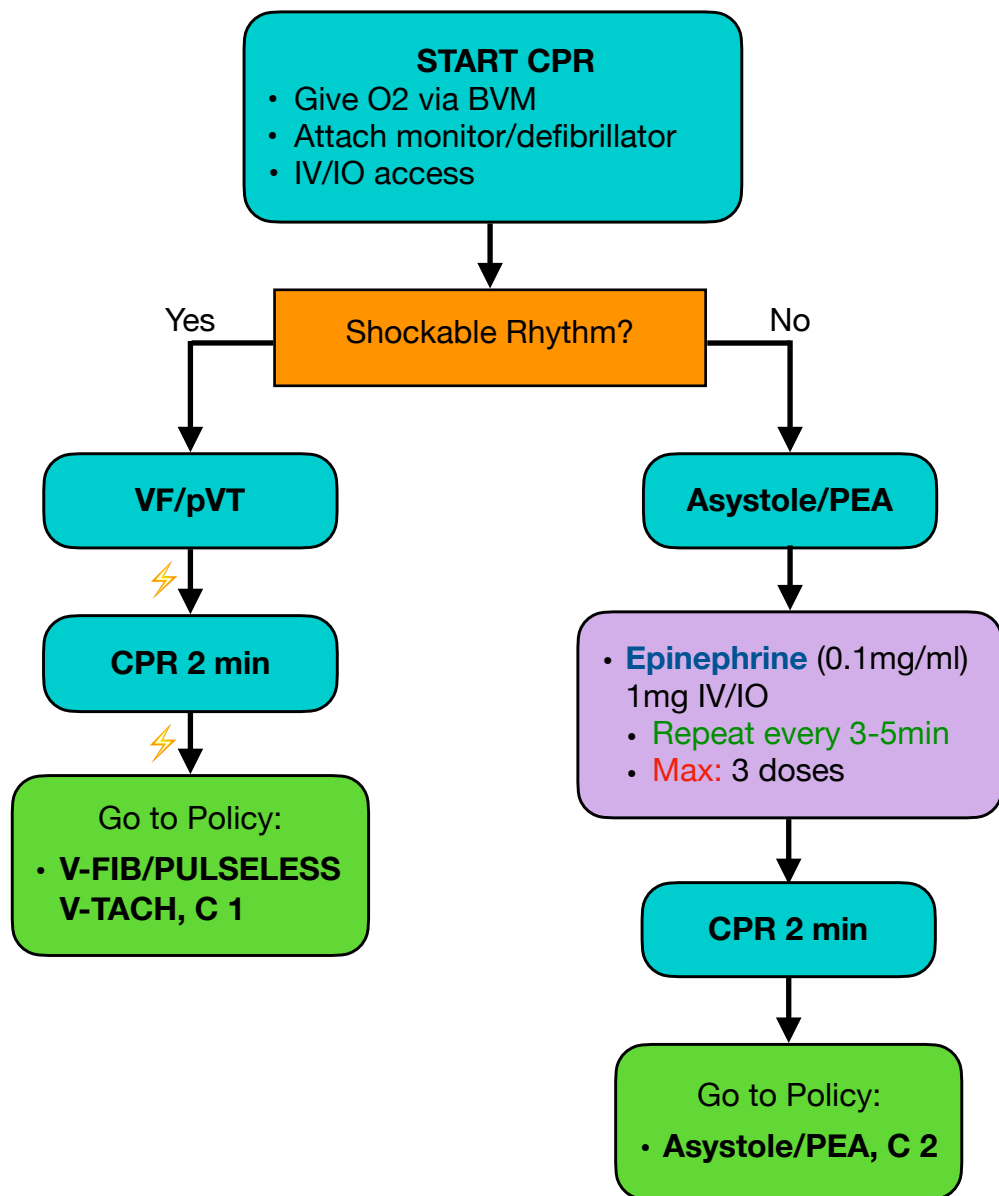
- Chest discomfort or pain, suggestive of cardiac origin.
- Other symptoms of Acute Coronary Syndrome (ACS) may include weakness, nausea, vomiting, diaphoresis, dyspnea, dizziness, palpitations, indigestion
- Atypical symptoms or “silent MIs” (women, elderly, and diabetics)



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.)

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

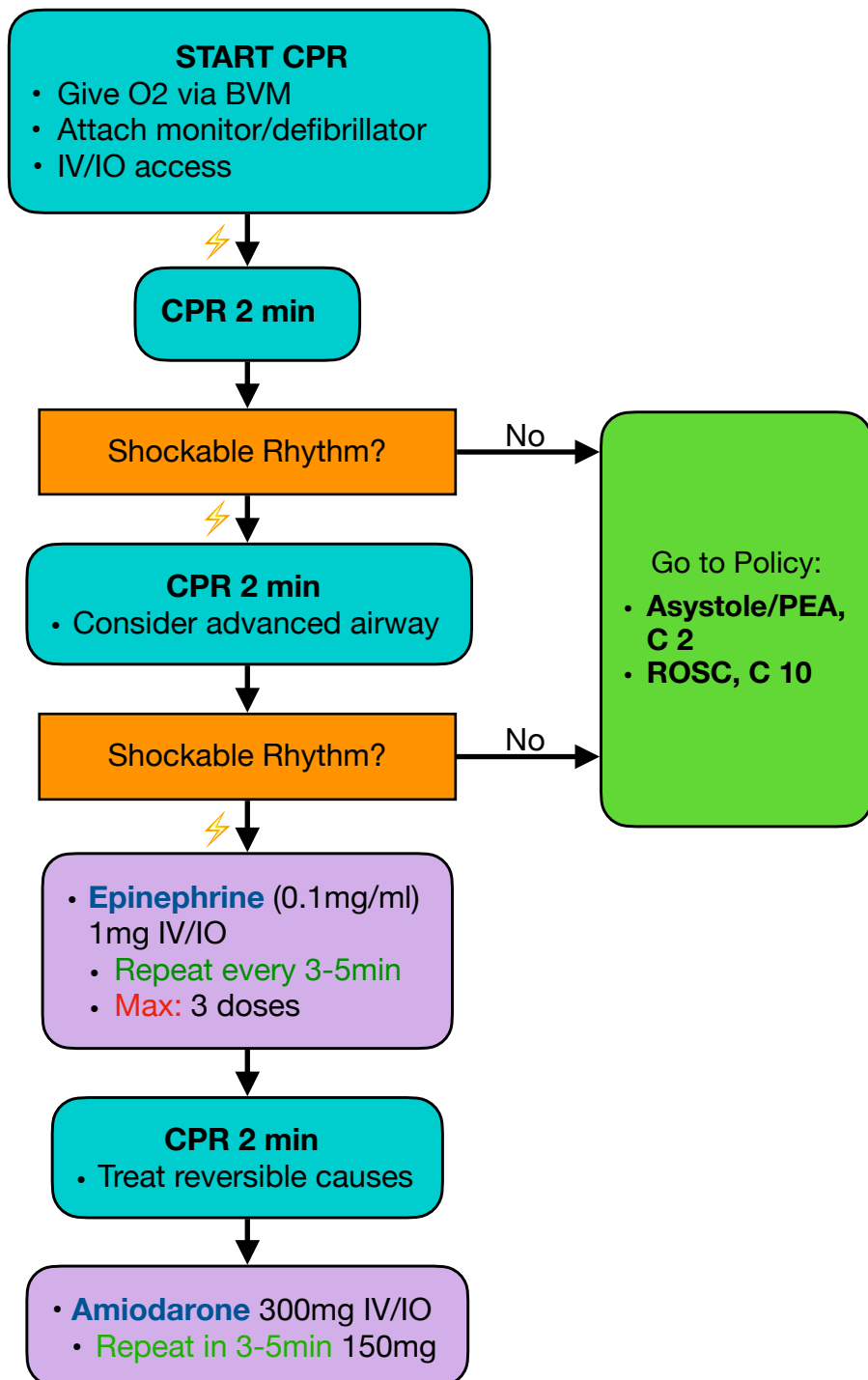
ALS Airway Management

- 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

- If patient is <75yrs and in refractory V-fib (3 unsuccessful shocks), transport to nearest available STEMI Receiving Center. Otherwise provide resuscitation on scene until ROSC or when patient meets Determination of Death criteria
- Regardless of the above, transportation is warranted in the following situations: unsafe scene conditions, unstable airway, hypothermia/hyperthermia as primary cause of arrest, any patient pulled from a fire in cardiac arrest
- To assure ROSC continues, remain on scene for 5-10 minutes and then transport to a STEMI Receiving Center

V-FIB/PULSELESS V-TACH



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.

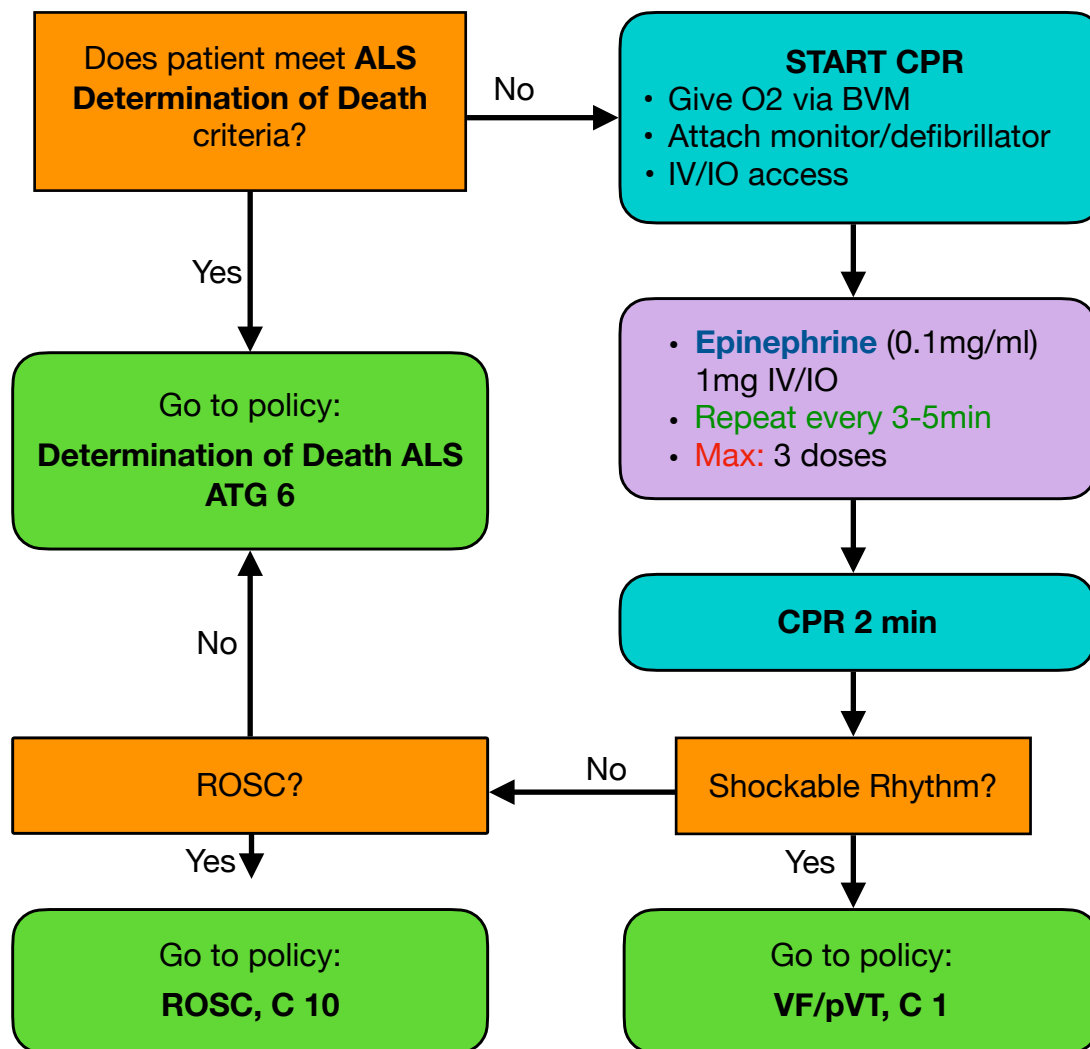
- If ROSC after **Amiodarone**, consider **Amiodarone drip** 150mg in 100ml NS, 1mg/min = 40gtts/min with 60gtt/ml tubing
- If hyperkalemia is suspected in renal dialysis patients, give 1 gram of 10% **Calcium Chloride** IV/IO and 50mEq of **Sodium Bicarbonate** IV/IO

Reversible Causes

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

- DO NOT transport rVF patients with any of the following: >75yrs, hospice, advanced dementia, irreversible neurological injury, active malignancy
- 📞 **PHYSICIAN CONSULT** to transport rVF patients with: unwitnessed arrest, >5min prior to resuscitation initiation (bystander or EMS personnel), non-cardiac etiology known or suspected

ASYSTOLE/PEA



CRITICAL INFORMATION

- Immediate determination of death can be made if patient meets **Determination of Death ALS ATG 6** criteria
- If hyperkalemia is suspected in renal dialysis patients, administer 1 gram of 10% **Calcium Chloride** IV/IO and 50mEq of **Sodium Bicarbonate** IV/IO

SPECIAL CONSIDERATION

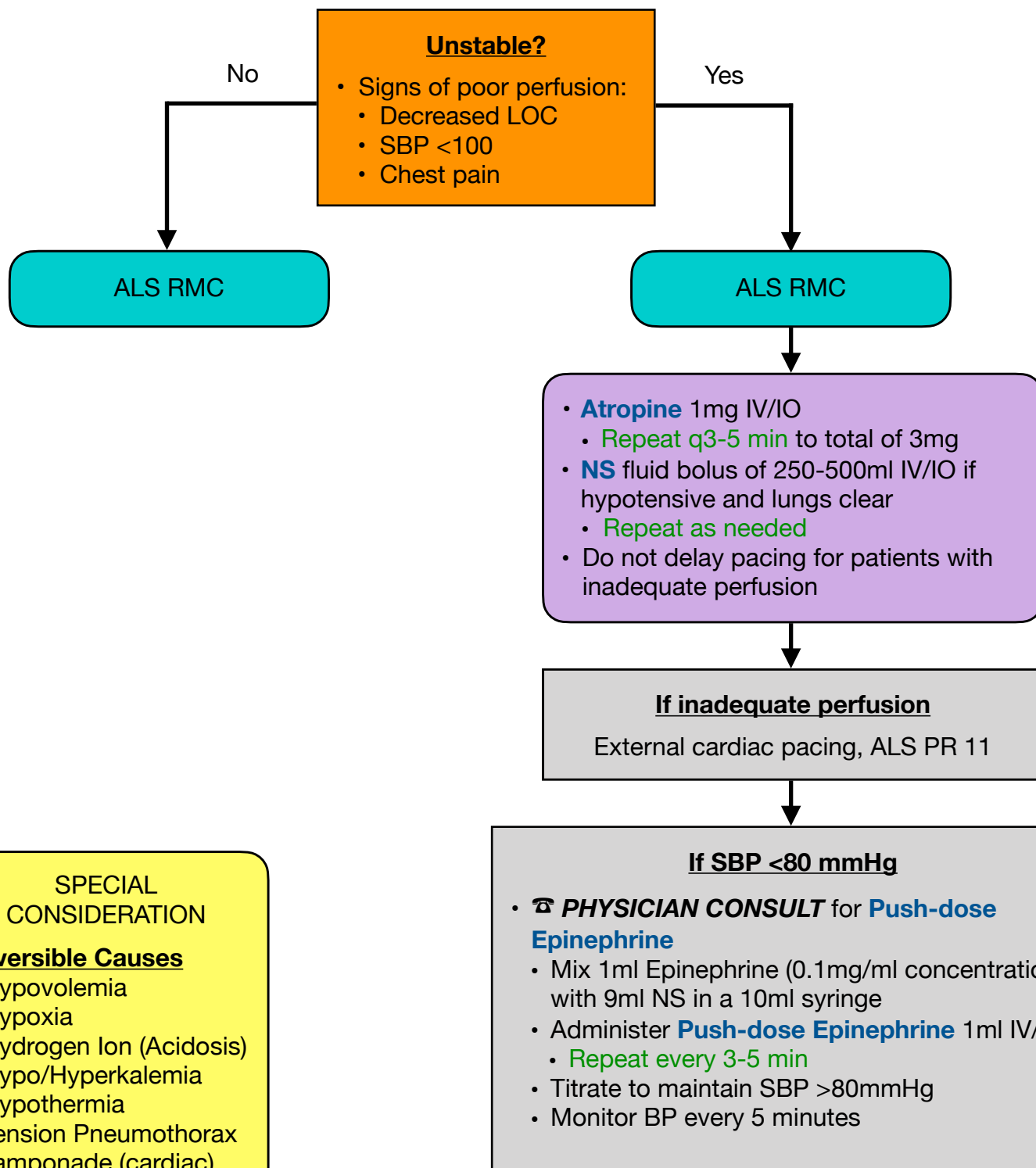
Reversible Causes

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

BRADYCARDIA

Indications

- HR <50 with adequate or inadequate perfusion



SPECIAL CONSIDERATION

Reversible Causes

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

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

- Restraints must not compromise airway, breathing or circulations
- 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

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

Critical Information

- Refer to Adult Sedation Policy, ATG 3
- 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

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
- Patients/DDMs with decision making capacity 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

☎ 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
- Patients/DDMs with decision making capacity 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



Have patient/DDM sign the RAS form

☎ PHYSICIAN CONSULT

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

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

SPECIAL CONSIDERATIONS

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

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

Indication

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

Follow standard procedures on arrival and assess the patient

If information of a DNR exists

- Responders shall request to see the signed order, form or medallion
- If a DNR is not present at the scene, but a person who is present and can be identified as an immediate family member or spouse requests no resuscitation and has the full agreement of any others who are present on scene, resuscitation may be withheld or stopped if it has already been initiated

If patient with a DNR collapses in public

- Responders will notify the appropriate public safety agency and remain on the scene until their arrival

☎ PHYSICIAN CONSULT

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

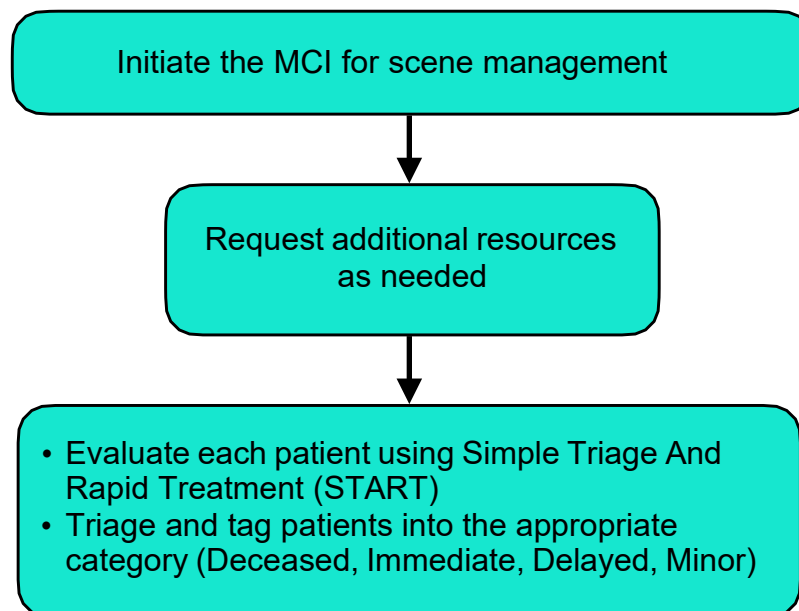
CRITICAL INFORMATION

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

MULTI-CASUALTY INCIDENT (MCI)

Indication

Any incident with multiple patients may indicate the use of the County Multi-Casualty Incident (MCI) Plan.



POISONS/DRUGS

Indications

- Exposure to one or more toxic substances (ingestion, inhalation, or skin contact)

ALS RMC

- Consider contacting Poison Control Center at 1(800) 404-4646 for additional information. If information from Poison Control is outside of scope of practice, contact intended receiving facility for consult
- If LOC diminishes, protect airway
- If skin or eye exposure, decontaminate patient, remove clothing, wash skin, continuous irrigation of eyes

Caustics/Corrosives

Ingestion of substances causing intra-oral burns, painful swallowing or inability to handle secretions

- Do not induce vomiting

Hydrocarbons or

Petroleum distillates

Kerosene, gasoline, lighter fluid, furniture polish

- Do not induce vomiting
- Transport immediately

Phenothiazine reactions

Restlessness, muscle spasms of the neck, jaw, and back; oculogyric crisis, history of ingestion of phenothiazine, or unknown medication

- **Benadryl** 50mg IV/IO

Insecticides

Organophosphates, carbonates; can cause cholinergic crisis characterized by bradycardia, increased salivation, lacrimation, sweating, muscle fasciculation, abnormal cramping, pinpoint pupils, incoherence or coma

- **Atropine** 2mg IV/IO slowly
- **Repeat every 2-5 min** until drying of secretions, reversal of bronchospasm and reversal of bradycardia.

Cyclic Antidepressants

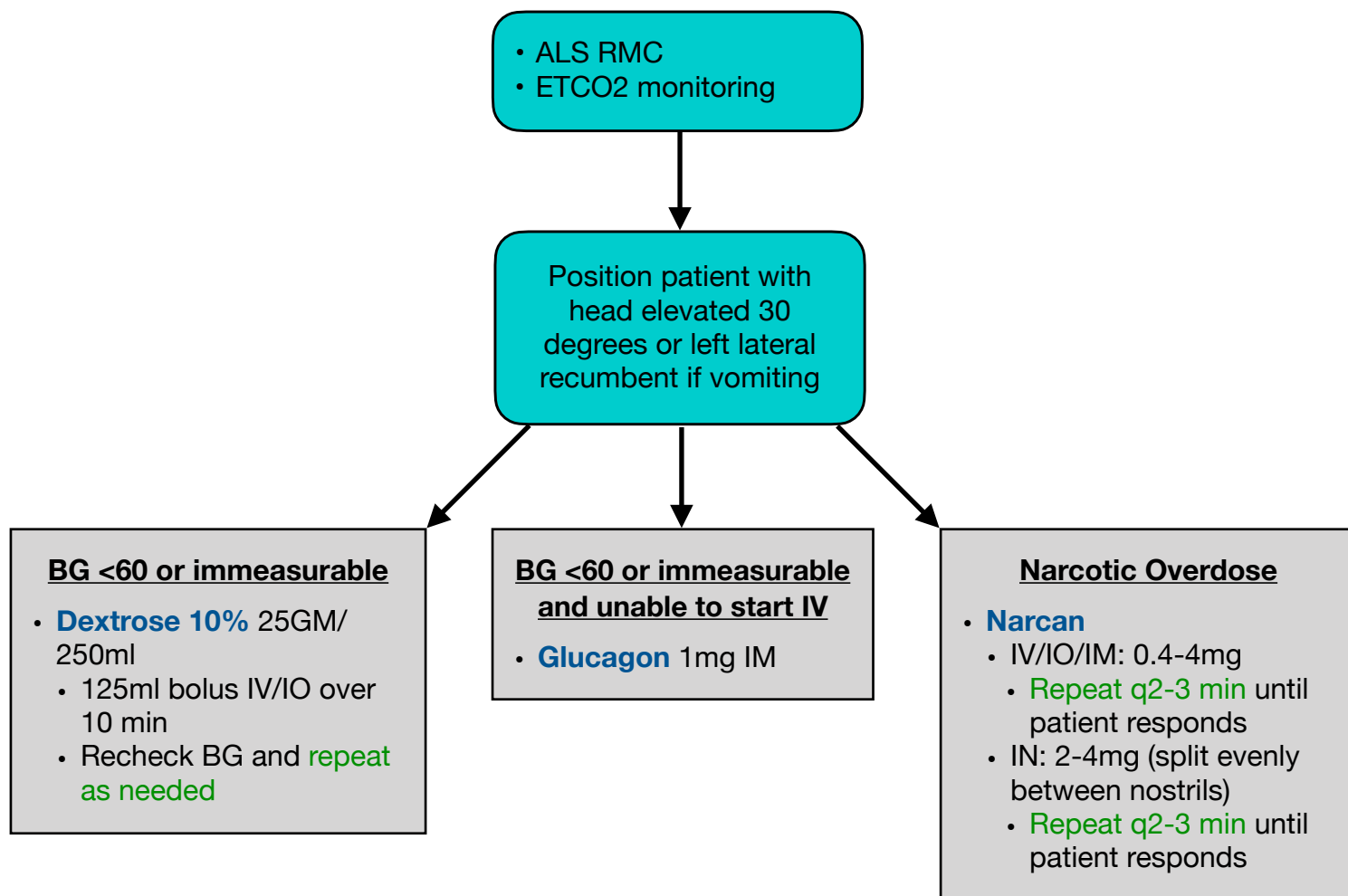
Frequently associated with respiratory depression, almost always tachycardic, widened QRS and ventricular arrhythmias generally indicate life-threatening ingestions

- In the presence of life-threatening dysrhythmias
 - Hyperventilate if assisting ventilations or intubating
- **Sodium Bicarbonate** 50mEq IV/IO

COMA/ALOC

Indications

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



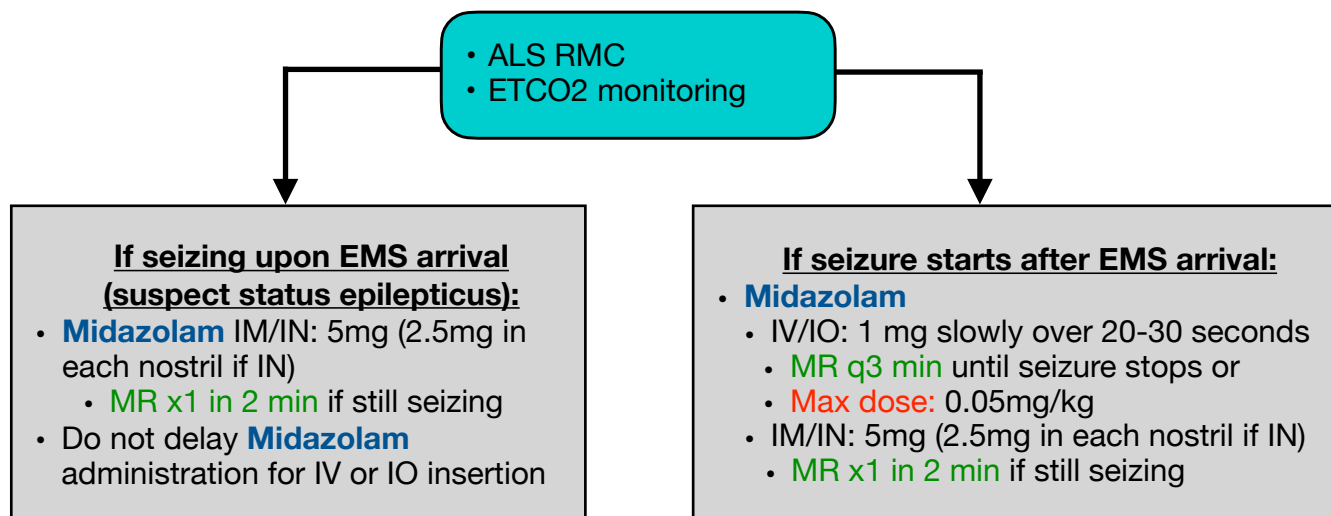
SPECIAL CONSIDERATIONS

- Indication for c-spine precautions
- Diabetic complications
- If Stroke suspected, see Stroke/TIA Policy, N 4

SEIZURE

Indications

- Recurring or continuous generalized seizures with ALOC
- Status epilepticus (two or more successive seizures without a period of consciousness, or one seizure lasting longer than five minutes)



SPECIAL CONSIDERATIONS

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

Midazolam Weight Based Chart- MAXIMUM DOSING for IV/IO only

Kg	Lb	Dose (0.05mg/kg)
40-50	88-110	2-2.5mg
51-60	111-132	2.5-3mg
61-70	133-154	3-3.5mg
71-80	155-176	3.5-4mg
81-90	177-198	4-4.5mg
91-100	199-220	4.5-5mg
>100	>220	5mg

STROKE/TIA

Indications

- Sudden onset of weakness/paralysis, speech or gait disturbance

ALS RMC

- IV access (AC preferred) if patient meets Early Stroke Notification criteria
- Elevate head of bed 20-30° or place in left lateral recumbent

If last known well <4.5 hours and BG >60

- Provide Early Stroke Notification if any are true:
 - Abnormal Cincinnati Pre-hospital Stroke Scale (CPSS) score
 - Abnormal Visual Fields Assessment
 - Abnormal Cerebellar Assessment
 - Symptoms are most likely due to stroke and not a stroke mimic

If the patient meets criteria for early notification

- During radio report, provide patient identifying information- medical record number if known and/or last name and DOB of patient
- Rapidly transport to patient's preferred Primary Stroke Center (PSC), as long as the estimated transport time is not >15 min longer than the closest PSC
 - Preferred PSC: patient's preference or PSC with patient's medical records
 - No preferred PSC: transport to the closest PSC
- Notify family members/medical decision maker that their immediate presence at the hospital is critical for optimal care
- Bring names and best phone numbers for the patient's medical decision maker and who last saw the patient normal whenever possible

If high suspicion of rapidly progressive intracranial bleed
(sudden, witnessed onset of coma or rapidly deteriorating GCS especially in the setting of severe headache)

- Transport to MarinHealth Medical Center

Cincinnati Pre-Hospital Stroke Scale (CPSS)

- Facial Droop (the patient shows teeth or smiles)
 - Normal: Both sides of the face move equally
 - Abnormal: Right side of the face does not move as well as the left
 - Abnormal: Left side of the face does not move as well as the right
- Arm Drift (the patient closes their eyes and extends both arms straight out for 10 seconds)
 - Normal: Both arms move the same, or both arms do not move at all
 - Abnormal: Right arm either does not move, or drifts down compared to the left
 - Abnormal: Left arm either does not move or drifts down compared to the right
- Speech (the patient repeats “The sky is blue in Cincinnati” or another sentence)
 - Normal: The patient says the correct words with no slurring or words
 - Abnormal: The patient slurs words, says the wrong words, or is unable to speak

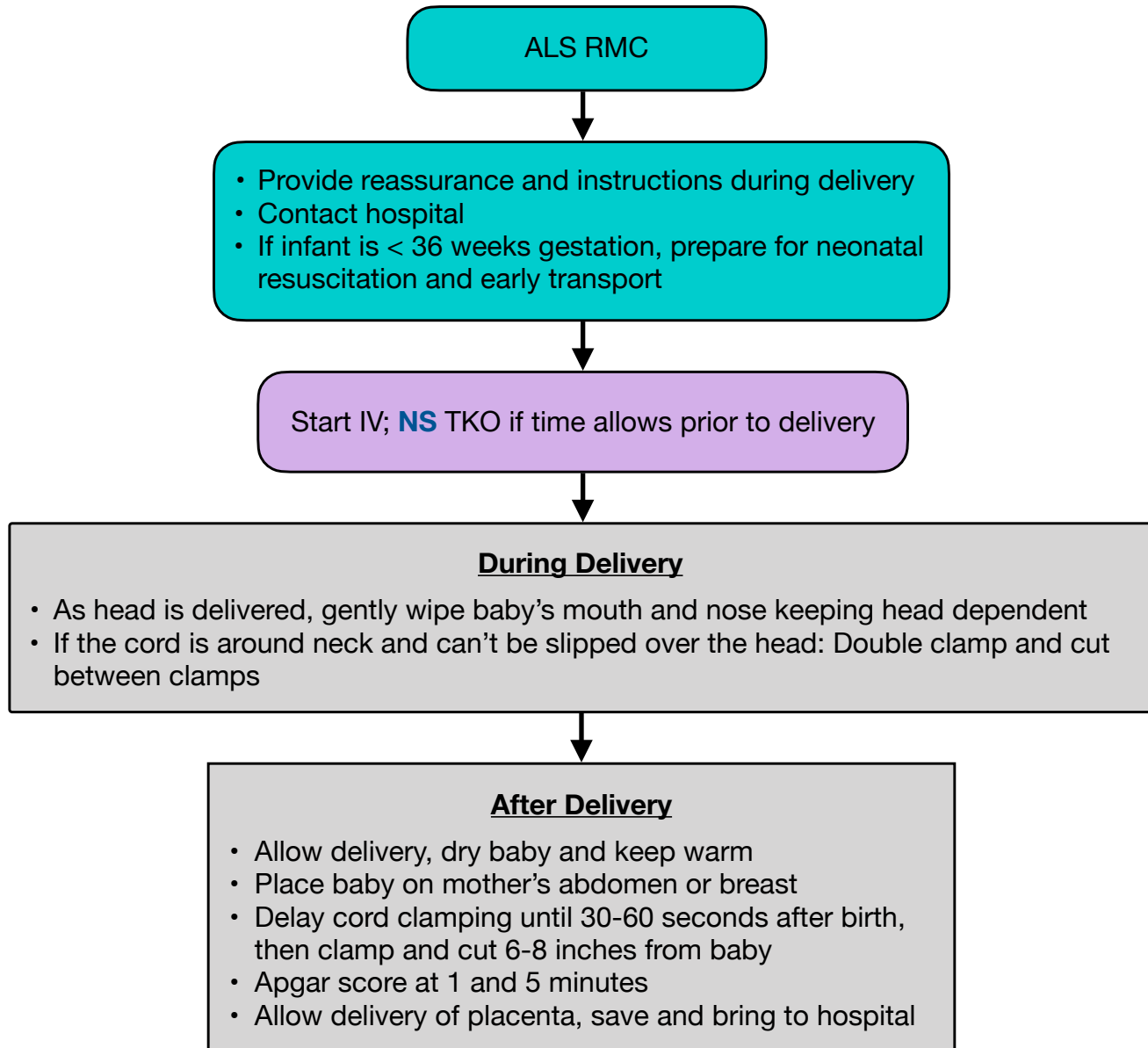
Visual Fields/Cerebellar Assessment

- Visual Fields Assessment
 - Normal: Patient able to count fingers in all four visual field quadrants
 - Abnormal: Patient unable to correctly count fingers in one or more visual field quadrants
- Cerebellar Assessment (finger-to-nose)
 - Normal: Patient able to move their index finger from their nose to the examiner’s finger
 - Abnormal: Patient exhibits clumsy/unsteady movements or “overshoots”

IMMINENT DELIVERY (NORMAL)

Indications

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

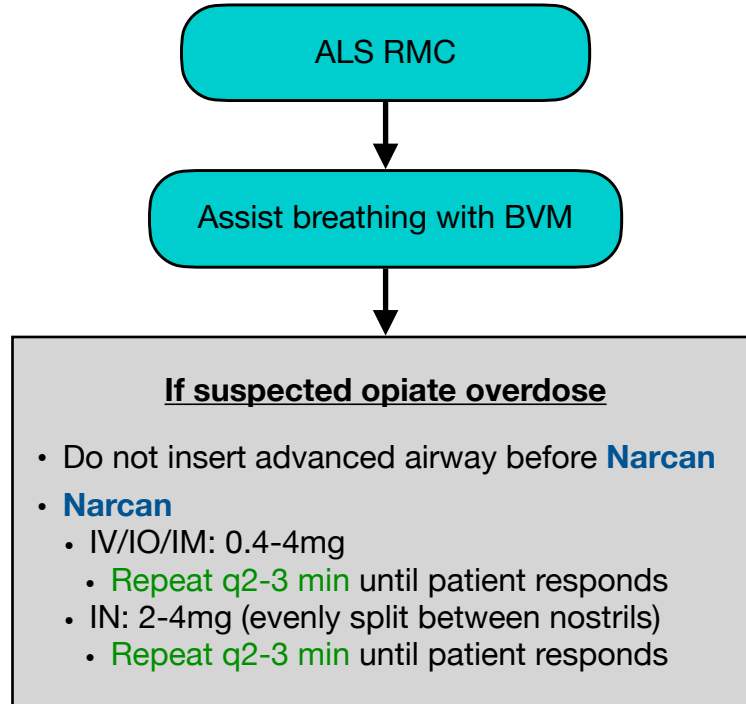


Sign	0	1	2
Heart Rate	Absent	Slow (<100)	≥100
Respirations	Absent	Slow, irregular	Good, crying
Muscle Tone	Limp	Some flexion	Active motion
Reflex Irritability	No response	Grimace	Cough, sneeze, cry
Color	Blue or pale	Pink body with blue extremities	Completely pink

RESPIRATORY ARREST

Indications

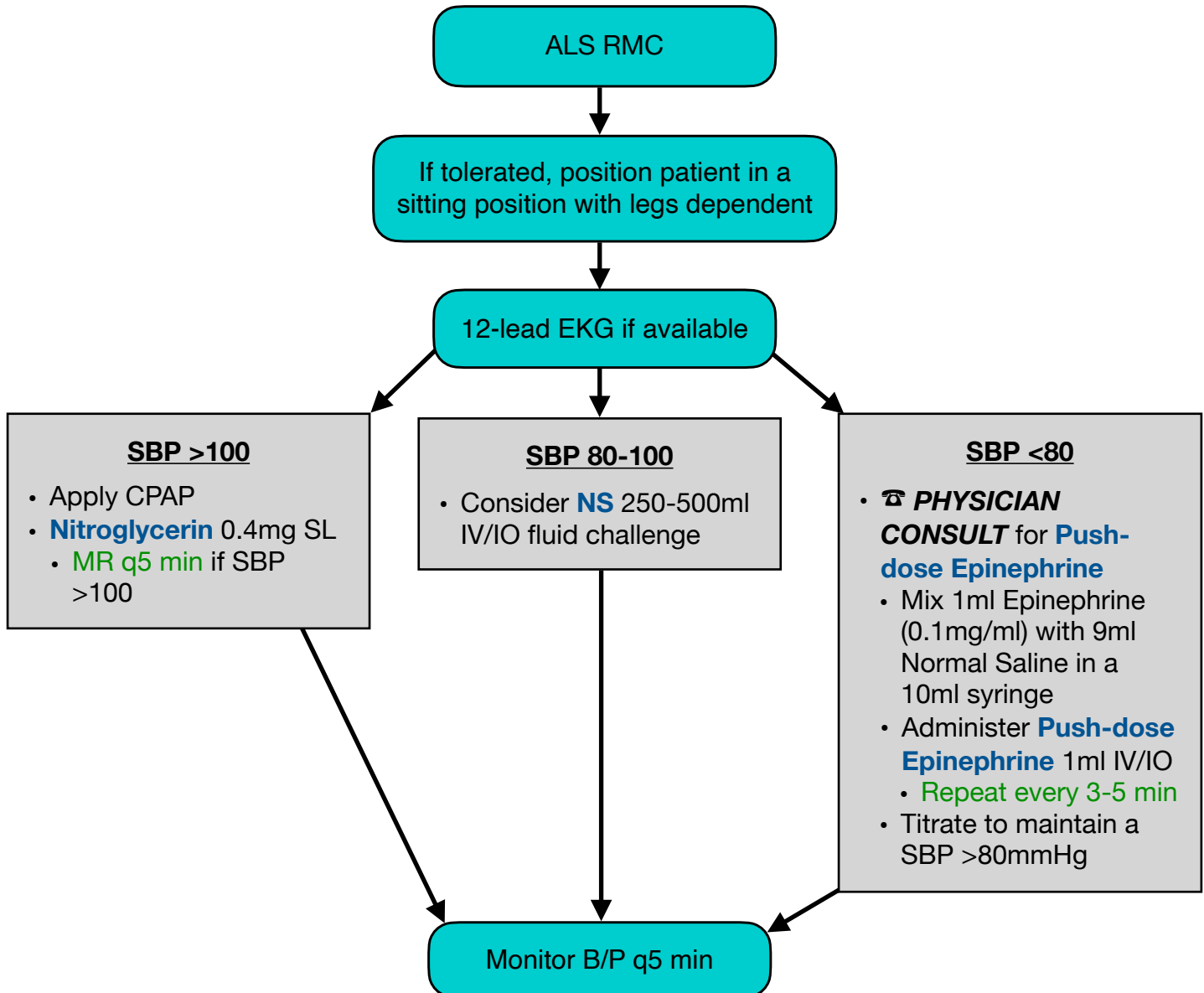
- Absence of spontaneous ventilations; pulse present



ACUTE PULMONARY EDEMA

Indications

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



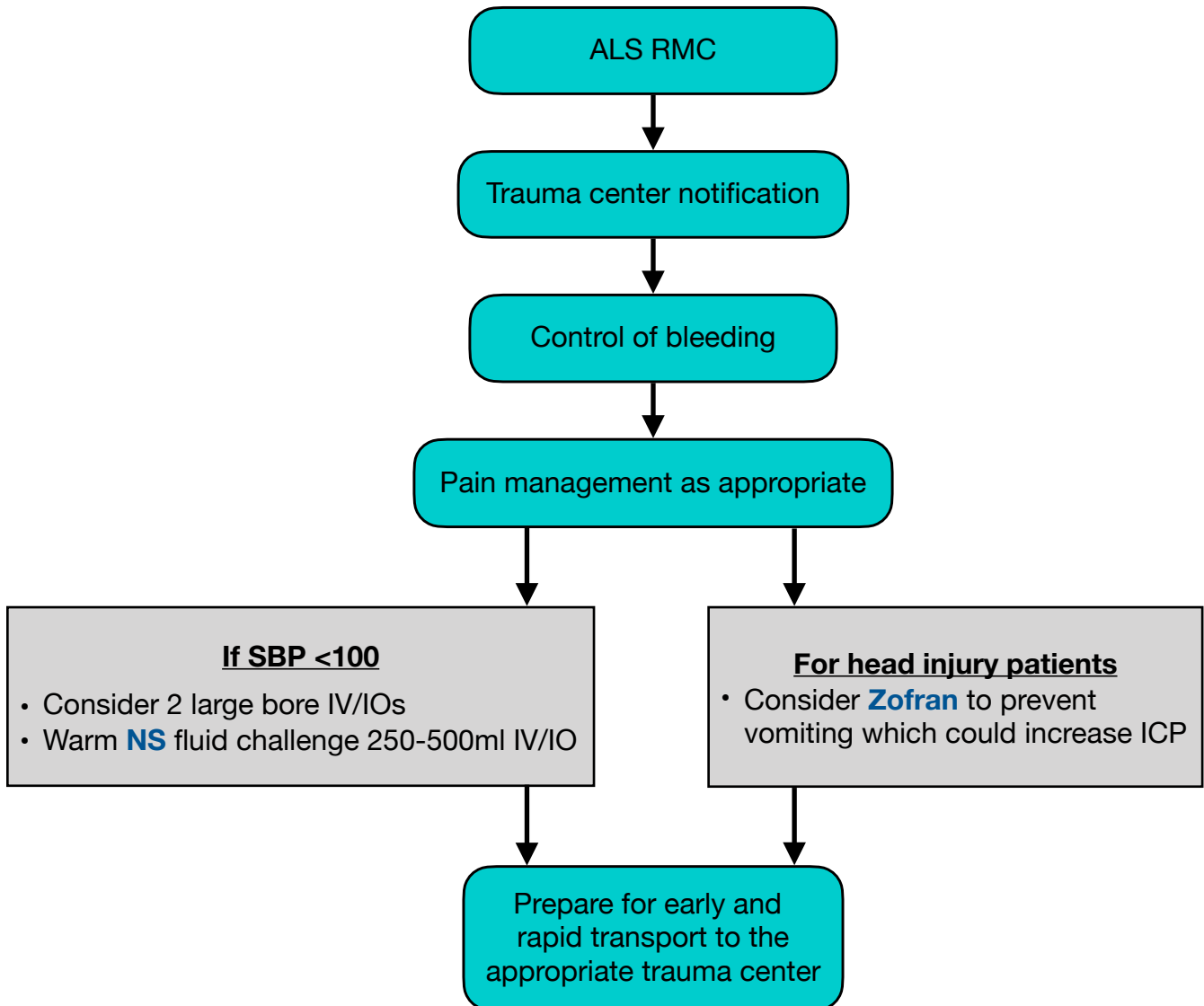
SPECIAL CONSIDERATION

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

TRAUMATIC INJURY

Indications

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



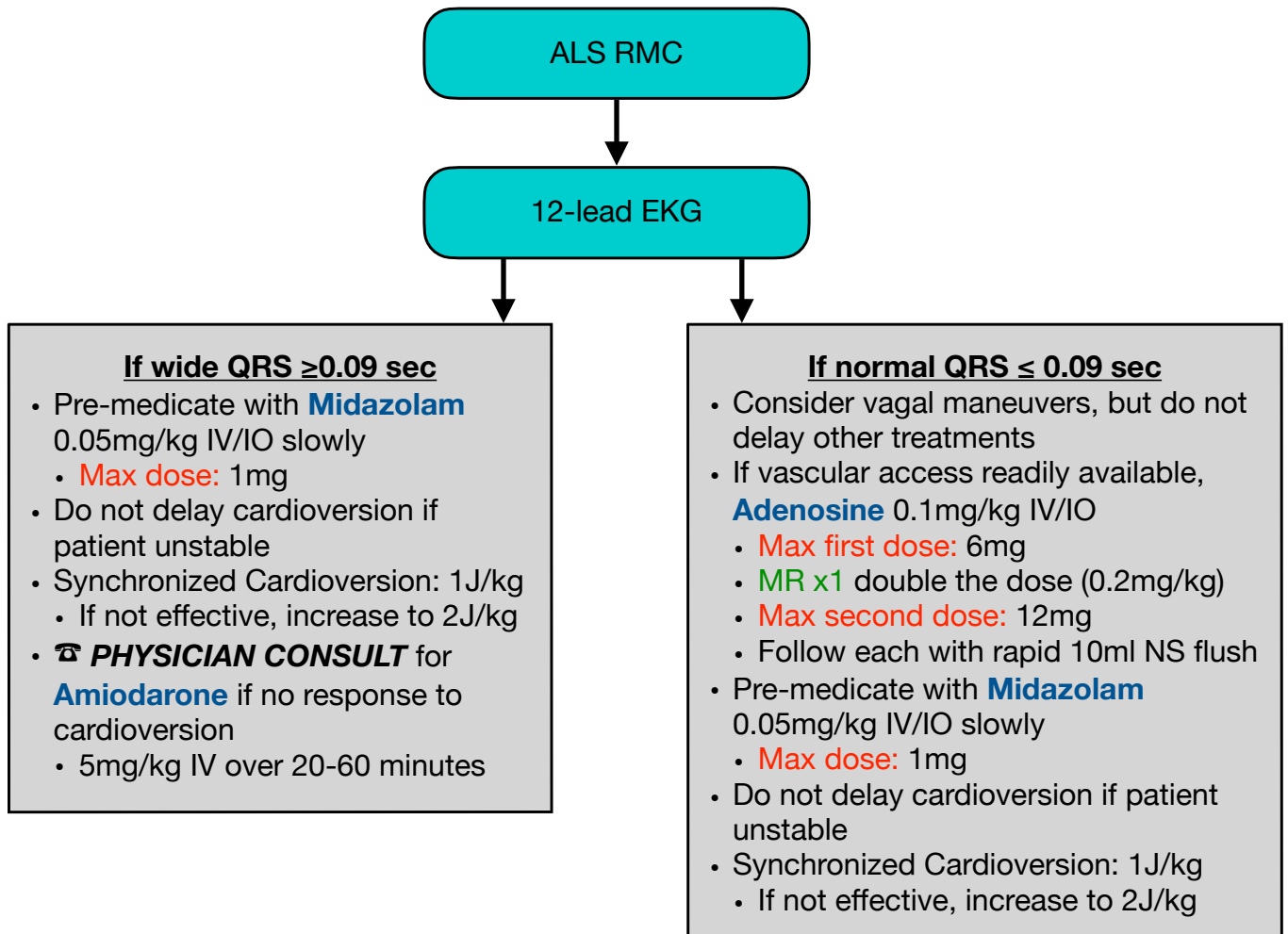
SPECIAL CONSIDERATION

- If injury may have resulted from abuse, neglect, assault, attempted suicide/homicide and/or other crimes, refer to Suspected Abuse/Neglect (GPC 9) and/or Sexual Assault/Human Trafficking (GPC 10) Policy for reporting

PEDIATRIC TACHYCARDIA

Indications

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



SPECIAL CONSIDERATION

Reversible causes:

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

PEDIATRIC DOSING GUIDE

ORANGE: 24-29kg/53-64lbs

Normal Vital Signs

HR asleep	HR awake	Respiratory Rate	Systolic BP	Diastolic BP	MAP
58-90	75-118	18-25	97-115	57-76	66-72

NS Fluid Bolus: 20ml/kg	530ml	DEFIBRILLATION: 2, 4J/kg	1st: 53J	2nd: 106J
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Blade for Foreign Body Removal:	2	CARDIOVERSION: 1, 2J/kg	1st: 26J	2nd: 53J
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Medication	Concentration	Dose	Dose in mg	Dose in ml	Details
ADENOSINE	6mg/2ml (3mg/ml)	0.1mg/kg RIVP Max 1st dose: 6mg Max 2nd dose: 12mg	<u>1st:</u> 2.7mg <u>2nd:</u> 5.4mg	<u>1st:</u> 0.9ml <u>2nd:</u> 1.8ml	RIVP w/ 10ml NS flush MR x1 double the dose (0.2mg/kg)
ALBUTEROL	2.5mg/3ml	2.5mg/3ml HHN	2.5mg	3ml	MR x1
AMIODARONE (Pulseless arrest)	150mg/3ml (50mg/ml)	5mg/kg IV/IO Max single dose: 300mg	130mg	2.6ml	Follow with or dilute in 20ml NS flush Give after 3rd shock
ATROPINE (Bradycardia)	1mg/10ml (0.1mg/ml)	0.02mg/kg IV/IO Min dose: 0.1mg Max single dose: 0.5mg	0.5mg	5ml	MR x1 in 3-5 min
ATROPINE (Organophosphate poisoning)	<u>Preload:</u> 1mg/10ml (0.1mg/ml) <u>Vial:</u> 0.4mg/ml	0.05mg/kg IV/IO	1.3mg	<u>Preload:</u> 13ml <u>Vial:</u> 3.3ml	MR q5-10 min until symptoms resolve
DEXTROSE	10%	5ml/kg IV/IO Max dose: 125ml		125ml	Give over 10 min
DIPHENHYDRAMINE <i>Benadryl</i>	50mg/ml	1mg/kg IM/IV/IO Max dose: 50mg	26mg	0.5ml	
EPINEPHRINE (Cardiac arrest/ Bradycardia)	1mg/10ml (0.1mg/ml)	0.01mg/kg IV/IO	0.26mg	2.6ml	MR q3-5 min
EPINEPHRINE (Allergic reaction/ Asthma)	1mg/ml	0.01mg/kg IM Total max dose: 0.6mg	0.26mg	0.26ml	MR x1 in 5 min
EPINEPHRINE (Upper airway/Stridor)	1mg/ml	5mg HHN	5mg	5ml	

ORANGE: 24-29kg/53-64lbs

Medication	Concentration	Dose	Dose in mg	Dose in ml	Details
FENTANYL (Pain)	50mcg/ml	1mcg/kg IV/IO/IM/IN Max dose: 3mcg/kg	26.5mcg	0.53ml	MR q5 min For IN: split dose equally in each nostril
GLUCAGON (Hypoglycemia/Beta blocker OD)	1mg/ml	0.03mg/kg IM Max dose: 1mg	0.8mg	0.8ml	MR x2 q15 min if no IV established
IPRATROPIUM <i>Atrovent</i>	500mcg/2.5ml	500mcg/2.5ml HHN	500mcg	2.5ml	
LIDOCAINE 2% preservative free (IO insertion)	20mg/ml	0.5mg/kg slow IO Max dose: 40mg	<u>1st:</u> 13mg <u>2nd:</u> 6mg	<u>1st:</u> 0.7ml <u>2nd:</u> 0.4ml	MR x1 half initial dose (0.25mg/kg)
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IM</u> Max single dose 5mg	5mg	1ml	MR x1 in 10 min
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IN</u> Max dose 5mg	5mg	1ml	Split dose equally in each nostril
MIDAZOLAM <i>Versed</i> (Seizure)	2mg/2ml (1mg/ml)	0.05mg/kg slow <u>IV/IO</u> Total max dose: 5mg	1mg	1ml	MR x2 q15 min
MIDAZOLAM <i>Versed</i> (Cardioversion)	2mg/2ml (1mg/ml)	0.05mg/kg slow IV/IO Max dose: 1mg	1mg	1ml	
MORPHINE (Pain/burns)	10mg/ml	0.1mg/kg IV/IO/IM	2.6mg	0.3ml	MR x2 q15 min (IV/IO) MR in 30min (IM)
NALOXONE <i>Narcan</i>	2mg/2ml (1mg/ml)	0.1mg/kg IV/IO/IM/IN	2mg	2ml	MR q5 min For IN: split dose equally in each nostril
ONDANSETRON <i>Zofran</i>	4mg tab 4mg/2ml	4mg ODT/slow IV	4mg	2ml 1 tab	Slow IV over 30 sec
SODIUM BICARBONATE	1mEq/ml	1mEq/kg IV/IO	26mEq	26ml	

PEDIATRIC DOSING GUIDE

GREEN: 30-36kg/66-80lbs

Normal Vital Signs

HR asleep	HR awake	Respiratory Rate	Systolic BP	Diastolic BP	MAP
58-90	75-118	18-25	97-115	57-76	66-72

NS Fluid Bolus: 20ml/kg	660ml	DEFIBRILLATION: 2, 4J/kg	1st: 66J	2nd: 132J
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Blade for Foreign Body Removal:	3	CARDIOVERSION: 1, 2J/kg	1st: 33J	2nd: 66J
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Medication	Concentration	Dose	Dose in mg	Dose in ml	Details
ADENOSINE	6mg/2ml (3mg/ml)	0.1mg/kg RIVP Max 1st dose: 6mg Max 2nd dose: 12mg	<u>1st:</u> 3.3mg <u>2nd:</u> 6.6mg	<u>1st:</u> 1.1ml <u>2nd:</u> 2.2ml	RIVP w/ 10ml NS flush MR x1 double the dose (0.2mg/kg)
ALBUTEROL	2.5mg/3ml	2.5mg/3ml HHN	2.5mg	3ml	MR x1
AMIODARONE (Pulseless arrest)	150mg/3ml (50mg/ml)	5mg/kg IV/IO Max single dose: 300mg	165mg	3.3ml	20ml NS flush MR x2 refractory rhythm
ATROPINE (Bradycardia)	1mg/10ml (0.1mg/ml)	0.02mg/kg IV/IO Min dose: 0.1mg Max single dose: 0.5mg	0.5mg	5ml	MR x1 in 3-5 min
ATROPINE (Organophosphate poisoning)	<u>Preload:</u> 1mg/10ml (0.1mg/ml) <u>Vial:</u> 0.4mg/ml	0.05mg/kg IV/IO	1.7mg	<u>Preload:</u> 17ml <u>Vial:</u> 4.1ml	MR q5-10 min until symptoms resolve
DEXTROSE	10%	5ml/kg IV/IO Max dose: 125ml		125ml	Give over 10 min
DIPHENHYDRAMINE <i>Benadryl</i>	50mg/ml	1mg/kg IM/IV/IO Max dose: 50mg	33mg	0.7ml	
EPINEPHRINE (Cardiac arrest/ Bradycardia)	1mg/10ml (0.1mg/ml)	0.01mg/kg IV/IO	0.33mg	3ml	MR q3-5 min
EPINEPHRINE (Allergic reaction/ Asthma)	1mg/ml	0.01mg/kg IM Total max dose: 0.6mg	0.3mg	0.3ml	MR x1 in 5 min
EPINEPHRINE (Upper airway/Stridor)	1mg/ml	5mg HHN	5mg	5ml	

GREEN: 30-36kg/66-80lbs

Medication	Concentration	Dose	Dose in mg	Dose in ml	Details
FENTANYL (Pain)	50mcg/ml	1mcg/kg IV/IO/IM/IN Max dose: 3mcg/kg	33mcg	0.66ml	MR q5 min For IN: split dose equally in each nostril
GLUCAGON (Hypoglycemia/Beta blocker OD)	1mg/ml	0.03mg/kg IM Max dose: 1mg	1mg	1ml	MR x2 q15 min if no IV established
IPRATROPIUM <i>Atrovent</i>	500mcg/2.5ml	500mcg/2.5ml HHN	500mcg	2.5ml	
LIDOCAINE 2% preservative free (IO insertion)	20mg/ml	0.5mg/kg slow IO Max dose: 40mg	<u>1st:</u> 17mg <u>2nd:</u> 8mg	<u>1st:</u> 0.8ml <u>2nd:</u> 0.4ml	MR x1 half initial dose (0.25mg/kg)
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IM</u> Max single dose 5mg	5mg	1ml	MR x1 in 10 min
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IN</u> Max dose 5mg	5mg	1ml	Split dose equally in each nostril
MIDAZOLAM <i>Versed</i> (Seizure)	2mg/2ml (1mg/ml)	0.05mg/kg slow <u>IV/IO</u> Total max dose: 5mg	1mg	1ml	MR x2 q15 min
MIDAZOLAM <i>Versed</i> (Cardioversion)	2mg/2ml (1mg/ml)	0.05mg/kg slow IV/IO Max dose: 1mg	1mg	1ml	
MORPHINE (Pain/burns)	10mg/ml	0.1mg/kg IV/IO/IM	3.3mg	0.3ml	MR x2 q15 min (IV/IO) MR in 30min (IM)
NALOXONE <i>Narcan</i>	2mg/2ml (1mg/ml)	0.1mg/kg IV/IO/IM/IN Max dose: 2mg	2mg	2ml	MR q5 min For IN: split dose equally in each nostril
ONDANSETRON <i>Zofran</i>	4mg tab 4mg/2ml	4mg ODT/slow IV	4mg	2ml 1 tab	Slow IV over 30 sec
SODIUM BICARBONATE	1mEq/ml	1mEq/kg IV/IO	33mEq	33ml	

April 2023		MARIN COUNTY EMS PEDIATRIC DOSING GUIDE							PTG 2A	
		Gray	Pink	Red	Purple	Yellow	White	Blue	Orange	Green
WEIGHT	kg	3 - 5	6 - 7	8 - 9	10 - 11	12 - 14	15 - 18	19 - 23	24 - 29	30 - 36
	lbs	6 - 11	13 - 15	18 - 20	22 - 24	27 - 31	33 - 40	42 - 51	53 - 64	66 - 80
FENTANYL (Pain) 1mcg/kg slow IV/IO/IM/IN MR q5 min For IN split dose evenly per nostril Max dose: 3mcg/kg		4mcg	6.5mcg	8.5mcg	10.5mcg	13mcg	16.5mcg	21mcg	26.5mcg	33mcg
Concentration: 100mcg/2ml (50mcg/ml)		0.08ml	0.13ml	0.17ml	0.21ml	0.26ml	0.33ml	0.42ml	0.53ml	0.66ml
GLUCAGON (Hypoglycemia/Beta blocker OD) 0.03mg/kg IM MR x2 q15 min if no IV established Max dose: 1mg		0.12mg	0.2mg	0.25mg	0.3mg	0.4mg	0.5mg	0.6mg	0.8mg	1mg
Concentration: 1mg/1ml		0.12ml	0.2ml	0.25ml	0.3ml	0.4ml	0.5ml	0.6ml	0.8ml	1ml
IPRATROPIUM - Atrovent Unit dose vial via nebulizer		500mcg	500mcg	500mcg	500mcg	500mcg	500mcg	500mcg	500mcg	500mcg
Concentration: 500mcg/2.5ml		2.5ml	2.5ml	2.5ml	2.5ml	2.5ml	2.5ml	2.5ml	2.5ml	2.5ml
LIDOCAINE 2% preservative free- (IO Insertion) 0.5mg/kg slow IO MR x1 at half initial dose (0.25mg/kg) Max dose: 40mg	1st	2mg	3mg	4mg	5mg	6mg	8mg	10mg	13mg	17mg
		0.1ml	0.2ml	0.2ml	0.3ml	0.3ml	0.4ml	0.5ml	0.7ml	0.8ml
	2nd	1mg	2mg	2mg	3mg	3mg	4mg	5mg	6mg	8mg
		0.05ml	0.1ml	0.1ml	0.2ml	0.2ml	0.2ml	0.3ml	0.4ml	0.4ml
Concentration: 20mg/ml										
MIDAZOLAM -Versed (Seizure) IM: 0.2mg/kg MR x1 in 10 min if still seizing Max single dose: 5mg		0.8mg	1.3mg	1.7mg	2.1mg	2.6mg	3.3mg	4.2mg	5mg	5mg
Concentration: 5 mg/ml		0.16ml	0.3ml	0.3ml	0.4ml	0.5ml	0.7ml	0.8ml	1ml	1ml
MIDAZOLAM - Versed (Seizure) IN: 0.2mg/kg Split dose equally per nostril Max dose: 5mg		0.8mg	1.3mg	1.7mg	2.1mg	2.6mg	3.3mg	4.2mg	5mg	5mg
Concentration: 5 mg/ml		0.16ml	0.3ml	0.3ml	0.4ml	0.5ml	0.7ml	0.8ml	1ml	1ml
MIDAZOLAM - Versed (Seizure) slow IV/IO: 0.05mg/kg MR x2 q15 min Total max dose: 5mg		0.2mg	0.3mg	0.4mg	0.5mg	0.7mg	0.8mg	1mg	1mg	1mg
Concentration: 2mg/2ml (1mg/ml)		0.2ml	0.3ml	0.4ml	0.5ml	0.7ml	0.8ml	1ml	1ml	1ml
MIDAZOLAM - Versed (Cardioversion) slow IV/IO: 0.05mg/kg Max dose: 1mg		0.2mg	0.3mg	0.4mg	0.5mg	0.7mg	0.8mg	1mg	1mg	1mg
Concentration: 2mg/2ml (1mg/ml)		0.2ml	0.3ml	0.4ml	0.5ml	0.7ml	0.8ml	1ml	1ml	1ml
MORPHINE (Pain/Burns) 0.1mg/kg IV/IO/IM MR x2 q15 min (IV/IO) MR in 30 min (IM)		0.4mg	0.7mg	0.9mg	1mg	1.3mg	1.7mg	2.1mg	2.6mg	3.3mg
Concentration: 10 mg/1 ml		0.04ml	0.1ml	0.1ml	0.1ml	0.1ml	0.2ml	0.2ml	0.3ml	0.3ml
NALOXONE - Narcan 0.1 mg/kg IV/IO/IM/IN MR q5 min For IN split dose evenly per nostril		0.4mg	0.7mg	0.9mg	1mg	1.3mg	1.7mg	2mg	2mg	2mg
Concentration: 2mg/2 ml (1mg/ml)		0.4ml	0.7ml	0.9ml	1ml	1.3ml	1.7ml	2ml	2ml	2ml
ONDANSETRON - Zofran						2mg	2mg	4mg	4mg	4mg
Concentration: 4mg ODT, 4mg/2ml (2mg/ml)						1ml/1/2 tab	1ml/1/2 tab	2ml/1 tab	2ml/1 tab	2ml/1 tab
SODIUM BICARBONATE 1mEq/kg IV/IO		4mEq	6.5mEq	8.5mEq	10mEq	13mEq	17mEq	21mEq	26mEq	33mEq
Concentration: 1mEq/ml		4ml	6.5ml	8.5ml	10ml	13ml	17ml	21ml	26ml	33ml