

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, antiplatelet 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

Provide Trauma Notification and transport to MHMC Level III Trauma Center

No

Transport to closest ED or ED of patient's choice

Trauma Notification

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

SPECIAL CONSIDERATIONS

- The clinical findings, including past medical history, are critical to identifying the trauma patient, especially when assessing Mechanism of Injury (MOI) and additional factors
- A thorough clinical assessment is especially important in patients with:
 - Persistent and unexplained respiratory difficulty, tachycardia, or peripheral vasoconstriction
 - Inability to communicate (e.g. language barrier, substance abuse or psychiatric impairment)
- There are MOI not identified in the Trauma Triage Tool that may be associated with trauma. Any fall or impact with significant velocity is likely to produce a candidate for trauma activation

📞 PHYSICIAN CONSULT

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

PEDIATRIC TRAUMA TRIAGE TOOL

Pediatric Patients <14yrs

Uncontrolled Airway- Transport to closest Emergency Department

Major Physiologic Factors?

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

Yes →

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

No ↓

Major Anatomic Factors?

- Penetrating injuries to head, neck, torso, or extremities proximal to elbow or knee
- Flail chest
- Two or more proximal long bone fractures
- Crushed, degloved, mangled or amputated extremity proximal to wrist or ankle

Yes ↑

No ↓

Mechanism of Injury Factors?

- Falls >10ft or three times the height of the child
- High-risk auto crash and
 - Passenger space intrusion >18" (>12' occupant side)
 - Ejection (partial or complete) from vehicle
 - Death in same passenger compartment
- Auto vs. pedestrian or auto vs. bicyclist: thrown, run over, or with >20mph impact
- Motorcycle or bicycle crash: thrown and >20mph 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. anticoagulant use, anti-platelet use, bleeding disorders with head/torso injury, 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

PEDIATRIC TRAUMA TRIAGE TOOL

Pediatric Patients <14yrs

Trauma Notification

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

SPECIAL CONSIDERATIONS

- The clinical findings, including past medical history, are critical to identifying the trauma patient, especially when assessing Mechanism of Injury (MOI) and additional factors
- A thorough clinical assessment is especially important in patients with:
 - Persistent and unexplained respiratory difficulty, tachycardia, or peripheral vasoconstriction
 - Age <5yrs who has suffered major trauma but for whom it is not possible to fully determine physiologic status
 - Inability to communicate (e.g. language barrier, substance 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

PEDIATRIC INTRAOSSEOUS INFUSION PROCEDURE

Indications

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

Procedure Preparation

- Position and stabilize insertion leg
- Locate primary site 1-2cm distal to tibial tuberosity and 1-2cm medial
- Continuously following aseptic technique, prepare insertion site and allow to dry via air or gauze

Equipment

- Intraosseous infusion needle and/or mechanical insertion device
- Chlorhexidine with alcohol solution
- Sterile gauze pads
- Saline lock
- IV **NS** solution and tubing with 3-way stopcock
- Supplies to secure infusion
- Pressure bag
- **Lidocaine 2%** (preservative free)

Automatic IO Device

- Insert needle through skin at 90° angle until bone contact
- Rotate applying gentle, steady pressure, letting the driver do the work
- Stop when a change of resistance is felt
- Stabilize hub and remove stylet
- Attach primed saline lock, aspirate to confirm placement
- Flush with 5ml **NS**

Manual IO Needle

- Choose desired depth of injection according to manufacturer's instructions
- Insert needle at 90° angle and advance according to manufacturer's instructions
- Stabilize hub and remove stylet
- Attach primed saline lock, aspirate to confirm placement
- Flush with 5ml **NS**

If patient >3kg and awake and/or responsive to pain

- **Lidocaine 2%** 0.5mg/kg slowly
- **MR x1 1/2 initial dose**
- **Max dose:** 40mg
- Wait 30-60 seconds before fluid infusion

If resistance is met

- Remove needle, apply pressure to site and attempt at secondary site

Critical Information

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

- Stabilize as recommended by manufacturer
- Attach pre-flooded IV tubing
- Administer fluid boluses via syringe utilizing the 3-way stopcock

PELVIC BINDER APPLICATION PROCEDURE

Indications

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

Equipment

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

Position patient in supine position

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

Critical Information

- Contraindication: Pediatric patients

ADULT INTRAOSSEOUS PROCEDURE

Indications

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

Procedure Preparation

- Position and stabilize insertion site
- Continuously following aseptic technique, prepare insertion site with antiseptic solution and allow to dry via air or gauze pad

Procedure

- Insert IO needle according to manufacturer's directions
- Confirm placement
- Attach primed extension set and flush with 10ml **NS**

If patient awake and/or responsive to pain

- **Lidocaine 2%** 20-40mg over 30-60 seconds
- Wait 30-60 seconds before fluid infusion
- **MR in 15 min** if needed

If resistance is met

- Remove needle, apply pressure to site and attempt at secondary site

- Stabilize as recommended by manufacturer
- Attach pre-flooded IV tubing with pressure bag for infusion
- Monitor insertion site and patient condition

Equipment

- Intraosseous infusion needle and/or mechanical insertion device
- Chlorhexidine with alcohol swab or ampule
 - If patient has allergy to Chlorhexidine, use alcohol swab only
- Sterile gauze pads
- 10ml **NS** syringe
- IV **NS** solution and tubing with 3-way stopcock
- Supplies to secure infusion
- Pressure bag
- **Lidocaine 2%** (preservative free)

Critical Information

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

ORAL ENDOTRACHEAL INTUBATION PROCEDURE

Indications

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

Procedure preparation

- Open airway and pre-oxygenate with BVM for 1-3 minutes with 100% O₂
 - Avoid hyperventilation in cardiac arrest
- Select proper sized ETT and insert stylet
- Select proper sized laryngoscope blade and visualize larynx
- Suction as needed



Procedure

- Provide continuous high flow oxygen during procedure, if possible
- Under direct visualization, insert ETT 2-3cm past the cords.
 - Each attempt should not exceed 30 seconds, hyperventilating between attempts
- Remove stylet and inflate cuff



- Verify placement using all of the following:
 - Rise and fall of chest
 - Absence of epigastric sounds
 - Bilateral breath sounds
 - Presence of condensation in the tube
 - EDD or colorimetric CO₂ device
 - Capnometry/capnography
- Secure the tube. Consider spinal immobilization to prevent extubation
- Reassess tube placement after each movement.
- If any doubt about placement, confirm by capnography or direct visualization

Equipment

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

SPECIAL CONSIDERATIONS

- Defibrillation should precede intubation in VF/pulseless VT
- Consider use of ETTI if difficult intubation
- If unable to intubate, manage airway with other airway adjunct

Critical Information

- Absolute contraindications:
 - Patient whose height is less than the length of the color-coded resuscitation tape **and** <12 years of age
 - Epiglottitis
- Relative contraindications:
 - Spontaneous respirations are present
 - Responsive patient with intact gag reflex
 - Suspected opiate overdose
 - Profound hypoglycemia

ENDOTRACHEAL TUBE INTRODUCER (ETTI) PROCEDURE

Indications

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

- Perform laryngoscopy and obtain the best possible laryngeal view
- Holding the ETTI in your right hand and the angled tip pointing upward, gently advance the ETTI anteriorly (under the epiglottis) to the glottic opening (cords)

Equipment

- Intubation supplies
- ETT Introducer

- Gently advance the ETTI until resistance is encountered at the carina
- **NEVER** force the ETTI, pharyngeal/tracheal perforation may be caused
- If no resistance is encountered and the entire length of the ETTI is inserted, the device is in the esophagus
- The ETTI is correctly placed when you see the device going through the cords, when the ratcheting of the tip on the trachea, an/or when resistance is met while advancing the device

SPECIAL CONSIDERATIONS

- Use the confirmation methods standard for endotracheal intubation to verify placement of the ETT prior to and after initiating ventilation

- Once positioned, withdraw the ETTI until the 37cm black line mark is aligned with the lip and advance an ETT over the ETTI and into the trachea
- If resistance is encountered while advancing the ETT, withdraw the ETT slightly, rotate 90° and reattempt
- Once ETT is in position, inflate cuff, then while holding the tube, remove the ETTI through the ETT
- Confirm tracheal placement

Critical Information

- Contraindications:
 - Patient whose height is less than the length of the color-coded resuscitation tape **and** <12 years of age
 - ETT smaller than 6.0

INTRANASAL MEDICATION ADMINISTRATION PROCEDURE

Indications

- No IV access with the following symptoms:
 - Status epilepticus
 - Suspected narcotic overdose with respiratory depression
 - Apparent or reported pain level < 6

Equipment

- MAD adapter (atomizer)
- Syringe
- Suction

- With medication in syringe, attach atomizer
- Do not lubricate tip



- Stabilizing the head, place applicator in nares and briskly compress the syringe plunger

SPECIAL CONSIDERATIONS

- Be attentive to excessive oral recreations, vomiting, and adequate tidal volume

Critical Information

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

NEEDLE THORACOSTOMY/ PLEURAL DECOMPRESSION PROCEDURE

Indications

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

Procedure Preparation

- Choose appropriate site on the affected side:
 - If patient head is elevated, locate the second intercostal space, mid-clavicular line
 - If patient is flat, locate the 4th or 5th intercostal space, mid-axillary line
- Prepare site with Betadine
- Attach the large gauge IV needle to a large syringe

Equipment

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

Procedure

- With the patient exhaling, introduce the needle at a 90° angle, just over the rib at the selected site
- Advancing slightly superior to the rib, continue until lack of resistance or a “pop” is felt as the needle enters the pleural space

- If the air and/or blood returns under pressure or is easily aspirated, continue to advance the catheter superiorly and remove the needle
- When no further air escapes, attach a one-way valve
- Secure the catheter with the valve in a dependent position
- Reassess patient

VERIFICATION OF TUBE PLACEMENT PROCEDURE

Indications

- To verify the placement of an endotracheal tube

Equipment

- Esophageal Detector Device (EDD)
- Colorimetric CO2 device
- End tidal carbon dioxide detector
- Stethoscope
- Capnography device

After tube placement, apply EDD or Colorimetric device prior to first ventilation

- Verify placement using all of the following:
 - Rise and fall of chest
 - Auscultate the lungs; assess for presence of equality of breath sounds
 - Presence of condensation in the tube
 - Auscultate the stomach; assess for absence of epigastric sounds

Apply capnometer or capnography if available

IV ACCESS PROCEDURE

Indications

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

Equipment

- IV catheter
- Equipment to secure line
- Tourniquet
- Syringe
- Saline lock or IV fluid/tubing, if indicated

Procedure Preparation

- Select insertion site and IV catheter size as appropriate to the patient's condition
 - Use smallest catheter and most distal site indicated
- Apply tourniquet above insertion site
- Don clean gloves
- Clean insertion site using a back and forth motion for 30 seconds with chlorhexidine, allow to air dry for 2 minutes

Procedure

- Insert IV catheter; assure latency
- Attach appropriate solution, begin flow, adjust rate or attach a saline lock if appropriate
 - If saline lock was started, irrigate with 5ml NS
- Apply occlusive sterile dressing over the insertion site
 - Do not put tape over the occlusive dressing
 - Secure with anchoring tape

- Saline locks may be used in lieu of intravenous lines when:
 - Treatment protocol specifies IV NS TKO
 - Fluid resuscitation or bolus is not anticipated

EXTERNAL CARDIAC PACING PROCEDURE

Indications

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

Procedure Preparation

- ALS RMC
- If tolerated, position patient supine, applying pacing electrodes to bare chest according to manufacturers recommendations (anterior/posterior or sternal/apex)
- Confirm and record ECG

Equipment

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

If patient is conscious

- Administer **Midazolam** 1mg slow IV/IO
 - MR q3 min to desired degree of sedation
 - Max dose: 0.05mg/kg

Procedure

- Set pacing rate at 60, turn on pacing module, and confirm pacer activity on monitor. May increase rate to 80
- Increase mA until capture occurs or maximum output is reached
- Once capture is confirmed, increase output by 10%
- Confirm pulses with paced rhythm
- Monitor vital signs and need for further sedatives or pain control

If SBP <90

- Consider **NS** 250ml bolus IV/IO

Critical Information

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

If SBP <80

- 🚑 **PHYSICIAN CONSULT** for **Push-dose Epinephrine**
- Mix 1ml Epinephrine (0.1mg/ml concentration) with 9ml NS in a 10ml syringe
- Administer **Push-dose Epinephrine** 1ml IV/IO
 - Repeat every 3-5 min
- Titrate to maintain SBP >80mmHg

🚑 PHYSICIAN CONSULT

- Concomitant administration of **opioids** (Morphine and Fentanyl) and **Midazolam**
- If SBP <80, obtain physician consult for **Push-dose Epinephrine**

12-LEAD ECG PROCEDURE

Indications

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

Equipment

- ECG machine and leads

Procedure

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

SPECIAL CONSIDERATIONS

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

PHYSICIAN CONSULT

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

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) PROCEDURE

Indications

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

Pre-procedure

- ALS RMC
- Place patient in a seated position with legs dependent
- Follow manufacturer directions for CPAP device set up
- Explain device to patient

Equipment

- CPAP equipment
- In-line nebulizer

Procedure

- Apply device to patient; set flow rate in excess of the patients inspiratory flow rate
- If albuterol and/or ipratropium appropriate, may administer with CPAP in-line nebulizer
- Reassess VS q5 min after CPAP applied, continuous SpO2 monitoring
- Increase oxygen percentage if patient does not demonstrate improvement after 5 minutes of application; repeat PRN to obtain improvement
- Remove the CPAP device and assist ventilations with BVM and/or intubation if patient condition worsens

Critical Information

- Contraindications:
 - Absolute:
 - Age <8 years
 - Respiratory or cardiac arrest
 - Agonal respirations
 - Severely depressed LOC
 - S/Sx of pneumothorax
 - Inability to maintain airway latency
 - Major trauma (especially head trauma with signs of ICP or significant chest trauma)
 - Facial anomalies or trauma
 - Vomiting
 - Relative contraindications
 - Systolic BP <100
 - History of pulmonary fibrosis or history of barotrauma
 - Decreased LOC
 - Claustrophobia or inability to tolerate mask (after 1-2 min trial)

SPECIAL CONSIDERATIONS

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

KING AIRWAY PROCEDURE

Indications

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

Pre-procedure

- Open airway and pre-oxygenate with BVM for 1-3 min with 100% O₂. Avoid hyperventilation in cardiac arrest
- Test cuff according to manufacturer's instructions
- Apply water soluble lubricant to distal end of the tube
- Position the head into the "sniffing" position or neutral position if trauma is suspected
- Remove dentures before placing tube to prevent laceration of the cuffs



Procedure

- Without exerting excessive force, advance tube until base of connector is aligned with teeth or gums
- Inflate cuffs based on size of tube
- Attach bag-valve to King Airway
- If necessary, withdraw the airway until ventilation is easy and free flowing
- Verify placement using all of the following
 - Rise and fall of chest
 - Bilateral breath sounds
 - Capnometry/capnography or colorimetric device
- Secure the tube with tape or commercial tube holder, noting depth marking on tube

Equipment

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

King Tube Sizing

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

SPECIAL CONSIDERATIONS

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

Critical Information

- Contraindications:
 - Responsive patient with an intact gag reflex
 - Patient with known esophageal disease
 - Patients who have ingested caustic substances
 - Tracheal stoma
 - Patient <4ft tall or <12 yrs

METERED DOSE INHALER (MDI) FIRELINE MEDICINE PROCEDURE

Indications

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

Equipment

- Metered dose inhaler of Albuterol or Atrovent

Pre-procedure

- Have patient sit or stand in an upright position
- Remove dust cap and have the patient hold the MDI in an upright position
- Gently shake MDI for 5-10 seconds
- Have patient tilt head back slightly and exhale normally and completely

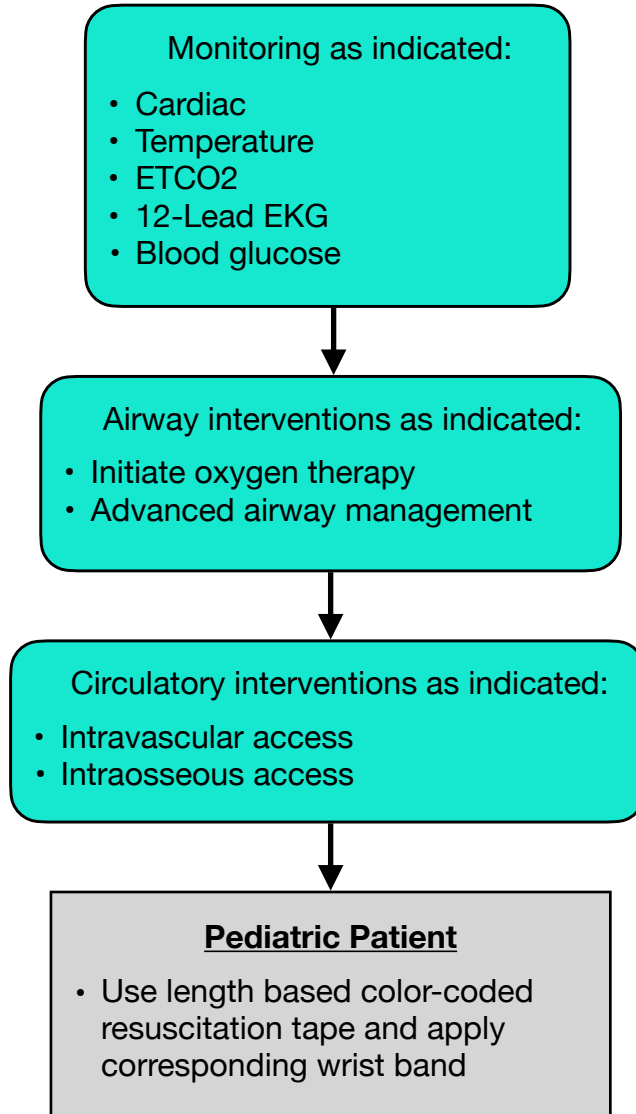
Procedure

- Have patient place lips around mouthpiece to produce a seal
- While inhaling slowly, have patient press down on inhaler to release the medication
- Inform patient to continue inhaling until they have taken the deepest breath possible
- Hold breath for 10 seconds
- Exhale slowly through pursed lips
- Administer a second dose as described above

ROUTINE MEDICAL CARE (RMC) ALS

Indications

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



ALS TO BLS TRANSFER OF CARE

Indications

- Patient needs or desires transport to a hospital and does not meet criteria for ALS interventions

Criteria for transfer:

- Patent airway, maintained without assistance or adjuncts
- No hemodynamic changes are anticipated during transport
- No imminent changes are anticipated in the patient's present condition
- GCS ≥ 14

SPECIAL CONSIDERATIONS

- The ALS first responder or provider will complete a County approved Patient Care Record (PCR)
- The ALS first responder will hand off electronic patient care record to BLS transport unit

Critical Information

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

ADULT INTRAOSSEOUS (IO) INFUSION

Indications

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

SPECIAL CONSIDERATIONS

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

Critical Information

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

ALS DETERMINATION OF DEATH

Indications

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

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

Medical- ALL must be present

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

Trauma- ALL must be present

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

If determination of death cannot be made

- Perform ALS resuscitation for 20 minutes on scene
- If patient is in refractory VFib after 3 unsuccessful shocks, immediately transport to nearest available STEMI Receiving Center
- If above procedures have been completed without ROSC, resuscitation may be discontinued, and determination of death made when **ANY** of the following are present:
 - A valid DNR or POLST form becomes available which precludes continuation of resuscitation efforts
 - ETCO2 ≤ 10mm/Hg and the rhythm is asystole or PEA

Does patient meet all above criteria?

Yes ↓ No ↓

Do not initiate resuscitation

Initiate resuscitation

If determination of death still cannot be made

- Continue resuscitation for ten additional minutes (30 minutes total) at which point resuscitation may be discontinued and determination of death made if ROSC has not occurred

- 📞 **Trauma center consult** for further care and destination decision
- If consult is not available, transport patient to the closest facility if there is the following:
 - Unmanageable airwave
 - Uncontrolled external hemorrhage
 - CPR in progress (unless transporting to SRC for refractory V-Fib)

📞 PHYSICIAN CONSULT

- Evidence exists that resuscitative efforts are not desired or appropriate and above criteria is not met
- ETCO2 >10mm/Hg after 30 minutes of resuscitation efforts

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

- Notify the appropriate law enforcement agency and remain on the scene until released by law enforcement
- Complete a Field Determination of Death Form at scene and leave copy for coroner if the patient will be transferred to coroner

ADULT MEDICATION STANDARD DOSAGES

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

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

ADULT MEDICATION STANDARD DOSAGES

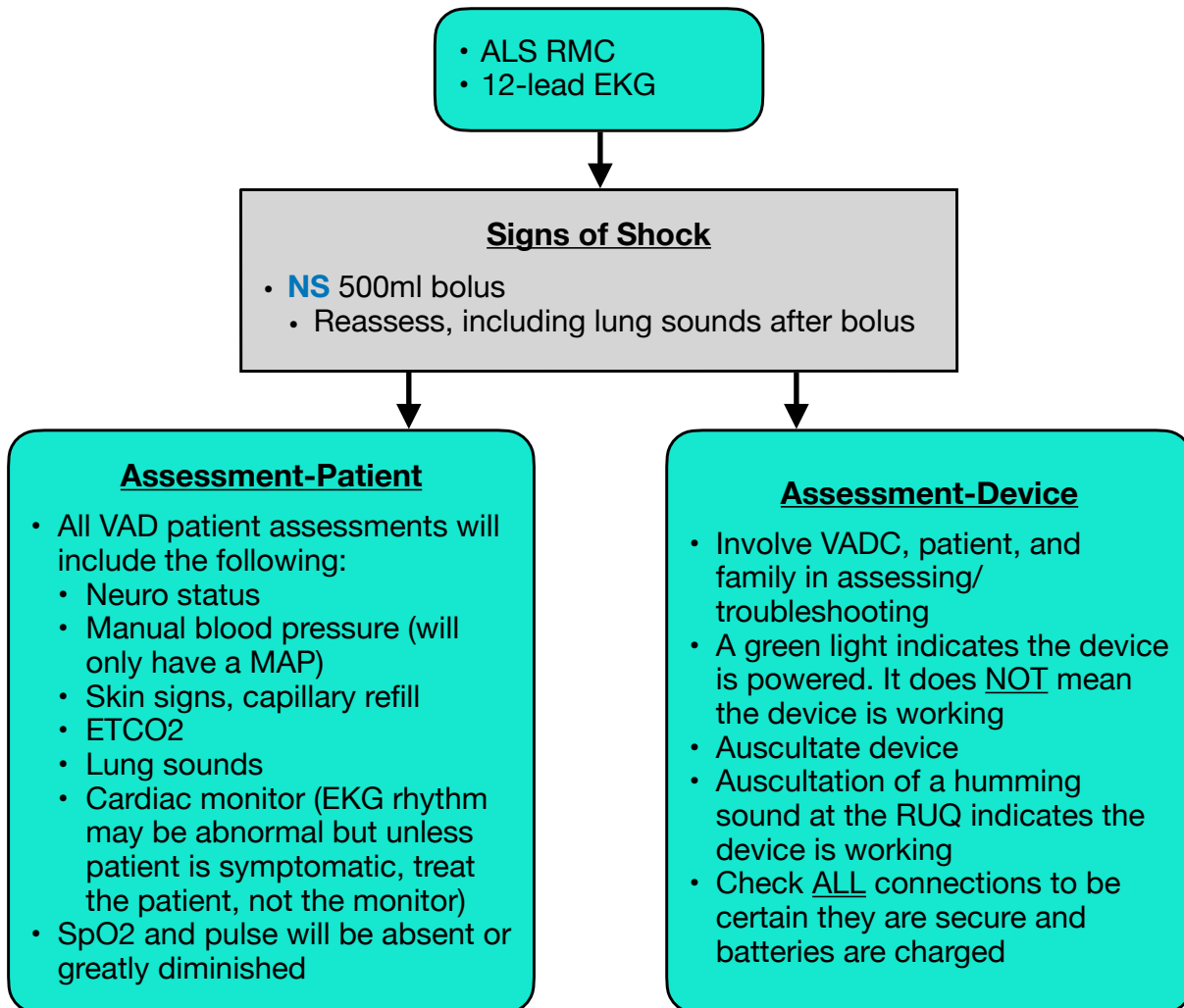
DRUG	CONCENTRATION	STANDARD DOSE
Glucose Paste	15 grams/tube	30 grams PO
Glucagon	1mg/ml	1mg IM
Ipratropium (Atrovent)	500mcg/2.5ml Unit dose	500mcg Nebulized
Lidocaine 2%	20mg/ml	IO 20-40mg over 30-60 seconds Repeat: q 15 min
Midazolam (Versed)	2mg/2ml (IV/IO/IM) 5mg/1ml (IN)	IV/IO Cardioversion/Pacing/Seizure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

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

VENTRICULAR ASSIST DEVICE (VAD)

Indications

- For assessment, management, treatment, stabilization and/or transport of a patient with a VAD



Critical Information

- If defibrillation is needed, do not place pads over pt's device
- Withhold chest compression unless the patient is pulseless, unconscious, and you and the VADC has determined the device has stopped working
- The VAD Coordinator (VADC) should be contacted immediately. Dispatch may have VADC contact information. The patient and caregiver will have contact information; it may also be found on the device, a medical alert bracelet, near a phone, or other obvious location. The VADC may be on the phone upon EMS arrival
- The VADC is a valuable resource but is NOT medical control. Request physician consult if necessary
- If appropriate, request POLST/DNR status

CANCELLATION OF ALS UNIT

Indication

- First Responders request to cancel an ALS unit

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

AGAINST MEDICAL ADVICE (AMA)

Indication

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

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

- The following information must be provided to the patient or DDM by EMS personnel:
 - The recommended treatment and benefits for receiving care
 - The risks and possible complications involved
 - Reasonable consequences for not seeking care and treatment for the condition
 - Alternative care and transport options which may include private transport to a clinic, physician's office or an Emergency Department, or telephone consultation with a physician

Have patient/DDM sign the AMA form

📞 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
- Mentally competent patients/DDMs have the right to accept or refuse any or all pre-hospital care and transportation as long as EMS personnel have explained the care and the patient/DDM understands by restating the nature and implications of such decisions



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



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

DESTINATION GUIDELINES

Indication

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

Kaiser Permanente San Rafael Medical Center

Emergency Department
Approved for Trauma (EDAT)
- Terra Linda -

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

MarinHealth Medical Center (MHMC)

Level III Trauma Center
- Greenbrae -

- Neurological Emergencies- sudden, witnessed onset of coma or rapidly deteriorating GCS with high likelihood of intracranial bleed
- Pregnant patients ≥ 20 wks with a complaint related to pregnancy
- STEMI receiving center (SRC)
- Primary Stroke Center
- Advanced Pediatric Receiving Center (PedRC)

Novato Community Hospital

Basic level receiving facility
- Novato-

- Primary Stroke Center

☎ PHYSICIAN CONSULT

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

CRITICAL INFORMATION

- The destination for patients shall be based upon several factors including, but not limited to the clinical capabilities of the receiving hospital, the patient's condition, and paramedic discretion
- When the patient is unstable or life threatening, the patient should be transported to the time closest receiving facility:
 - Patients with unmanageable airway
 - CPR in progress (unless transporting to SRC for rVF)
 - Uncontrolled external hemorrhage
 - Patient requiring ALS but having no paramedic in attendance
- The following factors will be considered in determining patient destination:
 - Patient condition
 - Patient/family request
 - Clinical capabilities of the receiving hospital
 - Patient's physician request or preference
 - Paramedic discretion
- Patients with return of spontaneous circulation (ROSC) post cardiac arrest will be transported to the nearest SRC
- Burn patients, without other trauma mechanism, shall be transported by ground ambulance to the time closest emergency department (ED)
- Patients with psychiatric complaints will be transported to their preferred facility or the closest ED unless specialty care (trauma, STEMI, stroke, pregnancy) is warranted
- Ventricular Assist Device (VAD) patients: If patient is stable and complaint is not related to VAD, transport per above guidelines. If VAD related, the patient may need to bypass local facilities and go to VAD center. If concerned about patient stability, refer to guidelines and request physician consult
- Prior to arrival, prehospital personnel must notify the receiving facility of any patient with a known history of violence or behavior which may pose a risk to staff (uncooperative, aggressive, disruptive)

INTERFACILITY TRANSFER PROCEDURE

Indication

- Interfacility transfer of patients from Marin County healthcare facilities

Procedure

- Transporting personnel will operate under the medical direction of the transferring physician in compliance with the County of Marin, State, and Federal laws, through direct contact or standing orders, in a safe and timely manner as permitted by their scope of practice
- The transferring facility will have confirmed acceptance by receiving facility prior to the transferring unit transferring the patient. 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 transferring physician to assure the appropriate level of care during transfer
- The transferring physician will provide the following information:
 - Patient name
 - Diagnosis/level of acuity
 - Isolation precautions
 - Destination
 - Transfer date and time
 - Accepting unit
 - Accepting physician
 - Special equipment with patient
 - Orders for specific treatments to be conducted in transport and contact information for the transferring physician
 - Additional personnel attending patient or required for transport
 - Pertinent medical records
 - Insurance information, if available
 - Contact information for family/designated decision maker
- The following communication is required by each transporting unit:
 - For patients being transported to receiving hospital emergency departments:
 - Ringdown report and early notifications as required based on patient condition
 - For patients transported to other hospital departments or facilities:
 - Patient remains stable without change in status- no communication necessary
 - Patient unstable or change in status- contact transferring or another specified physician; if unavailable, request another physician in that facility or contact Marin County online medical control
- In addition to the procedures describe elsewhere in Marin County EMS protocols, upon completion of proper training and with provider agency medical director approval, specified personnel may perform the following procedures under the direction of the transferring physician:
 - **EMT**
 - Monitor 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

- Transfer patients who have 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, clamp PleurX drains, and/or indwelling vascular access lines, excluding arterial lines
- Transfer patients with completely patient-controlled devices including CPAP/BiPAP, medication pumps, etc. requiring no monitoring or adjustment
- **Paramedic**
 - Monitor and adjust intravenous fluids containing potassium ≤ 40 mEq/L
 - Monitor thoracostomy tubes
 - Perform suctioning of patients not on mechanical ventilators with stomal intubation
 - Monitor patients with nitroglycerin paste initiated prior to transport
- Additional clarification on level of service in **Appendix A**

SPECIAL CONSIDERATIONS

- Medical emergencies which are immediately life-threatening events (cardiac arrest, new stroke symptoms, uncontrolled hemorrhage, etc) should utilize zone provider/911 resources
 - In the event ALS interventions are required beyond the orders of the sending physician, paramedic caregivers shall follow patient care protocols and request an EM number from Sheriff's County Communications and a Marin County Patient Care Record as specified in 7006 must be completed
 - For *emergent transfers* with CCT service requirements, when no provider is able to fulfill transfer request within the required ETA and further delay would cause significant risk of increased morbidity or mortality, under the direction of the transferring physician a facility caregiver (RN, NP, PA or physician; RT if continuous respiratory assistance is required) may attend to patient during transport utilizing the highest level ambulance available as a last resort.
 - All transporting team members shall provide care within their own scope of practice with ultimate responsibility for patient care in transport held by the orders of the transferring physician
 - All advanced monitoring equipment or medications anticipated to be required during transport which 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
- **Documentation- Essential Elements**
 - Patient Care Records as specified in 7006 must be completed by ambulance personnel
 - Interfacility transfers with hospital contact will be reviewed by hospitals receiving the calls
 - Statistic on total numbers of ALS level transfer calls per month will be maintained by each provider and submitted to the EMS Agency on request (transfers with Paramedic, RN and/or MD)
 - Training records for procedures authorized in this policy shall be maintained by participating agencies
 - An EMS Event Form must be completed for any transport utilizing non-permitted ambulances, non-certified EMS providers or utilizing sending facility personnel as caregivers

Appendix A

Guideline for determining level of service

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			✓

MEDICAL PERSONNEL ON SCENE

Indication

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

Person is not a physician

- First Responder/EMT or EMT-P should inform the non-physician individual that they may assist and/or offer suggestions within the scope of their licensure but may not assume medical management for the patient
- Continue with care in usual manner
- Ask to see proof of licensure/certification/accreditation



Person is a physician

- Unless physician is known to the prehospital personnel, ask to see proof of licensure
- First Responder/EMT yield medical management to the physician until the arrival of ALS personnel
- Upon arrival of ALS personnel, the EMT-P will provide the physician with "Note to Physicians on Involvement with EMT-Is and Paramedics" card (Appendix A) to determine option #1, 2 or 3, he/she has chosen to follow



Option #1

- The physician assists the ALS treatment team and/or offers suggestions, but allows the EMS personnel to provide medical treatment according to policy



Option #2

- The physician requests to provide on-scene medical advice and/or assistance after speaking with the intended receiving hospital physician



Option #3

- The physician is willing to take total responsibility for care, and will physically accompany the patient to the hospital
- Make all ALS equipment and supplies available to the physician and offer assistance as needed



Complete a "System Notification Form" for review of the call

☎ PHYSICIAN CONSULT

- On-scene physician has chosen option #2 or 3 on the "Note to Physicians on Involvement with EMT-Is and Paramedics" card and should speak directly with the receiving hospital physician

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

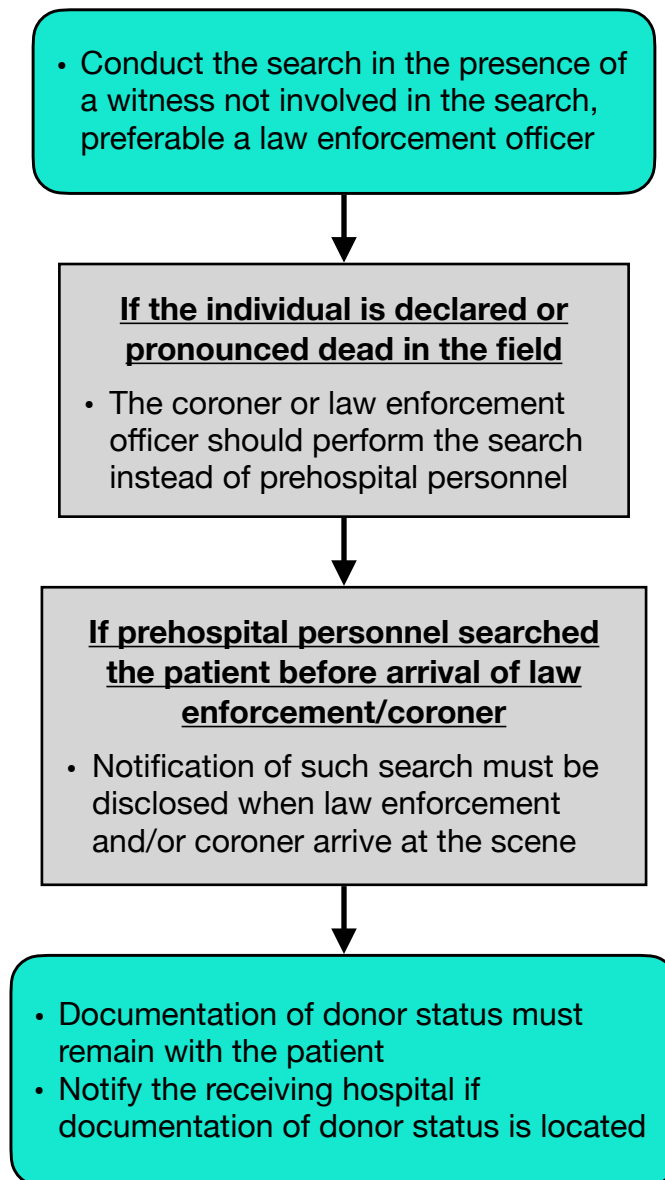
CRITICAL INFORMATION

- 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
 - Chest compressions
 - Defibrillation
 - Intubation
 - Cardiotoxic drugs
- Approved prehospital DNR directives include
 - A DNR directive signed by both the patient and physician; a copy or original is valid
 - A DNR ordered 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 ordered 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

ANATOMICAL GIFT/ DONOR CARD SEARCH

Indications

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



Critical Information

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

SUSPECTED ABUSE/NEGLECT/ HUMAN TRAFFICKING/INFLICTED PHYSICAL INJURY

Indications

- Identification and guidelines for reporting and treating suspected child abuse (persons <18 years), dependent adults between the ages of 18 and 64 years (those with physical or mental limitations restricting their ability to carry out normal activities), domestic abuse (intimate partner violence, includes dating relationships), human trafficking, and elder adults (≥65 years)
- Abuse is defined as harmful, wrongful, neglectful or improper treatment which may result in physical or mental injury
- Physical injury includes any injury that is self-inflicted or inflicted by another person or any assaultive or abusive contact

- BLS/ALS RMC
- Treat and transport the patient per Destination Guidelines Policy GPC4

If patient or patient's Designated Decision Maker (DDM) refuses transportation and patient's life IS in imminent danger

- Stay on scene, request local law enforcement agency to respond and place patient in protective custody

If patient or patient's DDM refuses transportation and patient's life is NOT in imminent danger

- Leave the scene, contact law enforcement, establish radio contact with the intended receiving hospital, describe situation including reasons for suspecting abuse

If abuse suspected in individuals other than the patient

- Follow the procedures stated above for imminent and/or non-imminent danger

- Contact the local law enforcement agency and/or one of the following protective service agencies by phone within 24 hours and submit completed report within 36 hours of incident
- Marin Children and Family Services Emergency Response 415-473-7153
- State of California Report of Suspected Child Abuse (Form SS 8583- see GPC 9A)
- Marin County Adult Protective Services 415-473-2774
- State of California Report of Suspected Dependent Adult/Elder Abuse (Form SOC 341- See GPC 9B)

- For inflicted physical injury:
 - Healthcare provider shall place a telephone call to the law enforcement agency with investigative jurisdiction as soon as practically possible
 - A written report shall be completed (OES form 2-920) and faxed to the law enforcement agency within two working days (see below for fax numbers)
 - Both telephone and written reports shall be submitted if the patient has expired
 - The prehospital providers at the scene shall determine who amongst them submits the report

Critical Information

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

Law Enforcement Agency	Fax
• Belvedere	415-435-9471
• Central Marin	415-927-5167
• Fairfax	415-457-8769
• Marin Sheriff	415-473-4126
• Mill Valley	415-389-4148
• Novato	415-898-5344
• Ross	415-453-6124
• San Rafael	415-485-3402
• Sausalito	415-289-4175
• Tiburon	415-789-2828

SEXUAL ASSAULT

Indication

- Patients with complaints consistent with sexual assault

- BLS/ALS RMC
- Calm/reassure patient
- Assign responder of same gender as patient if possible

Treat medical conditions, traumatic injuries per protocol

- Transport to an appropriate Marin County hospital, following the Destination Guidelines Policy

If patient/Designated Decision Maker refuses transport

- Instruct patient not to bathe, shower, or change clothes until after contact with and advice by law enforcement. Advise patient of alternative care/transport options per AMA and RAS policy

SPECIAL CONSIDERATIONS

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

Critical Information

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

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

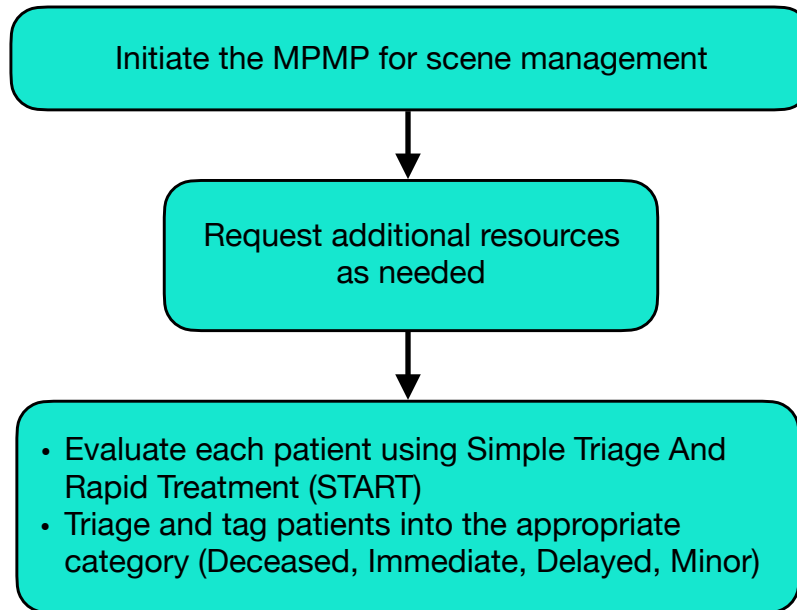
Critical Information

- 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

MULTI-CASUALTY INCIDENT (MCI)

Indication

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



SPINAL MOTION RESTRICTION (SMR)

Indication

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

Full SMR

(Cervical collar with full-length vacuum spring or rigid device with lateral immobilization and straps)

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

Modified SMR

(May include any of the following: rigid cervical collar alone; self limiting motion; padding to limit movement; KED; or 1/2 length vacuum splint)

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

SPECIAL CONSIDERATIONS

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

BARIATRIC PATIENT TRANSPORT

Indication

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

• When ambulance crews are faced with a patient that exceeds the weight limitations of the standard ambulance equipment, personnel shall request a 'bariatric ambulance' from their dispatcher. Crews will provide the estimated weight of the patient

- The dispatcher shall contact the local private ambulance providers to determine if they have a bariatric unit available. The private ambulance provider will provide an ETA to the incident scene
- Dispatchers will relay this information to the personnel at the incident who will then confirm their need for the specialized equipment

If patient's condition is such that a delay in transport (caused by the use of a bariatric equipped ambulance) will potentially cause additional harm to the patient

- Ambulance personnel should consider transporting the patient on the floor of the standard ambulance. In those cases, floor and wall cot hardware shall be removed (if possible) as to not compromise patient safety

- Bariatric patients shall only be transported in an ambulance
- As early as possible, field personnel will relay to the destination hospital that they are inbound with a bariatric patient. The communication will include the approximate weight of the patient

- Field personnel shall notify their agency CQI coordinator and immediate supervisor of any incident involving the management and transport of a bariatric patient. Management personnel will review all cases for appropriate care

Critical Information

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

SPECIALTY PATIENT

Indication

- A patient with unique medical or behavioral prehospital needs which fall outside current county protocols

Purpose

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

Active and Current SPP in place

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

No SPP in place

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

- All established and approved SPPs will be written on official Marin County letterhead and signed by the current Marin County EMS Agency Medical Director. Issue date and expiration date will be included
- Current SPPs will be reviewed annually as par of Policy and Procedure updates

PEDIATRIC PATIENT TRANSPORT

Purpose

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

General Information

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

- The child’s age and weight shall be considered when utilizing an appropriate restraint system
- Use of child’s own car seat can be considered for the following (children <2 years must be rear facing):
 - No other restraint systems are available
 - Minor vehicle crash (ie: “fender bender”)
- The child shall be secured by the harness within the seat at all times. Whenever possible, procedures should be performed around the harness straps

Transportation of a child requiring monitoring or interventions

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

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

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

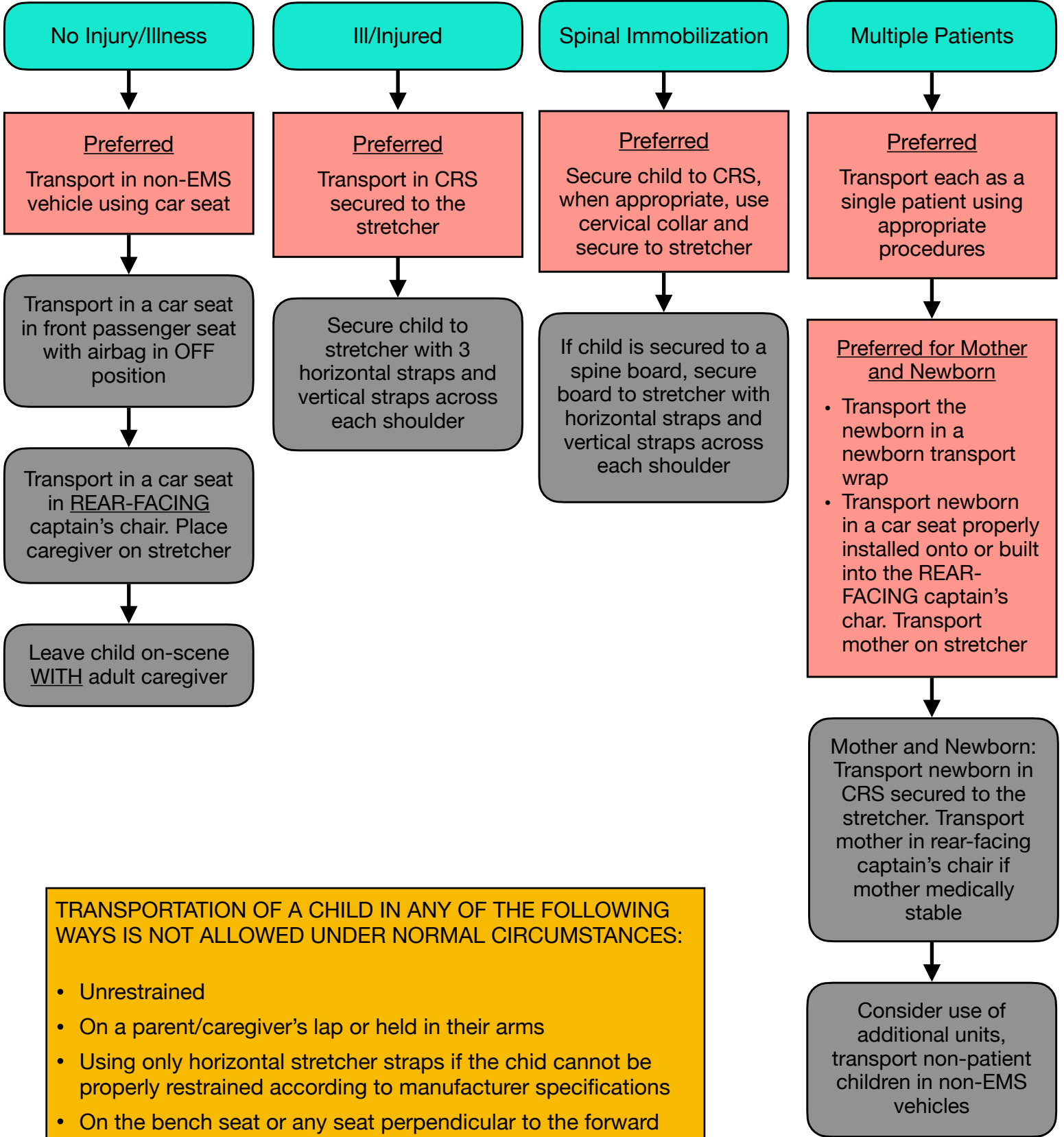
Transportation of a child or children requiring transport as part of a multiple patient transport (newborn with mother, multiple children, etc)

- Preferred: If possible, transport each as a single child according to guidance above. Additional resources may be necessary
- Preferred for mother and newborn: Transport the newborn in a newborn transport wrap (i.e., Aegis Neonate wrap)
 - Transport newborn in a car seat properly installed onto or built into the rear-facing EMS provider captain’s chair, facing the rear of the ambulance.
- Even with child birth in the field, make every attempt to transport the infant in a car seat or CRS
- Alternative for mother and newborn: Transport the newborn in a CRS secured appropriately to stretcher. Transport mother in rear-facing EMS provider captain’s chair if mother is medically stable. Consider the use of additional units to accomplish safe transport

Transportation of a child who is not a patient

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

PEDIATRIC PATIENT TRANSPORT FLOWCHART



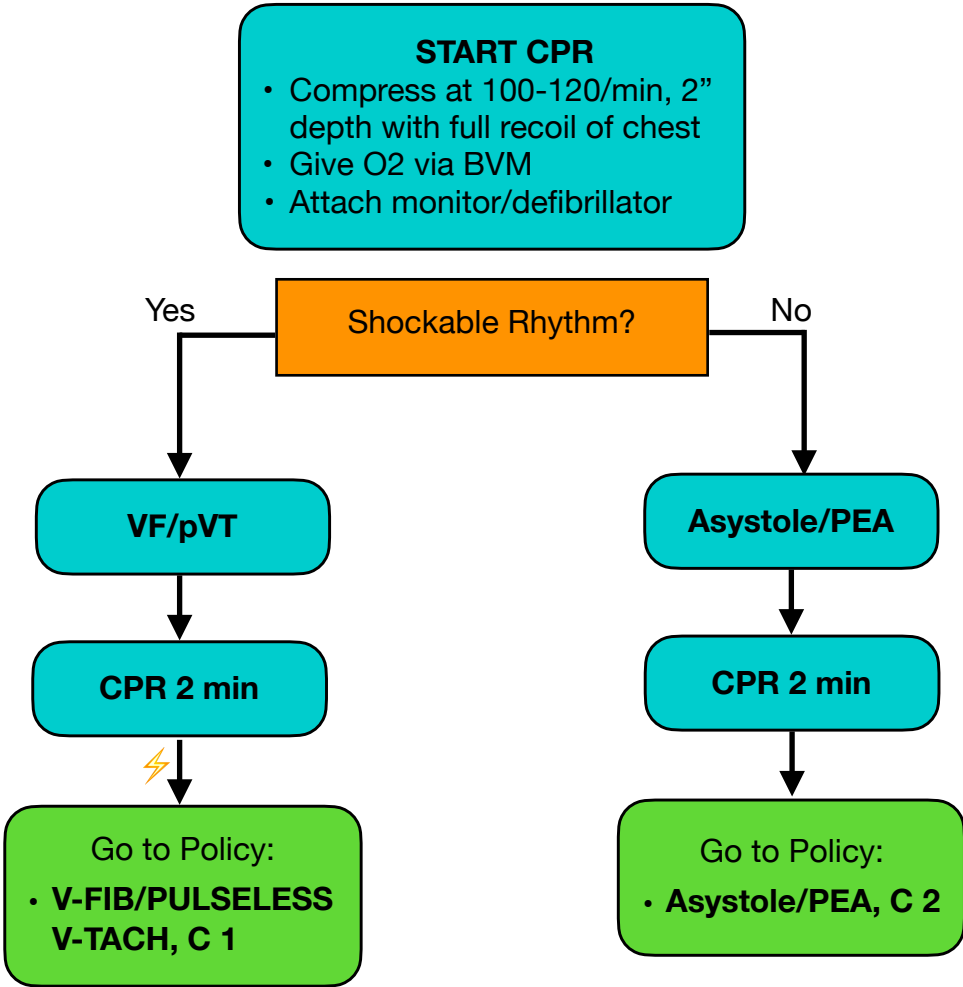
TRANSPORTATION OF A CHILD IN ANY OF THE FOLLOWING WAYS IS NOT ALLOWED UNDER NORMAL CIRCUMSTANCES:

- Unrestrained
- On a parent/caregiver's lap or held in their arms
- Using only horizontal stretcher straps if the child cannot be properly restrained according to manufacturer specifications
- On the bench seat or any seat perpendicular to the forward motion of the vehicle

ADULT CARDIAC ARREST

Indication

- Unresponsive; no breathing or has agonal respirations; no pulse



CRITICAL INFORMATION

- Witnessed vs Unwitnessed
- Consider pre-cordial thump if witnessed and defibrillator not immediately available
- Compress at 100-120bpm. Use metronome or similar device
- Mechanical CPR is mandatory during transportation
- Change compressors every 2 minutes
- Minimize interruptions
- If hypothermic <95°F, delay compressions for 3 min; focus on ventilations and active rewarming
- Defibrillate at 200J, 300J, 360J
- 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

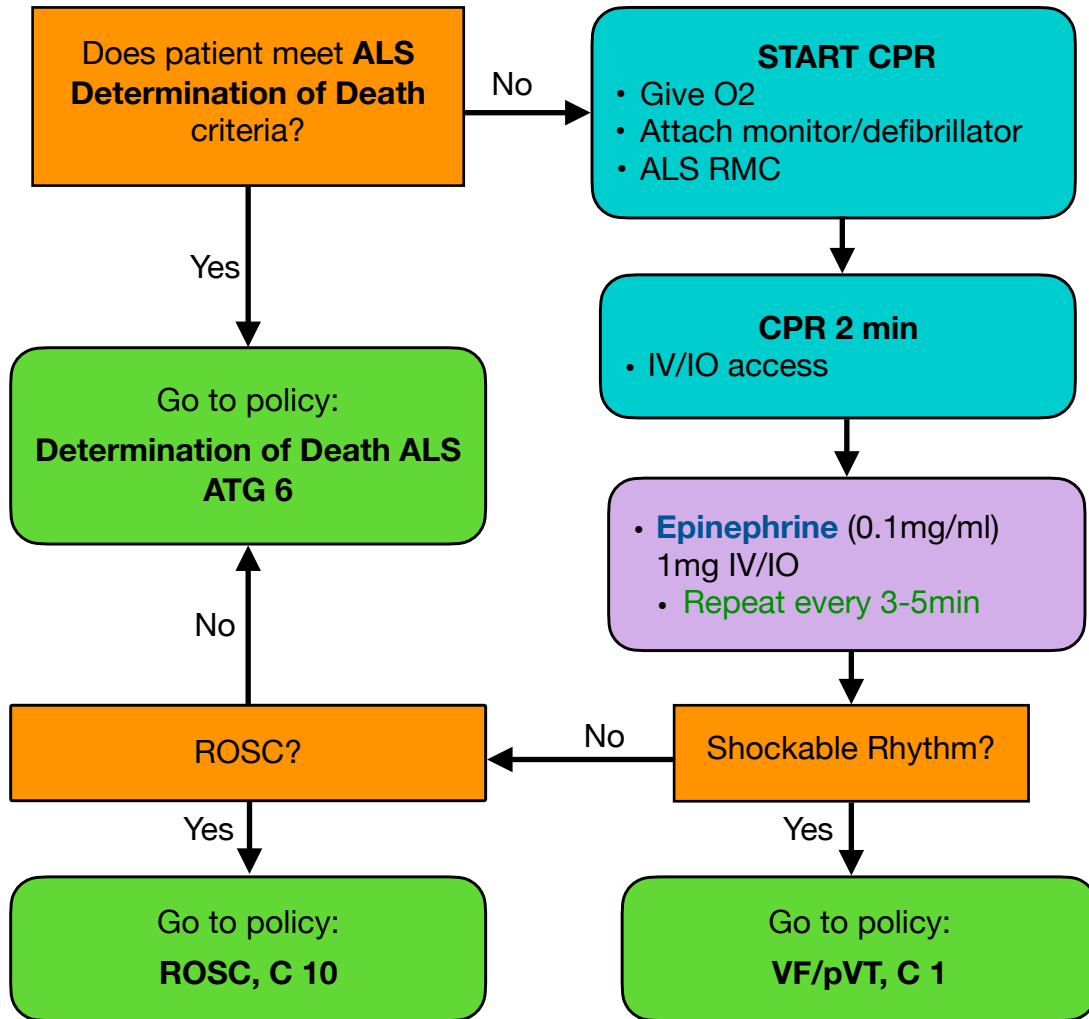
ALS Airway Management

- 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 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

ASYSTOLE/PEA



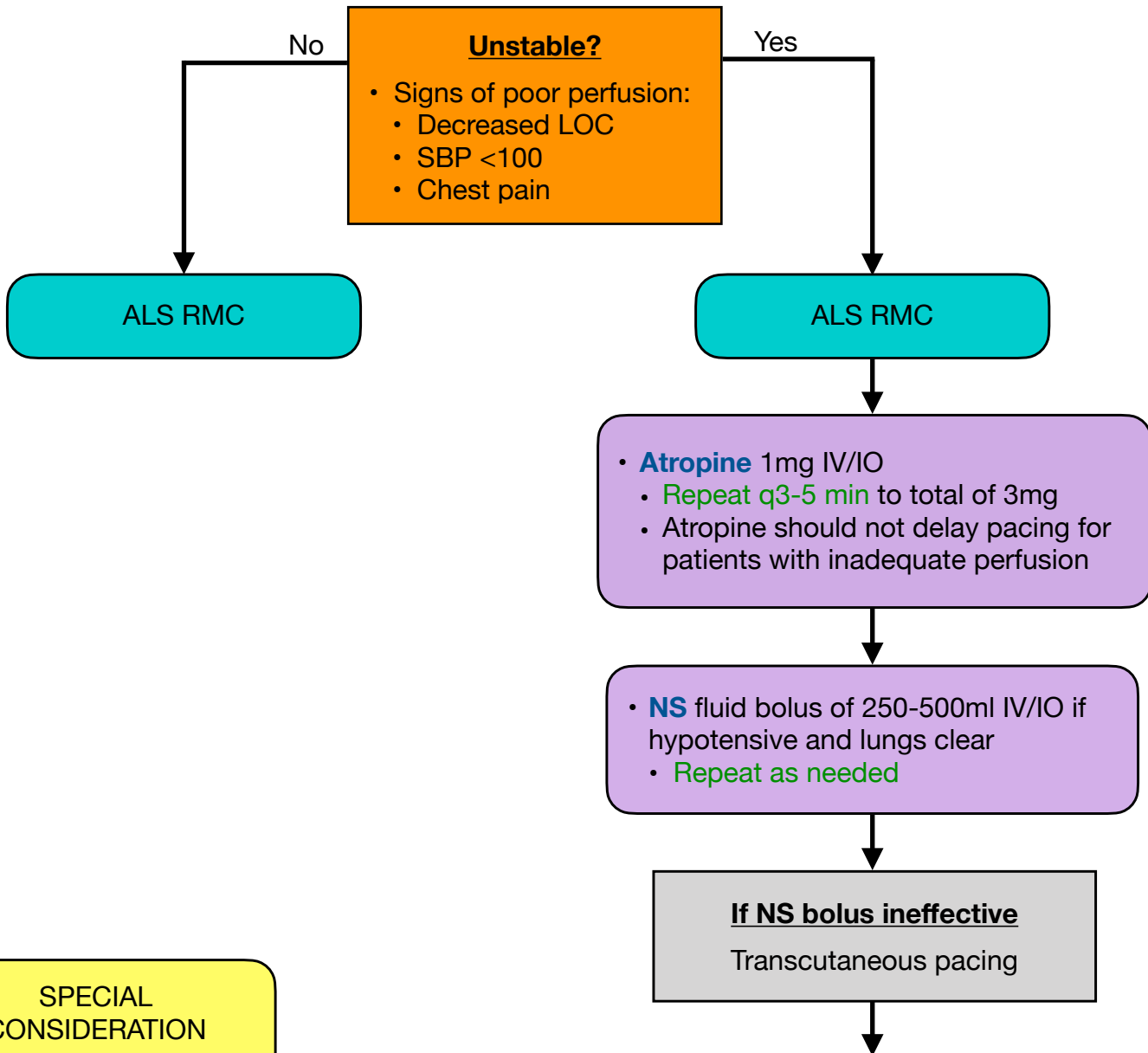
CRITICAL INFORMATION

- 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

BRADYDYSRHYTHMIAS

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

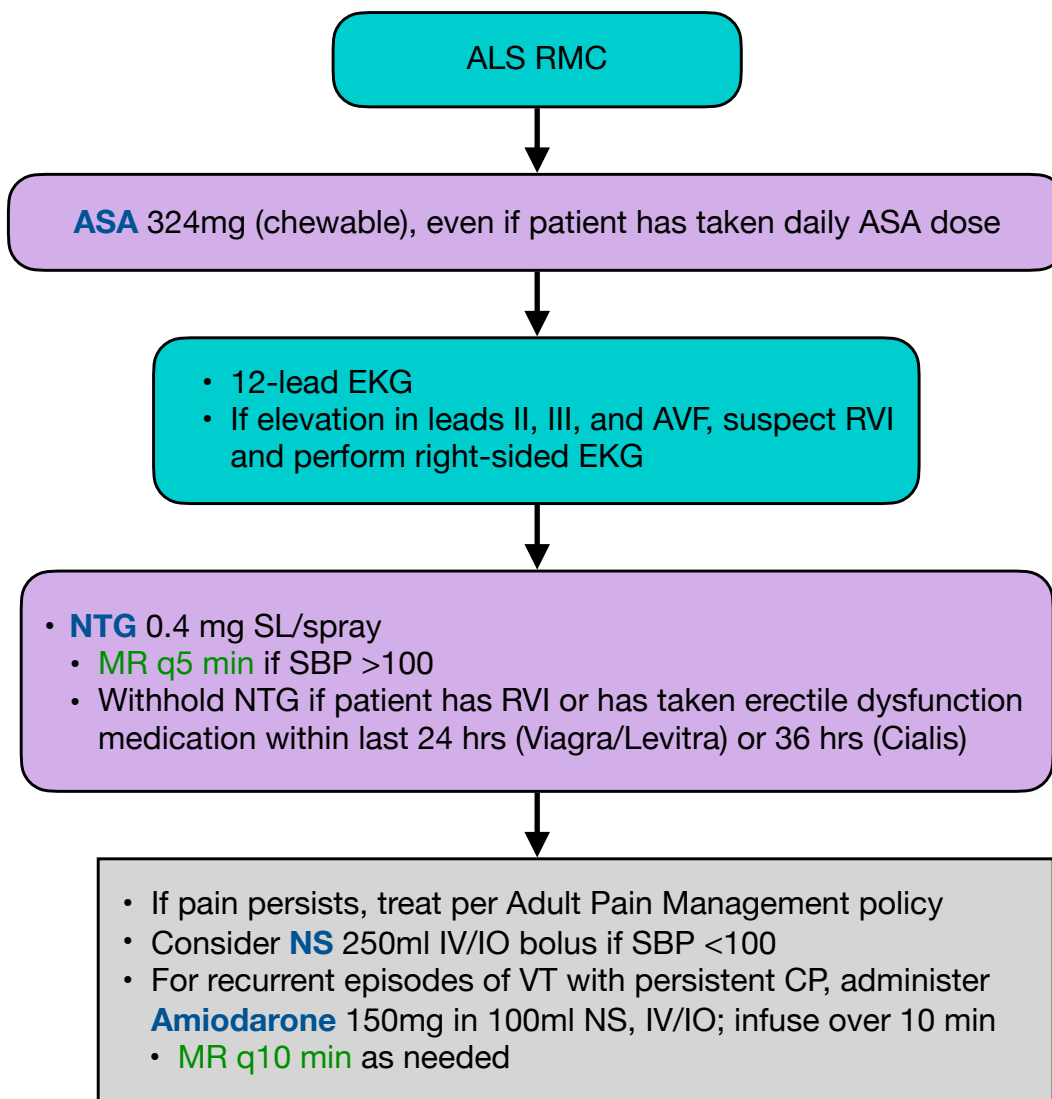
If SBP <80 mmHg

- 📞 **PHYSICIAN CONSULT** for **Push-dose Epinephrine**
 - Mix 1ml Epinephrine (0.1mg/ml concentration) with 9ml NS in a 10ml syringe
 - Administer **Push-dose Epinephrine** 1ml IV/IO
 - Repeat every 3-5 min
 - Titrate to maintain SBP >80mmHg
 - Monitor BP every 5 minutes

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)



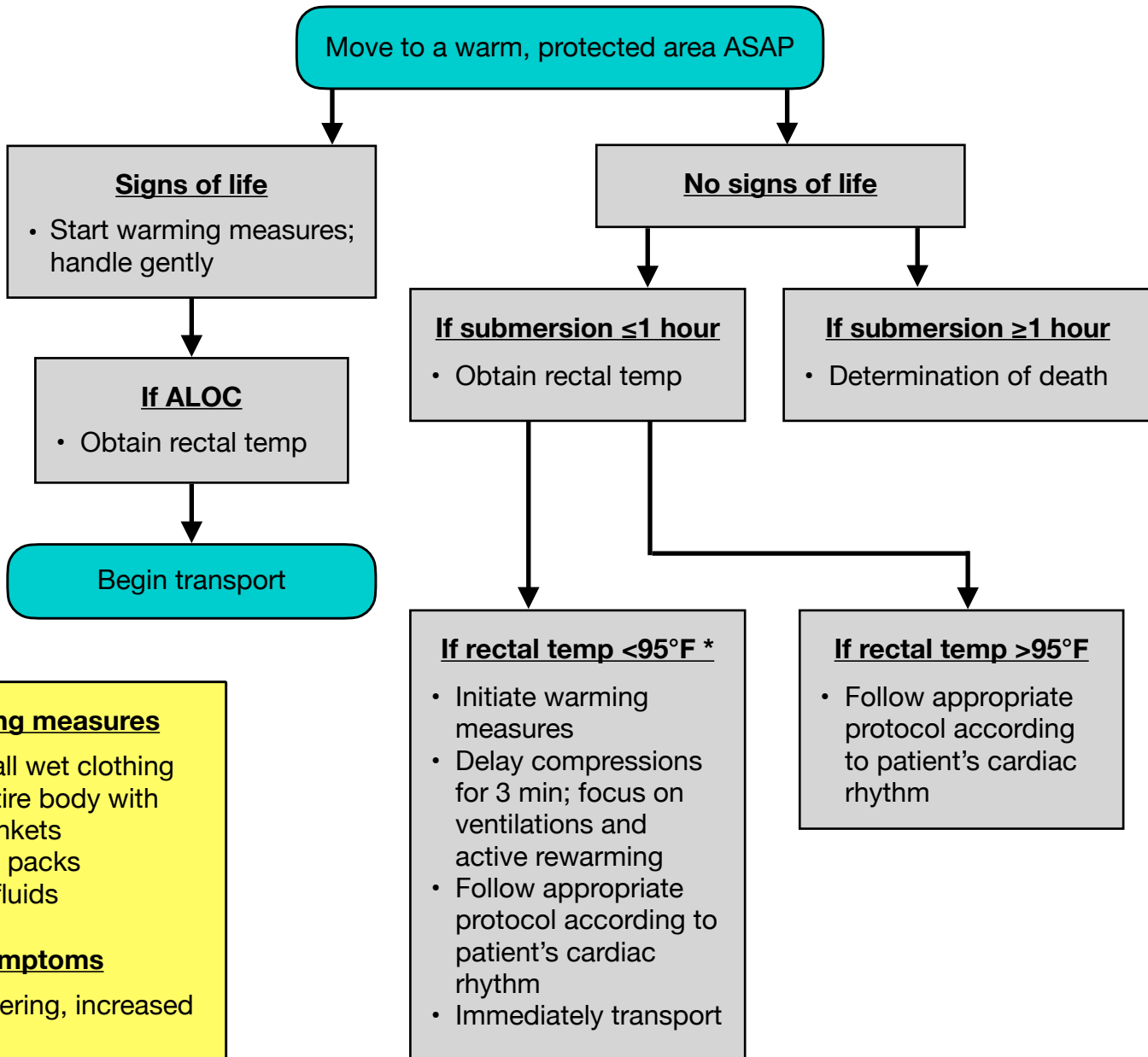
SPECIAL CONSIDERATIONS

- 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

COLD INDUCED INJURY

Indications

- Exposure to cold or wet environment



Warming measures

- Remove all wet clothing
- Cover entire body with warm blankets
- Apply hot packs
- Warm IV fluids

Symptoms

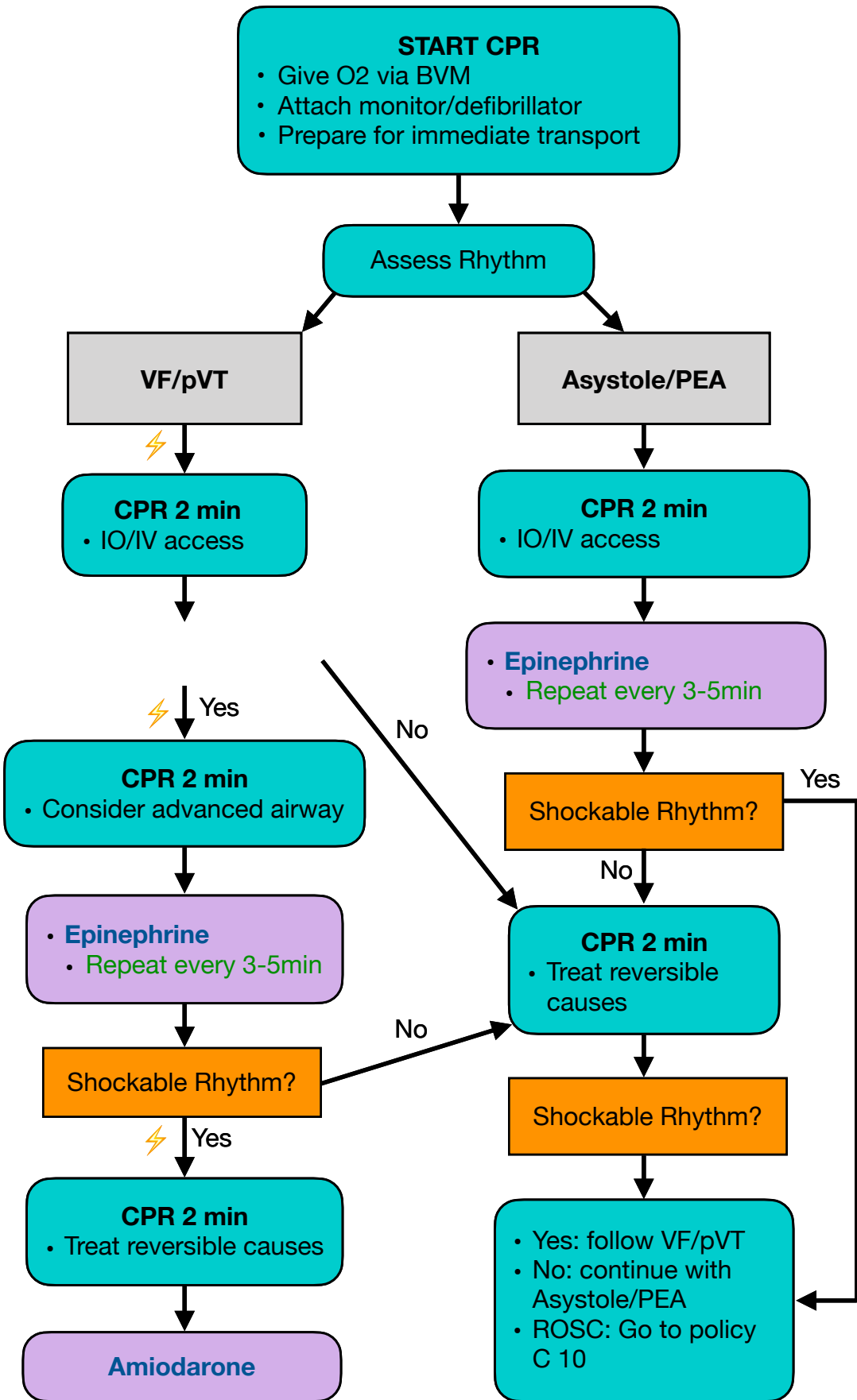
- Mild: shivering, increased RR & HR
- Moderate/Severe: ALOC, slurred speech, unsteady gait, slow HR & RR, low BP, (ventricular) dysrhythmias

Special Consideration

- Subtler presentations exist in elderly, newborns, chronically ill and alcoholics

* Withhold ACLS meds if temp < 86°F

PEDIATRIC CARDIAC ARREST



CPR Ratios

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

Airway Management

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

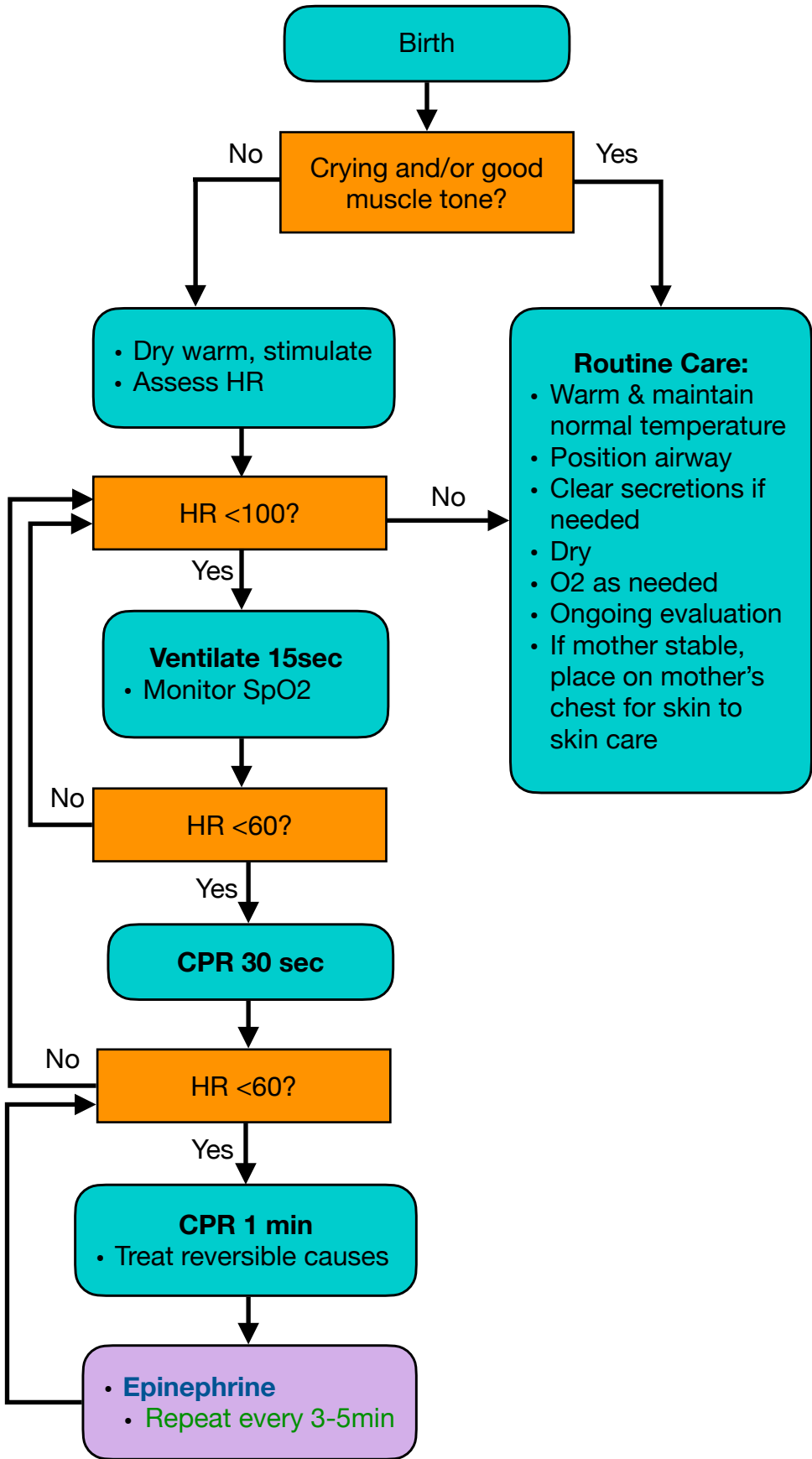
Drug Therapy

- **Epinephrine** 0.01mg/kg (0.1mg/ml) IV/IO
• Repeat every 3-5 min
- **Amiodarone** 5mg/kg IV/IO followed by or diluted in 20-30ml NS

Reversible Causes

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

NEONATAL RESUSCITATION



CRITICAL INFORMATION

- Measure with color-coded resuscitation tape
- Compress at rate of 90bpm
- Use metronome or similar device
- 3:1 compression/ventilation ratio with 2 person CPR
- Peripheral cyanosis is a normal finding
- Delay cord clamping until 30-60 seconds after birth, then clamp 6-8" from baby
- If cord is around neck and can't be slipped over the head, double clamp and cut between clamps

Airway Management

- Suction mouth then nose
- Ventilate at a rate of 60 breaths/min
- Use 2 person BLS airway management whenever possible
- Avoid excessive ventilation
- If HR >100 but SpO2 not in target range or central cyanosis present, administer blow-by O2 at 10LPM

Drug Therapy

- **Epinephrine** 0.01mg/kg (0.1mg/ml) IV/IO
 - Repeat q3-5 min
- **NS** fluid bolus 10ml/kg IV/IO

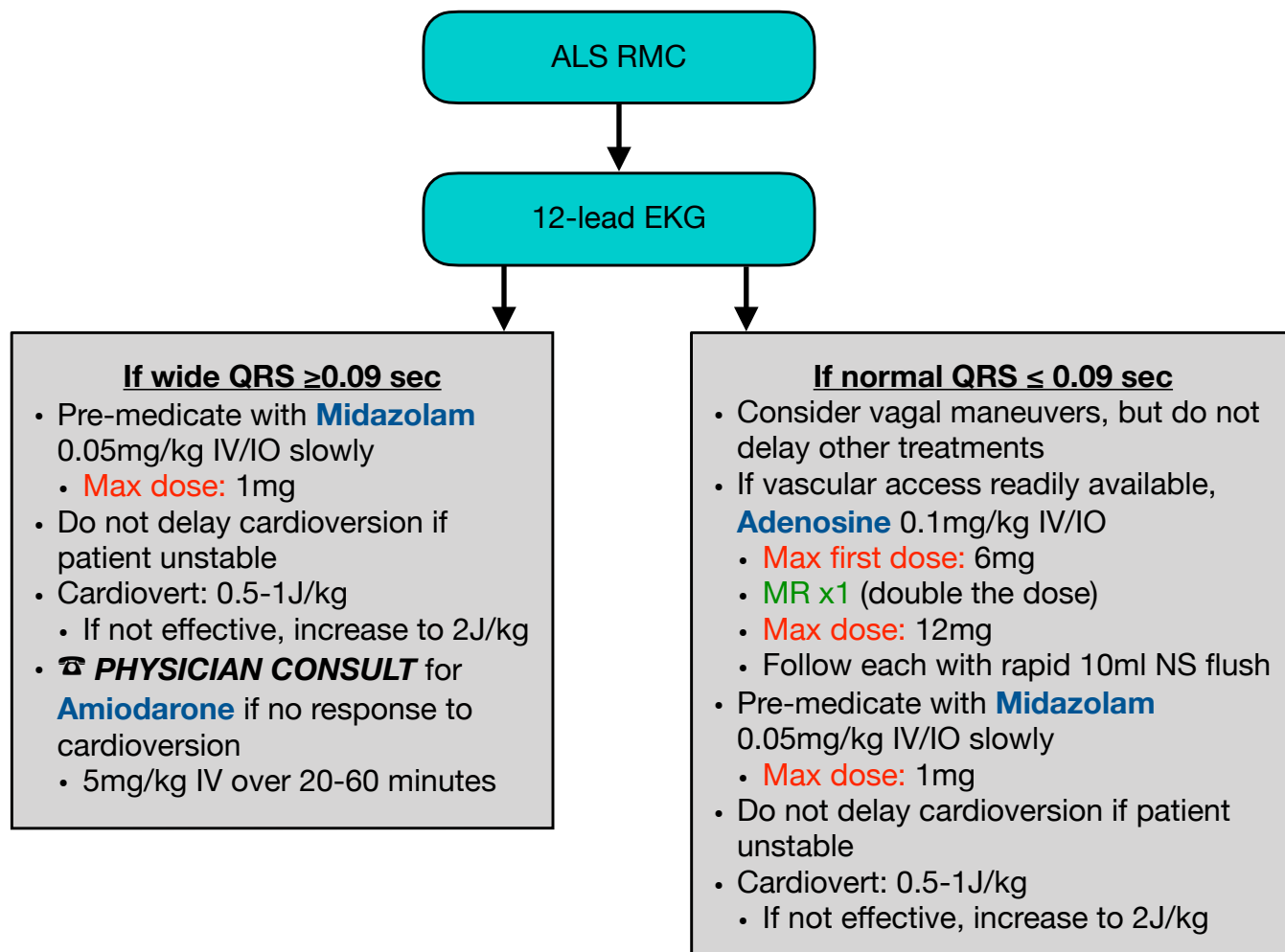
SpO2 Normal Values After Birth (in Min)

1 min	60-75%
2 min	65-70%
3 min	70-75%
4 min	75-80%
5 min	80-85%
10 min	85-95%

PEDIATRIC TACHYCARDIA POOR PERFUSION

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 MEDICATIONS

DRUG	CONCENTRATION	STANDARD DOSE
Adenosine	6mg/2ml	0.1mg/kg rapid IV/IO push, followed by 5ml NS flush <i>Max first dose:</i> 6mg <i>Repeat:</i> x1 (double the dose); <i>Max dose:</i> 12mg
Albuterol	2.5mg/3ml NS	2.5mg/3ml NS
Amiodarone	150mg/3ml	<u>Pulseless Arrest:</u> 5mg/kg IV/IO, followed by or diluted in 20-30ml NS <i>Max single dose:</i> 300mg <u>Tachycardia with poor perfusion:</u> 5mg/kg IV/IO over 20-60 min
Atropine	1mg/10ml	<u>Bradycardia:</u> 0.02mg/kg IV/IO Minimum dose 0.1mg, <i>Single max dose:</i> 0.5mg <i>Repeat:</i> x1 <u>Organophosphate Poisoning:</u> 0.05mg/kg IV/IO <i>Repeat:</i> q5-10 min <i>Max dose:</i> 4mg or until relief of symptoms
Dextrose 10%	D10%	<u>ALOC (Neonate):</u> 2ml/kg IV/IO <u>ALOC (>Neonate):</u> 5ml/kg IV/IO
Diphenhydramine (Benadryl)	50mg/ml or 50mg/10ml	1mg/kg IV/IO/IM <i>IV/IO max dose:</i> 25mg/min <i>IM max dose:</i> 50mg
Epinephrine	1mg/ml EpiPen Jr ® 0.15mg	<u>Allergic Reaction:</u> 0.01mg/kg IM (0.01mg/kg) <i>Max dose:</i> 0.6mg (0.6ml) EpiPen Jr ®: repeat as needed in 5 min <u>Upper Airway/Stridor:</u> 5mg in 5ml via nebulizer
Epinephrine	1mg/10ml or 0.1mg/ml	0.01mg/kg (0.1ml/kg) IV/IO

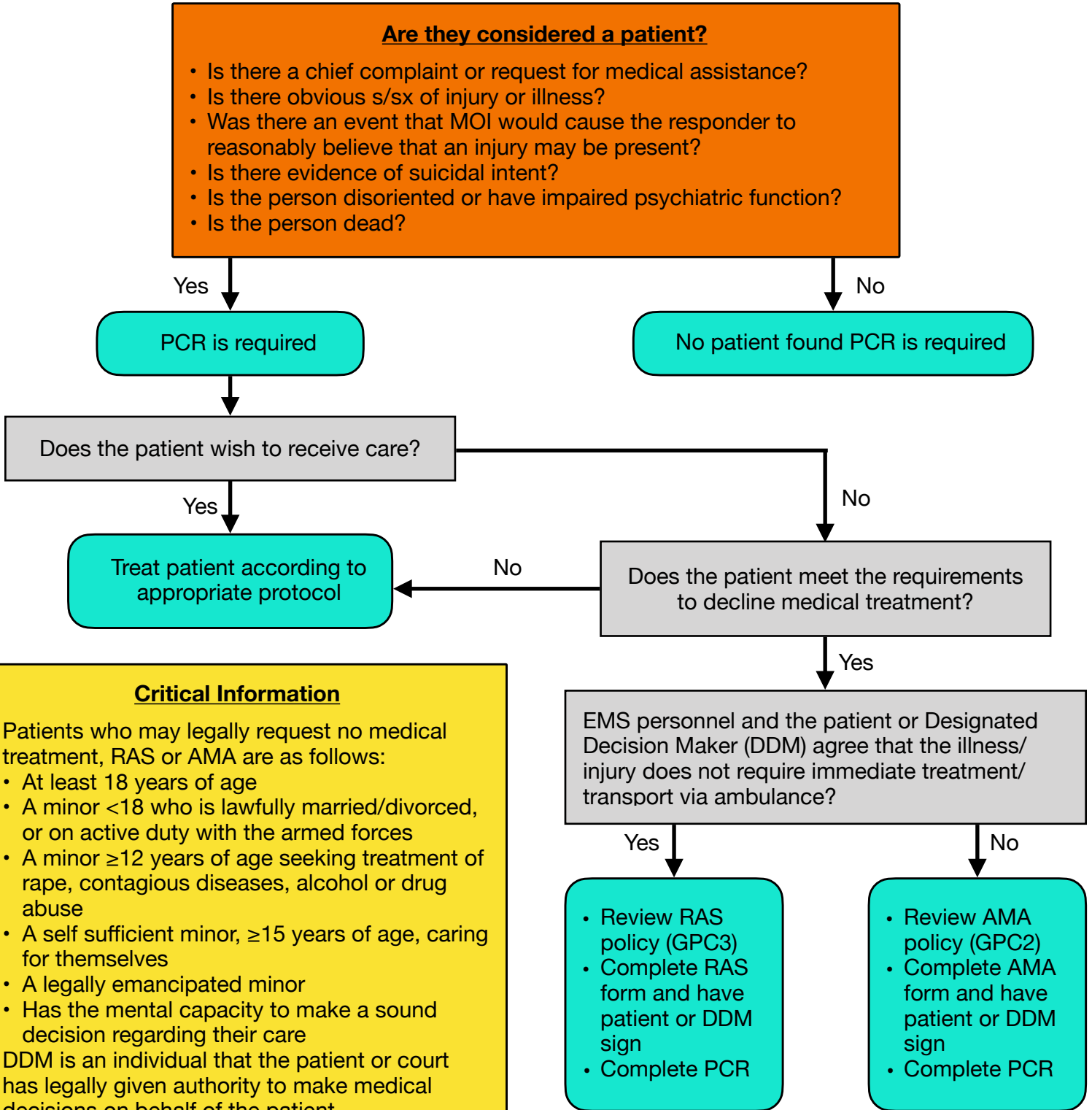
PEDIATRIC MEDICATIONS

DRUG	CONCENTRATION	STANDARD DOSE
Fentanyl	100mcg/2ml	1mcg/kg slow IV/IO/IN <i>Repeat: q5 min</i> <i>Max dose: 3mcg/kg</i> For IN: divide dose evenly between nostrils
Glucagon	1mg/ml	0.03mg/kg IM <i>Max dose: 1mg</i>
Ipratropium (Atrovent)	500mcg/2.5ml Unit dose	500mcg/2.5ml Unit dose
Lidocaine 2%	20mg/ml	0.5mg/kg slowly <i>Max dose: 40mg</i> <i>Repeat: x1 1/2 of initial bolus</i>
Midazolam (Versed)	2mg/ml IN: 5mg/ml	<u>Cardioversion:</u> 0.05mg/kg slow IV/IO <i>Max dose: 1mg</i> <u>Seizure:</u> IV/IO: 0.05mg/kg <i>Repeat: x2 q15 min</i> <i>Max per dose: 1mg</i> IM: 0.1mg/kg <i>Repeat: x1 in 10 min is still seizing</i> IN: 0.2mg/kg <i>Max dose: 5mg</i>
Morphine	10mg/10ml 10mg/ml	<u>Pain Management:</u> 0.1mg/kg (0.1ml/kg) slow IV/IO/IM <i>Repeat: x1 in 15 min if IV/IO, 30 min if IM</i> <u>Burns:</u> 0.1mg/kg IV/IO/IM in incremental doses up to <i>max dose: 0.3mg/kg</i>
Naloxone (Narcan)	2mg/2ml	0.1mg/kg (0.25ml/kg) IV/IO/IM
Ondansetron (Zofran)	4mg	<u>Patients ≥4 years:</u> 4mg ODT or slow IV over 30 seconds <u>Patients 2-4 years:</u> 2mg ODT or slow IV over 30 seconds
Sodium Bicarbonate	50mEq/50ml	1mEq/kg IV/IO

PATIENT DETERMINATION

Indications

- To determine if a person is considered a patient and the appropriate course of care.



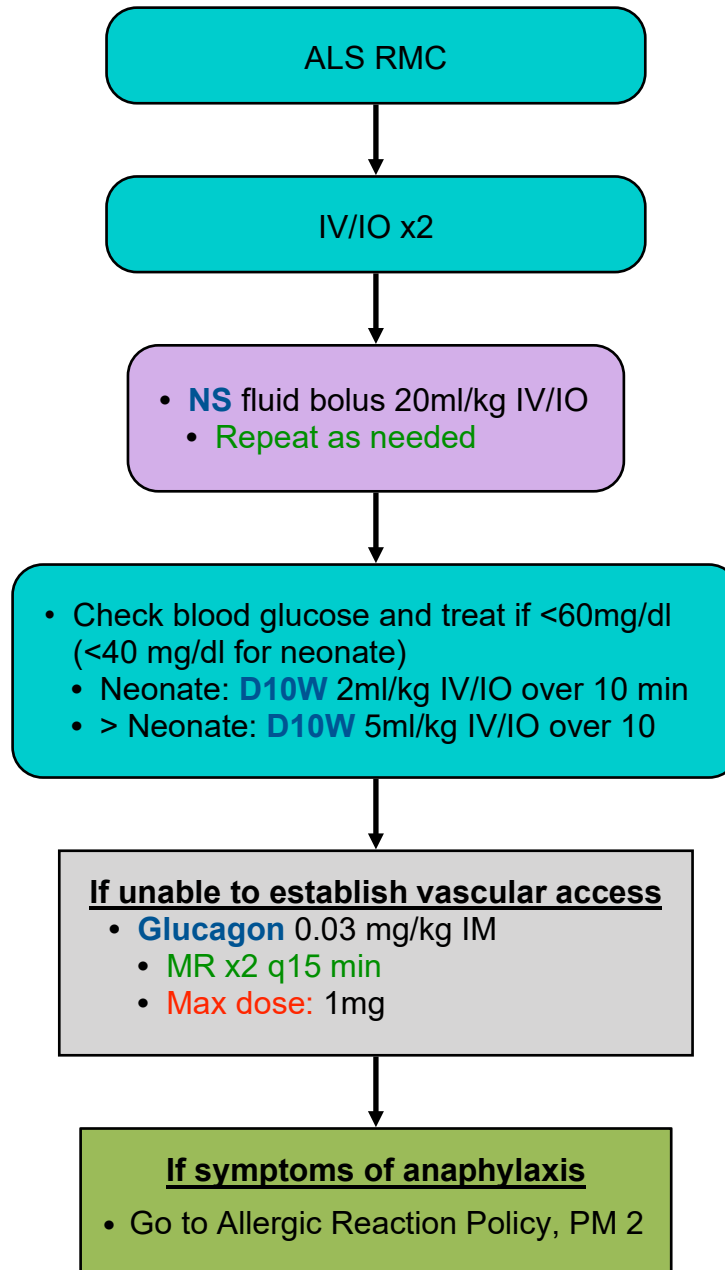
Critical Information

- Patients who may legally request no medical treatment, RAS or AMA are as follows:
 - At least 18 years of age
 - A minor <18 who is lawfully married/divorced, or on active duty with the armed forces
 - A minor ≥12 years of age seeking treatment of rape, contagious diseases, alcohol or drug abuse
 - A self sufficient minor, ≥15 years of age, caring for themselves
 - A legally emancipated minor
 - Has the mental capacity to make a sound decision regarding their care
- DDM is an individual that the patient or court has legally given authority to make medical decisions on behalf of the patient.
- Patients who do not have a DDM physically present may be released at the scene after telephone consent is obtained

PEDIATRIC SHOCK

Indications

- Inadequate organ and tissue perfusion to meet metabolic demands



Administrative Policy for EMS Distribution of Naloxone Kits

- Naloxone administered to a patient for a narcotic toxidrome and,
- Polypharmacy overdose ruled out to the extent possible (collateral toxicants with associated risk) and,
- Patient now conscious and has capacity to make decisions
- No symptoms of induced abstinence syndrome/withdrawal
- No recurrence of decreasing level of consciousness during the EMS encounter
- Patient is now refusing ambulance transport
- An AMA protocol and documentation is followed then,
- Intranasal naloxone left with patient or with household member with directions for use

I. Purpose

To oversee the “leave behind” Narcan program which allows emergency medical responders to distribute “leave behind” Naloxone (Narcan) kits on the scene of an overdose or perceived overdose.

Procedure

- A. EMS logistics staff will receive naloxone kits intended for laypersons use, as they are available from external suppliers.
- B. Naloxone kits will be distributed to EMS providers in a manner similar to current supply chain procedures.
- C. EMS providers will distribute “leave behind” Narcan kits at the scene of an overdose, or upon their discretion, will give a naloxone kit to any person encountered on an EMS call that is at risk of experiencing an opiate overdose (e.g. a current opiate overdose patient who refuses transport) or any person in position to assist a person at risk of opiate overdose.
- D. Shall not give naloxone to patients or bystanders from the regular EMS patient care supply.
- E. Resupply provider’s naloxone kits, as stock is available, via usual supply chain procedures. It may be the case that no resupply is available; layperson naloxone kits are not a required in-service medication.

INTERFACILITY TRANSFERS

PURPOSE

To provide direction and policy for interfacility transfers by authorized EMS providers in Marin County.

RELATED POLICIES

5200 - Medical Mutual Aid, Multi-Casualty Incident (MCI) Plan

AUTHORITY

Health & Safety Code 1797.200, 1797.218, 1797.222; Marin County Code of Ordinances, Chapter 7.60, "Ambulance Transportation Services"; Marin County Board of Supervisors Resolution 96-41

DEFINITIONS

1. *Interfacility Transfer* – The scheduled movement of a patient by ambulance from one healthcare facility to another healthcare facility.
2. *Rapid Re-triage* – An emergent interfacility transfer of a trauma patient from an Emergency Department to a designated Trauma Center.
3. *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.
4. *Authorized EMS Provider* – A private ambulance company with a current certificate of operation, authorized by the County to provide ambulance services.
5. *Permitted Ambulance* – An ambulance with a current permit from the Marin County EMS Agency.
6. *Emergent Transfer* – Patient requires immediate transportation by ambulance to another facility for a higher level of care (e.g., STEMI, stroke, trauma, etc.).

POLICY

In Marin County, interfacility transfers must be conducted by an authorized EMS provider except for a transfer that originates outside Marin and terminates in Marin.

- An immediate interfacility transfer of a rapid re-triage or confirmed STEMI patient may be conducted by a Fire Department provider that provides 911 ambulance services.
- Interfacility transfers requiring ALS, CCT, or other level of specialty care (e.g., neonatal, bariatric, infectious disease, etc.) must use a unit staffed and equipped for that level of care.
- For outgoing interfacility transfers requiring the use of an air ambulance, the transferring hospital shall contact Sheriff's Communication Center to dispatch appropriate fire department units to secure the emergency landing zone.
- Receiving interfacility transfers by air ambulance directly to the facility is not allowed in Marin except under extraordinary circumstances.
- In cases of an emergent transfer request when a requested authorized EMS provider does not have a permitted ambulance available, the hospital or provider may:
 - Contact other authorized EMS providers to conduct the transfer.
 - Utilize a non-permitted ambulance from any authorized EMS provider, and submit an *EMS Event Form* to the EMS Agency for CQI review.
 - Request an ambulance from a non-authorized EMS provider and submit an *EMS Event Form* to the EMS Agency for CQI review.

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

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