

AMBULANCE DIVERSION POLICY

Purpose

- To define the circumstances under which ambulance traffic may be diverted from the intended receiving facility

Related Policies

- Trauma Triage and Destination Guideline Policy, 4613
- Destination Guidelines, GPC 4

Authority

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

Definitions

- **Full diversion** means a rerouting of all ambulance traffic
- **Condition specific diversion** may occur when a normally available service, procedure or piece of equipment is temporarily unavailable and results in the rerouting of specific patients, dependent on the reason for diversion. Condition specific diversion may include the following:
 - I. CT Scanner inoperable
 - II. Neurosurgeon not available
 - III. Trauma Center diversion
 - IV. Emergency Department saturation
 - V. Cath Lab diversion

Policy

- A. Each receiving hospital shall establish an internal hospital plan, approved by and on file with the EMS Agency. The plan shall include but not limited to the following:
 - Definitions and standards for activation which are consistent with this policy/procedure
 - Identification of the internal approval process, including persons or positions that must be involved in the decision-making process
 - Mechanisms for notification, on-going monitoring, removal from diversion status; identification and activation of back-up ED and ICU physical space per state licensing guidelines; call-in mechanism for additional staff; identification of patients who can be safely transferred within the facility; internal review of the diversion and reporting to the EMS Agency
- B. Full diversion may occur only if the receiving emergency department is incapacitated by a physical plant breakdown (i.e., fire, bomb threat, power outage, etc.) which renders patient care unsafe. In the event of a full diversion, **all patients will be rerouted to other facilities** as appropriate

- C. The need to institute a Conditions Specific Diversion is determined per each facility's plan, consistent with the following:
1. The following patients may not be rerouted:
 - Obstetrical patients in active labor
 - Patients with respiratory distress and unmanageable airway
 - Patients with uncontrolled external hemorrhage
 - Patients requiring ALS, but having no paramedic in attendance
 - Patients with CPR in progress (unless transporting to the nearest STEMI Receiving Center for patients in refractory VF)
 - Stable patients who insist on transport to a specific hospital. Ambulance personnel will inform the patient of the diversion status and document that the patient refused transport to an alternate facility
 2. CT Scanner Inoperable:
 - Patients who meet Physiologic and/or Anatomic Trauma Triage Criteria with signs and symptoms of head, neck or spinal cord injury will be transported to Level II Trauma Center; if conditions preclude air transport consult with MarinHealth Medical Center Level III Trauma Center
 - Patients who meet Mechanism of Injury and/or Additional Factors will be transported to Kaiser Permanente San Rafael EDAT
 - Patients with the following get transported to the closest facility with functioning CT scanner:
 - I. Signs or symptoms of a new CVA
 - II. Head injury patients not meeting trauma criteria with anticoagulant use and/or bleeding disorders
 3. Neurosurgeon Not Available:
 - Patients with signs and symptoms of head, neck or spinal cord trauma: transport to Level II Trauma Center; if conditions preclude air transport, consult with MarinHealth Medical Center Level III Trauma Center
 - Patients with signs and symptoms of CVA and/or medical conditions that may require neurosurgical intervention: transport to the closest appropriate facility in Marin County with a functioning CT scanner for initial evaluation and stabilization. Transfer, if indicated, is the responsibility of the hospital, including the maintenance of formal transfer agreements with other facilities
 4. Trauma Center Diversion:
 - Trauma patients will be diverted from the trauma center when the trauma surgeon and back-up trauma surgeon are encumbered with the care of trauma patients either in the operating room or emergency department
 - Patients who meet Physiologic and/or Anatomic Trauma Triage Criteria shall be transported to the time-closest Level I or Level II Trauma Center by air or ground
 - Patients who meet Mechanism of Injury and/or Additional Factors Trauma Triage Criteria shall be transported to the EDAT

- The following conditions DO NOT constitute acceptable grounds for Trauma Center Diversion:
 - I. A lack of clinical specialty back-up, inpatient bed space, monitored beds, or inpatient nursing staff
 - II. ED Saturation Diversion
 - III. Inoperable CT Scanner (see section 3B)

5. ED Saturation Diversion:

- Ambulance traffic may be diverted due to emergency department saturation when emergency department resources are fully committed and unable to accept incoming ambulance traffic
- Trauma, STEMI, suspected CVA, and OB patients >20 weeks (with a pregnancy related complaint), neonates with evidence of shock, and/or OB patients 0-6 weeks postpartum will NOT be rerouted
- Under this policy, ED Saturation Diversion can occur up to four hours a day, two hours maximum at a time, and separated by a minimum of four hours
- At the beginning and end of any diversion period, a hospital must update ReddiNet
- Under no circumstance is lack of in-patient hospital beds, other than in the Emergency Department grounds for diversion. Hospitals are expected to accept ALL ambulance patients and to provide emergency stabilization and appropriate transfer if necessary
- In all cases of diversion, senior management or designee must be notified and must approve activation of the diversion status

6. Cath Lab Diversion

- STEMI ambulance traffic will be diverted when a STEMI Receiving Center Cath Lab is unavailable because of physical plant or mechanical problems
- Cath Lab diversion will not be declared when the Cath Lab is encumbered by routine medical care

D. If more than two receiving hospitals within Marin County meet their internal plan criteria and wish to activate diversion status at the same time, diversion status for all will be discontinued upon direction of the EMS Agency

E. Initiating and termination diversion status

1. Initiating diversion

- The facility shall implement the internal surge plan prior to initiating diversion status. The request to initiate status must be approved by senior management
- The facility shall update ReddiNet immediately to indicate their status as being on diversion
- Dispatch centers (public and private) shall monitor ReddiNet to inform providers of the hospital diversion status

2. Termination of diversion

- Diversion status will be terminated as soon as possible or within two hours of initiation, whichever comes first
- Diversion status is terminated when the hospital updates their status in ReddiNet to indicate that they are no longer on diversion or two hours from initiation has passed

- Dispatch centers (public and private shall monitor ReddiNet to inform providers of the hospital diversion status
3. The Communications Center shall notify the EMS Agency of changes in diversion status
 4. EMS Agency staff is available to assist with solving system-related problems and can be reached by contacting the Communications Center
 5. The EMS Agency will track the frequency and duration of diversion, making periodic reports to system participants
 6. Any problems associated with patient care, such as delays in transfer of care or patient safety, shall be submitted to the EMS Agency by either prehospital service provider or receiving facility, as applicable, per the Event Reporting Policy #2010

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
- Communication Failure, 7002
- EMS Communication System, 7004
- Multiple Patient Management Plan (MPMP)
- BLS Treatment Guidelines
- STEMI, C 9
- CVA/Stroke, N 4
- 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 MPMP omitting contact or hospital consultation

PATIENT CARE RECORD (PCR)

Purpose

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

Related Policies

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

Definitions

- *Patient*- someone who meets any one of the following criteria:
 - I. Has a chief complaint or has made a request for medical assistance
 - II. Has obvious signs or symptoms of injury or illness
 - III. Has been involved in an event when mechanism of injury would cause the responder to reasonably believe that an injury may be present
 - IV. Appears to be disoriented or to have impaired psychiatric function
 - V. Has evidence of suicidal intent
 - VI. Is dead
- *Emergency Medical (EM) Number*- assigned by the Marin County Communication Center to identify each 9-1-1 call dispatched for medical assistance
- *Incident Number*- The "F" number assigned to an incident
- *Electronic Patient Care Record (ePCR)*- the permanent record of prehospital patient evaluation, care, and treatment
- *Field Transfer Form (FTF)*- a temporary paper record of patient care used only when ePCR is unavailable
- *Quicksheet*- a single section within Elite Field that streamlines data entry
- *Short Form*- a printed report, typically received via fax at the ED containing a minimum set of data elements from the ePCR
- *Posting*- the process of uploading the ePCR from Elite Field to the ImageTrend server. The first time a record is posted, a fax will be sent to the ED. Each post to an out of county facility will result in a fax
- *Completed PCR*- the PCR is considered complete when it has been posted and locked
- *Triage Tag*- a paper record for multi-casualty incidents involving 6 or more patients

Policy

- A. An ePCR shall be completed for every call for which an EM is issued
- B. For all transported patients:
 - To ensure an informed continuum of care for all patients transported to the hospital, field personnel will post the ePCR no later than 10 minutes prior to ED arrival. If short ETAs

preclude posting before arrival, the ePCR must be posted soon as possible upon arrival. Immediate patient care needs shall take precedence over posting

- Once posted, hospital personnel can retrieve ePCR information from the ImageTrend Elite Viewer or secure the short form that is automatically faxed to their facility. If this patient information is not available, hospital personnel will notify field personnel. In no event shall field personnel leave the ED if the short form or posted patient information or similar document (e.g., FTF or locally printed short form) is not available. The transfer of care will include a verbal report to hospital clinical staff
- When available, posted information shall contain at a minimum:
 - I. Patient name
 - II. Patient address
 - III. Patient phone number
 - IV. Date of birth
 - V. Chief Complaint
 - VI. Contact information of the best medical historian
 - VII. Medical decision maker (when not the patient)
 - VIII. Pertinent findings on exam
 - IX. Last known well (if applicable)
 - X. Vital signs
 - XI. Medications
 - XII. Allergies
 - XIII. Presence of advanced directive/DNR
 - XIV. Medications administered
 - XV. Procedures performed
 - XVI. Kaiser/insurance number
- 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
- If the ePCR system precludes the transfer of information to the hospital and a compatible printer is available, the ePCR should be printed locally
- Data gathering and documentation responsibilities should never take precedence over hand-on rescue and patient care and therefore may not always be possible to complete during an incident. Nevertheless, prehospital information, particularly for critical patients, is essential for the emergency department and hospital course of care and every effort to obtain the information should be made
- A completed ePCR must be available to the receiving facility within 20 minutes of transferring care. If this is not possible (e.g. unit must leave for another call), then a complete and legible short form or posted ePCR must be available to hospital staff prior to leaving the ED. When this occurs, an ePCR must be completed and available to the facility as soon as possible and no later than 3 hours after the transfer of care
- Notification patients (e.g. sepsis, stroke, STEMI, trauma) or critical patients (e.g. cardiac arrest and/or airway emergency) require a completed ePCR before field personnel leave the hospital with the exception being for a rapid re-triage patient that utilizes the same transport unit
- For all patients transported, the ePCR will be completed by the personnel assigned to the transport unit

- C. For non-transported patients (e.g. AMA, RAS, Dead on Scene), the ePCR will be completed as soon as possible and no later than three hours by the paramedic or EMT most involved in patient care and responsible for the patient's disposition
- D. For calls where there is no medical merit, the unit that completes the ePCR will be determined according to provider agency policy
- E. The ePCR is the permanent PCR and will be filled out in a complete manner and will include all care provided in the prehospital setting. When possible, it shall include all 12 lead ECGs and any ECG other than normal sinus rhythm. When possible, pertinent photographs from the scene should be attached to the ePCR (e.g. vehicle damage).
- F. The completed PCR includes all care rendered by the transporting providers as well as any care given prior to arrival of the transporting unit by bystanders and/or first responders. Documentation of care provided by first responder (of a different agency than the transport unit) may be required by their department policy
- G. For air ambulance transportations, a FTF will be given to the receiving provider
- H. Personnel assigned outside of the county to provide medical mutual aid (e.g. fire-line EMT/ Paramedic, cover engine assignment), shall complete a FTF for each patient contact. The FTF will be created on site and retained by the provider agency
- I. 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

General Instructions

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

Documentation Requirements

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

- C. An appropriate physical assessment that includes all relevant portions of a head-to-toe physical exam
- D. Check and document at least 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 emergent patients, and every 15 minutes for non-emergency patients (e.g. BLS patients). When required by policy, a temperature should also be documented at least once in the VS section. For children ≤ 3 years of age, blood pressure does not need to be documented unless the child is critically ill in whom blood pressure measurement may guide treatment decisions
- E. A pain scale shall be documented for all patients ≥ 6 months who have a GCS >14
- F. All pediatric patients being treated and transported by ALS will be measured with a color-coded resuscitation tape. The corresponding color wrist band will be applied, and the patient treated according to the Pediatric Dosing Guide (PTG 2A)
- G. Only approved medical abbreviations may be used- see 7006b
- H. All pertinent medications taken by the patient prior and/or administered by a first responder (e.g. erectile dysfunction medications, aspirin, medications used for OD, Narcan, etc.) should be documented if known
- I. The CAD to PCR interface should be used to populate all PCR data fields it supplies. Imported data may be manually corrected as needed
- J. When the cardiac monitor is applied, data will be transferred to the PCR from the device. If transferred automated VS do not correlate with manually obtained values, or are not consistent with the patient's clinical condition, providers should manually check VS and record manual results
- K. All 12-lead ECGs must be imported. Any significant rhythm changes should be documented. For cardiac arrests the initial strip, ending strip, pre and post defibrillation, and pacing attempts, should be attached
- L. For drug administrations, the drug dosages, route, administration time and response shall be documented
- M. Treatments should be documented in chronological order. Response to treatment shall also be documented
- N. For patients with extremity injury, neuromuscular status must be noted before and after immobilization
- O. For patient with spinal motion restriction, document motor function before and after mention restriction
- P. For IV administration, document catheter placement, catheter size, number of attempts, and flow rate if applicable
- Q. Any Physician Consult request and response will be documented
- R. All personnel information, including signatures, will be documented
- S. All crew members are responsible for accuracy of the content of the PCR

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 unsuccessful after 1 attempt, may attempt King tube or iGel x1. If unsuccessful with King tube or iGel, then manage with BLS airway

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

I-GEL AIRWAY PROCEDURE

Indications

- When ventilation cannot be adequately maintained by BLS techniques, intubation is anticipated to be difficult, or intubation is unsuccessful after one attempt

Pre-procedure

- Open airway and pre-oxygenate with BVM for 1-3 min with 100% O₂. Avoid hyperventilation in cardiac arrest
- Apply water soluble lubricant to the back, sides and front of the cuff. Ensure no lubricant remains in the bowl of the cuff
- Position the head into the “sniffing” position or neutral position if trauma is suspected
- Remove dentures before inserting tube



Procedure

- With the cuff opening facing the patient’s chin, glide the device downwards and backwards along the hard palate with a continuous but gentle push until definitive resistance is felt. The incisor teeth should be resting on the integral bite block
- Attach bag-valve to I-gel Airway
- Verify placement using all of the following
 - Rise and fall of chest
 - Bilateral breath sounds
 - Capnometry/capnography or colorimetric device
- Secure the tube with provided strap or commercial tube holder

Equipment

- i-gel or i-gelO₂ airway device
- Water soluble lubricant
- Portable suction device
- Capnometry/capnography or colorimetric device
- Stethoscope

I-gel Sizing

Size	Patient Size	Color	Patient weight
3	Small adult	Yellow	30-60kg
4	Medium adult	Green	50-90kg
5	Large adult	Orange	90+kg

SPECIAL CONSIDERATIONS

- If there is any doubt about the proper placement of the i-gel airway, remove device; ventilate the patient with BVM for 30 seconds and repeat sequence of steps
- If unsuccessful on second attempt, resume BLS airway management
- If an excessive air leak during ventilation is noticed, use one or all of the following:
 - Hand ventilate the patient with gentle and slow squeezing of the reservoir bag
 - Limit estimated tidal volume to no more than 5ml.kg
 - If all of the above fail then change to one size larger I-gel

Critical Information

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

KING AIRWAY PROCEDURE

Indications

- When ventilation cannot be adequately maintained by BLS techniques, intubation is anticipated to be difficult, or intubation is unsuccessful after one attempt

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 airway until ventilation is easy and free flowing the
- 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

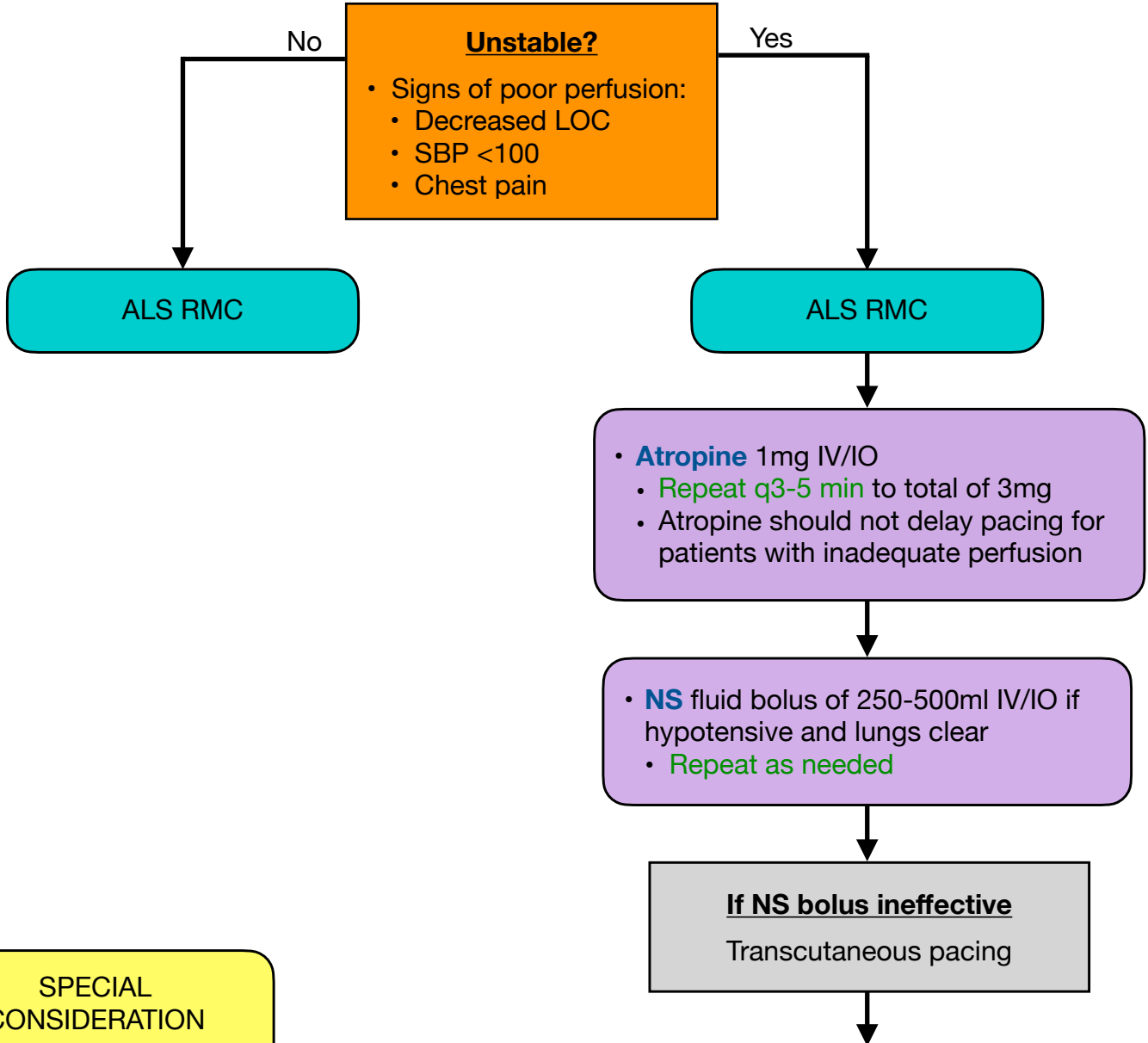
Critical Information

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

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

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
- General Pediatric Receiving Center (PedRC)

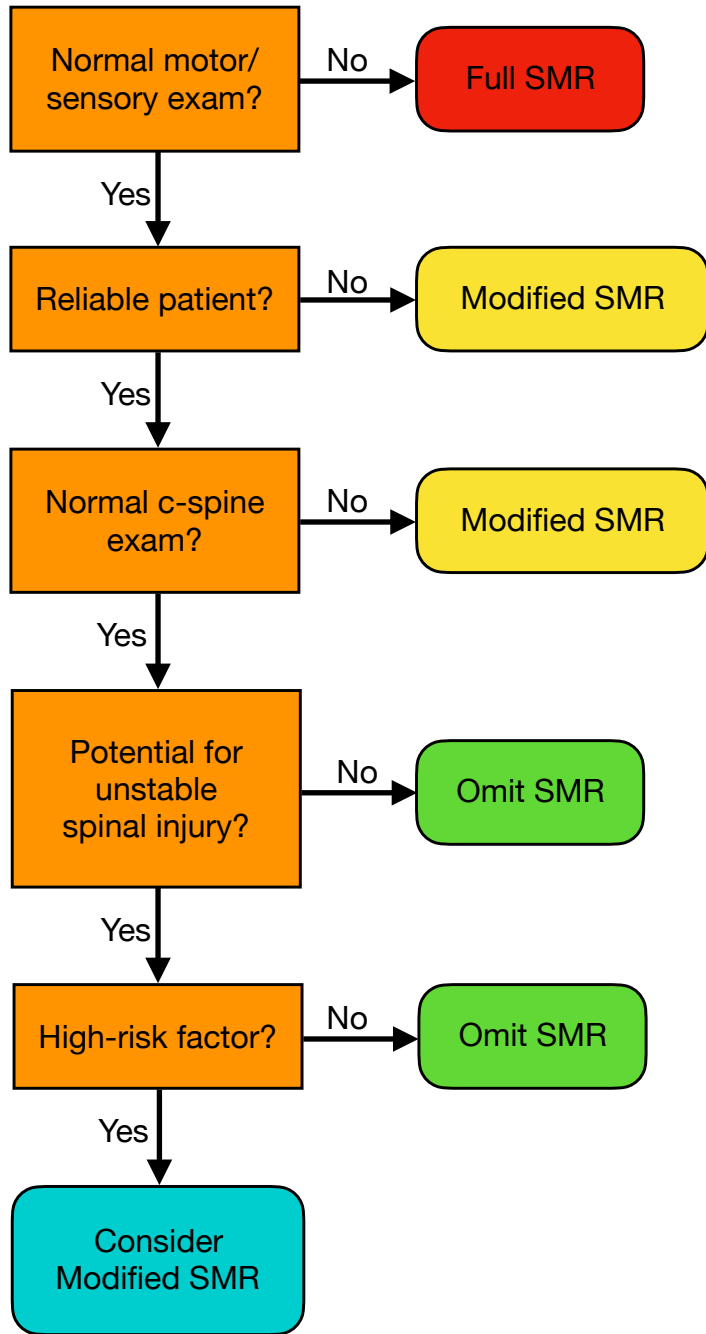
☎ PHYSICIAN CONSULT

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

CRITICAL INFORMATION

- The destination for patients shall be based upon several factors including, but not limited to the clinical capabilities of the receiving hospital, the patient’s condition, and paramedic discretion
- When the patient is unstable or life threatening, the patient should be transported to the time closest receiving facility:
 - Patients with unmanageable airway
 - Uncontrolled external hemorrhage
 - CPR in progress (unless transporting to SRC for rVF)
 - Patient requiring ALS but having no paramedic in attendance
- The following factors will be considered in determining patient destination:
 - Patient condition
 - Clinical capabilities of the receiving hospital
 - Paramedic discretion
 - Patient/family request
 - Patient’s physician request or preference
- Patients with return of spontaneous circulation (ROSC) post cardiac arrest will be transported to the nearest SRC
- Burn patients, without other trauma mechanism, shall be transported by ground ambulance to the time closest emergency department (ED)
- 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)

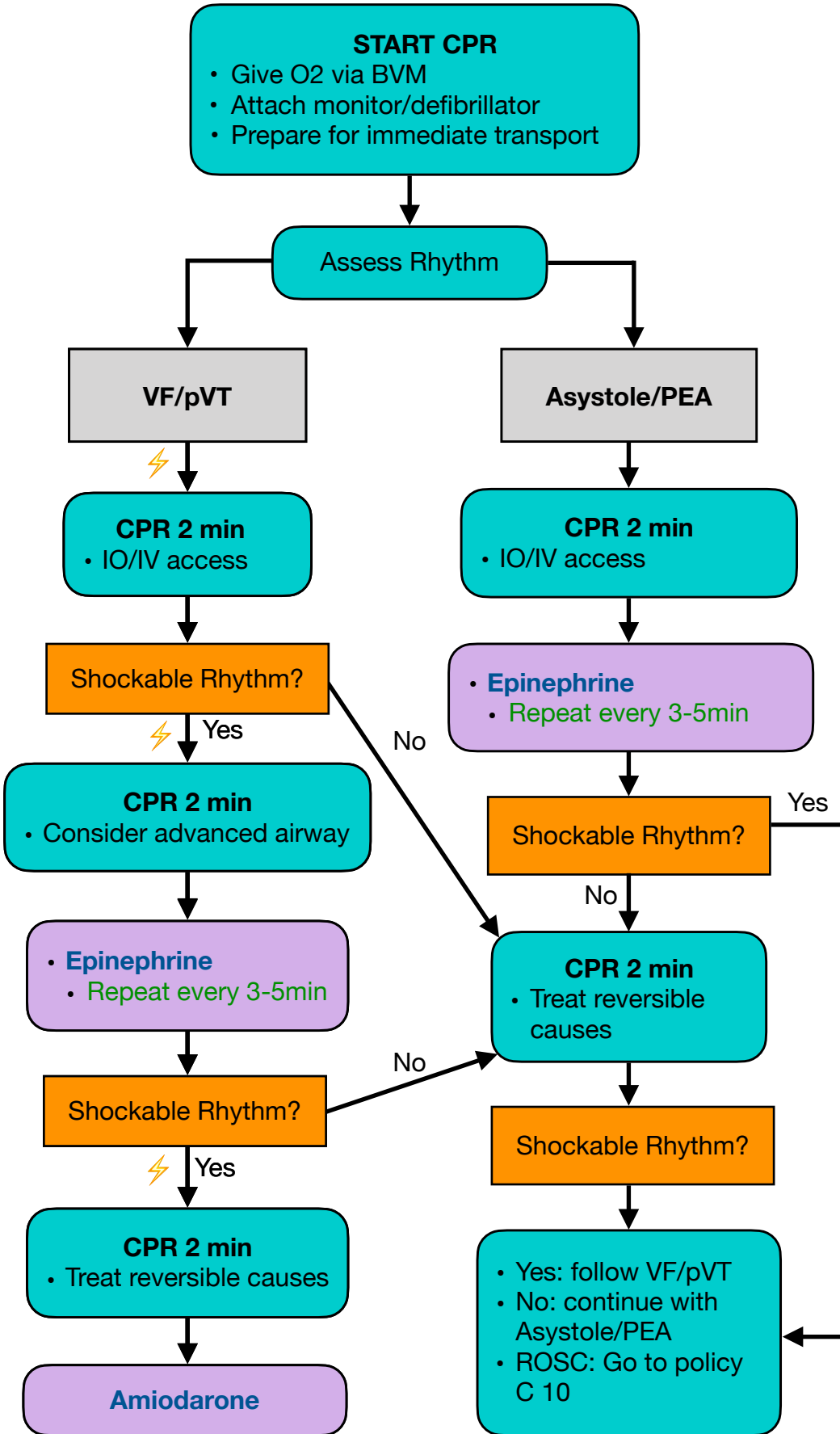
SPINAL INJURY ASSESSMENT



CRITICAL INFORMATION

- See GPC 13, Spinal Motion Immobilization for full and modified SMR procedure, and pediatric/pregnancy considerations
- **Motor exam:**
 - Wrist/finger extension
 - Finger abduction
 - Plantar and dorsiflexion of both feet
- **Sensory exam:**
 - Check for abnormal sensation in all extremities
- **Unreliable patient:**
 - ALOC
 - Alcohol or drug impairment
 - Distracting injury
 - Language barrier
- **Spinal assessment:**
 - Palpate entire spine for pain, step off, and swelling
- **High-risk factors:**
 - Age ≥65 years
 - Meets trauma mechanism of injury
 - Axial load to the head

PEDIATRIC CARDIAC ARREST

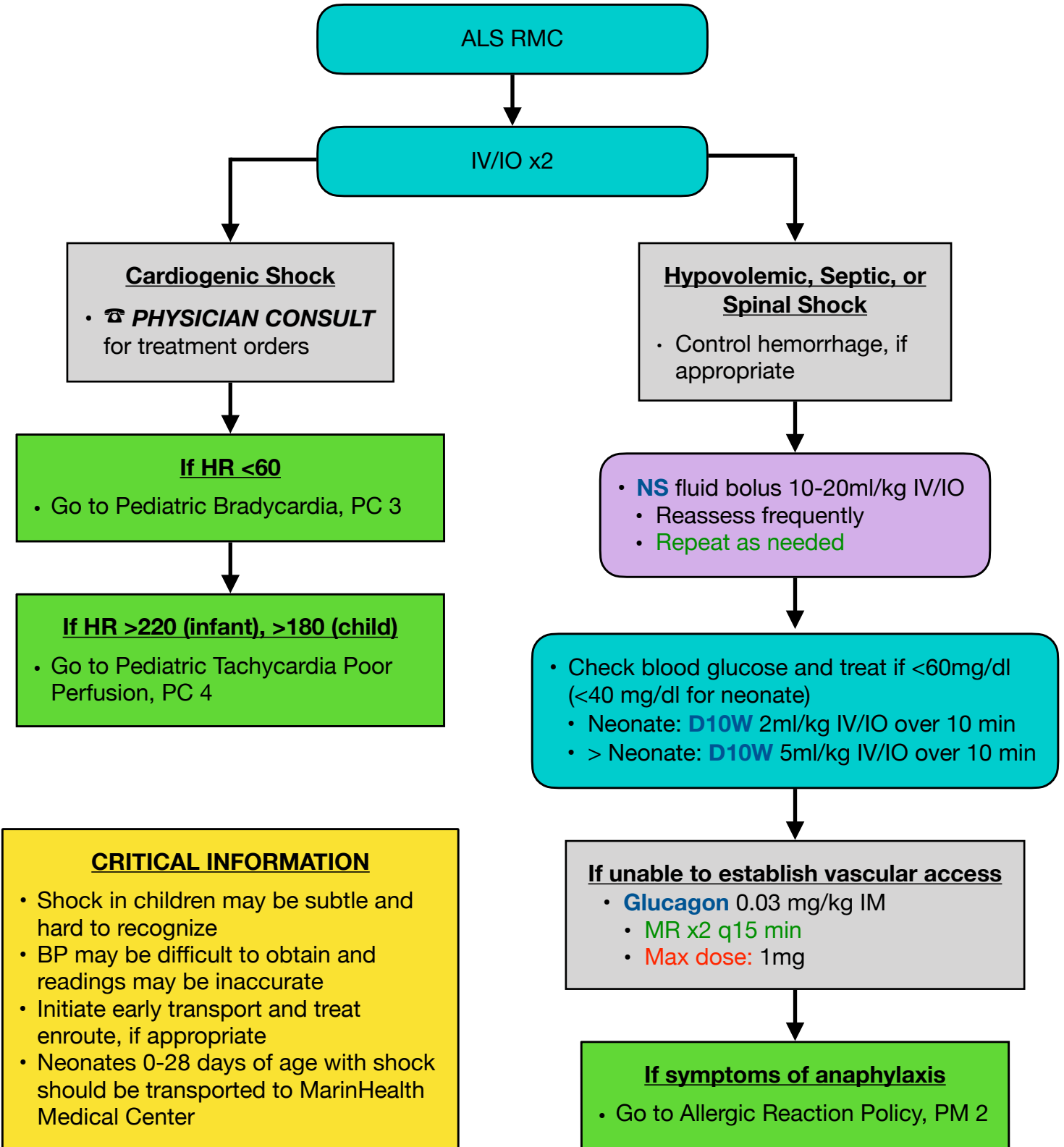


- CPR Ratios**
- One rescuer: 30:2
 - Two rescuer: 15:2
- Defibrillation**
- 2-4J/kg
- Airway Management**
- BLS airway is preferred
 - Avoid excessive ventilation
 - Place younger child in sniffing position for neutral airway positioning
 - Consider advanced airway only if patient height > color coded resuscitation tape **and** unable to ventilate with BVM
 - Laryngoscopy for ETT must occur with CPR in progress.
 - **Do not interrupt CPR for >10 seconds for tube placement**
 - Use ETCO2
 - Maintain SpO2 94-99%
 - 1 breath every 2-3 sec.
- Drug Therapy**
- **Epinephrine** 0.01mg/kg (0.1mg/ml) IV/IO
 - Repeat every 3-5 min
 - **Amiodarone** 5mg/kg IV/IO followed by or diluted in 20-30ml NS
- Reversible Causes**
- Hypovolemia
 - Hypoxia
 - Hydrogen Ion (Acidosis)
 - Hypo/Hyperkalemia
 - Hypothermia
 - Tension Pneumothorax
 - Tamponade (cardiac)
 - Toxins
 - Thrombus
 - Trauma

PEDIATRIC SHOCK

Indications

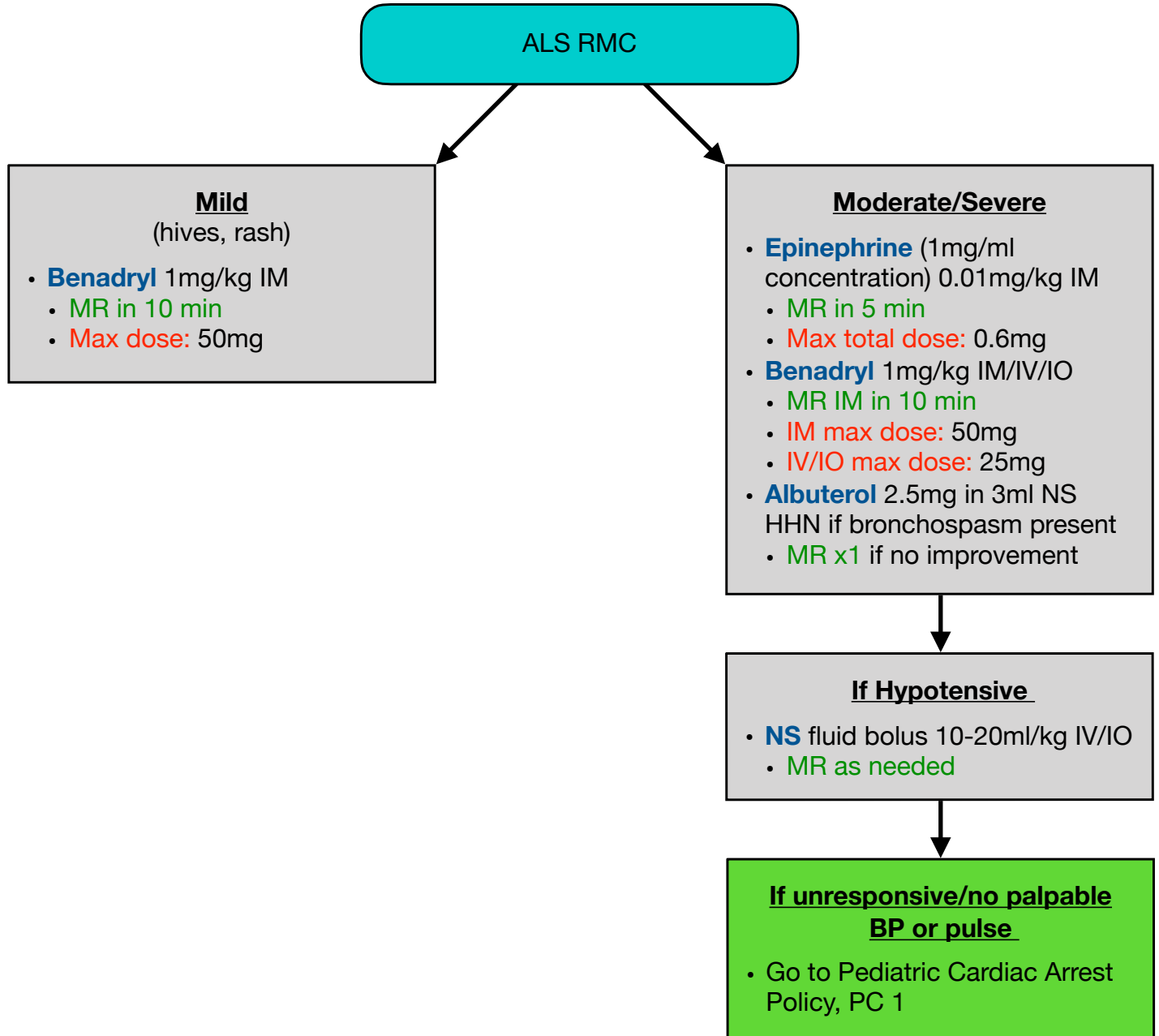
- Inadequate organ and tissue perfusion to meet metabolic demands as seen in the following signs and symptoms: pale, cool, clammy and/or mottled skin, ALOC, SBP <70mmHg



PEDIATRIC ALLERGIC REACTION

Indications

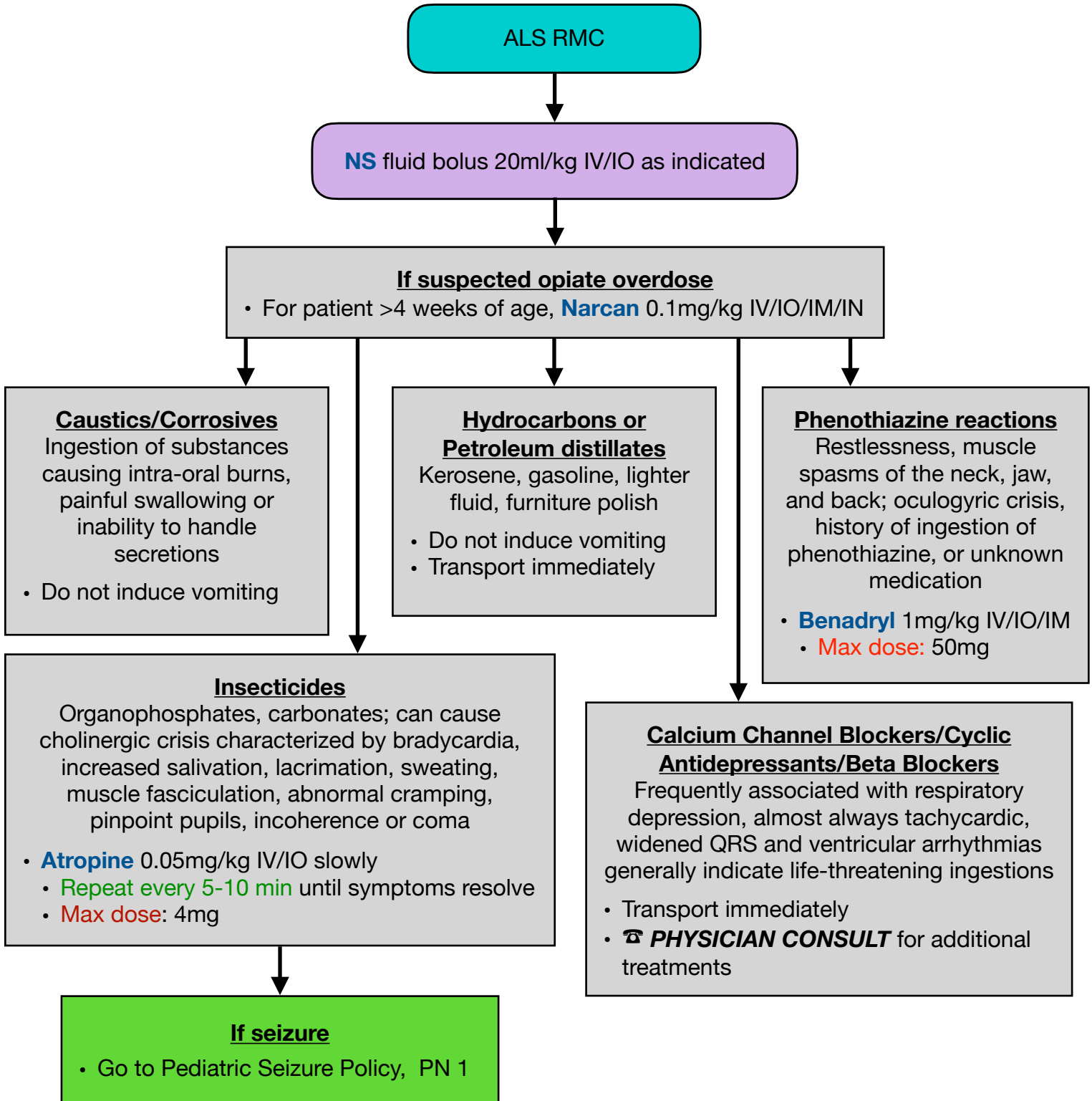
- Exposure to allergens causing airway, breathing and/or circulatory impairment



PEDIATRIC TOXIC EXPOSURE

Indications

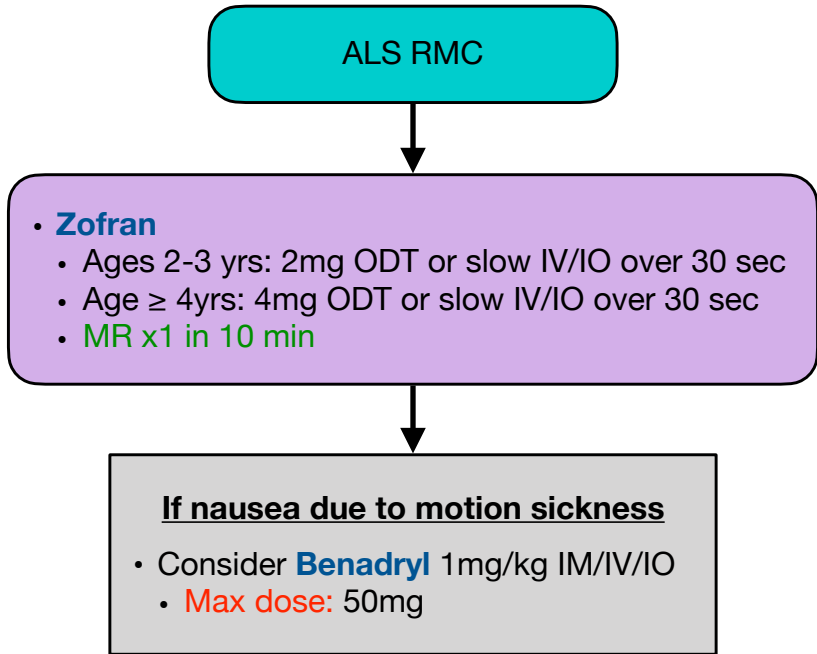
- Probable ingestion and/or exposure to one or more toxic substances, including alcohol and medications



PEDIATRIC NAUSEA/VOMITING

Indications

- Severe nausea
- Intractable vomiting
- Patients ≥ 2 years of age
- Motion sickness



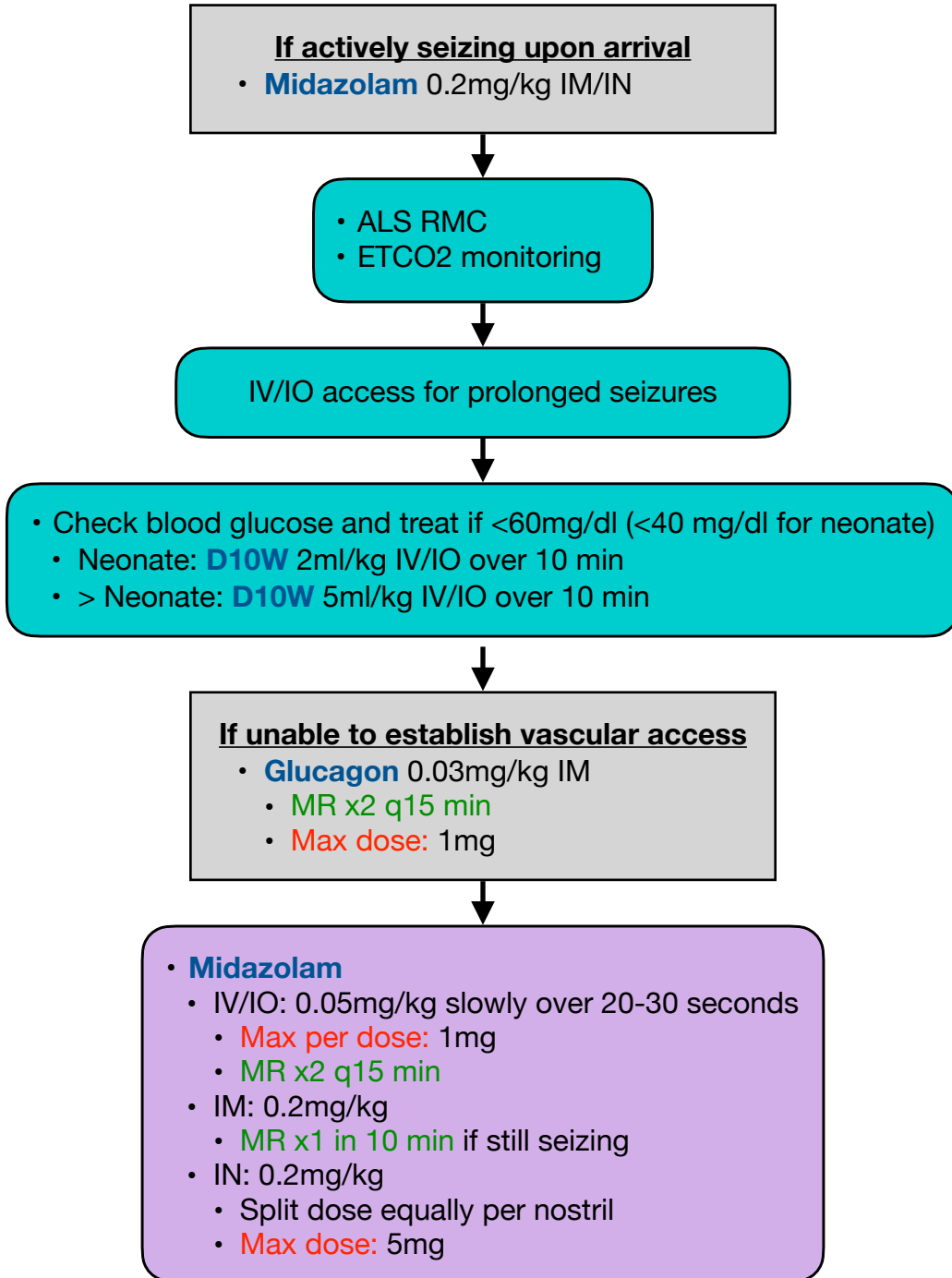
CRITICAL INFORMATION

- **Zofran** contraindicated in patients with known sensitivity to **Zofran** or other 5-HT3 antagonists:
 - Granistron (Kytril)
 - Dolasetron (Anzemet)
 - Palonosetron (Aloxi)

PEDIATRIC SEIZURE

Indications

- Recurring or continuous generalized seizures with ALOC



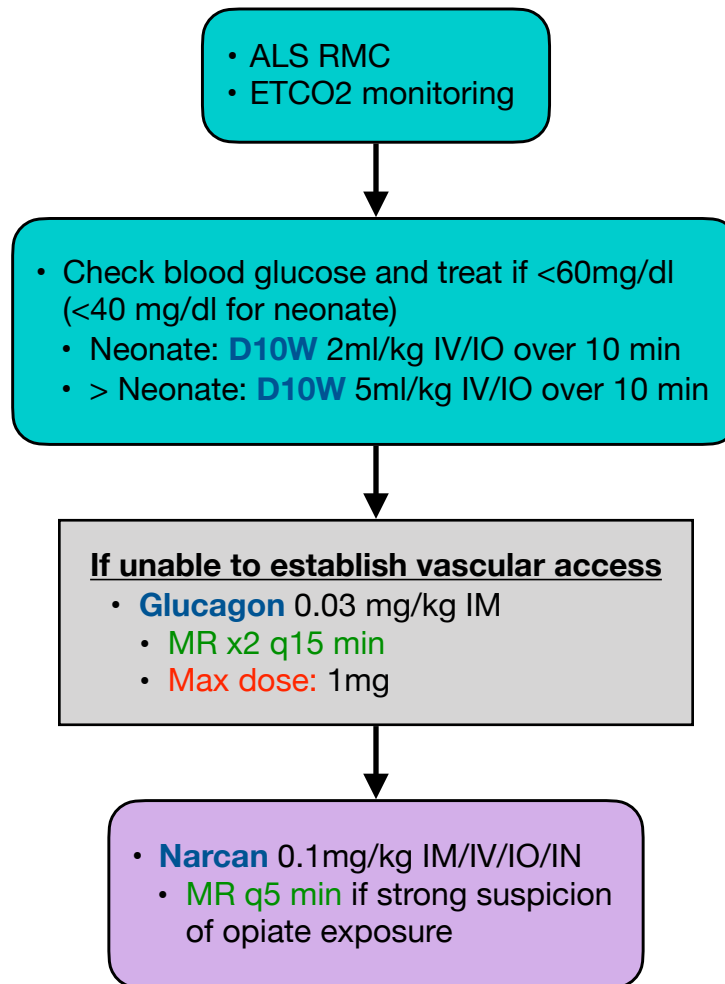
CRITICAL INFORMATION

- Evaluate for and treat hypoglycemia, hypoxia, narcotic overdose, trauma, fever, etc. prior to administering anti-seizure medications
- Never administer **Midazolam** rapid IV/IO since cardiac and/or respiratory arrest may occur

PEDIATRIC ALTERED LEVEL OF CONSCIOUSNESS (ALOC)

Indications

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



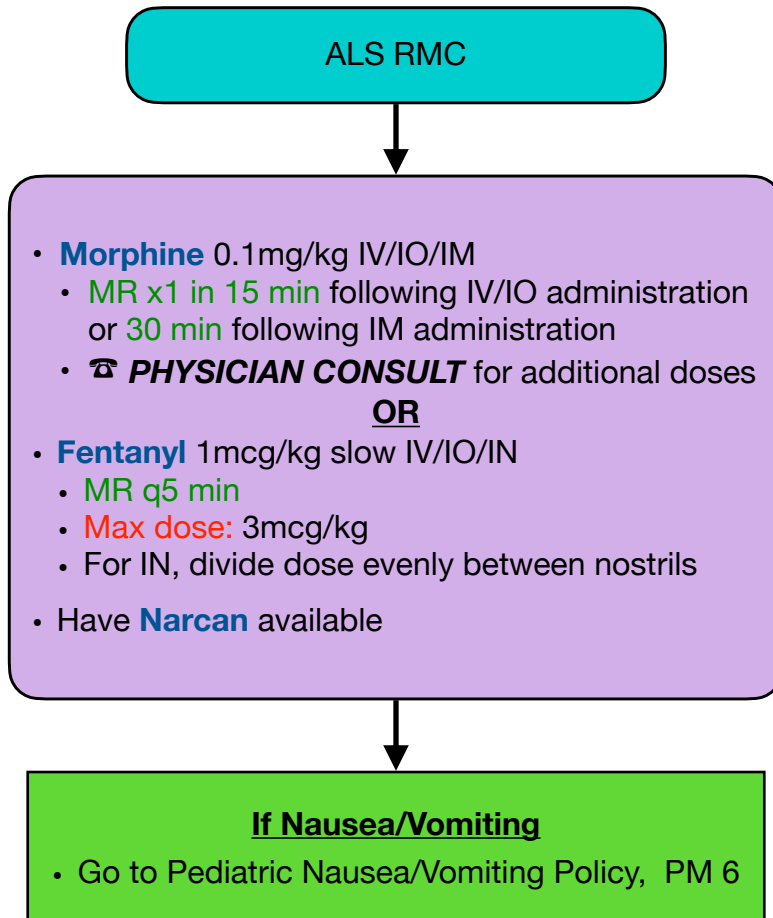
CRITICAL INFORMATION

- **Narcan** is contraindicated with neonatal resuscitation

PEDIATRIC PAIN MANAGEMENT

Indications

- Patient with apparent or reported pain



📞 PHYSICIAN CONSULT

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

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>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
Fentanyl	100mcg/2ml	1mcg/kg slow IV/IO/IN <i>Repeat:</i> q5 min <i>Max dose:</i> 3mcg/kg For IN: divide dose evenly between nostrils

PEDIATRIC MEDICATIONS

DRUG	CONCENTRATION	STANDARD DOSE
Glucagon	1mg/ml	0.03mg/kg IM <i>Repeat:</i> x2 q15 min if no IV established <i>Max dose:</i> 1mg
Ipratropium (Atrovent)	500mcg/2.5ml Unit dose	500mcg/2.5ml Unit dose
Lidocaine 2%	20mg/ml	0.5mg/kg slowly <i>Max dose:</i> 40mg <i>Repeat:</i> x1 1/2 of initial bolus
Midazolam (Versed)	2mg/ml 5mg/ml	<u>Cardioversion:</u> 0.05mg/kg slow IV/IO <i>Max dose:</i> 1mg <u>Seizure:</u> IV/IO: 0.05mg/kg <i>Repeat:</i> x2 q15 min <i>Max per dose:</i> 1mg IM: 0.2mg/kg <i>Repeat:</i> x1 in 10 min is still seizing IN: 0.2mg/kg <i>Max dose:</i> 5mg
Morphine	10mg/10ml 10mg/ml	<u>Pain Management:</u> 0.1mg/kg (0.1ml/kg) slow IV/IO/IM <i>Repeat:</i> x1 in 15 min if IV/IO, 30 min if IM <u>Burns:</u> 0.1mg/kg IV/IO/IM in incremental doses up to <i>max dose:</i> 0.3mg/kg
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 <i>Repeat:</i> x1 in 10 min <u>Patients 2-4 years:</u> 2mg ODT or slow IV over 30 seconds <i>Repeat:</i> x1 in 10 min
Sodium Bicarbonate	50mEq/50ml	1mEq/kg IV/IO

PEDIATRIC DOSING GUIDE

GRAY: 3-5kg/6-11lbs

Normal Vital Signs

HR asleep	HR awake	Respiratory Rate	Systolic BP	Diastolic BP	MAP
90-160	100-205	30-53	67-104	35-56	45-62

NS Bolus: 20ml/kg	3kg	4kg	5kg
	60ml	80ml	100ml

DEFIBRILLATION: 2-4J/kg			
	3kg	4kg	5kg
1st:	6J	8J	10J
2nd:	12J	16J	20J

CARDIOVERSION: 1-2J/kg			
	3kg	4kg	5kg
1st:	6J	8J	10J
2nd:	12J	16J	20J

Blade for Foreign Body Removal:	0
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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	1st: 0.3-0.5mg 2nd: 0.6-1mg	1st: 0.1-0.16ml 2nd: 0.2-0.33ml	RIVP w/ 10ml NS flush MR x1 double the dose
ALBUTEROL	2.5mg/3ml	2.5mg/3ml HHN	2.5mg	3ml	
AMIODARONE (Pulseless arrest)	150mg/3ml (50mg/ml)	5mg/kg IV/IO Max single dose: 300mg	15-25mg	0.3-0.5ml	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	0.1mg	1ml	MR x1 in 3-5 min
ATROPINE (Organophosphate poisoning)	Preload: 1mg/ 10ml (0.1mg/ml) Vial: 0.4mg/ml	0.05mg/kg IV/IO	0.15-0.25mg	Preload: 1.5-2.5ml Vial: 0.4-0.6ml	MR q5-10 min until symptoms resolve
DEXTROSE	10%	2ml/kg IV/IO		6-10ml	Give over 10 min
DIPHENHYDRAMINE <i>Benadryl</i>	50mg/ml	1mg/kg IM/IV/IO Max dose: 50mg	3-5mg	0.03-0.05ml	
EPINEPHRINE (Cardiac arrest/ Bradycardia)	1mg/10ml (0.1mg/ml)	0.01mg/kg IV/IO	0.03-0.05mg	0.3-0.5ml	MR q3-5 min
EPINEPHRINE (Allergic reaction/ Asthma)	1mg/ml	0.01mg/kg IM Total max dose: 0.6mg	0.03-0.05mg	0.03-0.05ml	MR x1 in 5 min

GRAY: 3-5kg/6-11lbs

Medication	Concentration	Dose	Dose in mg	Dose in ml	Details
EPINEPHRINE (Upper airway/Stridor)	1mg/ml	5mg HHN	5mg	5ml	
FENTANYL (Pain)	50mcg/ml	1mcg/kg IV/IO/IM/IN Max dose: 3mcg/kg	3-5mcg	0.06-0.1ml	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	0.09-0.15mg	0.1-0.15ml	MR x2 q15 min
IPRATROPIUM <i>Atrovent</i>	500mcg/2.5ml	500mcg/2.5ml HHN	500mcg	2.5ml	
LIDOCAINE 2% (IO insertion)	20mg/ml	0.5mg/kg slow IO Max dose: 40mg	1st: 1.5-2.5mg 2nd: 0.75-1.25mg	1st: 0.06-0.13ml 2nd: 0.04-0.06ml	MR x1 at 1/2 initial dose
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg IM	0.6-1mg	0.12-0.2ml	MR x1 in 10 min
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg IN Max dose 5mg	0.6-1mg	0.12-0.2ml	Split dose equally in each nostril
MIDAZOLAM <i>Versed</i> (Seizure)	2mg/2ml (1mg/ml)	0.05mg/kg slow IV/IO Max per dose: 1mg	0.15-0.25mg	0.15-0.25ml	MR x2 q15 min
MIDAZOLAM <i>Versed</i> (Cardioversion)	2mg/2ml (1mg/ml)	0.05mg/kg slow IV/IO Max dose: 1mg	0.15-0.25mg	0.15-0.25ml	
MORPHINE (Pain/burns)	10mg/ml	0.1mg/kg IV/IO/IM	0.3-0.5mg	0.03-0.05ml	MR x2 in 15 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	0.3-0.5mg	0.3-0.5ml	MR q5 min up to 2mg
SODIUM BICARBONATE	1mEq/ml	1mEq/kg IV/IO	3-5mEq	3-5ml	

PEDIATRIC DOSING GUIDE

PINK: 6-7kg/13-15lbs

Normal Vital Signs

HR asleep	HR awake	Respiratory Rate	Systolic BP	Diastolic BP	MAP
90-160	100-180	30-53	72-104	37-56	50-62

NS Fluid Bolus: 20ml/kg	130ml	DEFIBRILLATION: 2-4J/kg	1st: 13J	2nd: 26J
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Blade for Foreign Body Removal	0	CARDIOVERSION: 1-2J/kg	1st: 7J	2nd: 13J
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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	1st: 0.7mg 2nd: 1.3mg	1st: 0.2ml 2nd: 0.4ml	RIVP w/ 10ml NS flush MR x1 double the dose
ALBUTEROL	2.5mg/3ml	2.5mg/3ml HHN	2.5mg	3ml	
AMIODARONE (Pulseless arrest)	150mg/3ml (50mg/ml)	5mg/kg IV/IO Max single dose: 300mg	32mg	0.6ml	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	0.1mg	1ml	MR x1 in 3-5 min
ATROPINE (Organophosphate poisoning)	Preload: 1mg/ 10ml (0.1mg/ml) Vial: 0.4mg/ml	0.05mg/kg IV/IO	0.3mg	Preload: 3ml Vial: 0.8ml	MR q5-10 min until symptoms resolve
DEXTROSE	10%	2ml/kg IV/IO		13ml	Give over 10 min
DIPHENHYDRAMINE <i>Benadryl</i>	50mg/ml	1mg/kg IM/IV/IO Max dose: 50mg	6.5mg	0.1ml	
EPINEPHRINE (Cardiac arrest/ Bradycardia)	1mg/10ml (0.1mg/ml)	0.01mg/kg IV/IO	0.07mg	0.7ml	MR q3-5 min
EPINEPHRINE (Allergic reaction/ Asthma)	1mg/ml	0.01mg/kg IM Total max dose: 0.6mg	0.1mg	0.1ml	MR x1 in 5 min
EPINEPHRINE (Upper airway/Stridor)	1mg/ml	5mg HHN	5mg	5ml	

PINK: 6-7kg/13-15lbs

Medication	Concentration	Dose	Dose in mg	Dose in ml	Details
FENTANYL (Pain)	50mcg/ml	1mcg/kg IV/IO/IM/IN <i>Max dose: 3mcg/kg</i>	6.5mcg	0.13ml	MR q5 min For IN: split dose equally in each nostril
GLUCAGON (Hypoglycemia/Beta blocker OD)	1mg/ml	0.03mg/kg IM <i>Max dose: 1 mg</i>	0.2mg	0.2ml	MR x2 q15 min
IPRATROPIUM <i>Atrovent</i>	500mcg/2.5ml	500mcg/2.5ml HHN	500mcg	2.5ml	
LIDOCAINE 2% (IO insertion)	20mg/ml	0.5mg/kg slow IO <i>Max dose: 40mg</i>	<u>1st:</u> 3mg <u>2nd:</u> 2mg	<u>1st:</u> 0.2ml <u>2nd:</u> 0.1ml	MR x1 at 1/2 initial dose
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IM</u>	1.3mg	0.3ml	MR x1 in 10 min
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IN</u> <i>Max dose 5mg</i>	1.3mg	0.3ml	Split dose equally in each nostril
MIDAZOLAM <i>Versed</i> (Seizure)	2mg/2ml (1mg/ml)	0.05mg/kg slow <u>IV/IO</u> <i>Max per dose: 1mg</i>	0.3mg	0.3ml	MR x2 q15 min
MIDAZOLAM <i>Versed</i> (Cardioversion)	2mg/2ml (1mg/ml)	0.05mg/kg slow IV/IO <i>Max dose: 1mg</i>	0.3mg	0.3ml	
MORPHINE (Pain/burns)	10mg/ml	0.1mg/kg IV/IO/IM	0.7mg	0.1ml	MR x2 in 15 min (IV/IO) MR in 30min (IM)
NALOXONE <i>Narcan</i>	2mg/2ml (1mg/ml)	0.1mg/kg IV/IO/IM/IN <i>Max dose: 2mg</i>	0.7mg	0.7ml	MR q5 min up to 2mg
SODIUM BICARBONATE	1mEq/ml	1mEq/kg IV/IO	6.5mEq	6.5ml	

PEDIATRIC DOSING GUIDE

RED: 8-9kg/18-20lbs

Normal Vital Signs

HR asleep	HR awake	Respiratory Rate	Systolic BP	Diastolic BP	MAP
90-160	100-180	30-53	72-104	37-56	50-62

NS Fluid Bolus: 20ml/kg	170ml	DEFIBRILLATION: 2-4J/kg	1st: 17J	2nd: 34J
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Blade for Foreign Body Removal	1	CARDIOVERSION: 1-2J/kg	1st: 9J	2nd: 17J
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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	1st: 0.9mg 2nd: 1.7mg	1st: 0.3ml 2nd: 0.6ml	RIVP w/ 10ml NS flush MR x1 double the dose
ALBUTEROL	2.5mg/3ml	2.5mg/3ml HHN	2.5mg	3ml	
AMIODARONE (Pulseless arrest)	150mg/3ml (50mg/ml)	5mg/kg IV/IO Max single dose: 300mg	42mg	0.8ml	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	0.2mg	2ml	MR x1 in 3-5 min
ATROPINE (Organophosphate poisoning)	Preload: 1mg/ 10ml (0.1mg/ml) Vial: 0.4mg/ml	0.05mg/kg IV/IO	0.4mg	Preload: 4ml Vial: 1.1ml	MR q5-10 min until symptoms resolve
DEXTROSE	10%	5ml/kg IV/IO Max dose: 125ml		42ml	Give over 10 min
DIPHENHYDRAMINE <i>Benadryl</i>	50mg/ml	1mg/kg IM/IV/IO Max dose: 50mg	8.5mg	0.2ml	
EPINEPHRINE (Cardiac arrest/ Bradycardia)	1mg/10ml (0.1mg/ml)	0.01mg/kg IV/IO	0.09mg	0.9ml	MR q3-5 min
EPINEPHRINE (Allergic reaction/ Asthma)	1mg/ml	0.01mg/kg IM Total max dose: 0.6mg	0.1mg	0.1ml	MR x1 in 5 min
EPINEPHRINE (Upper airway/Stridor)	1mg/ml	5mg HHN	5mg	5ml	

RED: 8-9kg/18-20lbs

Medication	Concentration	Dose	Dose in mg	Dose in ml	Details
FENTANYL (Pain)	50mcg/ml	1mcg/kg IV/IO/IM/IN Max dose: 3mcg/kg	8.5mcg	0.17ml	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	0.3mg	0.3ml	MR x2 q15 min
IPRATROPIUM <i>Atrovent</i>	500mcg/2.5ml	500mcg/2.5ml HHN	500mcg	2.5ml	
LIDOCAINE 2% (IO insertion)	20mg/ml	0.5mg/kg slow IO Max dose: 40mg	1st: 4mg 2nd: 2mg	1st: 0.2ml 2nd: 0.1ml	MR x1 at 1/2 initial dose
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IM</u>	1.7mg	0.3ml	MR x1 in 10 min
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IN</u> Max dose 5mg	1.7mg	0.3ml	Split dose equally in each nostril
MIDAZOLAM <i>Versed</i> (Seizure)	2mg/2ml (1mg/ml)	0.05mg/kg slow <u>IV/IO</u> Max per dose: 1mg Total max dose: 5mg	0.4mg	0.4ml	MR x2 q15 min
MIDAZOLAM <i>Versed</i> (Cardioversion)	2mg/2ml (1mg/ml)	0.05mg/kg slow IV/IO Max dose: 1mg	0.4mg	0.4ml	
MORPHINE (Pain/burns)	10mg/ml	0.1mg/kg IV/IO/IM	0.9mg	0.1ml	MR x2 in 15 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	0.9mg	0.9ml	MR q5 min up to 2mg
SODIUM BICARBONATE	1mEq/ml	1mEq/kg IV/IO	8.5mEq	8.5ml	

PEDIATRIC DOSING GUIDE

PURPLE: 10-11kg/22-24lbs

Normal Vital Signs

HR asleep	HR awake	Respiratory Rate	Systolic BP	Diastolic BP	MAP
90-160	100-180	30-53	72-104	37-56	50-62

NS Fluid Bolus: 10-20ml/kg	210ml	DEFIBRILLATION: 2-4J/kg	1st: 21J	2nd: 42J
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Blade for Foreign Body Removal	1	CARDIOVERSION: 1-2J/kg	1st: 11J	2nd: 21J
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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	1st: 1mg 2nd: 2.1mg	1st: 0.3ml 2nd: 0.7ml	RIVP w/ 10ml NS flush MR x1 double the dose
ALBUTEROL	2.5mg/3ml	2.5mg/3ml HHN	2.5mg	3ml	
AMIODARONE (Pulseless arrest)	150mg/3ml (50mg/ml)	5mg/kg IV/IO Max single dose: 300mg	50mg	1ml	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	0.2mg	2ml	MR x1 in 3-5 min
ATROPINE (Organophosphate poisoning)	Preload: 1mg/ 10ml (0.1mg/ml) Vial: 0.4mg/ml	0.05mg/kg IV/IO	0.5mg	Preload: 5ml Vial: 1.3ml	MR q5-10 min until symptoms resolve
DEXTROSE	10%	5ml/kg IV/IO Max dose: 125ml		53ml	Give over 10 min
DIPHENHYDRAMINE <i>Benadryl</i>	50mg/ml	1mg/kg IM/IV/IO Max dose: 50mg	10.5mg	0.2ml	
EPINEPHRINE (Cardiac arrest/ Bradycardia)	1mg/10ml (0.1mg/ml)	0.01mg/kg IV/IO	0.1mg	1ml	MR q3-5 min
EPINEPHRINE (Allergic reaction/ Asthma)	1mg/ml	0.01mg/kg IM Total max dose: 0.6mg	0.1mg	0.1ml	MR x1 in 5 min
EPINEPHRINE (Upper airway/Stridor)	1mg/ml	5mg HHN	5mg	5ml	

PURPLE: 10-11kg/22-24lbs

Medication	Concentration	Dose	Dose in mg	Dose in ml	Details
FENTANYL (Pain)	50mcg/ml	1mcg/kg IV/IO/IM/IN Max dose: 3mcg/kg	10.5mcg	0.21ml	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	0.3mg	0.3ml	MR x2 q15 min
IPRATROPIUM <i>Atrovent</i>	500mcg/2.5ml	500mcg/2.5ml HHN	500mcg	2.5ml	
LIDOCAINE 2% (IO insertion)	20mg/ml	0.5mg/kg slow IO Max dose: 40mg	1st: 5mg 2nd: 3mg	1st: 0.3ml 2nd: 0.2ml	MR x1 at 1/2 initial dose
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg IM	2.1mg	0.4ml	MR x1 in 10 min
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg IN Max dose 5mg	2.1mg	0.4ml	Split dose equally in each nostril
MIDAZOLAM <i>Versed</i> (Seizure)	2mg/2ml (1mg/ml)	0.05mg/kg slow IV/IO Max per dose: 1mg Total max dose: 5mg	0.5mg	0.5ml	MR x2 q15 min
MIDAZOLAM <i>Versed</i> (Cardioversion)	2mg/2ml (1mg/ml)	0.05mg/kg slow IV/IO Max dose: 1mg	0.5mg	0.5ml	
MORPHINE (Pain/burns)	10mg/ml	0.1mg/kg IV/IO/IM	1mg	0.1ml	MR x2 in 15 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	1mg	1ml	MR q5 min up to 2mg
SODIUM BICARBONATE	1mEq/ml	1mEq/kg IV/IO	10mEq	10ml	

PEDIATRIC DOSING GUIDE

YELLOW: 12-14kg/27-31lbs

Normal Vital Signs

HR asleep	HR awake	Respiratory Rate	Systolic BP	Diastolic BP	MAP
80-120	98-140	22-37	86-106	42-63	49-62

NS Fluid Bolus: 10-20ml/kg	260ml	DEFIBRILLATION: 2-4J/kg	1st: 26J	2nd: 52J
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Blade for Foreign Body Removal	2	CARDIOVERSION: 1-2J/kg	1st: 13J	2nd: 26J
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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	1st: 1.3mg 2nd: 2.6mg	1st: 0.4ml 2nd: 0.9ml	RIVP w/ 10ml NS flush MR x1 double the dose
ALBUTEROL	2.5mg/3ml	2.5mg/3ml HHN	2.5mg	3ml	
AMIODARONE (Pulseless arrest)	150mg/3ml (50mg/ml)	5mg/kg IV/IO Max single dose: 300mg	65mg	1.3ml	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	0.3mg	3ml	MR x1 in 3-5 min
ATROPINE (Organophosphate poisoning)	Preload: 1mg/ 10ml (0.1mg/ml) Vial: 0.4mg/ml	0.05mg/kg IV/IO	0.7mg	Preload: 7ml Vial: 1.6ml	MR q5-10 min until symptoms resolve
DEXTROSE	10%	5ml/kg IV/IO Max dose: 125ml		65ml	Give over 10 min
DIPHENHYDRAMINE <i>Benadryl</i>	50mg/ml	1mg/kg IM/IV/IO Max dose: 50mg	13mg	0.3ml	
EPINEPHRINE (Cardiac arrest/ Bradycardia)	1mg/10ml (0.1mg/ml)	0.01mg/kg IV/IO	0.1mg	1ml	MR q3-5 min
EPINEPHRINE (Allergic reaction/ Asthma)	1mg/ml	0.01mg/kg IM Total max dose: 0.6mg	0.1mg	0.1ml	MR x1 in 5 min
EPINEPHRINE (Upper airway/Stridor)	1mg/ml	5mg HHN	5mg	5ml	

YELLOW: 12-14kg/27-31lbs

Medication	Concentration	Dose	Dose in mg	Dose in ml	Details
FENTANYL (Pain)	50mcg/ml	1mcg/kg IV/IO/IM/IN Max dose: 3mcg/kg	13.5mcg	0.27ml	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	0.4mg	0.4ml	MR x2 q15 min
IPRATROPIUM <i>Atrovent</i>	500mcg/2.5ml	500mcg/2.5ml HHN	500mcg	2.5ml	
LIDOCAINE 2% (IO insertion)	20mg/ml	0.5mg/kg slow IO Max dose: 40mg	1st: 6mg 2nd: 3mg	1st: 0.3ml 2nd: 0.2ml	MR x1 at 1/2 initial dose
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IM</u>	2.6mg	0.5ml	MR x1 in 10 min
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IN</u> Max dose 5mg	2.6mg	0.5ml	Split dose equally in each nostril
MIDAZOLAM <i>Versed</i> (Seizure)	2mg/2ml (1mg/ml)	0.05mg/kg slow <u>IV/IO</u> Max per dose: 1mg Total max dose: 5mg	0.7mg	0.7ml	MR x2 q15 min
MIDAZOLAM <i>Versed</i> (Cardioversion)	2mg/2ml (1mg/ml)	0.05mg/kg slow IV/IO Max dose: 1mg	0.7mg	0.7ml	
MORPHINE (Pain/burns)	10mg/ml	0.1mg/kg IV/IO/IM	1.3mg	0.1ml	MR x2 in 15 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	1.3mg	1.3ml	MR q5 min up to 2mg
ONDANSETRON <i>Zofran</i>	4mg tab 4mg/2ml	2mg ODT/slow IV	2mg	1ml	Slow IV over 30 sec
SODIUM BICARBONATE	1mEq/ml	1mEq/kg IV/IO	13mEq	13ml	

PEDIATRIC DOSING GUIDE

WHITE: 15-18kg/33-40lbs

Normal Vital Signs

HR asleep	HR awake	Respiratory Rate	Systolic BP	Diastolic BP	MAP
65-100	80-120	20-28	89-112	46-72	58-69

NS Fluid Bolus: 20ml/kg	330ml	DEFIBRILLATION: 2-4J/kg	1st: 33J	2nd: 66J
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Blade for Foreign Body Removal	2	CARDIOVERSION: 1-2J/kg	1st: 17J	2nd: 33J
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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	1st: 1.7mg 2nd: 3.4mg	1st: 0.6ml 2nd: 1.1ml	RIVP w/ 10ml NS flush MR x1 double the dose
ALBUTEROL	2.5mg/3ml	2.5mg/3ml HHN	2.5mg	3ml	
AMIODARONE (Pulseless arrest)	150mg/3ml (50mg/ml)	5mg/kg IV/IO Max single dose: 300mg	80mg	1.6ml	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	0.3mg	3ml	MR x1 in 3-5 min
ATROPINE (Organophosphate poisoning)	Preload: 1mg/ 10ml (0.1mg/ml) Vial: 0.4mg/ml	0.05mg/kg IV/IO	0.8mg	Preload: 8ml Vial: 2.1ml	MR q5-10 min until symptoms resolve
DEXTROSE	10%	5ml/kg IV/IO Max dose: 125ml		83ml	Give over 10 min
DIPHENHYDRAMINE <i>Benadryl</i>	50mg/ml	1mg/kg IM/IV/IO Max dose: 50mg	16.5mg	0.3ml	
EPINEPHRINE (Cardiac arrest/ Bradycardia)	1mg/10ml (0.1mg/ml)	0.01mg/kg IV/IO	0.2mg	2ml	MR q3-5 min
EPINEPHRINE (Allergic reaction/ Asthma)	1mg/ml	0.01mg/kg IM Total max dose: 0.6mg	0.2mg	0.2ml	MR x1 in 5 min
EPINEPHRINE (Upper airway/Stridor)	1mg/ml	5mg HHN	5mg	5ml	

WHITE: 15-18kg/33-40lbs

Medication	Concentration	Dose	Dose in mg	Dose in ml	Details
FENTANYL (Pain)	50mcg/ml	1mcg/kg IV/IO/IM/IN Max dose: 3mcg/kg	16.5mcg	0.33ml	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	0.5mg	0.5ml	MR x2 q15 min
IPRATROPIUM <i>Atrovent</i>	500mcg/2.5ml	500mcg/2.5ml HHN	500mcg	2.5ml	
LIDOCAINE 2% (IO insertion)	20mg/ml	0.5mg/kg slow IO Max dose: 40mg	1st: 8mg 2nd: 4mg	1st: 0.4ml 2nd: 0.2ml	MR x1 at 1/2 initial dose
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IM</u>	3.3mg	0.7ml	MR x1 in 10 min
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IN</u> Max dose 5mg	3.3mg	0.7ml	Split dose equally in each nostril
MIDAZOLAM <i>Versed</i> (Seizure)	2mg/2ml (1mg/ml)	0.05mg/kg slow <u>IV/IO</u> Max per dose: 1mg Total max dose: 5mg	0.8mg	0.8ml	MR x2 q15 min
MIDAZOLAM <i>Versed</i> (Cardioversion)	2mg/2ml (1mg/ml)	0.05mg/kg slow IV/IO Max dose: 1mg	0.8mg	0.8ml	
MORPHINE (Pain/burns)	10mg/ml	0.1mg/kg IV/IO/IM	1.7mg	0.2ml	MR x2 in 15 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	1.7mg	1.7ml	MR q5 min up to 2mg
ONDANSETRON <i>Zofran</i>	4mg tab 4mg/2ml	2mg ODT/slow IV	2mg	1ml	Slow IV over 30 sec
SODIUM BICARBONATE	1mEq/ml	1mEq/kg IV/IO	17mEq	17ml	

PEDIATRIC DOSING GUIDE

BLUE: 19-23kg/42-51lbs

Normal Vital Signs

HR asleep	HR awake	Respiratory Rate	Systolic BP	Diastolic BP	MAP
65-100	80-120	20-28	89-112	46-72	58-69

NS Fluid Bolus: 20ml/kg	420ml	DEFIBRILLATION: 2-4J/kg	1st: 42J	2nd: 84J
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Blade for Foreign Body Removal	2	CARDIOVERSION: 1-2J/kg	1st: 21J	2nd: 42J
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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	1st: 2.1mg 2nd: 4.2mg	1st: 0.7ml 2nd: 1.4ml	RIVP w/ 10ml NS flush MR x1 double the dose
ALBUTEROL	2.5mg/3ml	2.5mg/3ml HHN	2.5mg	3ml	
AMIODARONE (Pulseless arrest)	150mg/3ml (50mg/ml)	5mg/kg IV/IO Max single dose: 300mg	105mg	2.1ml	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	0.4mg	4ml	MR x1 in 3-5 min
ATROPINE (Organophosphate poisoning)	Preload: 1mg/ 10ml (0.1mg/ml) Vial: 0.4mg/ml	0.05mg/kg IV/IO	1mg	Preload: 10ml Vial: 2.6ml	MR q5-10 min until symptoms resolve
DEXTROSE	10%	5ml/kg IV/IO Max dose: 125ml		105ml	Give over 10 min
DIPHENHYDRAMINE <i>Benadryl</i>	50mg/ml	1mg/kg IM/IV/IO Max dose: 50mg	21mg	0.4ml	
EPINEPHRINE (Cardiac arrest/ Bradycardia)	1mg/10ml (0.1mg/ml)	0.01mg/kg IV/IO	0.2mg	2ml	MR q3-5 min
EPINEPHRINE (Allergic reaction/ Asthma)	1mg/ml	0.01mg/kg IM Total max dose: 0.6mg	0.2mg	0.2ml	MR x1 in 5 min
EPINEPHRINE (Upper airway/Stridor)	1mg/ml	5mg HHN	5mg	5ml	

BLUE: 19-23kg/42-51lbs

Medication	Concentration	Dose	Dose in mg	Dose in ml	Details
FENTANYL (Pain)	50mcg/ml	1mcg/kg IV/IO/IM/IN Max dose: 3mcg/kg	21mcg	0.42ml	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	0.6mg	0.6ml	MR x2 q15 min
IPRATROPIUM <i>Atrovent</i>	500mcg/2.5ml	500mcg/2.5ml HHN	500mcg	2.5ml	
LIDOCAINE 2% (IO insertion)	20mg/ml	0.5mg/kg slow IO Max dose: 40mg	1st: 10mg 2nd: 5mg	1st: 0.5ml 2nd: 0.3ml	MR x1 at 1/2 initial dose
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg IM	4.2mg	0.8ml	MR x1 in 10 min
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg IN Max dose 5mg	4.2mg	0.8ml	Split dose equally in each nostril
MIDAZOLAM <i>Versed</i> (Seizure)	2mg/2ml (1mg/ml)	0.05mg/kg slow IV/IO Max per dose: 1mg 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	2.1mg	0.2ml	MR x2 in 15 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 up to 2mg
ONDANSETRON <i>Zofran</i>	4mg tab 4mg/2ml	4mg ODT/slow IV	4mg	2ml	Slow IV over 30 sec
SODIUM BICARBONATE	1mEq/ml	1mEq/kg IV/IO	21mEq	21ml	

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	1st: 2.7mg 2nd: 5.4mg	1st: 0.9ml 2nd: 1.8ml	RIVP w/ 10ml NS flush MR x1 double the dose
ALBUTEROL	2.5mg/3ml	2.5mg/3ml HHN	2.5mg	3ml	
AMIODARONE (Pulseless arrest)	150mg/3ml (50mg/ml)	5mg/kg IV/IO Max single dose: 300mg	130mg	2.6ml	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)	Preload: 1mg/ 10ml (0.1mg/ml) Vial: 0.4mg/ml	0.05mg/kg IV/IO	1.3mg	Preload: 13ml Vial: 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	0.3mg	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	

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
IPRATROPIUM <i>Atrovent</i>	500mcg/2.5ml	500mcg/2.5ml HHN	500mcg	2.5ml	
LIDOCAINE 2% (IO insertion)	20mg/ml	0.5mg/kg slow IO Max dose: 40mg	1st: 13mg 2nd: 6mg	1st: 0.7ml 2nd: 0.4ml	MR x1 at 1/2 initial dose
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IM</u>	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> Max per dose: 1mg 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 in 15 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 up to 2mg
ONDANSETRON <i>Zofran</i>	4mg tab 4mg/2ml	4mg ODT/slow IV	4mg	2ml	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
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DEFIBRILLATION: 2-4J/kg	1st: 66J	2nd: 132J
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Blade for Foreign Body Removal:	3
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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
ALBUTEROL	2.5mg/3ml	2.5mg/3ml HHN	2.5mg	3ml	
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)	Preload: 1mg/ 10ml (0.1mg/ml) Vial: 0.4mg/ml	0.05mg/kg IV/IO	1.7mg	Preload: 17ml Vial: 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	0.3mg	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	

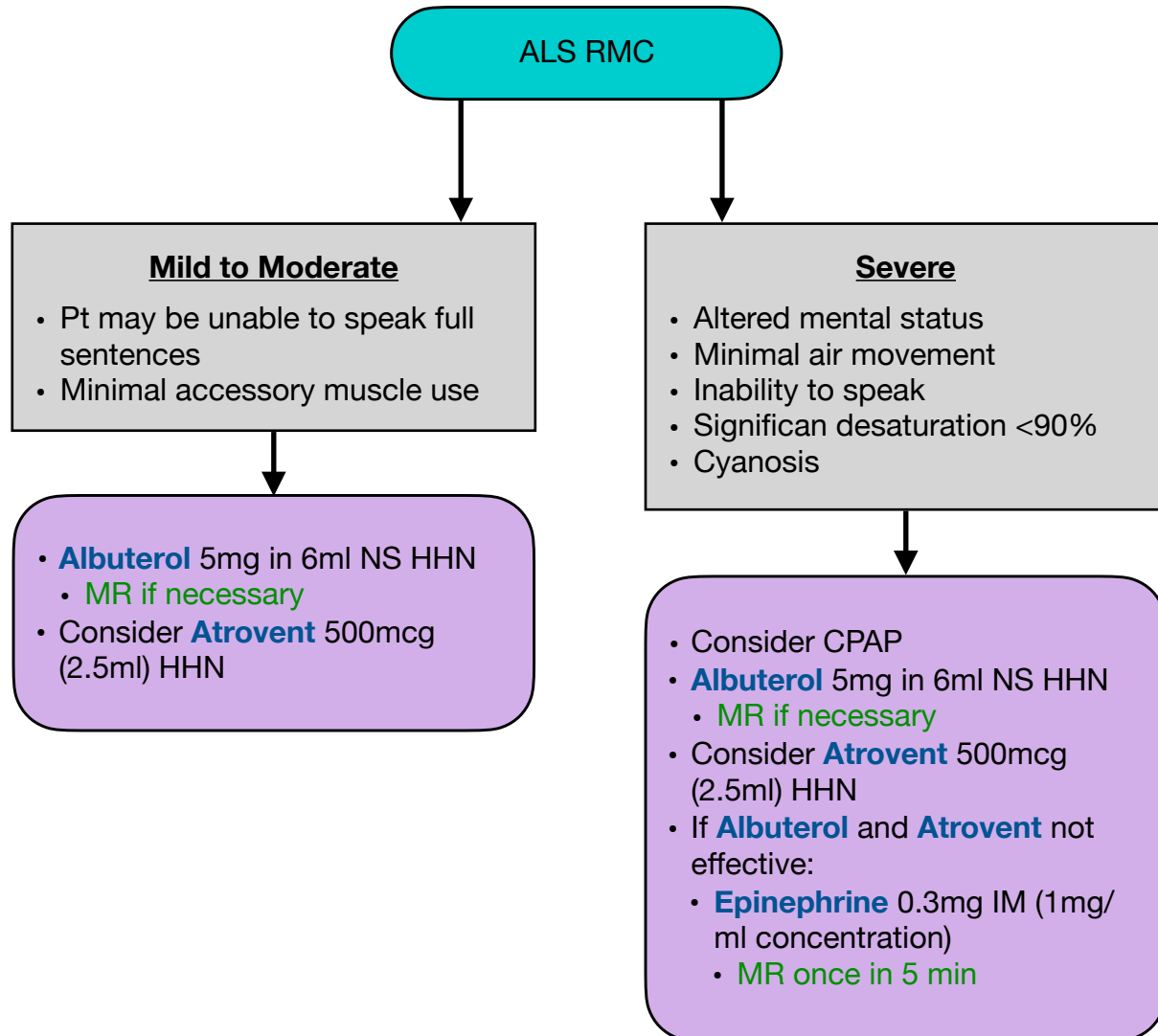
GREEN: 30-36kg/66-80lbs

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
IPRATROPIUM <i>Atrovent</i>	500mcg/2.5ml	500mcg/2.5ml HHN	500mcg	2.5ml	
LIDOCAINE 2% (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 at 1/2 initial dose
MIDAZOLAM <i>Versed</i> (Seizure)	5mg/ml	0.2mg/kg <u>IM</u>	6.6mg	1.3ml	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> Max per dose: 1mg Total max dose: 5mg	1mg	1ml	MR x2 q15 min
MIDAZOLAM <i>Versed</i> (Cardioversion)	2mg/2ml (1mg/ml)	0.05mg/kg slow <u>IV/IO</u> Max dose: 1mg	1mg	1ml	
MORPHINE (Pain/burns)	10mg/ml	0.1mg/kg IV/IO/IM	3.3mg	0.3ml	MR x2 in 15 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 up to 2mg
ONDANSETRON <i>Zofran</i>	4mg tab 4mg/2ml	4mg ODT/slow IV	4mg	2ml	Slow IV over 30 sec
SODIUM BICARBONATE	1mEq/ml	1mEq/kg IV/IO	33mEq	33ml	

BRONCHOSPASM/ASTHMA/COPD

Indications

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



SPECIAL CONSIDERATIONS

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

DESTINATION GUIDELINES

ALWAYS USE STANDARD PRECAUTIONS


INDICATION

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

PHYSICIAN CONSULT

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

CRITICAL INFORMATION

- Destination choices:
 - The destination for patients shall be based upon several factors including, but not limited to the clinical capabilities of the receiving hospital, the patient's condition, and paramedic discretion.
 - When the patient's condition is unstable or life threatening, the patient should be transported to the time closest receiving facility:
 - Patients with unmanageable airway
 - Uncontrolled external hemorrhage
 - CPR in progress (unless transporting to SRC for rVF)
 - Patients requiring ALS but having no paramedic in attendance
 - The following factors will be considered in determining patient destination:
 - Patient condition
 - * Age
 - Clinical capabilities of the receiving hospital
 - Paramedic discretion
 - Patient/family request
 - Patient's physician request or preference
 - Patients with return of spontaneous circulation post cardiac arrest will be transported to the nearest STEMI Receiving Center.
 - Burn patients, without other trauma mechanism, shall be transported by ground ambulance to the time closest emergency department.
 - Patients with psychiatric complaints will be transported to their preferred facility or the closest emergency department, unless specialty care (trauma, STEMI, stroke, pregnancy) is warranted
 - Ventricular Assist Device patients: If patient is stable and complaint 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.
 - ***Neonatal (≤28 days) with signs of shock will be transported to MarinHealth Medical Center**
 - 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 (disruptive, uncooperative, aggressive, unpredictable).
 - Marin County receiving facilities/LEMSA Designations:
 - **MarinHealth Medical Center** - Level III Trauma Center- Greenbrae
 - Neurological Emergencies- sudden, witnessed onset of coma or rapidly deteriorating GCS with high likelihood of intracranial bleed
 - Pregnant patients - 20 weeks or greater with a complaint related to pregnancy
 - STEMI Receiving Center (SRC)
 - Primary Stroke Center
 - Advanced Pediatric Receiving Center (PedRC)
 - **Kaiser Permanente Medical Center San Rafael** - Emergency Department Approved for Trauma (EDAT) - Terra Linda 
 - STEMI Receiving Center (SRC)
 - Primary Stroke Center

- General Pediatric Receiving Center (PedRC)
- **Novato Community Hospital** - Basic level receiving facility – Novato
 - Primary Stroke Center
 - General Pediatric Receiving Center (PedRC)

RELATED POLICIES/ PROCEDURES

- Trauma Triage & Destination Guidelines Policy 4613
- STEMI Policy C 9
- Ambulance Diversion Policy 5400
- Adult and Pediatric Sexual Assault GPC 10 and P M5
- Cerebrovascular Accident (Stroke) N 4
- Burns E4 and P E1
- Ventricular Assist Device ATG 8
-