PEDIATRIC I-GEL AIRWAY PROCEDURE

Indications

Cardiac or respiratory arrest, or severe respiratory compromise where ventilation cannot be adequately maintained by BLS techniques

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
  - ETCO2 or colorimetric device
- Secure the tube with provided strap or commercial tube holder

Equipment

- i-gel or i-gel O2 airway device
- Water soluble lubricant
- Portable suction device
- ETCO2 or colormetric device
- Stethoscope

I-gel Sizing

Tube Size	Patient Size	Color	Patient weight
1.0	Neonate	Pink	2-5kg
1.5	Infant	Blue	5-12kg
2	Small child	Gray	12-25kg
2.5	Large child	White	25-35kg

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
- Relative Contraindication:
  - Patients who have ingested caustic substances or have severe airway burns

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

- Select insertion site based on manufacturer's instructions
- Position and stabilize insertion site
- Following aseptic technique, prepare insertion site and allow to dry via air or gauze

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%** (preservative free) 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

ADULT PAIN MANAGEMENT

Indication

Patient with apparent or reported pain

ALS RMC

Pain >6?

No

Pt is >50kg

Acetaminophen (Tylenol/Ofirmev)

- PO: 500-1000mg
- IV/IO: 1000mg IV infused over 15-20 min

Yes

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

OR

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

If nausea/vomiting

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

If Morphine/Fentanyl unavailable or patient unable to tolerate

- **Midazolam**
  - IV/IO: 1mg slowly
    - MR q3 min;
    - Max dose 0.05mg/kg
  - IM: 2-4mg if no IV
  - IN: 5mg (2.5mg in each nostril)

☎ PHYSICIAN CONSULT FOR OPIOIDS

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

ADULT MEDICATION STANDARD DOSAGES

DRUG	CONCENTRATION	STANDARD DOSE
Acetaminophen (Tylenol/Ofirmev)	1000mg/100ml	**IV/IO** 1000mg over 15-20 min **PO** 500-1000mg
Adenosine	6mg/2ml	**IV/IO** 6mg rapid push followed by 20ml NS flush *Repeat:* 12mg
Albuterol	2.5mg/3ml NS	**Nebulized** 5mg/6ml NS
Amiodarone	150mg/3ml	**IV/IO** VF/Pulseless VTach: 300mg push *Repeat:* 150mg push in 3-5min Perfusing/Recurrent VTach: 150mg over 10 min (15mg/min) *Repeat:* q10 min PRN
Aspirin (Chewable)	Variable	***PO*** 324mg
Atropine	1mg/10ml	**IV/IO** Bradycardia: 1mg *Repeat:* q3-5 min *Max total:* 3mg Organophosphate Poisoning: 2mg slowly *Repeat:* q2-5 min until drying of secretions
Calcium chloride 10%	1gm/10ml	**IV/IO** Suspected Hyperkalemia in: Asystole/PEA: 1gm Crush Syndrome: 1gm over 5 min Flush with NS before and after
Cyanokit	5gm/vial	**IV/IO** 5 grams over 15min *Repeat:* x1 if severe signs *Max total dose:* 10 grams

DRUG	CONCENTRATION	STANDARD DOSE
Dextrose 10%	25gm/250ml	**IV/IO** 125ml bolus over 10 min; recheck BG *Repeat:* as needed
Diphenhydramine (Benadryl)	50mg/ml	**IV/IO/IM** 50mg
Epinephrine	1mg/ml EpiPen ® 0.3mg	**IM** Allergic reaction/Anaphylaxis: 0.3mg or EpiPen ® *Repeat:* x1 in 5 min
Epinephrine	0.1mg/ml	**IV/IO** 1mg (10ml) followed by 20ml NS flush *Repeat:* q3-5min
Epinephrine (Push-Dose)	0.01mg/ml	**IV/IO** SBP <90: Mix 1ml Epinephrine (0.1mg/ml) with 9ml NS in a 10ml syringe *Initial:* 1ml *Repeat:* q3-5 min, titrate to maintain SBP >90
Fentanyl (Sublimaze)	100mcg/2ml	**IV/IO** 50mcg slowly *Repeat:* q5 min *Max dose:* 200mcg **IM** 50mcg *Repeat:* in 30 min **IN** 50mcg; administer 1/2 dose in each nostril *Repeat:* q5 min *Max dose:* 200mcg

ADULT MEDICATION STANDARD DOSAGES

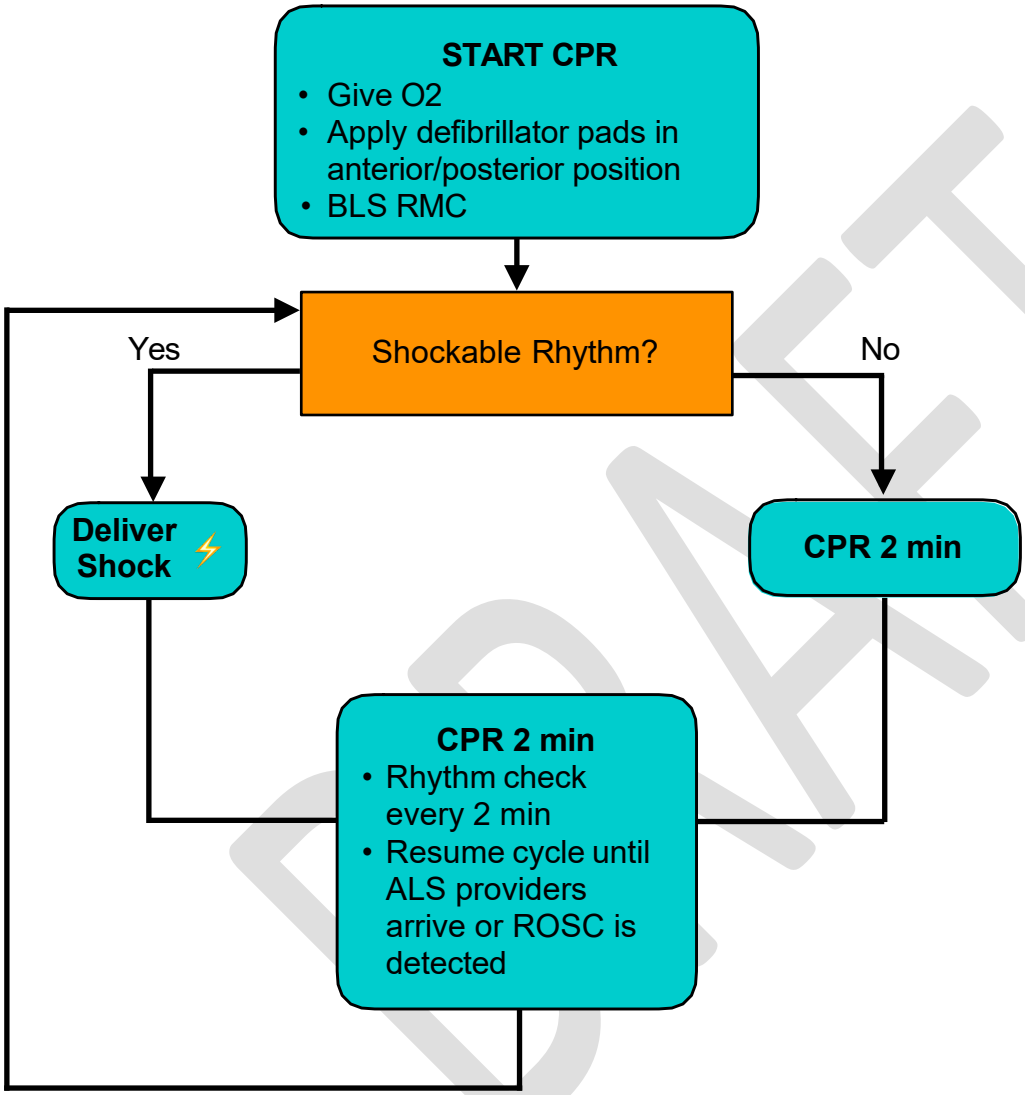
DRUG	CONCENTRATION	STANDARD DOSE
Glucose Paste	15 grams/tube	**PO** 30 grams
Glucagon	1mg/ml	**IM** 1mg
Ipratropium (Atrovent)	500mcg/2.5ml Unit dose	**Nebulized** 500mcg
Lidocaine 2%	20mg/ml	**IO** 20-40mg over 30-60 seconds *Repeat:* q15 min
Midazolam (Versed)	2mg/2ml (IV/IO/IM) 5mg/1ml (IN)	**IV/IO**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

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

CARDIAC ARREST BLS

Indications

Unresponsive; no breathing or has agonal respirations; no pulse



CRITICAL INFORMATION

- Witnessed vs Unwitnessed
- Consider pre-cordial thump witnessed and defibrillator not immediately available
- Compress at 110 to 120 bpm
- Use metronome or similar device
- Mechanical CPR is mandatory during transportation
- Change compressors every 2 minutes
- Minimize interruptions
- If hypothermic <95F, initiate warming measures, start CPR, and immediately transport
- Defibrillate per manufacturer's recommendations
- Do not stop compressions while defibrillator is charging
- Resume compressions immediately after shock

Airway Management

- BLS airway preferred during first 5 minutes
- Use two-person BLS airway management whenever possible
- Avoid excessive ventilation
- Consider i-gel airway if unable to adequately maintain BLS airway
- 30:2 compression/ ventilation ratio or continuous compressions with ventilations on the 10th upstroke of compressions

BLS ADULT I-GEL AIRWAY PROCEDURE

Indications

When ventilation cannot be adequately maintained by BLS techniques

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
  - Colorimetric ETCO2 detection device
- Secure the tube with provided strap or commercial tube holder

Equipment

- i-gel or i-gel O2 airway device
- Water soluble lubricant
- Portable suction device
- Colormetric ETCO2 detection 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

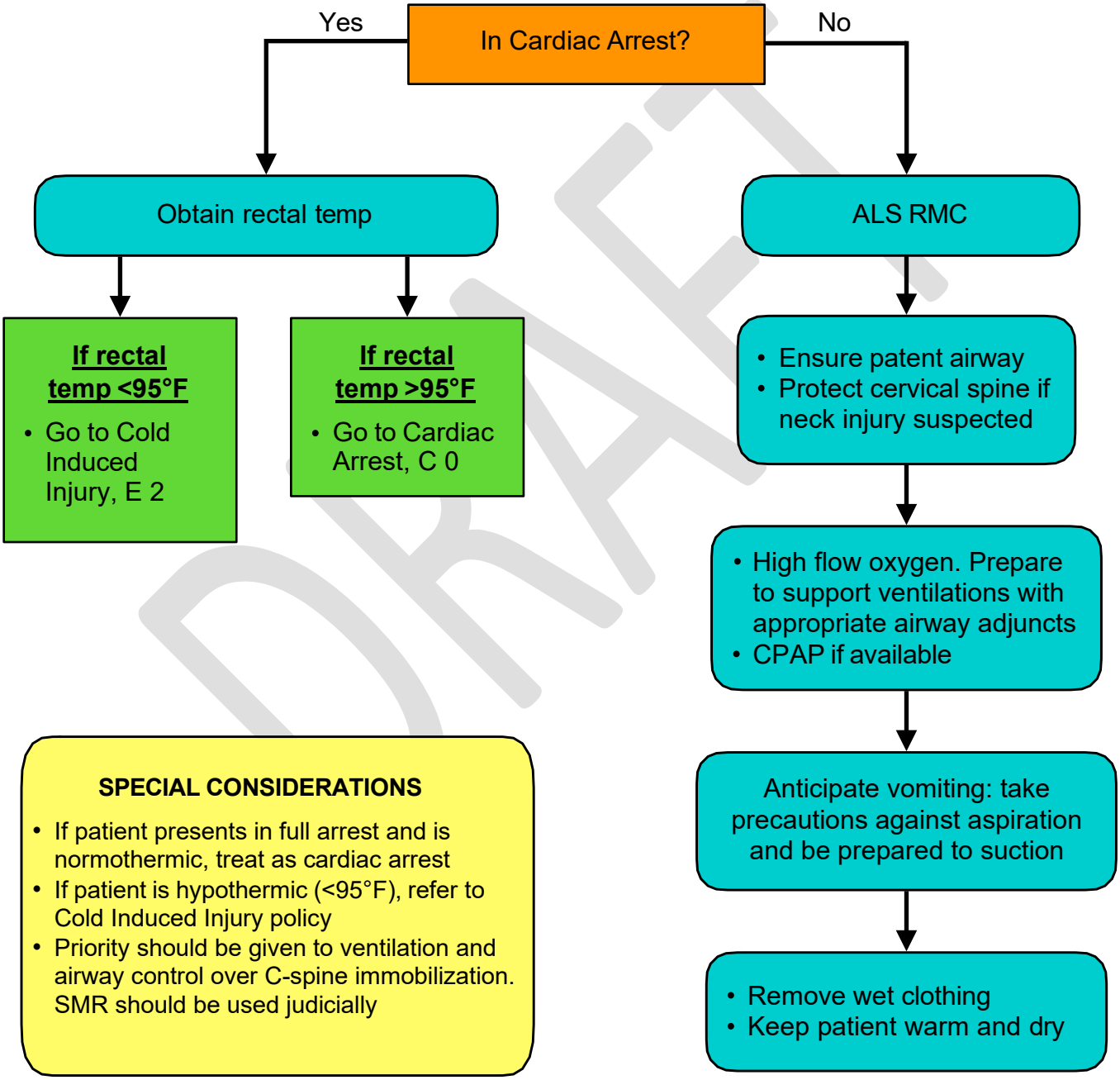
Critical Information

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

DROWNING / SUBMERSION

Indications

Immersion in water with altered mental status and/or respiratory impairment



SPECIAL CONSIDERATIONS

- If patient presents in full arrest and is normothermic, treat as cardiac arrest
- If patient is hypothermic (<95°F), refer to Cold Induced Injury policy
- Priority should be given to ventilation and airway control over C-spine immobilization. SMR should be used judicially

PEDIATRIC CARDIAC ARREST

START CPR
- Give O2 via BVM
- Attach monitor/defibrillator
- Prepare for immediate transport

Assess Rhythm

VF/pVT

CPR 2 min
- IO/IV access

Shockable Rhythm?

Yes

CPR 2 min
- Consider advanced airway

- **Epinephrine**
  - Repeat every 3-5min

Shockable Rhythm?

Yes

CPR 2 min
- Treat reversible causes

Amiodarone

No

Asystole/PEA

CPR 2 min
- IO/IV access

- **Epinephrine**
  - Repeat every 3-5min

Shockable Rhythm?

Yes

No

CPR 2 min
- Treat reversible causes

Shockable Rhythm?

- Yes: follow VF/pVT
- No: continue with Asystole/PEA
- ROSC: Transport to closest facility

No

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

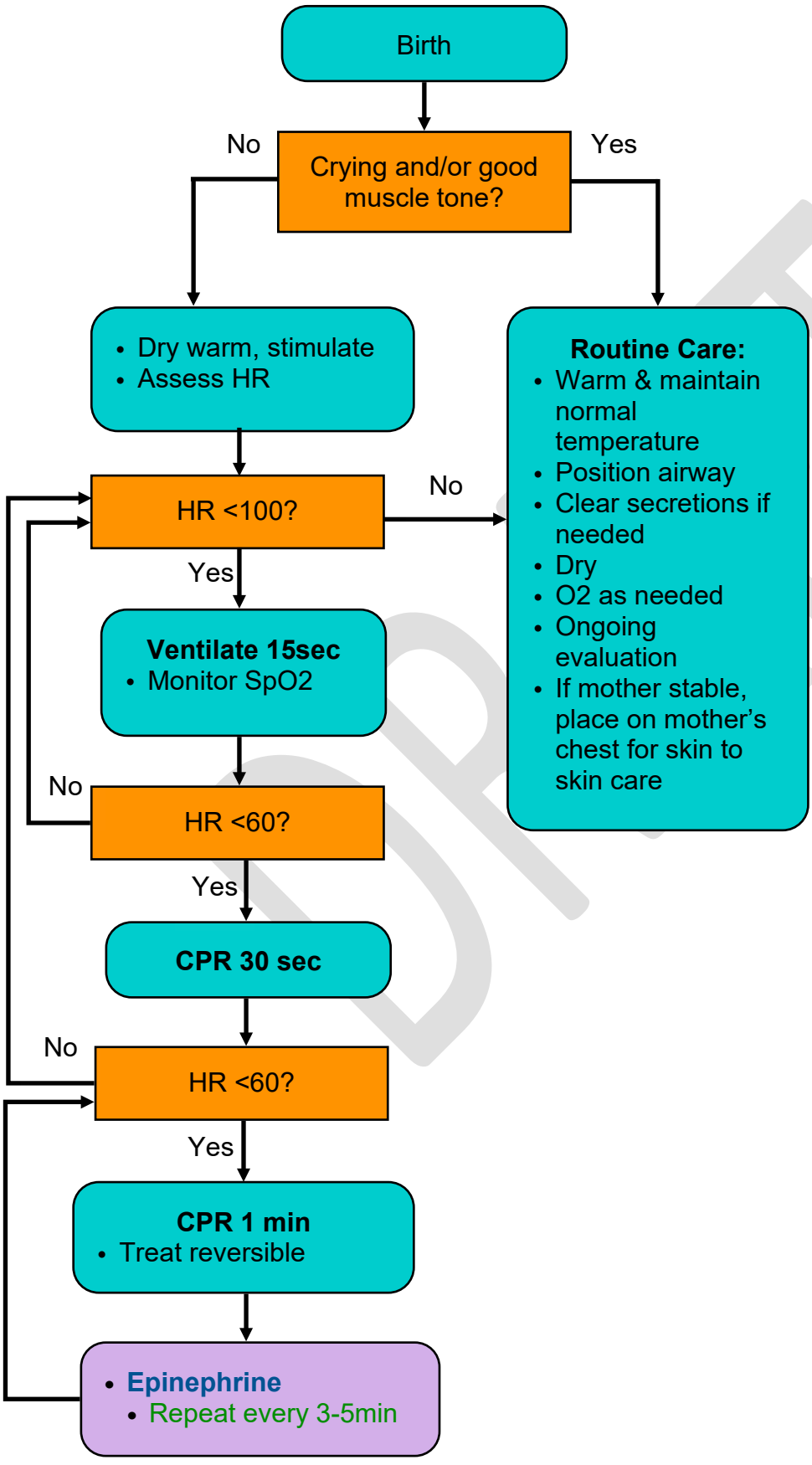
Defibrillation
- 2-4J/kg

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

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

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

NEWBORN 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
- Place pulse ox on right arm (due to ductus arteriosus)
- 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 with room air at a rate of 60 breaths/min
- Use 2 person BLS airway management whenever possible
- Avoid excessive ventilation
- Consider i-gel if unable to maintain a BLS airway
- 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

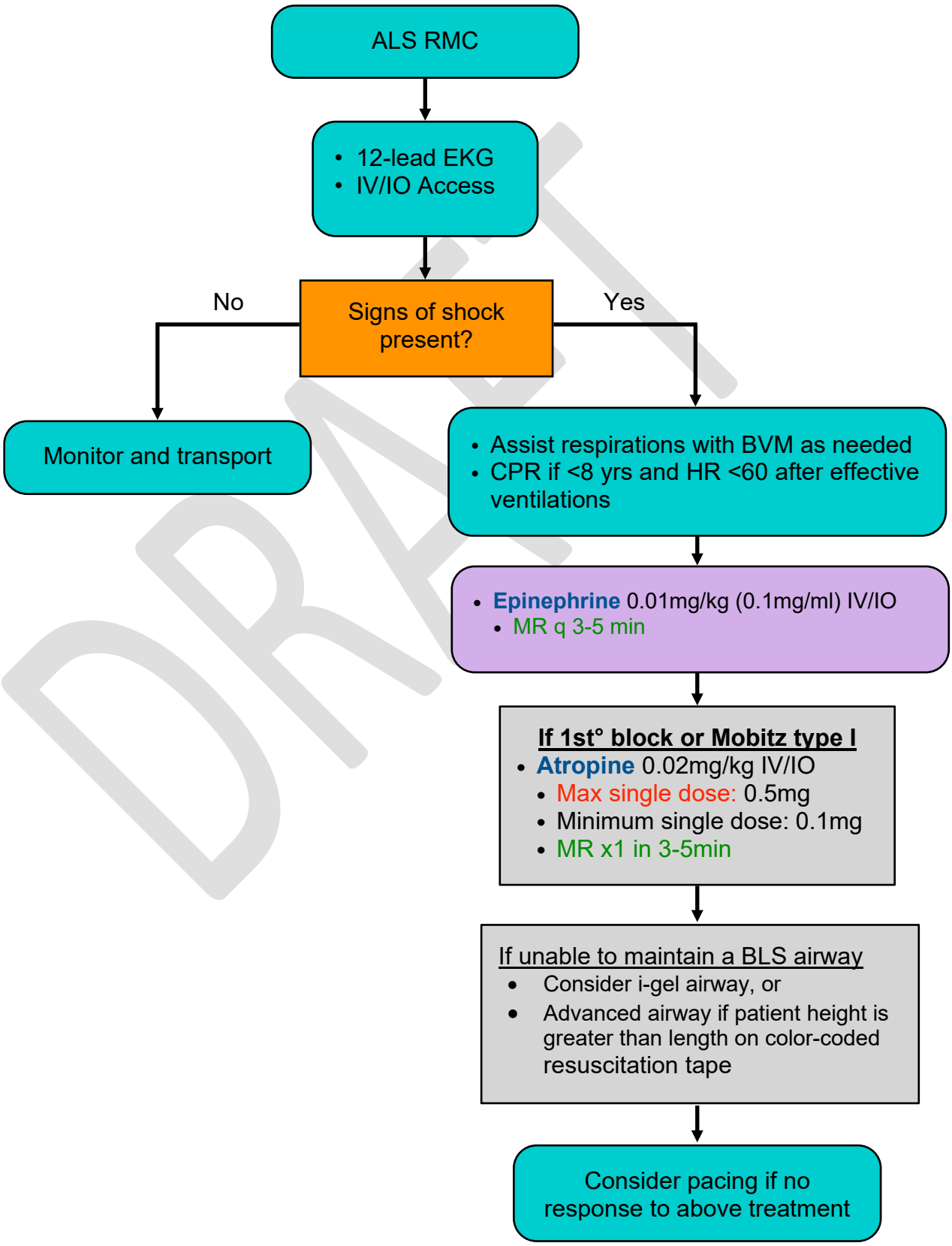
SpO2 Normal Values After Birth (in Min)

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 BRADYCARDIA

Indications

HR <60 causing cardio-respiratory compromise



PEDIATRIC RESPIRATORY DISTRESS

Indications

Patient exhibits any of the following:

- Wheezing
- Stridor
- Grunting
- Nasal flaring
- Apnea

ALS RMC

- Position of comfort
- Allow parent to administer O2 if possible

Upper Airway/Stridor

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

Lower Airway/ Wheezing

- **Albuterol** 2.5mg in 3ml NS HHN, mask, or BVM
  - MR x1
- Consider **Atrovent** 500mcg in 2.5ml NS HHN, mask or BVM
- If response inadequate, **Epinephrine** (1mg/1ml concentration) 0.01mg/kg IM
  - MR in 5 min
  - Max total dose: 0.6mg

Foreign Body Obstruction

- Attempt to clear airway
- <1 year: 5 back blows and 5 chest thrusts
- >1 year: 5 abdominal thrusts
- For FBO refractory to above attempts, utilize laryngoscopy to visualize and remove foreign body with Magill forceps

Respiratory failure/apnea/complete obstruction

- Attempt positive pressure ventilation with BVM 1 breath every 2-3 seconds

If unable to maintain a BLS airway:

- Consider i-gel, or
- Advanced airway if patient height is greater than the length of the color-coded resuscitation tape

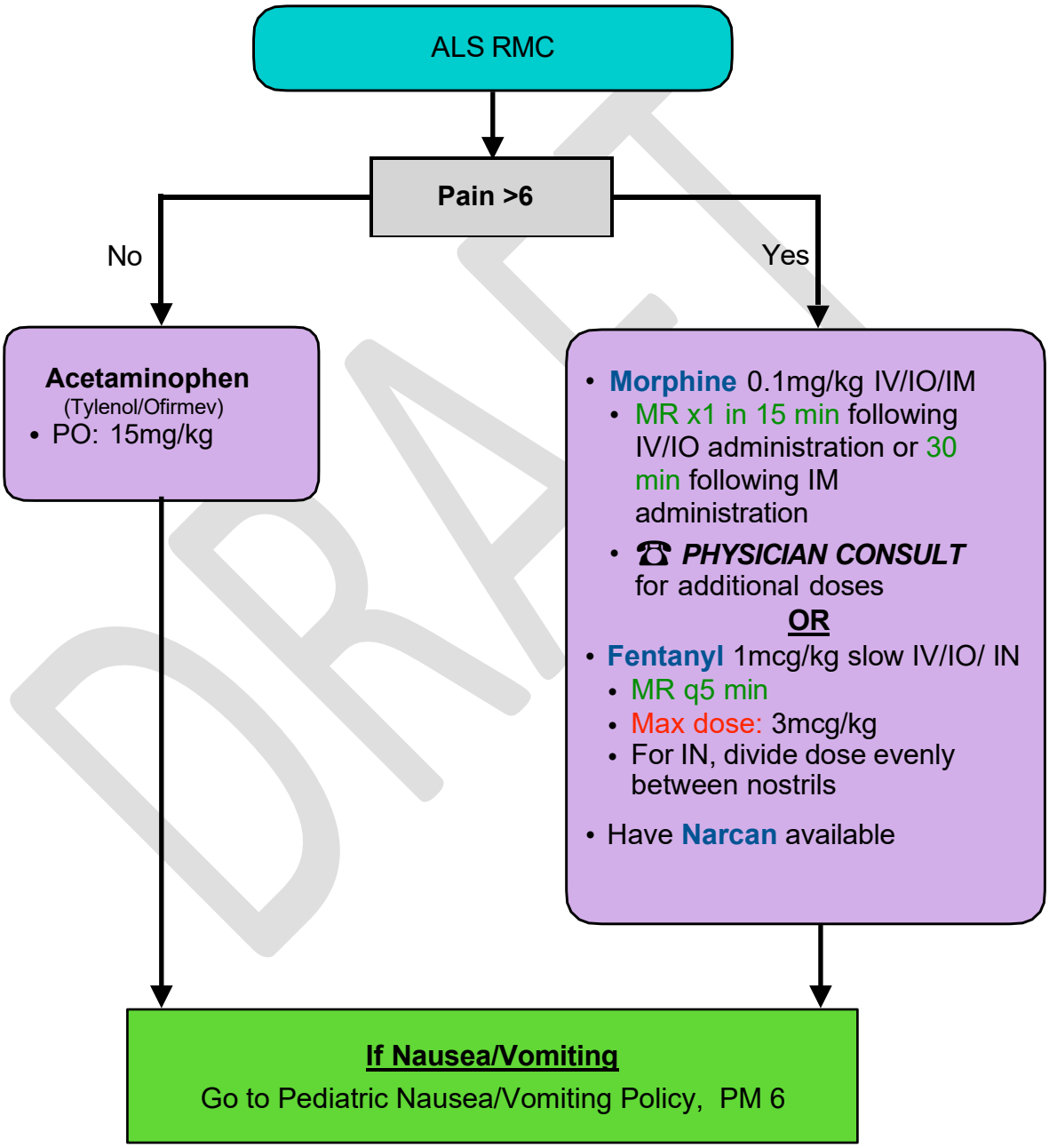
SPECIAL CONSIDERATION

Assess key history factors: recent hospitalizations, asthma, allergies, croup, and medication usage

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 PAIN MANAGEMENT SCALES

Neonatal Infant Pain Score (NIPS)- age <1 year

Score 0-7

	0	1	2
Facial expression	Relaxed	Grimace	
Cry	None	Whimper	Vigorous cry
Breathing Pattern	Relaxed	Variable breathing	
Arms	Relaxed	Flexed/extended, tense	
Legs	Relaxed	Flexed/extended, tense	
Alertness	Asleep/Awake (content)	Fussy, restless	

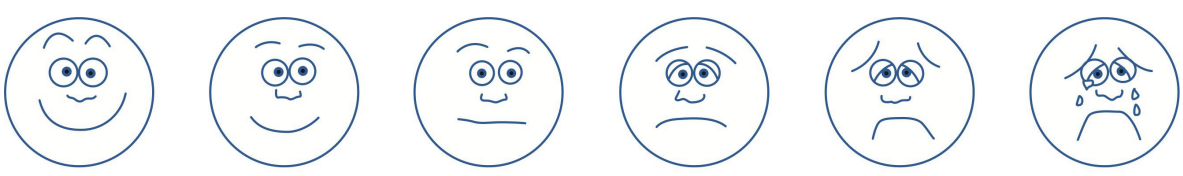
FLACC Pain Score- age >1 year

Score 0-10

	0	1	2
Facial expression	Disinterested	Occasional grimace, withdrawn	Frequent frown, clenched jaw
Legs	No position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Normal position	Squirming, tense	Arched, rigid, or jerking
Cry	No crying	Moans or whimpers	Constant crying, screams or sobs
Consolability	Content, relaxed	Distractable	Inconsolable

Wong-Baker FACES Pain Score- age >3 years

Score 0-10



0 No Hurt

2 Hurts Little Bit

4 Hurts Little More

6 Hurts Even More

8 Hurts Whole Lot

10 Hurts Worst

PEDIATRIC MEDICATIONS

DRUG	CONCENTRATION	STANDARD DOSE
Acetaminophen (Tylenol)	160mg/5ml (32mg/ml)	15mg/kg PO
Adenosine	6mg/2ml (3mg/ml)	0.1mg/kg rapid IV/IO push, followed by 5ml NS flush *Max first dose:* 6mg *Repeat:* x1 double the dose (0.2mg/kg) *Max second dose:* 12mg
Albuterol	2.5mg/3ml NS	2.5mg/3ml NS *Repeat:* x1
Amiodarone	150mg/3ml (50mg/ml)	Pulseless Arrest: 5mg/kg IV/IO, followed by or diluted in 20ml NS after 3rd shock *Max dose:* 300mg ☎ Tachycardia with poor perfusion: 5mg/kg IV/IO over 20-60 min
Atropine	Preload: 1mg/10ml (0.1mg/ml) Vial: 0.4mg/ml	Bradycardia: 0.02mg/kg IV/IO Minimum dose 0.1mg *Max single dose:* 0.5mg *Repeat:* x1 in 3-5 min Organophosphate Poisoning: 0.05mg/kg IV/IO *Repeat:* q5-10 min *Max dose:* 4mg or until relief of symptoms
Dextrose 10%	D10%	3-7kg: 2ml/kg IV/IO ≥8kg: 5ml/kg IV/IO *Max dose:* 125ml
Diphenhydramine (Benadryl)	50mg/ml	1mg/kg IV/IO/IM *Max dose:* 50mg
Epinephrine	1mg/10ml (0.1mg/ml)	Cardiac Arrest: 0.01mg/kg (0.1ml/kg) IV/IO *Repeat:* q3-5 min
Epinephrine	1mg/ml EpiPen Jr ® 0.15mg	Allergic Reaction: 0.01mg/kg IM *Repeat:* x1 in 5 min *Max dose:* 0.6mg EpiPen Jr ®: repeat as needed in 5 min Upper Airway/Stridor: 5mg in 5ml via nebulizer
Fentanyl	100mcg/2ml (50mcg/ml)	1mcg/kg slow IV/IO/IM/IN *Repeat:* q5 min *Max dose:* 3mcg/kg For IN: divide dose evenly between nostrils

PEDIATRIC MEDICATIONS

DRUG	CONCENTRATION	STANDARD DOSE
Glucagon	1mg/ml	0.03mg/kg IM *Repeat:* x2 q15 min if no IV established *Max dose:* 1mg
Ipratropium (Atrovent)	500mcg/2.5ml Unit dose	500mcg/2.5ml Unit dose
Lidocaine 2% (preservative free)	20mg/ml	0.5mg/kg slowly *Repeat:* x1 at half initial dose (0.25mg/kg) *Max dose:* 40mg
Midazolam (Versed)	2mg/2ml (1mg/ml) 5mg/ml	Cardioversion: 0.05mg/kg slow IV/IO *Max dose:* 1mg Seizure: IV/IO: 0.05mg/kg slowly *Repeat:* x2 q15 min *Max single dose:* 1mg *Total max dose:* 5mg IM: 0.2mg/kg *Repeat:* x1 in 10 min if still seizing IN: 0.2mg/kg *Max dose:* 5mg For IN: divide dose evenly between nostrils
Morphine	10mg/10ml (1mg/ml) 10mg/ml	Pain Management: 0.1mg/kg slow IV/IO/IM Repeat: x2 in 15 min (IV/IO), 30 min if IM Burns: 0.1mg/kg IV/IO/IM in incremental doses up to *max dose:* 0.3mg/kg
Naloxone (Narcan)	2mg/2ml	0.1mg/kg (0.25ml/kg) IV/IO/IM/IN Repeat: q5 min For IN: divide dose evenly between nostrils
Ondansetron (Zofran)	4mg ODT 4mg/2ml (2mg/ml)	Patients 12-18kg: 2mg ODT (1/2 tab) or slow IV over 30 seconds Repeat: x1 in 10 min Patients >18kg: 4mg ODT (1 tab) or slow IV over 30 seconds Repeat: x1 in 10 min
Sodium Bicarbonate	50mEq/50ml	1mEq/kg IV/IO

April 2025 | MARIN COUNTY EMS PEDIATRIC DOSING GUIDE (PAGE 1) | PTG 2A

		Grey	Pink	Red	Purple	Yellow	White	Blue	Orange	Green
WEIGHT	kg	3 - 5	6 - 7	8 - 9	10 - 11	12 - 14	15 - 18	19 - 23	24 - 29	30 - 36
	lbs	6 - 11	13 - 15	18 - 20	22 - 24	27 - 31	33 - 40	42 - 51	53 - 64	66 - 80
NS Fluid Bolus		60, 80, 100 ml	130 ml	170 ml	210 ml	260 ml	325 ml	420 ml	530 ml	660 ml
Blade size for foreign body removal		0	0	1	1	2	2	2	2	3
i-gel airway size		**1.0**	**1.5**	**1.5**	**1.5**	**2.0**	**2.0**	**2.0**	**2.5**	**2.5**
DEFIBRILLATION 2 - 4 J/kg	**1st**	**6, 8, 10J**	**13J**	**17J**	**20J**	**26J**	**33J**	**40J**	**53J**	**66J**
	2nd	12, 16, 20J	26J	34J	40J	52J	66J	80J	106J	130J
CARDIOVERSION 0.5 - 1 J/kg, 2 J/kg	**1st**	**3, 4, 5J**	**7J**	**9J**	**10J**	**13J**	**17J**	**20J**	**27J**	**33J**
	2nd	6, 8,10J	13J	17J	20J	26J	34J	40J	54J	66J
ACETAMINOPHEN 15 mg/kg IV/IO		60 mg	98 mg	128 mg	158 mg	195 mg	248 mg	315 mg	398 mg	503mg
Concentration: 160 mg/5ml (32mg/ml)		2ml	3ml	4ml	5ml	6ml	7.8ml	9.9ml	12.4ml	15.7ml
ADENOSINE 0.1 mg/kg RIVP w/ 10ml NS flush MR x 1 double the dose Max 1st dose 6 mg, Max 2nd dose 12 mg	**1st**	**0.3, 0.4, 0.5 mg**	**0.7 mg**	**0.9 mg**	**1 mg**	**1.3 mg**	**1.7 mg**	**2.1 mg**	**2.7 mg**	**3.3 mg**
		0.1, 0.14, 0.16 ml	**0.2 ml**	**0.3 ml**	**0.3 ml**	**0.4 ml**	**0.6 ml**	**0.7 ml**	**0.9 ml**	**1.1 ml**
	2nd	0.6, 0.8, 1 mg	1.3 mg	1.7 mg	2.1 mg	2.6 mg	3.4 mg	4.2 mg	5.4 mg	6.6 mg
Concentration: 6 mg/2 ml (3 mg/ml)		0.2, 0.26, 0.33 ml	0.4 ml	0.6 ml	0.7 ml	0.9 ml	1.1 ml	1.4 ml	1.8 ml	2.2 ml
ALBUTEROL		Unit Dose 2.5 mg/3 ml								
AMIODARONE (Pulseless Arrest) 5 mg/kg IV/IO followed by 20 ml NS flush. MR x 2 refractory rhythm Max single dose 300 mg		15, 20, 25 mg	32 mg	42 mg	50 mg	65 mg	80 mg	105 mg	130 mg	165 mg
Concentration: 150 mg/3 ml (50 mg/ml)		0.3, 0.4 0.5 ml	0.6 ml	0.8 ml	1 ml	1.3 ml	1.6 ml	2.1 ml	2.6 ml	3.3 ml
ATROPINE (Bradycardia) 0.02 mg/kg IV/IO MR x 1 in 3 - 5 minutes Min dose 0.1 mg, Max single dose 0.5 mg		0.1 mg	0.1 mg	0.2 mg	0.2 mg	0.3 mg	0.3 mg	0.4 mg	0.5 mg	0.5 mg
Concentration: 1 mg/10 ml (0.1 mg/ml)		1 ml	1 ml	2 ml	2 ml	3 ml	3 ml	4 ml	5 ml	5 ml
ATROPINE (Organophosphate Poisoning) 0.05 mg/kg IV/IO MR q 5 - 10 mins until symptoms resolve		0.15 - 0.25 mg	0.3 mg	0.4 mg	0.5 mg	0.7 mg	0.8 mg	1 mg	1.3 mg	1.7 mg
Concentration: (preload) 1 mg/10 ml (0.1 mg/ml)		1.5 - 2.5 ml	3 ml	4 ml	5 ml	7 ml	8 ml	11 ml	13 ml	17 ml
Concentration: (multi-dose vial) 0.4 mg/ml		0.4 - 0.6 ml	0.8 ml	1.1 ml	1.3 ml	1.6 ml	2.1 ml	2.6 ml	3.3 ml	4.1 ml
DEXTROSE 10% Give over 10 minutes		6-10ml	13 ml	42 ml	53 ml	65 ml	83 ml	105 ml	125 ml	125 ml
		2 ml/kg IV/IO		5 ml/kg IV/IO Max dose 125 ml						
BENADRYL 1 mg/kg IM/IV/IO Max dose 50 mg		3-5 mg	6.5 mg	8.5 mg	10.5 mg	13 mg	16.5 mg	21 mg	26 mg	33 mg
Concentration: 50 mg/ml		0.06-0.1 ml	0.1 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.7 ml
EPINEPHRINE (Cardiac Arrest/Bradycardia) 0.01 mg/kg IV/IO MR q 3 -5 mins		0.03 - 0.05 mg	0.07 mg	0.09 mg	0.1 mg	0.1 mg	0.2 mg	0.2 mg	0.3 mg	0.3 mg
Concentration: 1 mg/10 ml		0.3 - 0.5 ml	0.7 ml	0.9 ml	1 ml	1 ml	2 ml	2 ml	3 ml	3 ml
EPINEPHRINE (Allergic Reaction & Asthma) 0.01 mg/kg IM; MRx1 in 5 minutes Total max dose 0.6 mg		0.03 - 0.05 mg	0.1 mg	0.1 mg	0.1 mg	0.1 mg	0.2 mg	0.2 mg	0.3 mg	0.3 mg
Concentration: 1 mg/1 ml		0.03 - 0.05 ml	0.1 ml	0.1 ml	0.1 ml	0.1 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml

April 2025 | MARIN COUNTY EMS PEDIATRIC DOSING GUIDE (PAGE 2) | PTG 2A

WEIGHT		Grey	Pink	Red	Purple	Yellow	White	Blue	Orange	Green
	kg	3-5	6 - 7	8 - 9	10 - 11	12 - 14	15 - 18	19 - 22	24 - 28	30 - 36
	lbs	6 - 11	13 - 15	18 - 20	22 - 24	27 - 31	33 - 40	42 - 51	53 - 64	66 - 80
EPINEPHRINE "Nebulized Epi" (Upper Airway/Stridor)		5 mg (5 ml) Via Nebulizer								
Concentration: 1 mg/1 ml										
FENTANYL (Pain) 1 mcg/kg IV/IO/IM/IN MR q 5 min For IN split dose evenly per nostril Max dose 3 mcg/kg;		4 mcg	6.5 mcg	8.5 mcg	10.5 mcg	13.5 mcg	16.5 mcg	21 mcg	26.5 mcg	33 mcg
Concentration: 1 mg/1 ml		0.08 ml	0.13 ml	0.17 ml	0.21 ml	0.27 ml	0.33 ml	0.42 ml	0.53 ml	0.66ml
GLUCAGON (hypoglycemia/Beta blocker OD) 0.03 mg/kg IM MR x 2 q 15 minutes Max dose 1 mg		0.09 - 0.15 mg	0.2 mg	0.3 mg	0.3 mg	0.4 mg	0.5 mg	0.6 mg	0.8 mg	1 mg
Concentration: 1 mg/1 ml		0.1 - 0.15 ml	0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.6 ml	0.8 ml	1 ml
IPRATROPIUM - *Atrovent* 500 mcg per unit dose (2.5 ml)		500 mcg / 2.5 ml								
LIDOCAINE 2% - (IO Insertion) 0.5 mg/kg slow IO Max dose 40 mg	**1st**	**1.5 - 2.5 mg**	**3 mg**	**4 mg**	**5 mg**	**6 mg**	**8 mg**	**10 mg**	**13 mg**	**17 mg**
		0.06 - 0.13 ml	**0.2 ml**	**0.2 ml**	**0.3 ml**	**0.3 ml**	**0.4 ml**	**0.5 ml**	**0.7 ml**	**0.8 ml**
	2nd	0.75 - 1.25 mg	2 mg	2 mg	3 mg	3 mg	4 mg	5 mg	6 mg	8 mg
Concentration: 20mg/1ml		0.04 - 0.06 ml	0.1 ml	0.1 ml	0.2 ml	0.2 ml	0.2 ml	0.3 ml	0.4 ml	0.4 ml
MIDAZOLAM - *Versed* (Seizure & Cardioversion) 0.05 mg/kg slow IV/IO Max 1st dose 1 mg, Total max dose 5 mg		0.15 - 0.25 mg	0.3 mg	0.4 mg	0.5 mg	0.7 mg	0.8 mg	1 mg	1 mg	1 mg
Concentration: 2mg/2ml (1 mg/ml)		0.15 - 0.25 ml	0.3 ml	0.4 ml	0.5 ml	0.7 ml	0.8 ml	1 ml	1 ml	1 ml
MIDAZOLAM - *Versed* (Seizure) IN: 0.2 mg/kg Split dose equally per nostril Max dose 5 mg		0.6 - 1.0 mg	1.3 mg	1.7 mg	2.1 mg	2.6 mg	3.3 mg	4.2 mg	5 mg	5 mg
Concentration: 5 mg/ml		0.12 - 0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.7 ml	0.8 ml	1 ml	1 ml
MIDAZOLAM-*Versed* (Seizure) IM: 0.1 mg/kg MR x 1 in 10 minutes		0.3 - 0.5 mg	0.7 mg	0.9 mg	1 mg	1.3 mg	1.7 mg	2.1 mg	2.6 mg	3.3 mg
Concentration: 5 mg/ml		0.06 - 0.1 ml	0.1 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.7 ml
MORPHINE (Pain/Burns) 0.1 mg/kg IV/IO/IM MR x 2 in 15 minutes (IV/IO) or in 30 minutes (IM)		0.3 - 0.5 mg	0.7 mg	0.9 mg	1 mg	1.3 mg	1.7 mg	2.1 mg	2.6 mg	3.3 mg
Concentration: 10 mg/1 ml		0.03 -0.05 ml	0.1 ml	0.1 ml	0.1 ml	0.1 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml
NARCAN- Naloxone 0.1 mg/kg IV/IO/IM/IN MR q 5 minutes up to 2 mg		0.3 - 0.5 mg	0.7 mg	0.9 mg	1 mg	1.3 mg	1.7 mg	2 mg	2 mg	2 mg
Concentration: 2 mg/2 ml		0.3 - 0.5 ml	0.7 ml	0.9 ml	1 ml	1.3 ml	1.7 ml	2 ml	2 ml	2 ml
SODIUM BICARBONATE 1 mEq/kg IV/IO		3 - 5 mEq	6.5 mEq	8.5 mEq	10 mEq	13 mEq	17 mEq	21 mEq	26 mEq	33 mEq
Concentration: 1 mEq/ml		3 - 5 ml	6.5 ml	8.5 ml	10 ml	13 ml	17 ml	21 ml	26 ml	33 ml
ZOFRAN - Ondansetron		Age 2 - 3 years: Give 2 mg ODT or slow IVP				Age 4 and up: Give 4 mg ODT or slow IVP				
Concentration: 4 mg tab ODT, 4 mg/2 ml IV										