

Arizona Emergency Medical Systems, Inc.

**RED BOOK
CHAPTER 3 - Part II**

Standing Orders: Pediatric Standing Orders

DISCLAIMER

This Manual sets forth procedures and protocols deemed by AEMS to be within the acceptable standard of medical care. It is specifically recognized that there are acceptable variations from these procedures and protocols, which may also satisfy the standard of care. Therefore, variations from these procedures and protocols are not necessarily deemed to be outside the standard of care. This manual does NOT define, limit, expand or otherwise purport to establish the legal standard of care.

RED BOOK

CHAPTER 3 - Part II

Standing Orders for Paramedics

Pediatric Standing Orders

Table of Contents

Pediatric Normal Vital Signs	Reference Chart
Pediatric Trauma Score and Coma Scale	Reference Chart
Respiratory Failure / Arrest	Chart 1
Pediatric Shock / Hypotension	Chart 2
Decreased Level of Consciousness (without a history of trauma)	Chart 3
Asystole	Chart 4
PEA / EMD	Chart 5
V-Fib and Pulseless V-Tach	Chart 6
Pediatric Supraventricular Tachycardia SVT	Chart 7
Bradycardia	Chart 8
Traumatic Injury	Chart 9
Pediatric Status Epilepticus	Chart 10
Pediatric Thermal Burns	Chart 11
Submersion Incident	Chart 12
Acute Allergic Reaction / Anaphylaxis	Chart 13
Pediatric Hypoglycemia	Chart 14
Pediatric Tracheostomy with Respiratory Distress	Chart 15
Pediatric Environmental Hyperthermia	Chart 16
Newborn Resuscitation	Chart 17

Pediatric Normal Vitals Signs Reference and Charts 1-14 and 17 - Approved by Board April 18, 2001

Pediatric Trauma Score and Coma Scale Reference and Charts 15 and 16 - Approved by Board August 20, 2003

Complete Chapter Contents - Reviewed, Amended, and Approved by Board October 15, 2003

Pediatric Weight Formula

Weight in kg = 8 + (2x age)

- ◆ use 3.0 kg for newborns
- ◆ use 7.0 kg for 6 month olds

Normal Heart Rate

Normal Respiratory Rate

◆ Neonate	100-180	30-60
◆ 1 Month	100-180	30-40
◆ 2-12 years	75-110	16-24
◆ Adolescent	50-100	12-20

Weight Conversion

- ◆ Wt (lbs) x .45 = Wt (kg)
- ◆ Wt (kg) x 2.2 = Wt (lb)

Blood Pressure

Minimum systolic blood pressure

- ◆ Full term newborn 60 mm Hg
- ◆ 1 year 70 mm Hg
- ◆ > 1 year 70+ (2 x age in years)

<u>Age</u>	<u>ETT Size</u>	<u>ETT Insertion Depth at Lip Line</u>
Preterm	2.5-3.0	8 (3 x ETT diameter)
Term-3months	3.0-3.5	9-10
4-9.0 months	3.5-4.0	10
10-18 months	4.0-4.5	11
19-24 months	4.5-5.0	12
>24 months	$\frac{16 + \text{age in years}}{4}$	10+ age in years

*Anonymous. Airway and ventilation. In: Chaemeides L., Hazinski MF, eds: Pediatric Advanced Life Support. Dallas American Heart Association. 1997, 4-1-4-22.

NG Tube

2x the ET tube size

Maintenance Fluids

0 – 10kg	4cc/kg/hr +
10 – 20 kg	2cc/kg/hr +
>20kg	1cc/kg/hr

Pediatric Trauma Score:

Component	+2	+1	-1
Weight	>20kg	10-20 kg	<10kg
Airway	Normal	Maintainable	Unmaintainable
CNS	Awake	Obtunded/LOC	Coma
Systolic BP	>90mm Hg	50-90 mm Hg	<50mm Hg
Open Wound	None	Minor	Major
Skeletal injury	None	Closed Fx	Open/Multiple Fx

Range of score –6 to 12. A score ≤ 8 indicates potentially important trauma. LOC, Loss of consciousness

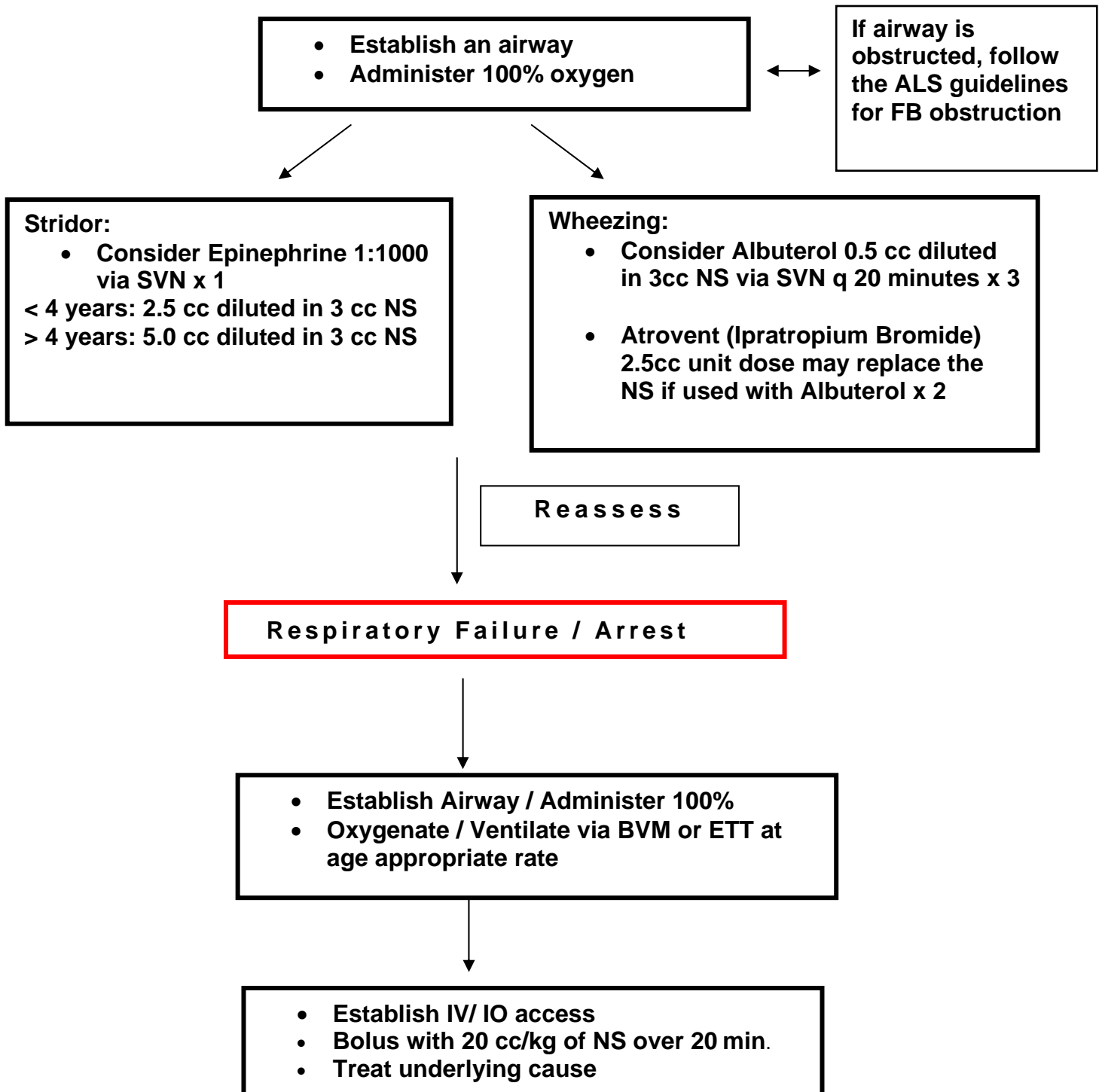
Glascow Coma Scale

Eye opening			Best Motor Response		
Score	>1Year	<1 Year	Score	>1Year	<1 Year
4	Spontaneously	Spontaneously	6	Obeys	Spontaneous
3	To verbal command	To shout	5	Localizes Pain	Localizes Pain
2	To pain	To pain	4	Flexion-withdrawal	Flexion-withdrawal
1	No response	No response	3	Flexion –abnormal (<i>decorticate</i>)	Flexion-abnormal (<i>decorticate</i>)
			2	Extension (<i>decerebrate</i>)	Extension (<i>decerebrate</i>)
			1	No Response	No Response

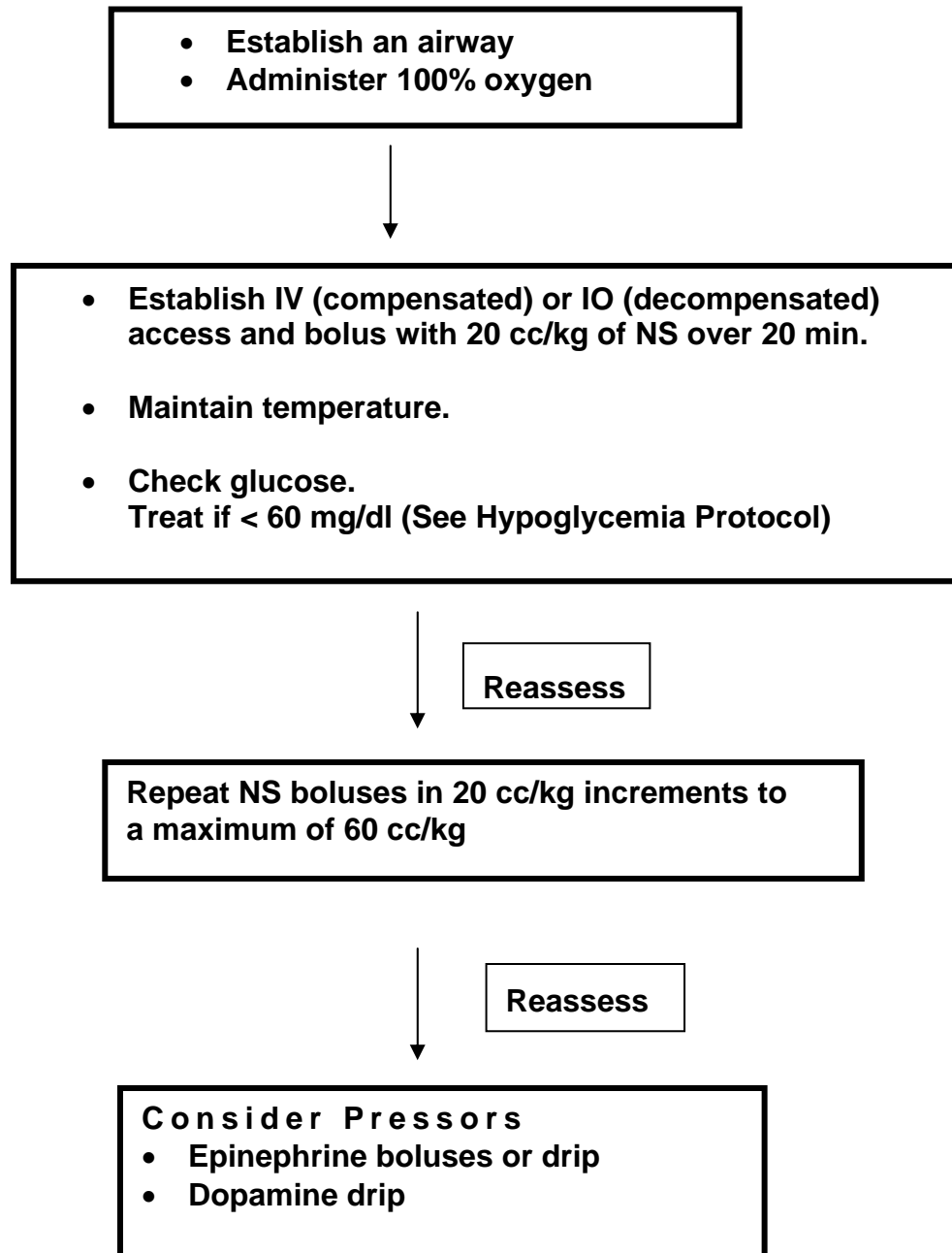
Best Verbal Response			
Score	> 5 years	2-5 years	0-23 months
5	Oriented & converses	Appropriate words/phrases	Smiles/coos appropriately
4	Disoriented & converses	Inappropriate words	Cries and is inconsolable
3	Inappropriate words	Persistent cries and screams	Persistent inappropriate cries and/or screaming
2	Incomprehensible sounds	Grunts	Grunts, agitated, and restless
1	No response	No response	No response

TOTAL = 3 to 15

Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.



Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.



Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.

- Establish an airway
- Administer 100% oxygen

- Establish IV access and bolus with 20 cc/kg of NS over 20 min.
- (Consider IO if patient is unarousable)
- Check glucose.

< 60 mg/dl

> 60 mg/dl

- See Hypoglycemia Protocol
 - Administer Narcan (Naloxone) IV/IO/IM/ETT if no response to glucose
- Dose: < 5 yrs: 0.1 mg/kg q 3-5 min.
(max = 2.0 mg)
- > 5 yrs: 2.0 mg q 3-5 min.

- Administer Narcan (Naloxone) IV/IO/IM/ETT
- Dose: < 5 yrs: 0.1 mg/kg q 3-5 min.
(max = 2.0 mg)
- > 5 yrs: 2.0 mg q 3-5 min.

Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.

- Establish an airway
- Administer 100% oxygen
- Oxygenation / Ventilation via BVM or ETT at age appropriate rate

- Continue CPR
- Establish Rhythm *

Identify and treat possible causes:

Hypoxia
Hypovolemia
Hypoglycemia
Hypothermia

- Establish IV/IO access and bolus with 20 cc/kg of NS over 20 min.
- Check glucose.

Administer Epinephrine q 3-5 min.

- IV/IO: 0.1 cc/kg (1:10,000)
- ETT: 0.1 cc/kg (1:1,000)

(Consider 1:1000 concentration IV/IO for second and subsequent doses)

***Note: Confirm Asystole in at least 2 leads**

Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.

- Establish an airway
- Administer 100% oxygen
- Oxygenation / Ventilation via BVM or ETT at age appropriate rate

- Continue CPR
- Establish Rhythm
- Treat underlying cause

Identify and treat potential causes:

Hypoxemia	Tension Pneumothorax
Hypovolemia	Tamponade
Hypothermia	Toxins
Hyperkalemia	Thromboembolus
Hypokalemia	

- Establish IV/IO access and bolus with 20 cc/kg of NS over 20 min.
- Check glucose.

Administer Epinephrine q 3-5 min.

- IV/IO: 0.1 cc/kg (1:10,000)
- ETT: 0.1 cc/kg (1:1,000)

(Consider 1:1000 concentration IV/IO for second and subsequent doses)

Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.

- Continue CPR
- Confirm Rhythm

Identify and treat potential causes:

Hypoxemia	Tension Pneumothorax
Hypovolemia	Tamponade
Hypothermia	Toxins
Hyperkalemia	Thromboembolus
Hypokalemia	

- Defibrillate x 3**
- 2J/kg, 4J/kg, 4J/kg

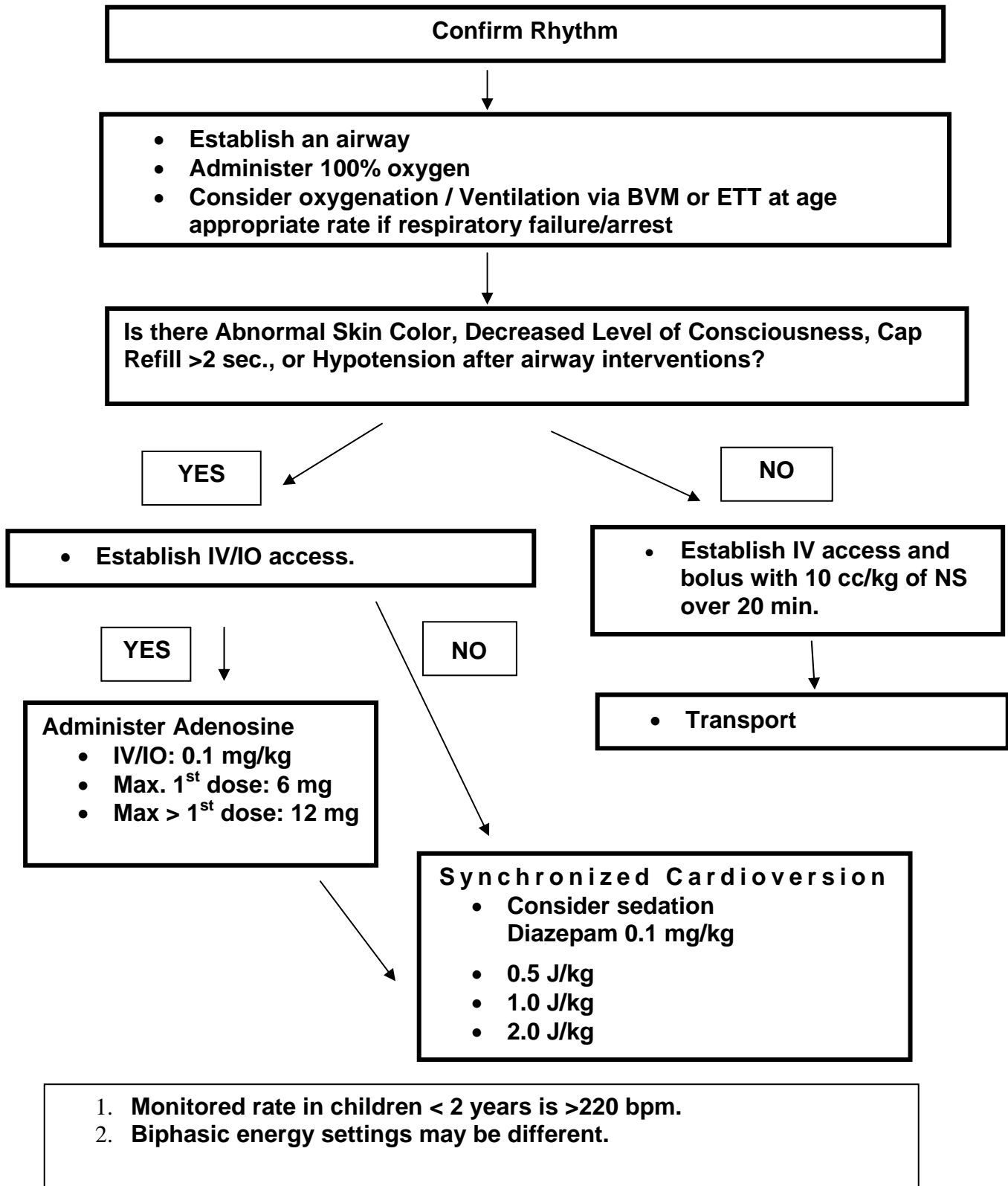
- Establish an airway
- Administer 100% oxygen via BVM or ETT at age appropriate rate
- Establish IV/IO access and start bolus with 20 cc/kg of NS over 20 min.

1. Administer Epinephrine q 3-5 min x 2
 - IV/IO: 0.1 cc/kg (1:10,000)
 - ETT: 0.1 cc/kg (1:1,000)

Consider 1:1,000 concentration IV/IO for second and subsequent doses.
2. Administer Lidocaine q 10-20 min. (3 doses max.)
 - IV/IO/ETT: 1.0 mg/kg

**DEFIBRILLATE WITH 4 J/KG
60 SECONDS AFTER EACH DRUG
ADMINISTRATION
(Biphasic may be different.)**

Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.



Pediatric Bradycardia (HR < 60 bpm)

Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.

- Establish an airway
- Administer 100% oxygen
- Consider oxygenation / Ventilation via BVM or ETT at age appropriate rate if respiratory failure/arrest

Identify and treat potential causes:

Hypoxemia	Hypothermia	Heart Dx
Hypovolemia	Head Trauma	Toxins

Is there Abnormal Skin Color, Decreased Level of Consciousness, Cap Refill >2 sec., or Hypotension after airway interventions ?

YES

NO

- Start CPR

- Establish IV access and bolus with 20 cc/kg of NS over 20 min.

- Establish IV/IO access and bolus with 20 cc/kg of NS over 20 min.
- Check glucose.

- Transport

Administer Epinephrine q 3-5 min. x 2

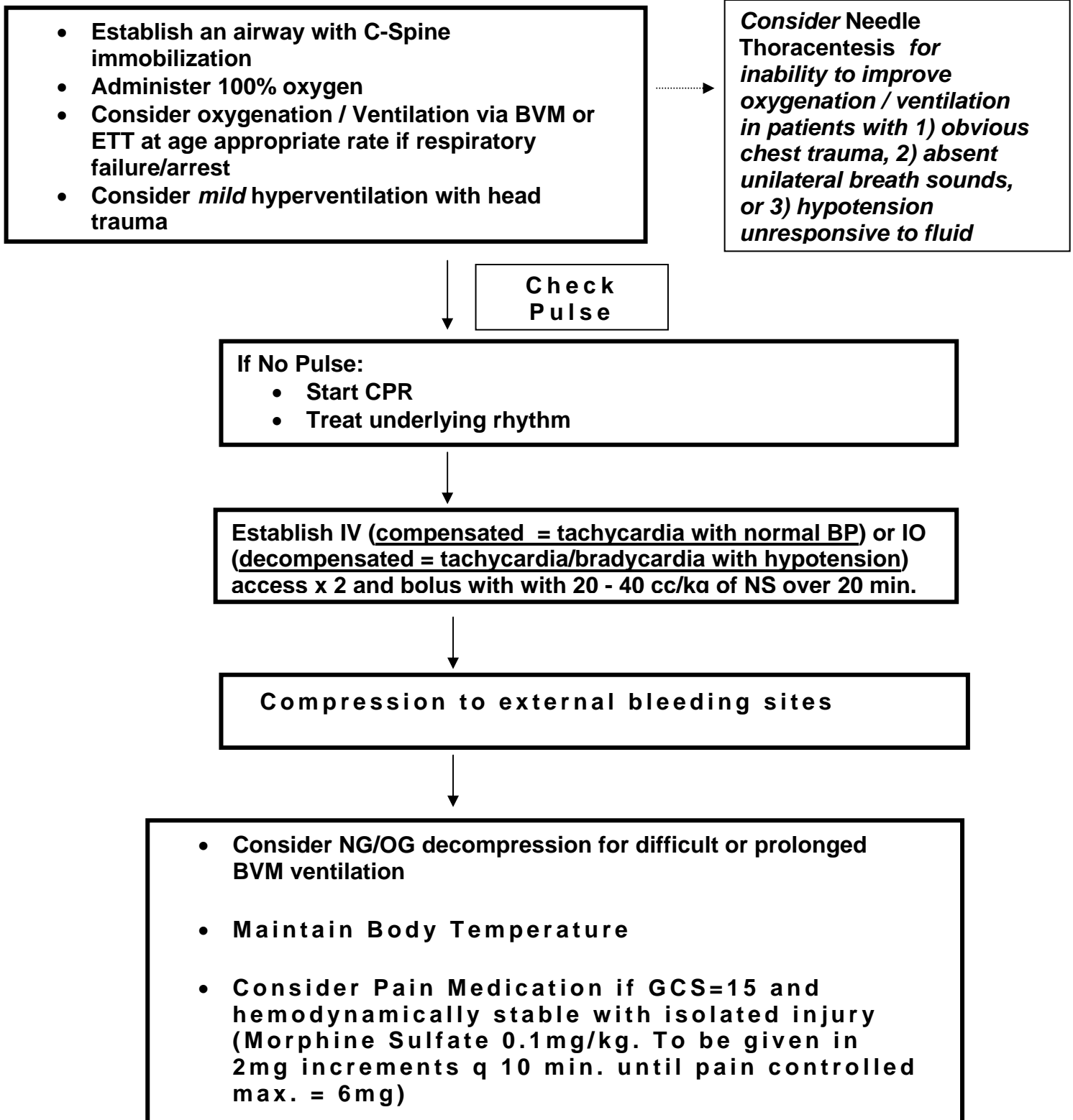
- IV/IO: 0.1 cc/kg (1:10,000)
- ETT: 0.1 cc/kg (1:1,000)

Administer Atropine (may repeat once)

- IV/IO/ETT: 0.02 mg/kg (min. dose 0.1mg, max. dose 1.0 mg)

Consider Transcutaneous Pacing

Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.



Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.

- Establish an airway
- Administer 100% oxygen



- Establish IV access and bolus with 20 cc/kg of NS over 20 min.
- Check glucose (if less than 60 mg/dl, refer to Hypoglycemia Protocol).
- Administer Diazepam 0.1-0.2 mg/kg IV (max. 2.0 mg/dose, may repeat x 3 q 5 minutes).
- If no IV, consider rectal Diazepam 0.5 mg/kg via angiocath (max. =10mg)
- Consider IO if seizure activity greater than 30 min.

Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.

- Establish an airway
- Administer 100% oxygen
- Consider oxygenation / Ventilation via ETT at age appropriate rate if signs of Upper Airway Obstruction (stridor, drooling, dysphagia, hoarseness) or Altered Mental Status

Check Pulse

If No Pulse:

- Start CPR
- Treat underlying rhythm

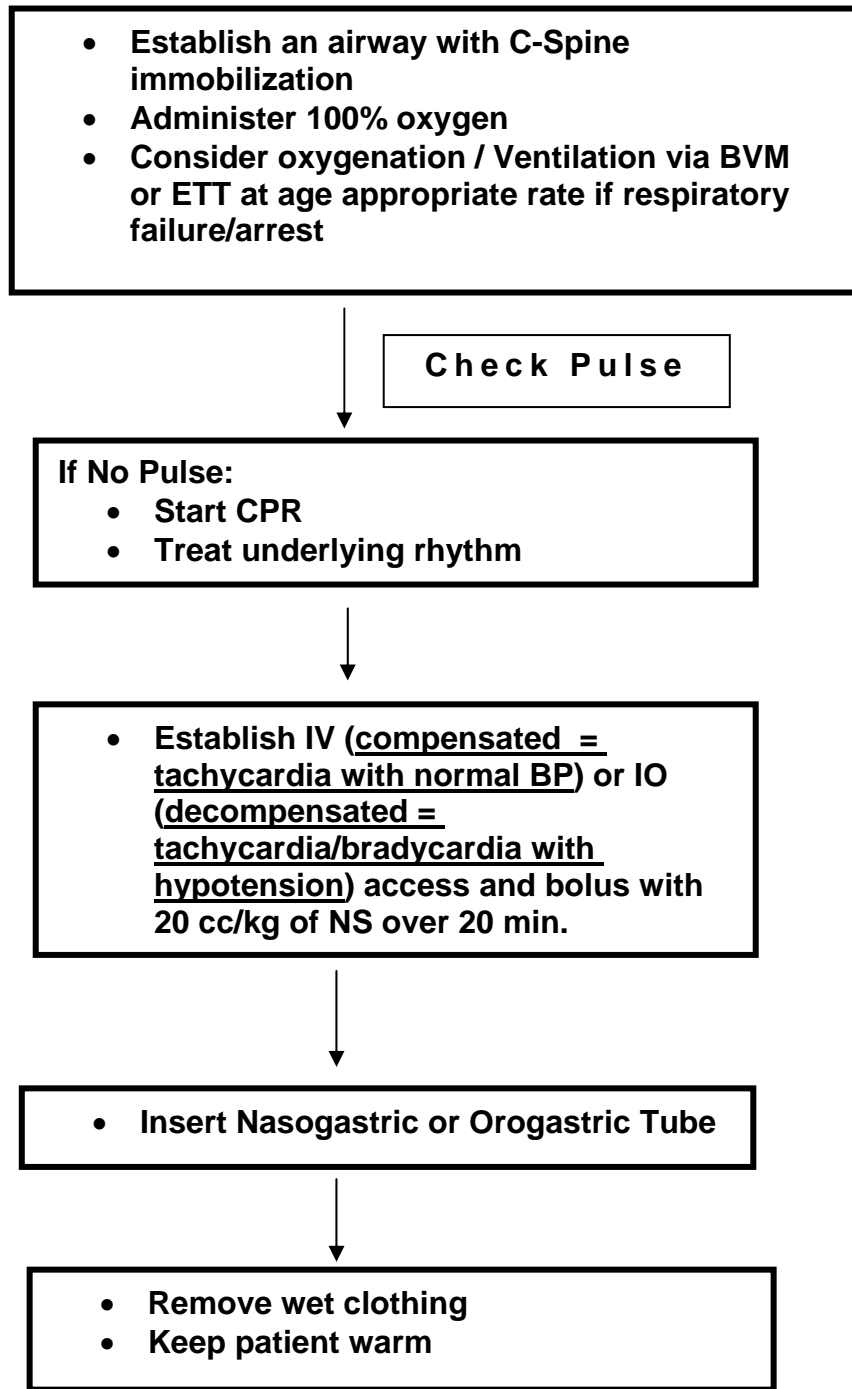
- Establish IV (compensated = tachycardia with normal BP) or IO (decompensated = tachycardia/bradycardia with hypotension) access x 2 in non-involved areas and bolus with 20 - 40 cc/kg of LACTATED RINGERS over 30 min.
- For prolonged transports, consider LACTATED RINGERS at 1.5x maintenance once vital signs are stable.

Cover involved areas with dry, sterile dressings

Maintain Normal Body Temperature

- Consider Morphine Sulfate 0.1 mg/kg for pain relief
- To be given in 2 mg increments q 10 min until pain controlled (max.=6mg)

Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.



Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.

- Establish an airway
- Administer 100% oxygen

Is there Abnormal Skin Color, Decreased Level of Consciousness, Cap Refill >2 sec., Hypotension, Respiratory Distress / Failure, Drooling, or Edema of lips, tongue or face?

YES

NO

- Consider Oxygenation / Ventilation via BVM or ETT at age appropriate rate if respiratory failure/arrest
- Consider Epinephrine 1:1,000 SC (0.01 cc/kg, max. dose = 0.3 cc).
- Establish IV/IO access and bolus with 20 cc/kg of NS over 20 min.

Consider Epinephrine 1:1,000 SC

- 0.01 cc/kg (max. dose: 0.3 cc)

Consider establishing IV access

Administer Epinephrine 1:1,000

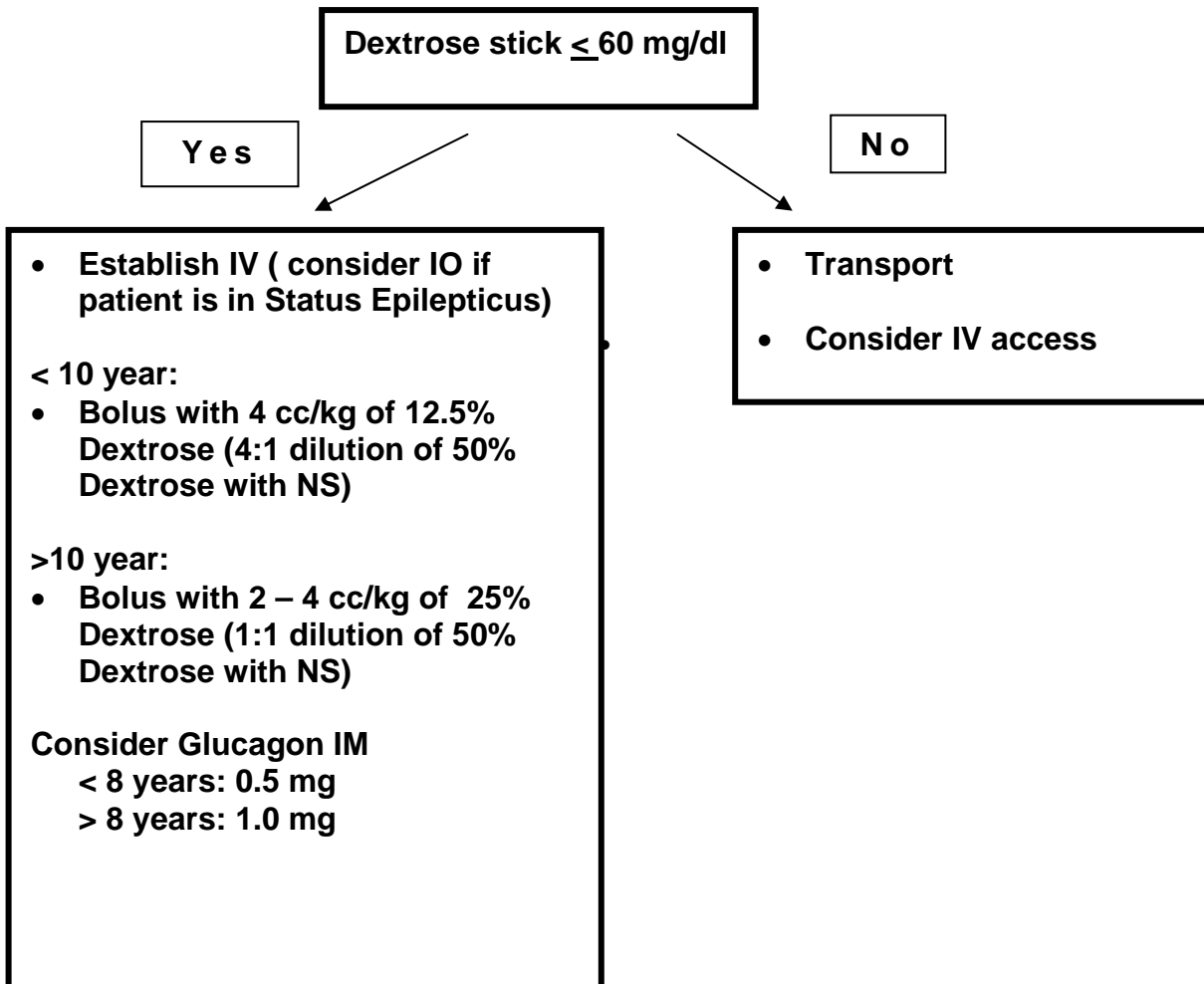
- IV/IO: 0.01 cc/kg (max. dose: 0.3 cc)
- May repeat q 3-5 minutes

Administer Diphenhydramine HCL (Benadryl)

- IV/IO/IM: 1.0 mg/kg (max. dose: 50 mg)

Consider Albuterol 0.5cc in 3 cc NS via SVN if respiratory distress / failure

Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.



Standing orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.

- Assess ABC's
- Administer 100% O₂
Per tracheostomy collar
- Suction
- Reassess airway patency

Patent

- Do not change trach
- Complete initial assessment
- Perform frequent reassessments

Is respiratory effort/ventilation
adequate?

- Retraction
- Grunting/wheezing/stridor
- Tachypnea
- Decreasing consciousness
- Apnea

Ventilation/ Effort Adequate

- Support ABC's
- Observe
- Keep Warm
- Transport in position of comfort

Special considerations:

If chest rise inadequate:

- Reposition the airway
- If using mask to stoma, consider inadequate volume delivered. Compress bag further and/or depress pop-off valve.
- Allow care giver to remain with child if possible.

Obstructed

- Repeat suction, after removing inner cannula if present
- Change trach tube, or insert appropriately sized ET tube into stoma.
- Reassess patency

Patent

Obstructed

Ventilation/Effort Inadequate

- Ventilate with 100% O₂ using resuscitation bag to trach.
- If trach not patent even after changing, ventilate with mask to mouth. If no chest rise, ventilate with infant mask to stoma
- Must have rise and fall of chest with each ventilation
- Consider nebulized Albuteral

Refer to Respiratory Arrest or Cardiac Arrest Protocols as indicated

Standing orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.

- Establish Airway
- Administer 100% O₂
- Assess ABC's

Assess For:
Hot, dry, flushed or ashen skin
Tachycardia
Tachypnea
Diaphoresis
Decreasing consciousness

Profound weakness and fatigue
Vomiting and diarrhea
Hypoperfusion
Muscle cramps

Place in cool environment. Remove clothing as appropriate

Normal level of Consciousness &
Diaphoresis

Decreased Consciousness,
Dry Skin

YES

Hypoperfusion or
Presence of Nausea/Vomiting

Adequate Respiratory Effort

Inadequate Respiratory Effort

- Give cool liquids PO
- Establish IV bolus with 20cc/kg of NS over 20 mins.

- Establish IV or IO access and bolus with 20cc/kg
- Repeat NS bolus in 20cc/kg increment to a max of 60 cc/kg

- Secure airway as appropriate
- Support ventilation with BVM

- Support ABC's
- Observe
- Transport

- Initiate cooling
- For shivering, consider Diazepam 0.1 mg/kg IV max dose 2mg/dose, may repeat x2 q 5 mins
- Refer to seizure protocol as indicated.

Cooling Techniques

- Apply cool pack to head, neck, armpits, groin, behind knees and to lateral chest
- Tepid water per sponge/spray
- Manually fan body to evaporate and cool
- Stop Cooling if shivering occurs Contact Medical Control

Standing Orders require contacting Medical Control as soon as the patient's condition allows and as soon as feasible.

- Suction mouth, oropharynx, and nose prior to delivery
- Clamp and cut umbilical cord.

