



This guideline serves as a guide and does not replace clinical judgment.

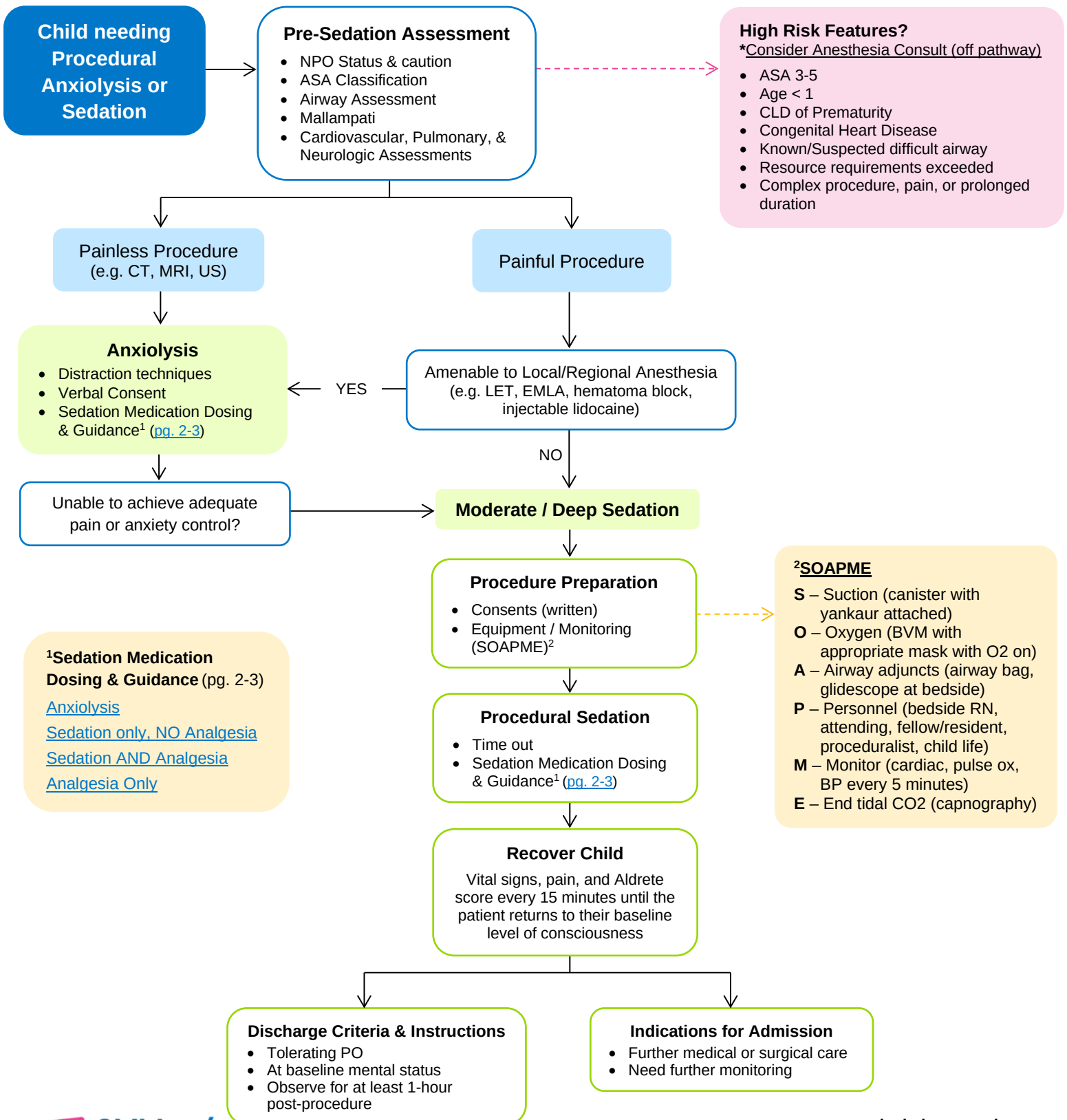
Clinical Guideline

Pediatric ED Anxiolysis and Sedation

Pediatric Emergency Medicine

Levels of Sedation:

- Anxiolysis – Normal response to voice / touch
- Moderate – Decreased / minimal response to voice / touch
- Deep – Response only to deep painful stimuli



Pediatric ED Anxiolysis and Sedation Guideline

¹Sedation Medication Dosing & Guidance Chart

Medication / Route	Dosing	MAX Initial Dose	Onset	Duration of Effect	Considerations
Anxiolysis					
Midazolam PO	0.25 – 0.5 mg/kg	20 mg	10 – 20 min	60 min	Paradoxical effect more likely in infants/toddlers IN administration is noxious
Midazolam IN	0.3 – 0.4 mg/kg	10 mg	5 min (max effect 10 min)	20 – 30 min	
Midazolam IV	0.05 mg/kg	2 mg	1 – 5 min (max effect 5 – 7 min)	30 – 60 min	
Dexmedetomidine IN	3 – 4 mcg/kg	200 mcg	20 – 30 min	90 min	Achieves an arousable sleep Can cause bradycardia
Nitrous Oxide	20% N ₂ O / 80% O ₂	50% N ₂ O / 50% O ₂	1 – 2 min	3 – 5 min after removal	Self- or parent-administered mask Start at 20%, titrate up q2–3 min to max of 50% After completion of procedure, administer 5 min of 100% FiO ₂ to reduce risk of post-administration headache, n/v Specific written consent form at VCU If co-administered with opiates or benzodiazepines, considered moderate/deep sedation
Dexmedetomidine Infusion	0.4 mcg/kg/h 0.4 mcg/kg loading dose & bolus q1h PRN	50 mcg max bolus dose	5 – 10 min (max effect 60 min)	60 – 240 min post infusion	Infants may require higher doses May cause bradycardia, biphasic blood pressure response (initial hypertension followed by hypotension) **Generally used for anxiolysis during non-invasive ventilation, NOT for procedural sedation**
Sedation only, NO Analgesia					
Propofol IV	1 – 2 mg/kg initial bolus 0.5mg/kg repeat dose every 1 min PRN	100 mcg	30 sec	5 – 15 min after single bolus	Painful when injected, push over 20 – 30 seconds Avoid if at risk for hemodynamic instability
Propofol Bolus & Infusion	0.5 – 1 mg/kg initial bolus 50 – 75 mcg/kg/min infusion	100 mg bolus	30 sec	10 – 20 min after discontinuing infusion	Can cause respiratory depression, especially if combined with opiates Consider higher initial bolus in toddlers
Etomidate IV	0.1 – 0.2 mg/kg 0.05 mg/kg repeat dose every 2 min PRN	10 mg	10 – 15 sec	4 – 10 min	Myoclonic jerks, respiratory depression most common adverse effects Slow push over 30 – 60 seconds

Pediatric ED Anxiolysis and Sedation Guideline

¹Sedation Medication Dosing & Guidance Chart Continued

Medication / Route	Dosing	MAX Initial Dose	Onset	Duration of Effect	Considerations
Sedation AND Analgesia					
Ketamine IV	1 – 2 mg/kg initial dose 0.5 mg/kg PRN every 5 – 15 min	100 mg	< 1 min	10 min	Emetogenic, consider premedication with antiemetic Does NOT achieve motionless sedation Push IV over 1 – 2 min, avoid fast push Rapid administration may cause respiratory depression or laryngeal spasm Additional doses IV or IM associated with agitation, nausea/vomiting, and prolonged recovery Use IM administration with caution, consider emergent IV access after sedation achieved
Ketamine IM	4 mg/kg Single additional 2 mg/kg dose in 10 – 15 min if needed Use 100/mL concentration	200 mg	5 min	20 – 30 min	
Analgesia Only					
Fentanyl IN	1 – 2 mcg/kg	100 mcg	5 – 10 min	30 – 60 min	Rapid IV push can cause chest wall rigidity Can cause respiratory depression when combined with benzodiazepines
Fentanyl IV	1 mcg/kg	100 mcg	Immediate	30 – 60 min	
Morphine IV	0.05 – 0.1 mg/kg	4 mg	5 – 10 min	3 – 5 hours	Common side effects include nausea, itching due to histamine release
LET	1 – 3 mL	3 mL	20 min	45 – 60 min after removal	For use on open skin (lacerations) Can consider applying q20min x2 doses
EMLA	Weight Dependent	Apply to area of skin < 10 cm ²	60 min	1 – 2 hours after removal	For use on intact skin (abscess, port access)

Executive Summary

Pediatric ED Anxiolysis and Sedation

Pediatric Emergency Medicine

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References

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