

Clinical Protocol

Procedural Sedation and Analgesia Outside the OR





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Agent	Bolus Dose	Titration Dose	Onset	Duration	Reversal Agent	Comments	
	<u>Patients >10 years</u> : 0.2 mg/kg	0.05 mg/kg Q3-5 min	30-60 seconds	3-5 minutes		 No analgesic effect. Use IBW if BMI>30. Consider lower dose (0.1 mg/kg) for age >60 years, concurrent opioids, or if recent alcohol use. Administer via larger vessel. (antecubital or larger). Precautions: 30% have myoclonus with transient skeletal/eye movements. 	
Etomidate	Patients ≤10 years: 0.2 mg/kg (0.1-0.3 mg/kg) Slow IV push over 30- 60 seconds.	0.05 mg/kg Q3-5 min	30 seconds	2-10 minutes	Time		
	<u>Adults</u> : 1-2 mg/kg IV over 1-2 min		30 seconds	10-20 min	• Time	Local anesthetic (eg. lidocaine) can increase effective duration.	
	4-5 mg/kg IM		3-4 min	20-30 min	• For lan/ngospasm:	Consider lower dose range for >60 years, concurrent opioids/alcohol.	
Ketamine for sedation	<u>Children >3 mo</u> : 1-2 mg/kg IV over 1 min		30-120 seconds	20-60 min	Succinylcholine 0.25-0.5 mg/kg IV	 Consider dosing by adjusted body weight if BMI>30. Precautions: emergence reactions (treat with 	
	4-5 mg/kg IM		5-10 min	30-90 min	3-4 mg/kg IM	benzodiazepines), nausea/vomiting (pre-treat with ondansetron), transient increase in salivation.	
	5 mg/kg PO		20-45 min	60-120 min		Contraindications: pregnancy, age <3 months.	
	0.1-0.4 ma/ka IV		30 seconds	10-20 min	Time For larvngospasm:	 Local anesthetic (eg. lidocaine) can increase effective duration. Consider lower dose range for >60 years, concurrent opioids/alcohol. 	
for analgesia	0.4-1.0 mg/kg IM		3-4 min	20-30 min	Succinylcholine 0.25-0.5 mg/kg IV	Consider dosing by adjusted body weight if BMI>30. Dresoutions, among and a state with	
					or 3-4 mg/kg IM	benzodiazepines), nausea/vomiting (pre-treat with ondansetron), transient increase in salivation. • Contraindications: pregnancy, age <3 months.	
	<u>Patients >2 yrs</u> : IV load 0.5-1 mg/kg	<u>ts >2 yrs</u> :).5-1 mg/kg Repeat 0.1-0.3 mg/kg Q30-60 seconds		3-10 min		 No analgesia. Consider low dose for age >60, concurrent opioids/alcohol. Consider dosing by adjusted body weight if BMI>30 Separate administration of opioid and propofol by >20 minutes to decrease respiratory depression. 	
Propofol	<u>Children 6 mos – 2 yrs</u> : IV load 1-2 mg/kg	Repeat 0.1-0.3 mg/kg Q30-60 seconds Max cumulative dose 3 mg/kg			Time	 Pre-oxygenate with high flow supplemental oxygen at least 3 minutes prior to procedure. Precautions: burning sensation during administration, hypotension, ↓CO, or bradyarrhythmias. High risk of respiratory depression/failure. Contraindications: allergies to egg, soybean, fat emulsion 	
	Adults:						
	1-4 mg IV		5-10 min IV	3-5 hours	Naloxone	Reduce dose when combining with a	
Morphine	Pediatrics:		30 11111 PO		May repeat	As opioids provide sedation and analgesia, administer them prior to benzodiazenines	
	0.05-0.1 mg/kg IV Max 4 mg		5-10 min	2-3 hours		מסווווווזגופו נוופוון אווטי נט שפוובטטומבפאווופג.	
	Adults: 0.5 mcg/kg if given with other sedatives	May repeat dose Q2min until	<1 min				
Fentanyl	0.5-1 mcg/kg Max 100 mg	desired sedation and analgesia achieved			Naloxone 0.1 mg/kg IV. May repeat Q2 minutes.	 Reduce dose when combining with a benzodiazepine. As opioids provide sedation and analgesia, administer them prior to benzodiazepines. 	
	1 mcg/kg IV up to 50 mcg/dose		3-5 min	30-60 min			

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner. Approved by Clinical Guidelines Committee 9/25/23. Click here to see the supplemental resources for this guideline. If comments about this guideline, please contact John_Nelson@ykhc.org.



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Midazolam	<u>Adults</u> : 2-5 mg IV	May repeat dose Q2min until adequate sedation. Max 0.3 mg/kg.			Flumazenil 0.01 mg/kg (up to 0.2 mg) IV over 15	 No analgesia. Consider lower dose range for >60 years. 	
Midazolam	Pediatrics (6 mos- 12 yrs): 0.2-0.3 mg/kg/dose IN 0.05 mg/kg IV	May repeat dose Q5min until max dose of 0.5 mg/kg is reached. Age <5 max 6 mg; age >5 max 10 mg.		15-20 min	May repeat Q1 minute.	• Watch for dose-related hypotension.	
Dexmed <i>e</i> tomidine (Precedex™)	Adults: Bolus 0.5-1 mcg/kg – infuse over 10 minutes. <u>2-18 years</u> : Bolus 2 mcg/kg -infuse over 10 minutes. <u>1 month to < 2 years</u> : Bolus 1.5 mcg/kg – infuse over 10 minutes. <u>Intranasal</u> for <10 years 2 mcg/kg IN x1, max dose 200 mcg.	Infusion 0.2-1 mcg/kg/hour. Infusion 1.5 mcg/ kg/hour (titrate up to 2 mcg/kg/hour). Infusion 1.5 mcg/ kg/hour (may titrate up to 2 mcg/ kg/hour).	Onset 5-10 minutes.	Duration 60-240 minutes post discontinuation of infusion Duration 30-70 minutes post discontinuation of infusion Duration 30-70 minutes post discontinuation of infusion.		 Sedative with modest analgesia and minimal respiratory depression. No amnestic properties – consider midazolam if amnesia desired. Biggest side effects: bradycardia and hypotension – generally dose/rate dependent. Relative contraindications: inadequate hydration, reduced cardiac output, elevated LFTs. Absolute contraindications: digoxin, cardiac conduction abnormalities. 	



Nursing Flowsheet for Procedural Sedation and Analgesia Outside the OR

PROCEDURE MONITORING

HR, RR, SpO₂, LOC (level of consciousness), and Modified Aldrete Score to be monitored and recorded Q5 minutes until fifteen minutes after last administration of sedating medication, then Q15 minutes x1 hour, then Q1h until returned to pre-sedation baseline. Respiratory status should be monitored continuously.

TIME OUT PERFORMED

- Correct patient
- □ Correct procedure
- Correct site

Time Initials

PRE-SEDATION IV ACCESS

IVF	Site
Gauge	Rate

EQUIPMENT READINESS

In room: Cardiopulmonary monitor with three lead ECG, RR,

- and BP cuff □ Pulse-oximeter
- □ Supplemental oxygen

□ End-tidal CO₂ monitoring

- Readily accessible: Crash cart

- Suction
- Reversal agents

- □ BVM

PRESENT IN ROOM (NAME AND ROLE)

RESPIRATORY EFFORT QUALITY

N = normal	L = labored
S = shallow	R = regular
D = deep	l = irregular

LOC SCALE

- 5 = awake and alert
- 4 = sleeping intermittently
- 3 = asleep but responds to voice
- 2 = responds to painful stimuli
- 1 = unresponsive

POST-SEDATION EVALUATION

- VS and SpO₂ stable and patient has returned to pre-sedation baseline.
- □ LOC at pre-sedation baseline.
- □ Airway protective reflexes intact or at pre-sedation baseline.
- □ Patient tolerates oral intake.
- Ambulation at baseline.

OUTCOMES AND MONITORING

Check all that apply:

- □ Apnea > 15 seconds.
- □ Intubation or positive pressure ventilation.
- □ Desaturation with SpO₂ <90% for >90 seconds.
- Vomitina.
- □ HR, CP, or RR change 30% from baseline.
- □ Emergency consultation with CRNA after start of procedure.
- No complications.

PROCEDURE SUMMARY

Date of procedure:
Procedure start time:
Procedure end time:
Time last sedating medication was given:
Deepest level of sedation achieved:
IVF received (type and total volume):

MODIFIED ALDRETE SCORE

Activity

Routicy		
	Able to move four extremities voluntarily on command. Able to move two extremities voluntarily on command. Unable to move.	2 1 0
Respirat	ion	
	Able to breathe deeply and cough freely. Dyspnea or limited breathing. Apnea.	2 1 0
Circulati	on	
	BP and HR \pm 20% of pre-sedation level. BP and HR \pm 20-50% of pre-sedation level. BP and HR \pm 50% of pre-sedation level.	2 1 0
Conscio	usness	
	Fully awake and able to answer questions. Arousable only to calling. Unresponsive.	2 1 0
Oxygena	ition	
	$SpO_2 > 90\%$ on room air. Requires supplemental oxygen to maintain $SpO_2 > 90\%$. $SpO_2 < 90\%$ despite supplemental oxygen.	2 1 0

SIGNATURES	
Provider performing sedation:	Place patien
Monitoring RN:	
Provider performing procedure	

ID sticker here.



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ТІМЕ	BP	HR	RR	RESPIRATORY EFFORT QUALITY	SpO ₂	OXY GEN (L/min)	LOC	MODIFIED ALDRETE SCORE	MEDICATION AND DOSE	COMMENTS	INITIALS

SIGNATURES				
Monitoring RN(s):				
o () <u>–</u>				

Place patient ID sticker here.