

Policy Title: Care of the Patients Requiring Procedural Sedation Administered By Non- Anesthesia Personnel

Addendum Title: Reference Adult Medications

Addendum Letter: H

Date: 6/16/2021

SUGGESTED dosages below- All medications are titrated to effect

Deep Sedation Drugs have a red * by their name

MR= May Repeat

AGENT	ADULT	CONSIDERATIONS	PRECAUTIONS
MIDAZOLAM IV (Versed) Onset: 2-5 min Duration: ≤ 2 hrs Half-life: ~3-4 hrs	Initially: 0.5-2 mg IV over 2 min MR every 5 min Max dose 5 mg	<ul style="list-style-type: none"> Reduce dosage if used in combination with narcotics & in elderly May be reversed with flumazenil 	-May cause respiratory depression and hypotension -With repeated doses, accumulates in adipose tissue, which can significantly prolong sedation; elderly, obese, and those with renal or hepatic disease are at greater risk of prolonged sedation
MIDAZOLAM IM (Versed) Onset: 15 min Duration: ≤ 6 hrs Half-life: ~4 hrs	Initially: 0.07 – 0.08 mg/kg (usual dose: 5 mg) Max dose 5 mg		
DIAZEPAM IV (Valium) Onset: 1-5 min Duration: 1-8 hrs Half-life: 15-100 hrs	Initially: 5 mg MR every 5 min Max dose 20 mg	<ul style="list-style-type: none"> Has significantly longer half-life than lorazepam and midazolam Less suited for procedural sedation due to prolonged onset and duration of action 	
LORAZEPAM IV (Ativan) Onset: 15-20 min Duration: 6-8 hrs Half-life: 12-14 hrs	Initially: 0.02 – 0.04 mg/kg Max dose 4 mg	<ul style="list-style-type: none"> Less suited for procedural sedation due to prolonged onset and duration of action 	

AGENT	ADULT	CONSIDERATIONS	PRECAUTIONS
FENTANYL IV Onset: immediate Duration: 30-60 min Half-life: 2-4 hr	Initially: 0.5-1 mcg/kg IV over 2 min MR every 2 min Max dose 250 mcg	<ul style="list-style-type: none"> Reduce dosage if used in combination with benzodiazepines & in elderly May be reversed with naloxone Administer slow IV push to prevent chest wall rigidity 	May cause respiratory depression and hypotension
MORPHINE IV Onset: 5 min Duration: 3-5 hrs Half-life: 2-4 hrs	Initially: 1-4 mg MR no sooner than 15 min Max dose 10 mg (over 4 hrs)	<ul style="list-style-type: none"> Reduce dosage if used in combination with benzodiazepines. May be reversed with naloxone 	May cause respiratory depression and hypotension
*IF used in combination of other sedation medication KETAMINE IV Onset: immediate Duration: 5 -10 min Half-life: 10-15 min/2.5 hrs	Initially: 1-2 mg/kg MR 0.5-1 mg/kg every 5-15 min	<ul style="list-style-type: none"> Emergence reactions (i.e. disorientation, hallucinations) and nausea & vomiting can occur Benzodiazepine may be considered for prevention or used for acute management of emergence reactions Rarely can cause laryngospasm 	<ul style="list-style-type: none"> Avoid in patients with history of psychosis or schizophrenia Loss of respiratory drive may occur with doses greater than or equal to 1.5 mg/kg, so generally lower doses are preferred for procedural sedation
*IF used in combination of other sedation medication KETAMINE IM (if IV route unavailable) Onset: 3-4 min Duration: 12-25 min Half-life: 10-15 min/2.5 hrs	Initially: 4-5 mg/kg MR 2 mg/kg in 5-10 min		
*ETOMIDATE IV Onset: 30-60 sec Duration: 2-5 min Half-life: ~3 hrs	Initially: 0.1-0.2 mg/kg IV over 30 to 60 seconds MR 0.05 mg/kg every 3-5 min	May cause myoclonus, which, if severe, can be treated with benzodiazepine	
*PROPOFOL IV Onset: 30 sec Duration: 3-10 min Half-life: 40 min/4-7 hrs	Initially: 0.5-1 mg/kg IV MR 0.25-0.5 mg/kg q 1-3 min	Use 50% of both agents if given in combination with ketamine.	May cause respiratory depression and hypotension, especially with bolus dosing
COMBINATION NARCOTICS/BENZODIAZEPINES			
ADULT- Start with sedation, 0.5-2 mg midazolam IV over 2 min followed by fentanyl 25-50 mcg IV over 3-5 min			
GERIATRIC - Start with sedation, 0.5-1 mg midazolam IV over 2 min followed by fentanyl 25 mcg IV over 3-5 min			

BENZODIAZEPINES ANTAGONIST			
AGENT	ADULT	CONSIDERATIONS	PRECAUTIONS
FLUMAZENIL IV Onset: 1-2 min Duration: 1 hr Half-life: 40-80 min	Initially: 0.2 mg IV over 15 sec MR q 1 min to a max of 1 mg For re-sedation: MR doses at 20-min intervals with a maximum of 1 mg/dose given as 0.2 mg/min maximum of 3 mg/hr	Observe for re- sedation for a minimum of 90 min	Caution in patients with history of seizures or who regularly use benzodiazepines outpatient.
NARCOTIC ANTAGONIST			
AGENT	ADULT	CONSIDERATIONS	PRECAUTIONS
NALOXONE IV Onset: 2 min Duration: 30-120 min Half-life: 30-90 min	Range 0.1-2 mg IV over 15 sec MR q 2-3 min to a max of 10 mg	<ul style="list-style-type: none"> Observe for recurrent respiratory depression for a minimum of 90 min. Consider lower doses initially to avoid excessive reduction in analgesia, especially in patients who regularly use opioids outpatient. 	