Addendum.
Recommended Moderate Sedation Drugs and Doses: Adult

Doses exceeding recommended ranges should be documented in the patient's chart.

DRUG	RECOMMENDED IV SEDATIVE DOSE	ONSET OF ACTION (min)	PEAK EFFECT (min)	DRUG EFFECTS	REVERSAL AGENT
Diazepam (Valium)	• Age 18-60 years: 2.5 mg IV over 3-5 minutes to maximum of 0.2 mg/kg if opioids not administered. • Age over 60 &/or poor-risk: 1.5 mg IV over 3-5 minutes to maximum of 0.1 mg/kg if opioids not administered.	Less than 2 minutes	3-4 minutes; duration of sedation 15-60 minutes; residual effects may be seen for up to 4 hours.	• Usual dose to achieve anxiolysis and retrograde amnesia is 2-5 mg. • Accumulation effect likely to occur in elderly & in patients with congestive heart failure and liver disease. • Respiratory depression in elderly or when combined with opioids. • Hypotension when combined with opioids.	Flumazenil (Romazicon) 0.2 mg IV over 15 sec every min to max of 1 mg
Lorazepam (Ativan)	• Age 18-60 years: 1-2 mg IV over 1-2 minutes to maximum of 0.04 mg/kg. • Age over 60 &/or poor-risk: 0.5-1 mg IV; give in 0.5 mg increments every 5 minutes to maximum of 0.03 mg/kg. • ~ dose 30% when given with opioid.	1.5 minutes	15-20 minutes; duration of sedation is 6-10 hours.	• Sedative and anxiolytic effects are more prolonged than diazepam which may limit usefulness in ambulatory surgery setting. • Respiratory depression in elderly or when combined with opioids. • Hypotension when combined with opioids.	Flumazenil (Romazicon) 0.2 mg IV over 15 sec every min to max of 1 mg
Midazolam (Versed)	• Age 18-60 years: 1-5 mg IV over 2 minutes; titrate in 1 mg increments to maximum total dose of up to 0.2 mg/kg when used without an opioid; ~ dose 30% when given with an opioid. • Age over 60 years &/or poor risk: 0.5-1.5 mg IV over 2-3 minutes to maximum total dose of up to 0.1 mg/kg when used without an opioid; ~ dose 33-50% when given with an opioid.	30 seconds to 1 minute	3-5 minutes; duration of sedation is 15-80 minutes.	• Produces anxiolytic, sedative, hypnotic, skeletal muscle relaxant, & anticonvulsant effects. • 3-4 times more potent on milligram basis than diazepam. • Capable of producing all levels of CNS depression from mild sedation to respiratory depression to coma. • Anterograde amnesia occurs within 1-5 minutes & persists for 20-40 minutes. • Doses greater than 5 mg administered by physician. • Respiratory depression in elderly or when combined with opioids. • Hypotension when combined with opioids.	Flumazenil (Romazicon) 0.2 mg IV over 15 sec every min to max of 1 mg
Morphine	• Age 18-60 years: 1-2 mg IV over 2 minutes every 5 minutes to maximum of 0.1 mg/kg. • Age over 60 &/or poor-risk: 0.5-1 mg IV over 2 minutes every 5 minutes to maximum of 7.5 mg.	Within 1-3 minutes	Peak analgesia occurs within 20 minutes and may last up to 7 hours.	• Maximal respiratory depression within 7 minutes; with return to normal within 2-3 hours; respiratory minute volume may be subnormal for 4-5 hours. • Occasionally causes pruritus after administration due to release of histamine.	Naloxone (Narcan) 0.1 mg IV every 2-3 min until sedation level over 1 & RR greater than 8 or max of 4 doses
Hydromorphone (Dilaudid)	• Age 18-60 years: 0.5-1.5 mg IV over 1-2 minutes to maximum of 2 mg/hr. • Age over 60 &/or poor-risk: 0.5-1 mg IV over 1-2 minutes to maximum of 1.5 mg/hr.	Within 1-3 minutes		• 1.5 mg hydromorphone equal to 10 mg morphine. • Respiratory depressant effect of 1.5 mg equivalent to 10 mg morphine. • Duration of analgesia: 4-5 hours.	Naloxone (Narcan) 0.1 mg IV every 2-3 min until sedation level over 1 & RR greater than 8 or max of 4 doses
Fentanyl	• Age 18-60 years: 25-50 mcg over 1-2 minutes to max of 100 mcg/hr. • Age over 60 &/or poor-risk: 12.5 mcg IV over 1-2 minutes to max of 50 mcg/hr.	Within 1 minute	Peak analgesia within 1-3 minutes; duration of analgesia 30-60 minutes after a single dose of up to 100 mcg	• 100 mcg equal to 10 mg morphine or 75 mg meperidine. • Respiratory depressive effects similar to morphine. • Maximal respiratory depression at 5-10 minutes with sensitivity of respiratory center normalizing within 1-2 hours. • Exhibits minimal hypnotic action & histamine release rarely occurs. • Rapid IV push of more than 100 mcg may cause chest wall muscle rigidity	Naloxone (Narcan) 0.1 mg IV every 2-3 min until sedation level over 1 & RR greater than 8 or max of 4 doses

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