REGIONAL PEDIATRIC PARENTERAL DRUG MONOGRAPH

GENERIC NAME

morphine

Effective Date: Dec 2011 Revised Date: Nov13-2013	CLASSIFICATION **Opioid analgesic**	OTHER NAMES	PAGE 1 of 3

ADMINISTRATION POLICY:
IV bolus – May be administered by a nurse
IM injection – May be administered by a nurse

RECONSTITUTION/DILUTION/ADMINISTRATION:
Available as: 10 mg/mL - 1 mL ampoule

IV bolus: Diluted OR undiluted over 1 – 5 minutes. Flush catheter with normal saline after each dose.

IV bolus neonates: Preferred concentration: 0.5 – 2 mg/mL; dilute with sterile water for injection prior to measuring dose.

Final concentration	morphine 10 mg/mL	Volume of sterile water	Final volume
0.5 mg/mL	1 mL	19 mL	20 mL
1 mg/mL	1 mL	9 mL	10 mL
2 mg/mL	1 mL	4 mL	5 mL

Intermittent: Dilute in compatible IV solution and infuse over 10 – 60 minutes (10 minutes preferred)

Intramuscular (IM): Choose appropriate needle size and site for age and weight. Choose large muscle mass since solution may produce discomfort.

Intraosseus (IO): Dilute dose in normal saline to at least 0.5 mL (infants) or 1 mL (children, adolescents). Flush with normal saline after administration.

Subcutaneous: Local tissue irritation common (IM route preferred). Choose appropriate needle size and site for age and weight. Administer **SLOWLY** over 30 seconds.

Maximum concentration: IV, IM, SC, IO: 10 mg/mL

DOSAGE:
NOTE: *Due to risk of respiratory depression in children under 1 year of age, start dose at lower end of range and titrate relative to need*

*** 0.1 mg = 100 mcg**

Neonate
IV/IM/Subcutaneous: Non-ventilated: 30 – 50 mcg/kg/dose every 4 hours of every 6 hours PRN
Intermittent: Ventilated: 30 – 100 mcg/kg/dose every 2 – 6 hours PRN

Procedural sedation
IV/IM: 50 – 100 mcg/kg/dose. May repeat in 15 minutes x 1 dose PRN
Do **NOT** combine with midazolam

(dosage continued)

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DOSAGE (continued):

Child greater than 30 days

IV:	0.05 – 0.1 mg/kg/kg/dose given every 2 – 4 hours PRN
IM/Subcutaneous:	0.1 – 0.2 mg/kg/dose given every 2 – 4 hours PRN
Procedural sedation	
IV/IM:	0.05 – 0.1 mg/kg/dose. May repeat every 15 minutes to desired response. May use with midazolam.

Adolescent

IV/IM/Subcutaneous:	5 – 10 mg/dose every 2 – 4 hours PRN. (Usual maximum 20 mg/dose)
Procedural sedation:	3 – 4 mg/dose. May repeat every 10 – 15 minutes to desired response. May use with midazolam.

Renal Impairment: Administer usual loading dose; decrease initial maintenance dose based on creatinine clearance; CrCl 10-50 mL/min/1.73m2 – by 25%; CrCl < 10 mL/min/1.73m2 – by 50%

Hepatic Impairment: Administer usual loading dose; decrease initial maintenance dose by 50%

STABILITY/COMPATIBILITY:

Stability of multidose vial: N/A
Stability of Final Admixture: N/A
Compatibility: D5W, D10W, normal saline, dextrose-saline solutions

PRECAUTIONS, POTENTIAL ADVERSE REACTIONS:

- Hypersensitivity: Flushing, rash, hives, bronchospasm, hypotension
- CV: Tachycardia, palpitations, bradycardia, peripheral vasodilation leading to orthostatic hypotension (especially in hypovolemic patients)
- GI: Nausea, vomiting, decreased peristaltic activity, delayed gastric emptying, biliary spasm, constipation, dry mouth, taste alteration
- Metab: Increased antidiuretic hormone release (resulting in decreased urine output)
- Neuro: Additive with other CNS depressants; drowsiness, mood changes, euphoria or dysphoria, nausea and vomiting, tremor, paresthesia, insomnia, miosis
- Renal: Urinary tract spasm
- Resp: Respiratory depression (especially with high doses or rapid administration), bronchospasm
- Local: Histamine release causing flushing, sweating, rash and pruritus, pain at site (especially with IM, SC)
- Caution in patients with atrial flutter and supraventricular tachycardia
- Patient with renal impairment – morphine and its metabolites (normorphine) may accumulate
- Raised intracranial pressure – hypoventilation may increase pCO_2 and elevate ICP in patients with head injury
- The usual morphine products in the patient care areas contain sulfites which may cause allergic reactions
- Contraindicated with hypersensitivity to morphine, codeine, HYDROmorphone or oxyCODONE
- Severe hepatic or renal impairment – accumulation of drug or active metabolites

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ADDITIONAL NOTES AND NURSING CONSIDERATIONS:

NOTE: *Naloxone reverses respiratory depression*

• **Required monitoring**

• These are the minimum monitoring parameters for safe administration of opiate analgesics in pediatric patients with no complicating factors. Clinicians must assess the individual patient's risk factors and adjust the type and frequency of monitoring accordingly.

• Resuscitative equipment must be available in patient care area

<u>IV bolus, intermittent</u>

HR, RR: Baseline and 15 minutes post-dose. Include BP and O_2 saturation if any concerns with patient stability

Pain and sedation assessment: 30 minutes post-dose