REGIONAL PEDIATRIC PARENTERAL DRUG MONOGRAPH

GENERIC NAME

EPINEPHrine

Effective Date: Dec 2011 **Revised Date:** Nov 13 2019	CLASSIFICATION **Inotrope** **Vasopressor** **Sympathomimetic**	OTHER NAMES **Adrenalin**	PAGE 1 of 4

ADMINISTRATION POLICY:

IV Infusion	–	**Administration restricted to ED/OR/PACU/CARDIAC ROOM**
IM Injection	–	May be administered by a nurse
IV Bolus	–	May be administered by a nurse
Intraosseous (IO)	–	May be administered by a nurse
Subcutaneous	–	May be administered by a nurse
ETT	–	May be administered by a nurse
Nebulization	–	May be administered by a nurse

RECONSTITUTION/DILUTION/ADMINISTRATION:

Available as: 1 mg/mL – 1 mL ampoule PROTECT FROM LIGHT, 30 mL multidose vial
0.1 mg/mL – 10 mL pre-filled syringe

NOTE: *May contain sodium metabisulfite or sodium bisulfite. Do not use if solution is brown, discolored or contains a precipitate.*

Subcutaneous/IM: Administer using the 1 mg/mL ampoule

Rapid bolus: Administer undiluted over 10 to 15 seconds. Flush IV with normal saline.

Bolus: Administer at recommended concentration over 1 to 3 minutes. Flush IV with normal saline.

Infusion: Administer using the 0.1 mg/mL ampoules. Dilute in compatible IV solution prior to administration. Use standard concentrations. Infuse continuously with a volumetric or syringe pump.

Central: Preferred site of administration. Insure that catheter tip is positioned in a large central vein (e.g. IVC, SVC) prior to initiating infusion. Refer to INFUSION for administration directions.

IM (preferred): Administer undiluted into antero-lateral thigh with appropriate length and gauge of needle for age.

Subcutaneous: IM preferred route due to faster absorption. Administer undiluted with appropriate length and gauge of needle for age.

ETT: Administer using the 1 mg/mL ampoule. Dilute ordered dose with normal saline to a volume of at least 0.5 mL for infants and 3 mL for children. Administer over 10 seconds through endotracheal tube. Follow by normal saline flush (similar volume) and 3 – 4 vigorous hand ventilations.

Intraosseus (IO): No special considerations. Refer to INFUSION.

(reconstitution/dilution/administration continued)

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RECONSTITUTION/DILUTION/ADMINISTRATION (continued):

IV Continuous: Colleague Pump:

Guardian Software	Dose Mode	Channel Display	Personality
Yes	mcg/kg/minute	EPINEPHP	Pediatric

Drug	IV Solution	Diluent Volume	Final Concentration
5 mg (5 mL of 1 mg/mL)	100 mL normal saline	105 mL	0.0476 mg/mL

DOSAGE:

NEONATES
IV/ IO/ ETT: 0.01 mg/kg IV or 0.1 mg/kg via ETT every 3 to 5 minutes as needed maximum 3 doses

INFUSION: Initial: 0.05 to 0.1 mcg/kg/minute
Titrate: Increase dosage by 0.05 to 0.1 mcg/kg/minute every 10 to 20 minutes up to 1 mcg/kg/minute or desired clinical response; then increase dosage by 0.2 to 0.5 mcg/kg/minute
Range: 0.05 to 3.5 mcg/kg/minute

INFANTS AND CHILDREN greater than 1 month of age
Bradycardia
IV/IO: 0.01 mg/kg/dose every 3 to 5 minutes PRN (maximum: 0.5 mg/dose)
ETT: 0.1 mg/kg/dose every 3 to 5 minutes PRN
INFUSION: Refer to Systolic or Pulseless Arrest

Asystolic or Pulseless Arrest/Shock
IV/IO: 0.01 mg/kg/dose every 3 to 5 minutes PRN (maximum: 1 mg/dose)
Not recommended for routine use, but may increase dosage to 0.1 to 0.2 mg/kg/dose every 3 to 5 minutes PRN
Maximum: 5 mg/dose
ETT: 0.1 to 0.2 mg/kg/dose every 3 to 5 minutes PRN
INFUSION: Initial: 0.05 to 0.1 mcg/kg/minute
Titrate: Increase dosage by 0.05 to 0.1 mcg/kg/minutes every 10 to 20 minutes up to 1 mcg/kg/minute or desired response; then increase dosage by 0.2 to 0.5 mcg/kg/minute
Range: 0.05 to 3.5 mcg/kg/minute

(dosage continued)

DOSAGE (continued):

Severe Asthma or Anaphylaxis:

IM: 0.01 mg/kg/dose (Maximum: 0.5 mg) **OR**

Weight (kg)	Epinephrine dose (1 mg/mL) amp
Less than 10	0.1 mg (0.1 mL)
10-25 kg	0.15 mg (0.15 mL)
Over 25-50 kg	0.3 mg (0.3 mL)
Over 50 kg	0.5 mg (0.5 mL)

every 5 minutes PRN

IV Continuous: 0.1 to 1 mcg/kg/minute. Titrate every 2 to 5 minutes to desired effect based on systolic blood pressure

Renal impairment: No dosage adjustment required

Hepatic impairment: No dosage adjustment required

Obesity: Dose based on actual body weight. Titrate dosage to achieve desired clinical response.

Maximum concentration:
IM/SC/IO/ETT: 1 mg/mL
Bolus: 1 mg/mL
Peripheral IV infusion: 50 mcg/mL
Central IV infusion: 500 mcg/mL (0.5 mg/mL)

Usual concentration:
Bolus: 0.1 mg/mL
ETT: 0.1 mg/mL

STABILITY/COMPATIBILITY:

Stability of diluted solution: 24 hours at room temperature

Stability of multidose vial: 30 days at room temperature

Stability of ampoule, pre-filled syringe: Discard unused portion

Compatibility:
Compatible with normal saline, D5W, dextrose/saline solutions, Lactated Ringer
Compatible with heparin, potassium chloride
Unknown compatibility with insulin

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PRECAUTIONS, POTENTIAL ADVERSE REACTIONS:

- Tachycardia, arrhythmias, hypertension, angina, palpitations, headache, angina, weakness, anxiety
- Contraindicated with sensitivity to sulfites
    - Contraindicated in uncorrected tachydysrhythmias or ventricular fibrillation
- Increase risk of gangrene of extremities secondary to vasoconstriction with peripheral IV or umbilical catheter (UC) administration, high dosages (more than 3 mcg/kg/minute), or in patients with cold injury or occlusive vascular disease (even at low dosages)
- Phenytoin: concurrent administration (especially rapid administration) – hypotension, bradycardia, seizures
- Tricyclic antidepressants: increased pressor response to direct acting sympathomimetic agents such as epinephrine; increased risk of dysrhythmia
- Patients with hyperthyroidism, hypertension, diabetes mellitus, or cardiovascular diseases
-

ADDITIONAL NOTES AND NURSING CONSIDERATIONS (continued):

- Peripheral administration may be used only as an interim measure until a central venous access device is established
- If 1:10,000 prefilled syringe not available; may prepare solution by diluting 1 mL of the 1:1000 solution with 9 mL of normal saline (1 mg = 10 mL ; 0.1 mg = 1 mL)
- Umbilical catheters (UC) – tip of catheter must be in inferior vena cava (IVC); do not administer vasoconstrictive agents via a UC when the tip of the catheter is below the liver or in the portal venous circulation due to significant risk of local vasoconstriction and hepatic necrosis