

## INTRAVENOUS DRUG THERAPY MANUAL

<b>OTHER NAMES</b> Levophed, Noradrenaline bitartrate, Levarterenol, Noradrenaline acid tartrate	<b>CLASSIFICATION</b> Sympathomimetic	<b>ALERTS</b> HIGH ALERT MEDICATION INDEPENDENT DOUBLE CHECK for continuous infusion
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### PREPARATION and ADMINISTRATION

**WARNING: Use Resuscitation Library for 4 mg/250 mL (16 mcg/mL) to access critical care dosage limits.**

**Reconstitution**  
 Not applicable

IV Direct	Intermittent Infusion	Continuous Infusion
Not applicable	<b>IV Bag (large volume pump)</b>	<b>IV Bag (large volume pump)</b>
	Not applicable	<b>Standard preparation</b> Diluent: D5W, NS  16 mcg/mL (4 mg/250 mL)  <b>Alternative preparation (central line)</b> Diluent: D5W, NS  240 mcg/mL (60 mg/250 mL total*) *Remove 60 mL from 250 mL IV bag *Add 60 mg (60 mL norepinephrine 1 mg/mL)
	<b>Syringe (syringe pump)</b>	<b>Syringe (syringe pump)</b>
	Not applicable	<b>Standard preparation</b> Diluent: D5W, NS  80 mcg/mL (4 mg/50 mL)  <b>Alternative preparation (central line)</b> Diluent: D5W, NS  240 mcg/mL (12 mg/50 mL)

### Requirements and Monitoring

Not applicable	Not applicable	Blood pressure via arterial line Cardiac monitor Infusion device 240 mcg/mL – central line required Concentrations 80 mcg/mL or less – peripheral administration, consistent with guideline, permitted for a maximum of 12 h <a href="#">Peripheral Vasopressor Inotrope Guideline</a>
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### INDICATIONS

- Short-term treatment of acute hypotension associated with neurogenic or distributive shock (i.e., trauma, sepsis, steroid withdrawal, pancreatitis).
- Treatment of hypotension associated with cardiogenic shock or after successful CPR from cardiac or respiratory arrest.

### ADVERSE EFFECTS

- Bradycardia, arrhythmia, dyspnea.
- Headache (transient), anxiety.
- Extravasation or necrosis at injection site. Observe for any sign of drug infiltration/extravasation including blanching, greying or coldness of skin.
- If extravasation occurs, refer to [Extravasation Policy Link](#).
- Vasoconstriction. Observe extremities, lips and earlobes for signs of vasoconstriction. Changes in skin temperature or colour may be associated with severe shock but may also be an indication that norepinephrine dose is excessive.
- Hypersensitivity reactions; usually due to sulfite content.

### DOSAGE

- Dosage units: continuous infusion–mcg/kg/min; bolus dose–mcg.
- Norepinephrine dose is expressed in terms of norepinephrine base.
- Infusion rate: initially 0.05 to 0.1 mcg/kg/min. Adjust infusion rate in increments of 0.05 to 0.1 mcg/kg/min as frequently as q1–5 min to achieve/maintain target blood pressure. The usual maximum dose is 1 mcg/kg/min although this may be exceeded in extenuating circumstances. Physician must be notified when patients do not respond to the usual maximum dose or prolonged infusions fail to achieve target blood pressure.
- The infusion should be discontinued gradually by reducing the dose by 0.05 to 0.1 mcg/kg/min q 10–15 min while assessing hemodynamic stability.

### COMPATIBILITY, STABILITY

- Compatible at Y–site with D5W, NS, dextrose–saline combinations, lactated Ringer’s, Ringer’s; compatible in concentrations up to 80 mcg/mL with Plasma–Lyte A.
- Incompatible with alkaline drugs such as lidocaine, sodium bicarbonate, barbiturates.
- Continuous infusions at concentrations of 16–240 mcg/mL in D5W or NS may be administered for up to 24 h at room temperature.
- Do not use if solution is brown in colour or contains a precipitate.
- Formulation contains sulfites.
- Single use vial. Discard unused portion.
- Protect vials from light.

### DOSAGE FORMS

- 1 mg/mL; 4 mL vial/ampoule.

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### MISCELLANEOUS

- Use with extreme caution in patients on MAOIs or TCA antidepressants. MAO inhibitors potentiate hypertension and hypertensive crisis. TCAs increase the pressor response.

### LIBRARIES

- [Searchable Drug Library Document](#)

### REFERENCES

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- Loubani OM, Green RS. [A systematic review of extravasation and local tissue injury from administration of vasopressors through peripheral intravenous catheters and central venous catheters.](#) J Crit Care 2015. <http://dx.doi.org/10.1016/j.jcrc.2015.01.014> [Epub ahead of print].
- CAEP Position Statement. Vasopressor and inotrope use in Canadian emergency departments: evidence based consensus guidelines. Can J Emerg Med 2015;17(S1):1-16.