

**PURPOSE:**

- To avoid delays in initiating vasopressors/inotropes due to lack of central IV access.
- To avoid unnecessary invasive procedures, such as central venous catheter (CVC) placement when benefits do not outweigh risks.
- To improve the safety and monitoring of peripherally administered vasopressor/inotrope IV infusions.

**RESTRICTIONS:**

- Refer to **OhioHealth Intravenous (IV) Administration Handbook** in regards to administration of intravenous medications in adult patients and unit specific restrictions (i.e., level of care).

**DOSING & ADMINISTRATION:**
**General Guidance for Peripheral IV Administration:**

- *Note: administration may deviate from this guideline in emergency situations (i.e., rates above the recommended maximum peripheral IV rate in an acute decompensating patient)*
- Patient should only be prescribed a single intravenous vasopressor medication.
- Only standard concentrations of intravenous vasopressors may be given peripherally; max concentrated drips should be administered via central line.
- Initiate peripheral IV administration if anticipated use is less than 24 hours and dose does not exceed the recommended maximum peripheral IV rate (see below).

Vasopressor/Inotrope	Standard Concentration	Maximum recommended peripheral IV rate
<b>Dopamine</b>	400 mcg/250 mL	Less than or equal to 5 mcg/KG/min
<b>Norepinephrine</b>	4 mg/250 mL	Less than or equal to 15 mcg/min
<b>Phenylephrine</b>	50 mg/250 mL	Less than or equal to 150 mcg/min

The following vasopressors/inotropes are **excluded** from this guideline – please refer to the **OhioHealth Intravenous (IV) Administration Handbook**. General recommendations are given below:

- Dobutamine or Isoproterenol: standard concentrations may be given peripherally without restrictions; dobutamine max concentrated drip should be administered via central line
- Epinephrine or Vasopressin: never recommended for peripheral IV administration; should be administered via central line

**Central vs Peripheral IV Administration**

- Recommend CENTRAL LINE placement if any of the following are present:
  - Patients on **two** or more vasopressors.
  - Vasopressor/inotrope requirements increasing rapidly or significant hemodynamic instability.
  - Vasopressor/inotrope dose exceeding recommended maximum peripheral IV rate.
  - Vasopressor/inotrope use for greater than 24 hours.
  - Inability to obtain peripheral access via recommended nursing protocol (outlined below).
- Nursing Peripheral Administration Requirements:
  - Access: above the wrist, placed under ultrasound guidance (if available), confirm blood return *prior* to initiation of vasopressor/inotrope.
  - IV gauge: 20 gauge or larger
  - Duration: maximum of 24 hours
  - There should be a new, dedicated line exclusively for vasopressor/inotrope administration.
  - Recommend labeling/placing a sticker on the IV indicating line is being used for a peripheral vasopressor/inotrope.

- Contact physician or APP if patient condition worsens, requiring rapidly increasing vasopressor/inotrope dose, or if hemodynamic instability develops. If this occurs, the prescriber should consider obtaining central venous access to liberate vasopressor/inotrope use.

#### MONITORING:

- Assess IV site for signs of infiltration every 2 hours
- Ensure IV has adequate blood return every 2 hours. ***If no blood return, line is considered unusable for vasopressors.***
- If signs of extravasation are noted, notify physician or APP **immediately**.
- Avoid obtaining blood pressures on the limb being used for peripheral vasopressor/inotrope administration.

#### MANAGEMENT OF EXTRAVASATION:

**CAUTION: Tissue vesicant – potential for serious complications if extravasation occurs.**

- Stop infusion immediately.
- Contact the physician or APP immediately to assess the site.
- Remove the catheter and mark the site of extravasation. Do not apply pressure to the area.
- Refer to Nursing Policy **P-128.051 Management of Extravasation of Non-Chemotherapy Medications** for additional information including antidotes.
- Establish new peripheral access site for vasopressor/inotrope administration. Consider obtaining central venous access.

#### References:

1. Cardenas-Garcia J, Schaub KF, et al. Safety of peripheral intravenous administration of vasoactive medication. [J Hosp Med](#). 2015 Sep;10(9):581-5. doi: 10.1002/jhm.2394. Epub 2015 May 26.
2. Lewis T, Merchan C, et al. Safety of the Peripheral Administration of Vasopressor Agents. [J Intensive Care Med](#). 2017 Jan 1:885066616686035. doi: 10.1177/0885066616686035. [Epub ahead of print]
3. 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 Jun;30(3):653.e9-17. doi: 10.1016/j.jcrc.2015.01.014. Epub 2015 Jan 22.