

# Extravasation Reduction for the Medical, Cardiac Care, and Surgical Intensive Care Units at Riverside Regional Medical Center

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Problem Statement	Investigation	Extravasation Reduction	Next Steps															
<ul style="list-style-type: none"><li>In 2023, Phentolamine was ordered 29 times for 23 true extravasation events.</li><li>However only 9 rCares for vasoactive medication extravasation were completed.</li><li>The goal for this project is to reduce the frequency of vasoactive extravasations by 20% annually and improve rCare documentation.</li></ul>	<ul style="list-style-type: none"><li>A survey completed by MICU, SICU, and CCU nurses revealed the following knowledge gaps:<ul style="list-style-type: none"><li>Safe IV placement to infuse peripheral VAM</li><li>Max doses for peripheral VAM infusions</li><li>IV catheter size to infuse peripheral VAM</li><li>Hourly assessments on IVs infusing VAM were not being completed</li></ul></li></ul>	<ul style="list-style-type: none"><li>Post-education extravasation data revealed a <b>28% improvement in rCare documentation</b> as well as the <b>reduction of extravasation events</b></li><li>Improvements were made in nursing education regarding rPolicy 12400 which outlines the safe administration of peripheral pressors</li></ul>	<ul style="list-style-type: none"><li>Continued education with nursing staff at Critical Care Skills Fairs</li><li>Distribution of badge buddies</li><li>Further research in the development of iCare pop-ups</li></ul>															
Definition	Interventions	Extravasation Reduction Badge Buddy	References															
<ul style="list-style-type: none"><li><b>Extravasations</b> are defined as leakage of an intravenous solution into surrounding tissues.<sup>1</sup></li><li>Risks of vasoactive medications (VAM) such as Norepinephrine, Neosynephrine, Epinephrine, and Intropin leaking into the skin can cause <b>tissue damage, ischemia, and necrosis</b>.<sup>2</sup></li></ul>	<ul style="list-style-type: none"><li>Held education seminars to review rPolicy 12400.</li><li>Worked with administrators to create nursing "badge buddy" aid to remind them how to safely administer peripheral VAMs</li></ul>	<div><div>Tips for Reducing Extravasations of Vasoactive Medications</div><ul style="list-style-type: none"><li>Safe Locations for IV Placement for Peripheral Pressors: Forearm, US-Guided Upper Arm. The antecubital fossa and the hand are not appropriate locations per rPolicy 12400)</li><li>Dosing table as below:</li></ul><table><tr><th>Medication Name</th><th>Concentration</th><th>Dose</th></tr><tr><td>Norepinephrine (Levophed)</td><td>32 mcg/mL</td><td>8 mcg/min</td></tr><tr><td>Neosynephrine (phenylephrine)</td><td>80 mcg/mL</td><td>130 mcg/min</td></tr><tr><td>Epinephrine (adrenalin)</td><td>0.016 mg/mL</td><td>10 mcg/min</td></tr><tr><td>Dopamine (Intropin)</td><td>1600 mcg/mL</td><td>10 mcg/min</td></tr></table><div>#13872 10-2024</div></div> <div><ul style="list-style-type: none"><li>Needle Gauges Appropriate for Peripheral Pressors: 20G or larger (18G, Intraosseous Line 14G)</li><li>PICC Team Number: 757-594-4252 or page through Smart Web if your patient is on peripheral pressors for &gt;48 hrs</li><li>Phentolamine Dose: 5 mg; Route: Subcutaneous; Timing: ASAP or at least within 6 hrs from event</li><li><b>You must assess and document your examination of your patient's PIV hourly if they are receiving peripheral vasopressors</b></li><li>If an extravasation occurs<ul style="list-style-type: none"><li>Immediately stop the infusion and aspirate the IV line</li><li>Notify provider and ask for Phentolamine order</li><li>Make nursing note documenting IV location, IV size, name of medication, rate of infusion, appearance of skin</li><li>Document rCare</li></ul></li></ul></div>	Medication Name	Concentration	Dose	Norepinephrine (Levophed)	32 mcg/mL	8 mcg/min	Neosynephrine (phenylephrine)	80 mcg/mL	130 mcg/min	Epinephrine (adrenalin)	0.016 mg/mL	10 mcg/min	Dopamine (Intropin)	1600 mcg/mL	10 mcg/min	<ol style="list-style-type: none"><li>Smolders EJ, Benoist GE, Smit CCH, ter Horst P. An update on extravasation: basic knowledge for clinical pharmacists. <i>Eur J Hosp Pharm.</i> 2021;28(3):165-167. doi:10.1136/ejhpharm-2019-002152</li><li>Plum M, Moukhachen O. Alternative pharmacological management of vasopressor extravasation in the absence of phentolamine. <i>P T.</i> 2017;42(9):581-592. Accessed August 22, 2024. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5565133/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5565133/</a></li></ol>
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