



Montgomery County Fire and Rescue Service **Division of Operations** **Emergency Medical and Integrated Healthcare Services**

Office of Medical Oversight Clinical Practice Guideline

Title:	Intravenous Nitroglycerin	Number:	2025 – 06
Date:	July 1, 2025		
Issued by:	Roger M. Stone MD, MS – MCFRS Medical Director		
Purpose:	To provide direction for the administration of IV Nitroglycerin (NTG)		
Target Patient Population:	<p align="center"><u>This CPG replaces and rescinds CPG 2025 - 02</u></p> <p>Adult (18 and older) Sympathetic Crashing Acute Pulmonary Edema (SCAPE) Patients</p>		
Guideline:	<p align="center"><u>MARYLAND LICENSED PARAMEDICS ONLY</u></p> <p><u>Background</u></p> <ul style="list-style-type: none"> • Sympathetic Crashing Acute Pulmonary Edema (SCAPE) is a term used to describe a sub-set of heart failure patients with rapid onset of respiratory distress, rales, flushed warm skin, and marked hypertension. These patients will often present without signs of peripheral fluid overload. • SCAPE patients meet the definition of “Critically Unstable Patient” and priority must be given to treatment rather than movement. Clinicians should strongly consider calling a 2nd ALS resource to the scene. • CPAP is the frontline treatment for SCAPE; however, it does not provide direct treatment for the underlying pathophysiology. • IV nitroglycerin (NTG) has been shown to be safe and effective in the prehospital environment for reducing preload and afterload to treat SCAPE. • The IV route allows for close titration, continuous infusion, and uninterrupted CPAP during treatment. • IV NTG boluses and infusions must be administered via infusion pump to provide automation, consistency, and reliability. • Higher doses of IV NTG have been shown to be safe and more effective in the acute management of hypertensive pulmonary edema <p><u>Procedure (consistent with guidelines in MMP Section 14.6 – Intravenous Nitroglycerin for Severe CHF):</u></p> <p><u>All Patients</u></p> <ul style="list-style-type: none"> • Administer high dose sublingual NTG (0.8 mg) prior to CPAP application. • Apply CPAP and establish vascular access. Do not hesitate to insert an IO when IV access is unavailable. • Reconstitute IV NTG to a concentration of 100 mcg/mL. • Each dosing range for IV NTG has a designated preset program in the IV pump. Select the appropriate program based on the patient’s SBP and begin treatment. • Administration of the 400 mcg bolus requires manual entry by the clinician. It is <u>not automatically delivered.</u> 		



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Patients with SBP of 220 mmHg or greater

- Via infusion pump, administer an initial bolus of 400 mcg (4mL) followed by a continuous infusion at **80 mcg/min**.
- If the target SBP reduction of 20% has not been achieved **three to five (3-5) minutes** after the completion of the bolus, titrate the infusion up by **10 mcg/min** every **3-5 minutes** to a maximum of **120 mcg/min** or until the target SBP reduction is achieved.

Patients with SBP of 190 –219 mmHg

- Via infusion pump, administer an initial bolus of 400 mcg (4mL) followed by a continuous infusion at **60 mcg/min**.
- If the target SBP reduction of 20% has not been achieved **three to five (3-5) minutes** after the completion of the bolus, titrate the infusion up by **10 mcg/min** every **3-5 minutes** to a maximum of **100 mcg/min** or until the target SBP reduction is achieved.

Patients with SBP of 150-189 mmHg

- Via infusion pump, administer an initial bolus of 400 mcg (4mL) followed by a continuous infusion at **40 mcg/min**.
- If the target SBP reduction of 20% has not been achieved **three to five (3-5) minutes** after the completion of the bolus, titrate the infusion up by **10mcg/min** every **3-5 minutes** to a maximum of **80 mcg/min** or until the target SBP reduction is achieved.

All Patients

- In the event of hypotension, titrate the infusion down by 10 mcg/min increments to achieve the targeted SBP (20% of original). ***Except in cases where the patient goes into cardiac arrest, do not abruptly stop the medication.***

Questions may be directed to any assigned EMS Duty Officer.