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:**	2023 – 04
Date:	October 16, 2023		
Issued by:	Roger M. Stone MD, MS – MCFRS Medical Director		
Purpose:	To provide direction for the administration of IV Nitroglycerin (NTG)		
Target Patient Population:	Adult (18 and older) Sympathetic Crashing Acute Pulmonary Edema (SCAPE) Patients		

Guideline:

MARYLAND LICENSED PARAMEDICS ONLY

Background

- 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.

Procedure

- 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.
- 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 five (5) minutes after the completion of the bolus, titrate the infusion up by 5 mcg/min every 5 minutes to a maximum of 80 mcg/min or until the target SBP reduction is achieved.
- In the event of hypotension, titrate the infusion down by 5 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.