

**Glyceryl Trinitrate 400 microg Pumpspray
(Nitrolingual®) for angina / chest pain****SESLHDPR/606****POLICY STATEMENT**

The Registered Nurse (RN), Registered Midwife (RM) is authorised to instigate nurse/midwife-initiated medication without an authorised prescriber's order under the specific circumstances set out in the **INDICATIONS** section and provided there are no contraindications present.

It is important for nursing and midwifery staff to remain aware that:

- Minor ailments may be symptoms of other more serious diseases or may be adverse reactions to medication already prescribed
- Nurse-initiated medication may interact with the patient's prescribed medication
- The maximum daily recommended dose of the medication must not be exceeded¹

The administering nurse/midwife must record the administration on eMEDs or the 'nurse-initiated medicines' section of the National Inpatient Medication Chart.

If the patient continues to require the medication (i.e., more than two doses in 24 hours) then a medical officer must be consulted, and a PRN order obtained.

A change in the patient's condition such as newly occurring or increasing severity of symptoms must be reported to the MO and investigated.

INDICATIONS

Angina (chest pain) in adults

All chest pain should be treated as myocardial ischaemia until proven otherwise.

CONTRAINDICATIONS^{2,3}

Hypotension

If systolic blood pressure is < 100 mmHg:

- **Do not administer glyceryl trinitrate**
- Initiate a Clinical Emergency Response Systems call (Clinical Review, Rapid Response or Code Blue) call
- If the patient is symptomatic to the hypotension, lie them flat

Hypovolaemia

Increased intracranial pressure (e.g., cerebral haemorrhage, head trauma)

Patients taking concurrent phosphodiesterase 5 inhibitors or rosiglitazone (see drug interactions)

Significant anaemia

Hypertrophic obstructive cardiomyopathy

Obstructive myocardial failure (severe aortic or mitral stenosis, compressive pericarditis, cardiac tamponade)

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PRECAUTIONS

Use with caution in patients who have never used sublingual nitrates as they may have an exaggerated blood pressure response.

HISTORY/ASSESSMENT

Assess the patient for pain location, duration, nature, precipitating factors and associated symptoms. Ask the patient to rate the pain on a pain scale where 0 is no pain and 10 is the worst pain imaginable.

Position the patient comfortably, preferably sitting upright. Assess vital signs, including pulse, respirations, blood pressure and oxygen saturation.

If the patient is short of breath, in respiratory distress or has a SpO₂ < 95%, administer oxygen via nasal prongs at 3-4 L/min or via Hudson mask at 6-8 L/min.

Record a 12 lead ECG as soon as practical during the episode of chest pain.

A CERS call must be initiated if:

- The patient breaches Between the Flags criteria, or
- The nurse or patient's family/significant others are concerned about the patient's condition

PROTOCOL/ADMINISTRATION GUIDELINES

Caution: CHECK for allergies and/or contraindications			
Drug	Dose	Route	Frequency
Glyceryl trinitrate	400 to 800 microg 1-2 metered doses via pumpspray	Sublingual	Once, and repeated in 5 minutes if not relieved by first dose
<p>- The patient should be on a bed/trolley at the time of administration in case of significant drop in blood pressure.</p> <p>- If the patient is fasting or has a dry mouth, rinsing the mouth with water prior to administration of sublingual glyceryl trinitrate will result in more rapid absorption.</p> <p>- Nitrolingual Pumpspray should be primed before using it for the first time by pressing the nozzle five times.</p> <p>- If Nitrolingual Pumpspray has not been used for 7 days a priming of 1 spray will be necessary. If the product has not been used for more than 4 months it will need to be primed several times (max 5) until an even spray is obtained.</p> <p>- Use the lower dose (1 spray) if the patient has never received nitrates, has a systolic blood pressure (SBP) between 100-110 mmHg or is known to have a sensitive blood pressure response to nitrates. Repeat dose after 5 minutes if the patient still has pain, provided SBP remains ≥ 100 mmHg and within 20 mmHg of the patient's normal baseline blood pressure.</p> <p>- If pain is unrelieved following 2 doses of sublingual glyceryl trinitrate initiate a CERS call.</p>			

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Recheck vital signs at least every 3-5 minutes during an episode of chest pain, and more frequently if warranted by the patient's condition. In cases of hypotension, lie the patient flat and elevate the legs.

If the patient's pain is not completely relieved within 5 minutes of administration of the first dose of sublingual glyceryl trinitrate, administer a second dose. A CERS call **must** be initiated:

- If the patient's pain is unrelieved by oxygen and sublingual glyceryl trinitrate within 10 minutes
- The patient breaches Between the Flags criteria
- The nurse or patient's family/significant others are concerned about the patient's condition

Notify the medical officer of the patient's pain, even if it has been relieved.

Adverse Effects:

Headache is the most frequent adverse effect. Headache can be treated by administration of simple analgesics eg paracetamol.

Some patients may be very sensitive to the effects of glyceryl trinitrate and may have an exaggerated hypotensive response. Consider the need to initiate a CERS call. As glyceryl trinitrate has a short half-life, these effects are usually short-lived.

Drug interactions:

Phosphodiesterase 5 inhibitors: the concomitant use with glyceryl trinitrate is contraindicated and may result in profound hypotension or myocardial infarction.

Do not give a nitrate unless it is more than 24 hours since the last dose of sildenafil or vardenafil, or more than 48 hours after the last dose of tadalafil.

Use with caution when administering in combination with any other medicine that lowers blood pressure e.g., antihypertensives, diuretics, beta blockers, calcium channel blockers, methyldopa, levodopa, moxonidine, hydralazine, clonidine, prazosin, opioid analgesics, antipsychotics, tricyclic antidepressants, anticholinergics, dopamine agonists (eg pramipexole, cabergoline, rotigotine) or alcohol. The risk of orthostatic hypotension and syncope may be enhanced.

Concurrent use with sympathomimetics may reduce the antianginal effects. Nitrates may counteract the pressor effect of sympathomimetics, possibly resulting in hypotension.

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DOCUMENTATION

A record of the administration must be made in the electronic medication management system or the 'nurse-initiated medicines' section of the National Inpatient Medication Chart.

A further record of the medication administered including indication, dose and effect must be included in the patient's health care record.

PRACTICE POINTS

- Onset of action is rapid, usually within 5 minutes
- Nitrolingual Pumpspray is for individual patient use. It must be labelled with the patient's identifying details and must not be used for any other patient.
- Nitrolingual Pumpspray must be administered under the tongue and not inhaled or swallowed.
- Nitrolingual Pumpspray should be kept vertical with the nozzle head uppermost. Hold the opening in the nozzle head as close to the open mouth as possible. Close the mouth immediately after each dose.
- Avoid rinsing the mouth for 5-10 minutes following administration.

REFERENCES/FURTHER READING

1. [NSW Health Policy Directive Medication Handling PD2022_032](#)
2. [PD2013_043 Medication Handling in NSW Public Health Facilities](#)
3. MIMS Online. [Nitrolingual Pumpspray](#). 01 February 2022
4. Australian Medicines Handbook. [Glyceryl Trinitrate](#). South Australia: Australian Medicines Handbook Pty Ltd, January 2023.

REVISION and APPROVAL HISTORY

Date	Version Number	Author and Approval
November 2017	DRAFT	Author: S. Rayner, Cardiology CNC POWH
February 2018		Approved by SESLHD QUM Committee
February 2018		Registered by Executive Services and progressed to publishing.
September 2021	DRAFT 3	Reviewed by nursing and pharmacy staff. Minor terminology & reference updates (PACE to CERS)
October 2021	3	Approved by SESLHD Quality Use of Medicines Committee
June 2023	DRAFT 4	NSW Medicines Formulary reviewed. Reviewed by nursing and pharmacy staff.
September 2023	4	Approved by SESLHD Drug and Therapeutics Committee