

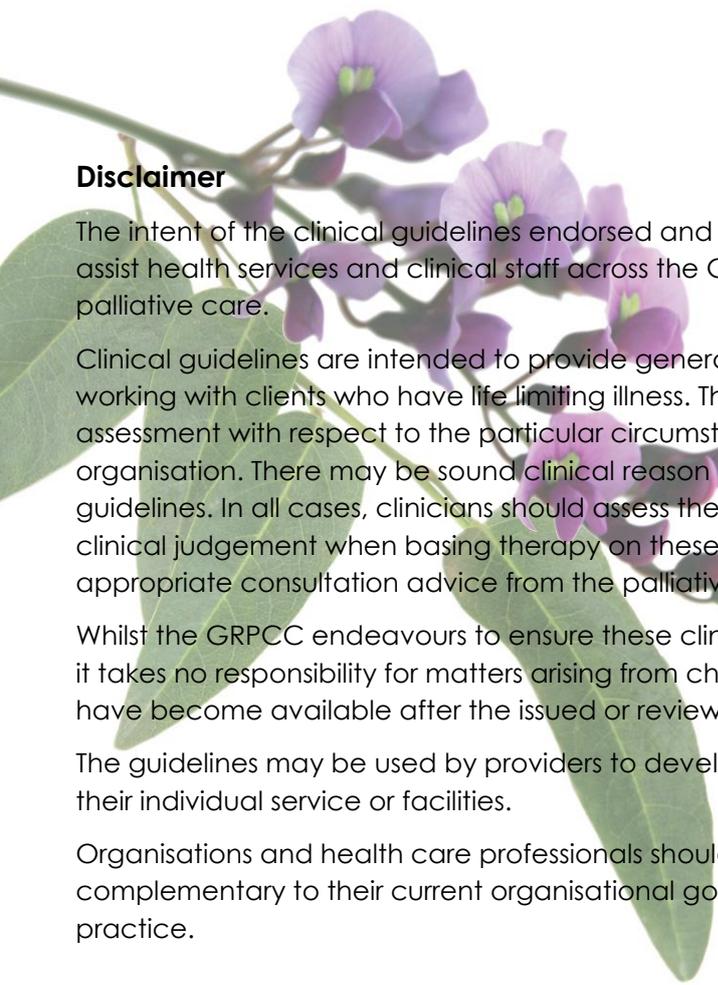
# Oxygen Use in Palliative Care Guideline and Flowchart

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**Gippsland Region  
Palliative Care Consortium  
Clinical Practice Group**



<i>Title</i>	Oxygen Use in Palliative Care Guideline and Flowchart
<i>Keywords</i>	Oxygen, Guideline, Palliative, Care, Clinical Practice
<i>Ratified</i>	GRPCC Clinical Practice Group
<i>Effective Date</i>	
<i>Review Date</i>	Every two years from effective date.
<i>Purpose</i>	This policy has been endorsed by the GRPCC Clinical Practice Group and is based on current evidence based practice and should be used to inform clinical practice, policies and procedures in health services. The intent of the policy is to promote region wide adoption of best practice. Enquiries can be directed to GRPCC by email <a href="mailto:enquiries@grpcc.com.au">enquiries@grpcc.com.au</a> or phone 03 5623 0684
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## Disclaimer

The intent of the clinical guidelines endorsed and made available by the GRPCC Clinical Practice Group is to assist health services and clinical staff across the Gippsland region to facilitate evidence-based practice in palliative care.

Clinical guidelines are intended to provide general advice to the medical, nursing, and allied health staff working with clients who have life limiting illness. They should never be relied upon as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of each patient or organisation. There may be sound clinical reason for therapy that is different to that suggested in these guidelines. In all cases, clinicians should assess the individual clinical situation, and exercise independent clinical judgement when basing therapy on these guidelines. These guidelines are not a substitute for seeking appropriate consultation advice from the palliative care service.

Whilst the GRPCC endeavours to ensure these clinical guidelines are accurate at the time of their preparation, it takes no responsibility for matters arising from changed circumstances or information or material that may have become available after the issued or reviewed date.

The guidelines may be used by providers to develop protocols and procedures tailored to the requirements of their individual service or facilities.

Organisations and health care professionals should ensure that in using the GRPCC guidelines that they are complementary to their current organisational governance structures, and individual clinicians scope of practice.

## Policy Statement

Supplemental oxygen therapy either by oxygen concentrator or oxygen cylinder should not be initiated without adequate assessment of possible aetiology, as it is not without adverse effects and social consequences. Optimal management of reversible causes using both non-pharmacological and pharmacological measures to manage dyspnoea or associated perception need to be addressed in the first instance. (Refer also to Dyspnoea (Breathlessness) Management Guidelines). A home oxygen medical prescription detailing oxygen therapy parameters and planned review needs to be in place prior to commencement of therapy.

The use of supplemental oxygen therapy (delivered by oxygen concentrator or oxygen cylinder in people with advanced cancer should be reserved for those with evidence of hypoxaemia, and symptoms not responsive to opioids and other pharmacological and non-pharmacological measures.

Supplemental oxygen therapy for non-cancer palliative clients including Chronic Obstructive Pulmonary Disease (COPD) needs to be in accordance with Thoracic Society of Australia and New Zealand (2015), and Australian Lung Foundation (COPDx) guidelines 2020.

## Definitions

**Dyspnoea (Breathlessness):** subjective sensation of difficult or uncomfortable breathing: shortness of breath.

### **Hypoxaemia:**

Hypoxemia is reduced oxygen concentration in the blood with arterial partial pressure of oxygen less than 60mmHg or oxygen saturation of  $\leq 90\%$ . It may present without recognisable signs. If present, signs of hypoxaemia can include anxiety, agitation leading to confusion and ultimately loss of consciousness. Other signs include tachypnoea, nasal flaring, use of accessory breathing muscles, changes in vital signs and cyanosis.

### **Hypoxia:**

Hypoxia is a reduced concentration of oxygen in the tissues, represented by an oxygen concentration (SaO<sub>2</sub>) of  $\leq 90\%$ .

Hypoxia and hypoxaemia are not synonymous, and may not co-exist if compensatory mechanisms are activated (Sarkar 2017).

*The presence of dyspnoea does not necessarily mean that hypoxaemia is present. Even if hypoxaemia is present, correcting this will not necessarily lessen the dyspnoea.*

## Guideline

### **Supplemental oxygen therapy**

While there is no evidence of symptomatic benefit of oxygen use in non-hypoxic clients who are dyspnoeic, oxygen may be given to mildly hypoxic patients (SaO<sub>2</sub>- 90-93%) once other pharmacological and non-pharmacological measures have been exhausted, and if it provides symptomatic relief. In patients with oxygen saturation at rest of  $\leq 90\%$ , a therapeutic trial of oxygen therapy may be reasonable, but continued use can only be justified if there is therapeutic benefit.

## Indications for oxygen therapy

### 1. Respiratory Disorders

PaO<sub>2</sub> = consistently 55mmHg or less on room air

or

PaO<sub>2</sub> 56-59mmHg with evidence of significant co-morbid conditions (right heart failure, pulmonary hypertension, chronic anaemia or polycythaemia)

***This group will generally require blood gases to meet the requirements of Thoracic Society of Australia and New Zealand Guidelines.***

### 2. Exertional Hypoxaemia

Evidence of exercise induced oxygen de-saturation on either walk or step test to SaO<sub>2</sub> ≤ 88% on room air and demonstrated improvement on supplemental oxygen.

### 3. Cardiac Disorders

PaO<sub>2</sub> = consistently 55mmHg or less on room air

or

PaO<sub>2</sub> 56-59mmHg with evidence of significant co-morbid conditions (right heart failure, pulmonary hypertension, chronic anaemia or polycythaemia)

Oxygen may be prescribed without blood gas measurement in the following circumstances which are primarily considered as palliative:

- severe intractable angina whilst on maximal drug therapy and further surgical intervention al procedures are possible; and
- recurrent episodic pulmonary oedema, severe pulmonary hypertension or severe chronic cardiac failure where no other drug therapy or interventional procedures are possible.

### 4. Terminal Malignancy

Primary or secondary lung cancer with evidence of hypoxaemia and a life expectancy of less than six months.

***Caution needs to be exercised in clients with underlying COPD as they may be dependent on hypoxemia for respiratory drive.***

## Contra Indication to Oxygen Therapy

- Current smoker including of non-legal substances.
- Patient without cognitive capacity or a carer to appropriately manage oxygen therapy presenting a risk to health and safety of patient and others

## Adverse effects of oxygen therapy include:

1. Promote anxiety – dependency on equipment can lead to anxiety regarding equipment failure with both client and family;
2. Drying of airways – nasal dryness, crusting and bleeding upper airway irritation; increased cough;

3. Trauma due to tubing – Pressure ulcers around ears/ nasal trauma; Trips/ falls from entanglement in tubing;
4. Noisy apparatus – Contributes to insomnia; and
5. Negative impact of quality of life – loss of independence and reduce mobility.

## Equipment and Funding

Equipment supply should be limited to an oxygen concentrator and back-up cylinder for use in the event of power failure, or the need for the supply to be mobile.

Depending on the model, oxygen concentrators deliver 92%  $\pm$ 3% oxygen when operated at flow rates  $\leq$ 4L/min. The percentage falls with increasing flow rate to 90%  $\pm$  3% oxygen at  $\geq$  5L/min.

If oxygen therapy is introduced, an initial limitation of two to four weeks supply subject to assessment review before ongoing supply is approved. If oxygen is introduced as an inpatient for home use, the health service through Post-Acute Care, will fund the first 28 days. For clients registered with community palliative care services, the funding to cover the cost of supply of home oxygen (concentrator and O<sub>2</sub> cylinders) varies between services. Funding may be available to clients with an Aged Care Package (oxygen supplement, subject to criteria-see resource list for details). NDIS does not provide funding for O<sub>2</sub> therapy within plans. If O<sub>2</sub> therapy in the community is to be ongoing, reassessment through outpatients by a respiratory, cardiac or oncology consultant is required to meet SWEP funding for ongoing supply (see equipment and resources list for details).

## Oxygen administration methods

Oxygen administration methods are categorised into low-flow and high-flow systems. A typical oxygen concentrator delivers oxygen flows of 0.5–5 L/min (low-flow oxygen concentrators), while some models may generate up to 10 L/min (high-flow oxygen concentrators).

**Caution needs to be taken with oxygen therapy, when a patient with a chronic lung disorder is having supplemental oxygen. Target SaO<sub>2</sub> levels need to be available to the clinician, including risk assessment and management plans in relation to hypercapnia.** (Abdo & Heunks 2012). **It needs to be noted the use of nasal cannulae and face masks differ the concentration of oxygen delivered and therefore the effect on the patient.**

Nasal cannulae delivers oxygen into the nasopharyngeal space and can be set to deliver oxygen at between 1 and 6 L/min, and provides 24-44% oxygen (as the patient is also inhaling room air). An oxygen flow  $>$ 6 L/min via nasal cannulae should be avoided as it dries nasal mucosa.

A simple face mask can be set to deliver between 5 and 10 L/min and is indicated when a moderate amount of oxygen is needed. It delivers 35-55% oxygen as there is less opportunity to inhale room air

## Client Safety

Document the provision of verbal and written information regarding use of oxygen concentrator including oxygen therapy prescription and safety issues.

Compliance with adherence to safety requirements and prescribed therapy should be monitored regularly.

## Key Performance Indicators

Oxygen use in palliative care is limited to those with hypoxaemia, or where all other therapeutic measures have been unsuccessful in managing symptoms, and where there is demonstrated evidence of improved symptom control.

## Equipment and funding information

In Victoria, the SWEP (Statewide Equipment Program) can be accessed via the following link <https://swep.bhs.org.au/domiciliary-oxygen-program-dop.php> , with details of criteria, cost, access and responsibilities.

Aged Care oxygen supplement <https://www.health.gov.au/health-roversiders/topics/aged-care/providing-aged-care-services/funding-for-aged-care-service-poxygen-supplement-for-aged-care>),

Department of Health, Victoria, - home oxygen information, within 'Referring to community services' <https://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/end-of-life-care/palliative-care/ready-for-community/referring-community>

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