

**Institution Name:** Directorate of Specialized Medical Care, MoH**Document Title:** Policy and Procedure of Oxygen via Simple O2 Mask**Approval Process**



	Name	Title	Institution	Date	Signature
Written by	Respiratory Care Services Team	Respiratory Therapists	Ministry of Health	May 2021	Respiratory Care Services Team
Reviewed by	Khalsa Al Siyabi	Head, Respiratory Care Services	Ministry of Health	May 2021	Khalsa Al Siyabi
	Ms. Saada Al Suqri	Section Head, Nursing Practice-Specialized Medical Care-Occupational Practice, DGNA	Ministry of Health	May 2021	Ms. Saada Al Suqri
Validated by	Dr. Qamra Al Sariri	DG of QAC	Ministry of Health	Dec 2021	
Approved by	Dr. Kadhim Sulaiman	DG of SMC	Ministry of Health	Dec 2021	



Table of Contents:

Acknowledgement 3

Acronyms:.....4

.1 Introduction5

2. Scope5

3. Purpose5

4. Definitions6

5. Policy6

6. Procedure **Error! Bookmark not defined.**

7. Responsibilities.....8

8. Document History and Version Control.....9

9. Related Documents:.....9

10. References:.....10



Acknowledgement

Respiratory Care Services (RCS) department would like to thank and appreciate the great efforts of all Respiratory Therapists staff from different institutions in the Sultanate of Oman who participated in writing this Policy and Procedure and also in particular to the following staff:

Khalsa Al Siyabi	Directorate General of Specialized Medical Care
Fatima V. Marasigan	Directorate General of Specialized Medical Care
Louie Dave V. Castro	Royal Hospital
Asaad Al Qasmi	Directorate General of Specialized Medical Care
Haifaa Mohammed Al Saadi	Directorate General of Nursing Affairs



Acronyms:

ABG	Arterial Blood Gases
CO2	Carbon Dioxide
DOB	Date of Birth
FIO2	The concentration of oxygen in the gas actually being inspired into the lungs and written as a fraction of 1 (e.g. 40% oxygen = 0.40 FiO2).
HCO3	Bicarbonate
LPM	Flow rate in liters per minute
O2	Oxygen
PaCO2	Partial pressure of carbon dioxide, often used in reference to blood
RT	Respiratory Therapist
SFM	Simple Face Mask



Policy and Procedure of Oxygen via Simple O2 Mask

1. Introduction

The simple face mask (SFM) is a basic disposable mask, made of clear plastic that covers the nose and mouth, held in place by an elastic strap around the back of the head, and it has a metal piece to shape over the nose to allow for a better mask fit for the patient with the end of the tubing attached to an oxygen source. It consists of exhalation ports (holes on the side of the mask) through which the patient exhales CO₂ (carbon dioxide) and ambient air can enter the mask. These holes should always remain open. The mask allows oxygen delivery via either the nose or mouth so is suitable for nose and or mouth breathers.

The simple face mask can deliver higher flow rates than nasal cannula (6-10 liters per minute) for a FiO₂ of 40-60% oxygen. If low concentration of oxygen (below 4 liters) required; there is a risk of a carbon dioxide build up. Minimum flow should be five liters to avoid re-breathing of carbon dioxide. Oxygen (via intact upper airway) via a simple face mask at flow rates of 4LPM does not routinely require humidification but prolonged periods of high percentage oxygen should be humidified. As compressed gas is drying and may damage the tracheal mucosa, humidification might be indicated/appropriate for patients with increased/thickened secretions, secretion retention, or for generalized discomfort and compliance. Efficiency depends on how well mask fits and the patient's respiratory demands so it can provide oxygen therapy. This mask is suitable for patients with respiratory failure without hypercapnia (type 1 respiratory failure) but is not suitable for patients with hypercapnic (type 2) respiratory failure.

2. Scope

This policy is applicable to all Respiratory Therapist and Nurses in all health care institutions of Ministry of Health.

3. Purpose

- 3.1. To ensure that all patients requiring supplemental Oxygen therapy receives therapy that is appropriate to their clinical condition.
- 3.2. To deliver oxygen using simple oxygen mask from the oxygen supply source and achieve the desired target oxygen saturation.



3.3. To use simple oxygen mask when an increased delivery of oxygen is needed for short periods of time if nasal cannula cannot meet the oxygen requirement of the patient.

4. Definitions

4.1. ABG (Arterial Blood Gas): A requisitioned lab test that measures the amount of O₂, CO₂ and HCO₃ dissolved in plasma. Plasma pH is also measured

4.2. Hypoxemic respiratory failure (type I): is characterized by an arterial oxygen tension (PaO₂) lower than 60 mm Hg with a normal or low arterial carbon dioxide tension (PaCO₂).

4.3. Hypercapnic respiratory failure (type II): is characterized by a PaCO₂ higher than 50 mm Hg

4.4. Carbon dioxide: A gas which is the byproduct of cellular metabolism and which collects in the tissues, is cleared from the tissues by the blood within the veins, is carried by the hemoglobin in the red blood cells, and removed from the body via the lungs in the exhaled air.

4.5. Hypoxia: reduction of oxygen supply to a tissue below physiological levels despite adequate perfusion of the tissue by blood.

4.6. Hypercapnia: a condition of abnormally elevated carbon dioxide (CO₂) levels in the blood

4.7. Hypoxemia: A drop in the oxygen carried in blood

4.8. Respiratory Failure: results from inadequate gas exchange by the respiratory system, meaning that the arterial oxygen, carbon dioxide or both cannot be kept at normal levels

5. Policy

5.1. Respiratory Care Services provides equipment and therapy according to physician's orders for patients requiring supplemental oxygen to maintain adequate blood levels of oxygen.

5.2. A practitioner's order is required to initiate oxygen therapy, except in an emergency situation.

5.3. All oxygen tubing's, humidifiers, masks, and standard cannulas used to deliver oxygen are for single patient use only.



5.4. The staff shall use appropriate devices with appropriate flow rates in order to achieve the target saturation range.

6. Procedure

6.1. Equipment:

- 6.1.1 Oxygen Flow meter
- 6.1.2 Humidifier (Optional)
- 6.1.3 Simple O2 Mask with connective tubing (Pediatric and Adult size)
- 6.1.4 Oxygen source (wall outlet or oxygen cylinder)

6.2. Simple Face Mask therapy may be contraindicated:

- 6.2.1 In patients with facial injuries.
- 6.2.2 For patients who will not leave the mask in place.
- 6.2.3 For patients experiencing adverse psychological effects of mask therapy.

6.3. Approximate concentrations, but should be regarded as an **estimate only**.

Low Flow System	Litter flow L/M	Approx. O2 % Delivered*
Simple Oxygen O2 Mask	5-6	40
	7-8	50
	9-10	60
* Approximately 4% / litre and depending on patients breathing		

6.4. Method

- 6.4.1 Check the patient's order sheet for the doctor's specific instructions including the liter flow of oxygen (6-10 LPM). In the absence of a complete order, Simple Face Mask oxygen therapy is to be administered only in an emergency. The order must be secured at the earliest possible time after emergency administration has occurred
- 6.4.2 Obtain the necessary equipment in the Respiratory Therapy equipment room and proceed to the patient's nursing unit. Verify the patient's name, DOB, and bed location.



- 6.4.3 Proceed to the patient's bed, introduce yourself, and explain what you are about to do and that it has been ordered by the patient's doctor. Check the patient's name and DOB verbally and by the patient's wrist band. Be reassuring. Be sure there is no ignition material at the patient's bedside by instructing patient in safe use of oxygen.
- 6.4.4 Wash hands.
- 6.4.5 Connect the flow meter to the oxygen source and to the humidifier. Attach the connecting tube and mask.
- 6.4.6 Make sure there is flow from the mask. Test for leaks, loose connections and proper function of the pressure relief valve by pinching the tube close to the mask.
- 6.4.7 Adjust the mask on the patient's face for maximum comfort and security.
- 6.4.8 Turn the flow meter to the liter flow specified in the doctor's order. Observe the initial effects of the treatment and make any necessary adjustments.
- 6.4.9 Inform the patient that he/she may remove the oxygen device only if with physician's orders (secure physician's order to replace mask with nasal cannula during meal)
- 6.4.10 If the equipment is on stand-by status the oxygen delivery appliance must be placed in a plastic set up bag
- 6.4.11 Properly document respiratory charges for equipment and oxygen hourly usage.

7. Responsibilities

7.1 Respiratory Therapists are responsible for:

- 7.1.1 Assessing patients, initiate and monitor oxygen delivery systems, recommends changes in therapy and discontinuation of the therapy.
- 7.1.2 Educating patients and family members in the safe use of oxygen therapy equipment preventing dangerous incidents or events.
- 7.1.3 Regular observations and detection of potential or existing problems to determine the effectiveness of oxygen therapy.
- 7.1.4 Document the settings of any equipment being used and your observations related to the client's condition.

7.2 Doctor or Physician is responsible for:



7.2.1 Evaluating the patients need for oxygen and writes a specific order for oxygen therapy with the appropriate settings.

7.2.2 Monitoring results of arterial blood gases (ABGs) to assess improvement in a patient’s condition or needing discontinuation of therapy.

7.3 Nursing Staff is responsible for:

7.3.1 Explain to the patients and their relatives about the procedure and inform regarding the necessary precautions.

7.3.2 Initiating, monitoring changes in therapy and discontinues oxygen therapy if RT is unavailable by following doctor’s order of the flow as prescribed.

7.3.3 Checking and documenting of devices if being used appropriately.

7.3.4 Assessment of physiologic parameters (measurement of PaO2s or saturation) in any patient treated with oxygen

7.3.5 Notifying a physician immediately if any signs of respiratory difficulty or distress occur

8. Document History and Version Control

Document History and Version Control			
Version	Description of Amendment	Author	Review Date
01	Initial Release	Respiratory Care Service Team	May 2024
02			
Written by		Reviewed by	Approved by
Respiratory Care Services Team		Khalsa Al Siyabi Haifaa Mohammed Al Saadi	Dr. Kadhim Sulaiman

9. Related Documents:

There are no related documents for this policy



10. References:

Title of book/ journal/ articles/ Website	Author	Year of publication	Page
https://en.wikipedia.org/wiki/Simple_face_mask			
O’Driscoll BR, et al. Thorax 2017; 72:i1–i90. doi:10.1136/thoraxjnl-2016-209729		2017	
https://www.rch.org.au/rhcpg/hospital_clinical_guideline_index/oxygen_delivery/			
AARC Clinical Practice Guidelines, Oxygen Therapy For Adults in the Acute Care Facility – 2002 Revision & Update, Respiratory Care 2002;		2002	47(7): 717- 720
https://emedicine.medscape.com/article/167981-overview; Respiratory Failure	Ata Murat Kaynar, MD;Sat Sharma, MD, FRCPC	Jul 25, 2018	