



Humidification of Oxygen Procedure

Procedure Number
WCDHBPBPN-0131

Version Nos:
3

1. Purpose

This Procedure is performed as a means of ensuring correct humidification system is chosen and safely administered to the patient.

2. Application

This Procedure is to be followed by all nursing staff throughout West Coast District Health Board (WCDHB).

3. Definitions

There are no definitions associated with this Procedure.

4. Staff Authorised To Perform Procedure

This Procedure shall be performed by a:

- Registered Nurse
- Enrolled Nurse under direction and delegation of a Registered Nurse
- Student Nurse under direction and delegation of a Registered Nurse

5. Resources Required

This Procedure requires:

- Fisher and Paykel Humidifier unit
- 1000mL bag of water for irrigation
- Oxygen tubing and mask
- Oxygen flow regulator.

6. Process

1.00 Introduction

1.01 The following are indications for use of a heated humidification system (commonly referred to as F&P humidifiers):

Circumstance	Reason for use of heated humidification
High concentration oxygen. ($F_{iO_2} > 40\%$)	Some patients find the effects of prolonged treatment (>24hours) with high inspired oxygen concentration uncomfortable, because of drying of the upper airway.
Conditions affecting mucociliary transport	Occasionally patients, usually with severe inflammatory conditions of the oropharyngeal mucosa, may obtain comfort from humidification therapy even in the absence of high inspired oxygen concentrations.
Hypothermia	In cases of hypothermia heating inspired gas may help increase core body temperature in some patients if used in conjunction with other devices.



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2.00 Heated Respiratory Humidification System

2.01 This system is used for:

- Patients requiring
 - High concentration oxygen (ie. Oxygen >40%).
 - Some patients find the effects of prolonged treatment (>24 hours) with high inspired oxygen concentration uncomfortable, because of drying of the upper airway.
- Conditions affecting Muco-ciliary Transport.
 - Occasional patients, usually with severe inflammatory conditions of the oro-pharyngeal mucosa, may obtain comfort from humidification therapy even in the absence of high inspired oxygen concentrations.
- Hypothermia.
 - Heating inspired gas in cases of hypothermia may help increase core body temperature in some patients if used in conjunction with other devices.

2.02 Fit the Chamber

- Slide the humidification chamber onto the humidifier base. Remove the blue caps.

2.03 Hang the water bag

- Hang water bag from a drip stand. Unwind the waterfeed set and spike water bag.
- The bag should be at least 50cm (20 inches) above the chamber. Ensure waterfeed set is not kinked and that water is present in chamber.

2.04 Connect the Circuit

- Connect oxygen tubing to O₂ flow meter and air entrainer.
- Set oxygen flow meter and air entrainer instructions. (Concentration + litres/min)
- Connect the air entrainer and the elbow of the blue breathing circuit to the humidification chamber.
- Connect either face or tracheostomy mask (not supplied) to the patient end of the breathing circuit.

2.05 Connect the temperature probe

- Connect the temperature probe plug into the socket on the side of the humidifier.
- Securely insert grey twin probe (B) into breathing circuit elbow above the chamber.
- Insert grey single probe (A) into port at patient end of breathing circuit.

2.06 Connect the heater wire adaptor

- Connect the heater wire adaptor plug into the socket on the side of the humidifier.
- Connect the black triplug end into the socket on the breathing circuit elbow above the chamber.

2.07 Turn the humidifier on

- Locate black on/off switch on the side of the humidifier.



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- 2.08 Attach the other end of the oxygen tubing onto the oxygen delivery device and connect to the patient.
- 2.09 Set the temperature:
- Patients with **endotracheal/tracheostomy tube**, a minimum temperature setting of **34°C** with a recommended setting of **37°C**.
 - Patients with an **oxygen therapy mask**, a minimum temperature setting of **30°C**, with a recommended setting of **33°C**.

3.00 Maintenance

- Ensure the water level of the humidifier unit is below the black line at all times
- The tubing and all consumables must be changed every three days.

4.00 Troubleshooting

- 4.01 If the humidifier unit should signal any of the following, below are a number of suggested strategies that may assist with the problem.

Problem	Solution
Temp Probe (Prb)	Check the temperature probe is inserted into the side of the humidifier base and into the two temperature probe holes in the circuit tubing.
Hi Temp	Check the fan/blower is switched on. Check there is water in the humidifier chamber. Check the temperature probes are inserted into the tubing. Check the tubing for ant leaks.
Lo Temp	Check the temperature probes are inserted into the tubing. Check the tubing for any leaks.

7. Precautions And Considerations

- ➔ Verify the order for humidification as charted in the patient's medication chart by a Medical Officer.
- ➔ Do not squeeze the bag of sterile water or use any other alternative means to fill the humidifier chamber
- ➔ Ensure the water level of the humidifier unit is below the black line at all times

8. References

Miyamoto K. (2004) Is it necessary to humidify 10w-flow oxygen or low concentration oxygen? Putsmed Feb 42(2) 134-144.



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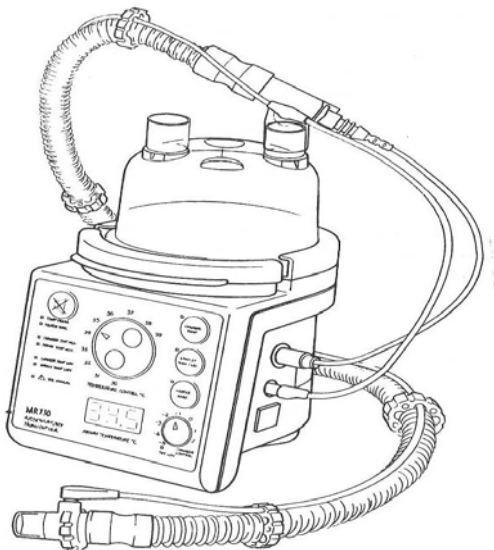
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9. Related Documents

- WCDHB Informed Consent Procedure
- WCDHB Clinical Documentation Procedure
- WCDHB Standard Precautions Procedure
- WCDHB Handwashing Procedure

10. Guidelines



Revision History	Version:	3
	Developed By:	Clinical Nurse Educator Acute Care Services
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