



High Flow Humidified Oxygen (HFHO) via AIRVO® Procedure - Bunbury and Busselton Hospital

Effective: 24 March 2021

1. Guiding Principles

This guideline shall be read in conjunction with the WACHS Oxygen Therapy and Respiratory Devices – Adults Clinical Practice Stand and corresponding clinical practice documents referenced for paediatrics and neonates.

The purpose of this procedure is to provide additional guidance specific to the clinical context for Bunbury and Busselton hospitals.

The benefits of use of High Flow Humidified Oxygen (HFHO) include decreased resistance leading to improvement of pulmonary compliance and subsequently decrease in work of breathing. Humidification also helps to assist in increased patient comfort and may reduce bronchoconstriction from cold dry air and prevent epithelial injury.

2. Guideline

The patient **MUST** be alert, cooperative and spontaneously breathing.

Patients that are considered suitable for HFHO include:

- Pneumonia
- Acute asthma/acute exacerbations of Chronic Obstructive Pulmonary Disease (COPD)
- Cardiogenic pulmonary oedema
- Hypoxaemia from Pulmonary Embolism
- Carbon monoxide poisoning
- Acute lung injury (when pneumothorax is excluded)
 - Lung contusions
 - Chest trauma including flail chest
 - Fractured ribs
 - Adult Respiratory Distress Syndrome (ARDS)
- Palliative care settings to provide comfort measures.

Contraindications for HFHO in Adult Patients include:

- Life threatening hypoxia/apnoea/haemodynamic instability
- Foreign body aspiration
- Epistaxis
- Base of skull fracture/significant mid maxillary facial trauma
- Surgery to the nose or upper digestive tract
- Nasal obstructions.

Possible complications for HFHO in adult patients include:

- Gastric distention
- Pressure injuries to the face from the nasal prongs

- Blocked HFHO system due to secretions
- Pneumothorax.

Procedural requirements:

- The **adult** patient is required to be located in the Intensive Care Unit (ICU), Medical Ward or Surgical Ward in Bunbury Hospital (BH) or General Ward, and Emergency Department (ED) Busselton Health Campus (BHC)
- Patients must be accepted by the inpatient consultant team/Senior Medical Practitioners (SMP) for admission to the ward areas from ED or as a step down to the ward areas from ICU, and they must have a documented plan of care for ward based treatment of HFHO via AIRVO®
- Patients admitted to the ward areas from both ICU and ED are required to be haemodynamically stable with AIRVO® already in place
- Ward based patients must have prescribed treatment of HFHO by the Inpatient Consultant team at BH or ward SMP team at BHC
- All patients requiring HFHO via AIRVO® must have a valid prescription on the MR139B WACHS-SW High Flow Humidified Nasal Cannula Oxygen (AIRVO 2) form which has been authorised by the Inpatient Consultant or the ICU Consultant, or the Emergency Department Consultant, or ward SMP team at BHC
- The HFHO prescription is to be reviewed **every** 24 hours by the Inpatient Consultant/Senior Medical Practitioner/Medical Registrar/ICU Consultant and review documented in the medical record.
- Any change to the prescription flow rates, must trigger a comprehensive medical review by either the Inpatient Consultant/SMP/Medical Registrar or ICU Consultant.
- If HFHO via AIRVO® has been removed or recommenced this must also trigger a comprehensive review by either the Inpatient Consultant/SMP/Medical Registrar or ICU Consultant. A new prescription must be completed
- The Oxygen flow rate to the AIRVO® device is the only variable which can be altered by an experienced nurse in accordance with the prescription parameters and in consultation with the shift/hospital coordinator/after-hours manager
- For additional support with the AIRVO® device please liaise with the shift/Hospital Coordinator/After Hours Manager in the first instance.

Monitoring:

Clinical improvement is usually observed within one hour of initiating HFHO therapy. Close observation, frequent reassessment and documentation of response to treatment are required by a registered nurse.

The following observations are to be recorded on the WACHS MR 140 Adult Observation and Response chart.

- Respiratory rate, SpO2 monitoring, heart rate and blood pressure, conscious level and temperature are to be recorded a minimum of 4 hourly unless indicated to be more frequently by ORC
- Minimum of 4 hourly flow rate and circuit observations
- Humidifier water level/bag check per shift. Water level should be to water fill line
- Blood gas either ABG or VBG before the commencement and after treatment as per flow chart. Patients who are CO2 should be monitored regularly.

Nursing Care and Management:

- Check nasal prong position hourly as dislodgement may result in reduced respiratory support
- Ensure that a leak is present, as obstruction of nasal passages will create high pressure and may lead to barotrauma
- Check pressure areas to nasal nares
- Check that oxygen is flowing freely and that the tubing/nasal cannula is not blocked at least hourly
- Replace the nasal cannula if it becomes blocked with secretions
- Check for condensation in tubing/nasal cannula at least hourly to two hourly and empty as necessary by draining back into the humidifier- water in tubing/nasal cannula may lead to aspiration
- Food and drinks may be consumed, however if flow rate is > 50L/min, oral intakes may need to be decreased to avoid possible aspiration.

3. Definitions

ABG	Arterial Blood Gas
VBG	Venous Blood Gas

4. Roles and Responsibilities

Medical staff are responsible for assessment, diagnosis, and ongoing management of the patient with documented comprehensive management plan and O₂ prescription.

The registered nurse is responsible for assessment, recognising and responding to acute deterioration with timely appropriate escalation.

All Staff are required to work within policies and guidelines to make sure that WACHS is a safe, equitable and positive place to be.

5. Compliance

Failure to comply with this policy document may constitute a breach of the WA Health Code of Conduct (Code). The Code is part of the [Integrity Policy Framework](#) issued pursuant to section 26 of the [Health Services Act 2016](#) (WA) and is binding on all WACHS staff which for this purpose includes trainees, students, volunteers, researchers, contractors for service (including all visiting health professionals and agency staff) and persons delivering training or education within WACHS.

WACHS staff are reminded that compliance with all policies is mandatory.

6. Records Management

All WACHS clinical records must be managed in accordance with [Health Record Management Policy](#).

7. Evaluation

Monitoring of compliance with this procedure will occur via the Clinical Incident Management system.

8. Standards

[National Safety and Quality Healthcare Standards: 1.7, 3.3, 4.1, 8.1, 8.3](#)

9. Legislation

[Health Services Act 2016 \(WA\)](#)

10. References

[Humidified High Flow Nasal Cannula Therapy Adults Procedure WACHS Pilbara Nickol Bay Hospital](#)

11. Related Forms

[MR139B WACHS SW High Flow Humidified Nasal Cannula Oxygen \(AIRVO 2\)](#)
[MR140A WACHS Adult Observation and Response Chart \(A-ORC\)](#)

12. Related Policy Documents

WACHS [Clinical Escalation of Acute Physiological Deterioration including Medical Emergency Response Policy](#)
WACHS [Documentation Clinical Practice Standard](#)
WACHS [Oxygen Therapy and Respiratory Devices – Adults Clinical Practice Standard](#)

13. Related WA Health System Policies

MP 0086/18 [Recognising and Responding to Acute Deterioration Policy](#)
MP 0095 [Clinical Handover Policy](#)

14. Policy Framework

[Clinical Governance, Safety and Quality](#)

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Contact:	Nurse Educator South West		
Directorate:	Operations South West	EDRMS Record #	ED-CO-20-18264
Version:	3.00	Date Published:	24 March 2021

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